

Elasticity of Chrome Steel.—In his experiments upon the hydrodynamometer, Pellat found that the elastic resistance of chrome steel could be pushed to a much higher figure than any other metal which he tried, without passing the limit of elasticity.—*Ann. des Ponts et Chauss.* C.

Density of Liquefied Oxygen.—Prof. J. Offret thinks that Pictet was too hasty in assigning a density to liquefied oxygen equivalent to that of water. He points out errors of calculation which reduce the result by Pictet's first method to .8655, and wholly invalidate his second method. He regards his own figures, however, as merely provisory, and as probably below the true value. Further investigations may perhaps still prove the correctness of Dumas' prediction, that water and liquid oxygen have equivalent densities.—*Ann. de Chem. et de Phys.*

Applications of the Hydrodynamometer.—De Perrodie reports a series of experiments which were undertaken to determine the exact value of the coefficient of the hydraulic dynamometer. Among the uses to which he finds it especially applicable is the measurement of the intensity of the wind. In the same way as balances are made for all purposes, from the most delicate determinations of chemical analysis to the most ponderous weighings in mechanical workshops, hydrodynamometers may be constructed of all degrees of strength, from those which are used in physical laboratories for the minute study of hydrodynamic laws to those which engineers would employ for gauging the force of water at the greatest depths.—*Ann. des Ponts et Chauss.* C.

Crookes' Vacuum.—In his experiments upon radiant matter Crookes required a vacuum of a millionth of an atmosphere. It was obtained by a combination of Geissler's and Sprengel's mercurial exhausters, and measured by McLeod's gauge. Warren de la Rue estimates that the gauge will correctly record a vacuum of one fifteen-millionth of an atmosphere. Precipitated sulphur was used by Crookes in order to absorb the mercurial vapors; metallic copper, reduced from its oxide, to absorb the sulphurous vapors, and sulphuric anhydride to absorb the vapor of water. A small radiometer was employed to show the progress of the vacuum, and a Plücker tube for a similar purpose, the spectrum of the electric spark changing with the degree of rarefaction.—*Ann. de Chim. et de Phys.* C.