values of m and n, while the values given for the smallest orifice cannot all be fitted to a curve of the required form, although they are not inconsistent with the general formula given hereinafter.

It will be noticed that the values given by Merriman for heads of 50 and 100 feet are not included, as the formulae are only offered as representing the values up to heads of 20 feet. To include higher heads the values of m must be somewhat decreased, with a corresponding increase in the values of n, and the results would not then be comparable with those obtained at McGill University.

It remained to be seen whether an expression could be formulated covering the variation of Cd with the area of the orifice; tabulating the values of m and n for the different diameters, it will be seen that, while m decreases as the diameter increases, the variation is so slight that it cannot be accurately expressed, and an average value of .5925 may therefore be taken. As regards n, the following table shows that the value of m may be expressed by the equation $n = \frac{k}{\sqrt[3]{d^2}}$, the average value of k being about .018.

TABLE IV.

d inches	n observed	$\frac{.018}{\sqrt[3]{d^2}}$
0.24	—	.0465
0.48	.028	.0294
0.84	.020	.0202
1.00	.019	.0180
1.20	.016	.0160
2.00	.011	.0113
2.40	—	.0100

As the probable error in the values of n as derived from the experiments is not less than .0005, the agreement may be considered good.

The general formula for the coefficient of discharge for sharp-edged circular orifices may therefore be written

$$Cd = m + \frac{k}{\sqrt{h}\ \sqrt[3]{d^2}}$$

where h is expressed in feet and d in inches
and m has an average value of .5925, increasing slightly as the diameter decreases
and k has an approximate value of .018.