

NEWSLETTER

International Union of the History and Philosophy of Science

Commission on History of Science and Technology in Islamic Civilization

No. 4 (1996/97)

Editor: Dr. Sonja Brentjes

1993-1997 Officers

President: S. M. R. Ansari, Physics Dept., Aligarh Muslim University, Aligarh 202002, India

Vice President: E. Ihsanoglu, Turkish Society for History of Science (TBTK), P. K. 234, Besiktas, 80692, Istanbul, Turkey

Secretary: S. Brentjes, Max-Planck-Institute for the History of Science, Wilhelmstr. 44, D-10117 Berlin, Germany email: brentjes@mpiwg-berlin.mpg.de

Past President: E. S. Kennedy, 37 Wiggins Street, Princeton, NJ 08540 USA

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1. Activity report of the Commission for the period 1993-1997

1.1 The president's report

The main activity of the Commission in 1996-97 has been to concentrate on organizing a symposium at ICHS-97. The first draft of the Symposium on *Science and Technology in Islamic Civilization* was circulated, already in the autumn of 1995, among several members of the Commission. At that point of time, the aim and objective of the Symposium was to critically review the researches carried out during the present century and to concentrate in the original contributions on Islamic Science and Technology beyond the classical period in Islamic Middle Ages. However, a number of other symposia were also proposed, for instance, on sciences in Iran, Turkey, etc. The president of this Commission suggested then to rope in "formally" all other proposed symposia under the auspices of the Commission by allotting one full day to each theme. Unfortunately this suggestion was not agreed upon. Further, the ad-hoc programme committee of ICHS suggested to have one sectional meeting of the Congress devoted exclusively to the "*Arabic and Islamic World*" (Section 3). At present the situation is as follows:

SS3: Islamic Science & Technology in Arabic-speaking countries, Central Asia and India
(Organiser: S.M.R. Ansari)

SU5: Crossing Boundaries-New Approaches to History of Pre-Modern Science and Technology (Organisers: S. Brentjes, F. Bray, N. Sivin)

SU6: Science and Technology in Ancient and Medieval Iran (Organisers: J.P. Hogendijk, M. Bagheri)

SU7: Science, Technology and Industry in the Ottoman World (Organisers: E. Ihsanoglu, A. Djebbar).

These four symposia concerning science and technology in Islamic countries will be held at ICHS-97 in Liège.

It is to be recalled that this Commission is very young, established formally at the XVIIIth ICHS-89 held in Hamburg and Munich, although efforts to set up some sort of grouping goes back to the XVth ICHS-77 held in Edinburgh. The first Symposium under this Commission was held in ICHS-93, held in Zaragoza. Consequently it is time now to discuss aim and objective also responsibilities of the Commission. In the Business Meeting of the Commission, this item is to be discussed fully. Another important item is to set up an organizing committee of the Commission not confined to the President, Vice-President, past-President and Secretary but also to include at least two other members of the Commission as Councillors, on the lines of I.A.U. Commission-41 for History of Astronomy which is a joint Commission of IAU & IUHPS.

--S.M. Razaullah Ansari, President 16/6/97

2. Some reflections by the secretary

The Commission sought to improve the communication between the individual scholars working in the field and to reach out to scholars outside the established network of the Commission. The main tool to achieve this goal was the newsletter which appeared in four issues. The difficulties in collecting the data made the preparation of the newsletter a tedious business and caused its irregular time frame. While some scholars responded to requests with appreciated eagerness, most needed to be prodded and some never bothered to reply. Thus, it seems to be necessary to discuss the profile and meaning of the newsletter at the Commission's next meeting in Liège.

The Commission's second major endeavour was to consolidate the status reached at the XIXth International Congress for the History of Science in Zaragoza, 1993. The president started an early campaign for gathering proposals for a symposium on science and

technology in Islamic civilization at the XXth International Congress for the Philosophy and History of Science. This campaign did not meet the interests of other members of the Commission. Thus we should discuss indeed the aims, objectives, and responsibilities of the Commission at the next Business meeting. It will take place July, the 23, Place Cockerill, Room 4.17, afternoon session. Each colleague who wants to participate in the election of the new officers and share her or his ideas and sentiments about the future work of the Commission is very welcome.

From my perspective, one task the Commission might successfully shoulder is to provide colleagues outside the established professional networks of history of science and technology in Islamic civilization with necessary information which they cannot otherwise obtain easily. This might attract more colleagues from related fields to come to our meetings and participate in our discussions and queries. It is one of the effects of preparing the newsletter which I found to be a pleasant experience.

A further effect I observed during the last four years is the slowly growing number of scholars and institutions asking for the newsletter. Thus by preparing a regular newsletter the Commission might contribute to broaden the scope of interest for history of science and technology in Islamic civilization.

With the growing tendency, at least in Europe, to distribute grants on a supra national level and with an increasing number of colleagues in the field depending on grants, the Commission might be a possible tool to mobilize some the necessary funding for future research in history of science and technology in Islamic civilization.

Finally, having worked for almost five weeks in Indian manuscript libraries, I am overwhelmed by two impressions: the amazing amount of undocumented manuscripts of exceptional historical value to be found there and the bad physical shape of most of these manuscripts despite the efforts of Indian colleagues to conserve them. The Indian colleagues in the libraries expressed interest in cooperating to conserve the manuscripts and to catalogue the treasures. I very much wish to discuss this issue at the Commission's meeting in Liège to find out in what ways the Commission and each one of us who might be interested can promote various forms of cooperation.

--Sonja Brentjes, Berlin May 27, 1997

2. New Organizations/Networks/Groups

3. New Journals/Series/Newsletters

4. Conferences/Symposia/Meetings in 1996/97

- Symposium of the Arabic Scientific History, Cairo, 22-24 June 1996

Organised by the Supreme Council of Egyptian Culture

- International Symposium on the Introduction of Modern Science and Technology to Turkey and Japan, Istanbul 7-11 October 1996

Jointly organized by the International Research Center for Islamic History, Art and Culture (IRCICA) and the International Research Center for Japanese Studies with the collaboration of the Turkish Society for History of Science

- Symposium on the History of Arabic Science, Ras al-Khaima, 16-19 December 1996

Jointly organised by the Institute for the History of Arabic Science, Aleppo University and the Documents and Studies Center, Ras al-Khaima, UAE

- L'Oeuvre Scientifique et Philosophique de Nasir al-Din al-Tusi, Téhéran, 6 au 9 mars 1997

Organisé par l'Institut de l'Histoire des Sciences de l'Université de Téhéran et l'Institut Français de recherche en Iran

- Experience and Knowledge Structure in Arabic and Latin Sciences, Berlin, December 16-17, 1997, MPI for the History of Science, Berlin

Organized by Mohamed Abattouy (Fez University/MPI for the History of Science, Berlin) and Paul Weinig (MPI for the History of Science, Berlin)

5. Forthcoming Events

- Research in Progress Workshop "*On the Transmission of Arithmetical/Geometrical/*

Recreational Problems", July 27-August 1, 1997

Organizers: Yvonne Dold-Samplonius, Joseph Dauben

In the history of Mathematics some rather simple problems turn up in different

cultures and times as in different attire, for example the "ladder leaning against a wall". Also the same lemmata, used in astronomy, can be found in Sanskrit texts as well as in Arabic texts from the 9th till the 12th or 13th century. There are many more examples. How did it happen that in some texts from ancient China to medieval Italy we find more or less identical problems? How were these problems transmitted?

During a small workshop, with ca. 12 participants from July 27 to August 1, 1997, we plan to discuss various forms of common mathematical problems trying to find direct or indirect influences, possible connections and eventual ways of transmission. As basis for our discussions each participant is asked to give a presentation regarding his specific field of interest.

--Yvonne Dold

6. Publications

Bagheri, M. 1375: Az Samarqand beh Kashan (Namehha-ye Ghiyath al-Din Jamsid Kashani beh pedarsh). Tehran

Bagheri, M. (translation) 1995: Pazhuheshi zijha-ye doure-ye eslami. (E. Kennedy: A survey of Islamic astronomical tables). Tehran

Bagheri, M. (translation) 1996: Risale-ye Sijzi dar raweshha-ye hall-e masa'il-e handasi. (J.P. Hogendijk: Al-Sijzi's treatise on geometrical problem solving.) Tehran

Bagheri, M. 1995: History of mathematics in Iran. *History and Pedagogy of Mathematics newsletter* 34, 6-7

Bagheri, M. 1995: Omar Khayyam, the Iranian mathematician, Astronomer, Poet, and Philosopher. Proceedings (The 22nd Annual Iranian Mathematics Conference, 13-16 March 1991), eds. M.-R.R. Moghaddam and M.-A. Pourabdollah, Ferdowsi University of Mashad, 69-71

Dold-Samplonius, Y. 1996: How al-Kashi Measures the Muqarnas: A Second Look. In: *Mathematische Probleme im Mittelalter: Der lateinische und arabische Sprachbereich*. Ed. M. Folkerts, Wolfenbütteler Mittelalter-Studien vol. 10, Wiesbaden, 56-90

Dold-Samplonius, Y. 1996: The Book of Assumptions by Thabit ibn Qurra (836-901). In: *History of Mathematics: The States of the Art*. Eds. J. Dauben, M. Folkerts, E. Knobloch, H. Wussing, San Diego

1996, 207-222

Dold-Samplonius, Y. 1997: Problem of the Two Towers. In: *Itinera Mathematica: Studi in onore di Gino Arrighi per il suo 90. compleanno*. Eds. R. Franci, P. Pagli, L. Toti Rigatelli, Siena, 44-69

Dold-Samplonius, Y. 1997: Video: Qubba for al-Kashi. (16 min.). I.W.R. (Interdisciplinary Institute for Scientific Calculating) 1996. Distributed by the AMS

Günergun, F. 1996: Le système Métrique en Turquie. In: *Les ecoles Savantes en Turquie: Science, Philosophie et Arts au Fil des Siècles*. Eds. S. Önen, Ch. Proust, Istanbul, Les Editions ISIS

Günergun, F. 1996: Metric System in Turkey. Transition Period (1881-1934). In: *Journal of the Japan-Netherlands Institute VI*, 243-256

Ihsanoglu, E. 1996: Les Ottomans et La Science Européene. In: *Les ecoles Savantes en Turquie: Science, Philosophie et Arts au Fil des Siècles*. Eds. S. Önen, Ch. Proust, Istanbul, Les Editions ISIS

Ihsanoglu, E. 1996: Büyük Cihad'dan Frenk fodullughu'na. *Iltesim Yayinlari*, Istanbul

Ihsanoglu, E. 1996: Aviation: The Last Episode in the Ottoman Transfer of Western Technology. In: *Journal of the Japan-Netherlands Institute VI*, 189-219

Ihsanoglu, E. (ed.) 1996: *Bibliography on Manuscript Libraries in Turkey and the Publications on the Manuscripts Located in these Libraries*. IRCICA, Istanbul

Ihsanoglu, E. 1375 A.H. (1996/97): Yadi ez Ustad Aydin Sayili Tarikhenkar Ulum Devre-i Islami. *Waqf, Mirath-e Javidan* 4, 157-164

Ihsanoglu, E. (ed.) 1997: *Osmanli Astronomi Literatürü Tarihi (The History of Ottoman Literature on Astronomy)*. IRCICA, 2 vols., Istanbul

Kheirandish, E. (forthcoming): *The Arabic Version of Euclid's Optics: Kitab Uqlidis fi khtilaj al-manazir*, a critical edition and English translation with a historical commentary. 2 vols., Springer Verlag: *Sources in the History of Mathematics and Physical Sciences*

Kunitzsch, P. 1995/96: The Role of Al-Andalus in the Transmission of Ptolemy's Planisphaerium and Almagest. In: *Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften* 10, 147-156

Neubauer, E. 1995/96: Al-Halil ibn Ahmad und die Frühgeschichte der arabischen Lehre von den "Tönen" und den musikalischen Metren. Mit einer Übersetzung des Kitab an Nagam von Yahya ibn 'Ali al-Munaggim. In: *Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften* 10, 255-324

Ragep, F.J. and S.P. Ragep (eds.) 1996: *Tradition, Transmission, Transformation: Proceedings of Two Conferences on Premodern Science Held at the University of Oklahoma*. Leiden: E.J. Brill.

Rebstock, U. 1995/96: Der Mu'amalat-Traktat des Ibn al-Haitam. In: *Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften* 10, 61-121

Sabra, A.I. On Seeing the Stars, II. Ibn al-Haytham's "Answers" to the "Doubts" by Ibn Ma'dan. In: *Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften* 10, 1-60

Vahedi, H. 1996: Iranian women in science. In: Masson, M.R., D. Simonton (eds.): *Women and higher education, past, present, and future*. Aberdeen University Press

7. Work in progress

Malekan, M. and H. Vahedi: Gender and science in Iran. A series of lectures on specific subjects in this field were given by the two scholars over the past few years such as *Iranian women in scientific societies* (8th International Conference on Gender, Science, and Technology, Ahmedabad, India, 1996) or *Zan, elm va teknoloji* (Seminar, Bahman Cultural Center, Tehran, 1997).

Miura, N. Kobe University, Faculty of Cross-Cultural Studies, Japan: al-Tusi's version of Euclid's Elements.

Sabra, A.I. and Kheirandish, E.: *Kitab al-Manazir wa al-maraya al-muhriqa (The Book on Optics and Burning Mirrors)* by Ahmad ibn 'Isa, a critical edition with introduction and notes.

8. Institutions

The Science Heritage Center was established at Cairo University. The objectives of the Center are:

- Conducting research and studies in various fields of the history of natural science;
- Collecting, classifying and publishing Arabic manuscripts within the domain of basic science;
- Collaborating with Arab and International scholars who aim at the revival of the scientific history;
- Training researchers to verify and explore the scientific theory;
- Issuing specialized periodicals aiming at enlightening the scientific culture of history and publishing the most recent world researches within the field of history and philosophy of science.

--Institute for the History of Arabic Science, Newsletter 68, July 1997, p.3

The foundation of a new Department of history of science at Tehran University was recently announced at an International Colloquium on Nasir al-Din al-Tusi (d. 672/1274) held on that occasion (March 6-9, 1997). One of the major objectives of the new institution was announced to be the publication of works on Tusi over the next few years, a plan which is already being carried out with the forthcoming publication of the proceedings of the Colloquium held through the joint efforts of the University of Tehran and the Institut Francais de Recherche en Iran.

The program of the Colloquium, which was devoted to the scientific and philosophical works of the Persian scholar, took three days in which papers were delivered on many aspects of Tusi's intellectual, institutional and political activities. Concurrent with the coverage of Tusi's works (in astronomy, astrology, geometry, optics, philosophy, logic, theology, mysticism, ethics, theosophy, his activities during the Isma'ili and Mongol periods, and his teachings in institutional circles including present-day Iranian religious schools), there was an exhibition of a selection of the manuscripts of the works of the "Khwaja" residing in Tehran University's Central (Markaz) Library. It is hoped that the valuable publication project of the new institution would extend to the exposure of the many manuscripts of the works of Tusi and others in that and other libraries throughout Iran.

--Elaheh Kheirandish, Cambridge, MA, USA

N. Miura informs us that besides him the following colleagues work on history of science in Islamic civilization in Japan:

- Sh. Ito, prof., Reitaku University, emeritus prof. of University of Tokyo
- M. Yano, prof., Kyoto-Sangyo University
- T. Kusuba, prof., Osaka Economics University
- T. Suzuki, prof., Tokai University
- K. Yamamoto.

From the Istanbul University Faculty of Letters, Department of History of Science:

The first graduates of the department received their BA degrees at the end of the academic year 1995-96 after having completed four years BA programme in History of Science. They were the first graduates in History of Science in Turkey.

The Museum and Documentation Center for History of Science (BIMDOK) was established in September 17, 1993 within Istanbul University with the object of finding out and preserving the Turkish History of Science heritage.

--Feza Günergun, Istanbul

Max-Planck Institute for the History of Science, Berlin

Workshop "*Experience and Knowledge Structures in Arabic and Latin Sciences*", December 16-17, 1996, Berlin

The international workshop was the first effort made at the Institute towards the field of History of Arabic Science. One of its major aims was to attain a general view of selected disciplines of Arabic sciences (philosophy, mathematics, astronomy, cartography, cosmography, medicine) and to receive firsthand information from specialists allowing an insight into the actual state of the art in each field portrayed. Problems of transmission or transmission processes and the relationship between experience and knowledge structures in the selected disciplines built the core of the discussions.

Another aim to pursue was to present to the scientific community of Arabists a research project on medieval Arabic mechanics. Connected with the framework of a current project on the emergence of preclassical mechanics directed by Jürgen Renn the project on Arabic mechanics was designed. It is conducted in cooperation by Mohamed Abattouy (Fez University-MPIWG Berlin) and Paul Weinig (MPIWG Berlin). The subject of investigation from Arabic treatises on balances and weights from the 9th till the 17th centuries, many of which remained unnoticed so far or have not been sufficiently studied thus constituting a field that urgently deserves exploration.

The workshop was held in four sessions; lectures were given by scholars from seven countries. In the first session aspects of the "Transmission of Knowledge from Antiquity to the Middle Ages" were the main topics discussed. The second session dealt with "Social Structures of Knowledge Production and Transmission". "Practical Experience and Scientific Knowledge (the cases of mathematics, geography, astronomy, and cosmography)" was the topic of the third session. In the final session "Comparison studies and their Problems in Arabic and Latin Sciences (the case of mechanics)" were treated.

The Proceedings of the workshop were edited by M. Abattouy and P. Weinig in the Preprints of the MPI for the History of Science, Berlin.

9. Research Reports

Research project on *The Arabic Science of Weights in the Middle Ages*

- Arabic treatises on the balance. Edition with English translation and commentary

Arabic scientists played an important role in the development of theoretical and practical mechanics. Often Arabic versions of ancient texts on the balance offer the only textual evidence of lost Greek material (e.g. Hero's *Mechanics*, Euclid's *On the balance*, Philo's *Pneumatics*). Arabic writers not only translated Greek material, revised it, commented upon and enlarged it, but composed original treatises on balances and weights of their own (e.g. Banu Musa, al-Khazini, Qusta ibn Luqa, Thabit ibn Qurra, Hassan ibn al-Haytham and others). Unfortunately, several works of this production are now lost, and the ones which were preserved draw but a partial picture of the Arabic tradition of mechanics. However, from the extant material we can conclude that the textual constituents of this tradition are different from medieval Latin texts on the same subject-matter in at least one important respect: One finds inserted parts dealing with practical aspects of balances and weighing pointing out a clear combination between theoretical and practical knowledge in this field. An analogous combination occurs in the European tradition of mechanics only much later (16th/17th centuries) in Italy, where it led to the genesis of classical mechanics.

Many of these texts have gone unnoticed and have neither been studied or edited properly. Few have been translated into Latin in the Middle Ages, but modern translations in European languages are missing. Access is difficult, because a greater number of them is only extant in manuscripts and preserve in libraries in Europe and Islamic countries as well.

Mohamed Abattouy (Fez University-MPIWG Berlin) and Paul Weinig (MPIWG Berlin) designed at the MPI for the History of Science in Berlin a conjoint research project in which Arabic writings on balances and weights from the 9th till the 17th centuries will be collected, edited, commented upon and translated into English, thus establishing for the first time a corpus of medieval Arabic statics. Work was started in Fall 96 with the search for relevant texts and material: It has already revealed surprising results with the rediscovery of two manuscripts of Thabit ibn Qurra, one of the most important figures of Arabic science, that were reported lost for many decades but are of particular importance for the medieval Arabic as much as for the Latin tradition of statics. First outcomes were presented at an international workshop in December 96 that was organized at the MPI for the History of Science in Berlin.

--Paul Weinig, Berlin

10. Teaching

GERMANY:

D. King

- History of Islamic and European instruments and maps, seminar for graduates, Johann-Wolfgang-von Goethe University, Institute for History of Science Frankfurt a.M.
- Medieval Arabic scientific texts, seminar for graduates, Johann-Wolfgang-von Goethe University, Institute for History of Science Frankfurt a.M.
- Medieval Islamic and European astronomical tables, seminar for graduates, Johann-Wolfgang-von Goethe University, Institute for History of Science Frankfurt a.M.
- Excursion to the British Museum, London, the Museum of Science, Oxford, and to the Bodleian Library, Oriental Mss, Oxford, study trip for graduates, July 1997

TURKEY:

F. Günergun

- Introduction to the History of Science, lecture course, Istanbul University, Faculty of Letters
- History of Science, lecture course, Istanbul University, Faculty of Letters
- Technology in Egypt and Mesopotamia, lecture course, Istanbul University, Faculty of Letters
- Technology in Ancient Anatolia, lecture course, Istanbul University, Faculty of Letters

E. Ihsanoglu

- Turkish-Islamic History of Science, lecture course, Istanbul University, Faculty of Letters
- Ottoman Science, lecture course, Istanbul University, Faculty of Letters
- Studies in History of Ottoman Science, seminar, Istanbul University, Faculty of Letters

11. Theses/Dissertations

Hariri, F. 1997: Study and Analysis of the Water Machines in the book entitled: A Compendium of the Theory and Practice of the Mechanical Arts by al-Jazari, Applying Modern systems on Control Engineering. Master Thesis, Supervisors: Prof. Dr. Taj al-Din Diya, Prof. Dr. Hasan Abu Saleh, Aleppo University, Aleppo, Syria

Kafadenk, N. 1997: The Critical edition of Hekim Bereke's Work Titled Tuhfe-I Mübarizi and the Study of the Materia Medica Section. MA thesis defended on 13 March 1997, Supervisor: E. Ihsanoglu,

Istanbul University, Istanbul, Turkey

Heiderzadeh, T. 1997: Ali Kushchu's Work on Astronomy. MA thesis defended on 13 March 1997, Supervisor: E. Ihsanoglu, Istanbul University, Istanbul, Turkey

12. Deaths

On March 25, 1997 we lose Wilbur Knorr.

13. Awards/Elections/etc.

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