NEWSLETTER

ISLAMIC ACADEMY OF SCIENCES

MARCH 1989 ISSUE NO. 8

INITIAL PLANS AND MODEL FOR IAS PERMANENT H.Q. FINALIZED

IAS has finalized the initial layout for the Academy's permanent headquarters to be built on a piece of land in the neighborhood of the Royal Scientific Society (RSS). An architectural model has also been prepared.

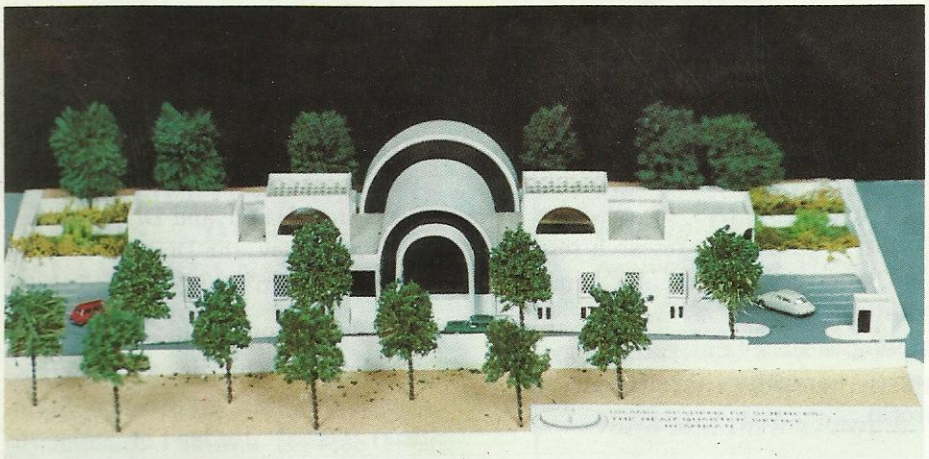
The layout and the model were prepared in cooperation with the Dept of the Architectural Engineering of the University of Jordan which was instructed by Prof. Dr. Abdel Salam Majali, President of the University, Founding Fellow of IAS to assist IAS in preparing the layout.

In October, 1987, His Royal Highness Prince Al-Hassan, Crown Prince of the Hashemite Kingdom of Jordan, Patron of IAS instructed the allocation of a piece of land to the Academy for the purpose of establishing IAS permanent H.Q. The initiative was highly evaluated by IAS Council and General Assembly as well as by the scientific community throughout the Muslim world. The piece of land of an area of 3000 sq.m, is located in the middle of ascientific complex comprising the Royal Scientific Society, the Higher Council for Science and Technology, The University of Jordan, The Geographical Centre, and Department of Statistics.

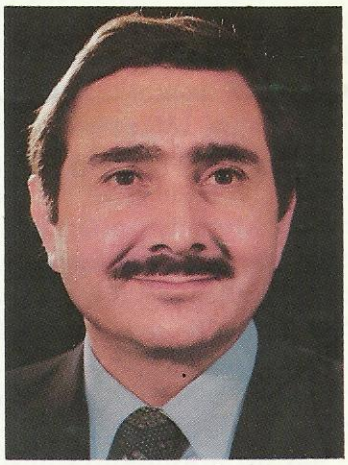
The total area of the building of the permanent H.Q. is around 2000 s.q m and comprises and auditorium, meeting rooms, library, prayer room, computer room, offices and utilities.

The major portion of the area is occupied by the auditorium the meeting rooms, and the library. The H.Q. is envisaged to be an active centre for scientific activities whether it be

continued, page 2.



Model For IAS Permanent Headquarters.



H.E. MR. Marwan Al-Qasem, Vice Premier, and Minister of Foreign Affairs of Jordan

JORDAN PAYS ITS FIRST INSTALLMENT OF ITS GRANT TO IAS

H.E. Mr. Marwan Al Qasem, Vice-Premier and Minister of Foreign Affairs have graciously authorized the payment of 25,000 J.D to IAS as the first installment of the annual grant of the Hashemite Kingdom of Jordan to IAS totalling 50,000 J.D.

The payment of the first half of the grant demonstrates the full commitment of Jordan to joint Islamic effort and its continuous endeavour to support Islamic Institutes.

IAS Secretariat has expressed to His Excellency its deep gratitude for the continuous support IAS has been receiving from the Hashemite Kingdom of Jordan.

Imitial Plan, contd.

local, regional or international.

In the meantime IAS H.Q. staff are working on a plan for sponsoring the project and shall be seeking the support of individuals and donor agencies world-wide specially those in the Muslim world.

.....

IAS PUBLICATION TRANSLATED TO ARABIC

The Kuwait Foundation For The Advancement Of Science (KFAS) has agreed to sponsor the translation into Arabic of IAS publications on "Food Security in the Muslim World", Proceedings of IAS First Seminar. KFAS has offered IAS a generous grant for the translation and publication of the mentioned proceedings. The emblem of KFAS will appear on the translated version of which 750 copies will be presented for distribution by KFAS.

IAS has already contracted a professional translator to do the job and it is expected that the book will be ready for publication by the beginning of May.

This step comes in furtherance of the cooperation previously initiated between IAS and KFAS. The highlight of the cooperation programme between the two institutes will be the organization of the joint conference on "New Technologies for the Development of the Muslim World" scheduled for December 1989.

.....

JORDAN'S HIGHER COUNCIL FOR S&T SPONSORS IAS PUBLICATIONS

Jordan's Higher Council for Science and Technology (HCST) has responded to IAS request to sponsor the publications of the proceedings of IAS second conference on "Science and Technology Policy in the Muslim World". An agreement to this effect was signed between IAS Executive Director General and HCST Secretary General.

According to the agreement, HCST will grant IAS 5000 JD to cover the cost of publishing the proceeding in a high quality book. The emblem of HCST will appear on the first page of the book with proper acknowledgment.

In addition, HCST will receive 200 free copies of the proceeding to be distributed according the HCST preference.

This step stems from the objectives of HCST in supporting scientific activities and cooperating with institutions working in the field of S&T.

.....

2ND ISSUE OF IAS JOURNAL DISTRIBUTED

The second issue of IAS Scientific Journal has been recently distributed to the scientific community throughout the Muslim World as well as world-wide.

The issue consist of 85 pages and comprises 17 research papers in various fields of knowledge such as polymer chemistry, hydrology, crop sciences, Immunology, clinical biochemistry as well as letters to the editor.

The Journal is a quarterly multidisciplinary refereed scientific publication issued by IAS to serve as a forum of presenting research results and increase interaction among Muslim scientists as well as promoting science and technology to serve humanity throughout the world.

.....

NOMINATION OF NEW FELLOWS FOR IAS

In conformity with IAS statues and by-laws, IAS Secretariat has forwarded to all IAS fellows the nomination forms for election of new fellows of IAS.

The filled-in nomination forms should reach IAS Secretariat no later than the first of May 1989. Election ballots accompanied by C.V's of nominees should be forwarded to all fellows no later than the first of July.

Item (3) of the by-laws of election of new fellows gives the right to existing IAS fellows to nominate one candidate every two years and any fellow who fails to exercise this option should loose his right of nomination for the two years in consideration.

The Editorial Board takes this opportunity to urge all IAS fellows to use their right of nomination and election and respond soon to the Secretariat.

.....

HCST OF JORDAN COOPERATES WITH GROZNY PETROLEUM RESEARCH INSTITUTE

An agreement for scientific and technological cooperation was signed in October 1988 between the Higher Council for Science and Technology (HCST) of Jordan and the Institute in Grozny. The agreement was signed by Dr. Adnan Badran, Secretary General of HCST and Dr. Salambek Naib Khadziev, the Director General of Grozny Institute.

In January 1989, a delegation composed of Dr. Khadziev and Dr. Hussein Kadi (both are Muslim Scientists) visited Jordan in order to finalize a detailed programme of

cooperation including joint research, exchange of information and exchange of scientific visits.

The programme of cooperation involves carrying out investigations for the conversion of oil shale into gaseous fuels, applications of new techniques to produce additional products in the petroleum refining process, the development of appropriat testing and standardization procedures for fuel and lubricants and the development of a reclamation process for used oils.

The institute which was established 65 years ago, is well known for its competence in research and development related to petroleum refining and in the design of refinery complexes. It is worth mentioning that the institute is located in Grozny, the capital of the Chechen-Ingush Republics at the North Caucasus in the Soviet Union.

The programme of the delegation included visits to Dr. Jawad Anani, President of Royal Scientific Society (RSS), Mr. Kamal Jreisat, Director General of Natural Resources Authority, Mr. Sa'ad Tall, Director General of Jordan Petroleum Refining Company, Dr. Kamel Ajlouni, President of Jordan University of Science and Technology, and Dr. Mohammad Hamdan, President of Yarmouk University.

The cooperation agreement was signed for a period of five years.

.....

FIRST MEETING OF THE HEADS OF INTER-ISLAMIC S&T NETWORKS

The first meeting of the Heads of The Inter-Islamic Science and Technology Networks was held in Islamabad, Pakistan between 25-26 Feb. 1989.

EDITORIAL LETTER

No one would dispute the fact that the founding of IAS constituted and important landmark in the history of joint Islamic action. Its coming into being has been the dream of many generations of Muslim scientists and scholars. Consequently, the Academy shoulders great responsibility in planning and executing programmes that meet the needs and requirements of the Muslim Ummah.

The few activities accomplished by IAS during the short period of its existence soundly proves its vital role in enhancing joint Islamic effort and promoting a collective Islamic approach towards dealing with the challanges facing the Ummah.

Since its establishment, IAS received tremendous support and encouragement. Its basic financial needs are covered from the grant graciously paid annually by the Hashemite Kingdom of Jordan. Recently, COMSTECH has approved an annual grant for IAS for the coming three years. Other parties including Kuwait Foundation for the Advancement of Sciences (KFAS), Islamic Foundation for Science, Technology and Development (IFSTAD), Pakistan Science Foundation (PSF), Jordan's Higher Council for S&T (HCST) have generously contributed towards one or more of IAS activities, Although the available financial resources of the Academy are enough to meet its running expenses and few short-range activities, yet it is prime time that IAS moves one step ahead to undertake some of its long-range activities detailed in its five-year programme.

Surely, the undertaking of IAS planned activities required generous funds. It is the responsibility of all IAS Fellows to endeavour for locating finanicial resources and suggest ways and means of attracting contributions to help IAS continue its noble mission on the course of revival of the Muslim Ummah. Needless to say that it is also the responsibility of the entire muslim scientific community and individual muslims to assist IAS continue and grow. This is the least muslims can do to serve their faith and their Ummah.

The meeting started by the Opening remarks presented by H.E. Prof. Dr. M. A. Kazi who reviewed the background of establishment of Inter-Islamic Networks on Science and Technology and the motives behind their establishment. The opening statment was followed by status reports on the Networks presented by the participating Network's Heads.

Elaborate discussions between participants were focussed on the guideline for organizing the Networks and the relevant issues such as the responsibilities of the host country in which the Headquarters of the Network is located, the role of representative national focal points. Mutual co-operation and co-ordination between OIC System, international agencies and similar Networks in other countries were also discussed.

.....

IAS SEEKS FUNDS FOR PUBLISHING SERIES OF BOOKS

In pursuing its five-year programme, IAS has finalized plans to publish three books on selected contemporary scientific issues, namely Biotechnology Revolution and the Muslim World, Informatics in the Muslim World and Health and Nutrition in the Muslim World.

Three proposals for the mentioned three books were prepared by experts in the relevant fields. The proposals were previously approved by the IAS General Assembly in its third meeting held in Islamabad in December 1988.

The three areas were selected in view of their impact on economic development and welfare of the Muslim Ummah. The books will be published in English in a simplified

continued, page 6.

SCIENCE AND TECHNOLOGY DEVELOPMENT IN THE ESCWA REGION*

1 . Introduction

This is the first of a series of short articles to be published by IAS Newsletter covering several aspects of science and technology (S&T) development in the ESCWA REGION (Member countries of the UN Economic and Social Commission for Western Asia) during the past several years.

Subjects to be covered include characteristics and development strategies in the region, S&T policies, human resources, S&T services, and interaction of S&T with selected development sectors**. This first article covers the characteristics of the ESCWA region and the socio-economic setting relevant to S&T policies.

2 . Characteristics

Countries in the ESCWA region have differences in economic systems, stage of development, resources, and S&T capacity. These countries can be classified under three categories. The first category includes the five countries of the diversified economics (the DE countries), namely; Egypt, Iraq, Jordan, Lebanon, and Syria. The second category includes the six member countries of the Gulf Cooperation Council (the GCC countries), namely; Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE). The third category includes the least developing countries (the LD countries), namely; Yemen republic and Democratic Republic of Yemen.

IAS Founding Fellow Dr. Fakhruddin Daghestani

(a) Land

The ESCWA countries cover an area of 4.7 Million sq. Km. of which 35.9% is in the DE countries, 53.2% in the GCC countries, and 10.9 in the LD countries. Out of the total area only 6.8% is arable and only 3.7% is cultivated. The ratio of cultivated land to area varies in these countries, but on the whole remains small. This ratio is 2.4% for Egypt, 12.5% for Iraq, 4.3% for Jordan, 0.5% for Saudi Arabia, 0.2% for UAE, and 0.7% in the Yemen Republic.

The low ratios of cultivated to arable land, the sparsely inhabited areas, the large portion of arid and semi-arid land constitute a serious obstacle to food security and offer S&T challenges to develop techniques and methods to increase land utilization and agricultural production.

* Article written by Dr. F. Daghestani, IAS Founding Fellow.

** For detailed information, see ESCWA Report No E/ESCWA/NR/88/Wg. 214 prepared by the writer.

(b) Oil

The ESCWA region is among the largest area in the world in oil and gas production and reserves. The estimated oil reserves in Iraq and the GCC countries are 370 billion barrels constituting 51% of world proven oil. Among the DE countries only Lebanon and Jordan are non oil producers.

This region is also among the major oil exporters. Exports dropped from 19 million barrels per day in 1979 to 11.4 million barrels per day in 1986 due to a drop in oil prices. This export constituted 28.7% and 19.1% of world export during these years.

Oil exploration, drilling, pumping, refining, transport, and marketing require many S&T inputs and technologies. The S&T capabilities in these areas are still limited in most ESCWA countries, and heavy reliance on firms from industrial countries still persists.

(c) Population

The population of the region is around 110 million, 75.2% is in the DE countries, 15.4% in the GCC countries, and 9.4% in the LD countries. The largest population is in Egypt (50 million), and the smallest is Bahrain (0.5 million). Among the GCC countries, Saudi Arabia has the largest population (11.5 million) constituting 70% of the total population in the GCC countries. All the ESCWA countries have high population growth rates ranging from 2.5% to 3.8%. This population is also thinly distributed with the average of 47 persons per sq.km.in the DE countries, 6.4 in the GCC countries, and 19.1 in the LD countries. The smallest distribution is in Saudi Arabia (5) and Oman (4).

In general, the DE countries and the LD countries are labor exporters while the GCC countries are labor importers. The ratio of expatriats in the GCC countries is very high, and it grew from 20.9% of the population in 1975 to 38.2% in 1985.

The common characteristics of the population in the region are: high growth rates, high percentage of young people where more than 50% of the population is 15 years of age or less, high concentration in urban areas (about 50%) and low density of population averaging 22 persons per sq.km. All these characteristics impose difficult devellopment problems and increased investment in the services sectors.

(d) Health

The ratios of population per physician and per nursing person is still high in most ESCWA countries. The available published data shows that in 1981 the population per physician ranged from 640 for Lebanon to 2240 for Syria. The population per nursing person ranged from 790 for Egypt to 2250 for Iraq. Life expectancy at birth ranged from 59 for Egypt and Iraq to 63 for Jordan. The infant mortality rate ranged from 49 for Jordan to 93 for Egypt. The health situation in the GCC countries is comparatively better than that in the rest of the ESCWA countries.

Improved health care creates a heavy demand for scientific and technological inputs such as qualified human resources, medical equipment, medicine, infrastructure, and management.

(e) Education

All ESCWA countries have made notable advances in education during the last ten years. The number of students at the first level increased from 11.3 million in 1980 to 13.2 million in 1984. Students at the second level increased from 5.5 million to 6.2 million during these years. Students at the third level increased from 0.75 million in 1980 to 1.05 million in 1984. The orientation of education to meet the development needs is still one of the persisting problems in the region

(f) Development goals

All the long development goals of the ESCWA countries are similar to those in most developing countries. They include increasing the GDP and improving the distribution of development benefits among its citizens; building the infrastructure and satisfying the bassic human needs for education, housing, energy, and health; restructuring the economy in favour of diversification and increasing the share of commodity producing sectors in the GDP and increasing the degree of self-reliance in the political and economic areas as well as in science and technology.

The major goals of the DE countries in the region include creating employment opportunities, increasing productivity of existing sectors, and promoting the commodity producing sectors. The goals of the GCC countries include the rapid development of human resources and diversification of the economy to reduce dependence on oil revenues. The two Yemens pursue two different economic systems but both aim at satisfying basic human needs and developing their infrastructure.

(g) GDP

The GDP in the region declines from $268 billion in 1980 to 166 billion in 1985. In 1985, the GDP in DE countries was $97 billion while that in the GCC countries was $164 billion. During the same year, the GNP per capita ranged from high $19270 in UAE to low $530 in South Yemen.

Most oil-exporting countries in the region depend largely on oil revenues. During the period 1975-1980, the percent increase of oil revenues was 300, 250, and 225 for Saudi Arabia, Iraq, and UAE respectively. After that period, these revenues recorded negative growth rates. Despite the wealth of the region in oil, the technological capabilities in the various aspects of oil exploration, production, and manufacturing (refining and petrochemicals) have not yet sufficiently developed in the countries of region.

In 1985, merchandise imports in the region reached $74 billion. These imports were $41 billion by GCC countries, $30 billion by DE countries, and $3 billion by the two Yemens. These large import figures created a demand for technological products. Technology transfer was mostly in terms of technology trade and not in know-how transfer.

3 . Difficulties

The region as a whole faced political unrest and wasteful wars. The prolonged Iran-Iraq war and the civil war in Lebanon have caused much loss in life and financial resources.

The declared objectives of the development plans in the region have not yet been sufficiently realized. This was due to three main reasons. Firstly, implementation of plans was not always consistent with declared objectives. Secondly, individual Arab Countries do not have the necessary human and financial resources needed for development. Thirdly, no major structural changes were made in favour of developing the endogenous S&T capacity.

IAS Seeks Funds, Contd.

form to reach the widest spectrum of readers including policy and decision makers, scientists, industrialists, entreprenures and all other individuals and groups in the society. They will also be a comprehensive treaties of the state of the art of each field and how they relate to the needs of Islamic countries.

Cost estimates of each book has been done and IAS H.Q. has already initiated contacts with some agencies in the Muslim World to sponsor this ambitious activity.

Parties contributing financially to these publications will be properly acknowledged.

ROYAL SCIENTIFIC SOCIETY OF JORDAN AND UNIDO ORGANIZE JOINT WORKSHOP ON SOLAR ENERGY

A two-week joint workshop on Solar Water Heaters (SWH) has been organized by Royal Scientific Society (RSS) of Jordan in cooperation with UNIDO during the period 26th Feb and 12th March 1989. Thirty technicians from 13 Islamic countries took part in the workshop.

The participants received training on aspects of design, manufacturing and maintenance of solar water heaters. They were also briefed on the theoretical side of utilizing solar energy for heating water.

The workshop included also a visit programme to various locations in Jordan where solar and wind energy facilities are installed and utilized for domestic needs. The participants have also visited local manufacturers of SWH's in Jordan.

Jordan experience in the application of solar energy for domestic and industrial purposes will be presented to the participants to help them benefit from it and open the door for possible cooperation with relevant agencies in the participating Islamic countries.

Participants in Joint Workshop on Solar Energy

IAS NEWSLETTER

The Newsletter is published bimonthly by the Islamic Academy of Sciences.

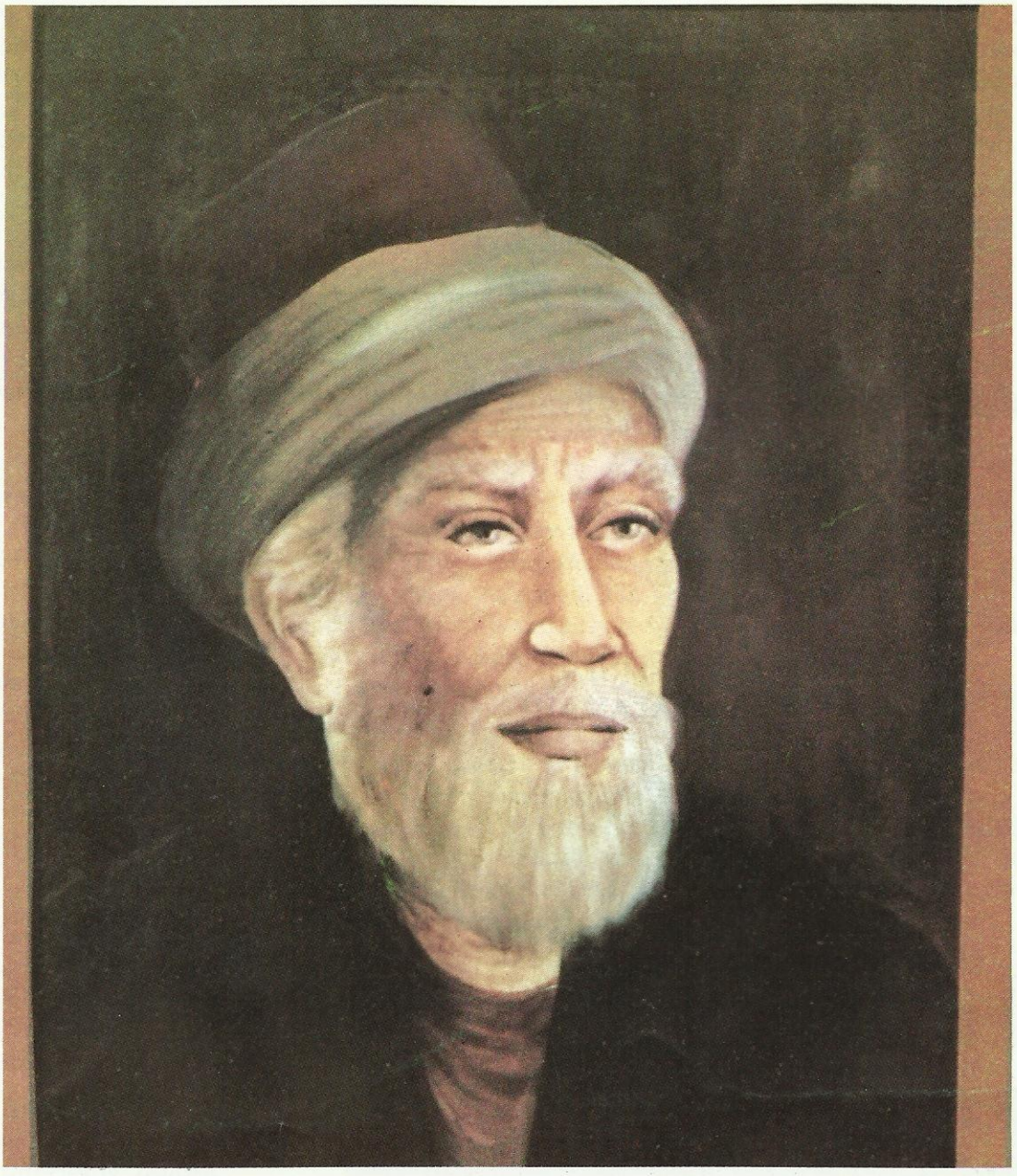
Correspondence;

Islamic Academy of Sciences,
P.O. Box 830036, Zahran,
Amman, Jordan

Phone: 822104, 823385
Tlx: 24368 IAS JO.

Royal Scientific Society Press.
Amman-Jordan

MUSLIM SCHOLARS



ABU RAIHAN AL-BIRUNI

(973-1048 A.D.)

Al-Biruni was a versatile scholar and scientist who had equal facility in physics, metaphysics, mathematics, geography and history. Born in the City of Kheva near "Ural", he had made considerable contributions in physics and mathematics.

(Taken from: Personalities Noble, National Science Council of Pakistan, edited by Hakim Mohammed Said).