

PERSONALITIES OF THE SCIENTIFIC UNIVERSE: Augustin Sabinu Maior



Maiors': Olivia, Augustin, Iuliu, Gheorghe and Ana.

Augustin

Sabinu Maior was born on the 21st of August 1882 in Reghin. His father, Gheorghe Maior, was a primary school teacher at the Primary School of Reghin. His mother, Tereza, born Cornea, brought up and educated the five children of the

Learning, the basic condition for success

Due to his erudition, he managed to form to the children the desire to understand things beneath the first impression. German was the language he learnt the first poems in, at the German kindergarten of Reghin. German was the language he learnt to write in during the primary school of Reghin. In 1892 he was enlisted in the first grade of the Evangelic German High school of Reghin. He studied here until 1896. Then, he continued school until the sixth grade at the Apiarist High school of Târgu Mureş, then the one in Budapest. Here, he met Professor Schmidt Agoston, a gifted pedagogue, who opened his way towards sciences. During all these years, he proved a remarkable passion for research, for documentary research, for explaining the reality using science, not only his intuition. In 1900 he graduated high school and passed the baccalaureate exam. In autumn, he became a student at the Polytechnic Institute from Budapest, faculty of Mechanics. In 1905 he became an engineer, but before practising as an engineer, he spent several months at universities of Wien, München and Göttingen for research. He attended several post-academic courses and here he met a lot of scientific personalities of that time, among who we can mention Hermann. Minkowski, the one who added the dimension of time to the other three dimensions of space, resulting the tetra dimensional variety of space-time. This property was later used by August Maior in his studies.

The beginnings of the research in the domain of multiple phone system

He found a job as an engineer at the technical department of the Post Company of Budapest, he participated to the contest organized in November 1905 and he convinced the examination board that he had great theoretical knowledge, so he started his activity at the Experimental Station of the Post Company.

The name "*Experimental Station*" or "*research Station*" was used in Europe for a long period of time, included in Romania in order to name a research institute.

The problems studied were related to the phone industry, to the increase of the quality of phone conversations, to support an increasing number of conversations per time unit. This was happening only after thirty years after 1876, when Graham Bell transmitted the first words through a phone. This was happening only after thirteen years after 1892, when the first automatic phone switchboard started functioning in Indiana, the U.S.A. He conducted a lot of experiments and he substantiated theoretically solutions for a simultaneous transmission of several conversations on the same electric circuit.

Experimental and theoretical success

Only after one year after his hiring as an engineer, at the end of 1906, he managed to transmit five simultaneous conversations between two phone switchboards situated at 15 kilometres from each other and which were linked by only one phone line made up of two electric conductors. The theory was published in 1907 in "*Elektrotechnische Zeitschrift*" Journal. In 1908 he participated at the First International Conference of the Engineers from the Phone and Telephone Company, where he presented the paper "*The Harmonic Telephony*" in which he described his experimental and theoretical results. Unfortunately, he didn't grant a patent for his technical solution; so Augustin Maior's priority in this domain is assured only by the copyright. Even Nicolae Vasilescu- Karpen wrote a letter to the Academy of Sciences of Paris in 1909 where he described his proposals regarding the multiple telephony starting from the experience he had in wireless telephony. During 1910-1911 the American George Owen Squier conducted several

experiments regarding multiple telephony, but he also granted a patent for the technical solution.

Unknown priority

Augustin Maior noticed the danger of not having his priority recognized in this domain and, as a result, he wrote a letter to the *The Electrician Journal* a letter which was published in the 21st of April 2011 issue. Augustin Maior stated “*I demonstrated mathematically that multiple telephony could be realized with high-frequency alternative currents, so every current could transport a conversation. I also mentioned that I managed to transmit five messages simultaneously. I presented my experiments at the first European conference of posts and telegraph and I communicated at the conference that I managed to transmit message at 15 kilometre distance.*” In spite of all these facts, in 1921, E.H. Colpitts published a synthesis paper in *Transactions AIEE Journal* in which he stated that George Owen Squier, due to his experiments between 1910 and 1911, managed to make the multiple telephony. It is true that he quoted in bibliography his of the theoretical papers written by Augustin Maior, but he didn't mention his priority.

The Big Union

After the proclamation of the Union on the 1st of December 1918, Augustin Maior came back to Cluj, being appointed general Manager of Posts, telegraphy and Phones.

He got involved in the development of the academic system from Transilvania. This is why he was appointed professor at University of Cluj in July 1919. He taught here the courses entitled “*Electricity and magnetism*” and “*Acoustics and optics*”. During 1919 - 1946 he was dean of the Faculty of Science. In 1919 he contributed to the setting up of the first school of telegraphy and telephony at Sibiu.

Being a dedicated practitioner, he conducted as manager, the activity of the Institute of Theoretical and technological Physics of Faculty of Science. He approach several different research directions: electricity and magnetism, acoustics and optics, telecommunications, gravitation, thermodynamics of radiations, theory of quantum and statistics theory.

He died on the 3rd of October 1893 at Cluj-Napoca.

Acknowledgement

Augustin Maior's life was full of events, and the jobs he had demonstrates the appreciation of the others. In 1946 he was elected member of the Romanian Academy. The political changes from 1947 weren't favourable to him, even if he was praised abroad. Louis de Broglie, a winner of the Nobel Prize in 1929, made a synthesis of Augustin Maior's paper entitled “*The Gravitational fields and magnetism*” which he presented at the Franch Academy in 1950. But, history changed again, and after 1990, Augustin Maior's activity is praised again: starting from the 21st of March 1994, the school of Reghin, where he learnt to write and read is called “*The State Gymnasium Augustin Maior*”, from March 1995 one of the amphitheatres of the Faculty of Physics is named after him, the telecommunication High school from Cluj-Napoca bears his name. On the 7th of July 2000, the City Hall of Cluj-Napoca mounted a memorial plate on the house from 9 Octavian Goga where Augustin Maior lived.



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