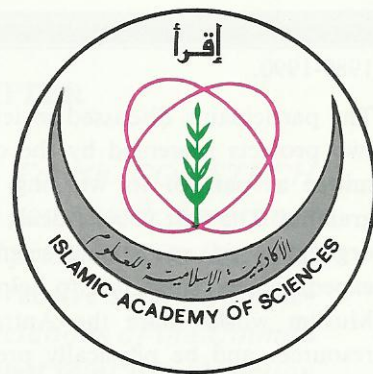


NEWSLETTER

ISLAMIC ACADEMY OF SCIENCES

MAY 1989

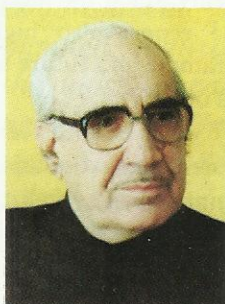
ISSUE NO. 9



FOURTH MEETING OF COMSTECH CONVENED IN ISLAMABAD

The fourth conference of the Organization of Islamic Conference (OIC) Standing Committee of Scientific and Technological Cooperation (COMSTECH) was held in Islamabad during the period 13-15 May 1989. Delegates representing twenty four Islamic Countries thirteen of them headed by ministers participated in the three day meeting. Representatives of Islamic Organizations and Institutes also took part in the Conference. Inaugurating the conference, H.E.Mr. Ghulam Ishaq Khan, President of the Islamic Republic of Pakistan, Chairman of COMSTECH stressed that development of Muslim societies, technological advancement and promotion of scientific knowledge, ought to be avoided at the cost of our spiritual heritage and cultural moovings.

The President said that Almighty Allah had endowed the Islamic Countries with immense resources in men and material and proper exploitation of these resources for the welfare and progress of mankind depend heavily on the application of science and technology. The President called upon Islamic countries to pool their own intellectual and material resources and collaborate with each other to solve common

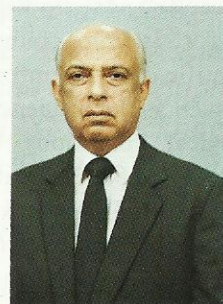


*H.E. Mr. Ghulam Ishaq Khan,
President of the Islamic Republic of Pakistan*
problems.

In her masage to the conference, H.E. Prime Minister of Pakistan Mohtarama Benazir Bhutto said that the Muslim Ummah has to pursue the bold initiatives taken to assemble at one platform for upgrading its scientific and technological capability and to achieve collective strength in science and technology in order to harness it for socio-economic development of the Muslim World. The Prime Minister added that concerted efforts will open new vistas of science in the Muslim World.

In his address at the opening session, OIC Secretary General Dr. Hamid Al-Gabid urged the Islamic States to re-orient their priorities towards new world technical order which would impose the exchange of technology and transfer to the developing countries as well as global scientific development.

Dr. Mumtaz A. Kazi, Coordinator General of COMSTECH (President of IAS), called for creating effective



*H.E. PROF. Dr. M.A. Kazi, President of IAS,
Coordinator General, COMSTECH*

institutional structures in high technology areas at the regional and Ummah level to meet the common needs of manpower training, planning, technology, transfer and research and development. In his address at the inaugural session, Dr. Kazi said that the main objective of COMSTECH is to promote co-operation and collaboration amongst the Islamic countries in the field of S&T in order to achieve the collective problem solving capability within the Ummah.

The main issues on the agenda of the three day conference were the report of the Coordinator General on the activities of the committee since its third meeting, considering the statutes of the committee, mobilization of resources for S&T development in Islamic Countries. Reports on the activities of the various Islamic organizations and institutes under the umbrella of OIC and COMSTECH, and the working programme and budget for the biennial

1989-1990.

The participants discussed in length two projects presented by the committee as part of its working programme. The first project deals with organizing of an Islamic scientific expedition to Antractica to help the Muslim world share the Antractic resources and be physically present on the continent to demonstrate its interest and intent. It was stressed that the objective of the expedition is totally scientific as it will open channels for Islamic countries to share scientific data and information on issues such as the influence of the meteorological conditions of An-tarctica on global climate and melting of Antarctic glaciers and ice sheets and their effect on global sea level.

The second project is a proposal to organize a oceanographic cruise around the Muslim World. The general objective of the project is to increase understanding of the ocean and coastal processes that affect climate, navigation, exploration and exploitation of natural resources as well as to provide on-site training in oceanography.

Both projects were adopted by the conference but it was left open to Islamic Countries to participate in them according to their needs and priorities.

A budget of 3.7 million U.S.\$ was also approved of which 1 million U.S.\$ was allocated to institutional building and 2.24 million U.S.\$ for programmes in seven S&T thrust areas such as food and agriculture, health, energy ... etc.

The conference ended by issuing its final resolutions' statement which outlines the set of resolutions and recommendations adopted by participants.

IAS REPORT TO 4TH COMSTECH MEETING WELL RECEIVED

IAS participated in the fourth meeting of OIC Standing Committee on Scientific and Technological Cooperation (COMSTECH) held in Islamabad 13-15 May 1989.

Acting Director General of IAS presented a report on the activities of the Academy since its inception in 1987. The report also highlighted IAS Programme and future activities in the area of S&T.

The report was well received by participating delegates who commended the accomplishments and the well managed financial resources of the IAS during the short time of its existence.

In the final resolution statement (item 6) issued at the end of the meeting, IAS was complemented on the good work done since its establishment.

EL-MULKI APPOINTED PRESIDENT OF RSS

Dr. Hani El-Mulki former Executive Director General of IAS took a new assignment as President of the Royal Scientific Society of Jordan (RSS) as of May 2nd. In His Highness's letter of assignment, HRH Crown Prince Al-Hassan bin Talal, Chairman of Jordan's Higher Council for Science and Technology, entrusted Dr. El-Mulki with pursuing the objectives and tasks of RSS.

Prior to this assignment, Dr. El-Mulki was the Executive Director General of IAS since its inception early 1987. His efforts were remarkable in establishing and managing IAS Headquarters for the last two years. The Editor, on behalf of IAS Fellows and employees takes



Dr. H. El-Mulki, President RSS

this opportunity to congratulate Dr. El-Mulki and wish him every success.

PROFILE OF AN ISLAMIC INSTITUTE:

KING ABDULAZIZ CITY FOR SCIENCE AND TECHNOLOGY

Institutional Background

King Abdulaziz City for Science and Technology (KACST) is an autonomous scientific organization administratively attached to the office of the Custodian of the two Holy Mosques, King Fahd Ibn Abdulaziz, The Prime Minister. KACST's headquarters are located in Riyadh and branch offices may be established in other cities of the Kingdom of Saudi Arabia.

KACST was established by the Royal Decree No.M/60 dated 18th Dhual Hijjah 1397 A.H. (27th of November, 1977) under the designation "Saudi Arabian National Centre for Science and Technology" (SANCST)". Subsequently, by the Royal Decree No.M/61 dated 20th Dhual Hijjah 1405 A.H. (5th September, 1985) a Supreme Board was formed to assume the authority and management responsibility for all matters and affairs associated with the Centre's functions.

The Supreme Board consists of the Prime Minister as a Chairman, the Deputy Prime Minister as a Vice-Chairman and the Second Deputy



H.M. King Fahad Bin Abdulaziz Al-Saud
The Custodian of the Two Holy Mosques
Chairman, Supreme Board.

Prime Minister, and the following Ministers and officials as members:-

Minister of defence and Aviations and Inspector General, Minister of Higher Education, Minister of Agriculture and Water, Minister of Industry and Electricity, Minister of Petroleum & Mineral Resources, Minister of Planning, Minister of Finance & National Economy, President of Intelligence Directorate, President of KACST.

In addition to the above, three other members are nominated for the Supreme Board by the Prime Minister. Current nominees are:

H.E. Turki Khaled Al-Suderi, Minister of State, Member of Minister's Council and President of Civil Services Bureau; H.E. Dr. Rida M.S. Obaid, President of King Abdulaziz University and Dr. Ali A. Al-Khalaf, Chairman of Saudi Iron & Steel Co. (HADEED).

By the Royal Decree No.M/8 dated 19th Rabi-II, 1406 A.H. (31st December, 1985) the name of SANCST was changed to "KING ABDULAZIZ CITY FOR SCIENCE AND TECHNOLOGY (KACST)" to suit its numerous responsibilities and functions.

KACST Functions and Objectives

KACST is entrusted with the

EDITORIAL LETTER

In its resolution statement, the Fourth COMSTECH Meeting commended IAS for the good work done since its establishment. It is a source of pride to note that IAS was the single Islamic institute to receive such a complement. Surely, living up to the expectations of the Ummah is not an easy task. But isn't this what joint Islamic action is all about?

Indeed, IAS received a tremendous support since its establishment. This has resulted in undertaking well planned, high quality activities. The Academy selected the most urgent items on the agenda of development needs of the Ummah. It started in 1987 by tackling the issue of Food Security in the Muslim World. The impact of that activity at the Ummah level was tremendous. In 1988 IAS organized an international conference on S&T Policy which again was of high value. Later this year Insha-Allah, the Academy is organizing a conference on High Technologies in cooperation with Kuwait Foundation for the Advancement of Science (KFAS), thus entering the area of specific. At the moment, IAS is jointly organizing with the Royal Academy for Islamic Civilization Research (Al-AlBait Foundation) a seminar on Coordination and Cooperation among Islamic Institutes of Thought, Research and Studies. Fifteen institutes are taking part in this activity.

As for publications, the proceedings of the S&T policy conference will be soon ready for distribution. The third issue of IAS Scientific Journal has already been issued and the reader will notice the progress in the quality and diversity of its subjects.

The basic question is how to keep the momentum and maintain continuity of the Academy's march? The Academy started with 38 eminent scientists as its Founding Fellows. In 1988, eleven more scientists were elected and soon new Fellows will be elected to join the Academy. Thus, the Academy is an institute of the cream of the Ummah and this what makes it different.

We are confident that our Fellows will spare no effort in fulfilling the Academy's objective of being the "Brain Trust" of the Ummah.

responsibility of supporting and promoting science and technology for the advancement of the Kingdom. In this regard, a number of functions and objectives have been defined to help KACST achieve its set goals. These functions and objectives include the following:

- (a) Encouragement and support of applied scientific research.
- (b) Coordination of research activities carried out by scientific institutions and research centers in such a way that they satisfy the defined requirements for development.
- (c) Cooperation with specialized bodies to specify developmental priorities and national policy in science and technology for the establishment of a scientific and technological base to serve development in agricultural, industrial, and other fields.
- (d) Development of national human resources in the field of science and technology, and attraction of highly qualified scholars for their contribution

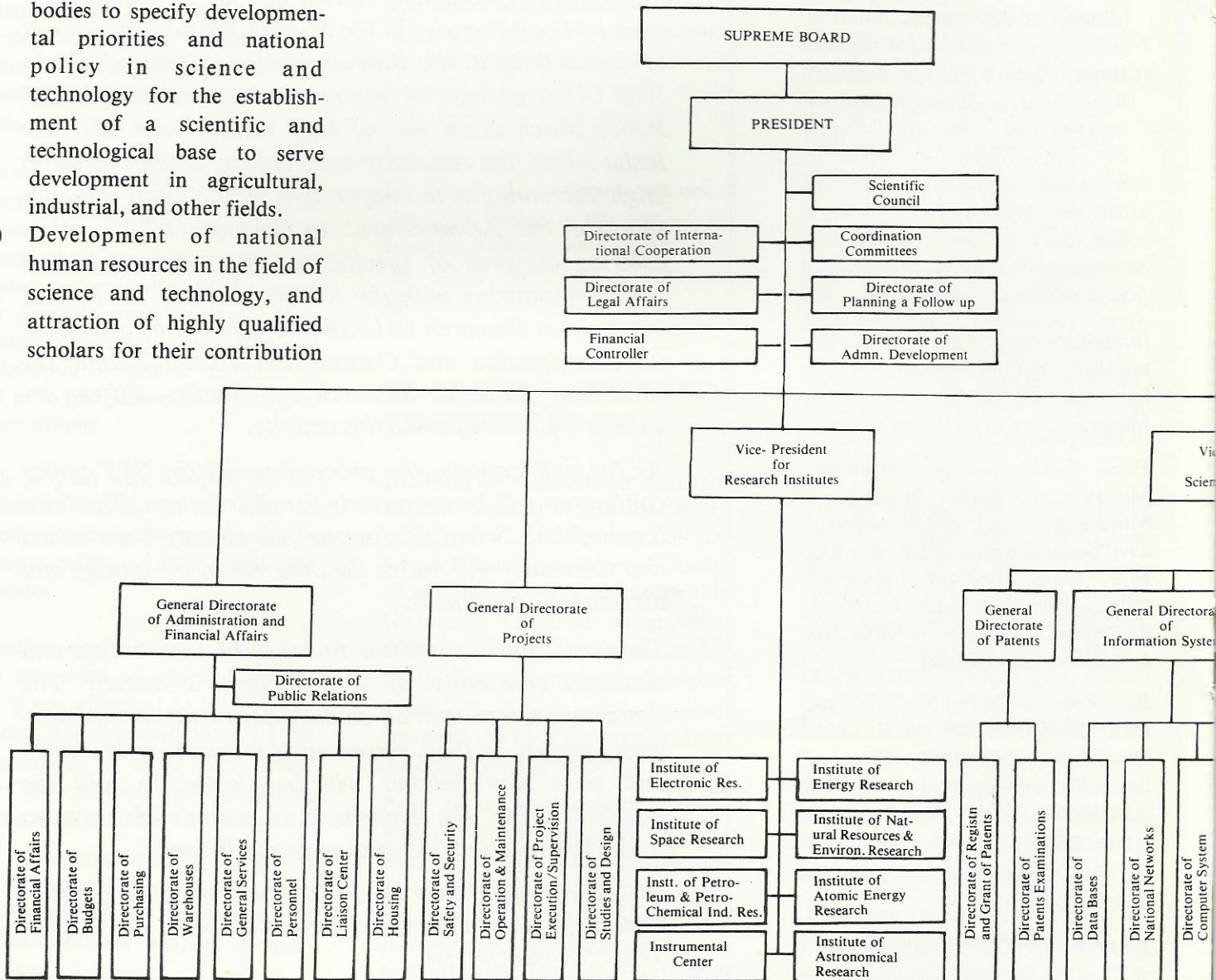


*Prof. Dr. Saleh A. Al-Athel, IAS Fellow
President of KACST*

- to the developmental process in the Kingdom.
- (e) Provision of facilities required

for scientific research such as laboratories, communication means, information resources, and other related necessities.

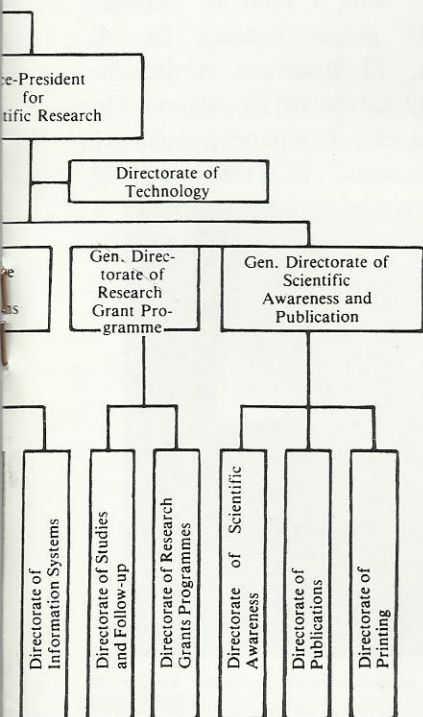
- (f) Proposition of the national policy for advancing science and technology, and provision of strategies, and plans required for the execution of such policy.
- (g) Execution of applied scientific research programmes designed to serve development in the Kingdom.
- (h) Provision of assistance to the private sector in promoting



Organizational Structure of KACST

research in agricultural and Industrial products.

- (i) Support of joint research programmes between the Kingdom and international scientific institutions through provision of grants and execution of research projects in order to keep abreast of the latest global development in science technology.
- (j) Awarding of study and training scholarships to individuals for developing their skills for future designing and execution of scientific research projects.
- (k) Provision of research grants to individuals and scientific organizations to conduct applied scientific research.
- (l) Coordination with government agencies, scientific organizations, and research centres in fields of research and exchange of information and expertise, to avoid duplication of efforts. This is achieved through specialized committees of experts selected from these bodies.



KACST Organizational Structure

A new organizational structure for KACST has been approved as shown in the attached flow chart.

KACST Activities

KACST houses institutes and directorates which function in collaboration to perform its various activities.

These institutions and directorates design, implement and supervise the execution of several projects and programmes, and other activities. The various activities of KACST include the following:

- (a) Applied Research Grants
 - Annual Award Grants.
 - National Research Projects
- (b) In-House Applied Research Programmes and Projects
 - Solar Energy Research Programmes.
 - Fish Culture Project.
 - Remote Sensing Project.
 - National Observatory Project.
 - Lunar Observatories Project.
 - Seismic Activity Monitoring Project.
 - Wind Energy Assessment Project.
- (c) Information and Technical Services.
- (d) Scientific Awareness and Publishing.
- (e) Patents.
- (f) Atomic Energy.
- (g) Technology Transfer.
- (h) Petroleum and Petrochemical Research
- (i) National Plan, Training, and Scholarships.
- (j) Manpower Development.
- (k) Facilities Development.
- (l) International Cooperation.

Methods of Research Support Offered by KACST

KACST offers the following three types of research support:

(a) Annual Research Grants

This programme was initiated by the general directorate of Research Grants Programmes in early 1979. The programme invites researchers in Saudi Arabia to submit proposals in various fields of study. These research fields are specified by KACST in accordance to priority issues identified in the national Development Plan. Eligibility for granting is based on the responsiveness of the proposed project to priority issues stated and on its passing an extensive review at different stages. Selection criteria include the following:

- Existing capability.
- Relevance to achievement of national development goals.
- Proven need for supplemental-funding.
- Personnel and institutional qualifications.
- Scientific and technological-merit.

(b) National Research Projects Grants

This programme deals with request from various government agencies. KACST has been supporting several national projects in the fields of Traffic Safety Computer, Construction, Medicine and Public Health. In addition, KACST is conducting a feasibility study on the Kingdom's Vegetation Atlas Project.

(c) In-House Research Projects and Programmes

These are projects and programmes housed in, and directly run and supervised by KACST; they include, among several projects and programmes, the Solar Energy Research Programmes, the Fish Culture Project, and the Remote Sensing Project.

Names of Countries That Have Agreements With KACST

The Government of Saudi Arabia has been engaged in several bilateral agreements for economic and technological cooperation with some friendly foreign governments. KACST is the representative of the government in the technology aspects of these agreements.

Many joint projects of these international agreements have been translated into actual results. Among these joint projects are the following:

- (a) A joint programme with the U.S. Department of Energy in the field of solar energy. This project deals with the development of photovoltaic power generation, generation of electricity from solar energy, and other aspects.
- (b) A joint programme in cooperation with the government of the Federal Republic of Germany. It deals with generation of hydrogen by water electrolysis using solar energy.
- (c) A joint programme in cooperation with the National Taiwan Fisheries Research Institute of the Republic of China. It deals with the development of Aquaculture.
- (d) Joint projects with the U.S. National Aeronautics and

Space Administration (NASA) and National Oceanic and Atmospheric Administration (NOAA) in the fields of space related science and technology, and remote sensing, respectively.

- (e) A joint project with the National Research Council of Canada for establishing a National Observatory.
- (f) A joint project with the Korean Advanced Institute of Science and Technology, Republic of Korea, in the areas of:
 - Development of building and construction materials using available resources in Saudi Arabia.
 - The utilization of agricultural by-products for the feeding of farm livestock.
- (g) A joint project with the Centre National d'Etudes Spatiales (CNES) of France in the field of space and space related sciences.

Future Plans And Programmes

When KACST was first established, the most viable way of conducting research was through the utilization of the existing research facilities, namely the Universities and research centres in the Kingdom. With the development of the required expertise for independent research centres, KACST has embarked on one of its basic objectives, namely the establishment of specialized and equipped research institutes which will serve the development plans of the Kingdom.

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TECHNOLOGY IN THE MUSLIM WORLD

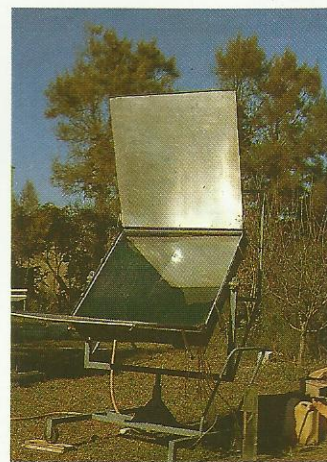
ALGERIA: A MULTISTAGE SOLAR DISTILLER PROVIDED ITS EFFICIENCY*

Four years ago a new type of solar distiller using a capillary film of water as evaporator was devised by researchers at Algiers University. It was hence possible to build multistage devices. In spite of the very good yield obtained, the achievement was not advertised before the testing period has passed.

The researchers have recently announced that a prototype of a three stage solar still was in operation for the past two years without any failure. It produced distilled water to the Chemistry Institute of the USTHB University, Algiers.

Under the same sunshine conditions, the three stages solar still has a yield which is 4 to 7 times that of the conventional green house type distiller.

For further information about the DIFICAP (abbreviation coming from: Distiller with a Film in Capillary Motion) please contact Dr. R. Ouahes, 12 Boulevard Amirouche, Bordj El Kiffan 16120, Algeria. One can also refer, to a paper published in "Desalination", 67, (1987) pp 43-52.



* This summary was provided by Dr. R. Ouahes, IAS Founding Fellow.

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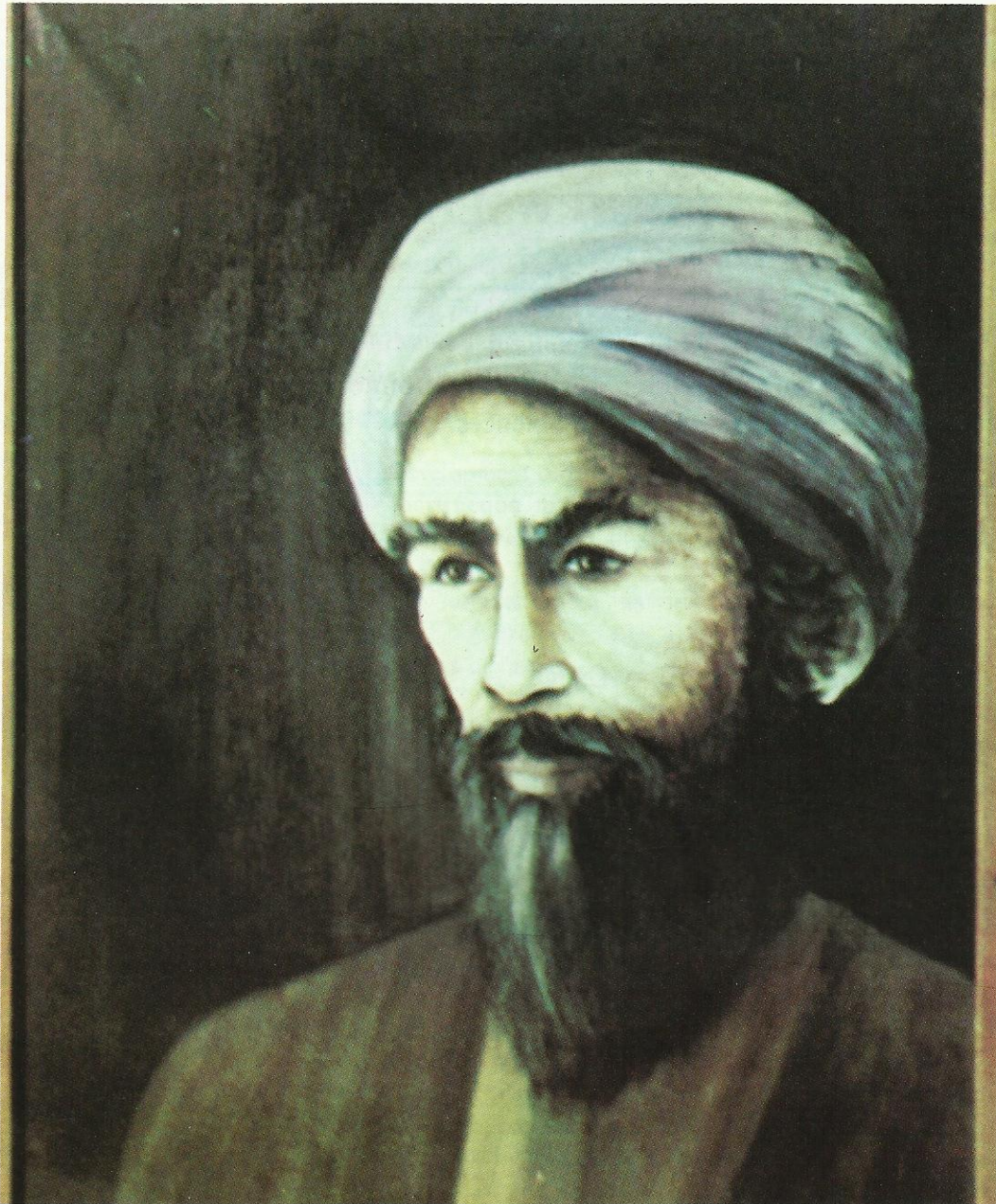
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Amman, Jordan**

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Tlx: 24368 IAS JO.**

MUSLIM SCHOLARS



IBN AL-BAITAR

(Died 1248 A.D.)

Abu Muhammad Abdallah Ibn Ahmad Ibn Al-Baitar was one of the greatest scientists of Muslim Spain and was the greatest botanist and pharmacist of the Middle Ages. Born in Malaga towards the end of the 12th century, his major contribution was *Kitab al-Jami fi al-Adwiya al-Mufrada*.