

PETRU PIPOȘ (1859 - 1913), THE FIRST ROMANIAN MATHEMATICIAN, DOCTOR OF MATHEMATICAL SCIENCES IN CLUJ

Abstract: This article presents aspects of the life and work of Petru Pipoș, the first Romanian mathematician who obtained the title of doctor in mathematical sciences, at a university on the territory of today's Romania, respectively at the "Franz Joseph" University of Cluj, on 13 April 1882. His PhD advisor was the renowned polymath from Cluj Sámuel Brassai.

Keywords: Petru Pipoș, "Franz Joseph" University of Cluj, Sámuel Brassai, Mór Réthy, Antal Abt.

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This paper aims to highlight the merits of Petru Pipoș in the field of mathematical sciences. All the biographical studies dedicated his Pipoș note that this remarkable Romanian intellectual studied at the "Franz Joseph" University of Cluj, where he became a doctor in philosophy in 1881. That year he "becomes professor of pedagogy at the Pedagogical High School in Arad – an important post which he occupied uninterruptedly till his death... He was the author of several textbooks and scientific papers in the pedagogical and didactic field. Petru Pipoș contributed to national journals and to Arad-based publications of the time: "Educatorul" in Bucharest, "Biserica și școală" in Arad, etc."²

It is, however, less known that Petru Pipoș was the first Romanian mathematician with a PhD in mathematical sciences, which he obtained on the territory of today's Romania, from the "Franz Joseph" University of Cluj.

In the last decades of the nineteenth century, there were already many Romanian intellectuals with doctorates in mathematical sciences, obtained at the great universities in the West. Thus, Ioan Bozocanu³ took his PhD in Brussels, in 1874, and Spiru Haret, David Emanuel and Constantin Gogu at the Sorbonne, on 30 January 1879, 5 July 1879 and, respectively, 7 February 1882. But the first Romanian Transylvanian with a doctorate in mathematics, obtained in the country, was Petru Pipoș, who received this degree on 13 April 1882.

The first specialist with a PhD in mathematical sciences obtained at the University of Cluj at the end of the nineteenth century was Paul Fuchs, from the city of Pécs (Hungary). In 1874, he submitted the thesis *Rotation Systems and*

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² http://www.aradcityguide.ro/_/monument-istoric/bustul-lui-petru-pipos/.

³ For the life and activity of Ioan Bozocanu, see: <https://www.crestinortodox.ro/carti-ortodoxe/romanii-covasna-harghita/valcele-82334.html>

Their Most Important Properties, under the supervision of Professor Lajos Martin.

In 1878, Fuchs was followed by Gyula Bartha, a primary school teacher in Baraolt, with the thesis *Analytical Treatise on the Most Famous Properties of the Triangle*, and the third dissertation was that of Petru Pipoș, with the title *The Problem of Apollonius*. His PhD supervisor was the renowned polymath from Cluj Sámuel Brassai, a good connoisseur of Euclidean geometry, being the first who translated *Euclid's Elements* into Hungarian.

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Petru Pipoș was born at Alba-Iulia on 29 August 1859, in a wealthy family. His grandfather (who bore the same name) was an *archpriest and rich owner of gold mines [who] insisted that two of his four children should also study mining. Thus, Ioan and... Victor [the uncle and father of Petru Pipoș], after they went to law school in Cluj, they also graduated from the mining academy in Schemnitz, undertaking afterwards a study trip through Austria, Salzburg, Tyrol and Italy.*"⁴

In terms of the subsequent development of the two brothers, the better known was Ioan Pipoș (the uncle of Petru Pipoș), who – between the years 1861-1867 – became supreme comes of Zarand.⁵ The father of Petru Pipoș, Victor, did not have such a spectacular career, occupying a modest position in the state apparatus, in Cluj. Given the establishment of his family in the city on the Someș, Petru Pipoș enrolled at the Piarist Highschool here (today, the "Báthory István" Theoretical High School).

In 1875, after his baccalaureate exams, Pipoș became a student of the "Franz Joseph" University of Cluj, at the Faculty of Mathematics and Natural Sciences, majoring in mathematics and physics. Here, between 1876 and 1880 his professors were Lajos Martin in superior mathematics, Sámuel Brassai in elementary mathematics, Mór Réthy in theoretical physics and Antal Abt in practical physics.⁶ All of these professors were, at that time, important personalities in the scientific life of Transylvania.

Petru Pipoș was an outstanding student and, in a way, the only one of the students in his class with a talent and a special devotion to mathematics. His qualities can be compared with those of Gyula Vályi, another colleague of his generation, who, in 1877, went to Berlin on a postgraduate scholarship. Back in the country, he became a university professor in Cluj, replacing Sámuel Brassai in the department of elementary mathematics.

⁴ Traian Mager, *Ținutul Hălmaგიului*, vol. 1. *În cătușele dualismului austro-ungar de la 1867* <http://www.darnick.com/halmagiu/catuscele.html#N5>, note 5.

⁵ Traian Mager, *op.cit.*; idem, *Beneficiile revoluției de la 1848. Organizarea românească a județului Zarand la 1861*. See <http://www.darnick.com/halmagiu/beneficiile1848.html#N30>.

⁶ Victor Marian, *Petru Pipoș (1859-1913)*, in *Gazeta matematică*, 1938, no. 1.

Pipoș developed a mathematics paper in each of the following three years of college: I, II and IV. These papers were awarded prizes in money by the leadership of the Faculty.

For the academic year 1876/77 the theme of the contest was: “*Find the curve described by the centre of a circle with a variable radius and that is tangent to two other given circles*”. In the second year of college a competition was announced for the elaboration of a paper on the theme: “*Establish a general formula by which to express the volume of the following polyhedra, namely: the prism with parallel or slanting sections, the parallelepiped, the pyramid and the truncated pyramid, the cone and the truncated cone, the obelisk and the prismatoid and which, through adequate replacements, can transform into individual formulae that serve to the calculation of the volumes of the above-mentioned geometrical bodies. The required formula will be determined causally, i.e. deducted from the considerations and principles of geometric and it will be shown that it can be turned into particular formulae relating to each of the bodies listed above*”. The faculty board granted the prize, again, to Pipoș, who was actually the only competitor.⁷

In the next year Pipoș did not submit any paper, but in the academic year 1878/79 he again won a prize of 50 florins, for a paper on superior mathematics: “*A monograph shall be written on trajectories*”.

In 1879 Pipoș enrolled in the Society of Medicine and Natural Sciences in Cluj, a prestigious scientific society, which included Mór Réthy and Gyula Váyi.

After obtaining the degree of professor of mathematics and physics, Pipoș could not get a teaching job in Cluj, in his specialty. In 1881, he was forced to accept a vacancy in Arad, but in the field of pedagogy, at the Romanian Greek-Orthodox Pedagogical Institute in this town, a post which he occupied continuously until his death. During his career he contributed to the publications “*Educatorul*” in Bucharest and “*Biserica și școala*” in Arad. The bust of Petru Pipoș, a creation of the sculptor Marcel Olinescu, was unveiled in 1937 on the alley of Arad personalities next to the Cultural Palace.

The works of Petru Pipoș:

1. *Apollonius kérdése (The Problem of Apollonius)*. Doctoral dissertation. Budapest, 1882.
2. *Metodica școalei populare pentru elevii institutelor pedagogice (școalelor normale)* [The Methodology of People's Schools for the Students of Pedagogical Institutes], Arad, 1887 (second edition in 1895, Orăștie; third edition in 1901, Orăștie).
3. *Istoria pedagogiei* [The History of Pedagogy], Arad, 1892 (second edition in 1903, Orăștie).

⁷ Idem, *Petru Pipoș (1859-1913)*, in *Gazeta matematică*, 1938, no. 2.

4. *Didactica pentru elevii institutelor pedagogice* [Didactics for the Students of Pedagogical Institutes], Orăștie, 1896.
5. *Psihologia pentru institutele pedagogice și școalele medii* [Psychology for Pedagogical Institutes and Undergraduate Schools], Arad, 1896 (second edition revised and completed in 1901, Orăștie).
6. *Pedagogia pentru preparandii (școale normale)* [Pedagogy for Pedagogical Schools], Orăștie, 1900.

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From the collections of the National Museum of Transylvanian History, inventory no. M 12.017

Fig. 3-4: The Pipoș family, photo by Ferenc Veress (two-sided).

From the collections of the National Museum of Transylvanian History, inventory no. M 12.018



Fig. 1



Fig. 2



Fig. 3



Fig. 4