

## 1st Series.

Pressure of air in inches of mercury.	Illuminating power of experimental flame.
29.9	100.
24.9	75.0
19.9	52.9
14.6	20.2
9.6	5.4
6.6	.9
2nd Series.	
30.2	100.
28.2	91.4
26.2	80.6
24.2	73.0
22.2	61.4
20.2	47.8
18.2	37.4
16.2	29.4
14.2	19.8
12.2	12.5
10.2	3.6

“These numbers indicate that even the natural oscillations of atmospheric pressure must produce a considerable variation in the amount of light emitted by gas-flames, and it was therefore important to determine, by a special series of observations, this variation in luminosity within, or nearly within, the usual fluctuations of the barometrical column. In order to attain greater delicacy in the pressure readings in these experiments, a water-guage was used, but its indications are translated into inches of mercury in the following tabulated results, each of which represents, as before, the average of twenty observations.

## 3rd Series.

Pressure of air in inches of mercury.	Illum. power of exp. flame.
30.2	100.
29.2	95.0
28.2	89.7
27.2	84.4