Living in a fairy land called mathematics: Svetoslav Jordanov Bilchev (1946-2010)

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ABSTRACT. In this note we give a brief presentation on the life and mathematical activity of a former member of our Editorial Board, the late Professor S. J. Bilchev, who passed away in March 2010.

1. LIFE AND PROFESSIONAL ACTIVITY

Svetoslav Jordanov Bilchev was born on 30 September 1946 in the town of Rousse, Bulgaria. In 1964 he graduated the Gymnazium "Baba Tonka".

As a high school student he was a member of the Bulgarian team for the 5th IMO (Wroczlaw, Poland, 1963) and 6th IMO (Moskow, USSR, 1964) and won 2 third prizes (bronze medals). This experience has been essential for his whole life because S. J. Bilchev never entirely abandoned his interest in elementary mathematics and educating talented students in mathematics. As a natural consequence, it is not surprisingly that he has been involved in the training of the Bulgarian team for the IMO in 1981, the Greek team in 1987 and the England team in 1995 and that many of his papers are devoted to the work with mathematically gifted students.

More than 25 students from the secondary schools in Rousse he had trained during the time took part in the International Mathematical Olympiad over the years. Some of them are now PhDs, Associate Professors or Full Professors of Mathematics and Informatics in Bulgaria and abroad (USA, Canada, England, France, etc.).

In 1969 he graduated the Moscow State University "M. Lomonosov" and in 1975 he got his doctoral degree with the thesis "Geometry of Partial Hyperbolic Systems of Two Equations With Two Independent Variables".

He started his academic career on 1st August 1969 in Rousse and spent more than 40 years to the same institution, nowadays called "A. Kanchev" University of Rousse. Here he held successively all academic positions: Midassistant (1969), Assistant (1969), Senior Assistant (1972), Chief Assistant (1975), Associate Professor (1979) and Full Professor (2010, a few weeks before he died).

He has been the Chairman of Department, Vice Director and Director of The Center of Mathematics, Dean of the Pedagogical Faculty of The University of Rousse (1994 - 2003) and Chairman of the Department of Algebra and Geometry from February 2004 till March 2010.

Professor Bilchev worked in a wide spectrum of fields in mathematics and mathematics education: Geometry, Differential Geometry, Partial Differential Equations and Systems, Ordinary Differential Equations, Differential Games, Mathematical Models in Economics, Oscillations of Neutral Differential Equations, Air Electric Nets, Geometric Inequalities, Transformations, Mathematics Education, Education of Talented Pupils and Students, Mathematical Competitions and Olympiads.

His published works include more than 140 articles, amongst which we find numerous scholarly articles, books, text books etc.

He was a tireless globetrotter in order to participate to as many as possible mathematical meetings and thus have the opportunity to share his experience, passion and enthusiasm in doing mathematics. He took part in 5 successive international congresses on mathematical education (7th ICME, 1992, Quebec, Canada; 8th ICME, 1996, Seville, Spain; 9th ICME, 2000, Tokyo, Japan; 2004, Copenhagen, Denmark; and 11th ICME, 2008, Monterrey, Mexico), in 4 congresses of the World Federation for Mathematical Competitions, in the all yearly conferences of the Union of Bulgarian Mathematicians, since 1971, in many other international forums in Cyprus, Italy, Denmark, Romania etc.

Related or not to the fact that the city of Rousse is situated just on the natural border - the river Danube, between Bulgaria and Romania - Slavy Bilchev had many friends and was acquainted by many people in Romania and, particularly, from North University of Baia Mare and Maramure's county, which he visited a couple of times, in order to attend conferences organized in Baia Mare or as a visitor in the framework of the CEEPUS network "Active teaching of mathematics".

He specialized himself abroad many times in Russia, Greece, Norway, England, Italy, Israel, he was a coordinator and took part in many international scientific and educational projects with either the University of Rousse as a contractor, or the UBM or other international mathematical organizations.

We actually met each other for the first time during the 8th Congress on Mathematical Education, Seville, July 1996, discovered our similar scientific and didactic interests and after that remained friends for the rest of our lives. This was continuously activated by the fact that we were involved in some common scientific and didactic projects: the European project MATHEU (Identification, Motivation and Support of Talented Students in European Schools) run in the period 2003-2006 and coordinated by Gregory Makrides from Cyprus, and also in the framework of the CEEPUS network I mentioned above (2006-2010).

I met him for the last time in Rousse, in February 2010, one month before his premature death. He was aware of his illness, a cancer in its final stage, but he was still extremely enthusiastic in doing mathematics and equally optimistic regarding the chances that there exist in treating his cancer by a new Russian therapy just launched, about which he told me a lot of details.

He was a fighter and he fought till the end: on the 11th of March 2010, exactly two weeks before his death (25th of March), Prof. Bilchev chaired the meeting (what turn out to be its last one) of the Department of Algebra and Geometry.

S. Bilchev was a member of the Union of Bulgarian Mathematicians, the Union of Bulgarian Scientists, the American Mathematical Society, the World Federation of National Mathematics Competitions, the Lions Club International - Rousse etc.

He served as a member of the Editorial Board of our journal, *Carpathian J. Math.*, since 1998. He was also in the Editorial Board of the *Journal of Mathematics and Informatics*, Sofia, and member of the Bulgarian National Committee for the International Union of Mathematics, since 1999.

He was a very kind, gentle man, an intellectually very honest person, open and generous man. He was also a poet, see [2] and he initiated and organized at University several "evenings" devoted to poetry and "evenings" devoted to humor and jokes. He was always a very inspired and funny jokes teller.

Slavy was an extraordinary kind, open and generous man. He was extremely respectful of other people and uncompromisingly honest. He was a fine person, invariably friendly, reliable, and helpful. Those of us who were lucky enough to have known him personally feel a tremendous sense of loss of someone very special. It was my good fortune to meet him, due to our common interest in working with talented students in mathematics and thus to become very good friends.

In his last weeks of life I have been really impressed by his optimism and the way to enjoy the life. When we met for the last time in Rousse, in February 2010, little time before his death, I was deeply impressed by his willing to live and availability to enjoy life: he insisted to have long dinners together, despite the fact it was rather difficult for him to go in and go out from the car and then ascend the stairs of the restaurant.

What a strong and beautiful man ! I'll miss him.

He left his wife, Ginka Bilcheva; a daughter, Marina, and two grand children, Anastasia and an unborn second one.

2. AWARDS AND HONOURS

1. LAUREAT OF THE SECOND BALKANIAD for Young Scientific Researchers, Athens, Greece, 1972.

2. GOLDEN SIGN of the Society for Disseminating of Scientific Knowledge "Georgi Kirkov", Sofia, 1983.

3. MEDAL "KIRIL AND METODII" - 3rd Degree, 1985.

4. MEDAL "KIRIL AND METODII" - 2nd Degree, 1986.

5. OUTSTANDING PERSON of the Ministry of National Education, Sofia, 1986.

6. HONORARY PLATE "ROUSSE" and DIPLOME from the Major of the Municipality of Rousse, 1999, 2000 and 2003.

7. MANY OTHER DIPLOMAS and AWARDS - from 1963 year till 2009.

8. DIPLOMA and a MEDAL from the Union of Latvian Mathematicians and the Institute of Mathematics and Informatics from the Latvian Academy of Sciences, August, 2003.

9. THE FIRST "MERITORIUS" AWARD as a mentor and as a creator of the Project for Creating of Didactical System of Problems on the Theme "Best Practice in Education" (18 E. 16th Street, NEW YORK, NY 10003, USA), 2003.

10. ASSOCIATE INVITED PROFESSOR of the North University of Baia Mare, BAIA MARE, Romania, September 30, 2003.

3. International projects

1. TEMPUS JEP No 04016 - "Creating a Department of Applied Mathematics and Informatics" - COORDINATOR;

2. PROJECT ERB 4061 PL 95 - 0796 (SPADE) - "Sequential and Parallel Algorithms for the Solution of Non-linear Differential Equations (with applications in the biomedical sciences and chemistry)";

3. PROJECT EURECA - "Mathematical Modeling and Investigation of Process in Medium Voltage Network Regarding the Consumption Reduction of Energy - Intensive Users";

4. PROJECTS - ERASMUS, COPERNICUS for The RU, Bulgaria, University of Ioannina, Greece, and Brunel University of West London, England;

5. PROJECT "MATHEU" of the MATHEMATICAL ASSOCIATION of the SOCIETIES of SOUTH - EASTERN EUROPE - "MASSEE" - taking part as an expert from the UNION of BULGARIAN MATHEMATICIANS

4. A selective list of S. Bilchevs publications (1990-2004)

A. Books

1. Bilchev S. J., *Application of the Method of Vectors Models for Solving Hard Geometric Problem ("6+66")* (in Bulgarian), Publishing House G. Kirkov, Sofia, 1983

2. Bilchev S. J., *Manual in Mathematics for Extracurricular Students Work* (in Bulgarian), Publisher Education, Sofia, 1986

3. Bilchev S. J., *Manual in Linear Algebra and Analytic Geometry* (in Bulgarian), Publisher University of Ruse, Ruse, 1986

4. Bilchev S. J., *Lectures in Mathematics* (in Bulgarian), Publisher University of Ruse, Ruse, 1986

5. Bilchev S. J. and Terzian S. (Eds.) Differential Equations and Applications, Proceedings of the Fifth International Conference on Differential Equations, Ruse, August 24-29, 1995

6. Bilchev S. J. and Terzian S. (Eds.) Proceedings of the Scientific Conference of the University of Ruse, Issue 8: Mathematics and Informatics, Vol. 37, University of Ruse, Ruse, 1999

7. Bilchev S. J., Such Love (Poems, in Bulgarian), Publishing House Denitsa, Ruse, 2000 8. Bilchev S. J., Bokov, V., Vlamos, P., *Mathematics Models in Economics*, V Publications, Athens, Greece, 2001

9. Bilchev S. J., *Junior Balkan Mathematics Olympiad 1997 - 2009* (in Bulgarian), Publisher Mediatex, Pleven, 2009

10. Bilchev S. J., *Stimulating the Mathematical Creativity of Students* (in Bulgarian), Publisher Mediatex, Pleven, 2009

B. Articles

1. Bilchev S. J. and Velikova, E.A., *On a Certain Triangle Transformation and Some of Its Applications*, Rad Jugoslovenske Akademija Znanosti i Umjetnosti, Rada 450, Matematicke Znanosti, Svezak 9, Zagreb, 1990, 69-76.

2. Velikova E. A., Janous W. and Bilchev, S. J., *Generalization of an Special Transformation for a Triangle and Some of Its Applications* (Bulgarian), Education of Mathematics and Informatics, No. 5, 1991, 17-24.

3. Bilchev S. J., Kontogiannis, D. G., *A Short and Elementary Proof of Mushkarov-Simeonov's Inequality*, Rad Hrvatske Academija Znanosti i Umjetnosti, Rada 456, Matematicke znanosti, Svezak 10, Zagreb, 1991, 33-37

4. Bilchev S. J., Rashkov, P. I., *Specialized Groups of Advanced Growth in Rousse - Achievements and Problems*, Math. Competitions, **4** 1991, No. 1, 34-46

5. Bilchev S. J. and Zhitomirsky G. I., *Maximum and Its Properties, Multicriterial Dynamical Problems Under Uncertainty*, Collection of Scientific Works, Orekhovo - Zuevo, Russia, 1991, 11-14

6. Bilchev S. J. and Velikova, E. A., *A Group of Transformations for a Triangle and Some of Its Applications*, Mathematics and Education in Mathematics, Proc. of XX Spring Conf. of UBM, Varna, April 2-5, 1991, Sofia, BAS, 1991, 377-387

7. Bilchev S. J., Grammatikopoulos M. K. and Stavroulakis, I. P., *Oscillations of Second-Order Neutral Differential Equations with Deviating Arguments*, Contemporary Math., **129** (1992), 1-21

8. Zhitomirsky G. I. and Bilchev, S. J., *About a Solution of an Antagonistic Game with Vector Function of the Payoff* (Russian), Mathematics and Education in Mathematics, Proc. XXI Spring Conf.UBM, Sofia, April 3-6, 1992, Sofia, 1992, 187-192

9. Bilchev S. J., Grammatikopoulos M. K. and Stavroulakis, I. P., *Oscillations of Higher Order Neutral Differential Equations*, J. Austr. Math. Soc., Series A, **52** (1992), 261-284

10. Bilchev S. J. and Lesov, H., *The Spieker Point and Some of Its Applications* (Bulgarian), Education of Mathematics and Informatics, Sofia, No. 6, 1992, 34-38

11. Bilchev S. J., Velikova, E. A. and Lesov, H., *Spieker and Crelle-Brocard Points and Their Crucial Role for the Theory of Geometric Inequalities*, Mathematics and Education in Mathematics, Proc. XXII Spring Conf.UBM, Sofia, April 2-5, 1993, 173-180

12. Bilchev S. J. and Velikova, E. A., *The Teaching of Transformations for Solving Competition Problems as a Route Towards Higher Mathematics*, Math. Competitions, 6 (1993), No. 2, 45-52

13. Bokov V. V., Bilchev S. J., *Prognosis and Management of the Training of Specialists in a Multiregional Economical System - Multilevel Optimization* (Russian), Mathematics and Education in Mathematics, Proc. XXII Spring Conf. of UBM, Sofia, April 2-5, 1993, 194-197

14. Bokov V. V., Bilchev S. J., *Prognosis of the Optimal Samuelson - Sollow Curve: Stakelberg - Nash Differential Game* (Russian), Sc. Proc. VTU "A. Kanchev" - Rousse, Volume XXXV, Ser. 8, Physics, Mathematics and Informatics, Rousse, 1994, 8-15

15. Bilchev S. J., Grammatikopoulos M. K. and Stavroulakis, I. P., *Oscillation Criteria in Higher Order Neutral Equations*, J. Math. Anal. Appl., 183 (1994), 1-24

16. Bokov V.V., Bilchev, S., Gladyshev, V., *Model of Controllable macroeconomic Equilibrium and Optimal Equipment of Economic System by Labour Force*, Mathematics and Education of Mathematics, Proc. XXIV Spring Conference of the UBM, Svishtov, April 4-7, 1995, Sofia, 318-323

17. Bokov V.V., Bilchev S. J., *Prognosis of the Optimal Phillips Curve for Applications in Econometric Models* (Russian), Mathematics and Education of Mathematics, Proc. of the XXIV Spring Conference of the UBM, Svishtov, April 4-7, 1995, Sofia, 360-369

18. Bokov V. V., Bilchev, S. J., *Mathematics Models for Short Time Prognosis and Management in Economics of the Education* (Russian), Proc. 5th Int. Conf. on Diff. Eq. and Appl. - CDE'V, Rousse, Bulgaria, August 24-29, 1995, 15- 28

19. Velikova E. A. and Bilchev, S.J., *Joint and Independent Creative Work of the Talented Students and Their Teachers During the Process of Learning of Mathematics* (Bulgarian), Mathematics and Education of Mathematics, Proc. the XXIV Spring Conference of the UBM, Svishtov, April 4-7, 1995, Sofia, 88-108 (invited talk)

20. Bokov V. V., S. J. Bilchev and V. P. Gladyshev, *The High Technological Method for Inflation Control in Economic System: Differential Game*, Proc. of the University of Sofia, Sofia, Volume 88, No. 1, 1996

21. Bilchev S. J. and Velikova E. A., *On Some Asymmetric Trigonometric Inequalities - Another Way of Competition*, Math. Competitions, 9 (1996), No. 2, 30-39

22. Laos Nikolaos K., Svetoslav J. Bilchev, Some Results for an Infinitely Extended 2 - Polyhedron of One Plane, Mathematics and Education in Mathematics, Proceedings of the XXV Spring Conference of the Union of Bulgarian Mathematicians, Kazanlak, April 6-9, 1996, Sofia, 78 - 80

23. Velikova E. A., Bilchev, S. J., *On Inequalities Connecting Certain Intracentral Distances in a Triangle*, Mathematics and Education in Mathematics, Proc. XXVI Spring Conf. Union of Bulgarian Mathematicians, Plovdiv, April 22 - 25, 1997, Sofia, 304-311

24. Velikova E., Bilchev, S. J., *A Solution of a Problem of Paul Erdos and Related with its Transformation*, Mathematics and Informatics Quaterly, Singapore, Vol. 7, No. 3, September 1997, 120-126

25. Bokov V. V., Bilchev, S. J., Perevertkin, S. M., *Management of the Inflation in Economical System - Educational Game* (Russian), Mathematics and Education in Mathematics, Proc. of the XXVI Spring Conf. of the UBM, Plovdiv, April 22 - 25, 1997, Sofia, 223-230

26. Velikova E. A., S. J. Bilchev , *The Method of Transformations for Solving Trigonometric and Mixed Inequalities*, Geometry & Mathematics Competitions, Isfahan Univ. of Technology, Isfahan, IRAN, 1998, 106-117

27. Bokov V. V., Bilchev, S.J., *Desargues's Metaphysical Heuristics in One Recent Problem of the Mathematical Knowledge*, Proc. 6th Greek Conf. on Mathematical Analysis, Karlovassi Samos, September 5-7, 1997, Univ. of AEGEAN, Faculty of Mathematics, Karlovassi, Greece, 1998, 39-45.

28. Kontogeorgis G. M., Vlamos, P. M. and Bilchev, S. J., *Limiting Cases Of Thermodynamic Functions*, Bul. Stiint. Univ. Baia Mare, Ser. B, Fasc. Mat.-Inform. **15** (1999), No. 1-2, 9-16

29. Bilcheva S. J. and Velikova, E. A., *Asymmetric Quadrilateral Inequalities*, Proc. of 16th Panhellenic Conf. on Mathematics Education, Greek Mathematical Society, Larissa, Greece, November 12-14, 1999, 270-28 (Plenary Report)

30. Velikova E. A. and Bilchev S. J., *Creative Work With Mathematically Talented Students*, Proc. of 16th Panhellenic Conf. on Mathematics Education, Greek Math. Soc., Larissa, Greece, November 12-14, 1999, 475- 478

31. Bokov V. and Bilchev S.J., *Model of Non Crisis Evolution of Connected - Diversification Systems: Shumpeter Approach* (Russian), Sc. Session "45 Years University of Rousse "Angel Kanchev", October 7-8, 1999, Rousse, Scientific Works, Volume 37, Ser. 8, Mathematics and Informatics (Sv. Bilchev - Editor), 1999, 65-70

32. Bokov V. and Bilchev S. J., Vlamos P. M., *Perspectives of Training Specialists of Logistics on the Base of Game Theory: Example of Russia and Bulgaria* (Russian), Sc. Session "45 Years University of Rousse "Angel Kanchev", October 7-8, 1999, Rousse, Scientific Works, Volume 37, Ser. 8, Mathematics and Informatics (Sv. Bilchev - Editor), 1999, 71-91

33. Vlamos P. M., Bilchev S. J. and Papanagiotakis D. V., *Active Web Mathematics*, Sc. Session "45 Years University of Rousse "Angel Kanchev", October 7-8, 1999, Rousse, Scientific Works, Volume 37, Ser. 8, Mathematics and Informatics (Sv. Bilchev - Editor), 1999, 105-111

34. Bilchev S. J., Velikova E.A. and Genchev S., *The Advantages of The Method of Evaluating "MQ - MA"* (Bulgarian), May Scientific Reading of The Faculty of Education - Silistra, May 19 - 20, 2000, Section 5 "The Education on Natural - Mathematics Sciences", Silistra, 2000, 247-259

35. Bilchev S. J., *Prof. Alipi Mateev - the Scientist, the Teacher, the Man of Wisdom, the Artist, the Friend*(Bulgarin), Mathematics and Informatics, No. 5-6, Sofia, 2000, 31-32

36. Bilchev S. J., *40 Years of School Mathematical Circles in Rousse* (Bulgarian), Mathematics and Education in Mathematics, Proc. of the XXX Spring Conf. of UBM, Borovets, April 8-11, 2001, BAS, Sofia, 51-65

37. Bokov V., Bilchev S. J. and Vlamos P.M., *A Model of Management of Targeted Capital Structure of A Company*, Bul. Stiint. Univ. Baia Mare, Ser. B, Fasc. Mat.-Inform. **17** (2001), No. 1-2, 13-22

38. Bilchev S. J. and Vlamos P., *A New Glance on The Fundamental Triangle Inequality*, Proc. of the Union of Scientists - Rousse, Ser. 5, "Mathematics, Informatics and Physics", Vol. 1, Rousse, 2001, 69-73

39. Bilchev S. J. and Velikova E. A., *The Advantages of MQ - MA Examinations*, Proc. of the Union of Scientists - Rousse, Ser. 5, "Mathematics, Informatics and Physics", Volume 2, Rousse, 2002, 3-14

40. Bilchev S. J and Kripakov A., *Methods of Decreasing of Currency and Price Risks of the Enterprises* (Russian), Proc. of the Union of Scientists - Rousse, Ser. 5, "Mathematics, Informatics and Physics", Vol. 4, Rousse, 2003, 129-147

41. Bilchev S. J., Bilcheva M. S., *The Method Of Infinite Descent*, Proc. of the Union of Scientists - Rousse, Ser. 5, "Mathematics, Informatics and Physics", Vol. 4, Rousse, 2003, 148-162

42. Bilchev S. J., *This Fairy - Land Named "Mathland"*, Proc. of the Union of Scientists - Rousse, Ser. 5, "Mathematics, Informatics and Physics", Vol. 4, Rousse, 2003, 168-180

43. Bilchev S. J., *About an Unexpected Transition from Algebra to Geometry*, Math. Competitions, 17 (2004), No. 2, 17-27

S. Bilchev (center) with Zoiţa Berinde and Vasile Berinde in Rousse, February
2010

REFERENCES

[1] Berinde, V., *On a homogeneous inequality given at the 2004 JBMO. Dedicated to the memory of my friend Professor Svetoslav Jordanov Bilchev (1946-2010)*, Gazeta Mat., Ser. A (submitted)

[2] Bilchev S. J., *Such Love* (Poems, in Bulgarian), Publishing House Denitsa, Ruse, 2000

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