

# Islamic Scientists

## 1. Physics

### (a). Abu 'Ali al-Hasan ibn al-Haitham (965 – 1039)

"Known as Alhazen to the West

"Mathematical evolution of spherical mirrors

"Rectilinear motion of light and use of lenses

"Refraction angle variations

"Magnifying effects of the plano convex lens

### (b). Abu Raihan al-Biruni (973 – 1051)

"Gravitational force

"Introduced the concept of elliptical shape of cosmological bodies

### (c). Abu'l Fath' Abd al-Rahman al-Khazini

"Mechanics and Hydrostatics

"Study of the Center of Gravity as applied to balance

"Measurement of specific weights of bodies

## 2. Mathematics

### (a). Muhammad Ibn Musa al-Khwarazmi

"Known as Khwarizm to the West

"Rule of algebraic equations

"Solutions to quadratic and Cubic equations

"Work on square roots, squares, theory of numbers, solution of the fractional numbers

### **(b). Abul Fath Umar Ibn Ibrahim al-Khayyam**

“Known for his translation of the Rubaiyat

“Solutions of equations of cubic order

“Wrote on conic geometry elaborating the solution of algebraic equations

“Determined the Trinomial Equation

## **3. Medicine**

### **(a). Abu ‘Ali al-Hussain ibn Sina**

“Known as Avicenna to the West

““Canon of Medicine “best known works

“Known as the Prince of Physicians to the West

“Wrote the first description of several drugs and diseases as meningitis.

### **(b). Hunain ibn Ishaq**

“Known as Johannitus Onan to the West

“Translated 95 Works of Galen from Greek to Syriac and 99 into Arabic

“Greatest translator of medical works

### **(c). Muhammad ibn Zakariyya ar Razi**

“Known as Rhazes to the West

“Student of ‘Ali ibn Rabban al-Tabari

“Skill in prognosis

“Treatment of Physiological shocks

“An expert on psychosomatic medicine and psychology

“al-Biruni mentions 56 (fifty six) manuscripts on pharmacology

“Credited for identifying Smallpox and its treatment

“Use of alcohol as an antiseptic

“Use of mercury as a purgative for the first time

### **(d). ‘Ali ibn al-Abbas al-Majusi**

“Known to the West as Holy Abbas

“After Rhazes he was the most outstanding Physician

“His works were authoritative till the works of ibn Sina appeared

## 4. Chemistry

### (a). Jabir Ibn Hayyan

“Known as Geber to the West

“Wrote on Cosmology; Astrology; Music; Science of numbers and letters

“Final authority on Chemistry for many many Centuries

“Classified metals into three classifications

“Laid the basis of the Acid Base theory

### (b). Muhammad ibn Zakruiyya ar RAzi

“Prominent Chemist

“Secrets of Secrets – where he describes

– chemical processes

– experiments he performed himself

“The processes were

– distillation

– calcination

– crystallization

– he mentions the use of

– beakers

– flasks

– phials

– casseroles

– naphtha lamps

– smelting furnaces

– chear tongues etc .....

“Credited for the discovery of many acids

### (c). Abul Qasim al-Iraqi

“Disciples of Jabir’s school of thought

“Cultivation of Gold – is a continuation of Jabir’s work

## 5. Astronomy

**(a). al-Farghani (Alfraganus)**

“Celebrated astronomer known for his work ‘ Elements of Astronomy

**(b). Thabit ibn Qurrah**

“Theory of Oscillatory motion of equinoxes

“Addition of ninth sphere to the eight Ptolemaic astronomy

**(c). al-Battani (Albategnius)**

“Discovered the increase of the sun's apogee

“responsible for the discovery motion of the solar apsides

“Best known is ‘ On the Science of Stars ‘

**(d). al-Biruni**

“Determination of latitudes and longitudes

“Determination of geodetic measurements

**(e). al-Hazen**

“Wrote ‘ Resume of Astronomy ‘

“Described the motion of the planets

**(f). ibn Yunus**

“Solved the problems of spherical trigonometry

“First to study the isometric oscillatory motion of a pendulum

**(g). al-Zarqali**

“He was an Andulasian observational astronomer

“Invented the instrument ‘ Sahifah ”

“Responsible for the proof of the motion of the apogee of the sun with respect to the fixed stars.

**(h). ibn Tufail**

“Known to the Occident as Abubacer

“An authority on the theory of the system of homocentric spheres

### **(i). Ummar Khayyam**

“Prepared a calendar that was more accurate than the Gregorian one, in use present day.

## **6. Art And Culture**

### **(a). Qutab al-Din Shirazi**

“Known for his work ‘ On the Highest Understanding of the Knowledge of the Spheres ‘.

### **(b). Muhammad ibn Musa al-Khawarizmi**

“Was well known for his work ‘ The Shape of the Earth ‘

## **7. Philosophy**

### **(a). Abu Yusuf Yaqub ibn Ishaq al-Kindi**

“The First Muslim Philosopher known to the West as Alkindus

“Also wrote treatise on mathematics, physics, medicine, natural history.

“Compiled the first vocabulary in Arabic of technical philosophy

### **(b). followed by Abu Nasr al-Farabi**

“First Muslim to classify the sciences and delineate the limit of each

“Wrote extensively on Aristotle’s work

“Out of 70 works, more than half were devoted to Logic

“His commentaries on Metaphysics helped Avicenna understand the work

“Known for ‘ Logic of the Orientals ‘

## **8. Social Sciences**

### **(a). Abd al-Rahman Abu Zaid ibn Khaldun**

“Known as the ‘ Philosopher of History ‘

“His works analyze the cause and the fall of civilizations and cultures.

“His work ‘ Kitab al-Ibar ‘ discusses the History of the Arabs, Persians, Berbers and their contemporaries who possessed great Powers.

## **Subject: “References – Scientists “**

This message is to the brother who had requested for the references of the Islamic Scientists.

1. Cultivation of Science by the Muslims by M. Abdul Aleem Siddiqui

2. Incredible Islamic Scientists (Two Volumes) by K. Ajram

3. Muslim Contribution to

“Civilization (by Haider Bammate)

“Geography (by Nafis Ahmed)

“Science and Culture (by M. Abdur Rahman Khan)

(These are infact 3 books in total that I have mentioned)

4. Muslim Contribution to Psychotherapy and Modern Trends by Dr. Syed Azhar ‘Ali Rizvi

5. Science and Islamic Civilization in Islam by Syed Hossain Noser

All these books are available at

Halalco Books (Ask for their free Catalog)

108 East Fairfax Street

Falls Church VA 322046

Phone no. 703 532 3202 (Call till 9 P.M)

Fax no. 703 241 0035

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