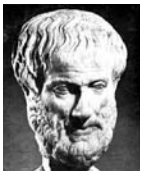

Newsletter

for the History of Science in Southeastern Europe

Published by the History, Philosophy and Didactics of Science and Technology Programme
Institute of Neohellenic Research, National Hellenic Research Foundation
Sponsored by Hephaestus Project, FP 7 Regpot 1-2008

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THE HE.P.H.A.E.S.T.U.S. PROJECT

Hellenic Philosophy, History and Environmental Science Teaching Under Scrutiny
Seventh Framework Programme Regpot-2008-1

The Programme of History, Philosophy and Didactics of Science and Technology (HPDST) originates from two initially complementary teams, the History and Philosophy of S&T Team and this for the Didactics of Science. The merge was brought through the acknowledgment that there is a strong need for science to be reestablished in society and engage its stakeholders, to be enabled through state of the art research using an interdisciplinary approach.

Since 2000, its founding year, the team has developed into one of the most promising research teams in Southeastern Europe, as can be certified by the following achievements:

The team publishes two peer reviewed scientific Journals (in Greek and English), a regional Newsletter, has published 21 books (in Greek, English, French and Chinese), has co-edited three special issues of international Journals and has published about 250 articles, has completed 13 research projects with Greek and European partners, has created a science Museum, has organized 14 Symposia and Conferences, organizes a summer seminar, has created a state-of-the-art website and has established an important international network.

A SWOT report has identified the team as an excellent regional research unit, and has pointed the following main weaknesses: Unmobilized human resources, lack of experience in museology and public science communicating, lack of European strategic partnerships.

In order to fully exploit its capabilities and therefore contribute through science and society activities to the regional sustainable development, the team has been supported by the 7th FP (project *Hephaestus*). The project aims to two way secondments with excellent European research units, recruitments, a series of conferences, workshops and seminars, equipment acquirement and dissemination and promotional activities.

During the next six months are planned two way visits (already Prof. Vincent Jullien, Nantes university - CNRS is visiting the group), the recruitment of two scholars, a summer seminar, the publishing of the international journal *Themes in history, philosophy and didactics of science* and a prominent exhibition on the Antikythera mechanism.

HPDST is a Programme of the Institute of Neohellenic Research of the National Hellenic Research Foundation in collaboration with the Laboratory of Science Education, Epistemology and Educational Technology (ASEL) of the University of Athens.

Hephaestus site www.hpdst.gr

A BOOK ON STS STUDIES IN BULGARIA

40 години наукознание в България.
София, ЦНИИН, 2008, 390 р.

*(*40 Years Science Studies in Bulgaria.
Sofia, CSSHS, 2008, 390 p.)

The book is published in the occasion of the 40th anniversary of the STS (Science Technology and Society) study in Bulgaria. The publisher, Center for Science Studies and History of Science (CSSHS), established in 1995 is the successor of the Research Group on "Science for Science" at the Bulgarian Academy of Sciences (1968), later on transformed into Center (1972). It is the first unite in the country which mission is to create and disseminate knowledge on the history, present development and perspectives of the Bulgarian science and its relation with the society.

The book presents part of the results from the research of the CSSHS, performed in the transition context and cover broad subjects and reflections on the history and methodological orientations of the field; results from research projects on different problems that characterize contemporary shifts and challenges to S&T systems in the country, such as the innovation systems, science and innovation policy and its instruments – monitoring and evaluation of scientific programs, new science intensive services, human resources, scientific communications and other.

The articles on history of science focus on the contribution of the Bulgarian scientist in the fields of biology, nuclear energy, cultural studies but also they tackle more general issues such as the sources for investigations in the history of the science like the Seventeenth-century scientific letters, the scientific archives, the role of institutional framework for the study of the history of technology and other.

BULGARIAN PUBLICATIONS ON HISTORY OF SCIENCE, 2007-2008

История на науката и техниката в България. Юбилейна сесия 50 години Национален политехнически музей. София, 2007, 120 с.

(*History of Science and Technology in Bulgaria. 50 Years National Polytechnic Museum.* Sofia, 2007, 120 p.)

ПРЕШЛЕНОВА, Р. *По пътищата на европеизма. Висшето образование в Австро-Унгария и българите (1879-1918)*. София, 2008, 404 с. (PRESHLENOVA, R. *Roads to Europeanism. Higher Education in Austria-Hungary and the Bulgarians* (1879-1918). Sofia. 2008, 404 p.)

KOSTOV, Al. Les étudiants roumains, serbes et bulgares à l'Ecole des Ponts et Chaussées (Paris) pendant la seconde moitié du 19e et au début du 20e siècle: origine sociale, formation, réalisations professionnelles. – *Etudes balkaniques*, 2004, 2, 72-87.

KOSTOV, Al. Les étudiants originaires des Etats balkaniques à l'Institut électrotechnique de Nancy (1900-1940) – Dans: Birck, Fr., A. Grelon (éds.) *Un siècle de formation des ingénieurs électriciens. Ancrage local et dynamique européenne, l'exemple de Nancy*. Paris, Ed. de MSH, 2006, 319-334.

KOSTOV, Al. Die neue technische Intelligenz: Zur Ausbildung bulgarischer Ingenieurfachleute zwischen 1945 und 1989. - In: Brunnbauer, U., W. Hoepken (Hrsg.) *Transformationsprobleme Bulgariens im 19. und 20. Jahrhundert. Historische und ethnologische Perspektiven*. München, Verlag Otto Sagner,

2007, c. 191-204.

KOSTOV, Al. Entre la Russie et l'Occident : les Bulgares et l'enseignement ingénéro-technique avant la Libération. - In : *Alexandre Exarh et les routes bulgares vers l`Europe XIXe – début du XX siècle*. Stara Zagora, 2007, p. 240-248.

KOSTOV, Al. Les étudiants balkaniques dans les écoles techniques françaises, XIXe – début du XXe siècle. Sources et historiographie. - *Anuarul Institutului de Istorie "George Baritiu"* (Cluj-Napoca), XLVII, Series Historica – 2008, pp. 191-198.

KOSTOV, Al. La Belgique et la formation des élites bulgares (1879-1914). - *Studia Politica. Romanian Political Science Review*, vol. VIII, no. 1, 2008, pp. 57-63.

КОСТОВ, А., Д. ПАРУШЕВА, Р. ПРЕШЛЕНОВА (съст.): *И настъпи време за промяна. Образование и възпитание в България XIX-XX век*, Институт по балканистика при Българска академия на науките, София 2008. (KOSTOV, Al., D. PARUSHEVA, R. PRESHLENOVA (eds.) *Time of Change Has Come. Education and Training in Bulgaria, 19th-20th* Century. Sofia. 2008)

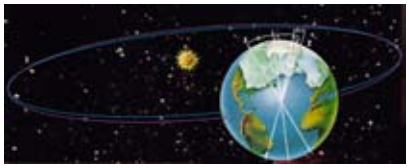
NAZARSKA, G. Bulgarian Women Medical Doctors in the Social Modernization of the Bulgarian Nation State (1878-1944). - *Historical Social Research/ Historische Sozialforschung* (Köln), 2008, vol.33, ser. 2, 232-248.

SERBIAN ASTRONOMY AND EARTH CLIMATIC DYNAMICS

The exhibition on History of Astronomical Theory of Climatic Change and Climatology of Milutin Milankoivc

The Gallery of the Serbian Academy of Science and Arts from January 28 this year (until the end of April) houses exhibition *Astronomical Canon of Milutin Milankovic*. It is dedicated to the secret of Ice Ages and Earth climate dynamics, history of astronomical theory of climate change and works of famous Serbian climatologist Milutin Milankovic (1879 – 1958) who is considered by the NASA among fifteen the most important Earth scientists ever. The authors of the exhibition are Professor Aleksandar Petrovic, academician George Zlokovic and designer Lily Radosavljevic. It was opened by the president of the Serbian Academy of Science and Arts, Nikola Hajdin, Vice-Dean of the faculty of Civil Engineering from Vienna, Porf Helmut Rechberger, and Dr. Fabrizio Antonioli, Insituto ENEA, Roma.

Exhibition explains that the idea of possible astronomically related climate changes emerged in the European scientific community almost two centuries ago. First it was considered by astronomers (John Hershel) and than postulated by geologists (Louis Agassis). After that, it took a few decades for earth sciences to assure itself, by geological data, in the existence of several "ice ages" which froze vast areas of Eurasia and Northern America significantly lowering the level of the oceans and seas. As soon as the idea became plausible, the earth scientists started making hypothesis to explain it.



The blueprint of Milankovic's orbital forcing with three cycles which are pacemakers of the global climate dynamics: 1. Eccentricity, 2. Obliquity, 3. Precession.

Attempts to explain the climate change by the influence of astronomical forcing started with the theories of the French mathematician Joseph Adhemar and Scottish natural philosopher James Croll in the middle of XIX century.

Sight from the exhibition

Following them, Milankovic began working on astronomical theory in 1912, after he had realized that "most of meteorology is nothing but a collection off innumerable empirical findings, mainly numerical data, with traces of physics used to explain some of them..." He continued the work of his predecessors, but in a basically different way: he was not searching for the causes of the Earth's ice ages, but trying to develop a general mathematical theory of climate applicable to all planets. His aim was an integral, mathematically accurate theory which

connects thermal regimes of the planets to their movement around the Sun. He wrote: "...such a theory would enable us to go beyond the range of direct observations, not only in space, but also in time..." It would allow reconstruction of the Earth's climate, and also its predictions, as well as give us the first reliable data about the climate conditions on other planets.

In 1917 Milanković made first calculations of the climate of Mercury, Venus Mars, and Moon which are completely accurate even today after numerous space missions. After that, in collaboration with Austrian climatologists Vladimir Köppen and Alfred Wegener, he calculated the changes of the insolation of the uppermost layer of the Earth's atmosphere depending on the changes in the Earth's distance from the Sun (i.e. on the shape and magnitude of its orbit), and on the declination of Sun's rays relative to that surface unit (i.e. on orientation and inclination of rotation axis, and geographical latitude). In his investigation he incorporated three astronomical cycles:

1. Variation in eccentricity of the Earth's orbit, from an almost exact circle to a slightly elongated shape, with the periodicity of about 100.000 years, which influences seasonal differences:

2. Variation in obliquity, i.e., the tilt, of the Earth's axis away from the orbital plane, from 22,1° to 24,5°; periodicity 41,000 years.

3. Precession of the equinoxes, i.e. revolution of the Earth's axis, where one revolution is completed in about 23,000 and 19,000 years.

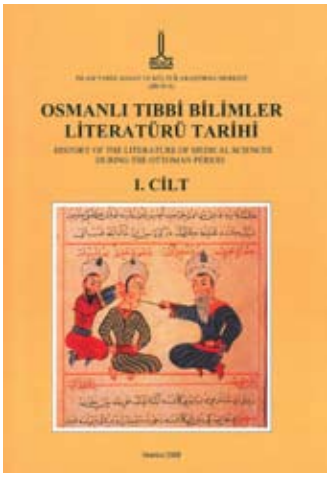
These three variations, superposed, constantly change the Earth's position relatively to the Sun, and, consequently, the insolation of any given spot on its surface. Graphically transformed these superposed variations are well known today as a Curve of insolation, which is today the firm basis for all the climate related Earth sciences.

The exhibition also displays numerous ways or climate reconstruction and prediction, various educative software, animations and movies for understanding climate dynamics and effect of Milankovic's cycles. Also impressive mechanical models of inner Solar system dynamics, precession cycles, obliquity dynamics are represented. Models of the last glacial maximum (21,000 years ago) and present glacial situation are shown along with astronomical situation which explains it. In the fall of this year exhibition is scheduled be opened in New York and Paris.

Djordje Djuric, University of Novi Sad, Serbia, djdjuric@gmail.com

HISTORY OF OTTOMAN MEDICAL SCIENCES

Ekmeleddin İhsanoğlu, Ramazan Şeşen, M. Serdar Bekar, Gülcan Gündüz, Veysel Bulut, Osmanlı Tıbbi Bilimler Literatürü Tarihi (History of the Literature of Medical Sciences during the Ottoman Period), *Ekmeleddin İhsanoğlu, 4 volumes: p. CLXXXI+556, 557-1304, 1305-2036, bibliographies and indexes 2037-2380, IRCICA, Istanbul, 2009*



The bio-bibliographies on the History of *Ottoman* Scientific Literature, a series resulting from about twenty-five years of research and the first two volumes of which appeared in 1997, now reached its fifteenth volume. The preceding eleven volumes were related to astronomy, mathematics, geography, music, military arts, and natural and applied arts, respectively.

The work begins with a Preface by Prof. İhsanoğlu that sketches the main features of the history of medical sciences starting from early Islam and with emphasis on the Ottoman period, describing the landmark developments in theory and practice and those relating to the establishment of hospitals, qualities of the physicians, and translations of medical works from other languages. The Introduction by Prof. Ekmeleddin İhsanoğlu and Prof. Ramazan Şeşen is an instructive study on the history of medicine – including dentistry, pharmacological sciences and veterinary sciences, the various schools and traditions, and the medical institutions, throughout the Umayyad, Abbasid and Ottoman periods. This section evaluates the results of the research and draws statistical figures from the content of the four volumes, thus describing the characteristics of scientific activity, theory, and authorship in the above three fields. The

main body of the book lists the medical works in chronological order under the names and biographies of their authors. The last section lists the books of which the authors and/or translators are not known. The first three volumes have illustrations at the end, such as reproductions of manuscripts, drawings or photographs of hospital buildings, laboratories, etc., and the fourth volume ends with indexes of personal names, book titles, place names, names of institutions, names of copyists, names of places mentioned in colophon, book ownership registers and waqf registers.

In the Ottoman period, authorship of original treatises began in the 14th century with Jamaleddin al-Aksarayi and Haji Pasha. Hospitals were built starting from the reign of Yıldırım Beyazıt (1389-1402). Ottoman medicine was for its greatest part directed to practice and treatment and so were Ottoman contributions to medical science. Ottoman medical scientists wrote treatises and made translations in all branches of medicine, however as it was the case in previous periods, studies on anatomy were relatively less. These, together with works in other medical sciences, gained pace in the 19th century especially with the opening of modern medical schools and later of other related institutions. Western professors, physicians and veterinarians were invited to the Ottoman state and Ottoman graduates of the modern schools were sent to Europe for specialisation; some of them were taught by founders of modern medicine such as Pasteur, R. Koch, and Claude Bernard. From the 1880's onwards Ottoman physicians closely followed the medical progresses in Europe and America. Some of them taught and practiced in Arab countries. As in other fields of science, the improvement of health services and the quality of medical literature were remarkable in the 19th century.

The book covers 5607 treatises and articles on medicine, dentistry, pharmacology and veterinary sciences by 1430 authors. 1437 out of the total are either manuscripts or have manuscript copies. Again out of the total, 4558 are medical books, 544 on pharmacology, and 546 on veterinary sciences. 4560 are in the Turkish language, 821 in Arabic, 114 in French, 39 in Persian, 17 in Armenian, and 14 in German. 36 of them are in more than one language. There exist a large number of translations. Until the 18th century, Ottoman medicine practically followed Islamic medicine, and thus until the 17th translations were made mostly from Arabic and Persian, while after that time translations from Western languages increased. The number of translated works included in the book is 723; 262 of them were translated from French to Turkish and 106 from Arabic to Turkish.

This impressive work will add voluminously to existing knowledge on the history of medicine in the Muslim world.

HISTORY OF ASTRONOMY IN THE 20TH CENTURY TURKEY

Erdal İnönü, 1923-1966 Döneminde Türkiye'nin Astronomi ve Astrofizik Dallarındaki Araştırmalara Katkısını Gösteren Bir Bibliyografya ve Bazı Gözlemler. (A Bibliography Accounting for Turkey's Contribution to Researches in Astronomy and Astrophysics Between the Years 1923–1966). *Eds. Feza Günergun, Esra Çolpan, Published by the Turkish Academy of Sciences (TUBA), Ankara 2009, 126 pp.*

The renowned Turkish physicist Prof. Erdal Inönü (1926-2007) published a series of bibliographical works on researches in physics, mathematics and chemistry completed in Turkey between the years 1923-1966. The present volume is a revised version of the bibliography on astronomy and astrophysics, which he had started to compile together with the astronomer Muammer Dizer (1924-1993) in 1970s.

This posthumous edition aims to portray the performance of Turkish and foreign researchers working in Turkey, and Turkish researchers working abroad in the field of astronomy and astrophysics, during the mentioned period. The number of references recorded in the Science Citation Index to the authors included in the bibliography are also noted. Detailed reports accounting for the beginning and evolution of astronomical research in Turkish universities and observatories are appended to the bibliography. Prof. Inönü's present work documenting the beginning of research and institutionalisation in the fields of astronomy and astrophysics and its evolution, starting from, 1923 can be regarded as a pioneering contribution to the history of astronomy in the 20th century Turkey, as well as a definitive source of reference in this field.

STUDIES IN OTTOMAN SCIENCE

Vol. VIII, Nr.2, 2007, Contents:

An early Turkish journal on mathematical sciences: *Mebahis-i İlmiye* (1867-69) (*Feza Günergun*); Hüseyin Tevfik Pasha: The Inventor of 'Linear Algebra' (*Gert Schubring*); Salih Murat Uzdilek and the 'Introduction of logarithms into Turkey' (*Şeref Etker*); An American plant collector in Samsun: Carl Tobey (1918-1991) (*Asuman Baytop*); The botanical expeditions of Prof. Kâmil Karamanoğlu (1920-1976) and his plant collection (*Asuman Baytop*); Dr.Osman Şevki Uludağ disputes Professor Fuat Köprülü's review of *Science among the Ottoman Turks* by A. Adıvar (*Nuran Yıldırım*)

Vol. IX, Nr.1-2, 2007 / 2008 (Atilla Bir Festschrift):

The current issue of *Osmanlı Bilimi Arastirmalari* (Studies in Ottoman Science) is presented to Professor Dr.ing. Atilla Bir in recognition of his oeuvre in history of technology on the occasion of his retirement from the university in 2008.

Born in Izmir in 1941, A. Bir received his BS and MS degrees in electrical engineering from the Technische Hochschule – Karlsruhe in 1966. He joined the Istanbul Technical University Faculty of Electrical Engineering in 1970, and started researching on electronic control systems. His PhD thesis was on 'the deterministic and probabilistic prediction in control systems' (1975). Soon, he became interested in history of mechanics and, besides producing popular articles on the hydraulic devices designed by medieval Islamic mechanicians, he published the *Kitab al-Hiyal* of Banu Musa Bin Shakir (9th c.), where he applied modern knowledge of system and control engineering to the functioning of mechanical devices.

Part of Professor Bir's research work focused

on the transliteration and the technical account of works by Turkish astronomers such as Taqi al-Din (16th c.) and Ahmet Ziya Akbulut (early 20th c.) dealing with the construction and the use of quadrants, sundials and mechanical clocks. Of particular interest is his interpretation of the historical quadrants employed in Turkey. His preoccupation with the physics of bows and arrows led him to calculate a mathematical model for the shooting of Turkish composite reflex bows. He has located the norias which were in use in Anatolia in the past, and studied their mechanisms. His recent work is on the extant windmills of Anatolia.

Professor Bir's intensive lecturing on system and control engineering did not prevent him to lecture on history of technology and scientific instruments. The undergraduate and graduate students of the Department of History of Science, Istanbul University profited immensely from his absorbing and seminal lectures. He also kindly offered his erudition, experience and assistance not only to the MSC and PhD students preparing theses, but to the team of historians of science in Istanbul University. Professor Bir's contributions to *Osmanlı Bilimi Araştırmaları* are twofold: while gladly and readily sending his original research articles to the journal for publication, he worked as an outstanding and meticulous referee. The editorial board of the journal is much indebted to him for his continuous support.

As a scientist specialised in control engineering and keenly interested in history, Professor Atilla Bir largely contributed to the study of mechanical devices used in Asia Minor in medieval times and thereafter. We wish him happy retirement and hope that he will enthusiastically continue to invest his talents in in history of science and technology in the coming years.

Contents: Introducing electricity through experiments: Yahya Naci Efendi's treatise on electrical fluid (*Feza Günergun*); The Ottoman School of Naval Engineering: From 'Geometry Room' to Naval Academy (1775-1845) (*Mustafa Kaçar*); Preliminary investigation of the water wheels of the 'Fatih Foundry' at Demirköy, Kırklareli (*H.H. Günhan Danışman*); An episode from the history of Ottoman technology: Methods of ship launching (*Tuncay Zorlu*); A Turkish electrical engineer and dedicated intellectual (*Meltem Akbaş*); Inheritance record of Yusuf Beshe, an Ottoman bowmaker of late 17th century (*Şinasi Acar & Murat Özveri;* The door lock in Anatolian culture (*Semra Saraçoğlu & Bülent Karakaş*); The Essad Ophthalmoscope (*Şeref Etker*); The Turkish plant collection of Hofrat Prof. Carl Haussknecht (1838-1903) (Asuman Baytop); The botanical expeditions of Prof. Kurt Krause (1883-1963) in Turkey and his publications (*Asuman Baytop*); Emigré scientists at the Ankara Higher Institute of Agriculture (Sevtap Kadıoğlu) An essay on the astronomical knowledge and the calender of the Hittites (*Gaye Şahinbaş Erginöz*); Calender: From astronomical regularity to socio-mathematical consensus (*Dursun Ayan*).

INTERNATIONAL SYMPOSIUM ON SCIENCE AND TECHNOLOGY IN EUROPEAN PERIPHERY

STEP's VIth Meeting
18-22 June, 2008, Istanbul, Turkey

Founded in 1999 the international Science and Technology in European Periphery (STEP) group organized its 6th meeting in İstanbul on June 18-22, 2008. The meeting was hosted by the Chair for the History of Science of Istanbul University. The 6th STEP meeting revisited old themes (textbooks, travels, popularisation of science, science in the press in the European periphery) and started discussing a new theme: scientific and technological controversies in (or involving) the European periphery. Controversies are instances of science-in-action which are particularly suited to highlight the dependence of science from local contexts, in their multiple social, cultural, political, institutional, and religious dimensions as well as from the idiosyncrasies of individual contenders particularly vis-à-vis the cognitive dimensions of science. Therefore, they appear particularly

suited to assess the specificities of the practices of appropriation of science throughout time and across disciplines in different sites of the European Periphery. The meeting was well attended by historians and students from Europe, Asia and South America. For the complete program of the Istanbul STEP symposium see: http://www.bilimtarihi.org/step/program.htm.

THEORETICAL ISSUES IN NATURAL SCIENCES

Constantine Skordoulis (editor), Theoretical Issues in Natural Sciences*, Topos, Athens, 2008*

The book "Theoretical Issues in Natural Sciences" has been published by "Topos Publications" in Athens and is a compilation of essays, under the editorial supervision of Prof. Constantine Skordoulis, on issues of history and epistemology of natural science. Topics include also the History of Scientific Instruments, the relationship between Mathematics and Science, Gender and Science, Historiography of Science and the reception of the new scientific theories in Greece.

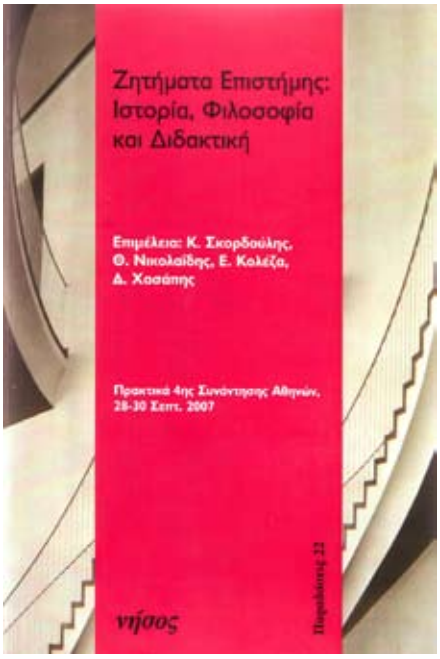
The authors of the topics of the book are: Efthymios Bokaris, Eugenia Koleza, Gianna Katsiampoura, Maria Rentetzi, Yiannis Parkosidis, George Vlahakis, Kostas Tampakis and Efthymios Nicolaidis.

The authors of this volume think that science is not a static collection of laws and theories but a dynamic process, full of controversies, challenges and re-evaluations and that the study of natural sciences cannot be separated from the study of their history.

The book aims at a multiple audience of students of natural science, primary and secondary school teachers and in general everyone with an interest in natural sciences.

ISSUES IN SCIENCE: HISTORY, PHILOSOPHY AND DIDACTICS

Constantine Skordoulis, Efthymios Nicolaidis, Eugenia Koleza and Dimitris Chassapis (eds), Issues of Science: History, Philosophy and Didactics*, Conference proceedings, 4TH HCHPST:ISPD, Nissos, Athens, 2008*



The book "Issues in Science: History, Philosophy and Didactics" published with the editorial supervision of Constantine Skordoulis, Efthymios Nicolaidis, Eugenia Koleza and Dimitris Chassapis, by "Nisssos Publications" in Athens, includes the Proceedings of the 4th Conference with the same name that was held in September 28th-30th 2007 in Athens.

In the 390 pages volume, 34 papers are presented out of the total of 46 presented in the Conference.

The papers of the volume are divided in three sections: History of Science (11 papers), Philosophy of Science (11 papers) and Didactics of Mathematics and Science (12 papers). All the papers published in the Proceedings have been peer-reviewed by members of the scientific committee of the Conference.

The publication of this aesthetic volume is the culmination of the works of a very successful conference and at the same time marks the establishment of an interdisciplinary community of Historians, Philosophers and Didacticians of Science and Mathematics in Greece.

SOVEREIGNTY AND MATHEMATICS

Christine Phili, Preface by Apostolos Doxiadis, Sovereignty and Mathematics*, G. Papasotiriou, Athens, 2009 (757 pages)*

The recent book of Christine Phili does not constitute a biographical collection concerning the activities of mathematicians of various periods. Her research focuses on a specific point of view regarding the involvement of certain mathematicians with sovereignty of their rulers in various aspects from the fourth century to the twentieth.

Mathematicians such as Hypatia and Galileo were confronted with the merciless punishement of their rulers. Others, such as Leibniz, Euler and Carathéodory were accepted as reformers of the State. Viète, Wallis and Monge served the Valois' House, the Stuarts and Napoleon the Great respectively. Cauchy destroyed his academic career by remaining faithful to his oath regarding the Bourbon's Dynasty, while Fourier abandoned Napoleon the Great and became a royalist. Omar Khayyam tried to do mathematics in the court of the Seldjuks during their struggle to gain the throne.

Bernard Bolzano the great reformer of mathematical analysis as well as philosopher, theologian and logician was dismissed from the University of Prague due to his democratic ideals which confronted Metternich's laws known as the Karlsbad laws.(1819).

The persecutions of Jewish mathematicians during the epoch of Fascism and the Third Reich as well as these of Egorov and Luzin after the Bolshevik Revolution have been minutely analysed.

It must be stressed that the relationship of Sovereignty and Mathematics has deep roots as mostly exemplified by Plato, who chose the future servants of the State according to their progress in mathematics.

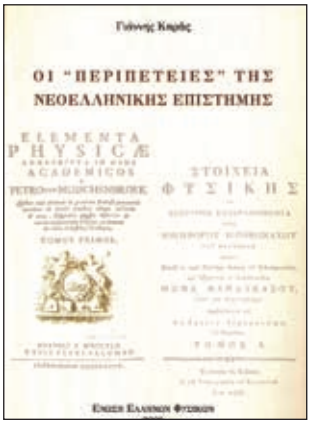
TWO BOOKS ON THE NEOHELLENIC REVIVAL AND THE SCIENTIFIC THOUGHT

Yannis karas, The meaning of matter in the Neohellenic Revival*, Second edition, Hellenic Physicists Association, Athens, 2009.*

This book is devoted to the study of the meaning of matter in the works of the greek scholars of the 18^{th} -19^{th} century. Yannis Karas, a pronounced historian of Greek science, succeeds in giving a complete and detailed picture of the ideas and theories concerning matter expressed during the eve of the scientific thought in the modern Greek culture. Some of the theories proposed or adopted by the Greek scholars seem to be quite realistic and in accordance with modern beliefs concerning the role of matter and void in the nature.

The book is useful not only for the experts but also for the wider audience, all those who wish to learn more about the recent, but mostly unknown past of the Greek science.

Yannis Karas, The Adventures of the Greek Science*, Hellenic Physicists Association, Athens, 2009.*



This is the most recent book of a series written by Yannis Karas on the scientific thought during the so called Neohellenic Revival. The main aim of the book is to prove that Europe and the Greek cultural regions before the Greek War of Independence (1821) could communicate through several channels. His main argument is that science has not a strictly national character but it consists the connecting bridge between all nations.

The main part of the book consists a table showing the parallel way of the scientific development in Europe and Greek cultural regions, proving the osmosis and assimilation of the modern scientific theories by the Greek scholars of that era.

MODERN PHYSICS AND THE MEANING OF MATTER

Charis Anastopoulos, Particle or Wave: The Evolution of the Concept of Matter in Modern Physics*, Princeton University Press, 2008,* (432 pages)

Charis Anastopoulos is a researcher in the Department of Physics at the University of Patras in Greece, who has thought deeply about the fundamentals of physics.

Particle or Wave is the first popular-level book to explain the origins and development of modern physical concepts about matter and the controversies surrounding them. Its aim is to convey to a mixed audience how the successful and well-established quantum theory of fields goes about describing nature

HPDST MEMBERS SUCCESSFULLY DEFENDING PHD THESES

Constantine Tampakis
The education of Greek primary teachers in Physical Sciences (1831-1931)
Pedagogical Department of Primary Education of the University of Athens
Supervisor: Constantine Skordoulis

In July 14th, 2008, Constantine (Konstantinos) Tampakis, a member of the HPDST, successfully defended his PhD thesis, titled "The education of Greek primary teachers in Physical Sciences (1831-1931)", in front of the seven members of the Examining Committee. Conducted under the supervision of Prof. Constantine Skordoulis of the Pedagogical Department of Primary Education of the University of Athens, C. Tampakis' thesis is part of an ongoing historiographical project of HPDST to document, study and create a coherent account of the development of modern scientific practice in the Modern Greek State.

A teaching School from primary teachers during the 19th century, in Argyrokastro, Greece.

More specifically, C. Tampakis' work focuses on the science education of prospective and active primary education teachers during the first century of the Modern Greek State (1820-1938). Using methodological tools and findings from both historiography of education and historiography of science, C. Tampakis' thesis examined curricula, journals, textbooks and speeches, as well as several secondary sources, in order to highlight and document the importance of primary education for the establishment and perpetuation of a specific scientific ethos inside Greek scientific practice. Furthermore, the importance attributed to primary education by the Greek State enabled several other interrelations between science education and the establishment of a scientific community in Greece to come to light. It remains, now, to be examined how these findings can be generalized and expanded towards a more general theory about the relations of science education and scientific practice.

Lucia Prinou
The Theory of Evolution in Greek Primary and Secondary Education
University of Athens, Greece
Supervisor: K. Halkia

This thesis explores the "presentation" and "presence" of the theory of biological evolution in Greek primary and secondary education since the beginning of the 20th century. In the introduction of this doctorial dissertation

there is an analysis of the central and unifying role of the theory of evolution in biology and in the teaching of biology. There is also an overview of the acceptance and treatment of evolutionary theory in Greece.

Initially, a study was made of the presentation of evolutionary theory in the school curricula and textbooks since it was first introduced in the early 20th century. However, the presentation of this theory is linked to the mindset of the teachers, as well of their pupils. Therefore, it was necessary to investigate what Greek primary and secondary school teachers thought about concepts in evolutionary theory and the subsequent effect it had on their pupils after their being taught the material in the curricula.

Therefore this study contains four separate sections that comprise the four chapters of the thesis, while the methodology includes an analysis of all the curricula with regard to their goals, the teaching material contained in them, the class time devoted to biology and other related lessons. It pinpoints and analyses all the texts that that are either directly or indirectly related to evolutionary theory in all primary and secondary textbooks.

The research instruments used to record teachers' and pupils' conceptions and views were questionnaires consisting of open-ended and closed questions and interviews with secondary school biology teachers.

In the fifth and final chapter, the individual research findings are evaluated in order to draw general conclusions as well as observations and proposals for further research.

NEWSLETTERS FOR THE HISTORY AND PEDAGOGY OF MATHEMATICS (HPM)

The History and Pedagogy of Mathematics (HPM) Newsletter No. 70

(March 2009), has been published by our colleague Nikos Kastanis

(University of Thessaloniki, Greece).

This and earlier issues of the Newsletter can be downloaded from the website

http://www.clab.edc.uoc.gr/hpm/

HISTORY and PEDAGOGY of MATHEMATICS * HPM

International Study Group on the Relations Between the HISTORY and PEDAGOGY of MATHEMATICS An Affiliate of the International Commission on Mathematical Instruction

THE LAUNCH OF THE NEW JOURNAL *SIGNUM*

The Department of Humanities, Social Sciences and Law of the National Technical University of Athens has launched the publication of the Journal *Signum* (previously published in the period 1979-80). The scientific fields of this Journal include Philosophy, Sociology, History and Philosophy of Science and Technology, History of Economic Theories, Applied Economics, History of Ideas and Civilization, Law etc. The term *technology* includes in general all its non-material forms as well.

Academic staff, researchers, authors, and students of the areas above are welcome to submit their works to the Journal that will be published bi-annually.

The official language of the Journal is Greek (not excluding English articles and papers whenever approved by the Editorial Board). Articles will be peer reviewed, and might also consist in book reviews, conference papers, etc. The Journal is also committed to communicating News and activities of the Schools and Departments of the NTUA.

Articles, varying between 3.000 and 6.000 words, should be submitted according to the Instructions for Authors (until the 30th of June 2009 for the first issue) to the electronic mails: ktheolog@central.ntua.gr or theologou@gmail.com. For further queries please contact Kostas Theologou (tel. +30 210 7722255, ktheolog@central.ntua.gr).

KRITIKI: CRITICAL SCIENCE AND EDUCATION

The Greek journal *Kritiki: Critical Science & Education* is the product of the work of a network of researchers. This network is formed having as its basic unifying element the intention to theoretically reconstruct the radical perspective about science and education. Especially, *Kritiki* invites articles on Radical Approaches to Science and the History of Science.

Kritiki's aim is to publish selected papers from the Seminars on Critical issues of History, Philosophy and Didactics of Science organized each July in Elati, Greece. However, the journal is open and invites papers to be published, provided that they integrate in its repertoire. During 2008, *Kritiki* published two issues, 7 (June) and 8 (December).

Contents of the volume 7:

Ole Skovsmose: *Reflections as a challenge*; John Milios; *The Marxian Notion of the Asiatic Mode of Production as a Critique to Evolutionary Approaches to History*; Kostas Stergiopoulos; *Is the success of Science Contingent?*; Anna Kostoula: *Giambattista Vico, the Republic of Letters;* Hellen Giannakopoulou: *Organization and Governance of Education. Questions and Comments*; Ioanna Stavrou: *Science Education and Literature of Science Fiction: critical approaches;* Nikos Nikisianis and Giorgos P. Stamou: *"Sustainability for biodiversity"...on the relation between ideology and science at the dominant discourse of contemporary evology.*

Contents of volume 8:

Aris Stylianou: *Obscure light: Rousseau's critic of the Enlightenment; Alex Koutsouris: Critical realism and the problem of interdisciplinarity-with reference to agriculture and agronomic higher education;* Gianna Katsiampoura and Ioannis Parkosidis: *Gender and Technology: a continuing discussion;* Vangelis Koutalis: *Disputing the jurisdiction of the victor: the criticism of Priestley to Lavoisier;* Philipos Tentolouris: *Intertextuality, discourse genres and social relations: the texts for the Flexible Zone;* Dimitrios Schizas and George Stamou: *Baroque and Romantic Perception of Wholeness within the science of Ecology.*

THE INTERNATIONAL EUROPHYSICS CONFERENCE

Technoscience. Historical, Sociological and Philosophical Perspectives
14-15 July, 2008, Syros, Greece

The Conference was organized by Byron Kaldis, Hellenic Open University, George N. Vlahakis, Institute for Neohellenic Research / National Hellenic Research Foundation (INR/ NHRF) and Peter Maria Schuster, History of Physics Group/EPS under the Auspices of the Hermoupolis-Seminars Series "Science and Culture", National Hellenic Research Foundation (NHRF) on 14-15 July 2008, Syros Island, Greece.

It was attented by 40-50 postgraduate students, teachers of secondary education and researchers. No registration fees were required for the participation in the Conference.

The main scope of the Conference was to become a forum for the presentation of different but interesting views in the study of history and philosophy of science in general and physics in particular.

During the opening of the Conference short addresses were given by Dr. Peter Maria Schuster, President of the History of Physics Group/ EPS, who mentioned in particular the role of the Group and EPS for the development of History of Physics in Europe, Malcolm Cooper, as representative of the Institute of Physics / England, Efthymios Nicolaidis, Secretary General of the International Union of the History and Philosophy of Science/ DHST, member also of HoP/EPS who referred to possibilities of further cooperation between IUHPST/ DHST and HoP/EPS and invited HoP/EPS to participate with a specific symposium to the next International Conference on History of Science and Technology which will be held in Budapest,

July 2009, Dr. Artemios Athanassakis, as representative of the National Greek Physicicsts association and Prof. Paschalis Kitromilides, Director of INR/NHRF, who welcomed all the participants.

The first session of the conference started with a paper by Prof. Peter Holmberg on "History of Physics and Science Teaching", as subject of particular interest for physicists and historians of physics. Prof. Holmberg's paper gave several examples about the way history of physics can be used as a tool which may make more easier for the students the understanding of fundamental laws of physics.

Two young and promising scientists gave the next papers, more related to the philosophy of science. Alex Tillas's on "Science Meets Psychology: An Empiricist Perspective on Concept Acquisition" offered "an account about how concepts can be acquired on the basis of perceptual experience." and Aikaterini Konstantinidou with "Argumentation as a Means for Understanding Science: Past and Present" presented a review of research on argumentation in science education.

The papers of the second session were as follows:

Steven Shapin: "The Life of Science. A Moral History of a late Modern Vocation"

Peter Maria Schuster: "The Concealed Realness, and the Mind Chasing After."

Denis Weaire: "Bubbles and Foams in Art, Architecture, Science and their intersections"

Byron Kaldis: "Technoscientific Reason"

Prof. Shapin, as pointed out "looking at episodes of American science from the early 20th century to the entrepreneurial present, argued that the roles of trust in familiar people, of ascribed personal virtue, and even of charisma have never been more important in institutionalized scientific life than they now are."

Dr. Schuster presented an inspired paper making obvious the hidden connection between physics and poetry in many different ways.

Prof. Weaire made his point on the strong relationship between science and art based on the story of the The Water Cube, Beijing which takes its essential structure from the 1994 Weaire-Phelan ideal structure of a dry foam.

Prof. Kaldis, stated that is "significant to emphasize that the falsity of portraying Techno-Science as all-powerful in the sense of being an independent meaning-giving practice or truly objective knowledge now appears to be the result of an altogether different standpoint, and as such it does not contradict what was said above. Displacement and centrality can both be present."

The third session was mostly devoted to the history and philosophy of physics in national contexts.

Prof. Juraj Sebesta in "Science and Culture in modern Europe" discussed several views concerning the interaction of science and culture in Europe.

Carl Grandin in "Importing Physics: Solid-State Physics in Sweden" compared solid-state physics with quantum chemistry, which was established in Sweden at the same time in 20th century, but in a completely different way.

Prof. Rajka Jurdana in "Science Culture building activities: the Croatian movement towards «the Knowledge Society»" gave a detailed account for the popularization of Physics in Croatia.

Prof. J.J. Yuann in "The Philosophical Significance of East Asian STS Studies" exposed "the philosophical significance of the East Asian STS. Taking both historical and methodological approaches, it will first concentrate on the circulation, translation and generation of STS studies in the region."

Prof. Ali Gheissari in "Science and Technology in contemporary Iran" provided "a general overview of research and application in Iran with particular reference to the impact of public and private sector variables on research, retention, and resource allocation."

And finally Dr.. George N. Vlahakis: "Science and Society in Greece" discussed the development of science in Greece during the late 19th and early 20th century in the framework of a social approach.

Additional comments and questions made the Conference a place for lively and fruitful discussions, which also continued during the lunch breaks and the dinners.

The proceedings of the Conference will be published shortly by Living Editions.

The organizers would like also to express their acknowledgements to the European Physical Society with special thanks to the Conferences Committee, the Hellenic Open University, the Hellenic Ministry of Education, the National Greek Physicists Association and the Institute of Neohellenic Research / National Hellenic Research Foundation for their generous support.

Many thanks also to the speakers and the participants of the Conference who made this event a real bridge between different approaches to the study of science in general and physics in particular.

HISTORY OF PHYSICS GROUP OF EPS ANNUAL MEETING

July 14-15, 2008, Syros, Greece

The annual meeting of the History of Physics Board Council Group of the European Physical Society took place during the Syros Europhysics Conference, Syros island, July 14-15, 2008.

It was a succeful meeting which attented almost all the members of the Council board and they welcome as newcomer Prof. Rajka Jurdana, Croatia. During the fruitful discussions and in a very friendly climate under the wonderful Greek sun it was decided that:

Our group will organize a symposium entitled "Spectroscopy: Science and Society" to be held during the International History of Science and Technology Congress (ICHST), Budapest, July 28 – August 2, 2009.

A special conference on History of Physics will be organized during the first (!) joint conference of the Austrian Physical Society (OEPG), together with the Swiss Physical Society (SPG) and the Austrian Society for Astronomy and Astrophysics (OEGAA) in Innsbruck, September 2-4, 2009. The proposal of Peter M. Schuster to invite Klaus Hübner/ Heidelberg and Denis Weaire, FRS, as plenary conference speakers was accepted by the committee of the three societies.

The annual Board meeting of the EPS/ HoP Group will take place in Innsbruck September 4, 2008, in conjunction with the OEPG&SPG&OEGAA Conference.

Add'ly: Excursion of the EPS/HoP Group to the Hess Laboratory at Hafelekar Mountain/ Innsbruck (2250 m).

Publication of the Proceedings of the Syros Conference 2008 and the Conferences in Krems 2007 and Leoben 2008.

VIII INTERNATIONAL CONGRESS FOR THE HISTORY OF OCEANOGRAPHY

The History of Oceanography in the Mediterranean
Naples, June 26 – 29 2008

Stazione Zoologica Anton Dohrn
Villa Doria D'Angri

International meetings in the history of oceanography, with the rubric of International Congress of the History of Oceanography, have a storied history from gatherings in Monaco (1966), Edinburgh (1972), Woods Hole (1980), Hamburg (1987), Scripps (1993), Qingdao (1999), and Kaliningrad (2003).

The successful eighth meeting held in Naples, incorporated these previous settings and expanded on the development of the history of oceanography. The conference hosted talks on a variety of topics, while session V featured Professor Georges N. Vlahakis, Manos Dassenakis, and Stella Triantafyllaki expounding upon the professional aspects of Oceanographic Development in Greece during the last 50 years. The conference was deemed a huge success by all participants, building on the legacy of its predecessors.

IDEAS AND INSTRUMENTS IN THE SOCIAL CONTEXT IN THE OTTOMAN EMPIRE AND NATIONAL STATES

XXIII International Congress of History of Science and Technology
28 July-2 August, 2009, Budapest, Hungary
Scientific Symposium organized by
Ekmeleddin Ihsanoglu, Efthymios Nicolaidis, Tuncay Zorlu
'Ideas and Instruments in the Social Context in the Ottoman Empire and National States'

The Symposium we propose to organize in the framework of the XXIII International Congress of History of Science and Technology which will be held on 28 July-2 August, 2009 in Budapest, Hungary comes as the continuation of the symposium on "History of Ottoman Science, Technology and Industry" that was organized during the XX International Congress of History of Science in Liège, Belgium, in 1997. The papers of this symposium were published in *Proceedings of the International Congress of History of Science (Liège, 20-26 July 1997) volume VI, Science, Technology and Industry in the Ottoman World,* ed. E. Ihsanoglu, Ahmed Djebbar and Feza Günergun, Brepols Publisher, Belgium 2000. It was followed by the symposium held in Mexico in 2001 under the title "Science and Cultural Diversity: from the Ottoman Empire to the National States". The papers of this Symposium studied the various scientific traditions of the Ottoman Empire, which were inherited by the National States that were born from this Empire. The proceedings were edited in the volume prepared by E. Ihsanoglu, K. Chatzis and E. Nicolaidis under the title *Multicultural Science in the Ottoman Empire*, De Diversis Atribus, Collection de Travaux de l'Académie Internationale d'Histoire des Sciences, Brepols, Turnhout, Belgium, 2003. We also participated in the XXII International Congress of History of Science and Technology held in Beijing in 24-30 July, 2005, with a symposium titled 'Diffusion of Science and Technology: Ottoman Empire and National States', which dealt with the neglected theme of interaction between different scientific cultures of the Ottoman Empire. The proceedings of the Beijing Symposium were edited by E. Nicolaidis and published in *Archives Internationales d'Histoire des Sciences*, vol. 55, 2006. As a continuation of our previous studies we propose to study the Ideas and Instruments in the Social Context of the Ottoman Realm in the coming Budapest symposium.

Over its long history, the Ottoman world had been a fertile setting for various cultural and intellectual activities fostered by the accoplisments of the East and the West. It had spread over a large territory harboring various scientific traditions in its provinces in Europe, Asia and the Middle East. While on the one hand, the scientific tradition stemming from the Islamic middle ages culminated towards the end of the 16th century in Istanbul, the Byzantine scientific tradition continued to be developed by Christian Orthodox populations of the Empire. During the the same century, the manifestations of the European scientific tradition began to be felt in the Ottoman realm; this tradition will prevail over the Muslim and Orthodox populations after the middle of the 18th century, together with the national ideas which will lead, one and a half century later, to the dismantlement of the Empire. This symposium aims to cover scientific contributions of the multi-national societies that inherited various scientific traditions and once lived within the broad territorial spectrum of the Ottoman Empire, to the emergence of new scientific ideas and creation of new instruments.

CONFERENCE ON "MATTER AND FORCE"

4-5 March, 2008, University of Patras, Greece

The Philosophy department of Patras University organized a two-day conference on natural philosophy and cosmology. More specifically, the topic of the conference was titled: 'Matter and Force: from Metaphysics to Secularisation'. The aim of the organizers was to open a philosophical discussion on the various ways the notion of matter and its correlation to force has been conceived throughout the history of ideas from antiquity to modernity. The papers addressed the diversified cosmological models provided from Plato and Aristotle, through early Christian and medieval views up to Descartes, Newton and Leibniz and the issues discussed have had an interdisciplinary flair, as philosophical questions were blended with scientific and historical topics. It is worth noting that the conference, during both days, attracted a large, wide and 'committed' audience, including mostly students but also academics from various departments of the university and this testifies, once more, that the perennial cosmological questions constitute not only the source of philosophical thought but also the meeting point between philosophy and modern science.

Speakers: V. Kalfas, D. Sfendoni-Mentzou, C. Terezis, E. Nikolaidis, E. Vampoulis, Z. Bosemberg, A. Arageorgis, A. Kaleri

THE ELATI SEMINARS

5th Workshop on critical approaches to science and education
14-20 July, 2007, Elati, Greece

The *5th Workshop on Critical Approaches to Science and Education* was held in Elati from July 14th to July 20th, in Elati. It was organized by the HRSN (Hellenic Radical Scientists Network) with the participation of the Universities of Athens and Janena, the National Hellenic Research Foundation, the Journal *Critical science and education* and hosted by the Municipality of Aithikon (Elati, Greece). About a hundred people attended the Workshop, ranging from students pursuing their Master's degree to established experts in the fields of didactics, philosophy and history of science. The 5th Workshop hosted talks on a variety of topics of Ecology, Gender Studies and History, Philosophy and Didactics of Science.

The plenary session featured Professor Ronald L. Numbers, President of the International Union of the History and Philosophy of Science / Division of History of Science and Technology, expounding upon "The Anttievolutionists: From scientific creationism to intelligent design" and Jullien Vincent, Professor of the University of Nantes, lecturing on " Who discovered what? A different point of view can change the answer". Peter McLaren Professor of USLA and Nathalia Jaramilo of Purdue University gave the last plenary lecture on the topics of "Pedagogy and Class Struggle in the age of empire" and "The politics of Gender and Post- Colonialism in Critical Pedagogy" respectively.

The seminar hosted several notable speakers as key lecturers. (see the Programme on the Hellenic Society of History, Philosophy and Didactics of Sciences site, http://www.hpds.gr).

It's worth mentioning that part of the Workshop time was devoted to the work and personality of Dimitrios Livieratos, the imperious historian who at the end of the event gave a special lecture on "Socialism in the 21st century". Additionally there was a whole session devoted in the memory of Aggelos Elephantis, a Greek intellectual who marked the period after the reestablishment of the democracy in Greece, and editor of the journal *Politis*.

Professor Ronald L. Numbers at Elati Seminars

The Workshop was deemed a huge success by all participants, building on the legacy of its predecessors. Selected papers based on the talks given will appear in the peer reviewed journal *Critical Science and Education*. Next year, the Seminars are planned to last three days, from 14 to 17 July comprising three events: A workshop on Ecology, the 6th Workshop on Critical Approaches to Science and Education and the Hephaestus Research Seminar.

Aggelos Elephantis

WILLIAM SHEA LECTURES ON GALILEO IN ATHENS

May 12-23, 2009
Istituto Italiano da Cultura di Atene,
Museum of the University of Athens

In the frame of the international year of astronomy, celebrating the 400 years of the telescope, the Istituto Italiano da Cultura di Atene in collaboration with the Laboratory of Science Education, Epistemology and Educational Technology of the University of Athens (on behalf of the project *Hephaestus*), have organized two lectures on Galileo. The invited speaker was the Professor of the *Cattedra Galileana* of the University of Padova, William Shea.

The first lecture, May 12, took place at the building of the Istituto Italiano and the second, May 13, at the Museum of the University of Athens (the old building of the University, in Plaka). William Shea presented in a very vivid way Galileo's encounter with the Catholic Church authorities (first lecture) and the interpretation he made of his telescope observations (second lecture). Following the second lecture of William Shea, Efthymios Nicolaidis and Constantine Skordoulis gave lectures on the "reception of the Copernican system in the Greek world" and "teaching about cosmological systems, from Aristarchos to Galileo".