



# Andrija Mohorovicic

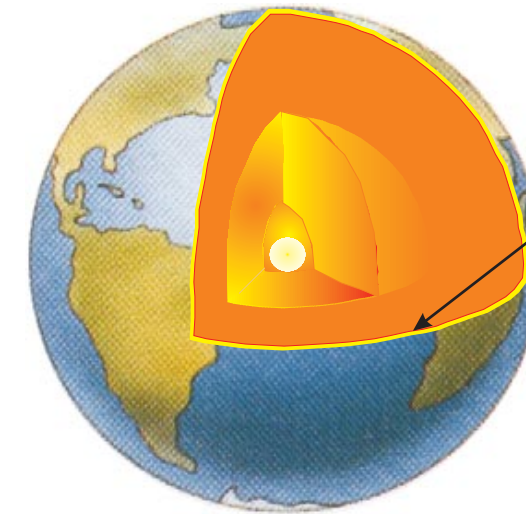
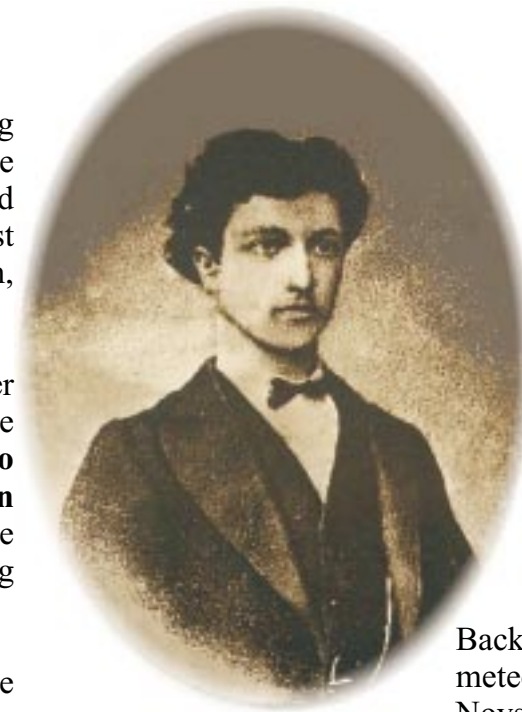
## 1857 - 1936

Mohorovicic is famous for his discovery of a discontinuity in the internal structure of the Earth.

Andrija was born in Volosko, a coastal Istrian village where his father was a blacksmith making anchors. He obtained his elementary education in his birthplace, continued his study in the gymnasium of a neighbouring town, Rijeka, and received higher education in mathematics and physics from the University of Prague. There, one of his professors was the famous physicist Ernst Mach. At the age of 15 he knew Italian, English and French and later learned German, Latin and Ancient Greek.

His career began with a teaching post in the Zagreb gymnasium but he soon obtained a transfer to the Nautical school in Bakar (close to Rijeka). He was teaching meteorology, became interested in the subject and started to make systematic observations and measurements. **To measure the horizontal and vertical velocity of the clouds he made instruments of his own design. He was meticulous in his daily work.** Much later (1907) in his 'Instruction for the observation of precipitation in Croatia and Slavonia' he wrote: 'Anyone not used to performing his work conscientiously, should not be involved in observing precipitations.'

The accumulated data of his observations represented a basis for his doctoral thesis 'On the observation of clouds, and the daily and annual cloud period in Bakar' presented to the University of Zagreb. He was one of the founders of the Society for Assisting Poor and Worthy Students of the Royal Nautical School in Bakar.



*He discovered that the earth has a surface layer some tens of **km** thick*

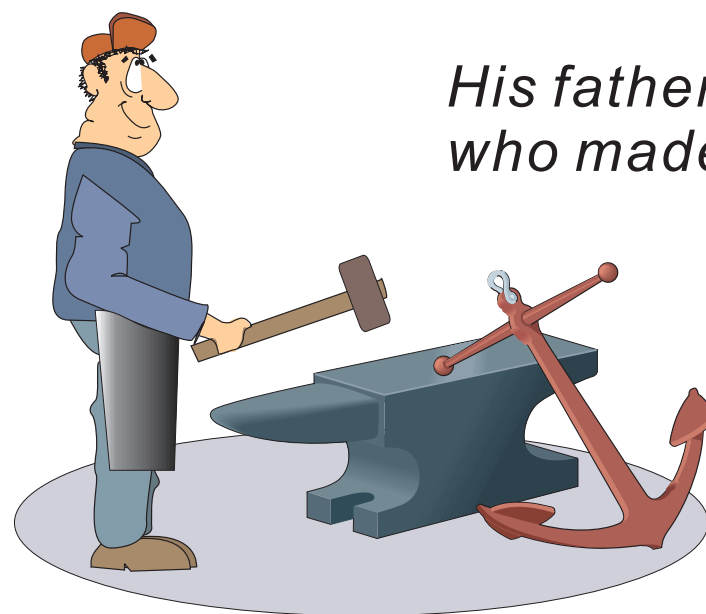
Back in Zagreb he continued to work in the meteorological observatory and he established a meteorological service throughout Croatia. A rare event observed at the time was the tornado in Novska (31st March, 1892) when a 13 ton railway carriage with 50 passengers was thrown a distance of 30 metres. Simultaneously he was teaching geophysics and astronomy at the university.

From 1900 his main interest switched toward seismology and he acquired a few seismographs that were installed before the occurrence on 8 October 1909 of the strong earthquake with its epicentre 39 km southeast of Zagreb.

When an earthquake occurs two waves, longitudinal and transverse, propagate through the soil with different velocities. When seismic waves strike the boundary between different types of material, they are reflected and refracted, just as light is when it strikes a glass block. Their arrival times at the locations of the seismological observatories are registered and following the traditions of seismologists the available data are freely distributed to their colleagues. Analysing the data of seismographs from a dozen stations, **Mohorovicic showed that the Earth consists of a surface layer above an internal core.**

From the calculations he was able to estimate the thickness of the upper layer as 54 km. Nowadays it is known that it varies between a few kilometers at the bottom of the oceans to about 70 km under the highest mountains. This discontinuity in the Earth's structure is named after Mohorovicic. It is interesting that a problem based on this understanding was proposed to the competitors of the XVII International Physics Olympiad for secondary school students held in London in 1986.

He was married to Silvija Verni and they had four sons.



*His father was a blacksmith who made anchors*