

SEMINAR REPORT

XXIII INTERNATIONAL CONGRESS OF HISTORY OF SCIENCE AND TECHNOLOGY (IUPHS/ DHST) : A REPORT

The XXIII International Congress of History of Science and Technology was held from 27 July- 02 August 2009 under the aegis of the International Union of History and Philosophy of Science/Division of History of Science and Technology (IUPHS/ DHST) at Budapest, Hungary.

The event was hosted in Budapest University of Technology and Economics, Budapesti Muszaki es Gazdasagtudoinanyi Egytem (BME). The university is one of the oldest technical institutions in the world, founded in 1782 by the Emperor Joseph II and has a long history of contribution to science and technology. Among its noble prize winner alumni are the inventor of holograph Dennis Gabor, the Chemist Gagloah, the physicist Eugene P. Wigner (1902-1995), world's first nuclear engineer to build the first nuclear reactor and the mathematician and chemist John von Neumann (1903-1957).

The Congress consisted of scientific sessions in the form of symposia organised by various Commissions and individual papers presented in the regular sessions. The general theme of the Congress "Ideas and Instruments in Social Context" drew specialists from diverse disciplines. Scientific sessions covered history of science, technology and medicine from antiquity to present. The topics covered in the symposia ranged from ancient Greek astronomical calculator known as *Antikythera* Mechanism, Handy Tables of Ptolemy to the topics of current interest such as the humanoid robots and the creation of a hyperrealist public sphere through the social networking web site called the Face Book

A series of plenary lectures delivered by the invited speakers marked the opening of the Sessions. The first plenary lecture on "Darwin's Sacred Cause" delivered by James Moore(Open University,England) raised the question and reasoned why did Darwin, a rich and impeccably upright gentleman, go out of his way to develop privately a subversive image of human evolution in 1837-39? The

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British scholar argued that it was the humanitarian instinct in Darwin, his belief in racial brotherhood and his scientific researches which led to the greatest movement of the age- the abolition of slavery. The theme was topical too, in the 200th anniversary year of Charles Robert Darwin (1809—1859- 2009) and 400 years of the Italian physicist and mathematician Galileo Galilei's telescopic discoveries (1609-2009). However, a number of symposia and regular sessions were also devoted to commemorate the anniversaries of both the scientific geniuses. Papers were also read as tribute to the physicist and philosopher Johannes Kepler (1571-1630), since the year 2009 is being celebrated as the International Year of Astronomy.

In the second plenary lecture Paolo Brenni from the Scientific Instrument Society (England) discussed the issue of "The Cumbersome Material Heritage of Astronomy," and focused upon the significance of observatories and collections and the problem of preservation, restoration and possible uses of the 19th and 20th centuries' historical astronomical instruments. Istvan Hargittai of the Budapest University of Technology and Economics in his lecture "From Hungary to the World: Martians of Science," highlighted the role of national heroes of science and technology. He enumerated that the works of Hungarian scientists ranged from aerodynamics to quantum mechanics, stored program computers to molecular biology and from the nuclear chain reaction to game theory. Another series of plenary lectures consisted of the distinguished speakers Ekmeleddin Ihsanoglu (the first Turkish scholar recipient of the prestigious Alexander Koyre Medal, awarded by the International Academy of Sciences), explaining the relation of modern science to Islam. Robert Halleux (Belgium) spoke on the technology transfer in early modern Europe and two invited Czech scholars recounted the plight of scientists and scientific exile under the totalitarian Communist regime such as the Cold War Czechoslovakia.

The "Regular Session - South Asia and India" consisted of two papers. The first "History and prospect of Bangladesh-India natural gas pipeline project" by Md. Mamunur Rashid (Tokyo Institute of Technology, Japan) focused on national and trans-national politics, negotiating with the neighbours, in this case with respect to India. The second by Gulfishan Khan (Aliharh Muslim University) on "Perceptions of Western Techno-scientific progress: Karim Khan Mushtaq Jhajjari (at present in the state of Haryana)" who visited Britain in 1840-41 focused upon the scientific and technical discourses of Karim Khan. The paper was based on his Urdu travelogue *Siyahatnama* and *Mirat-i-gitinuma*, a universal history written in

Persian. During the discourse several questions were raised about the contemporary sources in India and European influences on it. Two other papers by Indian scholars were “Planning and Technology for National Reconstruction, the NPC initiative in Colonial India” by Jagdish N. Sinha (Delhi University) and “Concept of *Śūnya* in the Indian Antiquity” by P. Mukhopadhyay (Calcutta university).

Another symposia “Revisiting Joseph Needham’s ‘Rivers and the Sea Metaphor’: the construction of modern science and technology in a global context, 17th-19th Centuries,” was also related to the question of the Asian perception and response to the western sciences and technology during the late medieval period. Not surprisingly separate sessions were devoted to the role of learned societies in the promotion of scientific endeavour. A separate symposium deliberated upon the role of gender in the development of science and technology in Europe. Two female scientists namely Margaret Rossiter and Annette Vogt enumerated the role of women scientists in the U.S. and Europe. Ann Vogt in her overview of the development of the careers of female scientists in the academic institutions of Europe reiterated that many of the problems that were part of the history, the women are now facing once again, such as the debates about women’s role in science and society, and the controversy about scholarly work versus motherhood.

American scholar Alexander Jones from the New York University (U.S.A.) explained the *Antikythera* Mechanism, the fragments of bronze device found a century ago among the objects recovered from a Hellenistic shipwreck, and its place in Greek astronomy. He suggested that the mechanism illuminates the broad question of what the discipline of astronomy meant in the time of Apollonius, Hipparchus, and Geminus, and how its specialists explained its nature and utility to the intellectual public.

Some of the symposia themes were simply fascinating for the specialists as well as the non-specialists, such was the journey of pen “From the First Fountain Pen to Ball Point Pens- Writing instruments from and for Medical Doctors” narrated by Gerhard F. Strasser (Penn State University, Germany). The author stressed the importance of pen as a writing instrument in the field of medicine where doctors needed to expediently take extensive notes in order to establish a patient’s medical history or write temper-proof prescriptions. The author recounted the invention of feather quill to a pen, and thereafter a ball-point pen by a Hungarian medical student Laszlo Biro (1899-1985) in 1938, before John Waterman’s invention and perfection of gold-tipped fountain pen in 1884. Similarly

an Australian scholar Tessa Morrison, through a reconstruction of the architecture of Solomon's Temple, on the basis of some unpublished papers of Newton, sought to argue that while the *Principia Mathematica* (1687) primarily embodied exoteric knowledge of Nature, but the esoteric knowledge too, was also embedded in the Newtonian world-view.

Three of the symposia were devoted to Islamic sciences: one on the 'Ancient and Medieval Astronomy with special emphasis on socio-cultural context', the other on 'Islamic Science in Context: Texts, Instruments, locales, and institutions' with a focus upon medieval astronomy, and the third on 'Ideas and Instruments in the social context in Ottoman Empire and the national states'. The symposium included papers on Babylonian, Greek, and Buddhist astronomy in its cultural context, as well as the growth of scientific learning in the Islamic West, a survey of the extant Persian *Zijes* the astronomical tables in Iran, assimilation of Islamic astronomy in 14th century China, and the Chinese response to the Western astronomy especially the impact of telescope. Professor Ansari's paper was on the scientific contribution of Abul Khayr Khayrullah Muhandis, the Royal Astronomer at the Delhi Observatory (Jantar Mantar) during the reign of the Mughal Emperor Muhammad Shah (r.1719-48). The paper in the form of original treatises, commentaries and translations suggested intense astronomical activities during an era associated with the political decline. Moreover, the scientific endeavours of Khayrullah Muhandis showed an abiding passion for inherited knowledge among the traditional elite despite the availability of new ideas from the West. K. Ramasubramanian's (IIT Bombay) paper was on an eighteenth century astronomical work *Samrāṭ Siddhānta*, executed by Jagannath on the orders of Maharaja Sawai Jai Singh II. A Sanskrit rendition from an Arabic version of Ptolemy's Greek text *al-Majisti* illustrated the impact of Graeco-Arab sciences in medieval India. S. R. Sarma, (Germany) in his scholarly presentation described the technique of subtle appropriation of Arabic and Persian astrolabes into Sanskrit astrolabes what he called the reworked astrolabes and celestial globes amply demonstrating a wide dissemination of Islamic instruments in eighteenth-century India.

Other scientific sessions were concerned with the issues such as the science and society, science and arts, science, technology and culture and gender discourse in science and technology. A number of symposia and regular sessions

covered topics like natural and exact sciences and social sciences in the classical age, medicine and bio-medical sciences in the contemporary period. Some of the papers were too specialized to be within the grasp of non-specialists such as role of nanotechnology in optoengineering development. Thus the conference was a broad and eclectic mix of papers from all parts of the globe from many periods of history and from numerous strands of science and technology and truly an international event with 1400 delegates attending from 60 different countries.

