



Newsletter

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Ibn Sina Academy of Medieval Medicine & Sciences

ALIGARH, INDIA

IAMMS ACTIVITIES

Extension lecture

An extension lecture by Prof. S. Zillur Rahman on the occasion of the Reorientation Training Programme for PG Teachers was arranged on July 3, 2002 at Ibn Sina Academy. The training programme was sponsored by the Ministry of Health & Family Welfare, Department of Indian Systems Medicine (ISM) for Teachers and Physicians. It was organized by Dr. (Mrs.) Qamar Akhtar Kazmi, Chairperson Dept. of Qabalat wa Amraze Niswan, A. K. Tibbia College, AMU, Aligarh.

Visit of Delegates

A "Reorientation Training Programme for PG Teachers" sponsored by Ministry of Health & Family Welfare of the Department of ISM for Teachers and Physicians, was held in the Dept. of Qabalat wa Amraze Niswan, A. K. Tibbia College, AMU, Aligarh. The participants paid a visit to the Ibn Sina Academy on July 2, 2002.

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Consultative Meetings of Urdu Board (Aligarh)

Two consultative meetings of Urdu Board (Aligarh) were held consecutively on June 30, 2002 and July 21, 2002 in the Library Hall of Ibn Sina Academy. Dr. Mohammed Umar Khan Samar Chhatarvi, Registrar Urdu Board, convened both the meetings, which were chaired by Prof. Hakim Syed Zillur Rahman

Selected Correspondences / Messages

Prof. Keiji Yamamoto, of the Department of Intercultural Studies, Kyoto Sangyo University (KSU), Kyoto (Japan) visited the Ibn Sina Academy on Sept. 9, 2002. He teaches at KSU Arabic language and History of Science. Prof. Yamamoto's research focuses on Astrological manuscripts in Arabic. Besides a number of papers, his major recent work is the following:

Abū Ma'shar: On Historical Astrology, The Book of Religion and Dynasties (On the Great Conjunctions), edited and translated by K. Yamamoto and Charles Burnett, 2 volumes, (Islamic Philosophy Theology and Sciences Nos. 32 and 33) E. J. Brill, Leiden, 2000.

He came to India for the first time, in order to collect Arabic primary sources concerning astrology in the manuscript collections of M. A. Library (AMU, Aligarh) and Raza Library (Rampur).

He admired the establishment and build-up of Ibn Sina Academy and wrote the following remark in the Visitors Book: "This Academy imprints me new ideas of Ibn Sina and Arabic Medicine. I hope this Academy will be maintained long time for scholars and others".

From: Professor Egbert Asshauer, a noted German scholar and authority on Tibetan Medicine, Quickborn (Germany), <dr.asshauer@snafu.de>, dated 28.8.2002
"Dear Prof. Rahman, thank you very much for sending me some copies of the Newsletter (NISA) as well as a letter through Dr. Latif. I appreciate your efforts very much. Attached, I send you the manuscript of my lecture at the 5th International Congress on Traditional Asian Medicine, held at Halle (Germany). Since the Proceedings of the Congress, to my knowledge, will not be published, you could use it as well. But I am afraid it is too long. With my best greetings, also from my wife. Yours Egbert Asshauer"

From: Dr. Shaheer H. Khan, a noted scientist at Applied Biosystems, CA (USA) & Moderator, "amunetwork e-group" (created for AMU Alumni), <Shaheer_Khan@hotmail.com>, dated 3.8.2002.

"Dear Zia, By the grace of Allah I got back safely here on Thursday night (July 25th) after a grueling forty-hour journey.Let me take this opportunity to thank you once again for your kind and generous hospitality. Indeed it was a pleasure to meet you, Hakeem Sahib and your family. The book Hakeem Sahib gifted me will be my companion for a very long time, InshaAllah. This is the best gift I would have ever imagined. Thank you very much for that as well... Your library is just wonderful. I have not seen such an extensive and well organized personal collection anywhere. Now I understand Hakeem Sahib's taste little better and hope to add few things to his collection on my next trip, InshaAllah. Please convey my Salam to Hakeem Sahib and the rest of the family. Please remind Hakeem Sahib that I am waiting for his article for our Sir Syed Day magazine.. Allah Hafiz. Shaheer"

Individual Activities of Members of IAMMS

• Professor Syed Zillur Rahman (Aligarh), Professor S. M. Razaullah Ansari (Aligarh), Dr. Gerhard Josef Lingg (Austria), Dr. R. P. Kumar (Chief Librarian, AIIMS, New Delhi) and Dr. Rashid Bhikha (S. Africa) attended the 38th International Congress on the History of Medicine, organized under the auspices of the International Society of History of Medicine, during September 1 – 6, 2002 at Istanbul (Turkey).

• Prof. S. M. Razaullah Ansari was invited to visit the Institute of History of Science of the University of Frankfurt, Frankfurt (Germany) to work as a collaborator in the Project:

“World List of Astronomical Tables in Arabic and Persian—the Zijes”. He has been compiling for some time the Zijes written in India during the medieval period. He visited also there the Institute of History of Arabic – Islamic Sciences at Frankfurt, and presented to its Director: Prof. Fuat Sezgin, a few issues of Newsletter of Ibn Sina Academy.

• Dr. Abdul Latif attended the 5th International Congress on Traditional Asian Medicine (ICTAM), held under the aegis of International Association for the Study of Traditional Asian Medicine (IASTM), at Halle (Germany) during August 18 – 24, 2002. Dr. A. Latif, who is a senior Lecturer in the Dept. of Ilmul Advia, A. K. Tibbia College, Aligarh Muslim University & Joint Secretary of Ibn Sina Academy of Medieval Medicine & Sciences, presented his paper, entitled, Double Blind Controlled Clinical Studies of Unani Herbo-mineral Cream in the cases of Psoriasis.

• Dr. Syed Ziaur Rahman, Lecturer in the Department of Pharmacology, Aligarh Muslim University (Aligarh), was selected as teacher-candidate to participate in the WHO Sponsored Training Course on “Teaching Rational Drug Therapy”. This weeklong course was held during September 5 – 11, 2002 at Hotel Nicco Metropolitan (New Delhi) under the aegis of Delhi Society for Promotion of Rational Use of Drugs (DSPRUD). Dr. Rahman after his return to Dept. of Pharmacology presented the gist of the course in the form of a seminar on 16th & 17th September for all teaching staff including PGs & SRs.

• Hakim Syed Zillur Rahman is among the 51 Indian scholars whose names are listed in the Directory

of Traditional Knowledge Systems (TKS) & History of Science (HST). This directory is prepared by Infinity Foundation (USA). This Foundation was created in 1994 by private endowment. The Foundation is a private, nonprofit and charitable organization in the State of New Jersey. Infinity Foundation does not solicit public donations.

Congresses/ Conferences Held

Memorial Congress on Hakim Syed Ismail Jorjani

The Academy of Medical Sciences (Tehran, Iran) sponsored a Memorial Congress in honour of Hakim Syed Ismail Jorjani – the eleventh century (435-531 AH) Iranian Physician and Philosopher, during September 27 – 30, 2002 in the city of Gorgan (Iran). For details, contact: PO Box 19395-4655, Tehran, Iran. E-mail: jorjanicon@ams.ac.ir

5th International Congress on Traditional Asian Medicine – A Report by Dr. A. Latif

About 250 delegates from all over the world attended the 5th International Congress on Traditional Asian Medicine (ICTAM). All the sessions including plenary, oral and poster were held in Martin Luther University. This University has now completed its 500 years. The important personalities who participated and delivered their lectures were Honb^l Union Minister of Health and Family Welfare, Govt. of India Mr. Shatrughan Sinha, and Health Secretary, Mrs. Malti Sinha (IAS). They delivered lectures on the status of traditional medical system in India with special reference to the Policy of Government of India towards these systems. Other authorities who spoke were: Prof. Egbert Asshauer (Germany), N. S. Bhatt (Germany), Helmut Rüdinger (Germany), Mr. Lawrence I. Conrad (Germany), Prof. Dr. Paul U. Unschuld (Germany), Ananda Samir Chopra (Germany), Prof. Jurgen C. Aschoff (Germany), Dr. Heidrun R. Hewel (Germany), Dr. Rainer Nabielek (Germany). In connection with Unani Medicine, Dr. Latif, interacted particularly with Prof. Aysegul Demirhan Erdmir (Germany), (Bursa, Turkey), Elizabeth D. Mihelis (Cambridge), Prof. Oztan Oncel (Istanbul, Turkey), Mr. Chris Micholt (Belgium), Maarten Bode (The Netherlands), Dr. Dominik Wujastyk (Wellcome Trust, UCL), Mr. Askar Yimit (China), Tsutomu Yamashita (History of Science & Medicine, Japan)

Forthcoming Congresses/ Conferences

3rd National Congress of Medical Ethics

3rd National Congress of Medical Ethics is going to be held in Mudanya, a historical town of Bursa in Turkey during June 25 – 28, 2003. The Congress along with a couple of symposia will be held under the aegis of the Turkish Society of Bioethics. The main aim is to discuss the developments in fields such as Philosophy & Medicine, Bioethics, Medical Ethics, Clinical Ethics, Health Care Ethics, Ethics for Health Sciences, Ethics of the Behavioural Sciences, Medical Law, Ethical Education in Medicine, Feminists Approach to Bioethics and Mass media and Medical Ethics. For details, contact: Dr. Elif Atice, Uludag University, Faculty of Medicine, Department of Medical Ethics, 16059 Gorukle / Bursa, Turkey. E-mail: ademirer@yahoo.com

XVIIth Meeting of History of Medicine

The 17th Meeting of History of Medicine under the aegis of the Argentine Society of the History of Medicine in collaboration with Argentine Medical Association (Av. Santa Fe 1171, Buenos Aires, Argentina) will be held on October 24-25, 2002. The event will gather physicians, historians, sociologists, anthropologists, architects, philosophers and people belonging to other areas of scientific thought coming from Argentina and abroad. The subject is "Europe and Argentina in Medicine and Science" and intends to review the cultural, medical and scientific relationships between European countries and Argentina, and the insistence that European scientists did have their contributions in the development of scientific thought in Argentina. The following issues will particularly be discussed:

- Positivism and its impact in sanitary architecture
- Darwin, darwinism and evolutionism in Argentina
- Medical linguistics: language and medicine
- Medical aesthetics: art and medicine
- Museology as a resource for teaching and historical research
- European scientists in Argentina

- Medicine in chronicles of Spanish colonies
- Miscellany on history of medicine and science
- Special symposium on Spanish medicine
- Special symposium on comparative bioethics

For more information please contact by fax at (54-11) 4307-9791 or by e-mail at <historiadelamedicina@arco-ap.com.ar>

Conference to Commemorate the 150th Anniversary of Sir Henry Wellcome

Sir Henry Wellcome was born and raised in the Upper-Midwest of the U.S.; he was a joint-founder of Burroughs Wellcome & Co. (U.K.), and founder of the Wellcome Trust. A two-day conference marking Sir Henry's sesquicentennial birth is to be organized on June 20-21, 2003. The Conference will be jointly sponsored by The Wellcome Trust Centre for the History of Medicine at University College London, The History of Medicine Panel of the Wellcome Trust & The American Association for the History of Medicine. The Conference will be devoted to themes in the history of medicine and related fields that reflect elements of Wellcome's own interests. Papers will be especially welcomed on the history of:

- British-American medical relations
- British and American pharmaceuticals
- Collecting of books and establishing of libraries
- Collecting and exhibiting of objects
- Ethno-pharmacology and medical anthropology
- The field of the History of medicine
- Philanthropy and medicine

Contact: Debra Scallan, PA to the Director, The Wellcome Trust Centre for the History of Medicine at University College London, 24 Eversholt St., London NW1 1AD (UK) E-mail: d.scallan@ucl.ac.uk

2nd Annual Scottish Phytotherapy Research Conference

Due to the outstanding success of the first Phytotherapy Research Conference hosted by Bioforce (Scotland?) in 2002, a 2nd Scottish Phytotherapy Research Conference has been announced for March 27-28, 2003. A social gathering is planned on the first evening.

This Conference, is to be held in Scotland, and aims to provide a focused and comprehensive forum for advancements in Phytotherapy Research. Consideration will be given to basic and applied medicinal plant research, current and evolving clinical trials, legislation and the novel therapeutic actions of herbs. By providing an opportunity for healthcare professionals, academics and students to become more closely engaged in the current scientific research being undertaken, the Conference endeavours to place phytotherapy at the forefront of 21st century healthcare. The Conference will welcome presentations on various topics and contributions by participants in the form of either a twenty-minute platform presentation or a poster for display during the event. To receive an abstract submission form or more information please contact: lorna@bioforce.co.uk.

War, Art and Medicine

The National Portrait Gallery, University College London (UCL) and the Group for War and Culture Studies at the University of Westminster are holding a 2-day conference on War, Art and Medicine during November 8 -9, 2002. During the Conference (?) an exhibition on the artist and surgeon Henry Tonks at the Stang Print Room, UCL will also be organized. For further information and a booking form contact via email or on the address: Stephen Allen, Head of Education, National Portrait Gallery, St Martin's Place, London WC2H 0HE [www.npg.org.uk]

Sessions:

- Censoring the Body: Surgeons, Nurses and Artists
- Remaking Faces in Art and Surgery: Henry Tonks' Plastic Surgery Pastels
- New Techniques of Plastic Surgery
- Henry Tonks and the Portraiture of Disfigurement: a medical view
- Plastic Arts: Sculptors and Surgeons in the Great War
- Shell Shock, Dreams and Facial Disfigurement – censoring the male body
- Deep into His Body, Anatomy, Knowledge and Trauma in First world war Nurses Narratives
- The faces of war
- The importance of the front-line orderly and

the stretcher bearer in the iconography of the Western Front

- Pain with Stoicism: Masculinity, Self-control and the Image of the Wounded British Soldier in the First World War
- The Agony and the Ecstasy: Two Conflicting Views of the Impact of Combat on the Soldier

NEWS ITEMS

Fourteenth Annual David L. Cowen Lecture in the History of Pharmacy

The Rho Chi Honor Society, The American Institute of the History of Pharmacy, and Dean John L. Colaizzi of the Ernest Mario School of Pharmacy of Rutgers, The State University of New Jersey are jointly organizing the Fourteenth Annual David L. Cowen Lecture in the History of Pharmacy. The lecture, entitled, "How I Learned about History from Pharmacy Cartoons" will be delivered by Dr. William Helfand, who is a historian, pharmacist, and chemical engineer, on November 13, 2002 at the Science and Engineering Resource Center (SERC) on Rutgers Busch Campus, Piscataway, New Jersey. For more information, contact Mary French, Ernest Mario School of Pharmacy, Rutgers, The State University of New Jersey. E-mail: french@cop.rutgers.edu

The Francis A. Countway Library Fellowship in the History of Medicine 2003-2004

The Francis A. Countway Library of Medicine is pleased to offer an annual fellowship to support research in the history of medicine. Established in 1960 as a result of an alliance between the Boston Medical Library and the Harvard Medical Library, the Francis A. Countway Library of Medicine is the largest academic medical library in the United States. The Countway Library maintains a collection of approximately 700,000 volumes. Its Rare Books & Special Collections department holds 250,000 books and journals published before 1920, including 802 incunabula. The departmental printed holdings include one of the most complete medical periodical collections, an extensive collection of European medical texts issued between the 15th and 20th centuries, and excellent holdings of pre-1800 English and pre-1900 American

imprints. The book collection is strong in virtually every medical discipline and is particularly rich in popular medicine, medical education, public health, Judaica, and travel accounts written by physicians. The Countway's collection of archives and manuscripts, approximately 20 million items, is the largest of its kind in the United States. The manuscript collection includes the personal and professional papers of many prominent American physicians, especially those who practiced and conducted research in the New England region, and who were associated with Harvard Medical School. The Countway Library serves as the institutional archives for the Harvard Medical School, Harvard School of Dental Medicine, and the Harvard School of Public Health. The printed, manuscript, and archives holdings are complemented by an extensive print and photograph collection and the collections of the Warren Anatomical Museum. Established in 1847, the museum houses an exceptional collection of medical artifacts, pathological specimens, anatomical models, and instruments.

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The Francis A. Countway Library Fellowship in the History of Medicine provides a stipend of up to \$5,000 to support travel, lodging, and incidental expenses for a flexible period between June 1, 2003 and May 31, 2004. Besides conducting research, the fellow will present a seminar or lecture at the Countway Library and submit a report on the results of his/her residency. The fellowship proposal should demonstrate that the Countway Library has resources central to the research topic. Preference will be given to applicants who live beyond commuting distance of the Countway. The application, outlining the proposed project (proposal should not exceed five pages), length of residence, materials to be consulted, and a budget with specific information on travel, lodging, and research expenses, should be submitted, along with a curriculum vitae and two letters of recommendation, by January 31, 2003. The appointment will be announced by March 31, 2003. Applications should be sent to: Thomas A. Horrocks, Associate Director for Special Collections and Joseph Garland Librarian, Francis A. Countway Library of Medicine, 10 Shattuck Street, Boston, MA 02115.

New Websites:

- Ibn Sina Academy of Medieval Medicine & Sciences (Aligarh, India) has a new web-host and which has been updated. For detail, please take a look at: <http://www.ibnsinaacademy.com>
- The Commission on History of Islamic Sciences and Technology has a new website and updated online Newsletter. For detail, please take a look at: <http://www.ou.edu/islamsci/>

New Manuscript:

Information on a new manuscript related to History of Sciences at the Bodleian (Oxford) can be looked at: <http://www.admin.ox.ac.uk/po/020627.shtml>

New Books:

1. David C. Reisman, *The Making of the Avicennan Tradition: The Transmission, Contents, and Structure of Ibn Sina's al-Mubāhathāt* (The Discussions). Islamic Philosophy, Theology, and Science, Texts and Studies, XLIX. Leiden: E. J. Brill, 2002. ISBN: 90-04-12504-3. ISSN: 01 60-8729.
2. Hakim Syed Zillur Rahman, *Maqalat Shifaul Mulik Hakim Abdul Latif*, in Urdu, Publication Division, Aligarh Muslim University, Aligarh, 2002. Price Rs. 125/- . 324pp.
3. *History of Science, Philosophy and Culture in Indian Civilization*, Vol. IV Part 2 (Medicine and Life Sciences in India), Ed. B. V. Subbarayappa, Centre for Studies in Civilizations, PHISPC, New Delhi, 2001, ISBN: 81-87586-07-9

Selected Papers from *History of Science, Philosophy and Culture in Indian Civilization*, Vol. IV Part 2 (Medicine and Life Sciences in India), Ed. B. V. Subbarayappa, Centre for Studies in Civilizations, PHISPC, New Delhi, 2001.

1. S. Zillur Rahman, *Unani Medicine in India: Its Origin and Fundamental Concepts*, pp. 298-325.

2. S. Zillur Rahman, Indian Hakims: Their Role in the medical care of India, pp. 371-426
3. B. V. Subbarayappa, Siddha Medicine, pp. 427-451
4. S. K. Mishra, Ayurveda, Unani and Siddha Systems: An Overview and their Present Status, pp. 479-516.
5. Maarten Bode, Indigenous Pharmaceuticals: The Articulation of Modernity and Tradition in India, pp. 549-573

Documentation:

Infinity Foundation (USA)

The Foundation provides two types of grants. One type is to nonprofit organizations in the following broad program areas: Charitable, Holistic Healing, Scientific, Religious, or Educational. The Foundation assists nonprofit organizations and public agencies committed to practices and policies that better the lives of all people. Under this type of grant, all work is done by the recipient and not by Infinity itself. This is because Infinity is a non-operating foundation.

In July of 1997, The Foundation submitted an additional request to the Internal Revenue Service to expand its purposes and mission to include creating, disseminating, and expanding a body of knowledge which clarifies or integrates philosophy, religion, science, psychology and non-traditional mystical disciplines; and bridging Eastern philosophies with Western thought. The Foundation received IRS approval for its expanded mission in December 1997. This ruling allows it to award grants to individuals for travel, study, fellowships or scholarships or for the production of a product, which supports the expanded mission.

The Foundation provides national and international grants. All proposals are reviewed and approved by the Board Members of the Foundation. Applicable rules and regulations are followed with respect to the grants to foreign charities.

(Courtesy: www.infinityfoundation.com/mandala/t_rs/t_rs_scholars.htm & www.infinityfoundation.com)

AN OVERVIEW OF AGRICULTURAL SOURCES WRITTEN IN THE MEDIEVAL ISLAMIC WORLD

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Introduction:

Agriculture is an activity started with the history of human being. Agricultural sciences are actually the result of the application of chemistry, hydrology, climatology and of biological sciences (that is botany and zoology). In modern times agriculture comprises phytotechny, zootechny and agricultural technology (feed, food, textile industries). The agricultural sciences were studied in the early Islamic period (between 7th – 9th centuries A.D.) together with the botany as a part of this science. A large number of Muslim scholars contributed to it, for instance, Jabir bin Hayyan, Abu Hanifa al-Dinawari, al Asma'i, Nadr bin Shumail, and al Farabi¹. Later the science of agriculture appeared as a sub-discipline of *'Ilm al Tab'iyya* (The Natural Philosophy or Physic) in the classification of sciences by Ikhwan al Safa' (The Brethren of Purity)² in the 10th century and by Ibn Khaldun in 14th century³. As a matter of fact this science is entered for the first time in the classification of sciences as a new discipline during the Islamic Middle Ages⁴.

In this paper we present quite a comprehensive survey of agricultural sources of the Medieval Islamic world, which are tabulated chronologically. We give also the themes of the sources, the availability of the manuscripts in the Turkish libraries, particularly in Bursa and Istanbul.

The Geographical Distribution of the Sources

In this survey, Medieval Islamic books on agriculture are listed in Tables 1, 2, 3 and 4 according to the authors and the languages of these books and also by the dynasties of the Medieval Islamic States.

Table 1: Agricultural books written during Abbasid State (8-9th Century A.D.)

Table 2: The same during Muslim Spain (Umayyad Caliphs, Muluk al Tawa'if or Petty Kings, Almoravid,

and State of Nasrid Granada)

Table 3: List of works written during Rasulid Sultanate of Yemen

Table 4: Books written during Ayyubid, Ilkhanid, and Mamluk States

The survey of the Medieval Islamic agriculture books can be grouped in five: location or country, time (age), state (dynasty), language, and content. It is known that according to the results of this survey there are 32 books written about agricultural sciences in the Medieval Islamic world. We can infer from the obtained data that there are the examples of agricultural books fewer more than books of other sciences such as mathematics, physic, astronomy, medicine and chemistry etc.

According to results of this study, 31 of the Medieval Islamic agriculture books were written in Arabic (see in Table 1, 2, 3, 4) and the majority in Andalusia (Muslim Spain) and between 10th - 14th centuries AD (see in Table 2). For example, 14 out of these 32 books were written in Andalusia (see in Table 2). This period is named as "The Andalus School of Agronomy" by historians.⁶ There are various reasons of this progressive activity. First, Andalus had very rich agriculture potential.⁷ Second, the agriculture was always supported by Islamic States of Andalus (for instance, Umayyad Sultans, Ta'ifa Emirates and Granada State).⁸ Finally, people of Andalus had a high intellectual activity.⁹ It is a known fact that the interplay of all those factors led to the scientific background of agriculture in Andalus. Only one of those Islamic agricultural manuscripts was in Persian¹⁰ (see Table 4). Unfortunately, there was no agriculture book written in Turkish in the Medieval Islamic world.

The distribution of the 32 books according to their state, location and time can be made as follows: 7 books (between 8th - 9th centuries Abbasid period in Iraq), see in Table 1; 14 books (in Muslim Spain from 10th to 14th century), see in Table 2; 8 books (Rasulid Sultanate of Yemen), see Table 3; 2 books (Ayyubid and Mamluk States); 1 book (Ilkhanid State of Iran), see in Table 4.

The Islamic manuscripts of agricultural sciences was written by various people which are from different disciplines, such as religious scholar (for example, Ibn

Hajjaj of Sevilla in Andalusia),¹¹ poet (for instance, Tighnari or Ibn Luyun in Andalusia),¹² Physicians (for example, Abu Qasim Zahrawi or his student Ibn Wafid in Andalusia),¹³ sultans (for example, some sultans of Rasulid dynasty of Yemen in particularly such as al Malik al Ashraf, al Malik al Mujahid and al Malik al Afdal)¹⁴, caliph (for example, Ma'mun of Abbasid caliphate)¹⁵ and viziers (for example, Ibn Mammati in Ayyubid State of Egypt,¹⁶ Rashid din Fadl Allah al Hamadani in Ilkhanid State of Iran and Jamal al Din Watwati in Mamluk State of Egypt).¹⁷

SOME IMPORTANT MEDIEVAL ISLAMIC AGRICULTURAL BOOKS AND THEIR GENERAL PROPERTIES

According to the results of this survey, there are totally 32 books written on agriculture by authors of different disciplines in the Medieval Islamic period (see Table 1, 2, 3, 4). The contents of these books include knowledge of various people from ancient (Mesopotamia, Greek, Hellenistic, Latin and Byzantine periods) to Islamic scholars. The quotations of various authors from ancient (for example, Quthami, Yanbushad, Dagrith, Aristotles, Anatollus, Demokritos, Cassianus Bassus Scholasticus, Philemo, Columella, Galenos) to Islamic period (for instance, Abu Hanifa al Dinawari, Zakariya al Razi, Qusta bin Luqa, Ibn Wahshiyya, Arib ibn Said, Ibn Jawad, Ibn Wafid, Ibn Bassal, Ibn Hajjaj) in the Medieval Islamic agriculture books proves an intercommunication in the Islamic World.¹⁸ There are some quotations from al Andalus, North African and Iraqi agronomers in Yemeni Rasulid texts also. For instance, in the 13th century Rasulid Sultan Malik al Afdal, provides an excellent detailed survey of medieval Yemeni agriculture, as well as drawing on the Iraqi Ibn Wahshiyya and various authors of Hellenistic world. This text (*Bughyat al Fallahin...*) also contains extensive quotations from Ibn Bassal of North Africa and Abu al Khayr of Seville, copies of whose works must have reached Yemen in the Rasulid era. These are further indication of the intercommunication of scholars and texts in all parts of the Islamic world during the medieval period¹⁹ with a primitive organisation of agricultural extension in Rasulid Sultanate of Yemen.

Most medieval Islamic agriculture books were written

on agronomy (*Filahat al Aradin* in Arabic²⁰) and horticulture. But the book of Ibn Wafid of Toledo,²¹ the books of Abu al Khayr al Ishbili²², Ibn Awwam of Seville²³ and the books of some Rasulid Yemeni Sultans (such as al Malik al Mujahid, al Malik al Afdal)²⁴ contain substantial information on food technology and zootechny (*Filahat al Haywanat* in Arabic). The most common zootechnic themes of these books usually include the apiculture and raising of some backyard animals (for example chickens, geese, pigeons, ducks, silkworms, in general, in addition to sometime also cows, goats, sheeps, camels, horses etc.).²⁵ Yemeni Rasulid texts often include very important information on relationships between agriculture, astronomy and meteorology.²⁶

Kitab al Athar wa'l Ahya (The Book of Animals and Monuments) was written by Abu'l Khair Rashid al-Din bin Fadl Allah al-Hamadani, who was also called Rashid al-Din Tabib, in the 13th century in Ilkhanid State of Iran²⁷ (see Table 4). It is known that this is the first book in Persian of the medieval Islamic agricultural manuscripts²⁸. He was the grand vizier of the Ilkhanid State of Iran in Tabriz.

His book containing 24 chapters is a collection of data concerning meteorology, agriculture, arboriculture, apiculture, the destruction of insects and other pests, farming, stockbreeding, architecture, fortification, shipbuilding, mining, and metallurgy²⁹. Rashid al Din's book was published as a collaborative study by Manuchehr Sotude and Iraj Asfar from Tehran University, 1989 A.D.³⁰

SOME NOTES ON KITAB AL FILAHA AL NABATIYYA OR NABATEAN AGRICULTURE AND ITS AUTHOR

Kitab al Filaha al Nabatiyya ("Nabatean Agriculture") is the first Islamic agriculture book, which was written by Ibn Wahshiyya in 9th century A.D. in Iraq (see in Table 1). This book is known as the oldest primer in Arabic of Islamic agriculture, which was titled as "The Book on the Cultivation of the Soil, and the Improvement of seeds and Arbors and Fruits, and Their Defense Against Disease".³¹ According to some orientalist, *Kitab al Filaha al Nabatiyya* translated into Arabic, from the Nabatean or Syriac by Ibn Wahshiyya.

There have been made various speculative claims about the author and origin of this book since 19th century in the science world. Syed Hussein Nasr, a well-known historian of sciences, explained that the so-called discussion about the origin of this book is not of great important. In any case, the book of Ibn Wahsiyya was an important primary source of agricultural information for Muslim Agriculturists during middle Ages because it had been based on various rich ancient sources.³² Moreover, it is a unique source of its kind for studying the agricultural and botanical knowledge attained by the *pre-Islamic* inhabitants of the Arabian Peninsula. Its sources are number of scholars from ancient Mesopotamia, for instance, Quthami, Yanbushad and Dagrith.³³ According to the investigation of Toufic Fahd, (a historian of sciences in Strasbourg University) this book is both on agronomy and phytotechny³⁴. It mentions some superstition also, but according to Ibn Khaldun³⁵ they were revised at right time by other Islamic Scholars, such as Ibn Hajjaj, Abu al Khayr al Ishbili and Ibn al Awwam.

The original *Al-Filaha Al Nabatiyya* was published in facsimile edition by Fuat SEZGIN (*Director, Institut für Geschichte der Arabisch-Islamischen Wissenschaften Frankfurt Universität, Germany*) in 1984 in seven volumes, based on the Arabic manuscript in *Topkapı Sarayı Müzesi III^ü Ahmed Kutuphanesi*, and Beyazit 19053, Turkey, and using British Library Ms Add.22371. In the introduction of this facsimile publication Fuat SEZGIN wrote, "We hold that the *Nabatean Agriculture* is one of the forgeries current in the Mediterranean basin shortly before Islam and during its inception. Most them were written in Greek. However, the *Nabatean Agriculture* was composed in Syriac. It was translated by Ibn Wahsiyya under the impression that it was an ancient writing, as the alleged author Quthami pretends. This book was among the numerous works forged in many scientific fields, and translated into Arabic from various languages. They, along with translations of genuine writings, played an important role in the early development of the Arabic and Islamic sciences."

THE TRANSLATIONS FROM/OF MEDIEVAL ISLAMIC AGRICULTURAL BOOKS INTO EUROPEAN AND OTHER LANGUAGES

Some of Islamic agriculture books were translated into

Spanish, Latin and other Western languages, also in Turkish³⁶ and therefore they became a source of inspiration for writings that appeared later in the West. In this way, Ibn Wafid's work (see Table 2) was widely used by the famous Spanish agriculturist of Renaissance, Gabriel Alonso de Herera (d. ca. 1539) in his famous *Agricultura General*. Ibn Wafid chronologically is the first of Andalusí agriculturists. He lived between 1086 - 1074 A.D.³⁷ His book are also published by C. Cuadrado Romero in Malaga University (Spain) in 1997, as a new edition in modern Spanish. According to the findings of C. Cuadrado Romero, the study of Alfonso de Herrera's work topics' title and even the chapter numbers are identical to Ibn Wafid's book in all respects. Both of them (Ibn Wafid's book and Herrera's book) contain basically 6 chapters. There are general subjects in phytotechny (such as the soil and its types, cereals, leguminous and basic process in the agricultural activities), viticulture and enology, the fruit trees, the horticulture, the animal husbandry (the apiculture, and the aviculture as zootechnical knowledge), and an agriculture calendar respectively.³⁸

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Abu'l Khayr al Ishbili was an arboriculturist and a native of Seville. He lived in 11th A.D. His *Kitab al Filaha* (see Table 2) is preserved as Ms. in the Biblioteheque Nationale (Paris), in Zaytuna mosque (Tunis), in some private libraries in North Africa³⁹ and in the library of Istanbul University, Turkey.⁴⁰ The following are the main contents of Abu'l Khayr's book. (i) General considerations on Planting (*gharasa* in Arabic): favourable months; influence of the moon; the time needed for plants to grow and to yield fruit; age of trees; damage (by weather, animals, fire, water); special treatment of olive trees, vines, fig trees, and of palm trees. (ii) Plantations proper: trees; bushes; grain; seeds; layering; pruning; grafting; fruit and vegetable conserves; growing of vegetables, aromatic plants, flowers, flax and cotton, banana, and sugarcane. (iii) Animals: of the backyard, especially pigeons, bees and wild animals, harmful animals (reptiles, rodents and insects). (iv) Finally two pages on the *tadjarib al amm* in Arabic, i.e., meteorological or astrological prognostications. Abu'l Khayr's book contains some quotations, for instance, from Abu Hanifa al Dinawari, Aristotle, Anatiolius, Cassianus Bassus Scholasticus, Philemo and Ibn Wahshiyya. Some excerpts from his book were

published by A. Cherbonneau and H. Peres under the title: *K. al Filaha ou Livre de la Culture*, in *Bibl. Arabe - Francaise in Algeria*, 1947. The Arabic text of this book has been published by Sidi Tuhami in Fez (Morocco) 1357 - 58 Hijra (1938 A.D.)⁴¹

Another book with the same title *Kitab al-Filaha*, was written by Ibn Awwam al-Ishbili in the 12th century A.D. in Andalusia. He lived first in half of 12th century in Seville, Spain. Much is not known about his life. *Kitab al-Filaha* of Ibn Awwam is a large collection of excerpts from Andalusí scientists,⁴² for example, Abul Khayr al Ishbili, al Hajj al Garnati, Ibn Hajjaj, Ibn Bassal, Ibn Abu Jawad, Arib ibn Said and Sheikh Muhammad bin Fadl Al Andalusí, and also in Eastern Arab texts, for example, Ibn Wahshiyya, Abu Hanifa al Dinawari, al Razi, Ishak bin Sulaiman, Galenos, Kustus, Aristotles, Mahraris al Yunani.

There are 35 chapters in this book. Chapters upto 30 deals with phytotechny (general soil knowledge, fertilizers and fertilization, plant nutrition, agronomy, horticulture, agriculture calendar, irrigation, viticulture, plant diseases, insects, meteorology and climatology etc.) and very little with food technology (such as cereal technology, bread making, enology, manufacturing of vinegar and boiled grape juice, manufacturing of olive oils and essential oils). Other chapters are on animal husbandry (the apiculture, sheeps, poultry, horses, camels, their breeding and veterinary practice or *Baytara* in Arabic).⁴³ This work of Ibn al Awwam was translated into Turkish in 1590-91 by Mehemed bin Mustapha about whom we know little⁴⁴. It was also translated into Spanish in 1802 by Don J.A. Banqueri, into French in 1864 by C. Mullet and into German with a summarized version in 1858 by E. Meyer.⁴⁵ To note is that recently this book was published in a new original edition in Arabic together with its Spanish translation by the Ministry of Agriculture of Spain.⁴⁶ There are 3 different manuscripts of its Turkish translations, (2 in Ýstanbul and 1 in Bursa. It is known today that all texts of this book in Turkey libraries are very rare manuscripts. In fact, the texts in Istanbul libraries (University and Beyazid) are autograph of translators. According to Izgi the manuscript of Bursa is a different translation.⁴⁷ From my own private survey, it follows that the text in Bursa is a copy of the first Turkish manuscript made by one scribe of the later century.

The studies of the Rasulid agricultural texts (especially *Bughyat al Fallahin...*) were published for the first time in 1974 by Robert B. Serjeant in Cambridge University, England.⁴⁸ In this publication the author translated the chapter concerning with the cultivation of cereals. Recently, on the history of Islamic agriculture in Yemen the second important study was carried out by anthropologist Daniel Martin Varisco of Hofstra University (New York). He published his two important studies in 1994⁴⁹ and 1998.⁵⁰

To note is that all Islamic agricultural books passes two significant aspects. First, they are source of agricultural heritage of the ancients. Second, they indicate effective and important agricultural experiments Muslims. It is evident that, ancient agricultural heritage became known through books and also through the activities of Muslim agriculturists from the middle ages down to modern age.⁵¹

ISLAMIC AGRICULTURAL REVOLUTION AND ITS EFFECTS ON THE MODERN WORLD

It has been established by now that Muslim farmers contributed to the diffusion of new plant pattern from Middle East to (West) Europe and in the development of different agricultural techniques, (for example, plant breeding, irrigation systems and extensive use of all agricultural land and various food processing systems).⁵¹

As a matter of fact a rigorous agricultural activity appeared between 7th and 11th A.D. centuries in the whole of Islamic world from Spain and Sicily to Transoxiana. This activity is referred to by historians as "The Islamic Agricultural Revolution". In fact, that revolution affected agricultural industries (flour milling, sugar production), population levels, distribution of the labour force, clothing (textile industry), cooking and diet in the Islamic world during Middle Ages. Evidently Muslim scholars wrote on agriculture various books and manuals during that revolution.⁵² For instance, Muslim agriculturists of Andalus may be classified according to their works. To start with, there were practitioners and professionals: farmers (*fallahun* in Arabic), fruit growers (*shajjarun* in Arabic), horticulturists (*jannanun*); there were also-herbalists (*ashshabun*), botanists (*nabattiyun*), doctors

interested in medicinal plants (*mufradat*) and dietetics; also pure theoreticians (*hukama*). On the other hand, Hispano - Arab treaties on agriculture (*filaha*) were often the work of many - sided writers (*musharikun, mutafannun*).⁵³ These activities were mainly the scientific back basis of Islamic agricultural revolution. The interactions of all the mentioned had made positive effects on the agricultural production during the Middle Ages in the Islamic world.⁵⁴

During the central government (Caliphate) rule, Taifa Emirates (Pretty Kings), Almoravid and Almohad in Muslim Spain established royal botanical gardens for acclimatization of plants brought back from the Near and Middle East.⁵⁵ These gardens were built in Cordoba (*Al Rusafa* and *Madinat al Zahra*), Seville (*Al jarafa* and *Buhayra* gardens), Toledo (*Hait al Sultan*), Almeria (*Sumadhiyya*), and Granada (*Jannat al Art*)⁵⁶ cities of Muslim Spain in different times. Some Muslim agriculturist (Ibn Bassal, Abu'l Khayr al Ishbili,⁵⁷ and properly also Ibn al Awwam⁵⁸) carried out part of their research and some of their experiments in the royal botanical gardens.

The sources mention many of these: the garden of Al Mu'tasim at Samarra; the great royal parks of the Aghlabid *amirs* of Tunisia and later the royal gardens of Tunisia's Hafsids rulers; those of the Fatimid rulers of Egypt and the vizier al Afdal; the gardens surrounding the royal palaces of Fez and Marrakesh; the Huerta del Rey in Toledo, and the gardens of many other Taifa kings of Spain; those of the Il-khans and Timurids at Tabriz and elsewhere; and that of Mahmud of Ghazna at Balkh.⁵⁹ In Yemen, Rasulid Sultans built also various royal botanical gardens for agricultural production between 13th - 14th centuries in different parts of the country. They were at Ta'izz, Thabat and Zabid cities of Yemen. Various diplomatic delegations from East (China, India or Sind and Ceylon) and West (Egypt) brought exotic plants to Yemen for Rasulid Sultans. These plants were acclimatized in the royal gardens for planting. Moreover, some sultans also experimented in their gardens with grape varieties and roses, as noted by al Malik al Afdal. For example, al Malik al Mujahid first introduced rice at al Jahmaliya in the coastal region.⁶⁰ In the Christian world, these agricultural experimental gardens appeared first in the university cities of northern Italy in the middle of the 16th century.⁶¹

In Spanish today also, there are a lot of agricultural terms of Arabic origin. They are being used even now, and their names algodón (cotton, *al kutn* in Arabic), azeituna or aceituna (olive fruit, *al zaytun* in Arabic), acafran or azafran (*al za'faran*), alezemin (*jasminum*),⁴² noria or naura (a type of irrigation canal, this term being also Arabic), alazud or assut / azudes (little irrigation dam, *al sudd la' asdad* in Arabic), raal, rahal, arreha or alraha (terms for water mills) and acequia / acaquinas (an irrigation term from the Arabic *al thaqiya*), almatzem (from *al maqsam*), acenas (water mills from Arabic *thaniya*)⁴³ for example. Further, Muslim farmers had established a tradition for agricultural irrigation in Andalus. This tradition exists of present also in Valencia, Spain and is called today as "Valencia Water Court Meeting".⁴⁴

In conclusion, we may reiterate that Islamic agriculture books are actually sources for traditional agriculture, which is necessary for ecological agriculture. These books containing priceless knowledge about soil, water, plant and animal resources, which are basic in the aspect of the ecology of the world. Finally, they are the source of important learning about the agricultural heritage of the Islamic culture.⁴⁵

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Table 1: In the Abbasid period (between 8th – 9th centuries) the agriculture books written

The Title of Books	The Authors	**E.T.L.
1. Kitab al Azminah (A)	Yuhanna b. Masavayh	***
2. Kitab al Filaha (A)	Jabir b. al Hayyan	Existent
3. Kitab al Hawwas (A)	Jabir b. al Hayyan	Existent
4. Kitab Fit Tyb wa al Filaha al- Suhur Rumiyya (A)	Ma'mun Caliph	Existent
5. Kitab al Filahat al Nabtyyya (A)	Ibn Wahshiyya	Existent
6. Kitab al Nabat (A)	Abu Hanifa Dinawari	Existent
7. Kitab'al'Filahat'al'Yunaniyye (Rumiyya) (A)	Kustus b. Luka	Existent

Table 2: During Umayyad Caliphs, Tavaif-i Muluk, Almoravid, and State of Nasrid Granada (between 10th – 14th centuries) in Muslim Spain the agriculture books written

The Title of Books	The Authors	** E.T.L.
1. Taqvim al Kurtuba (A)	Arib b. Said al Qurtubi	***
2. Muhtasar-y Kitab al Filaha (A)	Abu Qasym Zahrawi	***
3. Kitab al Tarth al Awaqit al Ghayra wa al Maghribat (A)	Anonymous	***
4. Kitab al Filaha (A)	Abd,al rahman..... ibn Wafid	***
5. Kitab al Anwa' (A)	Abu Al Hasan Qurtubi	***
6. Divan al Filaha (A)	Ibn Bassal	***
7. Kitab al Kasf' wa al Bayan (A)	Ibn Bassal	***
8. Kitab al Mukni fil Filaha (A)	Ibn Hajjaj	***
9. Kitab al Filaha (A)	Abu'l Khayr Shadjjar al Ishbili	Existent
10. Muhtasar ilm' al Nucum wa al Filaha (A)	Abu'l Khayr Shadjjar Ishbili	Existent
11. Kitab al- Filaha (A)	Abu Zakariya Yahya bin Ibn Awwam	Existent
12. Kitab al Zuhrat' al Bustan wa al Nuzhat' al Adhan (A)	Muhammad b. Malik Tighnari	***
13. Kitab al Hulasat' al Ihtisar fil Ma'rifat al Kurwa (A)	Abu Abd al Allah Avsi	***
14. Kitab al Ybda' Milaha fil Usul Syanaat al Filaha (A)	Abu Uthman Saad b. Abu Ca'far Ibn Luyun	***

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Table3: The list of agricultural books of Rasulid Sultanate of Yemen (between 13th – 14th centuries)

The Title of Books	The Authors	**E.T.L.
1. Kitab al Milh Malaha fil Ma'rifat al Filaha (A)	Al Malik al Ashraf Al Rasuli	***
2. Kitab al- Tabsira fil ilm al- Nujum (A)	Al- Malik al Ashraf Al Rasuli	***
3. Kitab al- Jamhara fil Filaha (A)	Al Malik al Muayyad Al Rasuli	Escape
4. Kitab al- Akwal al Kafiyeh wal Fusul al Ashafiya fil ilm al Baitara (A)	Al Malik al Mujahid Al Rasuli	***
5. Kitab al Ishara fil Imara (A)	Al Malik al Mujahid Al Rasuli	Escape
6. Bughyat al Fallahin fil Ashjar' il Murthmira wa al Rayahin (A)	Al Malik al Afdal Al Rasuli	Existent
7. K. al Salwat al Mahmum fil ilm al Nujum (A)	Al Malik al Afdal Al Rasuli	***
8. Kitab al Fusul Mecnu' fil Anwa'i wal Zuru' wa al Hisad (A)	Anonymous	***

Table 4: During Ayyubid, Ilkhanid, Mamluk States (between 12th – 13th centuries) the agriculture books written

The Title of Books	The Authors	** E.T.L.
1. Kawanin al Dawanin (A)	Ibn Mammati	***
2. Mubahic al Fikar ve Manahic al Ibar (A)	Jamal al din Watwat al Qutubi	Existent
3. Kitab al Athar-i wal Ahya (P)	Rashid al din al Tabib	***

A: Arabic, P: Persian, T: Turkish, **E.T.L.: The Existence in Turkey Libraries, ***unknown or nonexistent at present, Escape: any available in the World



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Left to Right Prof. S. Z. Rahman, Prof. M. S. Siddiqi (President, I.S.M.M., Istanbul) & Dr. R. P. Rutna (Chief Librarian, AMU, New Delhi) during the 38th Int. Cong. on History of Medicine, Istanbul, Turkey

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