

Abstract: Hare's Apparatus

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Density measurement began with the Myth of Archimede and the crown of Hiero II. Measuring the density of liquids is first reported in a letter from Synesios of Cyrene to Hypathia.

The early 18th. century sees the development of an instrument, using the phenomena, that the height of two liquid-columns, lifted by the same pressure gradient is inversely proportional to the specific weight of the liquids. This type of instrument, today known as "Hare's apparatus", is often and falsely attributed to Musschenbroek.

Up to the late 19th century several instruments (Pandyrometer, Hydrodensimeter, Litrameter, etc.) were invented using this principle, only to be rejected by the scientific community in no time. The hydrostatic balance (Mohr-Westphal Balance) and the hydrometer were more accurate and easier to handle.

The so called Litrameter, developed in 1826 by the well known U.S. American chemist Robert Hare is the only instrument that could gain some acceptance. Today it is known as "Hare's Apparatus" and mostly used for science education. Hare was Professor of chemistry at the University of Pennsylvania from 1818 to 1847

In this talk I will present the history of the hydrostatic measuring principle and my findings which result from an replication of the Litrameter.