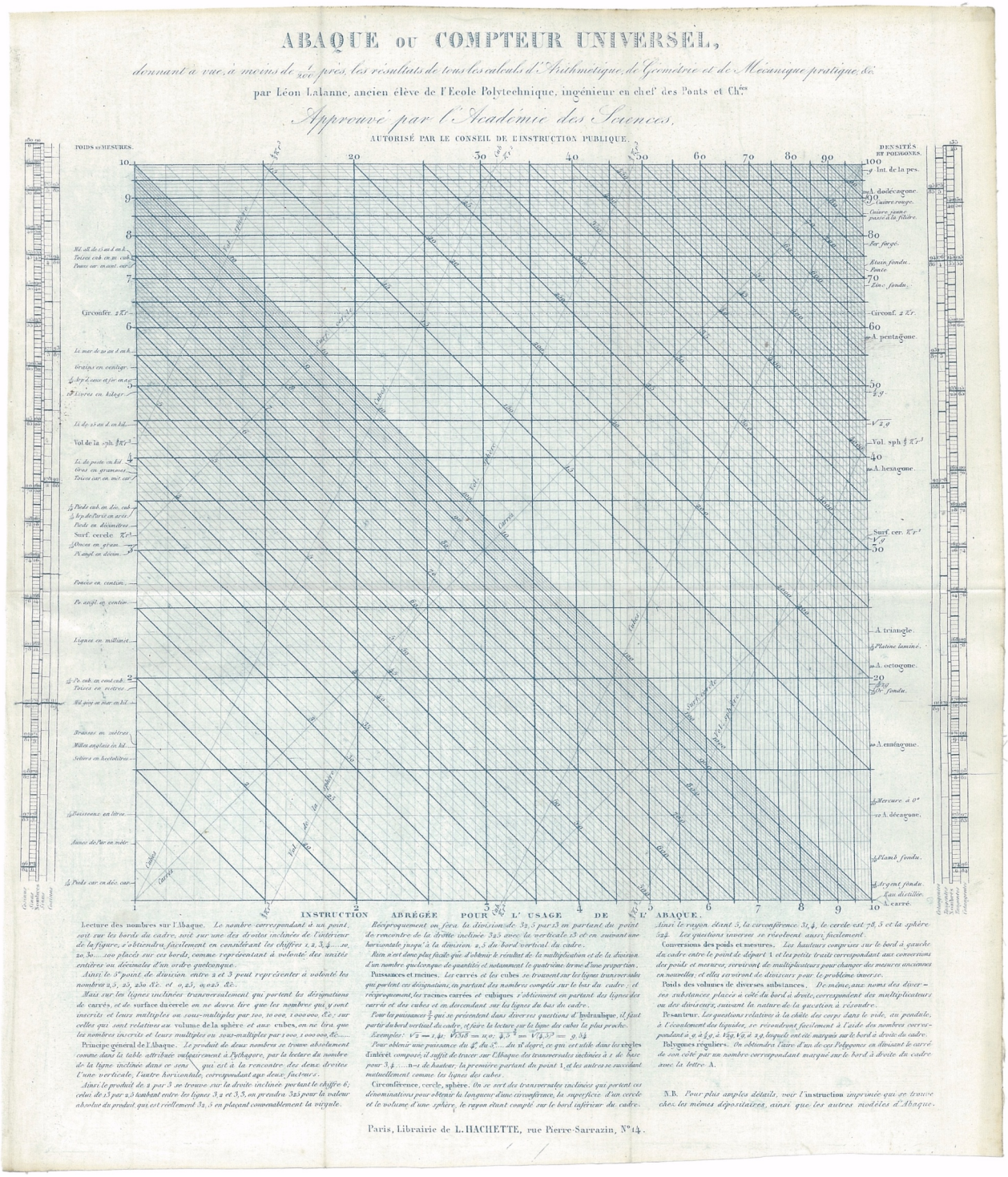
The *Abaque Compteur* of Léon Lalanne

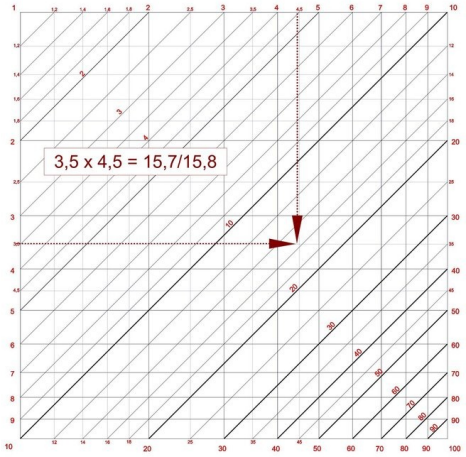
In 1844 Léon Lalanne created the first logarithmic graph table, calling it '*Abaque Compteur Universelle'*: The product of two numbers x and y is found from their intersection with the 45° lines.

The *Abaque* was adopted by the French Railways and distributed in various versions, each designed to solve specific problems. It was indispensable for the construction of bridges, which no-one today would know how to design without 8 decimal digits at hand; in its time it was widespread but today it is very rare.

This interesting system had little success and was abandoned for the easier and more practical nomography.



One of the few surviving copies of the *Abaque Compteur.* How many would be able today to design a railway bridge with no other help?



Lalanne's *Abaque* allows very quick operation at the expense of a small loss of precision.

To perform 3.5 x 4.5 just search for the two factors on the lateral scales, look for their intersection on the diagonal and read the result. In this case the intersection is close to 16 and we can evaluate the result in ca. 15.7-8. The exact result is 15.75, within the accuracy range of 2% which was considered acceptable.

To perform 35/8 go on the diagonal value of 35 and seek for the intersection with the horizontal line of value 8: this point is close to the vertical line 4.5, and we can read a value between 4.3 & 4.4. The exact result is 4.375, again an error of less than 2%.

This is a simplified graphic, the original *Abaque* also allows the user to raise numbers to powers and to extract roots.