



СРПСКА АКАДЕМИЈА НАУКА И УМЕТНОСТИ

SERBIAN ACADEMY OF SCIENCES AND ARTS

SCIENTIFIC MEETINGS

Book CLXXXII

PRESIDENCY

Book 12

MIHAILO PETROVIĆ ALAS

REGARDING ONE HUNDRED AND FIFTY YEARS SCIENCE BIRTH

Scientific meeting with an international partake,
held at the Serbian Academy of Sciences and Arts
on October 2–3, 2018

BELGRADE 2019

СРПСКА АКАДЕМИЈА НАУКА И УМЕТНОСТИ

НАУЧНИ СКУПОВИ

Књига CLXXXII

ПРЕДСЕДНИШТВО

Књига 12

МИХАИЛО ПЕТРОВИЋ АЛАС

ПОВОДОМ СТО ПЕДЕСЕТ ГОДИНА ОД РОЂЕЊА

Научни скуп са међународним учешћем одржан
у Српској академији наука и уметности,
2–3. октобра 2018.

БЕОГРАД 2019



Програмски одбор:

Копредседници: *Жарко Мијајловић, Градимир Миловановић, Стеван Пилиповић*
Чланови: *Војислав Андрић, Зоран Каделбург, Миљан Кнежевић, Александар Липковски, Зоран Огњановић, Зоран Марковић, Миодраг Михаљевић*

Организациони одбор:

Зоран Огњановић, Војислав Андрић, Миљан Кнежевић, Марија Шеган-Радоњић, Маја Новаковић, Јелена Катић, Небојша Икодиновић, Александра Делић, Марек Светлик

Уредници

академик Градимир Миловановић
академик Стеван Пилиповић
др Жарко Мијајловић

Издавачи

Српска академија наука и уметности
Београд, Кнеза Михаила 35
Математички факултет Универзитета у Београду
Београд, Студентски трг 16
Математички институт САНУ
Београд, Кнеза Михаила 36
Друштво математичара Србије
Београд, Кнеза Михаила 35/IV

Дизајн корица

Драгана Лацмановић-Лекић

Технички уредници

Александра Делић
Миљан Кнежевић
Никола Стевановић

Лектура и коректура

Весна Шубић

Штампа

Colorgraph, Београд

Тираж

600 примерака

Подршка Министарства просвете, науке и технолошког развоја

ISBN: 978-86-7025-825-9

ISBN: 978-86-7589-136-9

Садржај

Синиша Црвенковић <i>Теорија алгебарских једначина Михаила Петровића</i>	7
Siniša Crvenković <i>Theory of algebraic equations of Mihailo Petrović</i>	34
Душан Тошић <i>Дело Михаила Петровића „Рачунање са бројним размацима” и интервална математика</i>	35
Dušan Tošić <i>The work of Mihailo Petrovich “Calculation with numerical interval” and interval mathematics</i>	45
Милош Миловановић <i>Значај Петровићевих спектра у заснивању математике</i>	47
Miloš Milovanović <i>La signification des spectres de Petrovitch pour les fondements des mathématiques</i> . . .	61
Miloš Milovanović <i>The Significance of Petrovich’s Spectra for the Foundations of Mathematics</i>	61
Наталија Јанц <i>Life of a Student-Corporal Mihailo Maksić – Student of Mihailo Petrović - Alas and Milutin Milanković</i>	63
Наталија Јанц <i>Животопис ђака-каплара Михаила Максића – студента Михаила Петровића-Аласа и Милутина Миланковића</i>	74
Александар Липковски <i>Савремени поглед на дисертацију Михаила Петровића</i>	75
Aleksandar Lipkovski <i>A contemporary view of Mihailo Petrović’s doctoral thesis</i>	83
Миодраг Михаљевић, Радомир Станковић <i>Михаило Петровић Алас – наш водећи криптограф између два светска рата</i>	85
Miodrag Mihaljević, Radomir Stanković <i>Mihailo Petrović Alas – Our leading cryptographer between the two world wars</i>	95

Радош Бакић, Жарко Мијајловић, Градимир Миловановић <i>Геометрија полинома у радовима Михаила Петровића и његових наследника</i> . . .97	
Radoš Bakić, Žarko Mijajlović, Gradimir Milovanović <i>Mihailo Petrović and geometry of polynomials</i> 116	
Мирослав Ђирић <i>Алгебарско наслеђе Михаила Петровића Аласа и Српска алгебарска школа</i> . . . 117	
Miroslav Ćirić <i>Algebraic heritage of Mihailo Petrović Alas and Serbian algebraic school</i> 126	
Душица Марковић <i>Михаило Петровић - метафоре детињства</i> 127	
Dušica Marković <i>Mihailo Petrović – Metaphors of childhood</i> 137	
Светлана Јанковић, Миљана Јовановић <i>Стохастичка грана математичког генеолошког стабла Михаила Петровића Аласа</i> 139	
Svetlana Janković, Miljana Jovanović <i>The stochastic branch to the mathematical genealogical tree of Mihailo Petrović Alas</i> 148	
Миодраг Живковић <i>Михаило Петровић Алас и криптографија</i> 149	
Miodrag Živković <i>Mihailo Petrović and cryptography</i> 160	
Мирјана Вуковић <i>Од Београдске школе Михајла Петровића Аласа до Сарајевске школе анализе</i> 161	
Mirjana Vuković <i>From the Belgrade School of Mihajlo Petrović Alas to the Sarajevo School of Analysis</i> 172	

LIFE OF A STUDENT-CORPORAL MIHAILO MAKSIĆ – STUDENT OF MIHAILO PETROVIĆ-ALAS AND MILUTIN MILANKOVIĆ

NATALIJA JANC*

A b s t r a c t. – The biography of Mihailo Maksić (Belgrade, 1894 – Knjaževac, 1915) is a story about broken youth, unrealized beauty, and unfulfilled ambitions. He wanted to put his wisdom and knowledge into the service of his recently liberated country, but the country wanted from him something else – his life. He made this ultimate sacrifice. Mihailo Maksić was a very ambitious student of Mihailo Petrović-Alas and Milutin Milanković. Certificates from colloquia have been preserved in which the top scores, grades 10, were signed by these professors. His name is engraved in a marble memorial plaque dedicated to the students and professors of the Belgrade University who died in the wars for liberation, located in the Rectorate of the University of Belgrade, Studentski trg 1. On page 34 of the publication “A memorial to students of the Belgrade University that died in the wars for the liberation and unification of 1912–1918” it is written “Mihailo Đ. Maksić, a student of philosophy, a student and corporal; died in October 1915 in Knjaževac.”

Keywords: Mihailo Maksić, Mihailo Petrović Alas, student-corporal, student, First World War

1. Introduction

Biography of Mihailo Maksić (1894–1915) (Figure 1) is a story about the youth cut short, beauties not experienced, ambitions not fulfilled. He wanted to serve the recently liberated Serbia with his wisdom and knowledge, but his homeland asked from him something else – his life; and he gave it to Serbia.

* Baltimore, Maryland, USA, e-mail: natalijanc@earthlink.net



Figure 1. Mihailo Maksić (1894–1915) [Михаило Максић (1894–1915)]

2. The Family of Mihailo Maksić

Mihailo Maksić's father was Đorđe Maksić (Orašje, 1856 – Beograd, 1915) (Figure 2). He wanted to become a priest under the influence of his mother, and primarily of her brother. His uncle was Vasilije, Vasa, Pelagić (Gornji Žabari, now Pelagićevo, 1833 – Požarevac, 1899), who graduated from the Faculty of Theology in Belgrade. Pelagić was a writer, physician, educator and clergyman. Đorđe Maksić enrolled in the Serbian Orthodox Seminary in Banja Luka, which was the first secondary school in Bosnia. Vasa Pelagić was the Dean of the School at that time. But Pelagić fell into disfavor with Turkish authorities who forced him into exile to Kutahya in Asia Minor in 1869. Due to this unfortunate situation, Đorđe Maksić had to leave the Seminary and with it his dream to become a priest. He came soon to Serbia to engage in the barrel-making trade. Then he went to Germany for further vocational training, where he spent six years and passed the craftsman



Figure 2. Đorđe Maksić (1856–1915) and Yelisaveta Maksić (1861–1922)
[Ђорђе Максић (1856–1915) и Јелисавета Максић (1861–1922)]

exam in the city of Kassel. When he returned, he worked in barrel-making workshops in Aleksinac and in the area of Obrenovac – Umka.

In Belgrade, Đorđe Maksić met Yelisaveta Predić (Pančevo, 1861 – Šid, 1922), (Figure 2), a widow at that time. Yelisaveta had been married to the brother of the painter Uroš Predić (1857–1953). She lived in Pančevo with her husband, and when the Serbian-Bulgarian war commenced, her husband joined the Serbian Army as a volunteer. Unfortunately, he was wounded and the wound “turned from bad to worse” so he died young, in his twenties.

Đorđe and Yelisaveta Maksić were married and started a nice and happy life together, hoping to keep it that way. Đorđe opened his own workshop first in Topčider, and then in Belgrade, at the banks of the river Sava. Barrel-making business was blooming, especially at the time of the great exports to Austria-Hungary.

The birth of the first child, Mihailo, in the cold winter, on January 22, 1894 brought immense joy to parents who were in their thirties what was at that time considered as quite some age for expecting a first child. They lived in Kraljević Marko Street in the vicinity of Karađorđeva Street.



Figure 3. Mihailo Maksić, circa 1900. and Mihailo and Olga Maksić, circa 1905
[Михаило Максић, око 1900. и Михаило и Олга Максић око 1905]

Almost six years after the birth of their son, while the cold Belgrade was white under the snow, they had a daughter Olga on December 28, 1899. Brother and sister (Figure 3) received plenty of love, tenderness and care and they shared it between themselves unselfishly. They were very close, despite different interests and affinities.

For his sister Olga, Mihailo was an idol, the best and the smartest person. She was very proud of his knowledge of mathematics. Whenever it was necessary he helped her with her homework. Olga did not have the affinity for mathematics; she was attracted to drawing. That is why her parents arranged the lessons for her with Nadežda Petrović (1873–1915), a well-known Serbian painter.

3. The Boyhood and Youth

Mihailo in his childhood days spent every free moment carefree, running barefoot along the banks of the river Sava, swimming and fishing. The Sava influenced the way of life, as for all the others that were growing along it. He even attended the “Primary School on the Sava” in Belgrade. He finished the fourth grade on June 29, 1905 with all “excellent” marks.

He sat for the entrance exam at the Second Belgrade High School on August 12, 1905. The exam consisted of three subjects: Serbian language, Mathematics and History. He passed them all with “excellent” marks.

He enrolled in the first year of the high school known as Realka in the fall of 1905. That was the only year when he had a “very good” mark in Math. In all the following years he obtained “excellent” marks in that subject.

School life in Belgrade went as usual. At that time, an exam, “lower school exam” had to be passed at that level after the first four finished years of the secondary school. Mihailo passed it on June 15, 1909 with “excellent” marks in Religious Instruction, Serbian Language, German, French, Geography, History, Chemistry and Mathematics. His only “very good” mark was in the Arts.

He enrolled in the fifth year of Realka in 1909. The number of subject increased in that year: Religious Instruction, Serbian, German, French, Geography, History, Natural Sciences, Chemistry, Mathematics, Arts, Shorthand (Stenography), and Physical Education. He excelled in all of them, except in Physical Education, where he earned a “very good” mark. He studied Stenography only in the fifth year. In the seventh and eighth year, Russian Language was added to the list of foreign languages.

Mihailo started the eighth year in 1912 when Serbia started the war for final liberation and realizing the five-century dream of freedom and independence. The first Balkan war lasted from October 1912 to May 1913. At that time, there were only around 400 students capable for heavy military duty. Many young men went to the combat but *Mihailo's time had not yet come*.

The Second Balkan War started immediately after the First. The war started on June 29/30 and finished on August 10, 1913 by signing the peace treaty in Bucarest, Romania. Serbian intelligence suffered great losses in bloody battles. Many of Mihailo's friends and cousins participated in it, being just a few years older. However, *his time had not yet come*. The Second Balkan War started that year. Mihailo was not mobilized yet.

Mihailo was not a boy anymore. He grew to a tall, slender and strong young man. He gained strength by helping his father in their workshop and there was always a lot to do.

During the entire schooling, Mihailo Maksić was a diligent pupil, with exemplary manners and commendable behavior. He passed the Maturity Exam after finishing the eighth year of Realka. He was preparing it during the time when heavy battles were fought on the remote fronts. He passed the exam in the first attempt. The exam started immediately after the end of the war, it lasted from August 12 to 18, 1913.

Since he was always an excellent student and showed on the written Maturity Exams excellent results in all the subjects, on the basis of the Article 16, Item “a” of the “Rules of the Higher Exam” he did not have to pass the oral part of that exam. On the basis of the achieved results, the examiners “affirmed his maturity and the qualifications for the University, Polytechnics.”

4. Student Days

Mihailo Maksić loved Mathematics and after finishing Realka in 1913 he enrolled at the Faculty of Philosophy in Belgrade (Figure 4). Dedicated to his books and his



Figure 4. The Rector's Office of the University of Belgrade, 1 Studentski trg,
(Photo: N. Janc, 2015)

[Зграда Ректората Београдског универзитета, Студентски трг бр. 1,
(Фото: Н. Јанц, 2015)]

work, he excelled among the best students of the professors that were the legends of the Serbian science, Mihailo Mika Petrović-Alas and Milutin Milanković. Mihailo Maksić drew attention and became the favorite student of professor Mika Alas who brought the young student even closer to mathematics. Professor Mihailo recognized himself in his namesake student Mihailo, as modest in life, diligent and excellent student, and his heart filled with love for mathematics. And for both of them in their veins did not flow blood but the river water.

Two most important and most difficult exams Mihailo passed in one day, on March 14, 1914 and we have preserved exam certificates (Figure 5).

“Mihailo Đ. Maksić, student of mathematics, attended lectures and exercises in theoretical mathematics regularly and at the exam earned the ‘excellent’ grade (10).” This was signed by Mihailo Petrović.

“Mihailo Đ. Maksić, student of mathematics, attended regularly the lectures in applied mathematics and at the exam earned the ‘excellent’ grade (10)”. This was signed by Milutin Milanković.

In June, the end of the exam period came followed by the beginning of summer vacation, meaning the season of swimming on the river Sava could begin. At the same

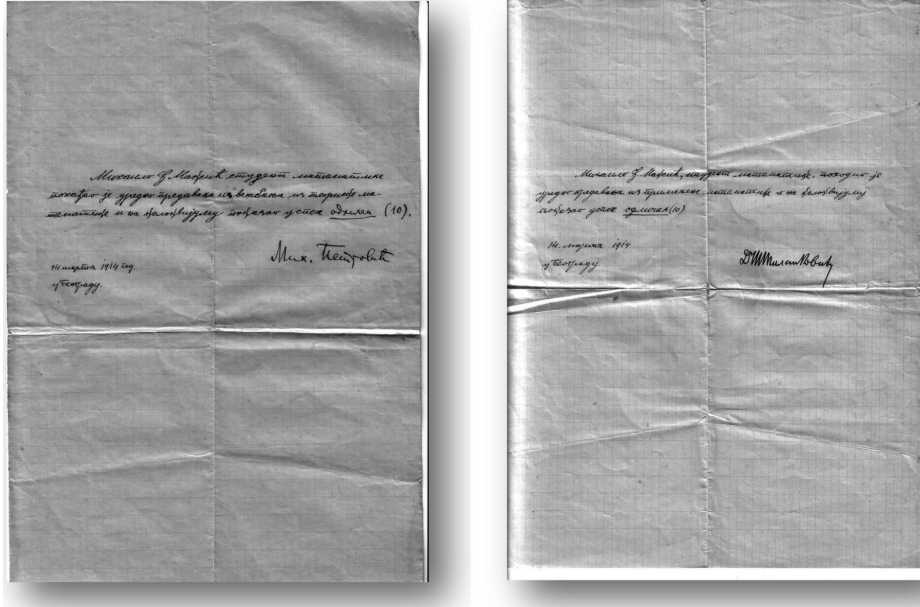


Figure 5. The exam certificates, “excellent” grades (10), in theoretical mathematics from professor Mihailo Petrović and in applied mathematics from professor Milutin Milanković [Потврде о положеном колоквијуму и оценама (10) из теоријске математике код професора Михаила Петровића и из примењене математике код професора Милутина Миланковића]

time, different plans were made in other places. In Sarajevo, Bosnia, on June 28, 1914, the Austrian-Hungarian heir to the throne, Archduke Franz Ferdinand, was assassinated. And thus, when Mihailo only finished the first year of the University, in the summer of 1914, Serbia was attacked by the Austria-Hungary and was forced into the war. Three wars in three years.

5. The Time Came for Mihailo’s Battles

The generation of 1894 was of age and was drafted. That was the generation of Mihailo. *His time for bloody battles had come.* Already at the beginning of heavy and bloody fighting, 85 students of the Belgrade University were killed and 350 were wounded. After only three months of military training, Mihailo, together with 1500 secondary school and University students, was ready for the front where they filled in the reduced ranks of officers.

Mihailo Maksić got the rank of a student-corporal. Being young and inexperienced in warfare, he soon got a serious wound in his leg. He was hospitalized in Knjaževac, at

the foothill of the Old Mountain (Stara planina). His joy was in corresponding with his family and occasional package that arrived from home. Only one letter survived, but even that is enough to reveal all family harmony and their closeness and it also speaks about Mihailo himself.

Knjaževac, March 8, 1915

Dear parents and my darling sister,

I received your letter of the 4th of this month and it brought joy to me, for knowing that you received the news from me, as your son, and second, for receiving the news from you. It touched my heart to read that my father goes to work early every day and how you, my sister and my mother see him off, and how you, my sister diligently help your mother and how mother worries so much about me! I know quite well how difficult it is for our father to be so troubled in his old days having me so young, but one day the Sun will shine on us and the situation will soon improve for us, only with health and patience. You are well aware that I was always good and grateful son, although you were often angry for my minor faults, but now I am still in different situation. With God's permission we shall see each other soon. I long to see you all, but it seems to me, most my mother; only now I can fathom the mother's heart and mother's love.

My every other word is: mother, mother and only mother. My father and my sister, do not be sad about this (as I am writing this, two tears dropped which is something most unusual in my life), but I know that my mother did not make a step without thinking of me, her son, who is so far from her on this duty delegated to me by my country. Oh, my mother, how you nursed me in my many illnesses while I was a little boy, three cases of pneumonia and when I suffered the most difficult stage of typhoid when you spent so many nights besides me, ready to die yourself (I will not forget those nights). Then I felt the full meaning of being a mother. That is why you deserve that we see each other soon, and God permit, it will happen. But my father has never forgotten me, too. I know very well that because of me he suffers such difficult problems at the threshold of his old age. And my sister, what am I to tell you, my sister never let her brother down.

I told something to all of you and now I am going to tell you something about myself. I am still lying here eagerly awaiting the day when I shall come to Belgrade to embrace you. After all the troubles I experienced here and that had to be experienced, I hope that finally all will end well, you know in what sense.

I do not know how long I shall stay here since I am already planned for wound revision in Zaječar but I can not go there before the 18th due to train schedules.

I shall have to wait to see what they will tell me about my leg, because it all depends on that since it causes me great pains and troubles. But, anyway, do send me cakes for the Easter. It can be addressed to the hospital like the letter you had sent. Oh, how I long now for all the cakes that before I did not want even to taste. (Without signature)

He eagerly waited to be sent to Belgrade. But war conditions did not permit that, so he stayed at the same place. In the autumn of 1915, strong military pressure was exerted on Serbia by the armies of Germany, Austria-Hungary and the Kingdom of Bulgaria. The epic retreat of the Serbian Army to the island of Corfu, Greece, occurred. This Army included University-educated people, recruits, high school and University students. Very few of them stayed in the country, mostly those heavily wounded and sick. Mihailo Maksić stayed as one of those heavily wounded. His leg was getting worse. There was not any chance that he could at least go to his mother for her care in Belgrade. He died of typhoid fever on a rainy and cold October day of 1915 in Knjaževac. Mihailo Maksić was one of 350 students that lost their lives during the seven war years, from 1912 to 1918 (Figures 6, 7, and 8).

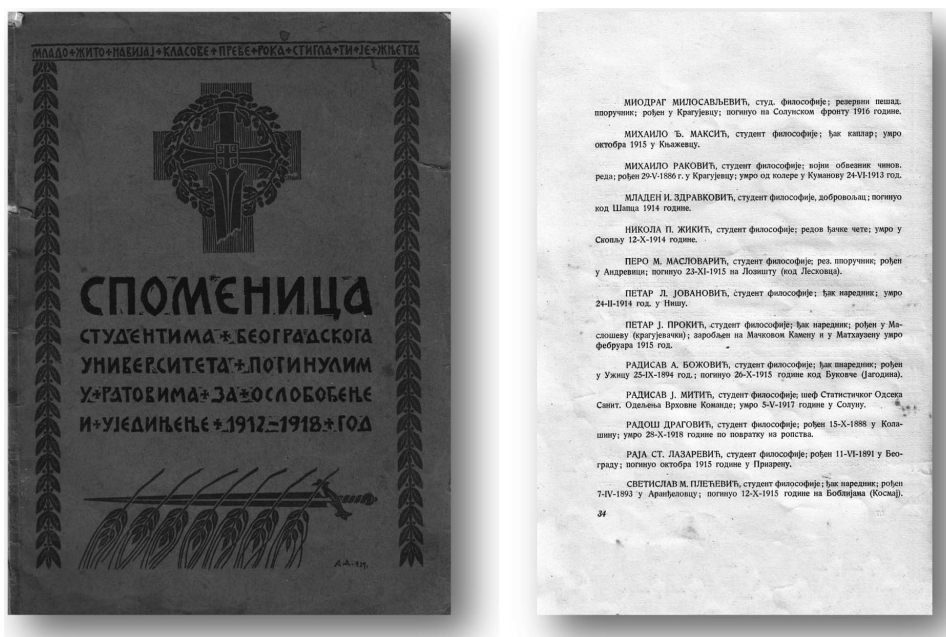


Figure 6. Volume commemorating students of Belgrade University that lost their lives in the liberation and unification wars

[Споменица студентима Београдског универзитета погинулим у ратовима за ослобођење и уједињење 1912–1918. год.]



Figure 7. Marble commemorative plaque dedicated to students and professors of Belgrade University that lost their lives 1912–1919. The name of Mihailo Đ. Maksić is carved in the first plaque from the left at the entrance into the hall of the Rector's Office of the University of Belgrade, Studentski trg 1; an endowment of Captain Miša Atanasijević, (Photo: N. Janc, 2015)

[Мермерна спомен-плоча посвећена погинулим студентима и професорима Београдског универзитета 1912–1919. Име Михаила Максића је уклесано у прву плочу лево од улаза у аули Ректората Универзитета у Београду, Студентски трг 1, Задужбина капетана Мише Атанасијевића, (Фото: Н. Јанц, 2015)]

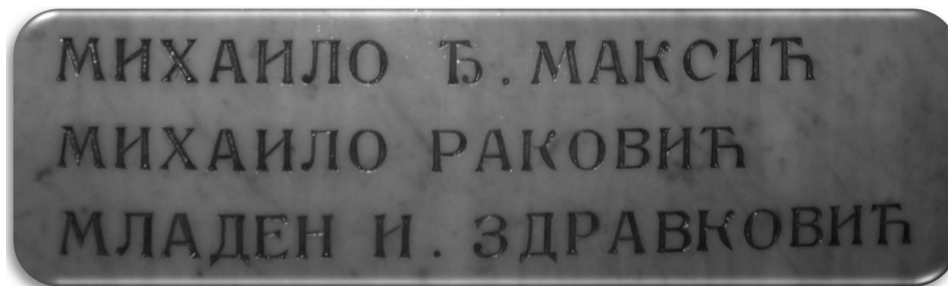


Figure 8. The name of Mihailo Đ. Maksić (first) carved in the commemorative plaque (detail)
(Photo: N. Janc, 2015)
[Име Михаило Ђ. Максић урезано у спомен-плочу (деталј)
(Фото: Н. Јанц, 2015)]

That same October, bombs and howitzer shells were falling on Belgrade from the other bank of the river Sava. The house of the Maksić family was near the river bank. One morning, while the father Đorđe was sitting at the sewing machine, a shell hit the wall behind it. It did not explode but the force of it made the sign “Singer” of the sewing machine break and hit Đorđe and he died of it. Mourning overcame the once happy family.

6. Epilogue

The purpose of this paper was to keep the memory of unfortunate and forcefully cut life of a talented and diligent young man, Mihailo Maksić. It was the short road from leaving his footprints on the soft and warm bank of the river Sava to his engraved name on the hard and cold marble commemorative plaque.

References

- [1] *For the King and the Country*, Belgrade 1930.
- [2] *Volume Commemorating Students of Belgrade University that Lost Their Lives in the Liberation and Unification Wars, 1912–1918*, State Printing Office in Belgrade, 1930.
- [3] *Small Encyclopedia Prosveta*, Prosveta, Belgrade, 1978.
- [4] Olga Pejić, personal communications of the sister of Mihailo Maksić.
- [5] Danica Spasova and Natalija Janc, *Results of the Observations of the Meteorological Observatory in Belgrade in the Period of 1887–1987*, Republic Hydrometeorological Service of Serbia, Belgrade, 1987.

Наталија Јанц

ЖИВОТОПИС ЂАКА-КАПЛАРА МИХАИЛА МАКСИЋА – СТУДЕНТА
МИХАИЛА ПЕТРОВИЋА-АЛАСА И МИЛУТИНА МИЛАНКОВИЋА

Р е з и м е

Животопис Михаила Максића (Београд, 1894 – Књажевац, 1915) је прича о прекинутој младости, недоживљеним лепотама, неоствареним амбицијама. Желео је да тек ослобођеној Србији стави у службу своју мудрост и знање, али отаџбина је од њега тражила нешто друго – његов живот, и он јој је и то пружио. Михаило Максић био је веома амбициозан студент Михаила Петровића-Аласа и Милутина Миланковића. Сачуване су потврде са положених колоквијума на којима је добио највише оцене (10), са потписима професора. Име Михаила Максића је угравирано у мермерну спомен-плочу посвећену студентима и професорима Београдског универзитета који су погинули учествујући у ослободилачким ратовима. Спомен-плоча се налази у аули Ректората Београдског универзитета, Студентски трг 1. У публикацији „Споменица студентима Београдског универзитета погинулим у ратовима за ослобођење и уједињење 1912–1918. год.” На страни 34 записано је: „Михаило Ђ. Максић, студент философије, ђак каплар; умро октобра 1915 у Књажевцу.”