

The Po Grande receives no river from Stellata to the sea, and its slope in that interval is found most surprisingly uniform, namely, six inches in the mile (reduced to English measure). The breadth in its great freshes is 759 feet at Lago Scuro, with a very uniform depth of 31 feet. In its lowest state (in which it is called *Po Magra*), its breadth is not less than 700, and its depth about $10\frac{1}{2}$.

The Rheno has a uniform declivity from the Ponte Emilio to Vigarano of 15 inches per mile. Its breadth in its greatest freshes is 189 feet, and its depth 9.

Signor Corrade, in his report, says, that in the state of the great freshes the velocity of the Rheno is most exactly $\frac{4}{5}$ of that of the Po.

Grandi says, that a great fresh in the Rheno employs 12 hours (by many observations of his own) to come from Ponte Emilio to Vigarano, which is 30 miles. This is a velocity of 44 inches per second. And, by Corrade's proportion, the velocity of the Po Grande must be 55 inches per second.

Montanari's observation gives the Po Magra a velocity of 31 inches per second.

Let us compare these velocities with the velocities calculated by Buat's formula.

The hydraulic mean depths d and D of the Rheno and Po in the great freshes deduced from the above measures, are 98,6 and 344 inches; and their slopes s and S are

$\frac{1}{1224}$ and $\frac{1}{10360}$. This will give, $\frac{307(\sqrt{D}-0,1)}{\sqrt{S}-L\sqrt{S+1,6}}=0,3$

$(\sqrt{D}-0,1)=52,176$ inches and $\frac{307(\sqrt{d}-0,1)}{\sqrt{s}-L\sqrt{s+1,6}}=0,3$

$(\sqrt{d}-0,1)=46,727$ inches.

These results differ very little from the velocities above-mentioned. And if the velocity corresponding to a depth of 31 feet be deduced from that observed by Montanari in the Po Magra 10 feet deep, on the supposition that they