Temperature at which Metals Volatilize.

The temperature at which the metals volatilize has been hitherto usually determined by means of an air pyrometer, but M. Becquerel has adopted another method for their determination. The instrument he employs is a thermo-electric pile, and with it he found that the following metals boil at the following degrees Fahr.: cadmium 1,328; zinc 1,688; silver 1,681; gold 1,879; palladium 2,517; platinum 2,690. It is of some importance to state that certain of these figures are lower than those obtained by M. Becquerel, when using the air pyrometer.

Land Measure.

Every farmer should have a rod measure—a light stiff pole—just 16½ feet long, for measuring land. Ascertain the number of rods in width and length of a lot you wish to measure, and multiply one by the other, and divide by 160 and you have the number of acres, as 160 square rods make a square acre. A little practice will enable any one to step a rod at five paces which will answer very well for ordinary farm work.

Statistical Information.

Measures and Weights of China, Japan, and India.

In China the foot is the unit of length, divided decimally, but there is also in use what is known as the merchants' foot, and which is equivalent to 0·33837 metre (or yard). The road measure is the *li*, which is equal to 575·5 metres. For weight there is the *pikot*, which contains 100 *kattes* of 16 *tales* each, and is equivalent to 133⅓ English pounds avoirdupois. The *katte* equals, therefore, 1⅓ English pound avoirdupois.

The unit of length in Japan is the *sasi*, divided decimally, and which is equal to 0·303 metres; there is also the ell, or *kupera sasi*, equal to 0·379 metre. For weight there is the *moume*, equal to 1¾ grams; the *moume* is divided into 10 *pun*, and 16 *rin*. All revenues of the Daimios are estimatep at so many ko-koos of rin. This is merely a standard of value, just as a pound sterling is with us, and does not give any clue to ascertaining the quantity of land these territories may contain. The standard of superficial measure is a *tsoobo*, being about 6 ft. square, or, in exact terms, the side is 5 ft. 11¾ in., and contains, therefore, an area of 35·35 square feet, instead of 36 ft. In referring to the size of a farm or tract of land, an *itham*, containing 300 *tsoobo*, is the measurement generally mentioned, and one *il-than* of good rice land is calculated to produce 1,600 *its-go*, or about 532 lbs. weight avoirdupois, of clean rice, at one cropping. The native 1 lb. weight is divided into 160 equal parts, of which 120 make 1 lb. avoirdupois. The smallest Japanese grain measure is an *its-go*, which contains 5⅓ lbs. avoirdupois of clean rice. In a tabular form, their weights may be shown as follows:—

1 Its-go	=	... ...	1-3rd lbs.
10 Its go (1 Ischo)	=	... 3	1-3rd
10 Ischo (1 Itho)	=	... 33	1-3rd
10 Itho (1 Its'ko-koo)	=	...333	1-3rd

The weights and measures of India are remarkably diverse, and puzzle the British residents to an enormous extent. In Bombay the unit of length is the *haht*, equivalent to 0·45719 metre, and in Calcutta the fathom, or four *hahts*. The road measure is the *coss*, equal to 1828·767 metres; for land measure they have the *biggah*, which contains 20 *cottahs*, or 6,400 square *hahts*, and is equivalent to 13,37755 *ares*. The new bazaar weight is the *tola*, equivalent to 10.66375 *grams*. The *mahnd* has 40 *sihrs*, 320 *tolas*.

It will be seen from the foregoing that the advocates of a universal metric system have some work before them.

The Public Debt of the United States.

The Secretary of the Treasury furnishes, in answer to a resolution of the Senate, a statement of the public debt of the United States to June 14, 1864, making the total amounts as follows:

Debt bearing interest in coin,	$837,941,091 80
" bearing int. in lawful money,	379,700,802 58
Debt on which int. has ceased,	370,170 09
Debt bearing no interest,	501,383,104 41
Total	$1,719,395,168 88
Annual interest in coin,	$50,823,672 45
Annual interest in lawful money,	20,876,057 71
Total interest,	$71,699,730 16
10-40 bonds,	$70,239,250 00
Three year 7-30 notes,	118,577,650 00
U. S. notes outstanding,	432,041,330 00
Fractional currency outstanding,	21,031,948 85

The remainder of the debt bearing no interest is mainly unpaid requisitions.

English Peals of Bells.

We have now in London and different parts of the United Kingdom about 14 peals of twelve bells; 50 peals of ten bells; 600 peals of eight bells; 700 peals of six bells; and about 400 peals of five bells; and a great number from one bell to a chime of four bells; and all these peals of five to peals of twelve bells cost each from £300 to upwards of £2,500. So you see what a merry ringing island England is; and a melodious peal of bells is perhaps not less captivating than the finest toned instrument ever yet invented.—*Builder.*

The Cost of the British Army.

A return, pertinent to the recent discussions on the cost per man of the army, has been made by the War Office, showing the amount allowed each soldier for, say, beer-money, clothing, fire, forage, and other allowances. The annual cost of a gunner, sapper, or private, in the following corps is:—Royal Horse Artillery, 55*l.* 6*s.* 1½*d.*; Life Guards, 68*l.* 16*s* 8½*d*; Horse Guards, 63*l.* 14*s.* 2½*d*; Cavalry of the Line, 52*l.* 11*s.* 3½*d*; Royal Artillery (Infantry,) 32*l.* 6*s.* 11½*d*; Royal Engineers, 31*l.* 5*s.* 3¾*d*; Military Trains, 31*l.* 15*s.* 9¾*d*; Foot Guards, 28*l.* 17*s.* 8¾*d*; and Infantry of the Line, 26*l.* 3*s.* 5½*d*.

Gas in London.

There are 13 metropolitan gas companies in operation, who realized in 1862 profits amounting