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Amelija Mažylytė (1900-1972)—The First Lithuanian Female Graduate in Mathematics

Juozas Banionis

Lithuanian University of Educational Sciences, Vilnius, Lithuania
Email: juozas.banionis@leu.lt

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Abstract

Amelija Mažylytė (1900-1972) was the first Lithuanian woman, graduate of The Lithuanian University in Department of Mathematics and also philosophy, and a participant of the catholic women movement. She started dissemination of knowledge of the history of mathematics in the Lithuanian language. The article presents enhanced biography of Amelija Mažylytė and the work of her research interests. Special attention is given to publications about the history of arithmetic, the development of geometry and the universally known specialist of mathematics C. Gauss.

Keywords

C.F. Gauss, Arithmetic, Calculus, Geometry, History of Didactics, Women's Movement in Lithuania

1. Introduction

In the second decade of the 20th century cultural foundations were actively laid in Lithuania which had been rebuilt as a modern republic. Considerable attention was devoted to educating the nation by introducing the achievements of various civilizations and doing it in the Lithuanian language. Amelija Mažylytė (1900-1972), the first Lithuanian woman graduate in mathematics, was very actively participating in this field. Lithuanian researchers Algirdas Ažubalis and Bronius Riauba had introduced her as a Lithuanian University graduate and a mathematician (Ažubalis, 2000, 2012; Riauba, 2011). This article adds new details to Amelija Mažylytė's biography by focusing on the merits of her social activities and her contribution to the development of education and the history of mathematics in Lithuania.

On the basis of archive material and the textual legacy the author of this article aims to record the most important facts of A. Mažylytė's biography and to introduce her most significant scientific 1928-1939 works by employing the methods of analysis, synthesis and description. A particular focus is provided to A. Mažylytė's works concerning the history of mathematics. In addition, this article emphasizes her role in promoting women's

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education as well as their involvement in academic activities.

2. A Biographical Timeline

Amelija Mažylytė was born on the 17th of March (the 4th of March according to the old calendar) in 1900 to a Mažyliai family of a large farmer Kazimieras and a young noblewoman Jankevičiūtė living in the village of Vebriai near the town Panemunėlis in Rokiškis region (Ažubalis, 2000; Riauba, 2011). They already had an older daughter Ona and a few years later their youngest daughter Veronika was born (**Figure 1**).

The Mažyliai were bright people, for they not only socialized with the Panemunėlis priest Jonas Katelė (1831-1908) who was well known as an organizer of Lithuanian education and a contributor to publishing as well as introducing "Užduotinas" (Book of Problems, Tilsit, 1885), but they also decided to educate their three daughters. Amelija started her primary education in Panemunėlis school and then moved to Kalkūnai school (*VVPI*: *p.* 2).

In 1912 she continued her education as a 4th form student in the Vilnius Gymnasium for Girls which, after the break of the First World War, was transferred to Voronezh in Russia. There she was a member of the Ateitininkai circle, a catholic youth organization, and together with other girls she read and analyzed Lithuanian literature and learnt by heart Lithuanian folklore and poems. She was also broadening her knowledge about Christianity by reading the Bible and by writing essays about the way she saw the world (Mažylytė, 1933b: p. 315). She was also developing her literary skills by translating fairytales into the Lithuanian language together with her classmates. In Voronezh she spent time among famous Lithuanian people such as the mathematicians Zigmas Žemaitis (1884-1969), Pranas Mašiotas (1863-1940) and Marcelinas Šikšnys (1874-1970), the linguists Jonas Jablonskis (1860-1930) and Juozas Balčikonis (1885-1969) (Ažubalis, 2012: p. 123).

In 1918 she graduated the Gymnasium with honors. When the Lithuanian State was restored Amelija Mažylytė together with her sisters returned back to the home country and joined a group of Lithuanian teachers. In the school year 1919-1920 she started working as a teacher in the State Gymnasium in Panevėžys. However, in January 1920 when the Higher Courses, the start of the Lithuanian University, were established in Kaunas Amelija Mažylytė came to the capital city and entered the department of mathematics and physics. In June 1929 she started working at the Ministry of Education in the administer office, later she worked there as a secretary of the Primary Education Department and finally as a member of the Publishing Committee. During her studies she had an opportunity to attend the lectures of such Lithuanian mathematicians as Zigmas Žemaitis, Viktoras Biržiška (1886-1964), Otto T. Volk (1892-1989) and Julijonas Graurogkas (1885-1968). She graduated in 1925 after the successful defense of the theses "Astronomical Time Setting" on 28th of October under the tutorship of Bernardas Kodatis (1879-1957) (*LU MGF*: p. 205).

Figure 1. Amelija Mažylytė (1900-1972).

After graduating the Lithuanian University with a diploma in mathematics Amelija Mažylytė continued working as a lecturer in the private teacher-training college for girls that belonged to the Congregation of the Sisters of St. Kazimieras where she had been teaching mathematics and its methodology since the 9th of February 1925 (*LR*: p. 3). Unwilling to limit herself to the current subject and teaching she decided to continue her education at the Lithuanian University and entered the faculty of Theology and Philosophy choosing studies in the Philosophy department for her second degree. At that time at the university there were teaching such well known Lithuanian personalities as Pranas Dovydaitis (1886-1942), Pranas Kuraitis (1883-1964), Leonas Bistras (1890-1971), Vincas Mykolaitis (1893-1967), Mečislovas Reinys (1884-1953) and Stasys Šalkauskis (1886-1941). Studying for her second degree she chose the philosophy of natural sciences as a major and the system of philosophy and sociology as a minor. On the 15th of June 1929 Amelija Mažylytė successfully passed her final exams and was awarded a Diploma in Philosophy with honors (*LU TFF*: p. 17).

Without a doubt the study of philosophy had contributed to forming her firm catholic attitudes. She represented these attitudes properly as an organizer of the educated women's movement in Lithuania and as a developer of women's education. Since the time at gymnasium she had belonged to the Ateitininkai organization, and since university studies she had been cooperating with the catholic press. In 1928-1929 she had been editing Ateitininkai girls' magazine "Naujoji Vaidilutė" which in 1931 developed into the educated women's monthly magazine. In her published works Amelija Mažylytė was promoting women's education and participation in politics embodying the image of a modern woman.

On the 15th of February 1929, as a recognition of her pedagogical and subject qualifications, the ministry of Education awarded her with a title of a Teacher of a Higher Education which gave her the right to teach mathematics, physics and cosmography; it also allowed her to teach the Russian language, history, geography and natural sciences at the secondary school level (*LR*: pp. 5-6).

In 1930-1936 Amilija Mažylytė continued her pedagogical career by teaching mathematics in Kaunas "Saulės" Seminary of teachers for girls and from 1931 cosmography at the S. Daukantas Seminary of Teachers. In 1936 when teacher seminaries were closed she was sent to work as a teacher in "Saulės" gymnasium (*VVPI*: p. 4). In 1940 Sovietization started and she was moved to the gymnasium in Zarasai. Later, already during the Second World War, she returned back to Kaunas and was teaching mathematics and its methodology in a restored teachers seminary. In 1943 she fell seriously ill and till 1944 stayed in the Red Cross hospital in Kaunas. In 1944-1945, when the Germans were retreating, she was employed at Braunsberg hospital. In 1945-1946 she returned back to Vilnius and worked at a hospital (**Figure 2**).

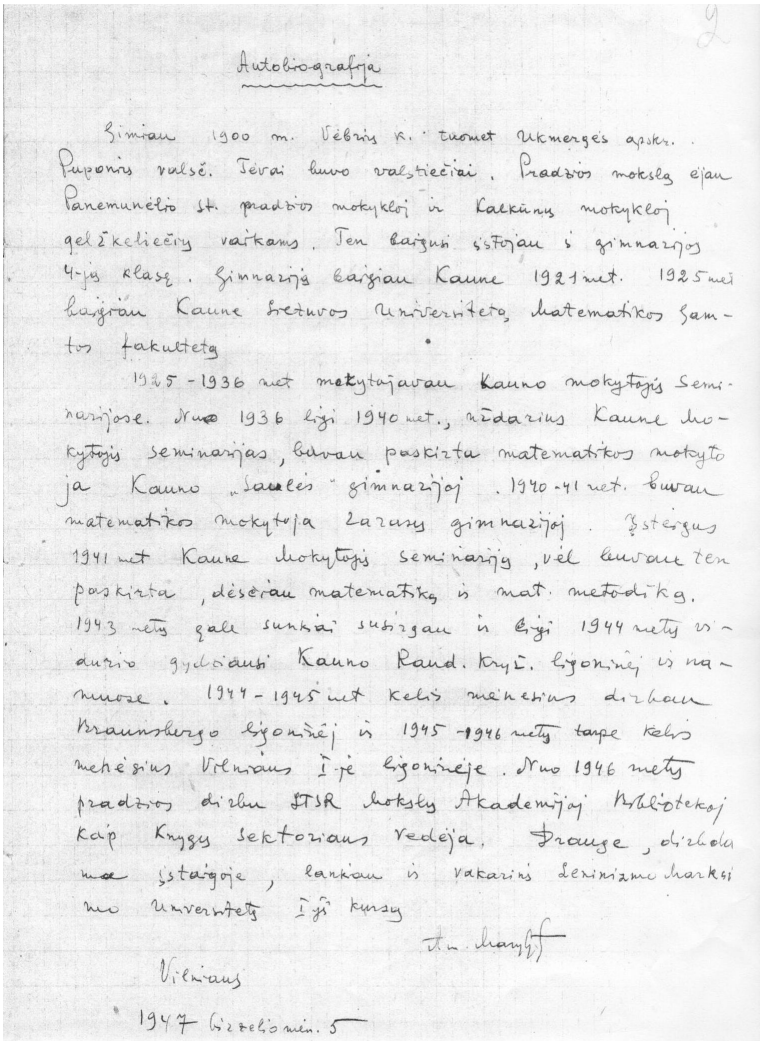
In 1946 Amelija Mažylytė was employed as a head of the books sector in the library of The Science Academy. She worked in this position till her retirement in 1956. The choice of a job outside teaching activities was most probably determined by the realities of the soviet education system which was based so different beliefs and values to those of her own. Though she made some attempts to return back to her well-liked mathematics and didactics. For two summers she taught mathematics in Kaunas at courses for teachers and in September 1947 she was also employed as a lecturer by Vilnius Pedagogical Institute in the Physics and Mathematics faculty at the Department of Mathematical Analysis and Geometry. However, she stayed in this job for only one academic year (*VVPI*: p. 6). In the remaining records she is described as a good mathematician and a serious teacher (*LR*: p. 6).

Amelija Mažylytė died in Vilnius on the 30th of April 1972.

3. Published Works with a Special Focus on the History of Mathematics

After graduating Amelija Mažylytė dedicated quite a lot of her time to writing and publishing various works. One of the reasons for being so active in this field was her high command of the Lithuanian language. When still at the gymnasium she socialized with Jonas Jablonskis and Juozas Balčikonis and when Lithuania restored its independence she got acquainted with Kazimieras Būga (1879-1924). These prominent linguists helped her to enrich the native language and broaden humanitarian education. The important factor was also the knowledge of foreign languages; she knew the German, French, Russian and Polish languages (*LR*: p. 4). In 1933 Amelija Mažylytė spent some time at Grenoble University where she broadened her experience in Western European science. Her broad outlook and erudition directed her scientific interests towards the history of mathematics.

She supported women's active participation in society by promoting education for girls and encouraging young women to study; she herself was actively participating in public life by taking part in such organizations



Autobiografija

Gimiau 1900 m. Vėbrių k., tuomet Ukmergės apskr., Paponių valsč. Tėvai buvo valstiečiai. Pradžios mokslą ėjau Panemunėlio st. pradžios mokykloj ir Kalkūnų mokykloj gelžkeliečių vaikams. Ten baigiau šešioje gimnazijos 4-jų klasę. Gimnaziją baigiau Kaune 1921 met. 1925 met baigiau Kaune Lietuvos Universiteto matematikos-gamtos fakultetą.

1925-1936 met mokytajavau Kauno mokytojų seminarijose. Nuo 1936 ligi 1940 met., uždarius Kaune mokytojų seminarijas, buvau paskirta matematikos mokytoja Kauno „Saulės" gimnazijoj. 1940-41 met. buvau matematikos mokytoja Zarasų gimnazijoj. Įsteigus 1941 met Kaune mokytojų seminariją, vėl buvau ten paskirta, dėsčiau matematiką ir mat. metodiką. 1943 metų gale sunkiai suširgau ir ligi 1944 metų vasario gydžiausi Kauno Raud. Kryž. ligoninėj ir namuose. 1944-1945 met kelis mėnesius dirbau Braunsbergo ligoninėj ir 1945-1946 metų tarpe kelis mėnesius Vilniaus Ij-je ligoninėje. Nuo 1946 metų pradžios dirbu LTSR Mokslų Akademijoj Bibliotekoj kaip Knygų sektoriaus vedėja. Draugė, dirbdama mane įstaigoje, lankiau ir vakarinį Leninizmo Marksizmo Universitetą Jį kursą

A. Mažylytė

Vilniaus

1947 Gegužės mėn. 5

Figure 2. CV of A. Mažylytė (Vilnius, 1947).

as the association for the women with higher education, the catholic teachers' union and the circle of teachers of mathematics and physics (*LR*: p. 5; *VVPI*: p. 5). Mažylytė published her works on a wide variety of subjects but the main area of her interest was the subject of mathematics. Beside the articles dedicated to the development of the fields of mathematics, she also published articles about the didactics of mathematics which was again very closely interrelated to the history of mathematics. The best five articles on the latter subject were published in the period between 1928 and 1939.

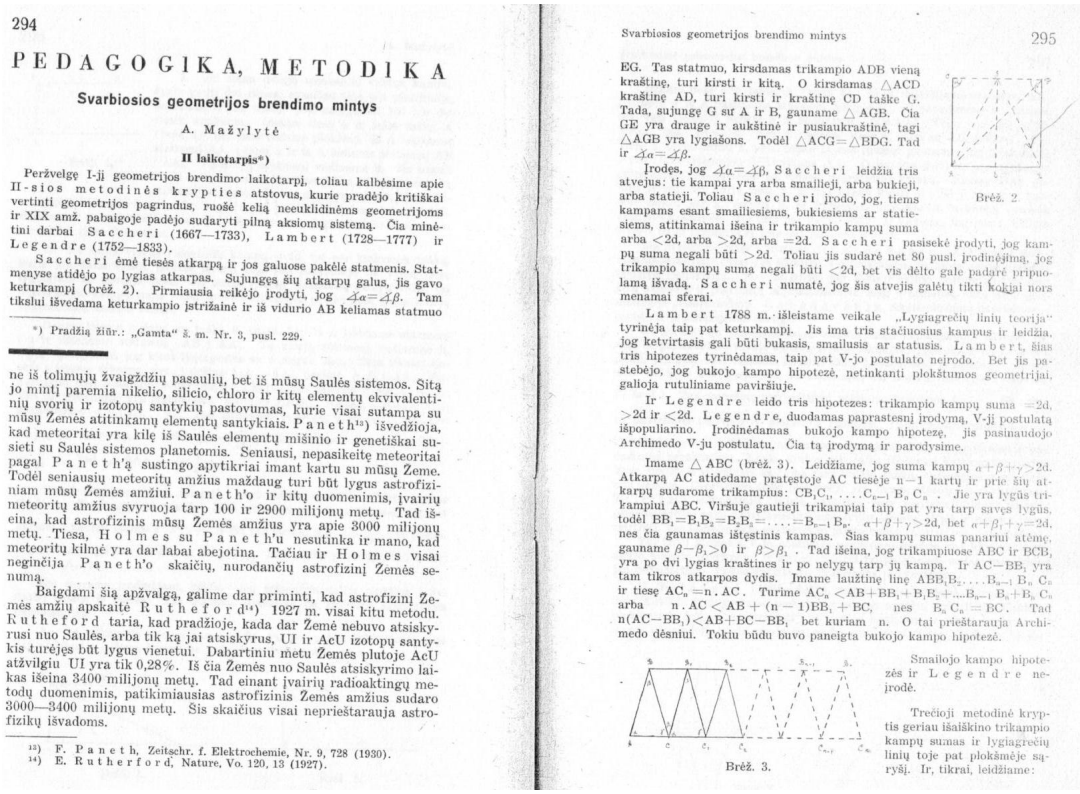
Amelija Mažylytė, most probably encouraged by professor Pranas Dovydaitis with whom she had been socializing since her activities in the Federation of Ateitininkai through her second-degree studies at the university, took a challenge to write an article about Carl F. Gauss (1777-1855) "the Prince of Mathematicians" (Mažylytė, 1928). With references to the biographical researches carried out by A. Kitner, F. Mathe and W. Ahrens she revealed the personality of Carl F. Gauss not only as of a great mathematician but also as of a man who experienced family joy and tragedies. Presenting his biography she focused on the most important stages of his life. After mentioning a special talent for mathematics that had become obvious in early childhood and his readings of L. Euler, J. L. Lagrange, and I. Newton, when he was still a schoolboy, she focused on his first achievements in the theory of mathematics, i.e. a simple method of errors and the prime numbers theorem. Such success encouraged him to further study mathematics and to abandon the idea of getting deeper into philosophy. Carl F. Gauss became even more known as mathematician during his studies in Goettingen when in 1796 he presented a regular heptagon inscribed in a unit circle by using a ruler and calipers. Another stage of Carl F. Gauss life was

related to the acquaintance with Professor John Friedrich Pfaff and the preparation of theses on the existence of polynomial equation roots. Evaluating his most important work "Arithmetical Investigations" Amelija Mažylytė wrote that he had described the theory of numbers since the times Diophantus and "must be considered to be the most important in the science of numbers" (Mažylytė, 1928: p. 422). Her article also covered other works published by Carl F. Gauss in the period between 1808 and 1828. She wrote about his achievements in astronomy, his contribution to works on triangulation and his interests in electromagnetic phenomena. She described Carl F. Gauss's working style as "make little but complete" and according to her "his works did not require correction". Describing the importance of his legacy to future generations Amelija Mažylytė used Ernst Kummer words "those are the masterful works with a stamp of exemplar" (Mažylytė, 1928: p. 424). Though the article was occasional, written for the Carl F. Gauss 150th anniversary, it was insightful and can be justly compared to the works written on the same topic by professors Pranas Dovydaitis and Zigmas Žemaitis.

Amelija Mažylytė, with the references to the major works by the Russian and German authors, also wrote two articles analyzing the development of arithmetic and geometry, the two oldest fields of mathematics. Both articles are similar in the way that they discuss the teaching of those subjects at different stages of history. The article "Evolution of Teaching Calculus" (Mažylytė, 1933a) covers the arts of calculating through the whole history of civilizations, starting with the Achmes Papyrus dated back to 1800 BC Egypt, and according to the author "the oldest known textbook of arithmetic", and closing with the German philosophers and mathematicians of the 19th century Johann Friedrich Herbart (1776-1841) and August W. Grube. The article elaborated on the most important facts of the science of arithmetic: Nicomachus textbook "Introduction to Arithmetic" that was used in Europe for a thousand years, the books propagating practical counting "The Rules of Abacus Counting" and "Definition of the Thing" by Gerbert d'Aurillac who became Pope Sylvester II in 999 and the work by Luca Pacioli "The Totality of Arithmetic". She devoted special attention to the work "The Calculation" by Adam Riese admiring "the absolute truth of number ratio" and evaluating it as "the thing important for trading" (Mažylytė, 1933a: p. 335). Because the development of arithmetic is closely related to its teaching in different stages of history in this article, the author intentionally names the 18th century as the century of Padagogy. The article showed how separate events of teaching mathematics in the past lead to the history of mathematics in general. By describing the development of arithmetic, Amelija Mažylytė gave meaning to the fact that in the 19th century arithmetic had become a compulsory subject in education (**Figure 3**).

The other article "The Most Important Thoughts about the Maturation of Geometry" (Mažylytė, 1939a; Mažylytė, 1939b) covers a long and interesting history of this field in mathematics. The work was published in two different parts corresponding to two important stages of the development of geometry. The first part of the article covers the rise of geometry as a science, starting with the Rhind Papyrus that dates to 1650 BC through Assyro-Babylonian Clay tablets and finishing with the heyday of this science in Ancient Greece. After introduction to the famous Greek scientists and philosophers like Thales, Pythagoras, Hippocrates, Plato, Eudoxus, Menaechmus, Archimedes and Apollonius, she focuses on the work "Elements" by Euclid, especially on the problem of the 5th postulate. According to Amelija Mažylytė that problem in geometry was influenced by three "methodological trends". The first one was seeking to prove the rightness of the postulate, the second tried to refute the cases that had contradicted the postulate and the third one was demonstrating the independence of the postulate (Mažylytė, 1939a: p. 233). The second part of the article introduces the representatives of the second "methodological trend": Sacher, G. (1667-1733), Lambert, J. (1728-1777) and Lagendre, A. (1752-1833). While evaluating their contribution it was pointed out that they not only had a critical view on the foundations of geometry but also "prepared the basis for the non-Euclidean geometries" (Mažylytė, 1939b: p. 294). Later it was recognized that the geometry created by the Russian mathematician Nikolai Ivanovich Lobachevsky proved the independence of the 5th postulate from other axioms and postulates. By the end of the article the author also elaborated on the ideas of David Hilbert's work "Foundations of Geometry" by introducing five groups of axioms. In both parts of the article the author comes across as a smart mathematician; she used proofs of various triangle theorems to illustrate her points. She made an important conclusion that the geometry created by David Hilbert "does not have a tangible basis but is a matter of agreement" that may be any existing patterns (Mažylytė, 1939b: p. 298). The article was written with references to the works of famous Russian and German authors, such as V. Kagan, V. Deputatov, H. Wieleitner and D. Hilbert.

Such an insightful article on the development of geometry was a result of long and hard work. The epilogue is considered to be her other paper "The First Non-Euclideans" (Mažylytė, 1935) that was written in a popular but a very informative style providing the whole history of the analysis of the 5th Euclidean Postulate and re-



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PEDAGOGIKA, METODIKA

Svarbiosios geometrijos brendimo mintys

A. Mažylytė

II laikotarpis*)

Peržvelgę I-jį geometrijos brendimo laikotarpį, toliau kalbėsime apie II-sios metodinės krypties atstovus, kurie pradėjo kritiškai vertinti geometrijos pagrindus, ruošė kelią neeuklidinėms geometrijoms ir XIX amž. pabaigoje padėjo sudaryti pilną aksiomų sistemą. Čia minėtini darbai Saccheri (1667—1733), Lambert (1728—1777) ir Legendre (1752—1833).

Saccheri ėmė tiesės atkarpą ir jos galuose pakėlė statmenis. Statmenyse atidėjo po lygias atkarpas. Sujungęs šių atkarpų galus, jis gavo keturkampį (brėž. 2). Pirmiausia reikėjo įrodyti, jog $\angle\alpha=\angle\beta$. Tam tikslui išvedama keturkampio įstrižainė ir iš vidurio AB keliamas statmuo

*) Pradžią žiūr.: „Gamta" š. m. Nr. 3, pusl. 229.

ne iš tolimųjų žvaigždžių pasaulių, bet iš mūsų Saulės sistemos. Sitą jo mintį paremia nikelio, silicio, chloro ir kitų elementų ekvivalentinių svorių ir izotopų santykių pastovumas, kurie visai sutampa su mūsų Žemės atitinkamų elementų santykiais. Paneth[13]) išvedžioja, kad meteoritai yra kilę iš Saulės elementų mišinio ir genetiškai susieti su Saulės sistemos planetomis. Seniausi, nepasikeitę meteoritai pagal Paneth'ą sustingo apytikriai imant kartu su mūsų Žeme. Todėl seniausių meteoritų amžius maždaug turi būt lygus astrofiziniam mūsų Žemės amžiui. Paneth'o ir kitų duomenimis, įvairių meteoritų amžius svyruoja tarp 100 ir 2900 milijonų metų. Tad išeina, kad astrofizinis mūsų Žemės amžius yra apie 3000 milijonų metų. Tiesa, Holmes su Paneth'u nesutinka ir mano, kad meteoritų kilmė yra dar labai abejotina. Tačiau ir Holmes visai neginčija Paneth'o skaičių, nurodančių astrofizinį Žemės senumą.

Baigdami šią apžvalgą, galime dar priminti, kad astrofizinį Žemės amžių apskaitė Rutherford[14]) 1927 m. visai kitu metodu. Rutheford taria, kad pradžioje, kada dar Žemė nebuvo atsiskyrusi nuo Saulės, arba tik ką jai atsiskyrus, UI ir AcU izotopų santykis turėjęs būt lygus vienetui. Dabartiniu metu Žemės plutoje AcU atžvilgiu UI yra tik 0,28%. Iš čia Žemės nuo Saulės atsiskyrimo laikas išeina 3400 milijonų metų. Tad einant įvairių radioaktingų metodų duomenimis, patikimiausias astrofizinis Žemės amžius sudaro 3000—3400 milijonų metų. Šis skaičius visai neprieštarauja astrofizikų išvadoms.

[13]) F. Paneth, Zeitschr. f. Elektrochemie, Nr. 9, 728 (1930).
[14]) E. Rutherford, Nature, Vo. 120, 13 (1927).

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EG. Tas statmuo, kirsdamas trikampio ADB vieną kraštinę, turi kirsti ir kitą. O kirsdamas △ACD kraštinę AD, turi kirsti ir kraštinę CD taške G. Tada, sujungę G su A ir B, gauname △AGB. Čia GE yra drauge ir aukštinė ir pusiaukraštinė, tagi △AGB yra lygiašonis. Todėl △ACG=△BDG. Tad ir $\angle\alpha=\angle\beta$.

Įrodęs, jog $\angle\alpha=\angle\beta$, Saccheri leidžia tris atvejus: tie kampai yra arba smailieji, arba bukieji, arba statieji. Toliau Saccheri įrodo, jog, tiems kampams esant smailiesiems, bukiesiems ar statiesiems, atitinkamai išeina ir trikampio kampų suma arba <2d, arba >2d, arba =2d. Saccheri pasisekė įrodyti, jog kampų suma negali būti >2d. Toliau jis sudarė net 80 pusl. įrodinėjimą, jog trikampio kampų suma negali būti <2d, bet vis dėlto gale padaré pripuolamą išvadą. Saccheri numatė, jog šis atvejis galėtų tikti kokiai nors menamai sferai.

Brėž. 2

Lambert 1788 m. išleistame veikale „Lygiagrečių linių teorija" tyrinėja taip pat keturkampį. Jis ima tris stačiuosius kampus ir leidžia, jog ketvirtasis gali būti bukasis, smailusis ar statusis. Lambert, šias tris hipotezes tyrinėdamas, taip pat V-jo postulato nejrodo. Bet jis pastebėjo, jog bukojo kampo hipotezė, netinkanti plokštumos geometrijai, galioja rutuliniame paviršiuje.

Ir Legendre leido tris hipotezes: trikampio kampų suma =2d, >2d ir <2d. Legendre, duodamas paprastesnį įrodymą, V-jį postulatą išpopuliarino. Įrodinėdamas bukojo kampo hipotezę, jis pasinaudojo Archimedo V-ju postulatu. Čia tą įrodymą ir parodysime.

Imame △ABC (brėž. 3). Leidžiame, jog suma kampų $\alpha+\beta+\gamma>2d$. Atkarpą AC atidedame pratęstoje AC tiesėje n−1 kartų ir prie šių atkarpų sudarome trikampius: $CB_1C_1, \ldots C_{n-1}B_nC_n$. Jie yra lygūs trikampiui ABC. Viršuje gautieji trikampiai taip pat yra tarp savęs lygūs, todėl $BB_1=B_1B_2=B_2B_3=\ldots=B_{n-1}B_n$. $\alpha+\beta+\gamma>2d$, bet $\alpha+\beta_1+\gamma=2d$, nes čia gaunamas ištęstinis kampas. Šias kampų sumas panariui atėmę, gauname $\beta-\beta_1>0$ ir $\beta>\beta_1$. Tad išeina, jog trikampiuose ABC ir BCB_1 yra po dvi lygias kraštines ir po nelygų tarp jų kampą. Ir $AC-BB_1$ yra tam tikros atkarpos dydis. Imame laužtinę liną $ABB_1B_2\ldots B_{n-1}B_nC_n$ ir tiesę $AC_n=n.AC$. Turime $AC_n<AB+BB_1+B_1B_2+\ldots B_{n-1}B_n+B_nC_n$ arba $n.AC<AB+(n-1)BB_1+BC$, nes $B_nC_n=BC$. Tad $n(AC-BB_1)<AB+BC-BB_1$ bet kuriam n. O tai prieštarauja Archimedo dėsniui. Tokiu būdu buvo paneigta bukojo kampo hipotezė.

Brėž. 3.

Smailojo kampo hipotezės ir Legendre neįrodė.

Trečioji metodinė krypties geriau išaiškino trikampio kampų sumas ir lygiagrečių linių toje pat plokštumėje sąryšį. Ir, tikrai, leidžiame:

Figure 3. Fragmen of A. Mažylė article "The Most Important Thoughts about the Maturation of Geometry".

vealing the achievements of such famous mathematicians as G. Sacher, N. Lobachevsky, J. Bolyai and B. Riemann. Comparing different geometries the author notices that Euclidean Geometry is based on imagination, Non-Euclidean Geometry (N. Lobachevsky and J. Bolyai) introduces analysis next to the imagination and Riemann's concept of space is considered to be a "variety of numbers" (Mažylytė, 1935: p. 680).

A. Mažylytė initiated the women's movement in Lithuania and was encouraging them to pursue university studies, including mathematics. She introduced Lithuanian women to role models of female mathematicians in the history of world science. By that she suggested the idea that education improves the social status of women and makes their lives more balanced. One more article by A. Mažylytė that often remains unnoticed by researchers is "Girls and Mathematics" (Mažylytė, 1936). The article focuses on the issues of teaching mathematics in gymnasiums for girls, talks about women with notable achievements in the science of mathematics and also stresses the importance of mathematics in the process of education. She disagrees with a stereotypical notion that "girls are not good at mathematics" and introduces well-known women mathematicians Hypatia from Alexandria, Maria Gaetana Agnesi from Italy (the 18th century), Sophie Germaine from France and Grace Chisholm from England (the 19th century). She also discussed Sofia Kovalevskaya's life and achievements in mathematics (Mažylytė, 1936: p. 382). The author is drawing a conclusion that "mathematics is not a kind of princess in the world of sorcery that is beyond the comprehension of girls" (Mažylytė, 1936: 383). By promoting an educated women's movement A. Mažylytė also had published the article about Nobel Prize winner Maria Curie-Sklodowska.

She also published articles about the origins and development of the metric system in order to advertise its benefits in Lithuania (Mažylytė, 1939c). It contributed to the popularization of the system in the country as well as to reinforcing the foundation of a modern state.

4. Conclusion

Amelija Mažylytė (1900-1972) was brought up in an intelligent family of Lithuanian farmers who were open to learning. Not only her activities, but also her entire life had been about promoting education, especially that of women, in the young state of Lithuania. A. Mažylytė was one of the first Lithuanian women seeking university

education in the restored state of Lithuania. She is the first Lithuanian woman graduate in mathematics. A. Mažylytė also got a second university degree in philosophy and was actively involved in educational work especially by promoting the rich mathematical heritage of different civilizations in the Lithuanian language for the first time in the history of the country. She was one of the organizers of the educated women's movement in Lithuania and a role model of a modern woman. In Soviet times she abandoned mathematics and social activities because of differences in views and values. The published works discussed in this article demonstrate her great erudition and the depth of her knowledge of the history of mathematics. The mentioned works can be separated into two groups. The first one discusses purely the history of mathematics and the second one proves the correctness of thesis by employing the historical facts.

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LR Švietimo ministerija (Ministry of Education of Rep. Lithuania). A. Mažylytės byla (Case of A. Mažylytė). LCVA[1], F.391, Ap.7, B.3653.

LU MGF tarybos protokolai (Lithuanian University Council on the Faculty of Sciences. VUB RS[2], F.96.VDU3.

LU TFF tarybos protokolai (Lithuanian University Council on the Faculty of Theology and Philosophy). LVCA, F. 631, Ap.13, B.155.

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[1]*LCVA—Central State Archive of Lithuania.*

[2]*VUB RS—Vilnius University Library, Departament of Manuscrips.*

[3]*LEUA—Archive of Lithuanian University of Educational Sciences.*

Appendix

List of A. Mažylytė (1900-1972) research (1928-1939) papers

1 Carl Friedrich Gauss (1777-1855), *Kosmos*, 1928, Nr. 9, pp. 422-424.

2 Kilimas moterų švietimo/Rise of Womens Education, *Naujoji Vaidilutė*, 1928, Nr. 10, pp. 255-260.

3 Matematikos mokymo tikslai/Proposes to Teaching Mathematic, *Lietuvos mokykla*, 1932, Nr. 7, pp. 151-155.

4 Skaičiuotės mokymo raida/Evolution of Teaching Calculus, *Lietuvos mokykla*, 1933, Nr. 18, pp. 333-340.

5 Mergaičių švietimas/Girls Education, *Naujoji Vaidilutė*, 1934, Nr. 1, pp. 14-16; Nr. 2, pp. 77-81.

6 Pirmieji neeuklidininkai/The First Non-Euclideans, *Šviesos keliai*, 1935, Nr. 11, pp. 675-680.

7 Mergaitės ir matematika/Girls and Mathematics, *Naujoji Vaidilutė*, 1936, Nr. 10, pp. 379-385.

8 Matematikos žurnalai mokykliniais klausimais/Mathematics magazine for Scholl Questions, *Gamta*, 1939, Nr. 1, pp. 86-87.

9 Marija Curie (1867-1934), *Naujoji Vaidilutė*, 1939, Nr. 2, pp. 89-98.

10 Svarbiausios geometrijos brendimo mintys/The Most Important Thoughts about the Maturation of Geometry, *Gamta*, 1939, Nr. 3; 4, pp. 229-234; 294-301.

11 Studentės ir studijos/Students (Females) and Studies, *Naujoji Vaidilutė*, 1939, Nr. 8-9, pp. 401-405.

12 Metras/Metre, *Lietuvos mokykla*, 1939, Nr. 12, pp. 766-768.