

only costs 9d.) gives a heat sufficient to fuse 5 lbs. of cast-iron. The furnace being cold when an operation is commenced, it will melt 1 lb. of cast-iron in 25 minutes; 1½ lbs. in 30 minutes; 4 lbs. in 45 minutes; and 5 lbs. in an hour. This furnace is said to possess this advantage, that platinum crucibles remain uninjured, as the rock-oil does not give off sulphurous vapors.

## Practical Memoranda.

Table of Properties of Liquids.

NAMES.	Specific grav. water, 1000	Weight of an imp. gallon in lbs.
Acid, sulphuric .....	1850	18.5
“ nitric .....	1271	12.7
“ muriatic .....	1260	12.0
“ fluorio .....	1060	10.6
“ citric .....	1034	10.3
“ acetic .....	1062	10.6
Water from the Baltic.....	1015	10.2
Water from the Dead Sea.....	1240	12.4
Water from the Mediterranean...	1029	10.3
Water, distilled .....	1000	10.0
Oils, expressed :		
linseed.....	940	9.4
sweet almond .....	932	9.3
whale .....	923	9.2
hempseed .....	926	9.3
olive.....	915	9.2
Oils, essential :		
cinnamon .....	1043	10.4
lavender .....	894	8.9
turpentine .....	870	8.7
amber.....	868	8.7
Alcohol .....	825	8.2
Ether, nitric.....	908	9.1
Proof spirit .....	922	9.2
Vinegar.....	1009	10.1

### Relative Strength of Metals to resist Torston.

Cast iron .....	=1.	Swedish bar iron.....	=1.05
Copper .....	= 48	English do .....	=1.12
Yellow Brass.....	=511	Shear steel.....	=1.96
Gun-metal. ....	= 55.	Cast do .....	=2.1

### Effects of Heat on

#### Linear Expansion of Metals from 32° to 212°.—

##### FARADAY.

Zinc.	1 part in....	322	Gold,	1 part in...	682
Lead,	“	351	Bismuth,	“	719
Tin, pure,	“	403	Iron,	“	812
Tin, impure,	“	500	Antimony,	“	923
Silver,	“	524	Palladium,	“	1000
Copper,	“	581	Platinum,	“	1100
Brass,	“	584	Flint Glass,	“	1248

### Face Protection from Cold.

An ordinary fine wire-gauze mask, as is sometimes used at masquerades, will keep the face comfortable, even if a fierce wind is blowing, while the thermometer is below zero; a thin veil or a silk handkerchief is a good substitute.

## Statistical Information.

### Lunatics in Canada.

The number of inmates of our Asylums is very considerable. On the 31st December, 1863, there remained in the Toronto Asylum, 380 patients; in the University Branch, 78; in the Orillia Asylum, 132; in the Malden Asylum, 226; total, in the Upper Canada Asylums, 816. In Beauport Asylum there were 502 patients; in the St. John's Asylum, 62; total, in the Lower Canada Asylums, 564. In Rockwood Asylum there were 98 criminal lunatics. The total number, therefore, of inmates of our asylums at the close of last year, was 1,478. To these we have to add 101 in the gaols of Upper Canada, and 84 in the gaols of Lower Canada, making a grand total of 1,663. Of the 816 patients in the Upper Canada Asylums, 373 were males, and 443 females. Of the 564 patients in the Lower Canada Asylums, 254 were males, and 310 females. It is singular that in both cases, the number of females largely exceeds the number of males. On the other hand, we learn that since the first opening of the Toronto Asylum in 1841, there have been admitted to that institution, in all 1,580 men and 1,398 women—the number of males thus considerably exceeding the number of female lunatics. It would appear, therefore, that the evidence furnished by our Canadian statistics as to whether insanity is more incident to the male or to the female sex, is somewhat conflicting. So it is also with the evidence furnished by the figures, as to whether the married or the single are more liable to lunacy. Of the 1,580 male patients admitted since 1841 into the Toronto Asylum, 702 were married and 878 single—the inference being that single men are more liable to lunacy than the married. But, on the other hand, of the 1,398 women admitted, 899 were married and 499 single—the inference being that women are more liable in the married than in the single state, to fall victims to insanity.—*Globe*.

### Facts Concerning Ivory.

England consumes 1,000,000 pounds of ivory annually, or the products of 3,333 elephants. About 4,000 men are annually killed in the elephant hunts. A tusk weighing 70 lbs. is considered a first-class one. A short time ago an American firm cut up a tusk which was not less than 9 feet in length and 9 inches in diameter, and weighed 800 lbs. In 1851 the same house sent over to the London Exhibition the largest piece of sawed ivory ever seen; it was 11 feet in length and 1 foot broad. The dearest ivory is that which is used for billiard balls. Since the conquest of Algeria by France, the ivory trade has considerably increased in the north of Africa. The hippopotamus also yields ivory, which is much harder and less elastic than that of the elephant, besides being of small dimensions.

### Old World Libraries.

At present the collection in the British Museum number 40,000 MSS. 600,000 printed volumes, and 200,000 pamphlets. The superb Bibliotheque Imperiale of Paris, the largest in the world, con-