

to be printed. The thickness of the zinc plates used is from  $\frac{1}{12}$  to  $\frac{1}{8}$  inch.

The same process of zinc engraving as above described can also be employed for the production of any subject, a picture of which is produced on the zinc in other ways than by lithography. Thus transfers from a steel or copper engraved plate or a photograph can be produced, the latter on a specially prepared zinc surface, or a sketch may be made on the zinc direct with lithographic ink or chalk.

Simple as this process appears, it requires considerable skill and care on the part of the operators to produce really good results, but some excellent specimens of blocks, as well as prints from the same, may be seen at the show, or at any time in the columns of this journal, our line engravings being prepared exclusively in this manner. The applications of this process are very various and widespread, and the advantages it possesses over line wood engraving are manifest. The simplest sketches, or the most complicated drawings covered with dimensions and writing, are produced with almost equal facility; fac-similes of ancient inscriptions, manuscripts, etc., can be photographed direct upon zinc, and require practically no hand labor, so that absolute accuracy is obtained. These are only a few applications, but are sufficient to show that the process is superior in many respects to the much older art of wood engraving, although it must always remain inferior to it where effects of color are required.

**Volatile Power of Liquids.**—Pictet gives a general equation, drawn directly from the mechanical theory of heat, which embraces all Regnault's equations of interpolation for all known volatile liquids; in other words, it gives the maximum tension of any given vapor at any given temperature. Let  $\lambda$  be the latent heat of volatilization at a temperature  $t$ ;  $c$  the specific heat of the liquid;  $k$  the specific heat of the vapors;  $P$  the maximum tension of the vapors at temperature  $t$ ;  $\delta$  density of the vapors, varying according to the law of the co-volumes;  $l\left(\frac{P^1}{P}\right)$ , a specific integral deduced from the work done, in accordance with Mariotte's law. Then

$$l\left(\frac{P^1}{P}\right) = \frac{[\lambda^1 + (c - k)(t^1 - t)] 431 \times 274 \times 1.293 \delta (t^1 - t)}{10333 (274 + t^1)(274 + t)}$$

—*Comptes Rendus*.

C.