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THE MATHEMATICAL SOCIETY OF SERBIA—60 YEARS

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Abstract. The Mathematical Society of Serbia was founded in January 1948. It had wide activities during previous 60 years in many fields—scientific, educational and in popularization of mathematics. It publishes five journals and a lot of other publications, mostly intended for young mathematicians and programmers. It is also the organizer of all competitions in mathematics and informatics in Serbia and it sends Serbian teams to international competitions. Finally, the Society represents Serbian mathematicians in international associations. This article is an attempt to give a brief description of these activities.

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Key words and phrases: Mathematical society, Mathematical congress, Mathematical olympiad, Olympiad in informatics.

1. History

The organizing of the Mathematical Society of Serbia was preceded by a period of development of the mathematical sciences and instruction of mathematics at all levels. In the scientific area it was realized by active participation of Serbian mathematicians and their contributions to mathematical achievements through permanent contacts with the universities at which they had been educated (Wien, Paris, Budapest, ...) and by participation at International Congresses of Mathematicians, as well as at International Congresses on Mathematical Education and some other scientific meetings. At the same time, the mentioned contacts had contributed to the advancement of the mathematical education. The names of *Mihailo Petrović*, *Nikola Saltikov*, *Anton Bilimović*, *Jovan Karamata* are registered in such roles.

In the scientific domain it was officially recorded that the mathematicians of the University of Belgrade had formed, in 1926, the *Mathematical Club*, managed by *Anton Bilimović*. The main agenda of its monthly meetings were discussions of scientific results of its members and acceptance of these papers for publication in relevant journals. This club was followed by the *Yugoslav Mathematical Society*, formed in Belgrade in 1937. It had gathered about 100 mathematicians, physicists and astronomers from universities of Belgrade, Zagreb and Ljubljana; *Tadija Pejović* from Belgrade was the president of this society. Reports from the regular sessions were published in its annual publications. The Second World War had interrupted the Society activities.

Following their decision to advance the level of the basic mathematical education, a number of distinguished Yugoslav mathematicians had founded a special

journal for the secondary school students, titled *Matematički list za srednju školu*, edited by *Radivoje Kašanin*, published in Belgrade during two years only, 1931 and 1932.

Union of Mathematics Students at the University of Belgrade was founded in 1926 and its activities had covered a wide spectrum: formation of the professional library, publication of auxiliary textbooks, organization of professional meetings, collaboration with the corresponding organizations in Zagreb and Ljubljana, etc. The results of the UMSUB activities were rather impressive, including 26 publications and 8 issues of its journal *Matematički vesnik*, in the period 1935–1940.

Activities of our mathematicians in international associations are treated in appropriate parts of this article.

2. Organization

A continuous activity of a mathematical association in Serbia started in 1948. Namely, in November 1947, an initiative was sent to the Committee for Science and Culture of the Republic of Serbia to establish a scientific and professional society which would gather all mathematicians and physicists, regardless of their position, i.e. those from universities, scientific institutes, schools, etc. The members of the Initiative Committee were: *Tadija Pejović, Sreten Šljivić, Dragiša Ivanović, Đorđe Karapandžić, Konstantin Orlov, Vojin Dajović, Vlastimir Stajić, Dobrivoje Mihajlović* and *Ernest Stipanić*.

The Founding Assembly of the *Society of Mathematicians and Physicists of Serbia* took place in Belgrade on January 4th, 1948. In his report concerning goals and future tasks of the Society, *Dobrivoje Mihajlović* pointed out the following:

1. The Society will contribute to the advancement of mathematical and physical sciences and to their popularization.
2. The Society will encourage scientific research in these fields.
3. The Society will deal with problems of mathematics and physics instruction in primary and secondary schools and at universities. It will cooperate with other educational institutions to advance this instruction.

The assembly elected:

1. *Tadija Pejović*, university professor, as the first president of the Society.
2. Managing Board: *Tadija Pejović*, university professor, *Sreten Šljivić*, university professor, *Ivan Bandić*, Pedagogical school professor, *Dobrivoje Mihajlović*, Technical school teacher, *Zarija Bulatović*, Technical school assistant, *Draga Nikolić*, university assistant, *Pavle Savić*, university professor, *Anton Bilimović*, university professor, *Miloš Radojčić*, university assistant professor, *Dragiša Ivanović*, Technical school assistant professor and *Petar Živojinović*, inspector in the Ministry of Education.
3. Supervising Board.
4. Court of Honor.

After some time the Society changed its name to the *Society of Mathematicians, Physicists and Astronomers of Serbia*. Due to the increased activity, it was decided that the Society should split in three parts, and so the *Mathematical Society of Serbia* was formed in 1981.

A lot of mathematicians took part in the activities of the Society during the past 60 years. We state here the names of its presidents: *Tadija Pejović* (1948–1952), *Dragoljub Marković* (1953–1957), *Sreten Šljivić* (1958–1962), *Milica Ilić-Dajović* (1966–1967 and 1972–1973), *Zlatko Mamuzić* (1968–1969), *Đorđe Karapandžić* (1970–1971 and 1974–1975), *Vojin Dajović* (1976–1980 and 1984), *Dušan Adnađević* (1981), *Miroljub Jevtić* (1982), *Milorad Zimonjić* (1983), *Vladimir Mićić* (1985 and 1989–1990), *Arif Zolić* (1986–1988), *Zoran Kadelburg* (1991–1994 and 1999–2000), *Pavle Mladenović* (1995–1998), *Rade Doroslovački* (2001–2004), *Branislav Popović* (2005–2007).

Nowadays, after 60 years of existence, the goals and tasks of the Mathematical Society of Serbia are nearly the same. According to its bylaws, the Society:

1. contributes to advancement of mathematical and computer sciences, and their applications, as well as the popularization of these sciences;
2. encourages scientific and professional activities of its members, assists scientific and professional research in the fields of mathematics, computer science and their applications;
3. treats matters concerning the instruction of mathematics and computer science in primary schools, secondary schools, post-secondary schools and universities, and contributes to the advancement of such instruction;
4. is engaged in the discovery, fostering and development of talented young mathematicians and programmers;
5. pursues matters concerning the status and protection of mathematics and mathematicians.

The organizing scheme is also nearly the same. The Society's Assembly is the supreme managing organ, and beside it the Society have:

- the president of the Society (*Branislav Popović*);
- the Managing Board (with *Aleksandar Lipkovski* as the actual chairman);
- the Executive Board and
- the Supervising Board.

The Assembly consists of delegates from each of the Society branches and the Managing and Supervising Boards are elected by the Assembly, while the Executive Board is elected by the Managing one. There are four committees which are in charge with the organization of mathematics and informatics competitions for primary and secondary schools. Finally, the Editorial Committee takes care about all periodical and non-periodical publications of the Society. Of course, each of the five journals has its own Editorial Board.

Until 2006 all professional mathematicians and computer scientists, working in educational institutions or in other organizations, were considered the members of

the Mathematical Society of Serbia. In order to improve the work of the Society's Assembly, new bylaws were adopted and a firm procedure of becoming the Society's member was defined. Hence, we can state now that there are more than 1800 registered members, and this number will certainly increase since it is assumed that in Serbia there are about 8000 mathematics and informatics teachers alone.

Membership in other mathematical associations. Representatives of the Society of Mathematicians and Physicists of Serbia were the leading members of the Steering Committee for preparing the 1st Congress of mathematicians and physicists of Yugoslavia. The Congress took place on Bled, November 8–12, 1949, and on the last day the Founding Assembly of the *Union of the Societies of Mathematicians and Physicists of Yugoslavia* was held. The Union existed until the disintegration of the country, its name being the *Union of Mathematicians of Yugoslavia* (resp. *Serbia and Montenegro*) in the period 1994–2006. The main activity of the Union was the coordination of scientific and professional work of the republic societies, as well as the organization of Federal competitions for primary and secondary school students. The Union's presidents from Serbia were: *Pavle Savić* (1949–1954), *Sreten Šljivić* (1960–1965), *Dragiša Ivanović* (1975–1980), *Vojin Dajović* (1980–1985), *Đorđe Bek-Uzarov* (1985–1994), *Vladimir Mićić* (1994–2001), *Zoran Kadelburg* (2001–2004) and *Pavle Mladenović* (2004–2006).

The participation of Serbian mathematicians in international associations can be traced back to 1900 when *Mihailo Petrović* was present at the 2nd International congress of mathematicians (ICM) in Paris. Later, he was the representative of Serbia in the *International Mathematical Union* (IMU) after its founding in 1920. Our representatives took part in the work of the *Interbalkan Union* in 1934.

After the founding of the Society and the Union, Yugoslav mathematicians renewed their participation in the IMU (they were among 12 countries present at its General Assembly in Rome in 1952). The representatives of Yugoslav (Serbian) mathematicians in IMU from Serbia were *Đuro Kurepa*, *Bogoljub Stanković*, *Zoran Kadelburg* and *Pavle Mladenović*. Our actual IMU representative is *Siniša Vrećica*.

When the *Balkan Mathematical Union* renewed its activities in 1966, our representative was *Đuro Kurepa* who acted as its president from 1977–1983, and as co-president in 1984. We hosted the 5th Balkan congress of mathematicians which was held in Belgrade in 1974. This Balkan mathematical association ceased to exist later on, and a new organization was founded in 2002 under the name MASSEE (*Mathematical Society of Southeastern Europe*). Our representatives in this association have been *Zoran Kadelburg* and *Pavle Mladenović*.

The *Federation of Mathematical Societies of European Countries* was founded in 1976 and *Bogoljub Stanković* was our representative. In 1990's the *European Mathematical Society* (EMS) was formed and it has invited our Society to become its member. The invitation was accepted and *Stevan Pilipović* was appointed as our representative in this new association.

The Mathematical Society of Serbia is a reciprocitating society of the *American Mathematical Society* (AMS) which gives certain advantages to our mathematicians

in obtaining literature and participating in international mathematical events.

The first registered activity in international associations dealing with the teaching of mathematics was the *Mihailo Petrović*'s participation as a delegate of Serbian mathematicians in the work of the *International Commission on Mathematical Instruction* (ICMI), since its founding in 1908. Further on, one can register that Yugoslav (Serbian) delegates at ICMI were *Đuro Kurepa*, *Milica Ilić-Dajović*, *Milosav Marjanović* and *Zoran Kadelburg*. In a period Đuro Kurepa was a vice-president of ICMI. Serbian mathematicians were regular and active participators at all International Congresses on Mathematical Education.

3. Scientific activities

The Mathematical Society of Serbia had organized scientific activities from the very start. *Scientific section* of the Society was founded already on the Founding session in January 1948, and in the first years there were regular Society meetings, always having scientific lectures as their parts. The reports about these meetings were published in *Vesnik društva matematičara i fizičara* which started in 1949 and which acted (in the beginning) as the bulletin of the Society. During 1960's and 1970's special scientific meetings were organized and articles intended for publication in *Matematički Vesnik* (as it was then called) had to be reported there. Later on this practice was abandoned.

After the Union of Societies of Mathematicians and Physicists of Yugoslavia was founded in 1949, scientific activities of the Serbian society were mostly included in the activities of the Union. So, national congresses (11 of them) were organized, in which Serbian mathematicians took part (in fact always the majority of participants in these congresses were from Serbia, regardless of the place where they were held). Also, several scientific symposia were organized, either independently or together with the Union or a particular faculty or institute. The full list of Congresses and Symposia is given below.

Congresses and symposia. The list of Congresses of Yugoslav (Serbian) mathematicians (including physicists and astronomers till 1985) is the following:

1. The 1st Congress, Bled, November 8–12, 1949;
2. The 2nd Congress, Zagreb, October 4–9, 1954;
3. The 3rd Congress, Belgrade, September 19–24, 1960;
4. The 4th Congress, Sarajevo, October 4–9, 1965;
5. The 5th Congress, Ohrid, September 14–19, 1970;
6. The 6th Congress, Novi Sad, August 28–September 2, 1975;
7. The 7th Congress, Budva-Bečići, October 6–11, 1980;
8. The 8th Congress, Priština, September 23–27, 1985;
9. The 9th Congress, Petrovac, May 22–27, 1995;
10. The 10h Congress, Belgrade, January 21–24, 2001;
11. The 11th Congress, Petrovac, September 28–October 3, 2004.

The 12th Serbian Mathematical Congress is scheduled for the end of August, 2008 in Novi Sad.

The Mathematical Society of Serbia organized (independently) three international symposia "Complex Analysis and Its Applications" held in Aranđelovac 1984, Bečići 1986 and Herceg Novi 1988. It was *Vojin Dajović* who gave the basic initiative for these symposia and a lot of well-known foreign analysts took part. After a short break, two new symposia were held under the new name ("Mathematical Analysis and Its Applications") in Aranđelovac 1997 and Niška Banja 2002, with the Union of Yugoslav Mathematicians and Faculty of Mathematics, Belgrade, resp. Faculty of Sciences, Niš, as coorganizers.

The Society was a coorganizer, also together with the Union and respective faculties, of the International Symposium on Differential Equations (Belgrade, 1957) and three International Symposia on Topology and Its Applications (Herceg Novi 1968, Budva-Bečići 1972 and Belgrade 1977). The Union itself (but with just Serbian mathematicians acting in organization) organized also the 5th Balkan Mathematical Congress (Belgrade, 1974) and "Kurepa symposium"—the International Mathematical Symposium Dedicated to the Memory of Đuro Kurepa (Belgrade, 1996).

Matematički Vesnik. The Managing Board of the Society decided in 1948 to start publishing a scientific journal named *Vesnik Društva matematičara i fizičara NR Srbije* ("Bulletin of the Society of Mathematicians and Physicists of Serbia"). *Jovan Karamata*, a well-known Serbian mathematician became its first Editor-in-chief. The first issue of the journal was published in the beginning of 1949. It consisted of four columns: *Scientific articles*, *Problems and exercises*, *Critics and bibliography* and *Meetings of the Society*. Eight articles (in Serbian) were published in this issue, having abstracts in French and Russian.

Reports on all the important activities of the Society and, later, of the Union of Societies of Mathematicians, Physicists and Astronomers of Yugoslavia can be found in the column *Meetings of the Society* in this and subsequent issues (up to 1963). Thus, we find the report from the Founding session dated 04.01.1948, from the first session of the Society dated 26.04.1948, the third session dated 10.06.1948, dedicated to the fifth anniversary of the death of Mihailo Petrović, the detailed report from the First congress of the Union and so on.

Vesnik continued to be published quarterly in the subsequent years, but sometimes there were double issues (so 2 or 3 issues per year instead of 4). The first issue for 1951 contained the first article written in French. The number of articles in foreign languages increased in the subsequent years, and finally, starting with 1989, there were no more articles in Serbian (the predominant language being English).

Only Yugoslav authors published in Vesnik in the first few years. The first article with a foreign author (*E. Hille*) can be found in the issue 3–4 for 1953. The number of foreign authors increased later on, and so one can find a lot of well known names among them; we mention just *W. Sierpinski* who published several articles in Vesnik and who was very active in the column *Problems and exercises*.

The journal got its present name *Matematički Vesnik* ("Mathematical Bulletin") in 1964 and in the period 1964–1976 it was issued together with Mathematical Institute from Belgrade. It has again been published independently by our Society starting from 1977.

Some of the issues of Vesnik were dedicated to the articles presented at the scientific meetings, organized by the Mathematical Society or the Mathematical Institute. Thus, issue no. 4 (1968) contained the articles presented at the Symposium on Mihailo Petrović, on the occasion of his 100th anniversary; three issues in 1985, 1986 and 1988 were dedicated to the Symposia on Complex Analysis, and an issue in 1997 to the 11th Geometrical Symposium. Finally, two issues in 1997 and 2002 contained articles presented at the 4th and 5th Symposia on Mathematical Analysis and its Applications.

The Editorial Board was refreshed several times. Some foreign mathematicians were included in the Board starting with 1996, in an effort to raise the quality of articles. Here is the list of all Editors-in-chief of Vesnik: *Jovan Karamata* (1949–1950), *Dragoljub Marković* (1950–1965), *Zlatko Mamuzić* (1965–1978), *Dušan Adnađević* (1979–1993), *Zoran Kadelburg* (1994–2003), *Mila Mršević* (2004–2006) and *Ljubiša Kočinac* (from 2006).

We can conclude that Matematički Vesnik has played a very important role in the development of mathematical sciences in Yugoslavia. Some of the most eminent mathematicians published their articles in it, and, on the other hand, a lot of our young mathematicians had an opportunity to publish their first articles in this journal. All the articles from Vesnik have been regularly reviewed in the main reviewing journals. Finally, starting with 1996, Vesnik has been published electronically, too, and it can be obtained through Internet on `http://www.emis.de/journals/MV/` or `http://elib.mi.sanu.ac.yu/journals/mv`.

4. Educational activities

Professional meetings. Among the most important activities of the Mathematical Society of Serbia one can identify the problems of improvement of the educational process in its entirety, especially the problems of improvement of teaching and learning mathematics at all levels. Besides the publishing of journals dedicated to these themas, there is a tradition (starting from the 1960's) of organizing "Republic Seminars on Mathematics and Computer Science Instruction". Usually, such seminars were incorporated in the traditional "January days of educators of Serbia". To them a number of special regional seminars can be added, held in all the regional centers of Serbia, dealing with some specific problems or elaboration of the mentioned ones. The exchange of experiences from the practical realization of the teaching and learning process is an important and very useful component of such meetings. Following the actual needs, from time to time a number of symposia and periodical workshops were realized, organized by the Society, independently or in collaboration with some relevant institutions, faculties, etc.

A particular symposium has to be mentioned here. It was the international symposium "Coordination of Instructions in Mathematics and Physics", held in

Belgrade during the 3rd Congress of Yugoslav Mathematicians and Physicists in 1960. More than 30 very well known foreign mathematicians took part, including *R. Courant, W. Sierpinski, M. H. Stone, G. Sansone, G. Choquet.*

Mathematical Society and its members were active in various educational institutions trying to improve the position of mathematics and mathematics teaching. The Society (and *Vojin Dajović* in particular) gave a decisive impact to founding the *Mathematical High School* in Belgrade in 1966. The school became the best one in Serbia, being the biggest source of future mathematicians, physicists and engineers.

Republic Seminars. The contemporary needs for the professional improvement of teachers of mathematics at all levels was approved in the organized, by the Ministry of Education accredited programs. The Mathematical Society of Serbia has several such programs, and the expected idea of incorporation of these programs into the traditional seminars has been realized for three years already. The following list of themas, realized on seminars in Belgrade (2006, 2007), and Niš (2008) will give to the reader a complete information about their contents. Let us remind that here primary school includes the grades 5–8 and secondary school includes the grades 9–12.

Themas for primary school mathematics teachers include: 1. *M. Marjanović*, Selected themas from the primary school mathematics; 2. *V. Mićić*, Rational and irrational numbers in the primary school; 3. *R. Tošić*, Geometry in the primary school; 4. *V. Andrić, I. Tomić, R. Kovačević*, Congruence of triangles and its applications; 5. *B. Popović*, Cartesian coordinate system in the primary school; 6. *Z. Kadelburg*, Number theory in the primary school; 7. *Đ. Dugošija*, Combinatorial ideas in the primary school; 8. *V. Mićić*, Let us apply in the primary school adopted geometric knowledge; 9. *B. Popović*, The data processing in the primary school. 10. *R. Tošić*, Mathematics and games; 11. *Lj. Petković*, Mathematics terms and symbols; 12. *N. Ikodinović, S. Dimitrijević*, Introduction of elementary mathematics concepts in the primary school; 13. *V. Andrić*, Individualization of the mathematics instruction in primary school; 14. *S. Ognjanović, O. Todorović*, External testing of primary school pupils.

Themas for secondary school mathematics teachers are: 1. *D. Herceg*, Numerical mathematics in the secondary school; 2. *V. Petrović*, Geometry in the secondary school; 3. *R. Doroslovački*, Vectors and analytic geometry; 4. *V. Andrić*, Diophantine equations in regular and additional instruction in the secondary school; 5. *P. Mladenović*, Probability and statistics; 6. *N. Ikodinović*, Three limits; 7. *V. Dragović*, Quadratic function, equations and inequalities; 8. *V. Petrović*, Stereometry; 9. *S. Vrećica*, Combinatorial geometry of convex sets; 10. *R. Doroslovački*, Complex numbers and polynomials; 11. *S. Janković*, A survey of the probability and statistics instruction in secondary school; 12. *A. Lipkovski*, Foundation of arithmetics—the importance of the division with remainder; 13. *B. Popović, M. Milenković, D. Đorđević*, On the trigonometry instruction; 14. *R. Doroslovački*, Interesting applications of complex numbers in polynomials and geometry; 15. *V. Petrović*, Combinatorics in the secondary school; 16. *B. Popović, M. Stanić, J.*

Elez, Mathematics in the three years secondary schools; 17. *Z. Kadelburg*, Application of congruences.

Finally, themas for informatics teachers include: 1. *G. Pavlović-Lažetić*, Internet technologies: production of WEB pages; 2. *D. Tošić*, Languages for marking—XML; 3. *N. Klem*, AutoCad and Corel—similarities and differences; 4. *N. Lazović*, Dynamic geometry; 5. *G. Pavlović-Lažetić*, Internet technologies: WEB interface of data bases; 6. *D. Tošić*, Script-languages; 7. *D. Herceg, Đ.Herceg*, GeoGebra in the mathematics instruction; 8. *G. Pavlović-Lažetić*, Logical projecting of the data bases; 9. *M. Tuba*, Modern programmers tools in instruction; 10. *F. Marić*, Digital formats of data notation; 11. *T. Stojanović, A. Kaplarević-Mališić*, Experiences about preparation for competitions in programming of the primary school pupils.

Nastava matematike. Trying to improve the mathematics and physics teaching and learning, the Union of Societies of Mathematicians and Physicists of Yugoslavia initiated in year 1951 the taking over from the Ministry of Education of Serbia the publication of the journal *Nastava matematike i fizike u srednjoj školi* ("The teaching of mathematics and physics in secondary schools"). Publication was committed to the Society of Mathematicians and Physicists of Serbia. The contents of the first issue, published in 1952 reads as follows:

1. *D. K. Jovanović*, Several remarks characteristic for the contemporary physics
2. *M. Sevdić*, On typical errors while solving equations
3. *S. Škreblin*, Position of two numbers α and β respecting the solutions of the biquadratic equation containing a variable parameter
4. *M. Ilić-Dajović*, On the development of geometry
5. Notices from the history of mathematics and physics
6. Problems and exercises
7. Reviews and notices

From the year 1954 the title of the journal was *Nastava matematike i fizike* and in the year 1974, in the new series, *Nastava matematike* started its independent "career". It is concerned with the problems of teaching and learning mathematics and computer sciences in primary school (grade 1–8), secondary schools (grade 9–12) and universities. Selected topics were presented through the corresponding rubrics, written by competent domestic and foreign authors, including translations of some important papers, written by the leading mathematicians interested in the problems of teaching and learning mathematics, being sometimes a kind of landmarks in creating corresponding curricula and realization of the proposed educational process.

Editors of the journal in the period from 1952 to 1974 were *Ivan Bandić*, *Vlastimir Stajić*, *Milica Ilić-Dajović*, *Đuro Kurepa*, *Miroslav Živković*. From 1974, when the *Nastava matematike* was born, Editor in chief was *Milica Ilić-Dajović* and secretary of the Editorial Board was *Mirjana Mrmak*. Since 1991 *Nastava matematike* has been edited by *Milosav Marjanović* (Editor-in-chief) and *Vladimir Mićić*.

The list of rubrics is worded as follows: 1. Articles of general interest (edited by *M. Marjanović*); 2. Teaching and learning Mathematics in grades 1–8 (*V. Mićić*); 3. Teaching and learning Mathematics in grades 9–12 (*V. Mićić*); 4. Teaching and learning Mathematics at universities (*V. Janković*); 5. Teaching and learning Computer Sciences (*M. Čabarkapa*); 6. My lecture (*V. Mićić*); 7. Problems (*P. Mladenović*); 8. From the History of Mathematics; 9. Informations on the activities of the Mathematical Society of Serbia (*Z. Kadelburg*).

Additional quality of the journal is its availability through `http://elib.mi.sanu.ac.yu/journals/nm` as well as regular reviewing of the articles in the "Zentralblatt für Didaktik der Matematik".

The Teaching of Mathematics. Taking into account the emphasized needs of the professional community for a journal devoted to investigations in the domain of mathematics instruction, research oriented and promoting essentially new ideas and techniques relevant for teaching of mathematics at all levels, in 1998 our *The Teaching of Mathematics* started. It is an important and pleasant fact that it is welcomed by the international mathematical community. The wide range of topics, the number and prominency of authors from various countries and relevant institutions had contributed to the activities and to the reputation of the journal.

It is available in the electronic form, too, at `http://elib.mi.sanu.ac.yu/journals/tm`, and regularly reviewed in ZDM. It is worth registering that the site of *The Teaching of Mathematics* is the most frequently visited site of our mathematical journals.

In the first number of journal the following articles were published:

1. *I. R. Shafarevich*, Selected chapters from algebra
2. *J. Cofman*, Explorations and discoveries in the classroom
3. *M. Marjanović*, Schematic learning of the addition and multiplication tables-sticks as concrete manipulatives
4. *V. Janković*, Improper integral
5. *Г. Д. Глеизер, Н. Х. Розов, 8-ои международный конгресс по математическому образованию*

At the begining Teaching was edited by: *Milosav Marjanović*, *Vladimir Mićić*, *Judita Cofman*, *Grigoriĭ Davidovich Gleizer*, *Vladimir Janković*, *Zoran Kadelburg*, *Aleksandar Lipkovski*, *Žarko Pavićević*, *Žikica Perović*, *Nenad Petrović*, *Nikolaĭ Khristovich Rozov*, *Viktor Antonovich Sadovnichiĭ*, *Jordan Tabov*, and *Draga Vidaković*. The Board has been changing; the current structure one can read at the second page of the present issue.

5. Publications

The Mathematical Society of Serbia began its publishing activities nearly immediately after its founding. So, till the end of 1948 the preparations were made for starting of the scientific journal *Matematički Vesnik* and its first issue was published

in the beginning of 1949. In the same year the first non-periodic issue appeared—a collection of articles *Članci* of a well-known Serbian mathematician *Mihailo Petrović*. These activities grew through subsequent years and nowadays the Society is one of the greatest publisher of mathematical texts in Serbia.

Periodicals. There are five journals that are regularly published by our Society: *Matematički Vesnik*, already mentioned scientific journal started in 1949; *Nastava matematike*, a journal intended for the use of primary and secondary school teachers, started in 1952; *Matematički list za učenike osnovne škole*, a popular journal for primary school pupils, started in 1966; *Tangenta*, a journal for mathematics and informatics, intended for secondary school students, started in 1995; finally, *The Teaching of Mathematics*, a journal which publishes research works in mathematical education, started in 1998. We describe these journals in more details in appropriate places of this paper.

Non-periodic publications. Since the greatest part of activities of our Society is devoted to young mathematicians, it is not a surprise that its publications follow this custom. So, we have a series of books named *Materijali za mlade matematičare* intended for the use of all young (and not only young) mathematicians who want to learn more, particularly to those that are preparing for mathematical competitions, and to their teachers.

There have been many other (about fifty) publications of the Society with a great variety of themes, intention and level. Some short booklets are intended for the use of teachers in lower classes of primary schools. Some collections of problems are for the regular use of pupils in schools (primary or secondary). There were also some popular mathematical books and translations of known foreign authors. And, last but not least, there were some University textbooks and even mathematical monographs. All these publications were attempts of the Mathematical Society to enrich our mathematical literature and all of them helped to develop our mathematics, particularly in educational area.

6. Activities with the young

Activities with young mathematicians and programmers are amongst the most important and surely the best organized type of activities of the Mathematical Society of Serbia. There are several ways in which the Society tries to achieve its goals—through preparing students of primary and secondary schools on various levels, by organizing summer and winter schools, through various periodicals and non-periodic publications which are mostly devoted to the young, and by organizing competitions in mathematics and informatics, which is, if not the most important, but certainly the best known and the most attractive way.

Mathematical competitions in Serbia started in 1958 and they became an obligatory part of the work with young students on all levels. Nearly all teachers of mathematics and informatics are involved with them in some way, either by preparing their students, or taking part in the organization itself. The exact

number of pupils that take part in the competitions is not known but it certainly comes close to 100 000 in a year. Finally, about 20 of them remain who become the representatives of Serbia in international competitions.

Summer and winter schools. The work with young mathematicians begins in their schools. But a lot of them can and need more than they obtain in this way. Some (unfortunately, not all) branches of our Society organize various types of mathematical preparations, mostly (but not exclusively) devoted to future competitions. The Society itself organizes nearly every year special preparations prior the Republic and/or Federal competition (for primary or secondary level or both). Of course, teams for international competitions deserve and get a special treatment.

But there are other types of mathematical activities, organized occasionally by the Society or some of its branches which are not exclusively competition-oriented, and these are summer and winter schools. They are usually organized in a certain summer or winter resort and, besides mathematical programs, other (social, sport, ...) activities are also present.

The first Summer school for young mathematicians from primary schools was organized from 1st till 8th August, 1975 in the resort "Šuplja Stena" (near Avala mountain). Since young mathematicians were very satisfied with this school, it lasted for 12 years—up to 1986. A lot of high school teachers and university professors took part and delivered lectures, but we want to mention especially *Branka Đerasimović* who lectured in nearly all of these schools. Some other summer schools were organized in the same time or after "Šuplja Stena": Primošten (1985), Puntižela (near Pula) (1986 and 1987), Struga and Rudnik (1987), Struga and Sutomore (1988) and Petrovac (1991). In the period 1995–1997 two summer schools were organized in Karataš (near Kladovo) and one in Bela Crkva (near Krupanj). They included lectures in informatics as well.

Winter schools were organized by various branches of the Society (Niš, Vršac, Bor, Zaječar, Loznica, Pirot, Obrenovac, Subotica, ...). One that has to be mentioned in particular is the Winter school in the resort Divčibare which was regularly organized (with rare exceptions) by the Valjevo branch of our Society from 1981 till 1997. Although officially regional, it was actually a Republic school were both students and lecturers were carefully chosen all over Serbia. They were realized mostly thanks to the energy and great will of *Vojislav Andrić*. In the same period Valjevo branch organized several summer schools, too. Let us mention also three thematic schools of great quality held in Tršić from 1994–1996.

Primary school competitions in mathematics. Following the idea of secondary school competitions (which started in the late 1950's), the Mathematical Society of Serbia started primary school competitions in mathematics during the 1960's. In the beginning lower level competitions (school, county, regional) were organized. Finally, the first Republic competition took place on June 4th, 1967 in Belgrade. A hundred 8th grade pupils qualified for this competition through the lower stages. Later on the 7th-graders were invited to the Republic competition as

well, and finally even the 6th-graders joined. Nowadays the Republic competition is an event in which about 300 pupils take part and which takes place each year in another town in Serbia. It is very hard to qualify for this event, since several tens of thousands of young mathematicians try to achieve this goal.

The lower level competitions are organized by local branches of our Society. But the problems are the same for everybody and they are prepared by the central Republic Committee for competitions in primary schools. Here is the list of chairmen of this Committee from 1967 till 2007: *Bogoljub Marinković, Ilija Mitrović, Vojislav Andrić, Dragoslav Ljubić, Branislav Popović* and *Milan Jovanović*.

The Republic (now it is called State) competition is not the final stage. In 1970, the first Federal competition was organized in Belgrade, where 28 best young mathematicians, 8th graders, from 5 republics took part. Later on the 7th and 6th graders joined and the competition was organized in various towns all over Yugoslavia. Now it is replaced by the Serbian Mathematical Olympiad (SMO) which overtook one of the main goals of the Federal competitions—to elect the team for the Junior Balkan Mathematical Olympiad (JBMO).

The Mathematical Society of Serbia gave the initiative for organizing the JBMOs—the mathematical competitions for best young mathematicians from Balkan countries of the age 15.5 or less. The first of these Olympiads was organized in Belgrade in 1997, with 5 countries present. *Mirjana Đorić* conducted the Jury which stated the rules for further JBMOs. Nowadays it is a competition were all 11 Balkan countries regularly participate, and even the guests from non-Balkan countries are invited. Our country was the host once more—the 8th JBMO took place in Novi Sad in 2004 (*Zoran Kadelburg* was the chairman of the Jury). The list of young Serbian students that obtained prizes (medals) in these competitions is long, so we give here only the gold medalists: *Aleksandar Ilić* and *Milivoje Lukić* (1999), *Jelena Marković* (2005), *Teodor von Burg* and *Luka Milićević* (2006).

Secondary school competitions in mathematics. The first "competition of high school students in solving mathematical problems" was organized by the Belgrade branch of the Society in 1958. Already the next year, the first Republic competition was organized. It was precedented by two stages—in the first about 2000 students from 68 gymnasiums took part, the second was organized in 12 places, and the final stage took place in Belgrade on April 26th, 1959.

The tradition of these competitions was established immediately and there was no year without it. Hence, the 50th Republic (now it is called the State) competition has been organized this year. It was precedented, as it became the custom, by county and regional competitions. These competitions are organized by local branches of the Society, but the problems are the same and they are prepared by the central Republic Committee for competitions in secondary schools. Till 1977 Republic competitions were organized in Belgrade, but then they began to take place in various towns in Serbia which was a good way to make them more popular and often better organized.

Unfortunately, there are no precise data about all that took part in organizing

these competitions in the first years. It seems that in the beginning there was no formal chair person of the Committee for competitions, but some of the names have to be mentioned: *Jelena Mihajlović, Bogoljub Stanojević, Milica Ilić-Dajović, Konstantin Orlov, Olga Mitrinović, Miroslav Živković, Slobodanka Krstić, Koviljka Popov, Ljiljana Petrović, Vladimir Mićić*, ... Later on, the chair persons were: *Branka Đerasimović, Živorad Ivanović, Zoran Kadelburg, Srđan Ognjanović, Pavle Mladenović, Đorđe Dugošija, Vladimir Dragović, Rade Todorović, Milena Radnović, Đorđe Krtinić, Vladimir Baltić* and *Rade Živaljević*.

The Republic (State) competition is not the final stage. Only a year after the first Republic competition, the first Federal competition took place in Belgrade, too. The initiative was given by the Mathematical Society of Serbia and in the beginning it was always organized in Belgrade. Later the other republics of Yugoslavia entered the organization as well. The great majority of prizes went to Serbian students. One of the goals of the Federal competition was to make the selection for the team for international competitions. This is now done in the Serbian Mathematical Olympiad, which started from 2007.

In the same year when our first Federal competition took place, in 1959, the first International Mathematical Olympiad (IMO) was organized in Roumania. Our country joined the olympic family in 1963, sending its eight-member team to the 5th IMO in Poland. In 1967 we were for the first time the host of the 9th IMO which was held in Cetinje. Our decision was to enlarge the olympic family by inviting certain countries from Western Europe (till then only Eastern European countries took part). Four of them accepted the invitation, and so it was the beginning of the constant growth of the number of participating countries which is nowadays approaching 100. When we organized the olympiad for the second time (in Belgrade, 1977) we were also the first to invite some non-European countries. In both of these Olympiads *Milica Ilić-Dajović* was the chair person of the International Jury.

Our students won a lot of prizes (or medals, as they are now called) in the IMOs, and the vast majority of them went to students from Serbia, even in the period when other Yugoslav republics also participated in the joined team. We will list here only the students from Serbia that got 1st prizes (i.e., gold medals): *B. Varga Jožef* and *Miodrag Živković* (1974), *Rade Todorović* (1989), *Dušan Đukić* (1999) and *Mladen Radojević* (2007).

Starting form 1987 Yugoslav (resp. Serbian) teams participate regularly in the Balkan Mathematical Olympiads (BMO). Serbia was the host for the BMO twice: in 1994 the 11th BMO was organized in Novi Sad and in 2001 the 18th BMO took place in Belgrade, with *Zoran Kadelburg* conducting the Jury both times. The list of medals obtained by Serbian students in BMOs is long, so we also list only the gold ones: *Rade Todorović* (1987, 1988 and 1989), *Rastko Marinković* and *Milena Radnović* (1989), *Igor Dolinka* (1990 and 1992), *Mladen Laudanović* (1991 and 1992), *Velibor Tintor* (1992), *Dragan Stevanović* (1993), *Miroslav Treml* (1995), *Đorđe Milićević* (1995 and 1996), *Dušan Đukić* and *Goran Predović* (1998), *Marko Jevremović* (2006).

Kangaroo without frontiers. In 1980 Australian mathematicians started organizing a game-contest in the form of a multiple-choice test, intended for popularization and promotion of mathematics among the youth. Since the contest was a great success, and paying tribute to the Australian colleagues, French mathematicians made a similar contest and started it from 1991 under the name *Kangourou Sans Frontières* ("Kangaroo Without Frontiers"). In the subsequent years other (mostly European) countries joined this organization and nowadays more than 4 million students (!), age 8 to 18, from over 40 countries, each third Thursday in March are trying to solve relatively easy, but challenging mathematical problems. The contest consists in one single session: no selection, no elimination, no finale, and best students in each country and each category obtain diplomas and prizes.

Serbia joined the "Kangaroo"-family in 2005 thanks to the work of Subotica branch of our Society. In the first two years mostly pupils from Vojvodina took part, but in 2007 the whole Society began to be involved and the number of competitors rose to nearly 20 000. We are sure that in subsequent years this growth will continue.

Primary school competitions in informatics. The computer era started to have implications on competitions in Serbia in the late 1980's. The Mathematical Society of Serbia organized the first Republic competition for young programmers from primary schools in Belgrade, 1988. The initiative came from its president *Arif Zolić* and the chair of the Republic Committee was *Vojislav Stojković*. Later on, the chair persons were: *Boško Damjanović, Dušan Tošić, Milan Čabarkapa, Stanka Matković* and *Tatjana Timotijević-Stojanović*. In the beginning (since technical conditions were poor) pupils wrote their programs on paper and they were checked "by hand". Later, when enough computers (with same characteristics) were available in one place, the programs were written and checked electronically. Several publications were prepared for young programmers, including the collection of all the problems done from 1988 till 2006 in both regional and Republic competitions.

The young programmers from primary schools were the only category of pupils that did not have the opportunity to compete with their friends from other countries. This situation was overcome in 2007 when our Society organized the first Junior Balkan Olympiad in Informatics (JBOI) in Belgrade. The idea was warmly welcomed and young programmers from 6 Balkan countries came to compete in this event. The Jury with *Đura Paunić* as the chairman stated the rules for further JBOIs since it was agreed that it will become a new traditional competition. Bulgaria will be the next host in 2008.

Secondary school competitions in informatics. Competitions in informatics for secondary school students started in Serbia in the same year, 1988, as for primary schools. In the beginning, Republic competition was the final stage, and the first Federal competition (now it is called Serbian Olympiad in Informatics) was organized in 1990. In the first years of these competitions (not only in Serbia) there were discussions about the exact way that they should be organized and there were technical problems how to provide the same conditions for all competitors. Nowadays these problems has been overcome and firm rules has been

accepted for Olympiads in Informatics (both national and international).

Chairmen of the Republic Committee for competitions of secondary students in Serbia were: *Dušan Tošić*, *Jozef Kratica*, *Zoran Ognjanović*, *Milan Tuba*, *Đura Paunić* and *Dragan Urošević*. The best students from Serbia participated in several international competitions: Balkan Olympiad in Informatics (BOI), Central European Olympiad in Informatics (CEOI) and International Olympiad in Informatics (IOI). As for mathematical competitions, we list here only the names of students who obtained gold medals: *Ranko Lazić* (IOI 1991), *Uroš Midić* (IOI 1993), *Vladimir Brankov* (CEOI 1995 and BOI 1996) and *Jaroslav Blagojević* (IOI 1996). Our country was the host to a BOI which took place in Belgrade, 2002, with *Đura Paunić* conducting the Jury.

Matematički list za učenike osnovnih škola. The Union of Mathematicians, Physicists and Astronomers of Yugoslavia decided in the mid-1960's that a journal for young mathematicians from primary schools ought to be published and that Mathematical Society of Serbia would be its publisher (in the same time the journal for secondary schools was published by the Croatian Society). The idea was realized in 1967 when the first issue of *Matematički list za učenike osnovnih škola* ("Mathematical Newsletter for Primary Schools") appeared. In subsequent years it became the basic mathematical literature for pupils of the age 10–15 (4th to 8th graders), in the whole Yugoslavia, having the number of published copies of about 80 000. "Matematički list" gave also the initiative for the Federal competition of young mathematicians from primary schools and for some years was its basic sponsor. It is now still the most popular school journal and after more than 40 years it can be said that hundreds of thousands of former students can remember that in their school days they read it and tried to solve problems from it.

The first Editors of "Matematički list" were *Milica Ilić-Dajović* and *Bogoljub Marinković* and Editorial Committee consisted of mathematicians from other Yugoslav republics. During 1970's and 1980's the Editors were *Platon Dimić* and *Miroslav Živković*. *Vladimir Mićić*, *Mirjana Mrmak* and *Arif Zolić* took this post in the late 1980's, and in the beginning of 1990's new Editors were *Pavle Mladenović* and *Vojislav Andrić*. In the last decade there were several changes in the Editorial Board and the Editors in that period were: *Mirjana Đorić*, *Vojislav Petrović*, *Vera Jocković* and *Ratko Tošić*. Of course, all of the time there have been other members of the Editorial Board who helped the Editors to prepare the columns.

There are now 6 issues per year of "Matematički list" and each of them consists of several columns: general mathematical texts, texts from the history of mathematics, problems from informatics, mathematical problems for primary schools (basic level), problems from entering exams for high schools, problems from mathematical competitions, selected problems, "concurs" problems (with solutions given by the readers), mathematical jokes, chess problems. Surely, for many years "List" will stay as the most popular publication of our Society.

Tangenta. As it was already mentioned, by the decision of the Union of Mathematicians, Physicists and Astronomers of Yugoslavia, the journal intended for

young mathematicians (and physicists) from secondary schools, has been published by the Croatian Society since 1950. Hence, the need for such a journal arose in Serbia in the beginning of 1990's. The first issue of *Tangenta* ("Tangent"), a journal for mathematics and informatics, intended for secondary schools, appeared in 1995. In the first years it was prepared by the Novi Sad branch of our Society and *Ratko Tošić* was the chief Editor. Starting from 2003, the Editorial Board switched to Kragujevac, and *Nebojša Ikodinović* and *Marija Stanić* are present Editors.

The structure of each issue of "Tangenta" is now the following: two or three mathematical texts are followed by challenging mathematical problems. The column "Something in between" is dedicated to texts and problems in informatics. Problems suggested for regular tests in schools are followed by reports and problems from mathematical competitions, as well as information about problems from University entering exams. Finally, reports on new mathematical books are sometimes given. Although it is a general opinion that the quality of "Tangenta" is very high (or maybe just because this is the case) we are not satisfied with the number of secondary school students that read it regularly. We hope that this will change in subsequent years.

Materijali za mlade matematičare. The work with young mathematicians would be impossible without the basic literature. This simple fact was very early recognized in the Mathematical Society of Serbia, and it was *Milica Ilić-Dajović* who gave the initiative in early 1960's to start a special series of books devoted to the young. It was agreed that its name will be *Materijali za mlade matematičare* ("Materials for young mathematicians") and the first issue was published in 1964. In the beginning the issues of this edition were short collections of mathematical problems, but later on more serious books were published, including textbooks treating basic areas of mathematics intended for those that prepare themselves for mathematical competitions. Also, collections of problems from national and international Olympiads are regularly published. It is certain that this collection of books played a very important role in raising the level of mathematical knowledge among young mathematicians, both from primary and secondary schools, as well as among their teachers.

The number of the last issue of the series published in 2008 is 49, but a lot of them had several editions (up to eight). The Editors of this collection in past 40 years were: *Milica Ilić-Dajović, Vladimir Mićić, Vladimir Janković* and *Zoran Kadelburg*.

Let us mention here another type of special publications of our Society, also intended for young competitors. These are so called *Bilteni* ("Bulletins")—the collections of all problems (from all levels) from mathematical competitions of a certain year (either for primary schools, or for secondary ones). They are regularly published and given (free of charge) to all the participants of Republic (State) competitions.

7. Branches

The branches of the Mathematical Society of Serbia are organizations of mathematicians from smaller regions. The first branches were organized immediately after the founding of the Society, back in 1948. These were the branches in the following towns: Beograd, Niš, Novi Sad, Kragujevac, Šabac, Čačak, Požarevac, Užice, Leskovac, Jagodina, Valjevo, Sombor, Subotica and Zrenjanin.

The activities of branches are based heavily on the enthusiasm of their members. There were periods when some of the branches were very active, but also the periods when some of them nearly ceased to exist. Let us mention the Valjevo Branch which was extremely active during a decade or two when it overtook the organization of summer and winter schools for young mathematicians from the whole Serbia. As a result Valjevo, in spite being a rather small town, had a lot successful competitors and even members of our olympic teams.

The major activities of the branches are the following:

- organization of lower level competitions (county and regional);
- organizing local seminars for mathematics and informatics teachers;
- organizing additional work with talented young mathematicians, including local summer and winter schools;
- periodical organization of Republic (State) competitions.

Presently, the following branches of our Society are active: Bačka Palanka, Beograd, Bor, Kikinda, Kragujevac, Kraljevo, Lazarevac, Leposavić, Leskovac, Loznica, Niš, Novi Sad, Pančevo, Pirot, Požarevac, Smederevska Palanka, Sombor, Subotica, Šabac, Valjevo, Vrbas, Vršac, Zaječar and Zrenjanin. The biggest are the branches from Beograd and Niš, having more than 200 members; these are followed by Kragujevac and Subotica with more than 100 members. It is one of the major tasks of the Mathematical Society of Serbia to improve the work of its branches in the years to come.

Let us conclude this article by mentioning the official site of our Society

`www.dms.org.yu`

where a lot of other actual information about the Mathematical Society of Serbia can be obtained.

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