

**PLATINUM ANNIVERSARY OF THE  
UNION OF MATHEMATICIANS OF MACEDONIA  
AND THE JOURNAL MAT. BILTEN**

VESNA CELAKOSKA-JORDANOVA

This year the Union of Mathematicians of Macedonia and the journal *Matematichki Bilten* celebrate the 70th anniversary since their founding. On January 29, 1950, the Society of mathematicians and physicists of the People's Republic of Macedonia was founded in Skopje. A steering committee of 11 members was elected with prof. Dragoslav Mitrinović as its first president. His report on the upcoming tasks of the newly formed society was presented before a large number of scientific and cultural workers from Macedonia and guests from other Yugoslav republics, [1], [3]. The Guidelines of the Society were established, [2], in which the goals, basic objectives and the work code were set. The same year, the Society launched the scientific journal *Bilten na Društvata na matematičarite i fizičarite od NR Makedonija* (abbreviated: *Bilten na DMF*), in which research papers on mathematics and physics were published. After 27 years of continuous activity, conditions were created to form two separate societies. So, on January 28, 1977, the Society of Mathematicians and Physicists of Macedonia made a decision to split into two separate societies, namely the Union of Societies of Mathematicians and the Union of Societies of Physicists. The Union of Societies of Mathematicians of Macedonia, according to its Statute, adopted in 1977 (and amended in 1981 and 1984), conducts its activities through its members, which were the municipal Societies of Mathematicians in the country (by 1990, 20 such societies had been formed), and through its consistent committees: for education and teaching mathematics, for mathematical competitions, and for publishing, [7].

In 1991 the Union of Societies of Mathematicians had changed its name into Union of Mathematicians and Informaticians of R. Macedonia and 10 years after, the Union decided to split into two separate entities, i.e. Union of Mathematicians of Macedonia (UMM) and Computer Society of Macedonia (CSM).

On July 2, 2019 a new Statute of the Union was voted in. Permanent committees of the Union include: competition committee, scientific committee, committee for promotion of teaching mathematics, publishing committee and committee for mathematical schools and camps.

The UMM promotes mathematical sciences, teaching mathematics at all levels,

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*Key words and phrases*. keywords should be put here.

applying mathematics in other disciplines, as well as improving the social position of mathematicians as a whole. We will mention the primary and some of the secondary activities of the UMM:

1. Organizing and conducting mathematics competitions for elementary and high school students, as well as international competitions.
2. Organizing scientific and professional meetings to contribute to the advancement of mathematics and its application; seminars for university students as well as elementary and high school teachers, to popularize mathematics; schools of mathematics and camps for elementary and high school students, etc.
3. To treat matters concerning the teaching of mathematics in primary schools, secondary schools and universities, and to contribute to the improvement of such teaching.
4. Publishing activity.
5. Cooperating with related domestic associations and institutions, as well as international cooperation and membership in international mathematical associations.

We will briefly describe the main activities of the Union.

1. **Competitions.** UMM has a well-developed and branched system of competitions. Primary and secondary school students today compete on the following levels: school, municipal, regional and state. The aim of the competitions are to initiate greater interest in mathematics among primary and secondary school students, to evaluate the level of their achieved knowledge, skills and abilities and to encourage them to expand and deepen their mathematical competencies. The average number of participants on the state competitions, for primary as well as for secondary school, in the last 10 years is between 150 and 200. UMM participates (with its teams) in the following international competitions: Balkan Mathematical Olympiad for students up to 15.5 years old (JBMO), Balkan Mathematical Olympiad for primary/high school students (BMO), International Mathematical Olympiad for primary/high school students (IMO), European Women's Mathematical Olympiad (EGMO), [4, 5], South Eastern European Mathematical Competition for University Students (SEEMOUS), Mathematical Kangaroo competition (1993/1994–2018), state electronic competition Pi-Day (2019–), etc.

State competitions for high school students have been held in our country since 1955, [7], [10]. We are proud to say that SR Macedonia was the first Yugoslav republic in which competitions of this kind began to be held. UMM has twice been the organizer of federal competitions (within Yugoslavia) and since then has been a host of 16th and 25th Balkan Mathematical Olympiad.

2. **Scientific and professional meetings.** The Union organises the Congress of Mathematicians of Macedonia every four to six years. The scientific program features plenary and invited talks by distinguished scientists, as well as contributed section talks. The primary aim of the Congress is to present the broadest possible overview of the activities of the mathematical community. Even though it is

well known that the First Congress of Mathematicians and Computer Scientists of Macedonia was held in Ohrid, October 1996 (after the proclamation of independence of the Republic of Macedonia in 1991), it is also known that UMM (then a Society of Mathematicians and Physicists of Macedonia) had organized the 5th Yugoslav Congress of Mathematicians in Ohrid, September 1970, while being an equal member of the Union of the Societies of Mathematicians and Physicists of Yugoslavia.

As we mentioned earlier, the First Congress of Mathematicians and Informaticians of Macedonia was held in Ohrid, October 3–5, 1996. It was attended by 475 participants and had 69 speakers in 6 sections: algebra, analysis, geometry and topology, differential equations, computer science and applied mathematics, as well as 33 contributed talks in mathematics education, [6],[9]. Here is the full list of the Congresses of UMM:

- First Congress of Mathematicians and Computer Scientists of Macedonia, October 3–5, 1996, Ohrid;
- Second Congress of Mathematicians and Computer Scientists of Macedonia, September 28 – October 1, 2000, Ohrid;
- Third Congress of Mathematicians of Macedonia, September 29 – October 2, 2005, Struga;
- Fourth Congress of Mathematicians of Macedonia, October 23–26, 2008, Struga;
- Fifth Congress of Mathematicians of Macedonia, September 24-27, 2014 Ohrid;
- Sixth Congress of Mathematicians of Macedonia, June 15–18, 2016, Ohrid.

The Seventh Macedonian Mathematical Congress was organized and supposed to be held from September 16 to September 20, 2020, in Struga, North Macedonia. However, due to the COVID-19 pandemic, the steering committee of UMM decided to postpone it until 2021.

Conferences, seminars and professional counseling meetings were held in the period from 1980 to 1990 in Skopje, Bitola, Prilep, Dojran, etc. concerning educational objectives in the mathematics curriculum in primary and secondary education, [7]. In recent years (March 2018 and September 2019), UMM was co-organizer of two International Conferences on Education in Mathematics, Physics and Related Sciences, held in Skopje at the Faculty of Natural Sciences and Mathematics. The purpose of these two conferences was to draw conclusions about the frequent educational reforms through lectures, presentations and discussions, hopefully to be used by the Ministry of Education and Science for improvement of the present situation and for implementation in future strategies.

Many members of the UMM contributed with their work by organizing and participating in five seminars entitled "Mathematics and its applications" within the professionally-applicable project of the Institute of Mathematics at the Faculty of Natural Sciences and Mathematics in Skopje entitled "Popularization of Mathematics". The purpose of the Seminar was to promote mathematics among young people, review the current achievements in mathematics and its applications, directions and opportunities for future research, exchange of experiences in teaching

mathematics, and the application of various successful teaching methods, forms or techniques. Popular lectures on pure and applied mathematics are presented, as well as lectures on teaching mathematics in primary and secondary schools, but also on experiences in teaching mathematics at the faculties.

In 2020 the UMM received support from the Municipality of Gazi Baba for the realization of the project concerning teachers and students training, "Mathematics for all - Mathematics circles for primary school students". This training contributes to teachers personal and professional development, which will have a positive impact on their preparation for regular classes. On the other hand, students had the opportunity to work on more challenging and interesting problems.

**3. Popularisation of mathematics.** Schools of mathematics are another important activity of the Union that involves students. In addition to participating in the preparation of schools of mathematics for high school students (began in 1967), the Union also takes care of schools of mathematics for primary school students. In 1986, the Summer and then the Winter School of Mathematics for students from 5th to 8th grade was founded, organized by the Society of Mathematicians of Štip, [7]. This trend lasted until 1995.

During the winter semester of 2019 and 2020 the UMM have organized Autumn School of Mathematics for primary and secondary schools students. The School was intended for all students who love mathematics and want to discover its beauties by deepening existing knowledge and acquiring new knowledge and skills. The Autumn School of Mathematics 2020 was quite challenging, due to the COVID-19 pandemic and as such was held online. Two books of the Autumn School of Mathematics 2019 with lecture materials were published, and two books of the Autumn School of Mathematics 2020 are in preparation.

Recently (from 2016 onward), members of the UMM have been engaged with a very interesting event for the popularization of mathematics and natural sciences among children from primary and secondary schools: "November – Month of the Sciences", that is usually held at the Faculty of Natural Sciences and Mathematics. Our members participated with lectures, workshops and competitions in experiments or presentations in mathematics.

**4. Publishing activity.** The UMM regularly publishes the scientific journal *Mat. Bilten* and two magazines, *Sigma* and *Numerus*.

4.1. *Numerus*. This magazine was launched in 1975 to popularize mathematics among primary school students. The first issue was published in November 1975 on 16 pages, [7], and today one issue has about 50 pages. It has 4 issues per year. This year marks 45 fruitful years since the magazine's creation. Today, in addition to the competition problems and prize assignments, one can find articles on Mathematical Olympiad and mathematical competitions for students up to 15.5 years old, as well as articles from the schools of mathematics organized by the UMM and articles on the application of mathematics in everyday life. Special attention is paid to some topics that are not sufficiently deeply covered within the existing mathematics curricula for the reformed nine-year primary education

and are a necessary link in preparation for the competitions. The magazine has a circulation of 3000 copies per number.

4.2. *Sigma*. The magazine *Sigma* has been published since 1979. It is the successor of the magazine *Informativen Glasnik na DMF*, which was published irregularly in the periods between 1962–1966 and 1972–1974, [7]. *Sigma* is intended for high school students. It publishes competition problems and prize assignments, papers on interesting mathematical topics, as well as materials of a professional and methodological nature, various documents and information related to the work of SMM. Until the end of 2020 there have been 118 issues published in a circulation of 500 copies per number.

4.3. *Mat. Bilten*. As we mentioned at the beginning of this paper, *Matematichki Bilten* (abbreviated as *Mat. Bilten*) is a successor to *Bilten na Društva na matematičarite i fizičarite od NR Makedonija*. It is the oldest Macedonian mathematical journal, founded by the Union of Mathematicians and Physicists of Macedonia in 1950. Until 1976 it appeared once a year. The first three issues were printed in 800 copies. Starting from the fourth issue it is printed in 500 copies. Until 1976, 26 issues (about 75 pages per issue) of *Bilten na DMF* were published. These issues contain 235 scientific papers, about 180 of them are in the field of mathematics and about 50 of them are in the field of physics. There are also 20 other articles, which are documents, reports, reviews, etc., related to the work of the Union of Mathematicians and Physicists of Macedonia, [7].

Since 1977 the journal is indexed as *Matematichki Bilten* (*Mat. Bilten*), *Bulletin Mathématique de la Société des Mathématiciens de la République de Macédoine* (by *Mathematical Reviews* serials abbreviations list). The journal is devoted to pure and applied mathematics. It covers practically all mathematical areas: algebra, analysis, topology, applied differential geometry and applications in gravitation, approximation theory, graph theory, measure theory and integration, differential equations and dynamic systems, mathematical optimization, probability theory and mathematical statistics and their application in different areas, such as applications in finance and modeling, etc. Around 410 papers were published since 1977. Each volume had one issue, except for the period between 1979–1988 that had 5 double issues (29-30, 31-32, 33-34, 35-36 and 37-38). Since 2013 *Mat. Bilten* appears twice a year. Today the journal is distributed to 180 scientific and higher education institutions around the world, as a result of a very generous exchange for a large number of scientific mathematical journals that enrich the library of the Institute of Mathematics at the Faculty of Natural Sciences and Mathematics, Skopje. All published papers are available online on the journal's website.

*Mat. Bilten* is indexed in many scientific databases: *Mathematical Reviews* (American Mathematical Society), *Zentralblatt*, *Referativnij Zurnal*, *EBSCO*, *Crossref*, *Publons*, etc. The language of the journal changed over the years. Many of the articles of the first two decades were written in French, German, Macedonian, Serbian and very little in English, Russian and Esperanto. All articles written in a foreign language needed to have a summary written in Macedonian. The number of articles written in English continued to increase and from 1993, 95% of the

articles were written in English. Since 2014 all articles are in English.

We will mention here many mathematicians that have given an enormous contribution to the development and the publishing of *Mat. Bilten* by their volunteer work in the Editorial Board, [8]: D. Mitrinović, B. Popov, J. Ulčar, P. Dimić, Ć. Čupona, I. Šapkarev, B. Trpenovski, D. Perčinkova, D. Dimitrovski, S. Markovski, S. Georgievska, S. Zdravkovska, O. Jotov, A. Samardžiski, N. Celakoski, D. Karčička, B. Pipereski, R. Sekuloski, K. Stojmenovski, D. Dimovski, B. Ilievski, M. Georgiva, N. Pandeski, K. Trenčevski, N. Shekutkovski, A. Malčeski, R. Malčeski, A. Vukelić, Gj. Markoski, etc.

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"Ss. CYRIL AND METHODIUS" UNIVERSITY,  
 FACULTY OF NATURAL SCIENCES AND MATHEMATICS,  
 INSTITUTE OF MATHEMATICS,  
 ARHOMEDOVA 3, 1000 SKOPJE, NORTH MACEDONIA  
 Email address: celakoska@gmail.com

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