

switch to metric

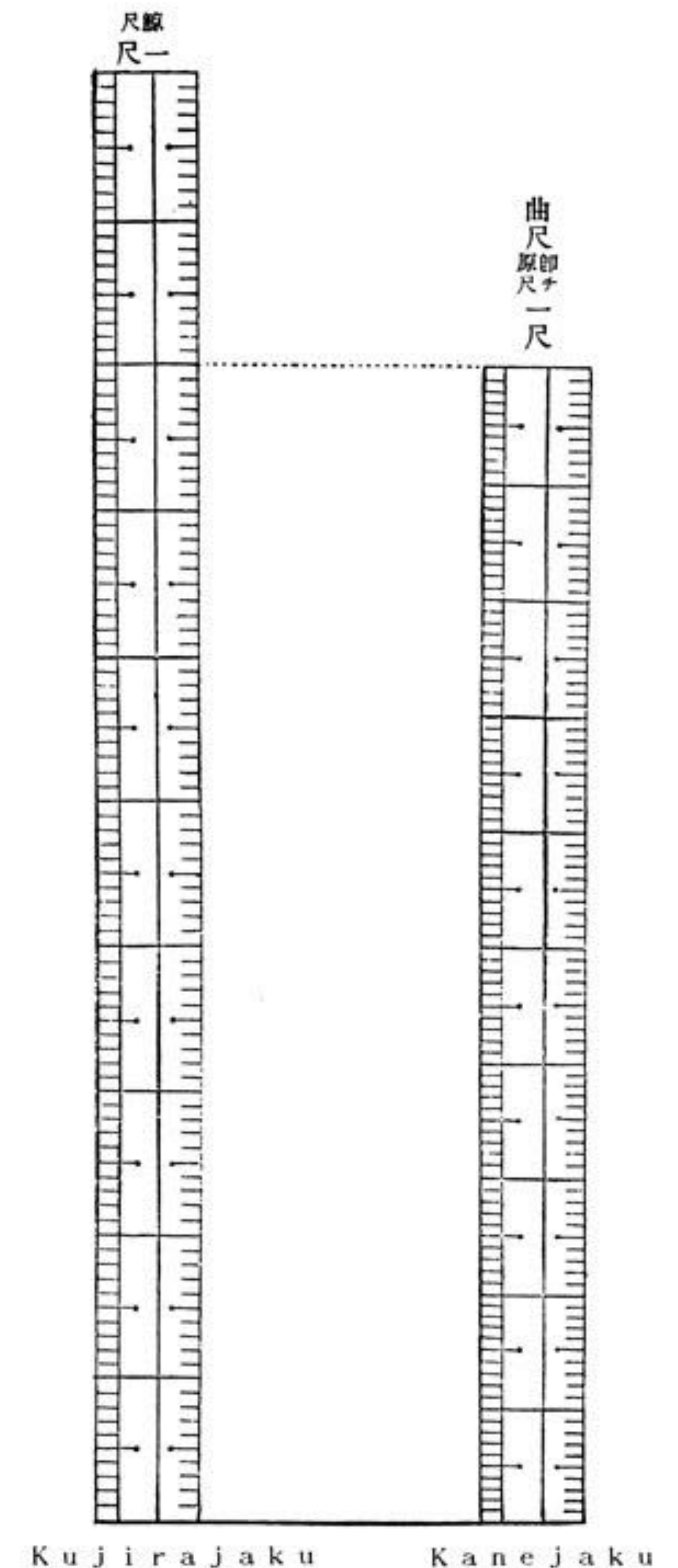
Japan joins the global movement

DeChicchis デキキス

shaku 尺

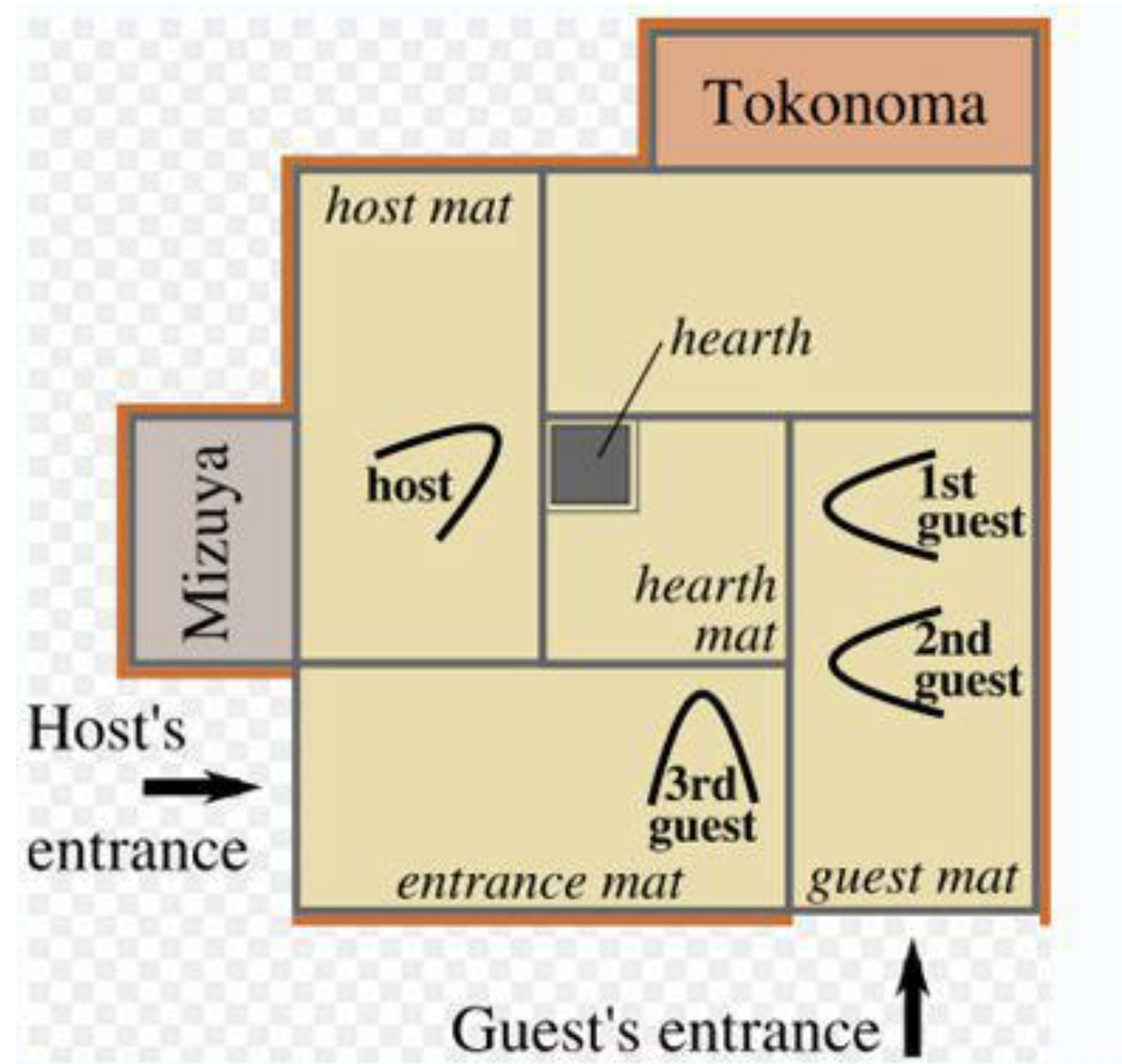
“Japan used the 17.3 cm-long linear measure unit that was common to all the regions in East Asia for a period of 25,000 years. Under the influence of China, the Japanese measuring unit gradually lengthened during the period from the end of the eleventh century BCE to the middle of the third century BCE. Then, the length of the Japanese measure shaku was stabilized at 23 cm and remained unchanged until the end of the second century AD. Various civil disturbances in China had the effect of lengthening the linear measure substantially to 29 cm until the middle of the seventh century, and no more significant variation has since been observed.”

[Iwata S., Weights and Measures in Japan; Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures, H. Selin (ed), Springer, Dordrecht, 2008. https://doi.org/10.1007/978-1-4020-4425-0_8935]



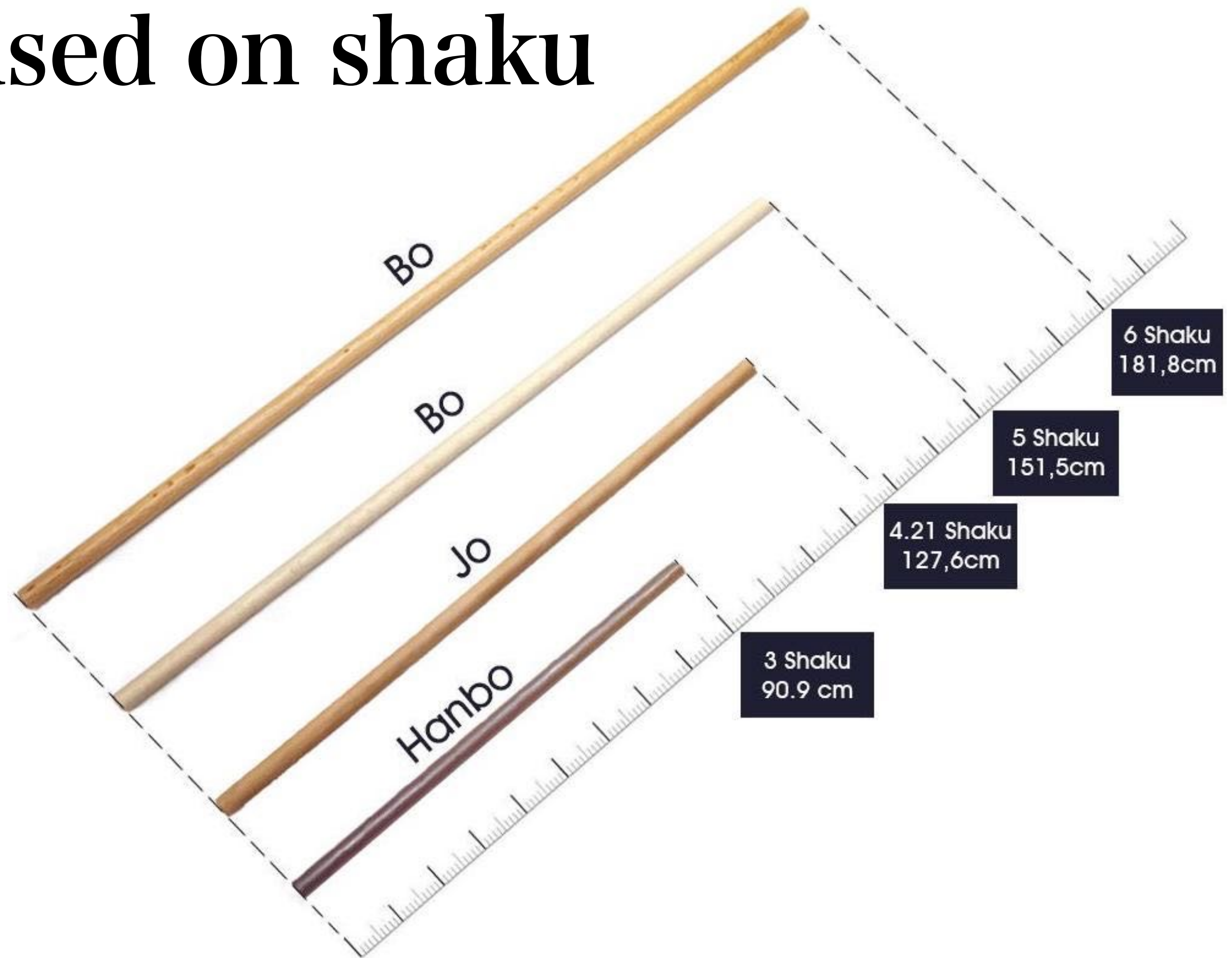
Traditionally 2畳=1坪
but a tsubo is now
a standard 3.3 m²,
and tatami size varies.

In the inaka-ma method of traditional Japanese architecture, the standard tatami floor mat (which was roughly 6×3 shaku, or 1×½ ken) varied slightly to allow for the thickness of building columns. In the kyo-ma method, the tatami mat was kept constant at 3.15×6.30 shaku.



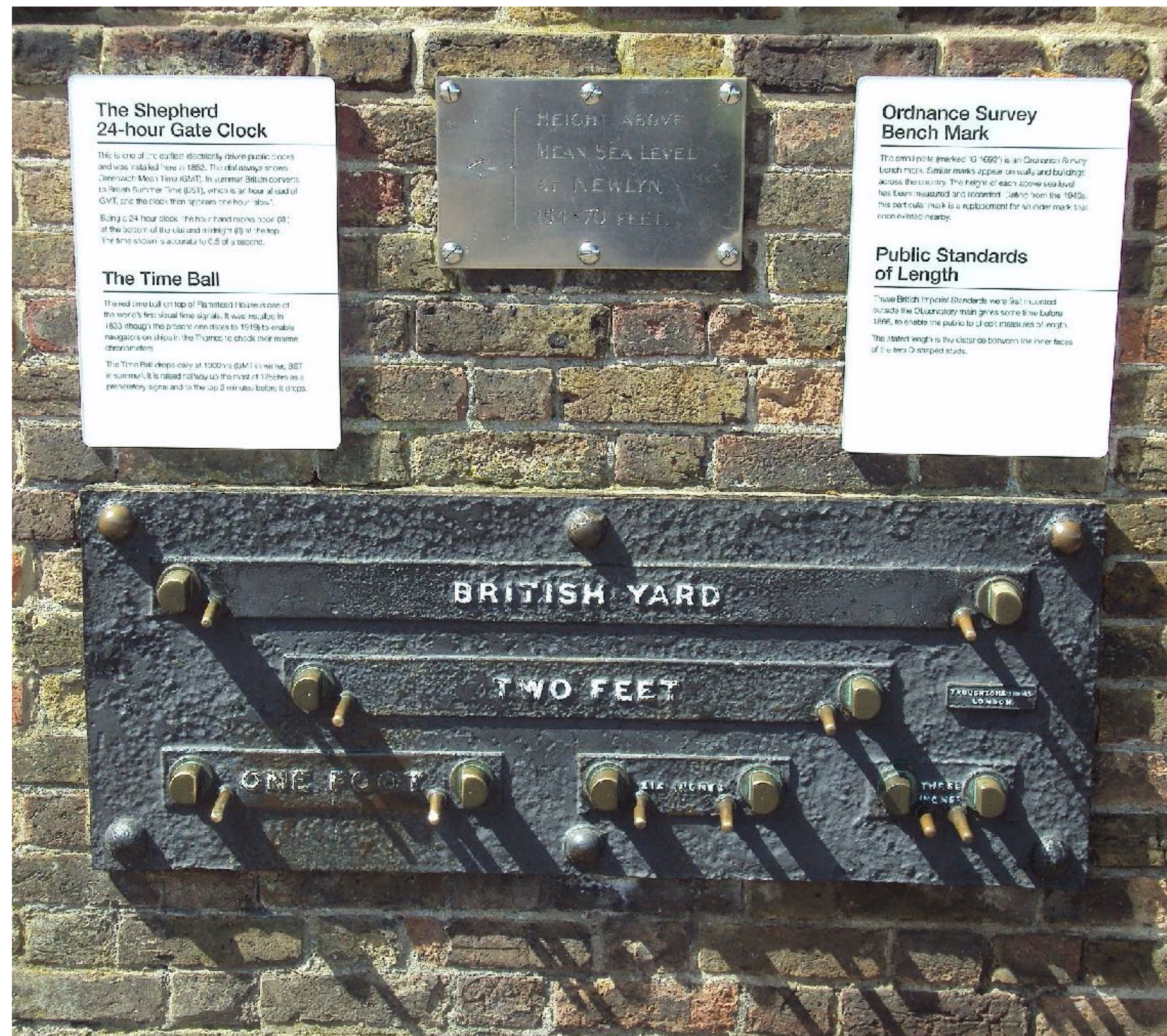
other lengths based on shaku

The hanbō 半棒
is commonly used
in martial arts:
Hanbōjutsu



British Imperial pre-metric standards

- The British Imperial system of weights and measures became commonly used worldwide in the 18th and 19th Centuries.
- The US standards were similar.



metrification

In 1795, the metric system became official in France, which defined:

- the **metre** (defined as one ten millionth of the distance between the North Pole and the Equator through Paris) for length
- the **are** (100 m²) for area [of land]
- the **stère** (1 m³) for volume [of firewood]
- the **litre** (1 dm³) for volume [of liquid]
- the **gram** (defined as being the mass of one cubic centimetre of water) for mass



The Metric System evolved into the International System of Units (abbreviated SI, from the French, *Système International*) in 1960. By 2019, all SI units were defined in terms of the seven defining constants: the speed of light in vacuum, the hyperfine transition frequency of caesium, the Planck constant, the elementary charge, the Boltzmann constant, the Avogadro constant, and the luminous efficacy. From these, SI defines the meter (m), second (s), kilogram (kg), ampere (A), kelvin (K), mole (mol), and candela (cd), respectively.





La Convention du Mètre / The Metre Convention / the Treaty of the Metre

was signed 20 May **1875** in Paris by 17 nations: Argentina, Austria-Hungary, Belgium, Brazil, Denmark, France, Germany, Italy, Peru, Portugal, Russia, Spain, Sweden and Norway, Switzerland, Ottoman Empire, United States of America, and Venezuela.

The Treaty established the International Bureau of Weights and Measures (**BIPM**, from *Bureau international des poids et mesures*), which is now an intergovernmental organization with all diplomatic rights and privileges.



In 1878, the USA approved the Treaty. In 1884, the UK signed the Treaty, and the **prototype kilogram** was delivered.

In 1893, US customary measurements (inches, feet, pounds, ounces, etc.) were officially defined in metric terms by The Mendenhall Order.

尺貫法 shakkanhō

the “shaku-kan system”

Japan joined the Convention du Mètre in 1885, and the basic units of the shaku-kan system were legally defined in metric terms in 1891.

In 1909, English units (both Imperial and US) also became legal in Japan.

On 1 January 1959, metric units became the sole legal system in most areas of Japanese life, although the shaku-kan and English units continue to be used.

1891 definitions						
Unit		Definition	Conversions			
Romanised	Kanji					
Length		metres	metres	feet		
<i>shaku</i>	尺	$10\frac{1}{33}$	0.3030	0.9942		
Area		square metres	square metres	square feet		
<i>tsubo</i>	坪	$100\frac{1}{30.25}$	3.306	35.58		
Volume		litres	litres	US gallons	Imperial gallons	
<i>shō</i>	升	$2401\frac{1}{1331}$	1.804	0.4765	0.3968	
Mass		kilograms	kilograms	pounds		
<i>kan</i>	貫	$15\frac{1}{4}$	3.750	8.267		
Note: Definitions are exact and conversions are rounded to four significant figures.						

The gō cup is a traditional Japanese unit equal to $1/10$ shō, ≈ 180.4 ml since 1891. The gō is the traditional amount used for a serving of rice and a cup of sake. However, the 200 ml “Japanese cup” is larger, and the “US cup” is even larger.



