



Traian Lalescu - an Outstanding Romanian Mathematician

Aurelian Cernea

Traian Lalescu is together with Gheorghe Țițeica and Dimitrie Pompeiu one of the founders of Romanian mathematics. In what follows we are remembering some of the highlights of his life and work.

Childhood. Traian Lalescu was born on July 12, 1882 in Bucharest. However, his real origin place is the village of Cornea near Caransebeș where his father was born. This explains, as we shall see later, his special relationship with Banat's country. His father was an office worker and superintendent at "Creditul Agricol" Bank. This means that the family had to move from one town to another and had several residences. Therefore, the first two years of gymnasium were attended by the young Traian at Craiova, the next two years at Roman and the high school at Iasi.

He was a very gifted child: he used to draw nicely, he was playing the cello and could translate from Italian. He was a brilliant pupil at all the subjects he studied. From the sixth grade (1899) he became acquainted with "Gazeta Matematică".

Education. Traian Lalescu was the first at the entrance examination at the National School of Bridges and Highways. After three years he gave up and he registered at the Faculty of Sciences of the University of Bucharest at the section of mathematics.

He was a precocious mathematician and he was polished by famous Professors as David Emmanuel, Gheorghe Țițeica, Anton Davidoglu, N. Coculescu.

In 1905 he graduated from the Faculty of Mathematics. Obtaining an "Adamachi" scholarship he attended, at Paris, the lectures of Emile Picard. Traian Lalescu stated that "Picard was my master". In 1908 he obtained his PhD with the thesis "Sur liquation de Volterra".

In 1908-1909 he participated in Gottingen at the scientific seminar lead by D. Hilbert. On June 15, 1909 he obtained the Docent degree.

In 1915 he attended, as an ordinary student, the lectures of Professor Vasilescu Karpen on electricity and electrotechnics at the National School of Bridges and Highways. In 1919 he obtained the diploma of electricity engineer at Ecole Supérieure d'Electricité in Paris.

Professional activity. For a short period Traian Lalescu worked as a teacher in secondary schools. More precisely, between 1906 and 1909 he was a teacher at the gymnasium of Giurgiu. In 1911 he moved to the Central Seminar in Bucharest; afterwards to Sincai High School and Cantemir High School. On October 1, 1912 he resigned from his position of teacher. The reason was that he was attracted to work at the university.

On April 1, 1910 he is appointed professor of rational mechanics at the University of Bucharest, replacing Spiru Haret (retired) until the arrival of D. Pompeiu as titular. At the same time, on April 1, 1910 he filled a position of associate professor of algebra at the University of Bucharest till 1913.

On January 1, 1911 he was appointed as full-time professor of analytical geometry at the National School of Bridges and Highways (succeeding there Spiru Haret). He delivered lectures here (which became the Polytechnical School) until his death.

Also in 1916 he was appointed as tenured professor of algebra and number theory at the University of Bucharest until his death.

In 1920 Traian Lalescu succeeded to convince the Minister of public works, D. Greceanu, to set up a Polytechnical School at Timisoara. He was the first Rector of this university until the death of his wife in September 1921. At the Polytechnical School in Timisoara he was tenured professor at the Chair of Mathematical Analysis and at the Chair of Electricity without abandoning the two positions in Bucharest.

The trip between Timisoara and Bucharest was done by train and just after getting down from the train he would walk from the North Railway Station in Bucharest to the Polizu building of the Polytechnical School to deliver his lectures. Obviously, with such an exhausting way of life his health weakened.



Publications. For Traian Lalescu elementary mathematics occupied the same place as higher mathematics. The only condition was to be hard-working and to rise to the highest peaks of human spirituality. Unlike Țițeica or Pompeiu he did not limit himself to a particular field of mathematics. He approached any new mathematical problem which presented mathematical challenges from the group theory of Galois and the theory of integral equations to Einstein's relativity theory. The diversity of his mathematical work is a feature that stands out compared to other researchers. He considered himself not only a mathematician but also a person responsible for the education of the young generation.

His book "Introduction à la théorie des équations intégrales", Hermann et fils, Paris, 1912 (152 pages)

[Bucharest, 1911] was the first book in the world concerning the theory of integral equations.

He provided a direct proof to the fundamental theorem of Galois.

In geometry he started to publish papers since his high school days. We shall mention just: "Culegere de probleme de geometrie descriptivă și cosmografie" (with Ștefan Mirea) in 1914; "Geometria triunghiului" - published posthumously by Prof. R. N. Raclis; "Tratat de geometrie analitică" (lectures delivered at the Polytechnical School) in 1923.

Passionate about the history of mathematics in Romania, he realized that the textbooks of Gh. Lazar, remained as manuscripts, are major contributions to the Romanian mathematical language. Therefore, he published "Trigonometria" of Lazăr.

In several journals Traian Lalescu published articles about: the mathematical theory of aviation, wireless telegraphy, mathematicians as Mittag-Leffler, Fredholm, Picard, Poincaré, etc., mathematical books from Transylvania, Greek mathematical textbooks from the Romanian countries.

George Șt. Andonie in "Istoria Matematicii în România" counts 222 papers published in "Gazeta Matematică" and "Revista Matematică din Timișoara".

Varia. On March 15, 1921 under his leadership appears the first number from “Revista Matematică din Timișoara”. This first number (600 copies) is printed in Bucharest at his expense.

He obtained from Tancred Constantinescu, the general manager of the Romanian railways, a ground in Calea Griviței where the House of “Gazeta Matematică” was built.

He was awarded, in France, with “La légion d’honneur”.

The war. Due to several health problems he was exempted from the military service. He worked in a certain auxiliary service, namely at the telegraphic censorship.

In December 1916, together with Ion Ionescu, bring out at Iasi ”Gazeta Matematică”. The editorial process was done in his house.

During 1918-1919 he was sent in a diplomatic mission to Paris. For the peace conference in 1919 he elaborated the book “Le problème ethnographique du Banat”, Dupont, Paris, 1919 in which he brought historical and statistic proofs in order to integrate this country to the Romanian State.

Deputy in the Romanian Parliament. The report concerning the budget project for the year 1925 presented by Traian Lalescu was considered the best report from the whole history of the Romanian Parliament.

It is worth mentioning that the quarrels and the polemics in the Parliament suddenly ceased and all the deputies paid attention to the arguments of high level proposed by Lalescu.

Family. His wife, Ecaterina, a former student of his, died in 1921 at 28 years old in childbirth. This is the reason of his resignation from Timisoara: to be able to manage with the growth of the children. He had four children: two sons and two daughters.

On June 15, 1929 Traian Lalescu died as a result of a double pneumonia caught in the autumn of 1927. He had a vacation in Nice and he tried a treatment in Paris in 1928 but without success.

We conclude this short presentation of such an amazing life with the words of two close friends of Traian Lalescu. Ion Ionescu, Professor at the Polytechnical School in Bucharest, said that the appearance of Lalescu is like a comet which shines, amazes and scares with its long tail. Gheorghe Țițeica stated that the head of Lalescu was worth much more than ten estates.

References

1. George Șt. Andonie, Istoria Matematicii în România, Științifică Publishing House, Bucharest, vol. 1 (1965), vol. 2 (1966), vol. 3 (1967).

2. Smaranda Ecaterina Lalescu, Traian Lalescu - un nume peste ani, Curtea Veche Publishing House, Bucharest, 2007.

3. Florin Diac, Mircea Trifu, Costel Chites, Școala matematică românească de-a lungul timpului, Oscar Print Publishing House, Bucharest, 2010.