ON THE CURVATURE OF THE LEAD LINE AND THE CORRECTION FOR ITS INCLINATION

In the note published under the above title in *Hydrographic Review*, Vol. IV, N° 2, November, 1927, it was shown that the form of equilibrium of the sounding line is an arc of a catenary. This result was obtained by assuming that the resistance of the water exerted on the sounding line act according to the law which we attributed to RESAL, and which was applied by the latter in a similar case, namely, that of the discussion of the problem of the profile taken by a rectangular sail filled by the wind.

In a recently-published book entitled :- GINO LORIA - *Curve piane speciali algebriche e trascendenti* - 2 vol. - Milano, 1930, we read in volume 2, page 236 as follows :-

"The problem of the catenary suggested to James BERNOUILLI the study "of other curves occuring in nature, and particularly of the profile curve of "the shape taken by a sail filled by the wind, without taking the weight in "account. He succeeded in representing the curve sought for (known as *velary*) "by a differential equation ; as, however, he failed to integrate this equation, "he applied to his brother John, asking him at any rate for a construction of "the curve point by point : later on he succeeded in writing the differential "equation under a simpler form, $ds.\ d^2x = dy^3$, which he also brought to his "brother's knowledge. The latter thereupon discovered not only a method for "establishing this differential equation, but succeeded also in proving that "the "curve of the sail is the same as the curve of the chain" ; consequently the "velary curve is similar to the catenary".

"*Journal des Savants*" of 28th April 1692 (John BERNOUILLI - Opera T. 1, page 59-61, etc).

The conclusion reached by John BERNOUILLI is, therefore, identical to that of RESAL, which means that the law relating to hydraulic resistance, as enunciated by the latter, was formulated for the first time (and definitely formulated) by BERNOUILLI.

L. T.