*The character behind the eponym*

# "The men and their forks" Heinrich Adolf Rinne (1819-1868) Ernst Heinrich Weber (1795-1878)

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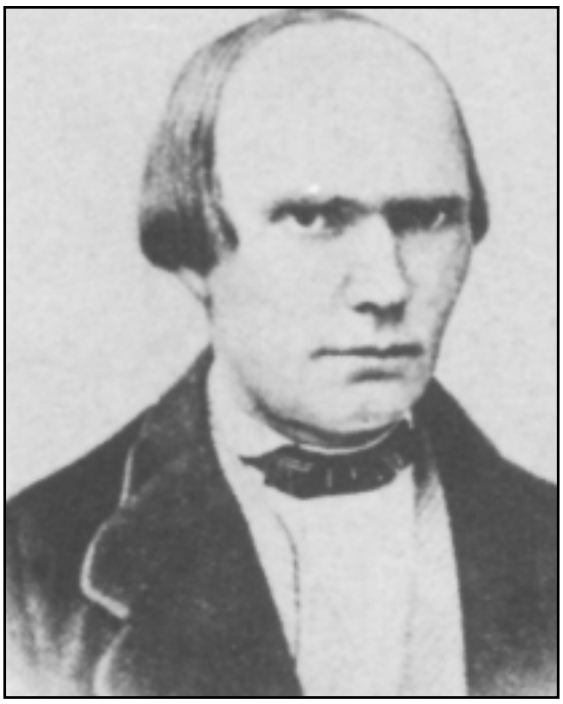
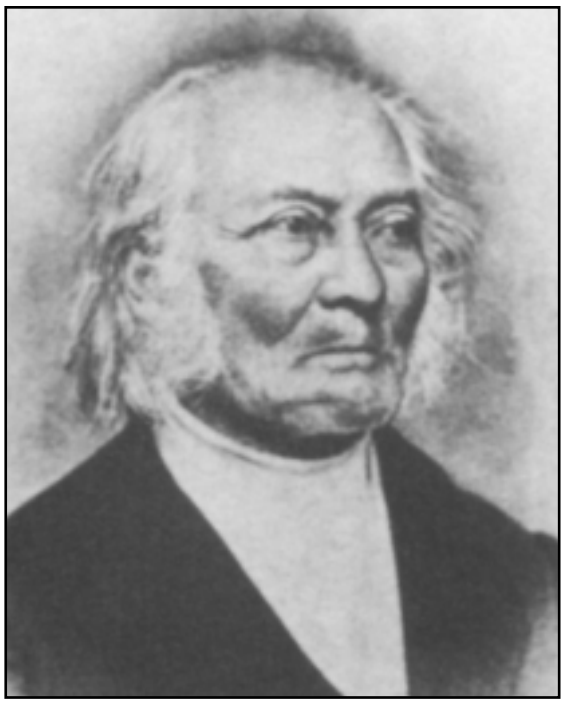


**Heinrich Adolf Rinne (1819-1868)**



**Ernst Heinrich Weber (1795-1878)**

The tuning fork was invented by the trumpeter and lutenist James Shore in 1711 but it was Rinne and Weber who initiated its use as a simple instrument for assessment of audiological function[1].

**Heinrich Adolf Rinne** was born 24th January 1819 at Vlotto on The Wesser[2]. He worked as an Otologist in Göttingen, Germany and published his seminal work in the Quarterly for Clinical Medicine of the faculty of Prague in 1855[3].

In this article he described the anatomy and physiology of the tympanic membrane, the ossicles and their combined conductive process.

He performed 22 experiments including the comparison between air conduction and bone conduction via the jaw and the incisor teeth. He appreciated that .. *"If the patient hears the sound transmitted by bone as long or longer than he hears it in the normal way then we assume a disease of one of the parts of the conduction apparatus including the membrane of the fenesetra ovalis."*

Much confusion has accompanied this eponym over the years. Many books have attributed the test, incorrectly to a Berlin, Obstetrician and Gynaecologist named Friedrich Heinrich Rinne. Unfortunately, due to a printing error in Dorland's Illustrated Medical Dictionary of 1957[4]., "Rinne's test" was quoted as "Rinnés test" hence the eponym has maintained its incorrect French pronunciation (rin'ēz) rather than the true, German (rin'neh).

Despite his work, "Rinne's test" as such was not generally recognised until it was publicised by August Lucae and Friedrich Bezold in 1881.

Rinne died from dysentery on July 26th 1868 leaving behind his invaluable contribution to diagnostic otology.

**Ernst Heinrich Weber** was born 24th June 1795 in Wittenberg, Germany[5].

He initially started his medical studies at Wittenberg in 1811 but due to the Napoleonic war was evacuated to Leipzig and completed his MD in 1815 with a dissertation on comparative anatomy

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and later became Professor of Anatomy and Physiology at Leipzig in 1818. His love for comparative anatomy persisted with his description of "Weber's ossicles", a chain of small bones on each side of the air bladder and in the ear atrium of some fish. This was the beginning of many studies comparing the embryology of the mammalian ear from its branchial origins and its comparison with its evolutionary forerunners. Weber was a prolific author on anatomical and physiological subjects including his revision of Rosenmüler's Handbuch der Anatome (1840).

Together with his brother, Wilhelm he described in great detail the physiology of blood flow through vessels and with his other brother Eduard was the first to describe the inhibitory effect of the vagus nerve on the heart.

He originally described his tuning fork test in 1825,[6] and then again in more detail in Latin nine years later[7]. He was the first to make the fundamental observation that in some cases of deafness when a tuning fork was placed anywhere in the midline of the skull, it was heard in the worse hearing ear, as would be the case in a patient with conductive deafness.

He died in Leipzig, Germany on the 26th January 1878 an accomplished anatomist, physiologist and physicist. As with Rinne, it was a third party, a Jean Pierre Bonnafont (1805-1885) who popularised Weber's work as a diagnostic test[8].

Rinne and Weber were two in a long line of scientists who each provided a valuable contribution to the modern day tuning fork tests, but it is their names which live on in our daily clinical work.

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