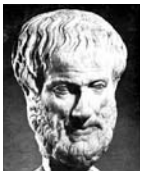

Newsletter

for the History of Science in Southeastern Europe

Published by the History, Philosophy and Didactics of Science and Technology Programme
Institute of Historical Research, National Hellenic Research Foundation
Sponsored by DACALBO project, Thales programme, National Strategic Reference Framework 2007-13

No 17 / December 2012

http://www.hpdst.gr
ISSN 1108-5630

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1ST WORKSHOP OF THE NETWORK FOR THE HISTORY OF SCIENCE IN SOUTHEASTERN EUROPE

THE FRAMEWORK

Since the beginning of the 1990s, historians of science from various countries of Southeastern Europe are collaborating on research subjects of common interest. The exchanges between these scholars led to the decision, in 1999, to publish a common Newsletter for the History of Science in Southeastern Europe. The History, Philosophy and Didactics of Science and Technology Programme (Institute of Historical Research / National Hellenic Research Foundation and Department of Education / University of Athens) is in charge of this publication. The Newsletter presents the activities of the teams of history of science in Southeastern Europe, the events organized, the publications, institutional news, courses and PhDs of interest and every other news concerning the history of science in the region. The Newsletter is published on hard copy and sent to more than 100 Institutions all over the world, and also on the web (http://www.hpdst.gr/publications/newsletter).

Except the Newsletter, a number of bilateral collaborations funded by countries of the region or by international resources have been implemented. For example, a Greek-Serbian common research project on Greek-Serbian scientific relations, four Greek-Turkish Symposia on the history of science during the Ottoman period and the National States of the 19th c. (in Liège, Mexico, Beijing and Budapest), common publications as thematic issues of international journals (*Archives internationales d'histoire des sciences*) or books published by international editors (*Brepols*), common research seminars (summer seminars in Syros and Elati, Greece), etc. Research collaborations involving more than two countries have also been implemented, such as Conferences and Symposia on the history of science in Southeastern Europe, the scientific and technological modernization of the region (a common project with LATTS, ENPC-CNRS, France), the scientific integration of the region to Europe (with the Univ. of Nantes), etc.

Four years ago, a new international journal for the history of scientific ideas, *Almagest*, was published and distributed by Brepols publishers. *Almagest*'s editorial board comprises of distinguished colleagues from all over the world but especially Southeastern Europe is well represented (see http://www.hpdst.gr/publications/almagest). One of the aims of the journal is to present the state-of-the-art research concerning history of science in Southeastern Europe. *Almagest* is published bi-annually and four issues have already circulated.

The important achievements of this informal network led to the decision to organize a meeting aiming to discuss the future of the collaboration. The meeting was titled "First Workshop of the Network for the History of Science in Southeastern Europe" and took place in Athens, 3-5 February 2012, financed by the European programme Hephaestus (FP7, RegPot1, 2008). Participants from Turkey, Romania, Bulgaria, Serbia, Croatia and Greece representing 9 institutions took part, and also two collaborators of the Network from two French institutions (Vincent Jullien, Univ. of Nantes and Michela Malpangotto, SYRTE, CNRS-Observatory of Paris) and Davide Poletto, as representative of the Venice office of UNESCO.

Bellow we present some some papers of the workshop.

Efthymios Nicolaidis
Institute of Historical Research
National Hellenic Research Foundation

HISTORICAL FACTS AND VISION FOR THE NEAR FEATURE ON THE HISTORY OF SCIENCE IN CROATIA

We need in Croatia, here and now, a formal establishment of the Croatian Society for the History of Science (CSHS), to couple historians, philosophers and scientists of the 7 universities: Zagreb (www.unizg.hr; 1669), Rijeka (www.uniri.hr; 1973). Split (www.unist.hr; 1974), Osijek (www.unios.hr; 1975), Zadar (www.unizd.hr; 2002), Dubrovnik (www.unidu.hr; 2003) and Pula (www.unipu.hr, 2006). History of Science (HS) has inevitably appeared and developed in Croatia with the establishment and evolution of the universities listed; University of Zagreb itself has history of almost four centuries, whereas others were recently or very recently founded. Five out of seven universities in Croatia are located at the towns along the Adriatic coast of the Mediterranean area: Rijeka, Split, Zadar, Dubrovnik and Pula. However, HS in Croatia requires today new European Initiatives and Vision for the Future in the next 5 or 10 years.

For a brief review of the HS in Croatia, let us note that its early stage was characterized by the theological and philosophical thought: Dominicans in Zadar (1369) founded 'studium provinciale' for theology, which were updated (1495) into the 'studium generale' and bestowed by a privilege of awarding doctorates in theology (1553). University of Zagreb was founded in 1669 and has a remarkable life history of 343 years by now. The core of the university was the Jesuit Academy in the Royal Free City of Zagreb. University of Zagreb was reorganized into the first modern university in Croatia (1874) by the humanistic trivium: Faculty of Law, Theological College, Faculty of Arts and Letters. By the end of the 19th century and the beginning of the 20st century, the faculties of natural sciences, engineering and other related disciplines were also established.

The modern era of the HS in Croatia was essentially inaugurated by Dr. Franjo v. Marković (1845 - 1914), philosopher and rector of the reformed University of Zagreb. His rector speech (1881/82 academic year) has been understood as an epoch-making paper for the modern HS in Croatia. This paper was presented under the title: "Philosophische Schriftsteller kroatischer Abkunft jenseits des Velebit vom XV. bis XVIII. Jahrhundert". In the paper, 22 philosophers and scientists, among them F. Petriš (Petrišević, Patricius) and R. J. Bošković, were critically examined and evaluated. His thought is very interesting: "Only that nation which has attained a homeland of thought has seized true homeland" (by F. Marković). This point might be of importance today for the mutual collaboration between countries of Southeastern Europe ('Nahwirkungsprinzip').

Left: Frane Petrić (Franciscus Patricius, 1529 – 1597). Right: Ruđer J. Bošković (Rogerius Joseph Boscovich, 1711 − 1787). The 3rd centenary of Boscovich's birth was celebrated in 2011 in Croatia.

The Croatian Academy of Sciences and Arts (HAZU) celebrated its 150th anniversary in 2011. Its founder was Josip Juraj Strossmayer (1815 − 1905), Bishop of Đakovo, who was the first modern European thinker in Croatia. Strossmayer had introduced the name 'Academy Yugoslav' or 'Slavorum' (1861 – 1991; renamed 'Croatica' in 1991), acting historically by the motto: "From Education towards Freedom." In his speech to the Croatian Parliament (1861), Bishop Strossmayer had mentioned *inter alia*: "Athens (a small city) and ancient Greece was essentially limited in space, but due to their intellectual and moral forces Athens and Greece have been celebrated in all parts of the world, and their glory will never fall in darkness."

We mention only academic departments, with their institutes and/or divisions, which are particularly important for the contemporary period of the HS in Croatia. In first place is the Department of Mathematical, Physical and Chemical Sciences which incorporates the Institute for the History and Philosophy of Science, which includes three related offices: The Division for the History of the Natural and Mathematical Sciences; The Division for the Philosophy of Science and Peace (Ivan Supek, 1915 – 2007; physicist, philosopher, historian and writer, founder and most prominent scholar of the office); The Division for the History of the Medical Sciences (Mirko Dražen Grmek, 1924 – 2000; medical doctor, historian of science, philosopher – epistemologist and one of the great universal thinkers of the 20th century; he worked in Zagreb, most of his life was spent in Paris, and in Italian university cities). Other important departments for the HS are: Department of Social Science, Department of Natural Sciences, Department of Medical Sciences, and Department of Technical Sciences (since 1996).

To report on the contemporary period of the HS in Croatia we present the Institutions and Journals with their details (selection by the author). The journals are listed according to chronological order:

1. Encyclopaedia moderna (1966 – 76, 1992 – 2000); *Journal for the synthesis of sciences, arts and social praxis*, Editor in Chief: I. Supek, JAZU / HAZU, Zagreb; Scientia (Yugoslavica), 1975 – 91, Zagreb.
2. Institute of Philosophy (since 1967), Zagreb. Journal: *Prilozi za istraživanje hrvatske filozofske baštine* (since 1975); Areas: humanities, philosophy.
3. Croatian Philosophical Society (HFD), Zagreb (since 1957), publisher of two journals: *Filozofska istraživanja / Philosophical Investigations* (since 1980), and Synthesis *Philosophica* (since 1986); Areas of both journals: humanities, philosophy. Synthesis Philosophica is indexed in the CC base.
4. *Croatian Journal of Philosophy* (since 2001), Publisher: Kruzak d.o.o., Zagreb; Area: Philosophy.
5. University Centre for Croatian Studies (since 1992), Zagreb. Journal: *Prolegomena – časopis za filozofiju / Prolegomena – Journal of Philosophy* (since 2002), Society for the Advancement of Philosphy, Studia Croatica, Zagreb.

Top event in Croatia in the fields of philosophy and history of science during the last 20 years was the continuous series of 20 symposia *The Days of Frane Petrić* (*DFP*), that were held at the city of Cres in the island of Cres, Croatia. The *DFP* symposium will continue to be held annually in the future. The historico-epistemological perspective of the *DFP* focuses on the renaissance and reveals the interdisciplinary bridges between history and contemporary developments in philosophy, cosmology, science, ethics and bioethics, technique, religion, and arts. The dynamic development is marked by the growing number of about 4 participants each year, for the period 1992 – 2011. A carefully chosen contemporary theme for each symposium seems very important, such as the moral issues for the 1st and 2nd symposia, relating to the philosophy of nature, ecology, philosophy of time, bioethics, Einstein and the World Year of Physics 2005, identity issues.

To conclude we report two asessments and expectations for the History of Science and Technology (HST) in Croatia:

- We accept and expect the common actions on HST in Croatia by the institutions and historians of the SE-region. The best bridge towards these goals is the initiative of the *1st Workshop in the History of Science in Southeastern Europe Countries* held in Athens, February 4, 2012.
- University of Zagreb, and particularly the Faculty of Electrical Engineering and Computing (FER), has demonstrated interest and results in the field of HST. Due to its actual academic role in Croatia, FER should be an

intermediate platform for communication between Croatia with the SE countries on the HST contemporary issues. Finally, inside FER building stands, as nowhere else in Croatia, the unique inscription by Plato: "He who does not know geometry may not enter" ("*Geometria nescius*, *ingrediatur nemo*.").

Tomislav Petković
Department of Applied Physics, Faculty of Electrical Engineering and Computing (FER), University of Zagreb, Croatia

NEW HISTORY OF SCIENCE AND TECHNOLOGY BOOKS AND WORKS IN TURKEY

Books

Katib Chalabi, *Sullam al-Wusul ila Tabaqat al-Fuhul* (The Ladder of Elevation to the Lives of the Great and Famous by Generation), Edited and Introduction by Ekmeleddin İhsanoğlu, in collaboration with Mahmoud Al-Arnaut and Saleh Sadawi Saleh, Indices by Selahaddin Uygur, 2 eds.: Arabic-English and Arabic-Turkish, 6 vols.; IRCICA, Istanbul, 2010, Vol. I: 501 p. Ar. + 50 p. English or Turkish; Vol. II: 439 p.; Vol. III: 473 p.; Vol. IV: 485 p.; Vol. V: 489 p.; Vol. VI: Index, 420 p.

The present book is a critical edition of the major biographical work *Sullam al-Wusul* by Katib Chalabi (d. 1657), one of the most important Ottoman scholars of the 17th century. His most well-known works are *Kashf al-Zunun* (bibliographical), *Sullam al-Wusul* (biographical), *Fezleke* (general Islamic history) and *Cihannuma* (geographical). The first cited, an outstanding bibliography in the history of science, and the last cited, were published multiple times. *Sullam al-Wusul* remained unpublished until today (*Fezleke* as well).

The book is arranged in two editions of 6 volumes each. The main body is in Arabic in both editions, whereby the comprehensive Introduction by Prof. Ekmeleddin İhsanoğlu and the Preface by Dr. Halit Eren are provided also in English in one of the editions and also in Turkish in the other edition. The sixth volume comprises the Index.

This biography records the lives and works of important statesmen and scholars in Islamic history and also of renowned personalities from pre-Islamic times who held a place in education and literature. In the second part of the book Katib Chalabi provides information about the personalities' names derived from their places of origin or their genealogy. In the prologue, he explains the method he followed in the book, comments on the science of history, and adds information on names derived from places or genealogy. In this regard *Sullam al-Wusul* is also a book on genealogy.

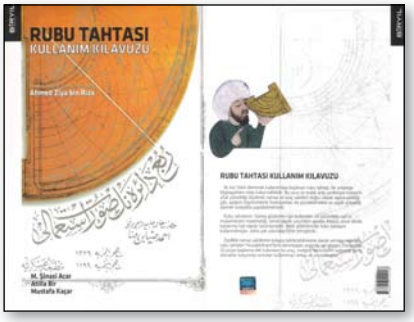
The Index section has been added to the edition. It is composed of four parts: personal names, place names, publication titles, names of institutions.

Mustafa Kaçar, Şinasi Acar and Atilla Bir, *XVI. Century Ottoman Astronomer, Takiyuddin's Instruments of Astronomical Observations*, İstanbul: İş Bankası Publications, 2011, 172p.

Astronomer Takiyuddin er-Râsıd (1526-1585) used the methodologies of scientific observation, experiment and research altogether in a similar way to the modern founders of as-

tronomy, Tycho Brahe (1546-1601) and Galileo Galilei (1564-1642). Takiyuddin improved, designed and used nine different instruments for his astronomical observations in Istanbul Observatory which was established by Ottoman Sultan Murad III in 1579. Among them were a wooden quadrant, "Zatu`l-evtar" a mechanical clock of astronomy, dividing an hour into 60 minutes, a minute into 60 seconds, a second into 5 split seconds for determining the equinoxes. When compared with Tycho Brahe's astronomical instruments, these instruments were similar in form, but superior in size and presicion. He introduced his observation instruments in his famous book *Alat-ı Rasadiyye li Zic-i Şehinşahiyye.* The present book, *XVI. Century Ottoman Astronomer, Takiyuddin's Instruments of Astronomical Observations*, is composed of the technical interpretation, transliteration and facsimiles of various copies of his above-mentioned book.

Ahmed Ziya Bin Rıza, *A Guidebook to the Use of a Quadrant*, İstanbul: Biryıl, 2010, 180p. (Prepared by Şinasi Acar, Atilla Bir and Mustafa Kaçar), 180p.



The present book written by Ahmed Ziya bin Rıza is a rare source describing the use of the quadrant in detail during the Ottoman period. *Rubu Tahtası*, the quadrant, being used for the first time in Islamic world is, in a sense, the predecessor of the computer. Through this practical and cheap instrument, sun's apogee, and prayer and fasting times can be calculated correctly. It is also used in solving the angles' trigonometric functions as well as making various arithmetical calculations. *Rubu Tahtası*, used until the beginning of the 20th century in the Ottoman Empire, was later abandoned in the face of new modern developments and fell into oblivion. The book also gives information about the biography of the author, as well as elaborates explanations supported by well-prepared graphics.

Ahmed Ziya (Akbulut), *A Guidebook to the Making of a Sundial*, İstanbul: Biryıl, 2010, 180p. (Prepared by Atilla Bir, Mustafa Kaçar and M. Şinasi Acar), 188p.

The book was originally written by Ahmed Ziya Bey, the last representative of the traditional period, mathematician, astronomer, sundial producer, cartographer and museum curator. This book with original muniscrip texts covers the history of sundials and exhibits well-illustrated tables, graphics and charts. However, the most important side of the book is the section in which Ahmed Ziya Bey explains how to determine a place for the new arms to be mounted and how the lengths of the arms will be determined through various calculation methods, in case the arms of the clock at the bottom of the walls of the mosques get lost.

This guidebook covers almost every detail about the sundials from the Ottoman period to the present. Beside the properties of the sundials, readers can discover and learn which mosques contain clock arms, where to erect a sundial, and most importantly how to read a sundial.

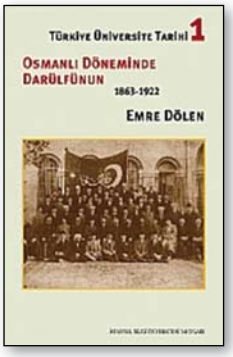
Ekmeleddin İhsanoğlu*, Darülfunun: the focus of Ottoman cultural modernization, Istanbul: IRCICA, 2010, 2 vols., 1126 p.*

Ekmeleddin İhsanoğlu, *Darülfünun. Osmanlı'da Kültürel Modernleşmenin Odağı* (Darülfunun: the focus of Ottoman cultural modernization), Istanbul: Research Centre for Islamic History, Art and Culture, 2010, 2 vols., 1126 p.

This is a comprehensive book on the history of the modern university which emerged as part of the cultural modernization process that followed the *Tanzimat* reforms. It records and evaluates on basis of first-hand sources the stages of formation of the university from its conceptualisation until its institution as the University of Istanbul. It is the result of many years of research by Prof. Ekmeleddin İhsanoğlu, a leading figure of the history of science, education and culture.

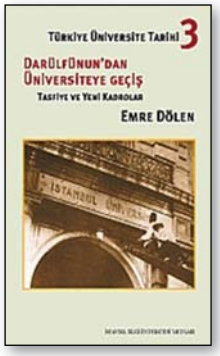
The formation of a European-type university represented a transformation in Ottoman cultural and educational life. In addition to building the university's legal, administrative and financial structures, it necessitated policy decisions on such subjects as the university model to be followed, the curricula and the faculty. The present work reviews the process extensively. It is comprised of three books laid out in two volumes. The first book examines the emergence of the idea of the modern university beginning from the period of the *Tanzimat* and its establishment after three attempts, and analyses its evolution in stages, until the 1933 university reform. The second book looks into the development of the *Darülfünun* in the light of evolving concepts and trends in cultural, social and scholarly life. As to the third book, it describes in detail the development of each of the Faculties of Science, Letters, Theology, Law and Medicine with respect to curricula, faculty, institutes affiliated, among other aspects of their activities.

Emre Dölen, *History of University in Turkey,* İstanbul: İstanbul Bilgi University Press, 2010, 5 vols.

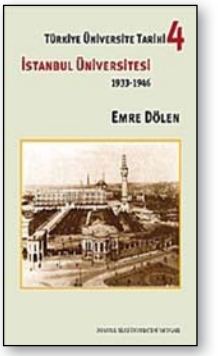


Vol.1
Darülfünun in Ottoman Period (1863 – 1922)
Contents:
First attempts to establish a Darülfünun:
Darülfünun-ı Osmanî. Darülfünun-ı Sultanî, *Darülfünun-ı Şâhâne. Mekteb-i Tıbbıye-i Şâhâne* (Royal Medical School). *Tıp Fakültesi* (Faculty of Medicine).
Darulfünun in the time of WWI and Armistice. Darulfünun Strike.
Appendices: Laws, Regulations, Documents, Darulfünun Song, Student Declerations.

Vol. 2
Ottoman Darülfünun in the Republican Period(1922-1933)
Contents:
Reorganisation of Darülfünun. Student Protests and Discipline
French Müderrises (Teachers) in Darülfünun. Faculties.
Darülfünun Libraries. Financial State and Budgets.
Appendices: Ordinances. Darülfünun Instructions. Student Conflicts.
Darülfünun Union's Rules and Regulations. Tevhidi Tedrisat Kanunu (Unified Education Law). Documents.

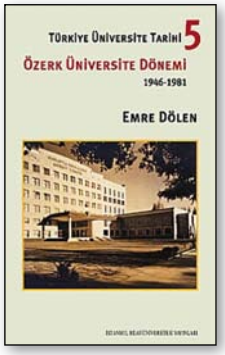


Vol. 3
Transition from Darülfünun to University (Liquidation and New Cadres)
Contents:
Towards the Darülfünuns Dissolution. Albert Malche's Report and Draft Law. Abolition of Darülfünun. Beginning of Liquidation. Comers and Goers. Coming of the Refugee German Professors. The Legent of Albert Einstein's Letter to Atatürk
Appendices: Nationalisation of History and Civics Education.
Law on the Abolishment of İstanbul Darülfünunu. Bills of the Foreign Proffesors.
A Bill about Ernst Hirsch, Fritz Neumark and Fritz Arndt's Reception to Turkish Nationality.
Einstein's Letter To Prime Minitry.

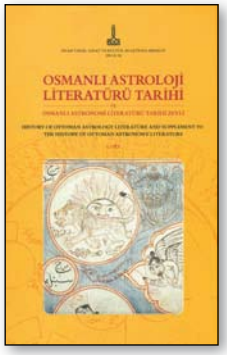


Vol. 4
İstanbul University (1933-1946)
Contents:
Foundation of İstanbul University and Its First Year. Faculties of Medicine and Law.
Reorganisation of Istanbul University. İstanbul University Publications.
Students, Education Durations and Diplomas.

First Ten Years of İstanbul University. Chemistry Education and German Influence. Appendices: The Law on Istanbul University. Decisions and Bills.
İstanbul University Regulations for Associate Professors, Assisstants and Interns. Establishment of İstanbul Üniversitesi Law Faculty and Ankara Language and History-Geography Faculty.

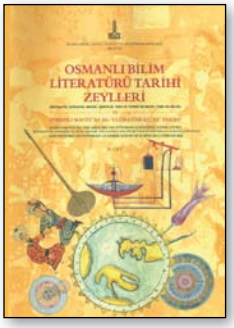


Vol. 5
Cilt Autonomous University Period (1946-1981)
Contents:
Foundation of the Institute for Higher Agriculture. Autonomous University Period and New University Law. Liquidations and Start of the Incidences. The Case of 147's. 1933 Reform of 1933. Appendices: Laws and Regulations on Universities. Constitutions of 1961, 1971 and 1982 and Law of Universities. State Officials Fired as a Result of Security Investigation and Some Other Reasons.



Ramazan Şeşen, M. Serdar Bekar, Gülcan Gündüz, and Veysel Bulut, *History of Ottoman Astrology Literature and Supplament to the History of Ottoman Astronomy Literature,* Editor: E. İhsanoğlu, İstanbul: IRCICA, 2011

This book is the bio-bibliography on the history of astrology, as an eighth field of science covered by the IRCICA History of Ottoman Scientific Literature Series, together with additions and corrections – supplements to the volume on astronomy, which was the first volume in the series.



Ramazan Şeşen, M. Serdar Bekar, Gülcan Gündüz, and Veysel Bulut, *Supplament to the History of Ottoman Scientific Literature* (Mathematical, Geographic, Music, Military Arts, Natural and Applied Sciences, and Medical Sciences Literature) and *History of Ottoman Classification of Sciences Literature,* Editor: E. İhsanoğlu, İstanbul: IRCICA, 2011

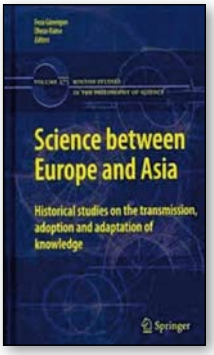
The present book contains the supplements to the volumes published earlier on mathematics, geography, music, military arts, natural and applied sciences, and medical sciences on one hand, and a bibliography of books on the classification and methodology of sciences written during the Ottoman period, on the other. Some additions were made to the entries about authors included in earlier volumes; thus, information obtained later about 218 authors and their works was added. A list of nearly 2000 maps was added to the supplement to the volume on geography. The Introduction by Ekmeleddin İhsanoğlu recapitulates the overall features and findings of the project during the twenty-five years of its implementation.

Ramazan Şeşen, M. Serdar Bekar, Gülcan Gündüz, and Veysel Bulut, *General Index of the History of Ottoman Scientific Literature,* Editor: E. İhsanoğlu, İstanbul: IRCICA, 2011

IRCICA's History of Ottoman Scientific Literature series is now complete with the General Index of the History of Ottoman Scientific Literature. This last volume contains the indexes of authors and works mentioned in the earlier 17 volumes of bio-bibliographies which were devoted to the scientific literature published in various branches of sciences throughout the Ottoman period and all over the Ottoman territory.

The index is composed of three parts; the names of authors/translators in the Latin alphabet are in the first part (pp. 3-106); the names of the books in the Latin alphabet are in the second part, (pp. 107-560); and the names of the books in the Arabic script are in the third part (pp. 561-980). The authors are mentioned by their entry names as given in the different volumes of the series. After the name of each author one finds the abbreviation of the title of the volume and page number he is mentioned in. An author who wrote books in more than one field of science may be referred to in more than one volume. Some books relating to more than one branch of science are necessarily referred to more than once.

The volumes of the series were on: astronomy literature (OALT, 2 volumes, 1997); mathematical literature (OMLT, 2 volumes, 1999), geography literature (OCLT, 2000), literature of musical sciences (OMULT, 2 volumes, 2003), literature of military arts and weaponry (OASLT, 2 volumes, 2004), literature of natural and applied sciences (OTTBLT, 2 volumes, 2006), literature of medical sciences (4 volumes, OTIBLT, 2008), literature of astrology and on classification of sciences and supplements to the earlier volumes (OASTLT, Supplement I and Supplement II, 2 volumes, 2011).



Feza Günergun and Dhruv Raina (eds), *Science between Europe and Asia: Historical Studies on the transmission, adoption and adaptation of knowledge*, Boston Studies in the Philosophy of Science, Springer, 2011, 279p.

This book explores the various historical and cultural aspects of scientific, medical and technical exchanges that occurred between central Europe and Asia. A number of papers investigate the printing, gunpowder, guncasting, shipbuilding, metallurgical and drilling technologies while others deal with mapping techniques, the adoption of written calculation and mechanical clocks as well as the use of medical techniques such as pulse taking and electrotherapy.

This book was generated by the proceedings presented in the symposium titled "Adoption and adaptation: The travel of methods, techniques and technologies between Asia and Europe and the transformations of know-how", İstanbul, 10 -14 May 2006, Istanbul University.

Research-excavation-restoration project of the Fatih iron foundry near Demirköy (2003-2012)

- Head of Project: Prof. Ekmeleddin İhsanoğlu (President of TBTK/Turkish Society for History of Science),
- Head of Excavation: Nurcan Yazıcı Metin (Mimar Sinan Fine Arts University)
- Architectural Documentation and Restoration: Assist. Prof. Gülsün Tanyeli (ITU, Faculty of Architecture)
- Archeometry: Prof. Hadi Özbal (Bogazici University, Chemistry Dept.)
- Archival Documents: Prof. Mustafa Kaçar (TBTK and Istanbul University)

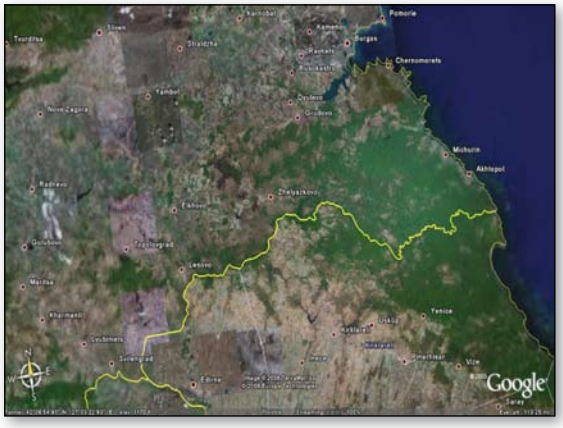
The research-excavation-restoration project of the Fatih iron foundry near Demirköy site in the city of Kırklareli, started in 2003 under the auspices of the Turkish Society for History of Science (TBTK) in collaboration with the Directorate of Kırklareli Museum, Ministry of Culture and is still in process. The project aims to obtain important data for the history of military architecture, cannon foundry, energy technologies, high industry and metallurgy during Ottoman period and create a open industrial museum.

The project has been carried in four main steps:

1. Determination of the settlement plan through recovery excavations
2. Preparation of the relief projects of the excavation site
3. Analysis of the samples of ores, slag and mines removed from the excavation site
4. Search for archival documents to support the excavation results

Among the findings were remnants of a furnace, remains of a small foundry, a partially-protected dam of a distance of 650-700m to the same direction; and a small hill of various amount of copper and iron slag. Also a small mosque within the site was taken under restoration. As the findings obtained through the archival studies carried along with excavations show, the foundry underwent a thorough restoration under the reign of Mahmud II (1808-1839). As the new findings of the architectural properties of the foundry are obtained, new materials are analysed and recorded. In addition, new parts come to light after excavations have been taken under protection in a proper way.

Map and pictures from the Demirköy Iron Foundry:











Tuncay Zorlu
Turkish Society for History of Science

HISTORY OF SCIENCE IN ROMANIA

In Romania, the history of science has developed, alongside other disciplines during the last two centuries. The most important body in charge of this field of research is the Romanian Committee for the History and Philosophy of Science and Technology – CRIFST – belonging to the Romanian Academy, the highest forum for science and culture in Romania.

It consists of three departments: History of Science, Logic, Methodology, Philosophy of Science and History of Technology, as well as two publications: *NOESIS* (published in English or French) and *NOEMA* (in Romanian), distributed to fifty countries. There is also a *Journal of Studies and Researches for the History of Science* published in Romanian.

Moreover, there are many international organizations of this kind, in which Romania is an active participant. One of them is the European Society "Astronomy in Culture" or "Société Européenne l'Astronomie en Culture" – SEAC. Its WG "Archaeoastronmical Heritage" is chaired by the author. It was set up in 2004 to study the archaeoastronomical heritage in Europe. It collects any information or articles suitable to support its goal. Another one is the Commission 41 for the History of Astronomy, belonging to the International Astronomical Union. This Commission will prepare a special meeting during the 28th General Assembly that will be held in Beijing next August. You are welcome to visit the C41 website, which contains the latest news & reports as well as further information about the Commission's structure, WGs, aims, history, recent activities, etc, as well as archives, materials and documents.

One of the topics of interest for the history of science is education. During the last General Assembly of the IAU, held in 2009 in Rio de Janeiro, the author gave an invited lecture entitled "The history of astronomy – tool of the instrunment of education".

But if we talk about the history of science in Romania, we have to remember their most important representative, Petre Sergescu, who, according to the great René Taton, was a "craftsman of international collaboration in science history". He was a famous mathematician, author of numerous treaties in the history of mathematics, many commissioned by the French. He will be remembered as founder of the International Union of the History and Philosophy of Science, the Division of History of Science (DHS), of which he was the first secretary general, followed by René Taton.

Research undertaken by the author has used every kind of sources available in Romania: the National Library, which is moving now to the magnificent new headquarters, the Library of the Romanian Academy, private houses of the scientific personalities, the National Archives and the Bucharest archives, the Archives of Radio Romania, which preserve ancient recordings, and even the archives of many important cemeteries and churches.

To give a few examples, we have just discovered that the present library of the Observatory, where its director lived for many years was the first government office of the Romanian principalities, after the unification of Wallachia and Moldavia in 1859. In 2011 a quite remarkable event took place. While the National Library manuscripts were packed for moving, we found 12 boxes of manuscripts written by the first director of the Observatory. We scanned thus nearly 5,000 invaluable pages. Among the documents important letters were found, e.g. those of Bigourdan and Gabrielle Camille Flammarion, as well as important courses, such as those of Picard and Tisserand. Among them there were 73 photos taken by Coculescu, the founder of Bucharest Observatory (1908) during his expedition in Senegal to observe a Total Solar Eclipse (1893).

The cemetery archives are in an extremely poor state of preservation, but we managed to identify some remarkable tombs: that of the admiral Urseanu, the founder of the first public observatory in Bucharest, and that of Gheorghe Demetrescu, the most important director of the Bucharest Observatory.

In 2011 we celebrated the bicentenary of Le Verrier's birth. On this occasion in the Romanian archives original documents have been discovered, which were written during the stay in Paris of Căpitaneanu, an important Roman astronomer.

We cannot provide an overview of the history of science in Romania without mentioning a number of important scholars from Greece who lived and worked with us. Their contribution is registered in a book entitled *Greek Scholars in Romania in the 14th-19th centuries.*

But the most influential figure was the prince of Wallachia, Constantin Brâncoveanu. He was a particularly educated man who understood the role of culture in civilizing the people. In order to educate his sons, he thought that the best way

was to educate their teachers in the most famous universities in Europe. He sent thus Hrisant Notara to London, Padua and Paris. Notara worked together with Cassini, the first director of Paris Observatory. In 1716 Notara published a book in Paris. Its translation into English and the commentary of this book would be the starting point of a long collaboration between Greek and Romanian scientists.

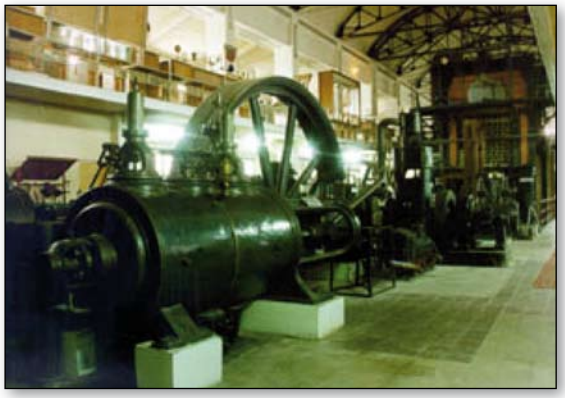
There are many projects that we should consider: a WG of the UNESCO-BRESCE for the South-Eastern European countries, aiming at at identifying and preserving the history of the region, many bilateral projects, summer schools at academic level, international associations for the dialogue between scientists and theologians, particularly relevant to a region which has a common religious background, i.e. orthodoxy.

Magda Stavinschi
Member of the IAU C41 History of astronomy
Chair of the SEAC WG "Archeoastronomy heritage"

HISTORY OF SCIENCE IN ROMANIA – BRIEF REVIEW OF EDUCATION AND RESEARCH

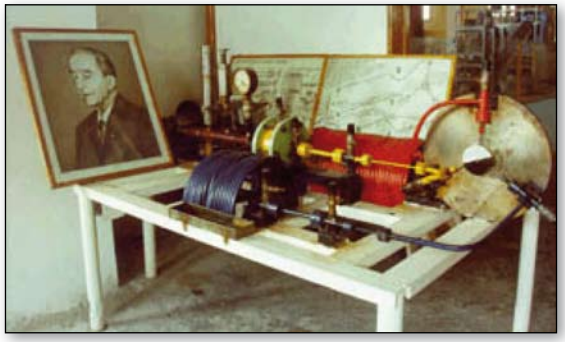
In Romania there are over 70 museums with collections of History of Science and Technology, with a patrimony of more than 45000 pieces. From all of these museums, only few of them are specialized only in Science and Technique, and the most important are the Technical Museums "Prof. Dimitrie Leonida" in Bucharest (Sections: History of mechanics, Electricity, Magnetism, Mining industry, Telecommunications, Hydraulics, etc.) and the Museum of Science and Technique "Stefan Procopiu" in Iasi (with sections: Energetics, Mineralogy, Telecommunications, Sound recording) [1,2].

Technical Museum "Prof. Dimitrie Leonida" in Bucharest [1]

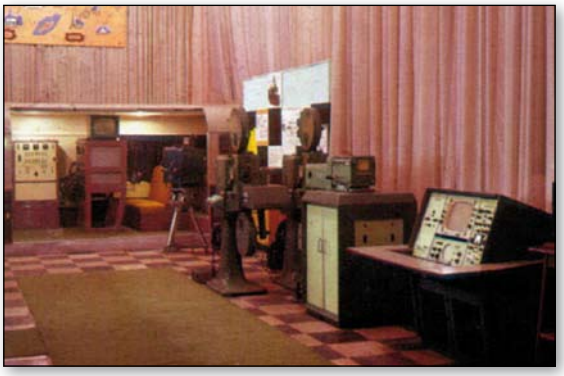


The engine of the first tram in Romania (1894)

Museum of Science and Technique "Stefan Procopiu" [2]



Sonic engine, designed by the Romanian Gogu Constantinescu (1919)



Telecommunications section

Sound recording section

There are also specific museums dedicated to mining industry, transportation, medicine and pharmacy, petroleum industry, and, most important, there are memorial museums dedicated to famous personalities in the field of astronautics (Traian Vuia, Aurel Vlaicu), chemistry (Petru Poni), biology (Victor Babes), etc.

Research centres

- CRIFST - The Romanian Committee for History and Philosophy of Science and Technology, belonging to the Romanian Academy [3]. The general objectives of this organization is to stimulate and promote the development and research in the field of history and philosophy of science and history of technique, to establish relationships between the Romanian scientists and researchers, but also between them and the scientists from abroad, to interconnect different institutions, societies and journals in these three fields of research, to disseminate the scientific data by publishing its own newspaper, to organize congresses, conferences and workshops, to share scientific information and publications in these fields.
- CELFIS – The Centre for the Logic, History and Philosophy of Science – University Bucharest. The Centre for the Logic, History and Philosophy of Science is one of most active centres of the University of Bucharest. Its members are constantly taking part in diverse research projects- both national and international. Our centre is dedicated to building and fostering a relatively new-born field in Romania, while at the same time it highly encourages and supports partnership with students aiming at research or academic careers worldwide [4].

Academic programmes

From WWII and until now, the history of science was taught in our country only as limited history of various sciences and it was attached to specific faculties. Today, there are some new opportunities to familiarize the students with a different view of the history of science, in which particular sciences are integrated in the general assembly of all the sciences and in the socio-economic and cultural context of each time [5].

- University of Bucharest, Faculty of Philosophy
  Master Programme "Philosophy and History of Science" [6]. Topics: From the natural philosophy to Newtonian physics: concepts of space, time and matter in XVI-XVIII centuries; Historical types of sciences; The structure and role of the scientific theory; Realism and constructivism in modern science; Logical construction of the science; Methodology of humanistic and social sciences; Science and the sociology of knowledge; Ethical dimensions of science: from Frankenstein to Dolly; The philosophy of technology; Evolution models; Theoretical paradigms in linguistic analysis; Methodological programmes in social sciences, etc.
- University "Babes-Bolyai" Cluj, Faculty of European Studies, Department of History and Methodology of Science
  PhD studies [5]. Research topics: Europeanism and Europecentrism in the history of science; Lucian Blaga and the history of science; Science and Religion in Europe; Man, the measure of all things: an anthropological

view of science; Humanism and Science: personalities of both areas; Transdisciplinary Studies.

- North University Baia Mare, Faculty of Sciences, Department of Physics
  Bachelor in Physics, Discipline "History of Physics", Compulsory discipline for the students enrolled in the 2nd academic year [7].
- University of Bucharest, Faculty of Physics
  Bachelor in Physics, Discipline "History of Physics", Optional discipline for the students enrolled in the 3nd academic year [8].
- University of Oradea, Faculty of Sciences, Department of Physics
  Bachelor in Physics, Discipline "History of Physics", Discipline for the students enrolled in the 1st academic year [9].
- University of Craiova, Faculty of Exact Sciences, Department of Physics
  Bachelor in Physics, Discipline "History of Physics- Physics and the progress of knowledge", Compulsory discipline for the students enrolled in the 3nd academic year [10]. Topics: Sciences in Antiquity; Physics in the Middle Ages; Physics in the Renaissance and Scientific Revolution; Newtonian Mechanics and Physics as a Science; Optics; Development of classical physics; The emergence and the development of modern physics; Contemporary physics.
- Academy of Romanian Scientists
  Summer Courses in "The history of science, technique and Romanian education". Topics: Innovation process - promoter of technical progress; Issues from the history of science, technology and education in Romania; Oil and gas engineering company; Romanian aeronautics history; High education in aerospace engineering; The first Romanian cosmonaut: Dumitru Prunariu, etc. [11]

References

[1] http://www.cimec.ro/muzee/mteh/mteh.htm
[2] http://www.palatulculturii.ro/sciencemuseum.htm
[3] http://www.acad.ro/crifst/crifst.htm
[4] http://www.celfis.ro/en/
[5] http://euro.ubbcluj.ro/structura/catedre-is.php
[6] http://www.filosofie.unibuc.ro/master#Filosofiaşiistoriaştiinţei
[7] http://stiinte.ubm.ro/multimedia/Programe%20AnaliticeF/IstoriaFizicii.pdf
[8] http://www.fizica.unibuc.ro/fizica/studii/licenta/Planuri/2011-2012/PlanInv_BF.pdf
[9] http://stiinte.uoradea.ro/ro/planeinv/2010/licenta/Fiz%20info%2010-11.pdf
[10] http://cis01.central.ucv.ro/physics/ro/licenta/fizica_2009.pdf
[11] http://www.aos.ro/site_mod/CURSURI.pdf

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BEYOND ARTIFICIAL BOUNDARIES: THE HISTORY OF SCIENCE IN SERBIA AS AN IDEA OF CONTINUITY

The history of science in Serbia was epistemologically established in the 19th century. It was founded as a philosophical discipline in 1898 in the comprehensive work of Bozidar Knezevic entitled *Principles of History*. This work commenced the history of Serbian science as a cosmopolitan philosophical field with a clear definition: "Whereas the idea of man displaces and disables all the artificial hindrances and boundaries between races, tribes and nations, the idea of continuity displaces and disables artificial boundaries between certain sciences… Every science becoming acquainted with the knowledge of the past and with the future prospects of its field at that point and in that part enters the sphere of philosophy, and upgrades itself to philosophy. *In this sense the history of science is the only true and supreme philosophy."*

Bozidar Knezevic set up a sound epistemological position for the history of science. Moreover, he made a certain Copernican turnover in that he perceived the history of science as a genuine *philosophia prima*. It is obviously a unique attempt in the entire European history of philosophy because no one before Knezevic put the history of science on that pedestal: it is not a follow-up discipline which should offer some 'introduction' to 'real' science, but rather an anterior work which has to break ground for the basic hermeneutics of science.

Such an understanding of the history of science was further developed by Milutin Milankovic (1879 – 1958). He shared the same opinion with Knezevic: "The history of science is the most magnificent part of the whole history of mankind ... Reading the history of science, I realized that the textbooks do not see how science emerged, but only their present status...

When I, as a scientist, began to deal with the history of science, primarily a history of exact sciences, I was surprised when I saw how little and insufficiently has been done in this field. While the volumes on general history would fill a large library, the most important works of the history of mathematics, astronomy and physics can be placed in any personal library."

Following this path, Milankovic established a history of science as a systematic discipline in the period from 1943 to 1957. Until that period, he elaborated on the astronomical theory of climate change and established climatology as an exact mathematical science with the capacity to reconstruct the past and predict the future. But after the Germans destroyed the National Library of Serbia in 1941 and, after that, the Library of the Mathematical Institute in 1944, he was forced to abandon his basic research and to begin a comprehensive examination of the history of science. In that period, he wrote *Through Distant Space and Times* (1943*), Isaac Newton and Newton's Principia (*1946), *Notes on the Life of the Great Mathematician Mihailo Petrovic - Alas*9 (1946), *History of Astronomy* (1948), *Through Realm of Science* (1950), *22 Centuries of Chemistry* (1953), *History of Science and Technics* (1955), *Technics in the Distant Past* (1955), *Aristarchos and Apollonius* (1956). Based on the cosmopolitan philosophical approach of Bozidar Knezevic and the sufficiently scientific work of Milutin Milankovic, the Serbian history of science was established as a scientific discipline with a distinct position, clear determination of its field, comprehensive basic studies and competent key authors.

Cultural understanding of the importance of the history of science was further approved after WWII through the construction of specialized museums on the history of science. The first one was the Museum of Nikola Tesla (1856 – 1943) in Belgrade. It opened in 1950, and it is currently on the UNESCO list of the world's cultural heritage. The second museum, also dedicated entirely to one scientist (a reliable sign of the place of the history of science in a certain culture), is the Museum of Jovan Cvijic (1865 – 1927) - geographer, anthropologist, climatologist - established in 1968. The Museum of Science and Technology opened in 1989. It runs 15 scientific and technical museums that exist in Serbia.

In 1995, under the umbrella of the Museum of Science and Technology *Phlogiston*, the first specialized journal for the history of science in Serbia and probably in the SEE was launched. The year before had seen the creation of *Pinus*, a journal for the history of engineering. At the same time, the Serbian Academy of Science and Arts initiated a regular series, *Lives and Work of the Serbian Scientists* (12 volumes already published), and the Serbian Society of the History of Science, established in 1997, created an edition of *Phlogiston* dedicated mainly to unpublished archive manuscripts. There are also specialized symposiums of the history of science of Serbia organized by the University of Kragujevac and Matica Srpska from Novi Sad. Besides that, some scientific and technical museums as well as certain university departments run their own regular or sporadic publications and meetings relevant to the history of science.

In 1997, the Gallery of Science and Technology opened in the premises of the Serbian Academy of Science, which hosts new scientific exhibitions almost on a monthly basis. Last but not least, two international projects within the framework of the history of science, in which the author of this article took part, should be mentioned. The Serbian – Greek project: *The Introduction and Development of Scientific Thought in Serbia and Greece Since the 18th Century Until Nowadays* (2002), and the Serbian - Russian collaboration: *Russian-Serbian Links in the Field of Science, Humanities and Education* (2010). The latter is available at: http://ihst.nw.ru/eng/index.php?option=com_content&task=view&id=62&Itemid=26

Aleksandar Petrovic
President of the Serbian Society of History of Science

HISTORY OF SCIENCE AND TECHNOLOGY IN BULGARIA

History of physics is a new scientific area in the Institute of Solid State Physics at the Bulgarian Academy of Sciences. Some Bulgarian research groups, institutions, and many people have put their efforts to establish history of physics as an independent field. History of physics, as Milko Borissov (1921 – 1998) said, has "an important role to physics itself. Especially in crucial moments, the history of physics helps physicists to make correct decisions. […] The history of physics has another side which is important for the history of science, culture, and mankind. […] One of the main tasks of physics in our time is to form a relationship with social sciences. […] Physics is an integral part of human culture and history of physics is an integral and essential part of general history and becomes independent branch itself" [1]. We will examine the past, present, and future development of the history of physics briefly. The aim of this paper is to elaborate on the history of physics in Bulgaria before 1989, to demonstrate its present state and to make proposals for future work.

Institutions

During the second half of 20th century the Bulgarian government established the National Polytechnic Museum, while the Society of Physicists initiated Palace of Physics.

The National Polytechnic Museum has sources on the history of physics, collected there by Penka Lazarova during the 1980's. Sources originate from the Sofia University and from the private collections. P. Lasarova has published many articles and one biographical book. At this moment, she is a secretary of the magazine Nauka published by the Union of Scientists in Bulgaria. Curators L. Filipova and chemist L. Dashovska work in the National Polytechnic Museum nowadays. They have been responsible for some exhibitions and have published articles too.

Palace of Physics is a branch of the National Polytechnic Museum. In the past it was an independent municipal museum, placed in the Professional School of Mechanics and Electrotechniques in Kazanlak. The idea for its creation was born during the National Conference *Physics and production*, organised in Kazanlak by the Society of Physicists (1974). The Palace inaugurated its first exhibition on September 1st, 1977. Numerous exhibits are collected there. The Palace contains equipment from the unique collection of the Faculty of Physics of the Sofia University "St. Kliment Ohridski". There are some self-made instruments by Professor P. Bachmetjew and his students which were constructed for the first physics laboratory in Bulgaria opened in 1890. Today the collection contains more than 1200 exhibits. The Palace of Physics prepares exhibitions, training programs, and methodological assistance. Moreover, it possesses some book collections for the history of physics and technology.

The *Musueum for the History of Physics*, situated in the Institute of Solid State Physics, is the youngest centre for the history of Physics in Bulgaria. Many people contributed to the creation of the Museum. Headed by Professor Milko Borissov (18.02.1921 –05.11.1998) the Institute of Solid State Physics turned personal laboratory of Georgi Nadjakov March into cabinet museum after his death. The research group for the history of physics along with the cabinet museum "Geogri Nadjakov" formed an independent unit named "Museum for the History of Physics". Many old books, documents, manuscripts, photographs, and instruments have been donated ever since. Georgi Nadjakov's permanent exhibition and a small reading room have opened for the public in 2006. The museum collects three kinds of sources: written sources (archival funds), objective sources (apparatuses and models) and publications (books and articles). The first task of the Museum is to promote research on the history of physics. The second task is to collect and preserve sources. All sources are at the disposal of researchers. The third task of the Museum is to publish books and journals, arrange exhibitions and produce historical and documentary films to popularise physics and the history of physics [2].

The Museum for the History of Physics

People

The researchers on the history of physics in Bulgaria differ from traditional researchers in the history of science. The reasons lie in the earlier historical transition of 1944. The entire scientific staff of the Faculty of Physics and Mathematics at the Sofia University was preserved in Bulgaria after the World War II. Probably Professor Georgi Nadjakov has the greatest merit. Occupying a high position in the Bulgarian Academy of Sciences (Vice President) he protected researchers in natural sciences. Only professor Georgi Maneff, who has turned pension (age 60), has left from the Sofia University. However, he has not been repressed and he is entitled to hold public office [3].

Milko Borissov (18.02.1921 – 05.11.1998) created a scientific research group on the history of physics at the Institute of Solid State Physics. He worked with Christina Stojcheva, Penka Lazarova, Marko Gerdjikov, Vladimir Kusev (22.01.1931 – 14.03.1983) and Alexander Vavrek (12.03.1947 – 07.08.2003). Many reports and lectures on the history of physics were given by him. In the Blagoevgrad Pedagogical Institute Professor Milko Borissov read eight-hour selected lectures on the history of physics in Bulgaria (21-23 December 1988). A comprehensive course (20 hours) on the history of physics was organized by him at the Sofia University. Hristo Botev Radio broadcast series of lectures on the history of physics in Bulgaria [4].

The first curators of the Museum were Vladimir Kusev (22.01.1931 – 14.03.1983) and Alexander Vavrek (12.03.1947 – 07.08.2003). The last one headed two projects on the history of physics (F251 from 1992 – 1995 and F517 from 1995 – 1999). History of theoretical physics at the Sofia University was the subject of the third project, F1312 (2003 – 2007) [2]. Institute of Solid State Physics appointed the first researcher on the history of physics in 1988.

The total number of the authors with publications on the history of physics is approximately 393 in Bulgaria. Professional researchers of the history of science represent a small percentage among them. Most of physicists write memories or popularize history of physics. Some individual researchers, as Iskren Asmanov, made private historical investigations after 1989.

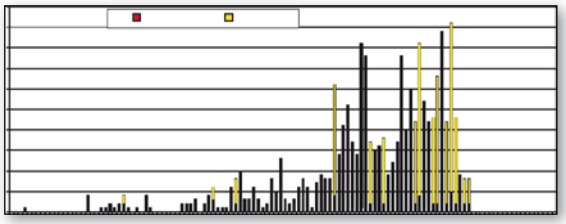
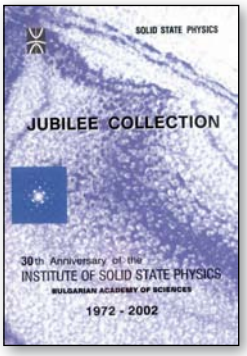


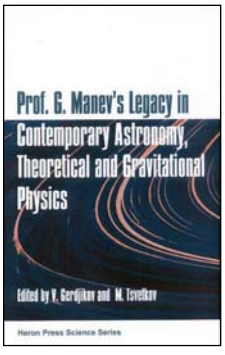
Table 1

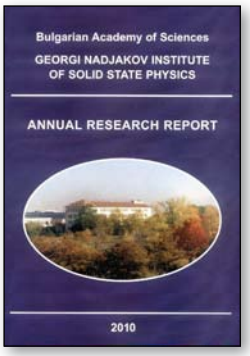
Publications

History of physics is a subject of investigation in Bulgaria since the beginning of the 20th century (after Professor P. Bachmetjew's death). In the beginning the publications were bibliographical and institutional studies mainly. Publications in the history of physics have grown after 1989 (Table 1). According to this preliminary study 24 books and 395 articles on the history of physics were published in Bulgaria until 1989. 31 books and 477 articles have been published since then. Only the negative evaluation about Professor Georgi Maneff's theory has changed [5].

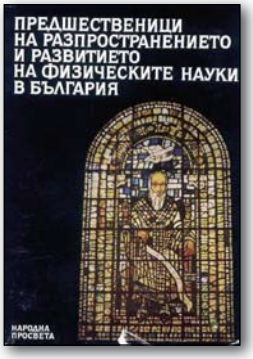
Milko Borisov embodies the role of personality in historical research. Analysis of the old texts on physics is the centre of research for him, whilst at the same time focuses on the socio-economic conditions of the historical epoch. Under his guidance significant conclusions are reached at for the history of secondary and higher education in physics in Bulgaria for the 19th and early 20th century.







The studies of Bulgarian Renaissance literature establishes the role of Joan Exarch (Bulgarian Exarch from 867 to 920), Ivan Seliminski (1799 – 1867), Pierre Beron (1799 – 1871) and Demetrius Mutieff (1818 – 1864) in the dissemination of physics in the Bulgarian terrotory. The activities of Emmanuel Vaskidovich (1795 – 1875) as a teacher show that he used Vardalahos' experimental physics textbook in Svishtov from 1817 to 1847. Textbooks of Nayden Gerov (1823 – 1900), Joachim Gruev (1828 – 1912) and Ivan Gyuzelev (1844 – 1916) are used in secondary and higher education of physics in Bulgarian schools since 1846. Articles in physics, published in Bulgarian journals in 19th century exhibit educational elements.



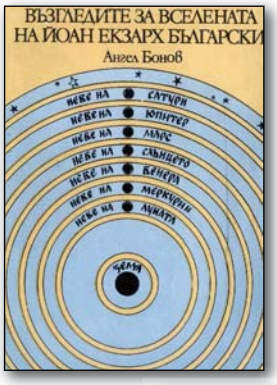
As a result of documentary research in the archives of the Sofia University new and interesting features are discovered for the history of higher education of physics in our country. Courses on physics (astronomy, meteorology, experimental, theoretical, nuclear and technical physics) have given birth to six physics departments during the first half of 20th century.

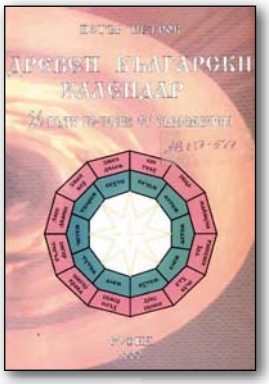
There aren't any journals for the history of physics in Bulgaria. Magazines relating to physics (Bulgarian Journal of Physics) and sciences (Comptes Rendus de l'Academie Bulgare des Science, Journal of the Bulgarian Academy of Sciences) have published some articles on the history of physics.

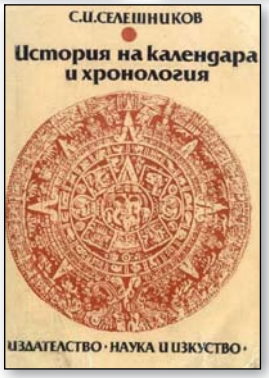
Collections about remarkable Bulgarian physicists, botanists, geologists, mathematicians, and inventors have been produced. Some books on the history of astronomy, and technology have been published in Bulgarian language. There are many biographical books and memoirs in the field of physics.

Collections

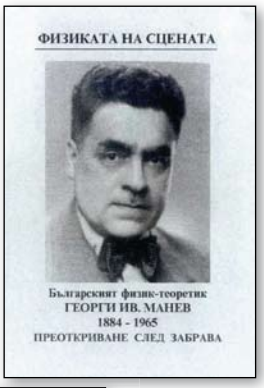
History of Astronomy





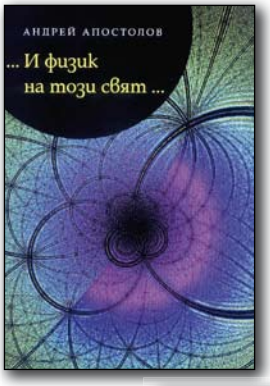


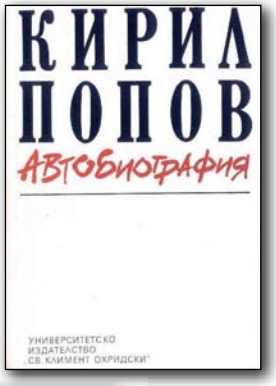
Biography

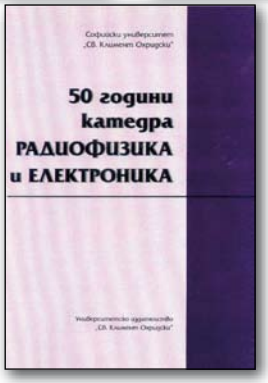


History of Technology

Memoirs







Common activities

Many memorial sessions and three symposia on the history of physics have taken place in Bulgaria up to now (2005, 2006, 2011). The idea came from Professor Nicola Balabanov in 2005. With his efforts the first symposium was held hosting 13 oral presentations. The second symposium on the history of physics was organized by the Museum with 20 oral presentations, 8 posters and 3 student reports. Their proceedings have been published in Bulgarian language. The third symposium was dedicated to the history of physics and mathematics in the Balkans (17-18 October 2011). 21 authors with 26 reports took part in the symposium. There were one plenary lecture, six thematic sessions and an exhibition.

Funding Methods

The existence and development of the Museum for the History of Physics in Bulgaria depends on its own income and funds. The Bulgarian Academy of Sciences and the Sofia University had many funds available for research purposes until 1939 when they were nationalised. According to funding regulations only the income from the accrual of interest was available for use. Since then, financial support to research centers for the history of science is derived from public sources.

Further methods of acquiring income were used and that was not the first time that such financial support was received by physics institutes. Since the 1950's contracts for applied research were signed between institutes of Bulgarian Academy of Sciences and factories which resulted in additional income. Around 1989 the Institute of Solid State Physics came to realize revenue from contracts equal to its budget subsidy. Because the factories in Bulgaria were destroyed after 1989, the income from applied projects has since become negligible. Some years ago the Sofia University recovered its research fund, while the Institute of Solid State Physics has established its own research fund. Finally, during the last five years internal contents have financed some of our research projects.

Conclusions

Since 1989 one can observe a tendency of growth in publications relating to publications in the history of physics in Bulgaria. Bulgarian common activities in the history of physics are 1) scientific assistance in the history of science and 2) symposiums, conferences and memorial sessions. Regarding future scientific activity, we propose a research on the history of altitude. As far as the organization level is concerned, we expect some standards to be further elaborated.

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A PROJECT ON GREEK ALCHEMY (DACALBO)

Digital archive concerning alchemy in Byzantium and in Greek-speaking communities of the Ottoman Empire and educational as well as cultural utilization of this archive

The HPDST team has been funded by the National Strategic Reference Framework for the project DACABO on Greek Alchemy.

DACALBO project addresses a significant gap in the current historiography of sciences, by exploring and carefully mapping the Byzantine and post-Byzantine alchemy through the creation of a comprehensive, open access, digitized, and searchable data-base and metadata material. Specifically the project aims to:

a) Identify, collect, digitize and classify all surviving manuscript and printed primary sources relevant to alchemy in Greek language during the periods of Byzantium and the Ottoman Empire.
b) Collect and classify the secondary bibliography.
c) Create prosopographical entries for every identifiable author.
d) Evaluate the modifications or transformations which Byzantine alchemical tradition has undergone, and to ascertain its relations with Hellenistic, Arabic, or Latin alchemy.
e) Determine what twists in the development of alchemy have taken place after its introduction in the cultural context of Greek-speaking communities of the Ottoman Empire, from the 15th to the 18th century and the passage to "Chymistry".

Additional objectives:

a) The enrichment of the history of Byzantium, drawing lines of connection between the historiography of Byzantine alchemy and that of the natural sciences in South-Eastern Europe.
b) The production of a historical material that is both profitable in terms of educational applications and suitable for activities aiming at promote public awareness of the different temporalities that have been merged in the history of science and render the written monuments of this history tokens of a common cultural legacy.

The interdisciplinary team is constituted by historians, historians of science, philologers, paleographers, chemists and didacticians. The project is supported by the International Academy of History of Science.

The duration of the project is from September 2012 to September 2015.

More information can be found at: www.hpdst.gr/dacaldo

A PROJECT ON SCIENCE AND RELIGION (NARSES)

Nature and Religion in Southeastern European Space: mapping Science and Eastern Christianity religions in South Eastern Europe and Eastern Mediterranean

The HPDST team has been funded by the National Strategic Reference Framework for the project NARSES on Science and Religion.

NARSES aims to map the relationship between sciences and religion from the 4th c. AD to the 20th c. in Southeastern Europe and East Mediterranean. It will focus on social formations where Eastern Christianity was, depending on the period, dominant or an important religious tradition.

Exploring historically the relationship between sciences and religions is essential in order to understand the relation between sciences and societies. The "Needham question" (why certain societies rather than others develop a specific scientific practice) is closely tied with this relationship. NARSES proposes to fill an important gap in the historiography: while a huge literature exists on science and religion in Western Christianity there is almost a complete void for the areas of Byzantium, the Ottoman Empire and the Balkan states, marked by Eastern Christianity. NARSES interdisciplinary research will reveal unknown dimensions of science-religion relations, with major implications for the relevant historiography developed in reference with the West European societies.

NARSES aims a) to collect, critically examine and catalogue the religious texts on nature, the scientific texts evincing theological aspects and the canonical texts on knowledge and sci-

ences; b) to map the complexity of the relations between sciences and religion, the Eastern Christianity groups active in debates on nature and the institutions responsible for the production and negotiation of knowledge about nature and God.

The PI has organized training of young scholars on sciences and religions in SE Europe and East Mediterranean through interdisciplinary research, networks, seminars and conferences. The implementation of NARSES will open a new research field which will constitute a solid ground in order to further develop the research to the whole Eastern Europe and the interdisciplinary comparative studies on science and religions between West and East. It will contribute to the dialogue between societies having different cultural histories and traditions.

The duration of the project extends from November 2012 to November 2015.

CLASSICAL GENETICS IN BULGARIA

Mintchev, Dinko, Classical Genetics in Bulgaria, Bulgarian Academy of Sciences, Ikopis, Sofia, 2010, 119 p. (in Bulgarian, English summary)

ISBN – 978-954-91905-4-0

The book is a short treatise presenting the rise and development of the classical genetics in Bulgaria in both a scientific and comprehensive way. The author examines the first hypothetical ideas on heredity in the Medieval literature; texts by the writer Joan Ekzarh and writings of the so-called "bogomili" (known also as "albigeois" in France and "katari" in Italy) are commented. Philosophical concepts of Dr Peter Beron, Dimitar Mutev and Vassil Beron (19th century) are also considered.

The author puts emphasis on the establishment - after five century-long Ottoman domination - of the young Bulgarian state (1878) as a key event giving rise to scientific institutions such as the Bulgarian Academy of Sciences (successor of the Bulgarian Literary Association founded in 1869 in Braila, Romania) and Sofia St. Kliment University (1888) where the first lectures on genetics were delivered by Prof. Georgi Shishkov (1904). The role of the eminent professors Methodii Popoff and Stefan Konsuloff, leaders of the newly-founded Natural Scientific Society, major lecturers and promoters of genetical sciences in Bulgaria, is underlined.

Special attention is given to the development of breeding closely related to genetical science, the contribution of the outstanding breeders Konstantin Malkov and Prof. Ivan Ivanov being emphasized. The creation of network of agricultural experimental stations covering different regions of the country (Sadovo, Obraztsov chiflik, Kneja, Dobrich, Sofia, etc.) is examined as a purposeful state policy, beneficial to breeding and agriculture. The crucial importance of the establishment of the Faculty of Agronomy and Forestry at Sofia University (1921) as well as the Central Agricultural Experimental Institute in Sofia (1919) for the genetical education and research is pointed out, and the merits of the professors of genetics Mihail T. Hristoff and Gentcho Gentcheff are recognized. The world-wide achievements of the most outstanding Bulgarian geneticist Prof. Dontcho Kostoff are thoroughly commented and strongly emphasized.

The author describes the close relations of Bulgarian geneticians with universities and scientific institutions in Europe and USA, materialized through education and specialization in prestigious scientific centers and collaborations with eminent geneticists - E. M. East, N.I.Vavilov, A. Gustafsson. Mintchev points out that Bulgarian geneticists and particularly Prof. Dontcho Kostoff contributed to the development of basic branches of genetics, such as cytogenetics, immunogenetics, mutational genetics, and related phenomena, like polyploidy and remote hybridization. Thus, the leading position of Bulgarian genetics and breeding in South-East Europe up to 1949 is convincingly presented. The decline of genetical education and research, and the dramatic fate of Prof. Dontcho Kostoff and other eminent Bulgarian geneticians after the imposiion of the Lyssenkoist dictatorship in biological science (1949) is outlined.

The book of Dinko Mintchev is an important contribution to the history of Bulgarian classical genetics, assisting young generations of biologists to acquire knowledge on the rise of this extraordinary science in Bulgaria.

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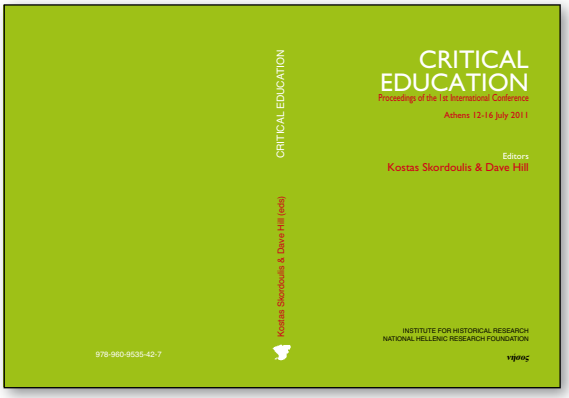
A BOOK ON CRITICAL EDUCATION

Kostas Skordoulis, Dave Hill, Critical Education. Proceedings of the 1st International Conference, Athens 12-16 July 2011, Institute of Historical Research/National Hellenic Research Foundation-Nisos, Athens, 2012.



This volume comprises of the papers presented during the 1st International Conference on Critical Education, which was held in Athens between 12 -16 of July 2011. The conference was co-organized by the Programme HEPHAESTUS and the Faculty of Primary Education of the National and Kapodistrian University of Athens. Responsible for the organization were Professor Dave Hill, from Middlesex University, UK, Professor Peter McLaren, from UCLA, USA and Professor Kostas Skordoulis, affiliated to the Programme for the History and Philosophy of Science and Technology, from the National and Kapodistrian University of Athens.

The core of the discussion aimed primarily at evincing the significance of critical education within contemporary conditions and its relationship with politics, education, teachers and students as well as radical movements. It is crucial that this was the first time such a conference was held and that numerous scholars from different countries had the opportunity to present their research work. The various points and reflections brought up during the 5 days of the conference are assembled in this particular volume, through the 34 papers presented by participant scholars originating from a variety of countries and fields of specialization.

EUROPEAN PHYSICAL SOCIETY/HISTORY OF PHYSICS GROUP ANNUAL MEETING

The European Physical Society/History of Physics Group annual meeting took place during the Swiss Physical Society Annual Conference, 13-18 July 2011.

From Southeastern Europe Mrs. Ganka Kamisheva, Bulgaria, Dr. Rajka Jurdana, Croatia, Dr. George N. Vlahakis, Greece and Dr. Constantine Tampakis, Greece, participated. The participation of the Greek delegates was funded by the project HEPHAESTUS.

The programme of the meeting was as follows:

Yacin Karim (Geneva/Lyon): Charles-Eugene Guye's experiments on relativity

Jan Lacki (Geneva): Arthur Schidlof and the first chair of mathematical physics in Geneva

Jean-Pierre Hurni (Geneva): Investigating Clifford structures: early mathematical physics between Geneva, Lausanne and Bern.

Régis Catinaud (Geneva): Gockel versus Kowalski in Fribourg: revisiting the pure versus applied science debate

Reinhard Folk (Linz): Sternwartebibliothek Kremsmünster

Sonja Lackner (Graz): Charting the planets: Early representatives of planetary movements

Peter Holmberg (Finnland): Aurora Borealis – early observations and research

Jean-François Loude (Lausanne): Heinrich von Wild (1833-1902) and his Polaristrobometer

Constantine Tampakis (Greece): The poet and his plants: Theodoros Orfanidis and early modern Greek scientific community

C. Tampakis at the comferance

Denis Weaire (Ireland): Hutchie Synge: Mystery Man
Sofia Talas (Italy): Bubble Chambers at their Beginning – The Italian Contributions

Araceli Sanchez Varela (Geneva): How experiments miss their ending: the case of LEP

Walter Kutschera, Wolfgang Reiter (Vienna): Josef Schintlmeister and the "Uranverein,,
Dieter Hoffmann (Germany): Peter Debye and

the Third Reich.

Karl Grandin (Sweden): Nobel Prizes, Neutrality and the Cold War José M. Sánchez-Ron (Spain): Spain and the World of Quantum Physics (1920-1950): German and US physicists viewed through the correspondence of Miguel Catalán, discoverer of the multiplets

George N. Vlahakis (Greece): Dimitrios Hondros, student of Sommerfeld: His contribution to the development of Physics in the early 20th century Greece

G. N. Vlahakis at the conference

13TH INTERNATIONAL CONFERENCE ON THE HISTORY OF SCIENCE IN CHINA AND INTERNATIONAL CONFERENCE FOR THE CHINESE HISTORY OF SCIENCE AND ITS INTERACTION WITH THE GREEK CIVILIZATION

The conference took place between 22-27 of July 2012 in Athens, Greece. It was organized by the Chinese Society for the History of Science and Technology, the Chinese Academy of Sciences/Institute for the History of Natural Science and the Hellenic Open University.

A large number of Chinese historians of science came to Athens for the 13th International Conference on the History of Science in China and the International Conference on Chinese History of Science and its interaction with the Greek Civilization.

Organizer of the event in Athens and the person who is responsible for the success of the Conference was Prof. Byron Kaldis of the Hellenic Open University. Members of the Local Organizing Committee were:

Athanasakis, Dimitris, HOU
Sakorrafou, Kyriaki, HOU
Steiris, George, HOU & Univ. of Athens
Stergiopoulos, Kostas, HOU
Vandoulakis, Ioannis, HOU
Vlahakis, George, HOU

The programme was intense and interesting and covered almost all fields of history of Chinese science. Greek participants also gave a view of the history of science in Greece and presented aspects of the links between these two great civilizations.

The detailed programme of the Conference can be found at https://sites.google.com/site/cngrconf/program

CONFERENCE ON CLIMATE AND WEATHER: SCIENCE AS PUBLIC CULTURE

The Conference took place between 7-9 of January 2013 at the Museum of the History of Science & Maison Française d'Oxford in the framework of the research programme in History of Science. It was organised by the Maison Française d'Oxford, in collaboration with the Museum of the History of Science, the Faculty History of the University of Oxford, Oxford Brookes University, the Centre Koyré (EHESS) and the Institut d'Histoire Moderne et Contemporaine (IHMC), and with the support of the French Embassy in London.

On Monday 7th, a reception was hosted at the Museum of the History of Science including a private view of the exhibition "Atmospheres: Investigating the Weather from Aristotle to Ozone".

On Tuesday 8th, sessions on the subjects of the "Commodification of meterological knowledge", and "Media", were followed by a lecture by Pascal Lecomte (European Space Agency, Harwell-Oxford) on "Data: From Satellites to the Public. The Value of Climate Data, their Cost and How they are Perceived by the Public".

Wednesday 9th was devoted to the session "Historicizing climate history", during which George N. Vlahakis (Hellenic Open University) presented his paper "Climate, Weather and Society in 19th century Greece".

6TH INTERNATIONAL CONFERENCE "FERE-VELESTINO-RHIGAS, HISTORY-ARCHAEOLOGY-PHYSICAL SCIENCES"

The scientific Society for the Study of Feres-Velestino-Rhigas organized the 6th International Conference "Fere-Velestino-Rhigas, History-Archaeology-Physical Sciences" between 4 - 7 October 2012, in Velestino, Thessaly.

G. N. Vlahakis at the conference

The Conference was a scientific success as participants gave original papers related to the subject of the Conference. The President of the Organizing Committee, Dr. Dimitrios Karamberopoulos, took care of the host of the participants and besides the main events of the Conference participants had the chance to exchange opinions and discuss matters of mutual interest during the lunches and dinners with a glass of local wine.

The programme of the Conference can be found at: http://www.rhigassociety.gr/PRPR12.pdf

ALMAGEST 3/1, VOL. 5

The fifth volume of *Almagest, International Journal for the History of Scientific Ideas*, published in May 2012 is a volume of varia.

Contents:

Edward J. Larson & Ronald L. Numbers
"Creation, Evolution, and the Boundaries of Science: The Debate in the United States"
Albrecht Heeffer
"The Genesis of the Algebra Textbook: From Pacioli to Euler"
Thomas De Vittori
"History in mathematics teaching: current problems and new proposals"
Laurent Mazliak
"Study of a Trajectory: Kiril Popoff, wars, and ballistics"
Silvia F. de M. Figueirôa
"A sample of geological textbooks: the book História Física da Terra (1943) by Alberto Betim Paes Leme"

ALMAGEST 3/2, VOL. 6

The sixth volume of *Almagest, International Journal for the History of Scientific Ideas*, published in November 2012 is a volume of varia.

Contents:

Alexey V. Postnikov
"George Bogle, the first British envoy to Bhutan and Tibet (1774-1775): the importance of his mission for his contemporaries and subsequent participants of the Great Game in Asia"
Anne-Laurence Caudano
"An Astrological Handbook from the Reign of Manuel I Komnenos"
Erica Torrens & Ana Barahona
"The 'Tree of Life' in textbooks and museums"
Daniel Špelda
"Anachronisms in the history of science: An attempt at a typology"
Jasper Doomen
"Understanding and Explaining"

Ευρωπαϊκή Ένωση
Ευρωπαϊκό Κοινωνικό Ταμείο
ΕΠΙΧΕΙΡΗΣΙΑΚΟ ΠΡΟΓΡΑΜΜΑ
ΕΚΠΑΙΔΕΥΣΗ ΚΑΙ ΔΙΑ ΒΙΟΥ ΜΑΘΗΣΗ
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ΥΠΟΥΡΓΕΙΟ ΠΑΙΔΕΙΑΣ, ΔΙΑ ΒΙΟΥ ΜΑΘΗΣΗΣ ΚΑΙ ΘΡΗΣΚΕΥΜΑΤΩΝ
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ΕΣΠΑ 2007-2013
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ΕΥΡΩΠΑΪΚΟ ΚΟΙΝΩΝΙΚΟ ΤΑΜΕΙΟ
Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης