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THE HISTORY OF ARABIC MEDICINE  
BASED ON THE WORK OF IBN ABI USAYBE'AH  
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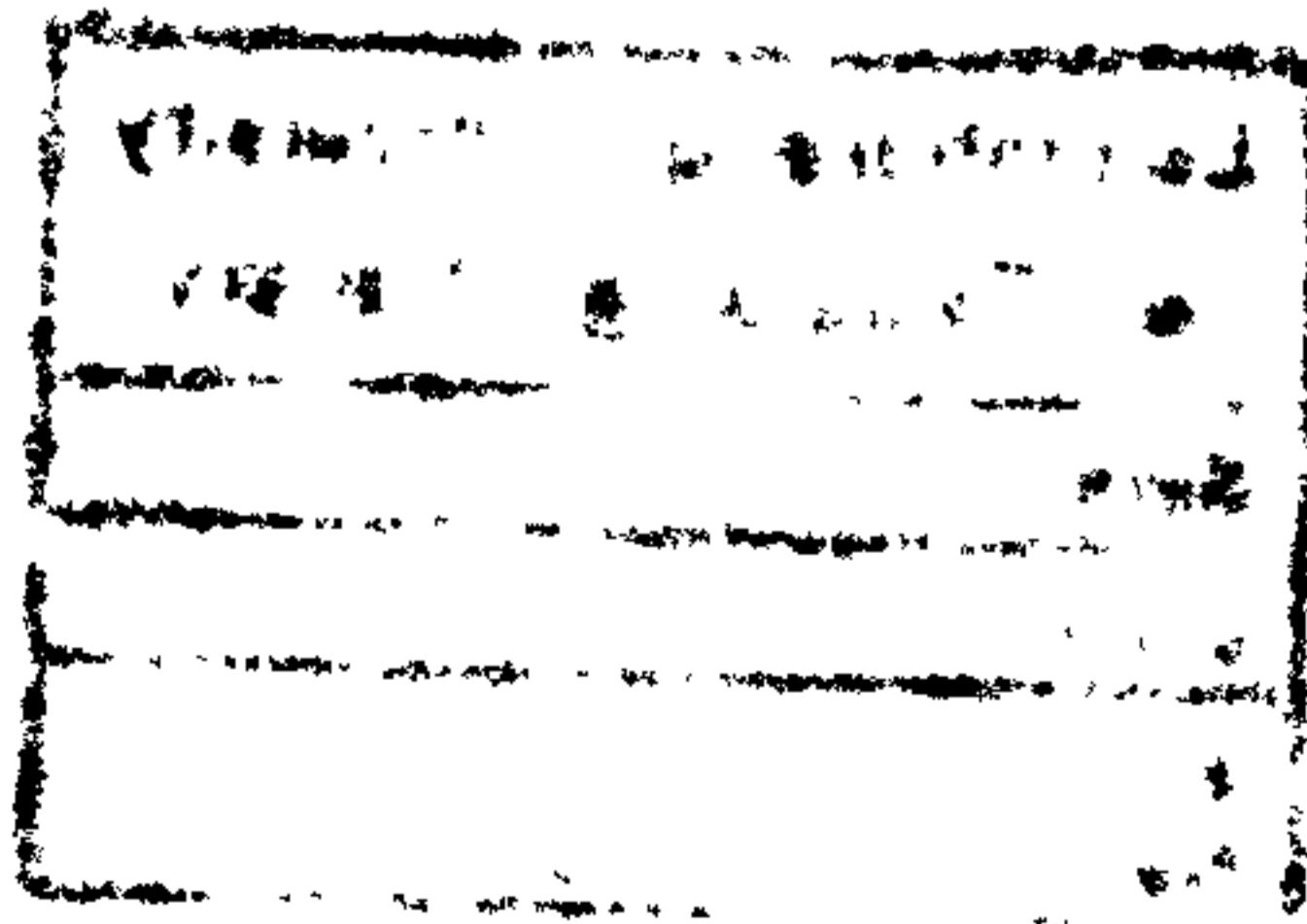
by

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Submitted in partial fulfilment of the requirements  
for the award of

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M.N. Istambouli 1981.



## PREFACE

I was cautioned by many upon undertaking the writing of this work concerning the scope of the topic I had committed myself to, and the need to narrow its focus as much as possible. If I had chosen to do so, I would have defeated my purpose. My cardinal objective is to introduce a comprehensive and up-to-date document covering the most important aspects of the historiography of Arabic Medicine. The lack of scholarly material on this subject strengthened my determination.

This work presents the History of Arabic Medicine during the Golden Ages of Muslim learning, approximately from the seventh through to the thirteenth Century, based on the work of the bibliography of Ibn Abi Unaybe'ah Ahmad. Although the main objective of this thesis is to trace the history of Arabic Medicine some effort is made to explain the history of medicine during the ancient civilization as an introduction.

In Chapter two, a full explanation of the development of Arabic Medicine during the various periods, pre Islam, during Islam, the Prophet medicine, the medicine during the various caliphates, and at the end of Chapter three, some effort is made to explain the situation of hospitals during the heyday of Arabic Civilization.

As the whole work is based on the work of Ibn Abi Usaybe'ah Ahmad, an in-depth discussion is made to give a full picture about his life, his work and the evolution of the work. To give an example of his writing, a translation is made of the fifteenth Chapter of his masterpiece "Yun al Anb Fi Tabakat al Atteba" (sources and information of the classes of physicians).

The fourth Chapter of this thesis is devoted to an extensive study of the present situation of the Arabic medical historiography and to present some proposals for future development.

At this point in the opening pages of this thesis, I would like to extend my deepest appreciation, and to express my esteem and profound respect to my supervisor Dr. A. M. Duncan for his valuable academic help and sincere advice through my years of research.

I would like to express my grateful thanks to the Rectors of the Universities of the Arab World for their indispensable help in providing me with a clear and up-to-date picture of the present situation of the historiography of Arabic Medicine.

I am also indebted to the Librarians of the British Library, Wellcome Institute for the History of Medicine and the School of African and Oriental Studies, London without whose assistance, this work could scarcely have been written.

Finally, I would like to thank Mrs. M. May for typing this thesis.

M.N. Istanbouli

London February 1981



AUTHOR'S NOTE

In place names I have in most cases used the Arabic forms. In the case of names already familiar to the English reader, I have used the best known form. Such are, for example, Cairo, Damascus, Jerusalem and Euphrates.

The Arabic personal names perhaps require a brief note. The Arabs, maybe, have a confusing way of calling a man the father of his eldest son. In the Seventh Century, this custom seemed to have been even more prevalent than now, so much so indeed that the man's original personal name seemed at times to have been forgotten. The name always embodied that of the eldest son, who, as often as not, died in infancy. Thus a man might be known for the greater part of his life as Abo al-Gasim, although his eldest son al-Gasim died at the age of one month and scarcely anyone had ever seen or heard of him. This curious custom accounts for the many people in the narrative known as Abu - or father of somebody else. Incidentally also, the word Abo makes Abi in the genitive. The younger sons of Abu al-Gasim, some of whom in sight survive, might therefore be known as "son of the father of al-Gasim" which would be rendered in Arabic "Ibn Abi al-Gasim" Ibn being the word for son.

In writing Arabic titles, I have used the spelling which seemed to me most likely to enable the English reader to pronounce them correctly. Translation from script to Roman alphabet always poses problems. For a lengthy description of translation from Arabic script to English and for excellent analysis of the use of Arabic words, personal names, names and suffixes thereto, see Marshal Hodgson, the Venture of Islam (Chicago, the University of Chicago Press, 1974), 1:3-22. (Please see the transliteration of Arabic names in the index at the end of this thesis.)

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CHAPTER ONE

THE HISTORY OF MEDICINE DURING THE ANCIENT CIVILIZATION

- A. The Characteristics of the History of Medicine
  
- B. Hisotry of Medicine during Ancient Civilization
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## THE CHARACTERISTICS OF THE HISTORY OF MEDICINE

To follow the thread of medical thought in the whole marvellous texture of its history, as ancient as humanity itself, to consider in detail the associations of a man and his pains throughout the centuries, realizing how they vary with the ages both in their essential being and in the way in which the individuality of the physician reacts upon them - there is the vast taste which is laid before the medical historian. He should probe carefully the facts of the past, examining them with a serene objectivity, and should follow the thread of medical thought through the centuries in its relations with religion, culture, philosophy, politics and social progress. Thus study of the past should above all lead to reconstruction of the unity of medical thought from its origin to its final goal, and should demonstrate the continuity of its historical sequence. These general principles are the principles that should guide the medical historian.

If the history of medicine on the one hand should study and teach what medicine was in the past, on the other hand it should range itself with the natural science as an experimental science, seeking for that which is permanent. It should then, on the one side study the past and mark the route travelled, but on the other it should exert equal care in seeking out the laws that have guided the evolution of medical thought in the past and that will determine its development in the future.

It is the threefold history of ideas, facts and people that should above all determine and illumine what we might call, the chief highway of our long course: namely, the reconstruction of the unity of medical thought in its origin and its limits. Modern medicine both in the faculties and in life, in theory and practice, is too often subdivided into branches and specialities, into technique and practice. We must not forget the common source of the original concept of medicine in the sufferings and fears of primitive man, perhaps even of animals, developing in a way, that we cannot ignore.



Thus, the origins of thought and its goal are the same, the nexus that exists in history is continuous and intimate in that nothing arises or disappears suddenly and without reason. Historical research in recent times has shown that the history of medicine should logically be considered, like that of the history of all sciences as a slow but continuous accumulation and alteration of knowledge and facts, some of which are forgotten over centuries and then come to light again. Up to the eighteenth Century it was still maintained that the Hippocratic School should be regarded as a purely Grecian product following in the Golden Age of Greece. We know now that it is more correct to base the foundation of this school on influences from Babylon, Assyria, and Italy, and even from ancient Egypt. Today it is clear that early medical knowledge of the Greeks, which until a few decades ago was regarded by historians as a first uncertain expression and child like attempt at medicine, really represents results obtained from the fundamental concepts of antique civilizations, derived in their turn from phenomena occurring thousands of years earlier in the prehistoric period. A fine network, then, ran through the history of medicine from the thought of our most ancient ancestors to present time - a thought which - as Arturo Castiglioni (1) indicated - exhibits truly interesting cycles. We know for instance, to cite one among many eloquent examples, that throughout the first great period of civilized medicine was essentially mediterranean, cultivated almost exclusively in the countries that touched this sea.

The tradition of the Vedas coming from holy India, the tablet of Nimereh, the Papyri of Egypt, the biblical records, and the bright light from the Aegaen Islands and Magna Grecia, all from the Mediterranean littoral. Thence, also are the products of the Greco-Roman civilization, followed in turn by the Anals and again by the great epoch of the Italian Renaissance. Thus a close bond is revealed between the work and thought of our most distant masters and that of their descendants. Thus the orientation of thought in the field of medicine, as in other fields of science and art, is

bound closely to the land from which it sprang, to the background of its environment, and to the spirit of the race.

It is no less necessary to recognize the importance of the history of facts, examined according to their characteristics and essential nature. The experience of recent years has brought about a realization of the fact that the pathologic changes in the individual and collective constitution are not produced according to time and environment alone, but also that certain diseases have different characteristics at different times and under different circumstances. The history of the great epidemics will note that their characteristics change at different periods and that such change is not entirely due to the modification of the defence measures taken.

Also the history of medicine represents not only a history of facts and processes, but it should be in part a biographic history and includes the history of the great pioneers and those who made their indelible impression on medical progress, of it is to be accurate and alive it cannot be separated from the history of ideas.

Although the main objective of this thesis is to trace the history of Arabic Medicine and the role of Ibn AbiUšabe'ah in the historiography of Arabic Medicine, some effort is made to explain briefly the history of medicine during the ancient civilizations, since history as J.B. Glubb stated: "must surely be an account of the development of the human race, from its primitive beginning to its present state. Such a process, to be intelligible, must be continuous. If we limit ourselves to turning the spotlight on one or two countries or periods in or during which events accord with our prejudices, or our beliefs, and leave the remainder of our development in darkness, we can obtain no coherent picture".<sup>(2)</sup> To explain the history of Arabic Medicine during the Golden Ages and then to jump to the present situation of history of Arabic Medicine without any effort to explain the history of Medicine during the previous civilizations is to miss the whole idea of continuous development.



## B. HISTORY OF MEDICINE DURING ANCIENT CIVILIZATION

We can fix approximately the date of the evolution of medical thought in its salient phases. We observe that in the fourth millennium before Christ there had begun to be formed in the people of southern Mesopotamia a systematic medical concept from which is derived Assyro-Babylonia medicine. In the second millennium Egyptian medicine attained an advanced development. All memory of these civilizations that have been engulfed by the march of time was already lost in the periods that followed soon after. But their medical thought left in its traditions, perhaps preserved by various colonies, traces which penetrated into Hippocratic medicine, which, though it seemed to be a sudden and marvellous apparition, certainly, was more or less directly attached to these ancient civilizations.

### B.1. EGYPTIAN MEDICINE

While the great civilization was becoming established in Mesopotamia, parallel to it and perhaps independently was developed the civilization of the people that inhabited the valley of the Nile. Examining the development of Egyptian Medicine, we should remember that the early documentation is very scanty and mostly on papyrus.

Egyptian Medicine was predominantly mystic and priestly in those times in which the oriental influence prevailed and in those parts of Egypt that had the most frequent commercial contact with the oriental countries.

In Egyptian mythology, the Gods concerned with health had an important place, and the control of health was attributed more or less to the Gods. The special God of Medicine is Imhotep, the Vizier of King Zeser (c2800 B.C.)

The sources for the History of Egyptian Medicine are found in a number of medical papyri. An important papyrus is the Kahun medical papyrus "discovered in 1889 by Sir Flinders Petrie in the Faiyum. Ascribed to the twelfth or thirteenth dynasty (2000 - 1800 B.C.) Its legible fragments show that it dealt entirely with gynaecology". (3)

The Egyptian believed that the blood was of great importance to them. Mummies were painted red to confer on them the strength of blood.

The numerous documents that we possess construct a picture of Egyptian surgery. The knife is among the list of surgical instruments used at that time . Egyptian knowledge of anatomy was based mostly on that of animals. Diagnosis, already appeared to have reached a fairly advanced position among the physicians in the period from which documents have been preserved. "The word brain hitherto unknown in any other language is mentioned for the first time in history in Ed Smith's papyrus, 2000 years before its appearance in Greek Medicine". (4)

The studies of Peyron on the Greek papyri in the British Museum show that circumcision of girls was in general use in Egypt. In one of the six papyri is contained a complaint by the Egyptian citizen living in the serapeion of Memphis against a mother who had not had her daughter circumscised, although she had reached the proper age according to Egyptian customs as it was performed at the age of fourteen. Surgery was regarded as a special branch, and surgical books are still extant. If we examine carefully the paypri, as example, the Medical papyri which were discovered by Edwin Smith "in 1916" (5) which are considered the oldest medical writings and the most complete and important treatise on surgery of all antiquity which "described some surgical cases still unchanged even in modern medicine at present times". (6)

Medical schools flourished at Heliopolis, Sais etc and the practice of the Medical Professional in Ancient Egypt was controlled by special regulation. The art of medicine is thus divided: each physician applies himself to one part of the body only and not more. "All places abound in physicians, some are for the eyes, others for the head, others for the teeth, others for intestines, and others for internal disease". (7)

The position of the physician in the social system and in the state was clearly known. It is well established that among the peoples of antiquity, the Egyptians enjoyed the reputation of being excellent physicians.

In general, the Egyptian Medicine represents the result of many centuries of observations and study and it is better known than the Babylonian because it is better preserved. The search for information regarding Ancient Medicine leads from the papyri of Egypt to Hebrew literature. An essential feature is that, the practices are no longer limited to the priests alone or adepts for whom it represents the advancement to a superior stage of knowledge as among the ancient Egyptians, but are extended and imposed on the entire people without professional physicians. And the Bible contains little on the subject of medical practice of old testament times, and medicine does not appear in the Bible as a distinct science or art, but only, as a kind of hygienic law, or giving comparative terms for moral punishment.

After the period that follows the destruction of the temple and the Jewish government Jewish medicine no longer had any special independence, but follows the lead of the people among whom the Jews lived in exile.



The great development that sanitary legislation had among the Hebrews can be properly called the first codification of hygienic regulations.

The medicine of the Jews differs from that of every other ancient people in recognizing that in the one God is the source of health, but also of all diseases which just because they come from God, can be interpreted only as deserves punishment for our sins.

In general, the Jewish medicine reflects Egyptian medicine on one side and Assyro-Babylonian on the other.

## B.2. PERSIAN AND INDIAN MEDICINE

### Persian Medicine

The history of Persian medicine is divided into great epochs. The first is that included in the ancient books of the Zavedvesta. The other belonging to the golden period of Islamic civilization as the Arab physician of Persian origin, brought an important contribution to this civilization.

The Ancient Persian medicine flourished in the period in which the Empire extended its power from the Mediterranean to the Indus, from the Caucasus to Indian Ocean. Of this civilization few traces are left today. In order to have an idea of the history of Ancient Persian Medicine one must go to the books of the Avesta and especially to the six books, the Vendidad, which treats of the purification ritual necessary to remove the malign demon. In this book are preserved the traditions, laws, and rites of the people that inhabited the plateaus of Persia when they still lived in simple pastoral life, close to the soil, and worshipped Ahura Mazda.

In general, the Ancient Medicine of Avestor corresponds in its origins and general times to the Jewish medical concept: It has as its basis the demonistic origin of all ill and a magical concept of healing that gradually changes into religion ideation.

### Indian Medicine

Indian Medicine is ancient , and is very difficult indeed , to form an approximate estimate of Indian Medicine, and this is due to the fact that its history like the history of art, philosophy, social, political and religious land of the people who inhabit the great land of India, is neither united, continuous nor well established.

The Indian medical literature holds closely even in recent times to the ancient models, so that books published towards the end of the last Century may represent the writing of more than a thousand years ago. Its earliest concepts are set out in the sacred writing called the Vedas. The period of Vedic medicine lasted until about 800 B.C. The Vedas are rich in magical practice for treatment of diseases.

The Golden Ages of Indian Medicine from 800 B.C. until about A.D. 1000 may be called the Brahamanistic Period.

Surgery held a position of honour, and in India many metals and methods for using them were known centuries earlier than in Europe. "In two types of operations especially the Ancient Hindus were outstanding. Stone in the Bladder was common in Ancient Indus, and the surgeons frequently carried out the operation of lateral lithotomy for the removal of the stone. They also introduced plastic surgery, <sup>(8)</sup> the operation was regarded as necessary when central treatment has not been sufficient. An interesting item in the history of Indian Medicine is the growth of a popular surgery, in which the operation of the nose is especially worthy of note. This often became necessary in

India, where the nose was amputated as a punishment or in revenge.

The Indian believed that the cutting of the dead body was prohibited according to their religion, as a result, their knowledge of anatomy was limited.

Hygiene plays a most important role in Indian Medicine. Strict hygienic regulations and frequent ablutions form the basis of religious cults. After every meal a generous ablution was required, after various contacts a bath. We find recommendation for frequent bathing of the eye, the hygiene of women during the menstrual period and the puerperium was covered by seven rules.

Considering the environment and the special conditions in which Indian medical thought developed through centuries, it seems natural that religious concepts should be dominant, in which the individual suffers pain with a severe mind and goes tranquilly toward death, which is regarded not as a punishment, but as the beginning of a new and better life. For this reason, Indian Medicine was directed chiefly towards the concept of the purification of the body towards the endeavour to make man more deserving of his greater destinies. It was also motivated by the tendency toward a deep mysticism which accompanied almost every form of thought and action.

### B.3. CHINESE MEDICINE

The history of Chinese civilization dates from many centuries before the period of 2800 B.C. It was a brilliant civilization which produced discoveries which revealed not only the profound gift of observation of this people but also its excellent method of study.



The basis of Chinese Medicine is to be found in a first stage of magic and demonic medicine, which is still predominant in those parts of China where the most ancient customs and superstitions are preserved analogous to the magic of the primitives. In the second period, the Chinese Medicine is based on their philosophy and cosmology, while contemporaneously with it there was developed an empirical and popular medicine founded on a past knowledge of vegetable drugs.

The concept of the universe which forms the essential basis of all Chinese philosophy and medicine is that of the religion of Confucius: Man is composed, like everything else in the world of wood, fire, earth, metal, and water and constitutes a microcosm in the macrocosm of the universe.

The origin of Chinese Medicine is attributed to the Emperor Shen Nung who lived about 2700 B.C. <sup>(9)</sup> He is said to have been the first to compile a herbal in which more than a hundred remedies are mentioned. The most ancient as well as the greatest medical work which is still studied in China is the Nei Ching (Book of Medicine). Among other ancient medical books of Chinese Medicine is 'Golden Mirror' a work of forty volumes, made about A.D. 1700 and published for the first time in 1774. Sixteen volumes of the surgical part of this work were translated into English by W.R. Mose.

According to the philosophy of traditional Chinese Medicine, the blood vessels are supposed to contain blood and air. The Nei Ching say that "the blood current flows continuously in a circle and never stops". <sup>(10)</sup>

Surgery flourished in ancient China. Ancient texts speak of the great surgeon Hua Tio and described many operations. In the third Century B.C. there were already in use practical methods for the treatment of wounds. However, Chinese surgery made no progress after the Tang dynasty, no books were written on the subject.

The conditions of the medical profession in China have been maintained through centuries without important changes. The teaching of medicine was always confided to a superior college of physicians. Under the Than dynasty the career of the court physicians stabilized and to them was given the task of instructing students in the canonical book of medicine. The first to introduce detailed rules for the medical examination was the Emperor Kublai of the Mongolian dynasty who ruled about the end of the 13th Century, and during the Ming dynasty (14th - 17th Century) instituted a complicated system of study for medical students. It was this dynasty that founded the medical college of Peking, to which was confided the instruction of the court physicians, while the physicians that conducted the ordinary practice of medicine were mostly empirical and self-taught. The physician called I-Sheg (Sir Physician) belonged to the second class of people, while only the court physicians and those of the supreme medical college belonged to the first class.

If we consider the principal characteristics of Chinese Medicine, we note that it consists in a rigid, closed system, which has undergone only minor modifications through the centuries. The essentially dogmatic Chinese Medicine avoids anatomical observations and experiment, being jealous only of traditional doctrines and faithful to the most minute and extreme exactness of the letter rather than the sense of the ancient text.

The influence of Chinese Medicine was early extended to Japan as she was entirely dominated by Chinese civilization for many centuries till the end of the 15th Century when some Japanese physicians tried to free medicine - which was exclusively magic - from the bondage of Chinese science.

#### B.4. THE GREEK MEDICINE

The characteristic note that dominates all Grecian civilization is already evident. The first factor in it is that the forms of art are free from any traditional rigidity. In the same way, philosophic



*is able*

thought) to abandon the stylistic lines of mystic dogmatism and to enter into the dominion of free thought, in which no speculation is too bold, no hypothesis too hazardous or subversive of established ideas. Finally, medical thought slowly sloughed off magic concepts and priestly dogmatism and established its basis on observation and a constant study of nature and of man in his relation to animals, a biological study that brings an essentially new note into medicine. Tempered by criticism, also an eminently Hellenic trait, this produced, perhaps for the first time in history a medicine that was both an art and a science.

Freedom of thought is very essential for any true progress of science. This freedom of thought, of observation and investigation existed in Hellenic culture, but why do we find this freedom of thought? The answer is found in the critical but speculative Greek mentality and in the political and religious life of the Greeks. In Greece there was never a close priestly caste, religion was a poetical myth, never a political edifice, and it never dominated critical thought. Ideas, therefore could develop freely, contradictions with and discussions of the most venerable traditions could flourish culture without established boundaries or dogmatic laws, offered to the Greeks assistance to their imagination unhindered by the fear of punishment.

The medicine we call Greek might be described as the system which prevailed in ancient times in that half of the Mediterranean area which lies east and south of the Italian Peninsula.

Scientific medicine began with the Greeks. "They not only started scientific medicine, but also provided the substantial basic elements of our anatomy, physiology and pathology". <sup>(11)</sup> Everyone is familiar with three great figures: Hippocrates, Aristotle, and Galen. For this reason and as medicine owes so much to these people we are going to give more detailed explanation about this marvellous civilization.

### Before the Hippocratic School

The most important document bearing on the evolution of Greek medical thought and professional practice in the early times are the Homeric poems which furnish copious facts and indications. Medicine of the time of Homer was a noble art, the illustrious heroes who knew the art of war were expert in medicine but already there is mention of lay physicians whose aid was sought for the cure of the sick. The physician was held in great honour, because according to the poet, he was "a man who was worth more than many others".

Axlepius who is said to have lived about 1200 B.C.<sup>(12)</sup> is the God of medicine and it is said he performed many miracles of healing. He was born at Tikka and "named Ischys, the son of King Flatos, as his father, and Coronis the daughter as his mother".<sup>(13)</sup> The meaning of this name in the Greek language is "the light". He was "intelligent, very easy to understand and he knew the medical profession very well".<sup>(14)</sup>

It is certain that the cult of Axlepius originated in Thessaly, and the most ancient shrine of the cult of Axlepius is at Titanos near Sicyon. The father of the temple was Alexander the son of Axlepius. The next is the temple of Epidaurus in Argolis because the centre of worship of Axlepius then spread throughout the whole Mediterranean basin, and it is introduced in Athens about 429 B.C. Ibn Abi Usaybe'ah mentioned that "most of the previous ancient philosophers and physicians agreed that Axlepius was the first physician who mentioned the experimental medicine".<sup>(15)</sup> Thabet Ibn Kura's writing indicated that "there were 1200 students belonging to Axlepius all over the regions".<sup>(16)</sup>

### The Hippocratic Physician

Let us move to the other period of Greek medicine, to the period where medical thought had reached and had partially discarded the

conception based upon magic and religion by 460 B.C., the year that Hippocrates is said to have been born. Little is known of his life and there may, in fact, have been several men of this name, or none as authors of the books that make up the Hippocratic collection. The books of which the "Collection" consists are "the work of a number of authors, belonging to different schools, holding various and often contradictory views, living in widely separated parts of the Greek world and writing at dates divided from each other, in the most extreme cases, by perhaps five or six centuries".<sup>(17)</sup> Whether Hippocrates was one man or several seems immaterial. The works attributed to him were written by someone, and they indicate a stage in the progress of medicine. Ibn Abi Usabe'ah gave full details about the life of Hippocrates (see figure no.1). He said "Hippocrates is the seventh of the great physicians mentioned before, and Axlepius was the first. He lived for 95 years, out of it 16 years as a boy and in the stage of learning and 79 years as scientist and teacher".<sup>(18)</sup> Bibliographical data on Hippocrates taken from a bibliography written by Soares in the second Century after Christ mentioned that the date of birth was 460 or 459 in the small island of Cos and he died in 355 B.C. Ibn Abi Usaybe'ah stated the same.<sup>(20)</sup>

The greatest legacy of Hippocrates, without any doubt, was the character of medical conduct known as the oath of Hippocrates, which has been adopted as a pattern by medical men all over the world throughout the ages and is still used during the ceremony of graduation at most universities and faculties of medicine.

Ibn Abi Usaybe'ah explained why, Hippocrates, the hero and God of medicine, produced the oath. He said: "Hippocrates found that his nation disagreed about the medical professions, and he was worried that this would lead to spoil the profession ...so he taught this profession to his two sons and his pupils and wrote the oath to be sworn by anyone who is going to learn medicine. The oath as mentioned by Ibn Abi Usaybe'ah is as follows:



"I swear by Apollo the physician and Axlepius, and Hygenia, and Panacea and all the Gods and Goddesses that according to my ability and judgement, I will keep this oath and this stipulation to reckon him who taught me this art equally dear to me as my parents, to share my substance with him, and relieve his necessities if required, to look upon his off spring on the same footing as my own brothers, and to teach them this art, if they shall wish to learn it, without fee or stipulation, and that by precept, lecture, and every other mode of instruction. I will impart a knowledge of the art to my own sons, and those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine, but to others I will follow that system of regimen which, according to my ability and judgment, I consider for the benefit of my patients and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to anyone if asked, nor suggest any such counsel, and in like manner, I will not give to a woman a pessary to produce abortion. With purity and holiness I will pass my life and practice my art. I will not cut persons labouring under the stone, but will leave this to be done by men who are practitioners of this work. Into whatever houses I enter, I will go into them for the benefit of the sick, and will abstain from every voluntary act of mischief and corruption, and further, from the seduction of females or males both freemen and slaves. Whatever, in connection with my professional practice, or not in connection with it, I see or hear, in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret. While I continue to keep this oath unviolated, may it be granted to me to enjoy life and the practice of the art respected by all men, in all times. But should I repress and violate this oath, may the reverse be my lot."<sup>(21)</sup>

Especially worthy of note are three precepts that appear in this oath.

1. the prohibition to the physician of practicing abortion



2. The clearly expressed duty of the physician not to allow, advise, or commit any act that may prejudice the health of his patient.
3. The obligation, for the first time codified in an oath, to maintain professional secrecy. The injunction not to perform lithotomy was probably due to an agreement that such an operation should be practised only by specialists.

One of the books of the ethical group called "on the physicians" is containf a series of interesting precepts concerning the behaviour of the physicians, the arrangement of his office, his instruments and his surgery.

The three other books of the corpus Hippocraticum are: on the law, on art and on ancient medicine. "On the law" a collection of precept about the practice of medicine which contains excellent advise about medical ethics:

"The art of medicine is the most beautiful and noble of all the arts, but on account of the inexperience of those who practice it, on the one hand, and the superficiality of those who judge physicians on the other hand, it is often ranked behind the other arts".

"He who wishes to acquire exact knowledge of the medical art, should possess a natural disposition for it, should attend a good school, should receive instruction from infancy, should have the desire to work and the time to dedicate to his studies".

In the book "on Art" which is as Ibn Abi Usaybe'ah. mentioned - an apologia of medicine, it is written "as regards the art of medicine, I should state first of all what I believe to be its scope: to remove suffering of the patient, or at least to alleviate these sufferings. The fact that even those who do not believe in it can be cured by it: proof that this art exists and that it is a powerful one".

The book "on Ancient Medicine" is the first in which the history of medicine is considered, it is stated as mentioned by Ibn Abi Usaybe'ah :

"Medicine has long had all its means to hand, and has discovered both a principle and a method, through which the discoveries made during a long period are many and excellent, while full discovery will be made, if the inquirer be competent, conduct his researches with knowledge of the discoveries already made and make them his starting point". (21) (a)

The books entitled "on Honourable conduct" and on precepts are the most perfect statement of medical ethics in all medical literature:

"The physician who is at the same time a philosopher is like the Gods. There is not a great difference between medicine and philosophy because all the qualities of a good philosopher should also be found in the physician: altruism, zeal, modesty, a dignified appearance, seriousness, tranquil judgement, serenity, decision, purity of life, the habit of brevity, knowledge of what is useful and necessary in life, reprobation of evil things, a mind free from suspicious, devotion to the divinity". (22)

These medical books give without any doubt proof that along with priestly medicine and in fact distinct from it, practically medicine had already reached considerable development.

### Post-Hippocratic Medicine

The fundamental features of Hippocratic philosophy lived again in the work of the philosopher and the great codifier of ancient science Aristotle (384 -322 B.C.) (see figure No 2 ) who as Singer stated "developed coherent theories of generation and heredity. He gave good descriptions of some organs, regarded from the standpoint of comparative anatomy". (23) Aristotle was a pupil of Plato at Athens and tutor to Philip's son Alexander the

Great. He studied the entire world of living things, laying the foundation of comparative anatomy and of embryology and flourished, the first great biologist, whose work may be of inestimable value to medicine".<sup>(24)</sup> Aristotle "died at the age of sixty six".<sup>(25)</sup>

Ibn Abi Usabe'ah gave no details about Aristotle in the field of medicine, although he gave full details about his life, and his knowledge in the field of philosophy and mentioned books.

Among the best anatomical description given by Aristotle is that of the ruminant stomach, and he gave fairly accurate descriptions of the branches of the great viens. He realized that the arteries are usually accompanied by veins. "The views of Aristotle have had a fast influence in determining the direction of medical thought. For more than two thousand years Aristotelian philosophy, in more or less corrupted form, constituted the main intellectual food of mankind".<sup>(26)</sup>

### Alexandrian School

Soon after Aristotle, about 300 B.C. a great medical school was founded at Alexandria in Egypt which had been conquered by Alexander the Great, after whom, the town was named and became the centre of Mediterranean trade where men of all races and tongues lived the tumultuous and fertile life of traffic and industry, aimed through the will of its leaders to take into itself the traditional glory of Greece and by hard work and zealous study to show itself worthy of this proud position. All these different currents coming together to form the Alexandrian medicine which so clearly reflected in itself the characteristics of its origin and period. On the one hand was the detailed investigation of the causes of being , of vital manifestations, and of diseases, which reflected the fervid studies of the Alexandrian philosophers and produced those first step in anatomy and physiology whose genius still



excites our admiration, on the other hand, the persistence<sup>e</sup> of a dogmatism which accentuated more and more the formal and literary side of medical studies and substituted erudition for science.

The two best medical teachers were Herophilus of Chalcedon (b.334.B.C.) whose treatise on anatomy may have been the first of its kind. The second is Erasistratus of Chios who is regarded by some historians as the founder of physiology.

Alexandrian Medicine seemed about to make great advances in the investigation of a new path in science.

"It is the first to study systematically the anatomy of the brain and spinal".<sup>(27)</sup> In addition, we can mention the following achievement by Herophilus

- observed and described abdominal organ and female genitals
- and tried to solve the problem of circulation and
- analysed respiratory movement.

With the absorption of Egypt into the Roman Empire in 50 B.C. and the extinction of the Ptolemaic dynasty by the death of Cleopatra in 30 B.C., Alexandria ceased to have great scientific importance. The school continued for centuries with restricted activity and devoid of all originality. Intellectually, it had become subordinate to the Metropolis. Rome was now mistress of the world and the future of medicine must be considered from the point of view of the Roman Empire.

The Greek physician was neither prophet, priest, nor magician. He was not a depositary<sup>o</sup> of divine secrets, but an independent agent guided by his own critical thought, and animated by the impelling necessity of searching for a logical explanation of natural phenomena. To this, he added knowledge of himself, that internal contemplation that is summarized in the formula of Thales:

"Know thyself" thus, in the history of medical thought, Hippocrates and his school ignored the sanctuary of the God and made clinical observation and critical reasoning their field of activity.

#### B.5. ROMAN MEDICINE

The entire external aspect of Roman Medicine was changed by the advent of Greek Medicine.

In spite of the contacts which certainly were made in early times with the Greek and in spite of the proximity of such an important centre for the development of medicine as the Sicilian Schools, Roman Medicine in its early periods was almost exclusively based on magic. To the Gods alone were attributed the power of healing.

It is certain that before the arrival of Greek physicians, Rome did not possess truly professional practitioners. At first scientific medical education at Rome was entirely a matter of private teaching. The earliest important scientific teacher there was the Greek Asclepiades (born 124 B.C.) of Prusa. the prince of physicians - who was invited to the court of foreign Kings and was sought after by the richest and most powerful families in Rome. Asclepiades is credited with at least one principle of the very highest importance: namely, that it is the method of investigation that is essential and determining. He taught as a fundamental precept of the art of medicine that treatment should be given: promptly, safely and pleasantly. He was in opposition of the Hippocratic attitude of relying on the "healing power of nature" which he regarded as "a mere meditation on death. He founded a regular school at Rome which continued after him.

After Asclepiades came the Methodists, who formed the most important school "at the time of the greatest splendour of the Empire, many of them were highly esteemed and cultivated by the Caesars".<sup>(28)</sup>

The most celebrated of the Methodist school was Sorcus of Ephesus who maybe regarded as the founder of obstetrics and gynaecology.

His work on "the disease of woman" particularly valuable for the history of obstetrics, and had a direct influence on this subject for many centuries. He is the first to prescribe bathing the eye of the new born with oil and he is the first to make attempts at differential diagnosis.

The greatest of Latin medical writers was Aulus Cornelius Celsus who lived in Rome at the beginning of the Christian era. The complete work of Celsus called De Artibus included agriculture, the military art, rhetoric, philosophy, and jurisprudence as well as medicine. It is thought to have been written between A.D. 25 and 35. The book of Celsus was the first book on general medicine to be printed and was published in Florence in 1478. The treatise of Celsus opens with an interesting account of the history of medicine. He dealt first with diet, then therapeutics, pathology, internal disease and then moved to external disease. The last part of his work is devoted to surgery, that described plastic operations on the face and mouth and the removal of polypus from nose.

It is to Celsus that we owe a great part of our information on the medicine of the Hellenistic periods and on Alexandrian surgery. It is in Celsus that we find the first translation of Greek medical terms into Latin.

### Galen

During the early centuries of the Christian era, Greek doctors thronged to Rome. The most illustrious of them was Galen (130-200 B.C.)<sup>(29)</sup> who was born at "Pergamum, Mysia"<sup>(30)</sup> and began practicing in Rome in AD 164<sup>(31)</sup>. He acknowledged his debt to Hippocrates and followed the Hippocratic method. Ibn Abi Usaybe' ah said that "he lived for 87 years, 17 years of this age as a boy and for learning aims, and 70 years as a scientist and teacher"<sup>(32)</sup>. He wrote numerous treatises, his work amounted to about "four hundred"<sup>(33)</sup>.



He is the founder of experimental physiology. Galen recognised that the arteries contained blood and not merely air, and showed how the heart sets the blood in motion, but he had not idea that the blood circulates, and he was forced to base his knowledge upon the examination of opes and piss given the dissection of the human body was at that time illegal. Ibn Abi Usabe'ah said that "Galen was the last of the great physicians and the last No one was equal to him in the field of Medicine".<sup>(34)</sup> Also Ibn Abi Usaybe'ah gave full details concerning the characteristics of Galen, he said that he was "brown in colour, well character, with broad elbows, large hands, long fingers, he loved songs and reading, modest in walking, smiling, making jokes, he was silent too little, cheating his friends too much and travelling very often, wearing clean dress, and he was loving riding and walking. He was very close to Kings. They were generous to him and paid him a number of payments of gold as a fee for his treatment. Galen himself mentioned this fact a number of times in his book".<sup>(35)</sup>

The writing of Galen made a culminating point in the ancient history of medicine. On the one hand his work assembled the investigations of a gifted physician, who relying on Hippocrates, utilized this great experience and practical observations. On the other hand, he represented the speculations of dogmatist, equipped with the highest opinion of his own value. Some of his scientific knowledge or rather of his infallibility and constructing an extensive edifice of dogma on the basis of an Aristotelian philosophy. Galen knew everything had an answer for everything, he confidently pictured the origin of all diseases and outlined their cure. He is the incarnation, perhaps, for the first time in history, of the physician who regards himself as omniscient and whose attitude of authority emanates from every act and every word.

Throughout centuries, his disciples followed the letter of his work rather than the spirit, they did not follow the ideas of the observer, whose work was excellent, but of the philosopher, who was

mediocre, and of the dogmatist, who gave to his hypotheses the appearance of immutable precepts.

### Roman Public Health

The great contribution of Rome to medicine and a very great one indeed - is the hospital system. "It is a scheme that naturally arose out of the Roman genius for organization and is connected with the Roman military system."<sup>(36)</sup> The discovery of Roman military hospitals near Vienna, at Bonn in Germany, and at Baden in Switzerland shows that sanitary service was well provided forever in the province.

The baths of Rome in the most ancient times consisted of the cold baths in the Tiber and in the great basins that had the name of the public pools. It was only later, when Greek and oriental customs began to be introduced into Rome, that first private baths were built in the dwellings, and then the magnificent public baths constructed by the state or the emperors or rich citizens.

Also Roman public health comprised "valetudinaria (infirmaries) for the sick that became the foundation of medical hospitals to hospitals for travellers and pilgrims along strategic roads, warm public healths, use of mineral springs, cremation, town planning, sewers and drains, and purity of food".<sup>(37)</sup>

Professional practice, status of the physician - medicine at Rome was at first practiced as one explained - by foreigners. The first foreign physicians in Rome were the Greeks. Medicine was regarded as an ignoble profession to which no free man would devote himself. At the time of the Republic instruction seems to have been delivered privately and without any control by the state, medicine formed part of the general culture. Athenians maintained that every cultivated man should concern himself with medicine, which was necessary for all professions. Galen wrote about the nobility conferred on the physician by the study of

philosophy, namely he meant, that the physicians should possess all the necessary knowledge of life and its manifestations, and he estimated that a period of study at least eleven years was necessary to attain this goal. In 46 B.C., Julius Caesar granted the right of Roman citizenship to all physicians. It was at that time begun to be thought necessary to organize medical studies. Toward the end of the Empire there was certainly public instruction in medicine. The palatine Archiaters, who were true court physicians, played an important part in political life. Besides these physicians, who had an official character, there were in Rome practitioners without a definite title, but enjoying various privileges, such as exemption from all taxation and the right of naming to judges those who refused to pay their honoraria, these honoraria were considerable. Galen received in a single case a payment equivalent to several thousands dollars today.

In the days of the last emperors, the physicians, included in their ranks the most important members of the court, their opinion had great weight not only in matters of hygien but often also in the most important political problems.

Romans, therefore, deserve credit in medical history. It was only in Rome the physicians constituted a class, protected by the law. For the first time, physicians attained to the more important public positions and took part in the political administration. It was the Roman genius that snatched the physician from his humble and uncertain position, granted him the rights of the social ladder, and placed in his hand the supreme responsibility for public health.

#### B.6. THE BYZANTINE PERIOD

In 410 Italy was overrun and Rome was sacked by Alaric. In the following Centuries the Roman Empire in the west gradually disintegrated. It was continued by the Byzantine and Medieval Empires. The latest was created by



Charlemagne who believed himself the successor of Augustus Caesar. This Empire consisted of what is now France, a small part of Germany, part of Italy, North Africa, Spain till the ~~Vandals~~ conquest and the Balkan countries.

After the unity of all the currents of scientific thought which was as a result of the work of Galen and the greatest splendorm of Roman power and the greatest extention of the power of the Casars, the decadence of the medicine began, this due to many factors: the great wars, the misery of large classes of the population. But the extremely important factor - especially for the hygenist and the medical historian - were the terrible epidemics which destroyed entire cities and led to the enormous destruction of human life and national wealth and hampered the progress of medical science. The prostrate conditions of the country following these epidemics removed confidence in physicians, as all methods of cure were useless to reduce the huge amount of mortality, and as a result led people toward a blind faith and new efflorescence of magic and mysticism.

Although E. Garrison said that the "early church had an adverse effect upon medical progress, disease was regarded as a punishment for sin, and such chastening demanded only prayers and repentance. Furthermore, the human body was held sacred and dissection was forbidden".<sup>(38)</sup> We believe that Christianity exercised an extremely important effect on the development of the Medicine of this period. The worship of Christ, regarded as the saviour from all physical and moral ills - the statu<sup>e</sup> of the Greek God was sometimes carried over the Christian temple and adored as the image of Christ. In the worship of the faith, Christ is the physician, both of the souls and of the body. Thus there was formed a Christian religious medicine in which prayer, the imposition of hands, unction with holy oil, were regarded as the most important remedies, those to which the faithful should have exclusive or almost exclusive recourse in seeking divine and for the cure of bodily ills. The

Christianity gave a different valuation of human life, a fraternal concept of equality and clarity which imposed on all faithful the most severe sacrifices in order to lessen the suffering of others.

Although, the Byzantic power lasted many centuries, medical history is concerned chiefly with the name of four physicians in the first three centuries of its existence. These were: Oribasius (325-403 A.D.) Aetium of Amida who lived in the 6th Century A.D., Alexander of Tralls (525 - 403 A.D.) and Paul of Aegina (625 - 690 A.D.) the last of the Greek electics and compilers.

In general, medicine in the period of Roman decadence returned to shelter itself in the shadow of the Church. Under the influence and domination of Christianity it becomes a dogmatic medicine of which faith is the first article. Its essential aim is the assistance of the sick, regarded as a work of human and divinity.

As soon as the seventh Century began, Islam arose and "soon swept over vast areas that had erstwhile belonged to the Emperor of the East. The territory occupied by the Nestorians came early under Moslem rule".<sup>(39)</sup> As explained in more detailed in the next chapter when we deal with the Arabic Civilization in general and Arabic medicine in particular.

Thus it was that the bulk of learning before the appearance of Islam came to be in Alexandria - Rome whence it travelled to Byzantium and was carried by the Nestorians who were founded in A.D.428 by Nestorius, the patriarch of Constantinople. The Nestorians were persecuted and so they emigrated to the Syrian City of Al-Ruha (Edessa), where "they set up their medical school. But persecution followed them, and the Byzantine Emperor expelled them in A.D. 489. So they emigrated to Persia, where they were welcomed and treated well by the Emperor and they settled there and penetrated eastwards

until they reached Jundishapur. And so it was that the Nestorian Centre of learning moved from Syria to Jundishapur in Persia, and there the Nestorians "erected a university next to a large hospital and Jundishapur became the most prominent cultural centre at the time of the Persian Emperor of Kisra Anushirawan".<sup>(40)</sup>



C H A P T E R   T W O

THE DEVELOPMENT OF ARABIC MEDICINE

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- In Egypt

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## CHAPTER TWO

### The development of Arabic Medicine

#### A. Historical setting of Ancient Arab Civilization

##### A.1. Ancient Arab Civilization

What is meant by the 'Arab' and Arab thought? When did the history of the Arabs and their civilization begin? Is it true to say that its genesis took place no earlier than the dawn of Islam? In the seventh Century A.D.?

These and similar questions should occupy a prominent position in the thinking of our intellectuals. They are key points which we have to settle before we can make an accurate evaluation of our national cultural heritage and establish a correctly orientated modern intellectual revival.

The majority of intellectuals in the Arab world are still following the old ways of thinking which emanated from the views of some Western historians, some of whom considered that Arab history and civilization did not exist before Islam. although, the fallacy of this premise began to be exposed by the efforts of some Arabs and Western thinkers. The history of the Arab nation stretches back into ancient times and all the Arab civilizations which have been born in the Arab homeland are an expression of the Arab personality of the people of the nation all of whom owe their origin to a single source. This definition transcends the long-held narrow concept of what is 'Arab' to the extent that it embraces all people who owe their national and geographical roots to the Arabian Peninsula. In other words, it includes all those people whom western researchers have called Semites, which is a misnomer with no basis of historical fact.



The application 'Semite' is, in fact, a modern word coined by the European orientalist Schlozer (1781) and used to describe several oriental languages which he had studied and which were known at that time, in particular Arabic, Aramaic, and Hebrew. These were classified and traced back to a single source, constituting what in linguistic science is referred to as a Family of languages. Schlozer mistakenly attributed to the people who spoke these languages a common ancestor, Shem, the Son of Noah in Genesis. (It is worth pointing out that Shem does not appear in the Holy Quran, although Schlozer's theory relied heavily on Arab annalists such as "Wahhab Bin Minbah and other esteemed authorities, most of whom were Jewish, who had introduced into Arab history many Israelite legends, one of which was that the Arabs were the descendants of Shem".<sup>(41)</sup>)

It is strange that the Torah, to which the orientalist turned to make his classification and definitions, excluded from those people descended from Shem the largest group in size and importance, the Canaanites. The reason for this sprang from the hatred of the Jewish writers for the Canaanites, the most ancient of the Arab peoples, who settled in Syria and Palestine.

This definition became common language usage among European researchers, who used it to refer to all other peoples whose language was found to resemble Arabic, Aramaic and Hebrew. Such as the Akkaadians, the Babylonians and the Assyrians (of Wadi al Rafidin), the Canaanites, the Hammurabis, the Phoenicians and the South Arabians. The most important reason for the orientalists, of whom there are many in the west. Thus the word came to be synonymous with the Jew, and Semitism began to mean in European languages the struggle of the Jews.

If the term 'Semitic' has no basis despite its widespread adoption by orientalists, what can we call those peoples who formed the

majority of the inhabitants of the Arab homeland in ancient times, such as the Akkadians, the Babylonians, the Assyrians, the Aramaics, the Arabs and others referred to above, whose languages can be grouped together in the same family by virtue of their linguistic similarities? In order to answer this question we must return to another historical fact, the truth of which most researchers are agreed on, which is that the Arabian Peninsula, its fringes and deserts, constitutes the cradle from which these peoples were diffused down centuries throughout the Arab world as it is known today, and where they established the first human civilization. Therefore, is it not more logical to refer to them as 'Arab people' or 'Peninsula people'?

The term 'Arab' as used by the Arabs themselves was not applied to all the peoples or all the Arab tribes, and it did not become a general nationalistic rallying cry until just before the dawn of Islam. The oldest mention of the word 'Arab' (according to what we can gather from cuneiform text) goes back to the ninth Century B.C. It appears in the text of the history of the Assyrian King Shalmaneser III, which describes one of his invasions of Syria (Bilad al Shan) in 853 B.C.

In tracing the sources of the terms 'Arab' and 'Semitic' it is necessary to mention what have been called the Hamitic languages (spoken by the descendants of Ham, Noah's other son, just as Semitic languages are those spoken by the progeny attributed to Shem). Attention has recently been focussed on them by researchers into ancient languages. Most notable among these people were the ancient Egyptians and the Berbers in North Africa. The languages they spoke manifest many linguistic similarities with the so called Semitic languages, enabling us to group the two families together in an inclusive greater linguistic family called Semitic-Hamitic by western reserachers.

Thus it is possible to attribute to the ancient Arab peoples a wide geographical area extending from the Arabian Peninsula to



the most western extremities of North Africa. From this 'cradle' the Arabs spread all over what is now the Arab World.

The above is a necessary preface for any investigation of the Ancient Arab Civilization.

In view of this long-standing 'Arab' nationality, which can be traced back to ancient history when the Arab people established the first human civilization, the first, in Mesopotamia and the Nile, having been founded more than five thousand years ago - the historian of the Arab World can distinguish several historical eras characterised by cultural innovations which have had a profound effect on man's intellectual and material history. For the sake of conciseness, it is possible to specify two periods as the most significant eras in history with respect to the richness of their cultural accomplishments and the legacy they handed on to succeeding generations. The ancient civilizations which flourished in the Arab World at the dawn of history, and the Golden Age of Islam, which began in the Seventh Century A.D.

The greatest revolution in human history took place in the Arab World with the founding of those first mature civilizations which bridged the gap between pre-history and the age of urban civilizations. It introduced social, economic and political order and the bases of science and technology and the first written literatures (prose and poetry - embodied in the cuneiform literary texts discovered in Mesopotamia). Perhaps the most prominent phenomenon that emerged from and characterised these civilizations is that for the first time in man's long history (more than a million years) he began to struggle against his environment and the hold it had upon him.

There followed the process of cultural diffusion and assimilation whereby the innovations which began in the Arab civilizations



spread to other peoples. Initially this occurred in the Mediterranean area - in the civilization of the Aegean with its centre in Crete and then that of Greece, which borrowed most of its civil institutions from the Societies of Mesopotamia and the Nile. The development in Greece of the science of logic and ordered thought was the basis for man's greatest discoveries and developments in the field of Philosophy. In turn, the foundations of this philosophy had been laid on what Greek culture had borrowed from the thoughts, legends and way of life of the Ancient Arab civilization and other civilizations.

The various methods of writing used by most of the peoples near East Europe can be traced back to one source in the first written form invented in the Nile and Mesopotamia more than five thousand years ago. For a long period of time in early history the development of human thought depended on two famous ancient scripts, cuneiform in Mesopotamia and hieroglyphics in the Nile valley. These two scripts were used up until the dawn of the Christian era. However, while they were flourishing in the second Century B.C. one of the Arab societies living in Syria (Sham) invented a simplified script based on a limited phonetic alphabet which was both efficient and easy to learn. This has to be considered one of the greatest inventions in human history, and the alphabet spread rapidly among other people and societies becoming the base for most known written language with the exception of Chinese and Japanese. Therefore, "The understanding of the Arabian people, of their affairs seems no less if not more necessary than a knowledge of the history of any people whatsoever, who have flourished since the decline of the Roman Empire<sup>(42)</sup> Moreover, as Andrew Crichton stated that, "the history of Arabia cannot fail to be of interest as the home of liberty and independence from the yoke of foreign conquerors".<sup>(43)</sup>

#### A.2. THE PROPHET AND THE CALIPHATES

The emergence of Islam in the Arabian Peninsula after the sixth

Century A.D. led to the appearance of the Arab civilization again,<sup>(44)</sup> as said by Sousa, but in fact the emergence of Islam in the seventh Century A.D. was the greatest social revolution that the Arab people have ever experienced, and the "religious culture which began in the early decedents of the seventh Century as purely Arabic in Origin, had developed into a unique system of belief".<sup>(45)</sup> Both the Arabs way of life and the world as a whole became radically transformed. That the peninsula Arabs chose to propagate the principles of this great cultural revolution among themselves is in itself an indication that the soil in which they planted the seeds of their doctrine was not, as some ignorant or hostile historian would have us believe, corrupt and depraved. Rather it was adequately ready to accept cultural upheaval and social progress. It thereby generated a fruitful interaction between the principles of the new fourth and the existing Arabs, which - following the political unification of the warring tribes - formed the basis of a new nationalism with Islam as its rallying cry. This interaction between old and new provided the impetus for a high principled civilization that Arab Islamic civilization that spread rapidly throughout the first and only truly international civilization bringing together diverse nations and people, until the cosmopolitan world culture of the present day. Therefore we will give below a brief background of the propher Mohammed and the Caliphates of Islam.

#### The Prophet Mohammed

"Mohammed was born in Mecca on 20th August 270 A.D. (see figure no. 3). He was the posthumous son of Abdallah, an esteemed merchant of moderate means, and of Aminah. The death of his mother, left the child an orphan when he was barely six years old".<sup>(46)</sup> Later he was intrusted to an uncle, Abu Talib. He married the rich widow Kadijah so he had travelled and traded and been in contact with Christian peoples of the desert and with Hanifs".<sup>(47)</sup>

"Mohammed, the Arabian Prophet, announced his mission in 612 A.D. when the Persian armies were already in occupation of several Byzantine provinces".<sup>(48)</sup> In the beginning of his mission, he had great difficulty in convincing the people of Mecca of his divine vocation (making the Hegira necessary) then, the most valiant and influential members of his tribe (Quarysh) were "converted by him and went to his support".<sup>(49)</sup>

From Medina, where he had returned after "his Meccan triumph",<sup>(50)</sup> he reappeared again in his native city during the tenth year after (the Hegira) in order to conduct personally the Muslim pilgrimage of farewell where with solemn words of the last revelation, the Prophet Mohammed declared "his mission accomplished and proclaimed that the grace of the God (Allah) had now entirely descended on his people with Islam".<sup>(51)</sup> Shortly, in June 632 A.D. the prophet Mohammed died without naming anyone to succeed him (Khaliphah) but left it to the descretion of his own people to determine who would be the best one to succeed him".<sup>(52)</sup>

### The Caliphate

For a short period of time, the disappearance of the Prophet plunged the Medinese community, which continued to form the directing nucleus of Islam, into crisis. It was necessary to provide a successor who, without being able to inherit the untransmittable religious prerogative of the prophet, would be his successor as the political leader of the society of believers. "The vital organization which Mohammed had formed under the sign of Islamic faith would not die with him."<sup>(53)</sup>

After stormy periods, Omar endorsed Abu Baker as indicated by the epithet as Al Siddiq (Caliphate of the prophet).



In 633 the Arabs penetrated into Palestine, Transjordan, and "entered Syria in 644 on the Peak of the Byzantines, who were engaged in confrontation with the Arabian".<sup>(54)</sup> Abu Baker designated Omar Al Khatab as his successor when he died in 634. During Omar's rule, the Muslims penetrated Egypt and from there they moved toward North Africa and he "continued not only by conquering the Roman dominions outside Europe, but also the entire domain of the Sassanian Empire".<sup>(55)</sup> On his death bed he entrusted the nomination of a successor to a Council (Majles al-Shoura) of six eminent Muslims: Ali, Talha, Zubeyr, Abdul Rahamn. Ibn Awf, Saiad Ibn Waqas and Othamn Bin Afan. They elected the last as a Calip. During Bin Afan's rule (644-656 A.D.) the Caliphate "witnessed the development and the continuation of the expansionst policy of Islamism, which began during Omar's decade".<sup>(56)</sup> After Othman's murder in 656 A.D., Ali Ibn Abi Taleb became the Caliphate. He was the cousin and son-in-law of the prophet. He ruled the Arabian Empire from 656 - 661 A.D. It is very sad to say that the rivalry between the Umayd and Beni Hashim appeared and in the years to come it was to rend the great Empire into shreds, and divided Islam into rival parties. "The Umayad Governor of Syria was Maawiyah Ibn Abi Safyan. There was some misunderstanding between Maawiyah and Ali."<sup>(57)</sup> By his outstanding leadership he transformed Syria into a province to be used by the entire Muslim world as a model."<sup>(58)</sup> and he succeeded in founding a dynasty in his family, the Bani Umaya, who held the Caliphate and the empire for ninety years".<sup>(59)</sup> During his rule, Damascus became the capital of the Muslim Empire. He founded an orderly Muslim Society, and developed a stable well organised state. In Maawiyah, the sense of politics was developed to a degree probably higher than any Caliphate."<sup>(60)</sup> The well known hstorian F.K. Hitti described his characteristics as he stated: His prudent mildness by which he tried to disarm the enemy and share opposition, his slowness to anger, and his absolute self control left him under all circumstances master of the

situation. "I apply not my sword where my lash suffices, nor my lash where my tongue is enough. Even if there be one lair binding me to my fellowmen, I do not let it break, when they pull I loosen, and if they loosen, I pull".<sup>(61)</sup> The most important Caliph was Marwan (683 - 685 A.D.) the founder of the Marwanid branch of the Umayyad Dynasty. He was succeeded by his son Abd al-Malik (685 - 705 A.D.). Under his rule and that of his four sons who succeeded him the dynasty at Damascus reached the Zenith of its power and glory. During the reign of al-Wahid and Hashim the Islamic Empire reached its greatest expansion, stretching from the shores of the Atlantic ocean and the Pyrenees to the Indies and the coast of China. (Please see No. 4). During this period, the language of al-Diwan (the public registers) began to be changed from a multitude of tongues to Arabic.

"In 727 A.D. open revolt against Umayyad was proclaimed by their cousins, the Abbasids, descendants of an uncle of the Prophet al-Abbas. After the success of the Abbasids, the Umayyad house was exterminated".<sup>(62)</sup>

### The Abbasid Caliphate

The Baghdad Caliphate, founded by al-Saffah and al-Mansur, reached its height in the period between the reigns of the third Caliph, al-Mahdi and the ninth, al-Watiq and more particularly in the days of Haroun al-Rashid and his son al-Maimun. It was mainly because of these illustrious and brilliant men, that the Abbasid dynasty acquired a "halo in popular imagination and became the most celebrated in the history of Islam".<sup>(63)</sup> Following the rule of al-Walhiq, the state began to decline until the Caliph al-Mustasim, the thirty-seventh in the succession, met final destruction at the



hand of Mongols in 1258. "An idea of the degree of power, glory and progress attained by the Abbasid Caliphate at the highest and most promising period may be gained from observing the security of its foreign relations, the court and aristocratic life in its capital, Baghdad, and the unparalleled intellectual awakening which culminated under the patronage of al-Maimun".<sup>(64)</sup> Under the rule of Haroun al-Rashed began the translation of classical mathematics from Greek and Sanskrit to Arabic and, in general, an overall increase in mathematical activity and the other fields of science as we will explain later. The Abbasid period is remembered as "a brilliant and prosperous era in the history of Islam. The rulers distinguished themselves as great patrons of learning, and under their influence scholars contributed considerably to the advancement of world civilization".<sup>(65)</sup> Under this liberal dynasty in Baghdad, "the great movement of Arabic Science flourished and opened the way for the Islamic Golden Age".<sup>(66)</sup> This situation leads us to emphasize that the Arab world was not politically unified, but shared a common culture.

After the overthrow of the Umayyad dynasty in Damascus in 750 A.D. by the Abbasid family, Abdul Rahman, a youth of twenty, was among the four people who escaped, making his way to Spain, where, he fought to reach power and maintain the Umayyad dynasty. "He initiated the intellectual movement and made Cordova as a centre of world culture".<sup>(67)</sup> About the tenth century, Cordova, the new capital of the Umayyads "took its place as the most cultured city in Europe"<sup>(68)</sup> and its university was founded in the principal mosque. It became "a place of pre-eminence among the educational institutions of the world, and attracted students, both Christian and Muslim from Spain and other parts of Europe, Africa and Asia".<sup>(69)</sup>

The Muslims' conquest of Sicily, which had begun with periodic raids as early as 552 A.D. had been completed in 827. During the next 189 years, "under the rule of Muslim Chieftains, Sicily was transformed into a province of the muslim world with Palermo as its capital".<sup>(70)</sup>



### A.3. The Decline

After six Centuries of the Umayyads and the Abbasid rule, the Muslim Empire experienced a fifty year period of gradual political breakdown in which "fragmentation eventually overcame unity". This political deterioration set the stage for the invasion of the Empire in 1258 A.D. by the Mongols under Hulagu Khan, and grandson of Gengiz Khan<sup>(71)</sup>, who had "ravaged Asia and terrorized Europe".<sup>(72)</sup> "The Mongols were ruthless warriors and their guiding creed was expressed by Gengiz Khan in these words. 'The greatest joy is to conquer one's enemies, to pursue them, to seize their property, to see their families in tears, to ride their horses, to possess their daughters and wives'."<sup>(73)</sup>

When Hulagu Khan and his men swept across Baghdad, the powerless Abbasid Caliph surrendered after a weak defence. As an indication of his scorn, Hulagu had him put in a sack and trampled to death. Although suffering less than some other cities, Baghdad was plundered, priceless libraries and works of art were destroyed and many of the inhabitants were massacred. The Mongols continued their destruction elsewhere in Mesopotamia in Syria, and the great system of irrigation which had made the region fertile and prosperous for thousands of years was ruined.

### B. THE DEVELOPMENT OF ARABIC MEDICINE

In the History of Science as in that of any expression of human intelligence and emotion, the past is never the past, but continues as very active in every form and at every manifestation of the Present. The close relation between the progress of medicine - connected more than any other science with the essential need of life - and the advance of civilization is quite evident. It is perhaps not sufficiently appreciated that the modern art of healing not only is linked with old magical rites and religious creeds, with classical Hippocratism, with dogmatic doctrines and revolutionary discoveries, but is also intimately associated with the economic, intellectual, and political condition of life

of different nations at different times, with their wealth or their misery, their trade, their laws, their wars, their philosophy, their literature and their art. Furthermore, medicine is one of the mightiest of all the suggestive agents active in their life of today: It affects both the individual and the group, constantly facing new threats and menaces, but offering also new promises opening unexpected horizons for the future.

The history of this evolution and these interferences has often been marked by the immortal touch of genius, illuminated by the flashing light of heroism and of sacrifice, and beautified by the radiant smile of poetry. Its progress has sometimes been dogmatism, by hatred and intolerance. But from the most remote past up to our time, medical thought, the noblest expression of human aspiration to deliver man from physical and moral evil, has maintained a striking historical unity, and only through a knowledge and a comprehension of the history of the past it is possible to understand or to judge the medicine of today. Therefore it is very essential to give an account of the development of Arabic medicine during the previous periods in the next pages.

The West has not done justice to the influence of the Arabs on the historical development of medicine, most of the Western writings have given little prominence to the Arabic Scientific and intellectual contribution to this field".<sup>(74)</sup> But the fact is that the Arabs carried the torch of science and thought in an age when no other civilization was capable of doing so. Professor George Sarton has stated in his monumental life of science: "I must insist on the fact that, though a major part of the activity of Arabic writing scholars consisted in the translation of Greek works and their assimilation, they did far more than that. They did not simply transmit ancient knowledge. They created a new one ... However, a few Greeks had reached, almost suddenly, extraordinary heights. That is what we call the Greek miracle. But one might speak also, though in a different sense, of an Arabic miracle. The creation of a new civilization of international and encyclopaedic

magnitude within less than two centuries is something that we can describe, but not completely explain".<sup>(75)</sup>

To give a clear picture of the Arab contribution to medicine, we will explain the development of Arabic medicine during the following periods: Pre Islam and during Islam where the Golden Age of Arabic civilization as Muslim culture exerted powerful, economic, political and religious influence over a large part of the civilized world. We will explain these developments of Arabic culture during Islam according to the following periods: Ummayad Caliphate, Abbasid Caliphate, Arabic Medicine in Spain and then in Syria and Egypt.

Although, the main objective of this chapter is to trace the history of Arabic medicine during the above mentioned periods, some effort is made at the end of this chapter to explain the progress of the hospitals and the practice of Medicine during the heyday of Arabic civilization.

#### B.1. Arabic Medicine Pre Islam

In pre Islamic times Arabic medical knowledge was negligible due to the unsettled, nomadic, desert environment the Arabs lived in. The only settlements were to be found in the vicinity of oases where towns such as Mecca, Medina, and al-Taif had grown up. The only contact the Arabs had with the other civilizations came by way of the trade caravans which made bi-annual trips from Mecca, travelling to Syria in the north and to Yemen in the south. Nevertheless, "there were some medical practitioners in pre Islamic Arabia such as Ibn Huzawn, Harith Ibn Kalda al-Thaqfi, Nadr Ibn Harith, and Ramtha al-Taminis".<sup>(76)</sup>

Ibn Abi Usaybe'ah gave some details about Harith Ibn Kalda al-Thagafi he said: "He was from al-Taif, and travelled to Persia



where he studied medicine and practised there and knew the profession."<sup>(77)</sup> Ibn Kalda described medicine as a diet: It is said that he met with Kisra Anushirwan, the emperor of the Persians. Ibn Abi Usaybeah gave full details of that meeting. "When he came to see Kisra Anushirwan, the latter asked him : who are you? I am Al-Harith Ibn Kalda al-Thagafi, he answered. What is your profession? he asked. Physician, he answered. Then the emperor was astonished on being told that al-Harith was a Bedouin and a physician. "What on earth" he demanded "are the Arabs doing studying to become physicians, when we know them to be ignorant, ill-fed, and feeble-minded?"

Unruffled, Harith replied: "your Majesty if these are indeed the qualities of the Arabs, then, they are in the greatest need of a physician to heal their minds and feed their bodies." Kisra was so amused by this reply that he rewarded him amply and had the scribes record the incident."<sup>(78)</sup> Then Kisra asked him to sit down and during that meeting, as asked him number of questions and asked for his advice. Some of his advice to the emperor:

- avoid having a bath while you are full. And making love while you are drunk.
- don't have your meal while you are angry.
- eat little to have good sleep
- the best meat is the lamb and avoid cow meat

When the emperor asked him about his advice on "making love" He replied:"It is too harmful to make love with an old woman, she will pull out your power...always try to make love with a young one because she will make stronger".<sup>(79)</sup> According to Harb Ibn Mohamed, Ibn Kalda mentioned four things hurt the body. They are:

1. making love while you are full
2. having a bath while you are full
3. eating unfresh meat and
4. making love with an old woman <sup>(80)</sup>

Ibn Abi Usaybea, also, mentioned other physicians who were practicing medicine pre Islam and in the early period of Islam; they were: Al-Nader bin al-Harith Bin Kelda al-Thakafi (the cousin of the Propher)<sup>(80a)</sup> Ibn Abi Ramtha al-Nameme Name,<sup>(80b)</sup> Abdul Malek Ibn Abjar al-Kanani who was living in Alexandria ,<sup>(80c)</sup> Ibn Athal, well known and distinguished physician in Damascus.<sup>(80d)</sup> Abo Al-Hakam,<sup>(80e)</sup> Hakam al-Dimashki of Damascus,<sup>(80f)</sup> Issa Bin Hakam,<sup>(80g)</sup> Tayazok<sup>(80h)</sup> and Zaynab physician of Bani Daous, she was a well-known physician among the Arabs and she was treating the eye diseases.<sup>(80i)</sup>

With regard to the drugs, the only drug which was known by the Arab at that time came from plants and leaves of trees, certain pods, animals' bones, and incense. They tended to live frugally and to eat a simple diet, and this was well protected them against many illnesses.

## B.2. DURING ISLAM

In order to give a full and clear picture about the Arabic Medicine during Islam, we will discuss briefly, the various factors which led to the cultural awakening among the Arabs. In fact, the first factor is the Quran. As the Quran, urged Muslims always to resort to reason and thought:

"We shall show them our portents on the horizons and within themselves until it will be manifest unto them that it is true."<sup>(81)</sup>

The Quran distinguished between those who were learned and who were not in favour of learned people.

"Are those who know equal with those who know not? But only men of understanding will pay heed."<sup>(82)</sup>

In many places of the Quran, there are some verses concerning knowledge "Allah (God)" there is no God save him, the Alive, the Eternal.

Neither slumber, nor sleep overtake Him. To Him belongeth whatsoever in the heavens and whatsoever is in the earth. Who is it that intercedeth with Him save by His leave? He Knoweth that which is in front of them. He is the Sublime, the Tremendous."<sup>(83)</sup>

"Allah (God) is the light of the heavens and the earth. The similitude of his light is as a niche where-in is a lamp. The lamp is in glass. The glass is as it were a shining star. This lamp is kindled from a blessed tree, an olive neither of the East nor of the West, whose oil would almost glow forth (at itself) though no fire touched it."<sup>(84)</sup>

A famous and significant part of the holy Quran commended the Prophet Mohammed to: read in the name of God. Read by thy God who taught with the pen, who taught man what he had never known. The Prophet Mohammed himself has said many sayings pertaining to knowledge, some of these sayings are the following:

"The quest of knowledge is obligatory for every Muslim"

"Verily the men of knowledge are the inheritors of the prophets"

"Seek knowledge from the cradle to the grave"

Therefore it is no wonder to see that the Quran and the sayings of the Prophet Mohammed "played a double role in the creation and cultivation of science."<sup>(85)</sup>

The other factor which led to the cultural awakening among the Arabs is that Islam, did not differentiate between one human being and another, and permitted no discrimination whether of sex, colour, or social class. "It was an extremely tolerant religion, indulgent to other religions, this becomes evident when it is recalled that many Christians and Jews had important posts in the Islamic Empire."<sup>(86)</sup>



Lastly, the fourth factor is the Arabic language as it is the language of the Quaran and it was the only language used throughout the Empire: Therefore it was the only instrument in the spreading of learning and it became the language of science and culture in many of the countries of the world of that time.

After this intorduction we will explain in detail in the following pages, the development and the contribution of Arabic medicine during Islam through the various periods but first of all we will start with:"the medicine of the Prophet".

#### B.2.1. The Medicine of the Prophet

The whole of Islamic medicine is deeply rooted in the Islamic tradition, and the whole of Islamic medicine is also "related to Islam through the injunctions contained in the Quran and the Prophet sayings (Hadith) concerning health and various questions related in one way or another to medicine."<sup>(87)</sup>

If we study the life of the Prophet Mohammed and his sayings (Hadith) we will notice that he made great efforts to persuade the people to take care of their health and we will see that he considered that health is one of the five factors of the life of human being (health, food, clothing, housing and security).

In the field of the body health we can mention the following sayings of the Phrohet:

"The religion is built upon cleanliness"<sup>(88)</sup>

"Who has a hair, he must take care of it"<sup>(89)</sup>

"In order to not make difficulties for my followers,

I am not going to order them to clean their teeth

by al-Sewak<sup>(90)</sup> (very hard tool)"

The follower of Islam is ordered to be moderate, moderate in eating and drinking. "Eat and drink but not too much."<sup>(91)</sup>

In order to keep the person healthy without causing any harm for him, Islam gave him the right not to fast during Ramadan (the fasting month) and to delay that for another time, when he or she will be cured from his or her illness.

"Any one who is ill in Ramadan or on a trip he or she had the right to not fast and delay that for another time of the year."<sup>(92)</sup>

The Prophet stated a number of pieces of advice in order to keep the water clean to avoid the illness from the dirty water.

"If someone awakes up from sleep, he must not put his hand in the pot of water before he washes them three times as he did not know where the hand was during sleep"<sup>(93)</sup>

The Prophet orders us also not to breathe in the water and not to have a bath in unclean water.

With regards to food, the Prophet ordered not to eat the meat of dead animals and not to drink alcohol and not to eat the forbidden food for religious reasons. He said that the cloth of prayer and the place where the prayer is said must be clean and not dirty, otherwise his or her prayer is not correct. The Prophet ordered the Muslim person not to make love except with his wife, for many reasons, one of these is to avoid the venereal diseases. He also advised a patient suffering from infectious disease not to contact a healthy person. He ordered everyone not to enter any affected area with any epidemic disease like cholera, and if any person is in one of the affected areas, he ordered him not to get out of this area to another one in order to avoid spreading the disease to that area. He said

"If you hear that the plague is in one area do not enter it, and if it happened while you were in do not get out of it."<sup>(94)</sup>

From what we have explained above, we notice that most of the prophet's medicine is preventive medicine as the teaching of medicine and the diagnosis and to cure disease "is not the Prophet's responsibility".<sup>(95)</sup>



### B.2.2 DURING THE UMAYYAD AND ABBASID CALIPHATE

Islam spread and the Muslims were keen to collect all the available manuscripts and books of the ancients. This period (750 - 900) may be called a period of preparation, influenced on the one hand by the current deriving from the ancient traditions of the Arab tribes and the fundamental regulations of the Quran, on the other hand by Greek medicine, which in the translations penetrated into the schools and academies. In this period also was felt the influence of Egyptian currents, magic and hermetic medicine, when alchemy began to develop. The Greek philosophers, notably Aristotle, were studied, astronomers and geographers, especially Hippocrates and Ptolemy became familiar to students. It is during this period that we find the names of authors who were the first representatives of the transition period; such as those belonging to the Nestorian family Bakhtishu, which produced famous physicians. No fewer than seven of them were court physicians up to the eleventh Century.

Under the Umayyad Caliphs of Damascus there lived a Jewish Persian physician, Masargiawaih who translated from Syrian into Arabic a book by a Syrian Christian priest and physician Aharon. This was the first work of Greek origin that fell into the hands of the Arabian physician and was often quoted by the authors of the golden period of Arabic medicine and especially by Rhazes.

By far the most prolific and best translator from the Greeks was the Christian Hunayn Ibn Ishaq (809 -74). " In 1925 the original of an authentic report by him was discovered." (96) as mentioned by Bergst<sup>r</sup>asser.

The Christians played a large part in these achievements. Within one and a half centuries of the rise of Islam, Baghdad came under the rule of Abbasids and Damascus and Cordova under the Umayyads and became world centres for learning and particularly medicine.

Among the famous physicians of the Umayyad period were the following - and the reader will notice a number of quotations in this chapter from Ibn Ibi Usaby'ah as the whole work is based on his masterpiece; Uyan al-Anba Fi Tabakat al-Atalia.

#### Ibathal

He was a Christian and physician to the first Umayyad Caliph, Muawiyah. "He was a well known and distinguished physician in Damascus. He was a close friend to Muawiyah Bin Abi Sofyan. He accompanied him most of the time, during the day and night."<sup>(96a)</sup>  
"He was skilled in the science of poisons and a number of nobles and princes died by poison during the period of Muawiyah."<sup>(97)</sup>

#### Abo al-Hakam al-Dimashki

He was a Christian who specialised in therapeutics, he helped Myawiyah to prepare him a number of drugs for his use against his enemies. He lived to be more than a hundred.<sup>(98)</sup> He was also a physician to the second Umayyad Caliph, Yazid.<sup>(99)</sup>

#### Hakam al-Dimashki

He was living in Damascus and lived for a long time. He was like his father - well known in the therapeutics.<sup>(100)</sup>

Issa Ben Hakam al-Dimashki

He was known as Jesus. Yousef Ben Ibrahim said: "I visited Issa Ben Hakam at his house in Damascus while I had a bad fever. He gave me delicious food and ice to drink. I told him it was not good to do so. He reassured me: 'I know the air of my country better than you. Things that are not beneficial in Iraq are useful in Damascus.'"

Issa Ben Hakam told Yousef Ben Hakam that he followed his father's advice: to eat fresh food and to wash his hands and feet in as cold water as possible after his bath because it is very useful. (101)

Tayathoq

He was a good physician in the early stage of the Umayyad caliphate. He served al-Hajaj Ben Yousef al-Thakafi, the Wali of Abdul al-Malek Ben Marwan who was born in al-Taef in 661 and died in 714. Taythoq served al-Thakafi who trusted him as a good physician. Among Taythoq's advice to al-Thakafi are the following precepts:

- "Don't make love except with a young girl.
- Eat fresh meat.
- Don't take medicine if you don't have any disease.
- If you eat during the day, it is alright provided you don't have a nap, but if you eat at night, don't sleep unless you walk not less than fifteen steps."

It is said that some King noticed that Thyathoq was getting very old and they were afraid to lose him and that he would die very soon. So the King asked him his advice as he was the best physician at that time. The King asked: "Describe to me what I must follow during my life because I am afraid that you will die and I will not find another like you." Taythoq answered the King:



"I will tell you ten things. If you follow them you will never get ill and these are the following:

1. Don't eat while you are full.
2. Don't eat any food which your teeth are unable to chew, because your stomach will not be able to digest it afterwards.
3. Don't drink water while you are having your meal.
4. Have a bath once every two days.
5. Try to have the necessary amount of blood in your body because it is very important for you.
6. In every season try to have an aid against vomiting and constipation.
7. While you are riding if you feel that you need to piss, don't hesitate to do so.
8. Go to the toilet éverynight and before you go to bed.
9. Don't make love too much, it affects your life whether you make love too much or too little.
10. Don't make love with very old women, it is a cause of death without any notice.

When the King heard this advice, he ordered him to write all these sayings in red gold and to put them in a golden box.

He died in 90 Hejri and wrote a number of books. One of them was Edal al-Adwayah (How to prepare the drug).<sup>(102)</sup>

The translation into Arabic began under the Umayyad especially in the time of Khalid Ibn Yazid who was interested in Alchemy, as the rulers of the first great Arabic Islamic Empire, had not much interest in science. Medicine was more personal, and they brought physicians mostly Christian, as we explained above - from Jundishpureto look after their health in Damascus.

With the change in the capital to Baghdad, when the Abbasids assumed power in 750 a more intellectual climate developed, diverse works on science and medicine were now translated into Arabic from Greek, Syrian middle Persian etc, as part of a great campaign to exploit earlier creativity, thought and experiments of all ages. The preoccupation of rulers with their health was still a powerful driving force, and mathematics and astronomy were important to such vital pursuits as agriculture, irrigation and land survey, but a genuine intellectual curiosity for its own sake was active between 800 and 850 and the impetus of this age carried the Arabic Islamic civilization forward for some three or four centuries to come. "The Muslims soon made original contributions which proved to be the greatest of their distinctive achievements." (103)

The centre of the world in all arts and science became the city of Baghdad which the first Caliph of the Abbasid dynasty, al-Mansur, took for his capital. The age of Haroun al-Rashid, the ninth century caliph renowned in the Arabian Nights, was among the most golden of historical ages. He surrounded himself with the foremost physicians of the age who studied Persian, Greek and Indian medicine.

First of the physicians of this period - we may mention - is Jurjis Jibrail, who was "the head of the hospital of Jundishpur and was called to Baghdad in 765 by the Caliph Al-Mansur who received him with great honours." (104) Al-Mansur called him to attend an examination of medical competence and those doctors who did not pass the examination were debarred from medical practice - exactly as it happens nowadays. As a result of this examination, some 860 men were successful and hundreds of them were thus expelled from the profession.

Jurjis Ibn Jibrael

He had experience in medicine and therapeutics. He served al-Mansour who established the city of Baghdad. Al-Mansour gave Jurjis plenty of money. Feython, the translator, said: One day al-Mansour felt some pain in his stomach, was treated by a number of physicians but no one was able to cure him, instead, he became worse. Then he asked his secretary call all the physicians to a meeting with him for consultation. At the meeting, al-Mansour said: "which one is the most important physician in the whole world? They answered: there is no one like Jurjis, the head physician of Jundishapour, he is clever in medicine and author of a number of books. Al-Mansour ordered someone to go and ask Jurjis to come and see the Caliph al-Mansour. He said he was unable to go immediately. The man of al-Mansour told him: If you don't agree, you will be forced to come. At this stage he agreed, when he said good-bye to his son Bikhtayshu, his son said to him: why don't you take me with you? His father Jurjis answered: don't be in a hurry my son you will have the time to serve the Kings."

He came to serve the Caliph. After two years of his service al-Mansour asked him to call some of his relatives, as his family produced famous physicians the Caliph liked him very much. Fathyoun has told us about the close relationship between al-Mansour and Jurjis He said: One day, the Caliph al-Mansour, asked Jurjis: "who is looking after you here? "my students" Jurjis answered. al-Mansour said, "I heard that you don't have any women." Jurjis said, "I have an old wife and she is rather weak and she is unable to travel to here from my home country." Then the Caliphat ordered three beautiful women to be brought to him with 3000 Dinars. Jurjis did not accept the women according to his friend's advice Issa Bin Shahla. The Caliph asked him what the reason was? Jurjis answered "I am a Christian, we Christians marry once only, and my wife



is still alive." This answer made him more respected in the Court. Another story of the excellent relationship among our physician and the Caliph is the following: When Jurjis had fallen ill in the year 152, the Caliph everyday asked about his situation and ordered him to be brought on a bed to the Court to meet him. One day al-Mansour asked him how he was feeling. Jurjis cried loudly and answered: "How nice it would be if you would give me permission to go back to my home country in order to see my relatives and my son there, and if I die, I will be buried with my parents." The Caliph as-Mansour said: "Oh Jurjis, follow my advice and be a Muslim and your fate will be heaven". Jurjis again answered bravely. "No, I prefer to be a Christian and to die as a Christian as my parents. I want to be buried with them whether they are in heaven or hell." The Caliph smiled and said: "alright Jurjis you are very helpful, I have found a great comfort in my body from the time I met you till now and I am relieved from all disease." Then he ordered him to be accompanied by someone to look after him on his way back home and granted him 10000 Dinars and asked his men to carry him along to his country to be buried there if Jurjis died on his way. Ibn Abi Usaybe'ah has told us that he arrived there alive and one of his books was translated by Hunyan Ibn Ishaq.<sup>(105)</sup>

### Bekhtaushu

He was a servant of Jesus. He served Haron al-Rashid, the greatest Caliph of the Abbasids. He was born in al-Ray in 766 and died in Tours 809. He had a good relationship with Charlemagne King of France.

Ibn Abi Usayb'ah had told us that the ruler met Bekhtaushu one day and explained to Yahya Ibn Khalid about that meeting and how Bekhtaushu proved that he was the best physician at that time. Ibn Abi Usayb'ah gave the following interesting

story of his meeting: When I met Bekhtausu I said to the ruler Yahaya Ibn Khalid, let us have an idea about Bekhtaushu's knowledge. The ruler Yahya Ibn Khalid agreed and he suggested calling the best physicians at that time. They were: Abo Kuraysh Issa, Abdulla al-Tayfour, Darvour Ibn Srabeyon and Jurjis. When they arrived and saw Bekhtaushu, one of them said to the Caliph: "Oh, Amir al-Moumeneen, not one of us is able to debate with Bekhtaushu as he is the best of us ~~at~~ all." Then, the Caliph al-Rashid asked one of his men to "bring some horse's urine and see whether he recognizes it." The servant put the horse's urine in a water bottle but the clever Bekhtaushu as soon as he saw the bottle said: "This is not a human being's urine". Abo Kuraysh said cheating: "You are a liar Bekhtaushu, this is the Caliph's urine". The Bekhtaushu said politely: Oh, my respectable Shekh, it is never a human being's urine and if it is as you have said it is clear that the human being has changed into an animal." The Caliph admired his confidence and asked him: "How did you know " Bekhtaushu said: "It has not got the same thickness and smell." Then the Caliph asked: "Who taught you medicine?" Bekhtaushu answered: "my father Jurjis". Then the Caliph granted him a very great deal of money and appointed him as a head of physicians. <sup>(106)</sup>

Ibn Abi Usaybe'ah also mentioned the following physicians belonging to the Bekhtaushu family.

Jebrael Ibn Bekhtaushu Ibn Jebrael Bin Bekhtaushu - Here are some of his precepts as recorded by Ibn Abi Usaybe'ah.

- It is bad to drink while you are hungry, but eating while you are full is worse.
- Eating a little from what is harmful is much better than eating too much from what is beneficial.

Here is a list of some other physicians mentioned by Ibn Abi Usaybe'ah: Jebrael Ibn Abdulla Ibn Bekhtaushu, Obeyed Ibn Jabrael, Khusayeb, Issa (well known as Abo Kuraysh), al-Lajlaj, Abdul al-Tayfori, Zakreya Ibn al-Jayfori, Israel Ibn Zakareya al-Tayfour, Yazid Ibn Yazid, Abdour Ibn Yazid, Sahel al-Kuset, Sabour Ibn Sahel, Israel Ibn Sahel, Mousa Ibn Israel al-Kofi, Maserjoueh of Basra, Salmoyeh Ibn Benan physician of al-Muatasem, Ibrahim Ibn Fazrim, Ayoub (known as al-Abrash, Ibrahim Ibn Ayoub al-Abrash, Jebrael al-Kahal, Masaweh Abo Youhans, Youhana Ibn Masaweh and Hunyan Ibn Ishaq. In the following pages we will give some details about the last two, as they were very famous.

Youhana Ibn Masaweh (The Mesu of the Latin writers)

"He was the first Syrian physician to use the Arabic tongue"<sup>(107)</sup>  
He was of Christian origin and practiced medicine in Baghdad, was physician of the Caliph al-Maimum, who about 830 put him in charge of a school of translators who were given the task of translating Greek manuscripts acquired in Asia Minor and Egypt. Ibn Abi Usaybe'ah gave some details about Ibn Masaweh. He said, "Ibn Masaweh was a physician at the time of the Caliph Haroun al-Rashid. At his request, he translated Greek medical books purchased in Byzantium and was himself the author of a number of books on fever, nutrition, headache, and sterility in women. The successor to Haroun al-Rashid, al-Muatasem, was so interested in Youhana's work on dissection that he made a special dissection room available for his use, and he used to have apes specially brought for him from Nubia in Africa.

Sulayman Ibn Hassan told as mentioned by Ibn Abi Usaybe'ah that Ibn Masaweh served Haroun al-Rashid, al-Amin and al-Ma'amun and continued serving till the time of al-Moutawakel and nearly all the Kings of Bani Hashim had met him and had their meal with him. He died in 243 during the caliphate of al-Moutawakel.



From his sayings, it is said that one day someone asked him. "What is the bad thing you will never get any good from?" He answered: "Making love with very old women."

Ibn Masaweh is the author of a number of books: al-Burham 30 parts, al-Basera, al-Kamal and al-Tamam, al-Humjat, al-Aghtheya, al-Ashrebah, al-Mongeh Fi al-Sefat Wat, al-Elayat, al-Fesed Wa al-Hijaman, al-Jezam. He wrote a number of books on Embryology, eye diseases, veins, the gall bladder, sterility, the stomach, the colon and constipation. "He wrote for the Caliph al-Ma'amun a book called "al-Abdal" home part of this book he wrote for Hunayan Ibn Ishaq upon his request." (108) This outstanding physician is known in the literature of the Renaissance and Mesul the older, and also as Johannes Damasceny, or Joh of Damascus, He died in 857, leaving as we mentioned before many works among which the most important was the Aphorisms, first published in Bologna in 1489, in a volume headed by the Aphorisms of Maimonides.

#### Hunain Ibn Ishaq

The best of the pupils of Masaweh (Mesus) and the most illustrious of the translators was Hunian Ibn Ishaq, known in the West as Johannitius (809 - 873). By dint of hard work he succeeded in mastering perfectly the four languages of the cultivated world of his age: Arabic, Persian, Greek and Syriac. He also studied medicine under the guidance of the Christians and teachers of the day. No one could have been better prepared for the immense work of translation which al-Maimun entrusted to him. After accompanying the mission which was sent to Byzantium in search of good manuscripts, he gathered around him an excellent team of translators, and the task was begun. Hunain's own activity as a translator exceeds imagination. Not only did he translate or revise the works

of Plato, Aristotle, Autolycus, Menelaus, Appolonius of Tjana, Alexander of Aphrodisias and Artemidorus, but also the greater part of the three authors who provided the basis of all Greek medical science: Hippocrates, Galen, and Diocorides. Hunian was not content with translating a large number of works, which made him famous in the Latin Middle Ages.

"The translations of Hunian were regarded as classics and are today of the greatest importance for textual criticism of the Greek writers and for the reconstruction of many ancient medical texts whose originals have been lost."<sup>(109)</sup>

Ibn Abi Usaybe'ah gave details about Hunian's life, he said: "Hunian's name is Abo Zayed Hunian Ibn Ishaq al-Abadi. He stayed first in Basra with his teacher Shekh Khalil Ibn Ammad who taught him the Arabic language, then he moved to Baghdad. It is said that al-Ma'amoun, used to give him when he finished translating a book a sum of gold equal to the weight of the translated book. Ibn Abi Usaybe'ah mentioned that Hunian travelled to many countries and he reached as far as Rome in order to search for manuscripts and books and translate them. One day, the Caliph, called him and gave him a grant of 50000 Dirahms, Hunian thanked the Caliph, then the Caliph said: "I would like you to describe to me a drug to kill one of my enemies and I would like to keep this a secret". Hunian answered: "Oh, Caliph Amir (prince) al-Moameneen I know only useful drugs, and I thought that the Caliph would not ask for anything else, but if you want me to learn about it, please let me do so". The Caliph refused Hunian's wish and ordered him to prepare the poison drug at once. But Hunian insisted that he was unable to fulfil the Caliph's order and as a result of his refusal he sent him to prison and asked to be informed about his behaviour there. Hunian stayed in the prison for a year reading, translating without taking care about his situation. After a year, the Caliph called him and he put in front of him a great amount of money on one side and a sword on the other side and told him: "Look, Hunian, it is time to

choose. Answer my previous question about poison drugs. If you agree, you will have all the money and some more, if not, I will kill you with this sword". Hunian said: "If you are going to kill me, I have the Lord." Then the Caliph smiled and said: "It is very good that you refused my order as I asked only to know whether you will be able to prepare a poison. Now trust us as we trust you." Hunian kissed the ground and thanked the Caliph. When the Caliph asked him to tell him why he refused to fulfil his order, Hunian said: "There are two reasons, religion and the principles of my profession. Religion ordered us to do good with our enemies, and still more our friends. It is forbidden not to follow this principle. Also, the profession does not allow us to hurt any human being, because my profession is for their help and only to take care of them and the Lord makes the physician promise to keep it and the physician swears upon this not to give or even possess lethal drugs. So I did not want not to follow both of them and I was ready for you to kill me. because the Lord at last will grant me heaven as a result of my faithfulness to my religion and profession." The Caliph was pleased to hear what Hunian had said and told him: "Both of them are very respectable laws indeed" and granted him a great sum of money.

Hunian had two sons, David and Ishaq. He said in his article on the Fihrist of Glalon that he lost all of his books. Hunian was born in 194 Hejri and died during the rule of al-Mouatamed, the 15th of Abbasid Caliph in Tuesday December, 1888 and it is said that he died as a result of a stomach disease."<sup>(110)</sup>

Ibn Abi Usaybe'ah also gave some details about the difficulties which faced Hunian particularly from his relatives and the other translators because all of them were very jealous. Hunian admitted that "the difficulties face everyone, the wise, the weak or strong man and if these difficulties will happen the wise man must trust in God and pray to him. With regard to myself, I thank God who helps me in this and helps me to succeed and makes me more respectable than my enemies."<sup>(111)</sup>



Hunian proved that he is the greatest translator in Arabic history. Toward the end of his life "he had the reputation of being of the most illustrious physician and most famous scientist in all Islam."<sup>(112)</sup>

Hunian left more than one hundred writings of his own books, those which had the most influence in the Orient were three in number: "Medical questions, a general introduction to medicine in the form of questions and answers."<sup>(113)</sup> This was a favourite method with writers of this period, and two ophthalmological works, "Ten dissertations on the eye" which is preserved in Arabic and in a salernitan edition in Latin by Constantinus."<sup>(114)</sup> The ten dissertations is the most ancient systematic manual of ophthalmology in the series of ten dissertations, which follow Galen closely. Hunian explains the anatomy of the eye, describes the brain and the optic nerve, examines ophthalmology, aetiology and symptomatology, the diseases of the eye and the properties of useful medicaments. Mention must also be made of the diagrams which accompany the book. They are the first known on the anatomy of the eye and they are much superior to similar works produced during the Middle Ages in the West. So no wonder to find that the renowned French medical historian Lucian Leclerc called Hunian - as stated by Sami K Hammarnah - not only the greatest scholar in the ninth Century Arabic medicine, but also one of the most gracious characters and most impressive servants of all time. His exemplary life helped establish ethical standards of behaviour for his profession.

There are other famous translators who were also prominent philosophers in their own right. These include the philosopher al-Kindi who translated the work of Aristotle and other Greeks. Thabit Ibn Kurrah, who wrote many books on a number of medical topics as well as on philosophy and astronomy. Qusta Ibn Luqa and Mankah the Indian who translated a treatise on poisons written by the Indian physician Shanaq.

Ibn Abi Usaybe'ah also wrote another chapter concerning the translators in his book: "Uyun al-Anbe Fi Tabakat al-Ataba" namely the 9th chapter under the heading - The classes of translator physicians who translated medical books from Greek to Arabic. He just mentioned the names with or without a very brief information. He mentioned the following physicians.

Jurjis, Munaman Ibn Ishaq, Ishaq Ibn Hunian, Hubaysh al-A'asam, Issa Ibn Yahya Ibn Ibrahim, Kusta Ibn Luqa al-Ba'alabaki, Ayoub who was well known as al-Abrash, Shudi al-Karki, Ibn Shudi al-Karki, al-Hajaj Ibn Matter, Ibn al-Na'amial, Homsî, Taythorn al-Turjman Abo Nasër Ibn Nari Bin Ayoub, Beseel al-Muttran, Istafan Bin Bessel, Mousa Ibn Khaled al-Turgman, Istath Hayroun Ibn Rabta, Todress al-Sankal, Gorges al-Ra'assi, Ayoub al-Rihawi, Yousef al-Nakel, Ibrahim Ibn al-Salt, Thabet al-Nakal, Abo Yousef al-Kateb, Youthana Ibn Bekhtushu al-Batriki, Yaheya Ibn al-Batrig Kayad al-Rahawi, Mansour Ibn Banas, Abdul Yasho'a Bin Behrez, Abo Othman sa'ad Bin Ya'agoub al-Dimashki, Abo Ishaq Ibrahim Bin Boko, Abo al-Hassan Ali Bin Ibrahim Bin Boks, Shershouia Bin Katrib, Mohamed bin Mousa al-Monajem, Ali Bin Yahaya - known as Ibn al-Monajem, Thadours al-Athqouf, Mohamed Ibn Mousa Bin Abdula Malik Issa Ibn Yonis al-Katib al-Hasseb, al-Fayoum, Ahmad Bin Mohamed - known as Ibn al-Modaber al-Kateb, Ibrahim Bin Mohamed Bin Mousa al-Katib, Abdulla Ibn Ishaq and Mohamed Ibn Abdula al-Zayat."<sup>(115)</sup>

After this development in the field of translations, the age of translation paved the way for the age of composition and innovations in the latter half of the ninth and tenth centuries from the most creative period in the history of Arabic civilization. It is called the period of the greatest glory of Arabic medicine and writers show an independence from their masters. We can also observe in their writings a spirit of observation and a tendency to develop new lines in all fields especially in the field of therapeutics. Ibn Abi Usaybe'ah in Chapter 10 of his book: Uyun al Anba Fi Tabakat al-Ataba under the heading "the classes of Iraq's physicians" mentioned the following physicians during this period:



Ibn Abi Usaybe'ah started with: al-Kindi, one of the Arabic philosophers and one of the King's own and gave the full name of this philosopher: Al-Kindi Abo Yusef ya'akoub Ibn Ishaq Bin al-Sabah Bin Omran Bin Isma'al Bin Mohamed Bin Omran Bin al-Ashaith Bin Kaise Bin Moadi Karb Bin Moa'weyah Bin Ojebila Bin Adi Bin Rabi'ah Ibn Ma'aweh Bin al-Harth al-Akbar Bin Maaweh Bin Thour Bin Marte'a. Bin Kenday Bin Afair Bin Adi Bin al-Harth Bin Mora Bin Add Bin Zaid Bin Yashjub Bin Arab Bin zayid Bin Kahlan Ibn Saba Bin Yaa'roub Bin Kahtan. His father, Ishaq Bin al-Sabah was the prince of Kufa al-Mahdi and al-Rashid. Also Ibn Abi Usaybe'ah mentioned the following physicians: Ahmad Bin al-Tayeb al-Sourkhose, Abo al-Hasan Thabet Bin Kura al-Harani, Abo Sa'ad Sanan Bin Thabet Bin Kura Abo al-Hassan Bin Thabet Bin Sanan Bin Thabet Bin Kurah, Abo Ishaq Ibrahim Bin Zahroun al-Harani, Abo al-Hassal al-Harrani, Ibn Wasef al-Sabe'a, Ghaleb, the physician of al-Mou'atated, Abo othman Sa'ad Bin Ghaleb, Abdol Sa'ad Bin Boushr Bin Abdous, Daylam, Dawoud Bin Daylami Abo Othman Sa'ad Bin Ya'agoub al-Dimashki, al-Ruki, Kouweyri, Ibn Kurneb, Abo Yaheya al-Mrozi, Maja Bin Younan, Yaheya Bin Adi, Abo Ali Zareh, Mousa Bin Sayar, Ali Bin al-Abas al-Magosi, Issa (the physician of al-Taher, Danyal al-Motatabeb, Ishaq Bin Sheleta, Abo al-Husayen Omran Bin al-Dahli, Fenon al-Mothabeb, Abo al-Husayen Bin Kashkereya, Abo Ya'goub al-Ahwazi, Nazef al-Kous al-Romi, Abo sa'ad al-Yamami, Abo al-Faraj Yaheya Bin sa'ad Bin Yaheya, Abo al-Faraj Bin al-Tayeb, Ibn Butlan, al-Fadel Bin Jaber al-Takreti, Abo Nasek Bin Jaber al-Takreti, Ibn Dinar, Ibrahim Bin Boks, Ali, Ibn Ibrahim Bin Boks, Kusta Bin Louka al-Balabaki, Maskaweh, Ahmed Bin al-Ashaith, Mohamed Bin Thawah al-Mouseli, Ahmed bin Mohamed al-Baladi, Ibn Kawsen, Ali Ibn Issa, Kayal Issa Bin al<sup>3</sup>Kahal, Ibn Shabel al-Baghdadi, Ibn Bekhteweh, Abo al-Ala'a Sa'ad Bin al-Hassan, Zahid al-Alama, al-Mokabli, al-Nayley, Ishaq Bin al-Rahawi, Sa'ad Bin Habeb al-Lah, Ibn Jezelah, Abo al-Khatatab, Ibn al-Wasti, Abo Jaher, Bin al-Burkhashi, Amin al-Dawheh Bin al-Telmez Abo al-Faraj Yaheya Bin al-Telmez, Abo



al-Faraj Yaheya Bin al-Telmez, Abo al-Barakat Habeb al-Lah Bin Ali Bin Mulka, al-Bad'a al-Estrabi, Abo al-Kasem Habeb al-Lah Bin al-Fadel, al-Antari, Abo al-Khanem Habeb al-Hah Bin Ali Bin al-Husayien Bin Asfadi, Ali Bin Hebat Bin Athradi, Sa'ad Bin Athradi, Abo Ali al-Hassan Bin Ali Bin Athradi, Jamal al-Din Ali Bin Athradi, Fakher al-Din al-Mardeni, Abo Naser Bin al-Masehi, Abo al-Faraj, Abo al-Husayen sa'ad Bin Habeb al-Lah. Bin al-Moamel, Ibn al-Maresta Neyan, Ibn Sader, Mohtathab al-Din Bin Habel, Shames al-Din Bin Habel and Kamal al-Din Bin Yonis."<sup>(116)</sup>

This intense activity in translation, combined with the application of the principles transmitted by the Greeks and supplemented by medical traditions derived from Persia and India, was not slow to bear fruit. The art of medicine became more extensive, precious manuscripts were distributed over the vast territories of the Muslim Empire and commentaries were made in all the important centres, in Spain, North Africa, Egypt and Syria. Soon there appeared Arabic physicians who lost no time in attaining the fame of their predecessors. Hospitals were built, as we mentioned earlier, and celebrated physicians appointed by the Caliphs to direct them. The government even had to supervise the control of medical practice, a function which was exercised under the "Hisba", a handbook of hisba, drawn up with the object enabling officials to fulfil their special chapters: pharmacists and druggists, perfumers, makers of syrup, veterinary surgeons and orthopaedists. These books outlined the questions which should be put to these different experts, and the instruments which they ought to possess.

There were by now many competent physicians, perhaps the greatest clinical doctor of Islam was without question Abu Baker al-Ra<sup>h</sup> / <sup>h</sup> .  
(d. 313 - 925).

Ibn Abi Usaybe'ah mentioned a great number of those physicians in his book Uyun al-Anba Fi Tabakat al-Ataba under the heading "The physicians who appeared on Belad al-Ajam (Persia)."

Although we are going to mention the names of all those physicians, space allows to give detailed information of only the most skilled prominent among them and we will talk first about the greatest doctor Abu Bakr al-Rhazi (al-Rhazes).

#### Abu Baker al-Rhazes

He is the best known writer, whose works were studied through centuries by physicians all over the world and cited as an indisputable authority. He is Abu Baker Mohamed Ibn Zakareya called al-Rhazi.

Ibn Abi Usaybe'ah gave a lengthy detail about him: "He was born in Ray (old city south east of Tehran) in Persia, it was ruled by the Arabs during the Caliphate of Omar in 639. Al-Razes travelled to Baghdad and stayed there. He showed a great interest in art and poetry during his childhood and taught medicine when he was young. His teacher in this profession was Ali Bin Rebin al-Tabari. He studied medicine in Baghdad when he entered al-Odedi Bemerstan and it is said that he was one of the men who agreed to build al-Odedi Bemerstan and the ruler of Baghdad asked al-Rhazes's advice about the proper place to build this Bemerstan. For this purpose, al-Rhazes asked some of his students to put a piece of meat in each part of both sides of Baghdad, then he considered the best place to establish the Bemerstan where the piece of meat was still unspoilt.

Ibn Abi Usaybe'ah said that Kahal al-Din Abo al-Kasim Bin Abi Tabeb al-Baghdadi told him that the ruler's aim of building the Bemerstan was to house the best physicians. He ordered

to be put before him a list of top physicians who were working in Iraq. There were more than one hundred. He chose fifty physicians out of the hundred according to qualifications, and experience. Al-Rhazes was one of them. From this figure, the ruler, selected ten physicians and also al-Rhazes was one of them. From the last figure he selected three physicians, and again, al-Rhazes was among the three physicians. This he distinguished between these three and he found that al-Rhazes was the best, therefore, he appointed him head of the Bermestan. Al-Rhazes wrote a book about this hospital and gave a description and situation of the patients at that time.

The judge, Sa'ed said in his book al-Taeref Fi Tabakat al-Omam (Identification of the classes of nations) - that al-Rhazes did not study in depth the religious sciences, and he did not understand the final aims of religion; for this he was confused and held wrong views, and criticised a number of people unfairly.

Mohamed Bin Ishaq al-Nadim - known as Abi al-Faraj Bin Abi Yaquob said in his book al-Fahrist that al-Rhazes travelled from one country to another. He was friendly with Mansour Bin Isma'el and he wrote a book and dedicated it to him. He said when one asked al-Hassan al-Warak about al-Rhazes he answered: He was a Shekh with a big hand, his students sat in front of him in the first row and next to them sat the students of al-Rhazes. If a patient came he asked the first row of students, if they were unable to give an answer, the students of al-Rhazes would deal with the case, and if they did not know the answer, al-Rhazes himself dealt with it. He added that al-Rhazes was very generous, helpful and took care of people. He would often grant them a sum of money and treated them free of charge. He was always reading, writing and re-writing. He had poor eyesight and became blind at the end of his age. But we did not agree at all that the reason for this was as a result of "a hit on the head by the



Caliph al-Mansour after he attempted to perform certain experiments in alchemy before him, which were not successful" and we believed that he lost his sight because "he ate too many beans"<sup>(117)</sup> and because he worked very hard .

Al-Rhazes took a great interest in chemistry and Ibn Abi Usaybe'ah told us that : It is said that al-Rhazes prepared alcohol from fermented sugars, and is said to have invented a scale for measuring the specific gravity of fluid.

Rhazes' fame in the West became immense and his authority remained unquestioned till the seventeenth Century and Ghada Karmi mentioned that he "dedicated his life to medicine, never married (and in fact wrote a book on physical ailments about the evils of love and how it leads men astray)."<sup>(118)</sup>

Al-Rhazes was a firm believer in experimental medicine and the beneficial use of previously tested medical plants and other drugs. He called for high professional standards of practitioners and urged physicians to continue their education by studying medical treatises, attending lectures or obtaining training at hospitals. He led the fight against quacks and charlatans in the health field, called for consultation and mutual trust between skilled physicians and favoured family doctor practice. He warned patients that changing from doctor to doctor was unhealthy, unwealthy and unwise. He promoted - as mentioned by S. Hammareh - psychotherapy, pointing out that hopeful comments from doctors encouraged patients, made them feel better, and promoted speedier recovery. He advised his colleagues to allow their patients to eat the kinds of food they preferred - a practice recommended in modern medicine - but he at the same time stressed the importance of a balanced diet for the preservation or restoration of good health. He admonished practitioners to avoid extravagance and to dress, eat and live simply.

Although al-Rhazes was familiar with the whole field of Greek science as his great medical work al-Hawi (continens in Latin) (Fig no. 5 ) and al-Mansuri (Ad almansorem) prove, he challenged tradition in all fields showing awareness of what he was doing. He spent many years collecting and preparing the data for his most comprehensive book al-Hawi Fi al-Tibe (continens) but he died before he was able to complete this excellent medical encyclopedia.

In al-Hawi al-Rhazes quotes the medical opinions of various authors and compares their interpretations with his own. The encyclopedia is enormous - so huge, in fact, that al-Majusi (died 994) knew only two complete copies. It was translated into Latin by Faraj Bin Salim in 1279 and under the title Continens, it was the first medical book of its size to be printed in the West in 1486.

In his book, Dubitaciones in Galenum, he expressly quoted the criticisms which earlier scholars, including Galen himself, had made of their predecessors. Being a free thinker and an independent spirit al-Rhazes did not permit his great admiration of the Greek masters to dull his critical judgement. He attached Hipporcate's Aphorisms, for example, as disorganized, ambiguous, and unnecessarily brief. To correct these deficiencies, he wrote al-Murshid, which provides a better treatment of the topics on general medicine covered in the Aphorismo. One of the most celebrated of these states: "When Galen and Aristotle agree on a subject, the decision of physicians is easy but when their opinions differ, it is very difficult to bring them into agreement."

The great fame rests on al-Rhazes's supreme abilities as a clinician and his description of clinical signs of many illnesses were unsurpassed. The most important book of al-Rhazes from the point of view of the medical historian, is the work on smallpox, which was called Liber de pestitientia and was first published in 1408, Venice by Vallah Nirephori Logica collection.

In this famous and much discussed book ; he for the first time correctly defined the difference between smallpox and measles. "He recorded exact case histories which have become known partly through the researches of Meyerhof."<sup>(119)</sup> The book Liber de pestilentia can be regarded as certainly and completely original. It is founded on the experiences and personal observations of a physician who knew how to examine the patients completely and to draw from his observations the conclusions of a great intellect. This is the first accurate study as mentioned by the great medical historian Castiglioni - that we possess of the infectious diseases. Al-Rhazes, distinguished two kinds: smallpox and measles. Both forms are described in detail according to their sign and symptoms, with indications for different diagnosis.

We quote the most interesting passage of this famous description of smallpox: "As to any physician who says that the excellent Galen has made no mention of the smallpox, and was entirely ignorant of this disease, surely he must be one of those who have either never read his works at all, or who has passed over them very cursorily.....If, however, anyone says that Galen has not mentioned any peculiar and satisfactory mode of treatment for this disease, nor any complete cause, he is certainly correct, for, unless he had done so in some of his works which have not been published in Arabic, he has had no further mention of it than we have just cited."<sup>(120)</sup> (ch.1.)....I am now to mention the seasons of the year in which the smallpox is most prevalent, which are, the latter end of the autumn, and the beginning of spring,<sup>(121)</sup> (ch.11). The eruption of the smallpox is preceded by a continued fever, pain in the back, itching in the nose, and terror in sleep. These are the more peculiar symptoms of its approach, especially a pain in the back, with fever, then also a pricking which the patient feels all over his body, a fullness of the face, which at times goes and comes, an inflamed colour, and vehement redness in both the cheeks, a redness of both the eyes, a heaviness of the whole body, great uneasiness, the symptoms:



As to the white pustules which are very small, close to each other, hard, warty and containing no fluid, they are of a bad kind, and their badness is in proportion to the degree of difficulty in their ripening. And if the patient be not relieved upon their eruption, but his condition continues unfavourable after it is finished, it is a mortal sign. And as to those which are of a greenish, or violet, or black colour, they are all of a bad and fatal kind, and when, besides, a swooning and palpitation of the heart comes on, they are worse and still more fatal. And when the fever increases further the apperance of the pustules, it is a bad sign. (123)

The other important works of al-Rhazes is the Liber medicinalis ad Almansorem, dedicated to the governor of Ghorasan, al-Mansour Ibn Ishaq, it contains a compend of ten treatises on the most important medicine. Ibn Abi Usaybe'ah gave the subject of each treatis "the first intorudction to medicine and description of the parts of the human body, the second is knowing the features of the body, the third on the effect of food and drugs and the fourth on the health care, the fifth on the beauty and making-up, the sixth on travel, the seventh on Orthopedics, the eight on poisons, the ninth on the diseasis of head to feet, and the tenth on fevers." (124) Of these books, the worthiest of note are the seventh on general surgery and the ninth, on the treatment of all diseases and the latter called in Latin Nonus Almansoris. "It was often read and commented upon in the Western Universities and was frequently printed separately or with the Micnotechne of Galen." (125)

In physiognomics, al-Rhazes "went his own way". (126)

Interesting also are certain Aphorisms of Rhazes that are mentioned by Ibn Abi Usaybe'ah. (127)

Out of al-Rhazes's sayings are the following:

"The truth in medicine is a goal that one cannot attain, and everything that is written in books is worth much less than the experience of physicians who reflect and reason."

"The patient must see one doctor only."

"When the doctor chooses the experiment without comparison and without reading the necessary books, he will fail."

"If the physician is able to cure with the food and without drugs he will reach happiness."

"If the patient goes to a number of physicians for the purpose of treatment, it may be that he will be faced with the fault of each one."

A prolific author al-Rhazes wrote on philosophy, logic, astronomy and physical sciences, but he is best remembered for his writings on the life sciences, indeed as our medical historian S. Hammarneh said, his profound erudition was matched by unusual capacity for understanding human nature. His writing summed up all the theoretical and empirical medical knowledge of his time, augmented by his own experiences and observations.

Late in life, al-Rhazes went blind. Ibn Abi Usaybe'ah told us that "when an oculist suggested remedial eye surgery, al-Rhazes replied, "I have seen enough of this old world, and I do not cherish the idea of suffering the ordeal of an operation for the hope of seeing more of it." Shortly thereafter, al-Rhaze died in 925.

Ibn Sina (Avicenna) (980 - 1037)

The ninth, tenth and eleventh Centuries are the Golden Age of Arabic medicine. Many famous names were yielded in this context who studied the previous civilizations and were educated in the widest sense, unlike the physicians of today whose education has narrowed down exclusively to medicine. The most famous physician of this period was Ibn Sina (980 - 1037).

He is Abo Abi al-Hussein Ibn Abdallah Ibn Sina

He was a child prodigy who completed his education in philosophy, juridprudence (al-Figh), mechanics as mentioned by al-Ahmad. (128.) and medicine by the age of 18. The earlier philosophers of the thirteenth Century. A man of profound and universal learning, he read the metaphysics of Aristotle forty times in an effort to overcome a difficulty, eventually dispelled by chancing on the treatise of al-Farabi's.

To give some details about Ibn Sina the best way - as Ibn Abi Usaybe'ah told us - is to read his autobiography which is preserved and often been translated.

Ibn Sina said, "my father was a man from Balkh of Khurastan. Although Russians insisted that he was born in the village of Efshan near the city of Bukharah in the republic of Ozekestan USSR." (129) We believe that he was born in Persia and this fact is assured by Professor S.H. Naser and mentioned in the Encyclopedia Britanica and stated by most famous historians and in particular Ibn Abi Usaybe'ah. He moved to Bokhara of Auzbekestan during the rule of Nouh Ibn Mansour. He got married and stayed in Kharethen where I was born. Then my brother and I moved to Bukhara. I asked for a teacher to teach me the Quaran and literature. When I was ten, I learnt the whole Quaran and a part of literature. This made me well-known and an astonishing



person. My father was one who believed in al-Esmaeleyeen and learnt a lot from him. My brother was also a believer of al-Esmaeleyeen. When they were discussing their belief I did not agree with them. My father and brother were discussing philosophy, engineering and Indian mathematics. They advised me to go to the vegetable seller to learn Indian mathematics. Then Abo Obehda al-Naely, the philosopher, came to Bukhara, his father agreed to let him stay with us at home to teach me. Before he left us I was able to understand juridprudence and for this purpose I visited Esmael al-Zahid. I was the best of his students and I was able to write a book on this subject."<sup>(130)</sup>

Then Ibn Sina studied geometry and astronomy, he dedicated himself to Aristotelian philosophy and the medicine. Avicenna occupied himself with logic, which he treated as a method of philosophic thinking rather than as a part of philosophy itself. He divided philosophy into six departments, three -ethics, economics and politics - "practical" in nature, and three physics, mathematics, and theology - existing both as pure and applied sciences. Ibn Abi Usaybe'ah told us how Ibn Sina studied medicine, the story which is mentioned by Ibn Sina himself:

"I wished to study medicine so I started reading the medical books. I found medicine was not difficult to study, therefore, I made very good progress in a very short time. This progress enabled me to be taught by the top doctor and I began taking care of some patients. I discovered a great number of cases from this experience. At the same time I was reading Juridprudence and teaching the subject as well at the age of sixteen."<sup>(131)</sup>

The young physician, Ibn Sina, was recognized by all as a person with a marvellous memory and a profound and extensive knowledge of all medical works of his time. All these characteristics were due to his great efforts, hard work and intelligence. About his excellent work ability he told us the following:

" When I return home at night, I put the candle before me and start reading and writing, When I feel tired I have a drink to regain my activity and continue reading. When I went to bed even for a short period, I dream and all my dreams were about the difficulties which I found in my studies. I solved a number of cases during my sleep. This made me familiar with all kind of science."<sup>(132)</sup>

Ibn Sina had a stormy life which led him to suffer and caused his death in his fifties.

Ibn Abi Usaybe'ah gave some details of Ibn Sina's situation before his death.

" The Shekh Ibn Sina was very strong, and his greatest power was his ability to make love. He was a sex maniac and this affected his mood. It happened one day when he was accompanying al-Dawlah, the ruler, during the war near al-Karakh, Ibn Sina felt very tired and had a pain in his colon. To enable him to stay with the ruler and help him win the war, he injected himself eight times to relief his pains, but it had no effect and his intestines hurt. Although his condition became worse, and he got another disease, he continued his way with the ruler, injecting himself from time to time with Bezer al-Kurfus (a kind of drug with the same effects as Valum) along with other drugs. He asked the advice of other physicians, but there was no improvement. His caretaker tried one day to give him Hashesh to kill him and steal his money. They took him to Asfahan, a city in Iran. There his health improved but he did not take care of himself properly. He went with the ruler to Hamadan, On his way he ignored his treatment and said that God would cure him. He lived for only a number of days and died at the age of 53. This is the last thing mentioned about the life of Ibn Sina, the Shekh, al-Raeas (the president). His tomb was under the arch near the Riwaq of Hamdan. It is said that his body was moved to Asfahan and buried there in a place near Korkenbad door."<sup>(133)</sup>

Ibn Sina had a stormy life as explained before. He gathered personal experience which led him to write copiously and on many subjects, but the most important composition was without any doubt the Canon Al-Qanun Fi Tib (Fig. No. 6 ) which was an encyclopedia of medicine that summarised all the medical theories up to his own day and set them out systematically and lucidly. This encyclopedic work embodies the contribution of Greek and Arabic systems, with the addition of Ibn Sina's personal experience. It deals with disease and classification, description and causes, with therapeutics and the classification of simple and compound medicine, with hygiene, the functions of parts of the body and with many other topics. "It was translated for the first time by Gerard of Cremona in 1114. He legislated in medical matters with an absolute authority as is shown in the title that he selected, the Canon, with the idea that it should constitute an immutable law. The clarity of the clinical historians, the accuracy of the therapeutic indications, constructed logically with full diagnosis and exaggerations, and eloquence of his forcible style were sufficient to confer on this book up to the end of the seventeenth Century an almost indisputable authority in the mind of the physicians of all countries. It has led to the publication of innumerable commentaries."<sup>(134)</sup>

This work in Latin translation was the bible of medical students and essential part of the syllabus of the Western Universities until the 18th Century. It is worthwhile to give some more explanation on this valuable book.

The Canon of medicine of Ibn Sina is divided into five large books. The first concerns itself essentially with theoretical medicine, the second with simple medicine, and the third with diseases and their treatment. He examines all diseases according to their locality. The fourth book treats of general diseases (that is those which attack different parts of the body at once."



The fifth is devoted to the composition and preparation of drugs. Each book is divided into treatises (Fen). The second treatise (Fen) treats general diseases and especially their symptoms, with lengthy observations and detailed precepts about the pulse and the examination of the urine. In the third (Fen), the author describes general therapeutics and especially purges, bleeding and so on. These two fin remained very important standard medical treatment up to the 17th Century all over the world. Therefore, it is unfair at all to see some historian saying that "his independence as a medical author is considerably less than was once believed."<sup>(134a)</sup>

It is true, that some of his writings are dependant upon the previous physicians but it is unjust to diminish his personal observations and comments and his significant additional writings which gained as a result of his efforts. He was a brilliant teacher and doctor. He was always eager for practical knowledge of the illness he had studied. Wherever he travelled, he set up free clinics that would give him opportunities to check his book learning against first hand information. Here he could observe cases that otherwise would have been inaccessible to him. He carefully recorded his observations and then followed through with a systematic examination of the possible cause and treatments of maladies under consideration.

The first complete edition of the Canon was printed at Milan in 1473. In 1523 the Gunta Press published the works of Ibn Sina with comments by the most illustrious Italian masters of the period. And the Lantin translator of the Canon said, "it is the first of its kind to form the subject of a special study."<sup>(134b)</sup>

It was mentioned recently by Tass News that "some scholars from Ozlekestan found a manuscripts of Canon al-Tib of Ibn Sina dated the end of the 13 th Century and this manuscript is considered the most precious of precious manuscripts as copied by one man only."<sup>(134c)</sup>

The second book contained a great amount of new information on drugs which were unknown to the Greeks.

The third book by Ibn Sina is devoted to pathology. This book includes a full description of symptoms of many diseases. Also it contains information about venereal diseases and it is no wonder that Ibn Sina devoted part of his book to venereal diseases as he was a sex maniac as mentioned before.

To give an idea of the way in which the diagnostic part is treated, we quote the passage describing the symptoms of pleurisy:

" The sign of simple pleurisy are clear. The fever is continuous, there is a sharp pain beneath the ribs which sometimes is only felt when the patient breathes strongly.... the third sign is a difficulty and frequency of respiration, the fourth sign is dry and then is accompanied by sputum, in this case it signifies it is also an infection of the lung"<sup>(135)</sup>

The fourth book by Ibn Sina is on a number of epidemic diseases such as smallpox and measles. The first chapter of it is on the treatment of fever in its various forms.

The fifth Fen is a treatise on surgery, in which fractures and dislocations are well described. The seventh Fen is about the preparation of drugs and these drugs were accepted as a textbook up to the time of the Renaissance.

Ibn Abi Usaybe'ah mentioned other books of Ibn Sina on many subjects, some of these books are the following:

al-Lawaheq (appendixes) an explanation of al-Shafa, al-Shafa (the book of healing) contained an explanation of the nature of

and mechanism of science, this book was written by Ibn Sina in Hamadan in twenty days only. It is the longest of his writings still in existence and perhaps the longest treatise on this subject ever written by any one man, al-Hasel Wal Mahsoul in twenty volumes, he wrote it during his early life, and al-Adweyah al-Kalbeyah (the drugs of heart), and other books. (136)

He also wrote a number of essays on the power of nature, the happiness, the fate, the classification of jurisprudence, the endless, introduction to music, chemistry and astronomy. (137)

Relating the events of his own life Ibn Sina was not hindered by false modesty. "People wondered at my attainments," he tells us, and thought he wrote with pride and considerable arrogance, the statement is true. He was we mentioned "The Master" - philosopher, scientist, mathematician, the most illustrious physician of the 10th and 11th Century.

He was determined to know all there was to know, he next examined the philosophy of Greeks, and devised his own integrated method of study, utilizing theory, experiment, critique and research. He first applied this systematic approach - with its extensive and its basic and end of question and proof - to his early medical career and to his writings.

During the time of Ibn Sina, the Arabic medicine was a highly developed profession, comparable in many ways with medical practice today: Arab doctors had to comply with licensing regulations in most areas. City hospitals were divided into wards, under the supervision of doctors and lay administration. Travelling physicians brought medical attention to people outside the urban centre. And Arab laboratories evaporated, filtered, crystallized, and distilled raw drugs, sometimes mixing them with syrup, gums, and fruit rinds to improve their taste.



In the Western World, Avicenna's influence was felt, though no distinct school of "Latin Avicennism" as referred by S Naser can be discerned, as it can with Averroes. The translations of the work of Ibn Sina spread his thought far and wide in the West. His thought, blended with that of St. Augustine, the Christian philosopher and theologian, was a basic ingredient in the thought of many of the medieval scholastics, especially in the Franciscan Schools. The Canon became the medical authority for several centuries and Ibn Sina enjoyed an undisputed place of honour equalled only by the early Greek physicians, Hippocrates and Galen. In the East his dominating influence in medicine, philosophy and theology has lasted over the ages and is still alive within the circles of Islamic thought.

With the death of Ibn Sina Bin Hamadan in 1032 "despite his attempts to treat himself from colic and from exhaustion", <sup>(137a)</sup> the centre of Arabian philosophy and medicine shifted from the east to Spain where a hundred and fifty years later at Cordova, it produced a number of great physicians as we explain next, but first we must mention the name of the other physicians other than al-Rhazes and Ibn Sina as stated by Ibn Abi Usaybe'ah. They are the following:

"Teydros, Berzeweh, Rib al-Taberi, Ibn Ribal-Tabiri, Abo al-Hasson Ahmad Bin Mohaned, al-Taberi, Abo Suleymun al-Sejestani, Abo al-Khayer al-Hassan Bin Touh al-Kamari, Abo Sahel al-Nasri, al-Elaki, Ibn Mendeweh al-AsFahsri, Ibn Abi Sadiq, Taher Ibn Ibrahim al-Sejari, Ibn Khatib al-Raj, Quteb al-Din Ibrahim Bin Ali Mohamed al-Selmi, al-Samanel Ibn Yehaya Bin Abbas. al-Makhrebi, Beder al-Din Mohamed Ibn Behram Bin Mohamed al-Kaylani al-Semarkandi, Najeb al-Din, Abo Hamid Mohamed bin Ali Bin Omar al-Semerkendi and al-Sharef Sharaf al-Din al-Esmaeli."<sup>(138)</sup>

Ibn Abi Usaybe'ah also wrote a very small chapter only of 3 pages under the heading "The physicians who were from India (chapter 12).

He mentioned the following physicians:

"Kengkah al-Hendi, Sanghel, Shanaq, Judor, Menkah al-Hendi and Saleh Bin Balah."<sup>(139)</sup>

### B.2.3. ARABIC MEDICINE IN SPAIN

The Golden Age of Ummayyad dynasty in Andalusia reached its peak during the tenth century, both politically and intellectually. Under the rule of Abdal Rahman an-Nasir, who reigned from 912 to 961, and his son al-Hakam II, who reigned from 961 to 976, this dynasty established sovereignty over the largest portion of the Iberian Peninsula. Once military and naval superiority had been achieved, education and scholarship were encouraged and patronage, and many eminent physicians began to appear on the scene, adding by means of their professional efforts and writings "lustre and substance to the progress of Arabic medicine."<sup>(139a)</sup> The capital Cordova (punic name *Cartago Nova*) contained 200,000 houses and c 1,000,000 inhabitants, 600 inns, 900 baths, 600 mosques, each with its free attached school, 17 universities and 70 public libraries. There was hardly a boy or girl over twelve who could not read and write and it became the most beautiful and cultural city in Europe."<sup>(139b)</sup> And Spain became "the Andalusian capital, Cordova, was converted"<sup>(140)</sup> into a great metropolis, where educational and religious institutions, as well as trade and industry, flourished. At the time it was unrivalled in Europe, and in medical achievements it was comparable with Constantinople.

Al-Nasir built a new royal city on the slopes of al-Arus, a mountain six miles northwest of crowded Cordova. He named the new capital al-Zahra, after his favourite wife, Zahra (flower) and it became a monument to the tenth Century of Muslim architecture

and ingenuity and quickly won the admiration of the entire world. It contained magnificent royal palaces, residential quarters, a mosque with schools and gardens.

Such civilization could not fail to produce physicians and philosophers comparable to those of the East. Rhazes and Ibn Sina were comparable to Abual-Gasim, Ibn Zuher, and Averroes.

Ibn Abi Usaybe'ah wrote a special chapter on his book - Uyun al-Anba Fi tabakat al-Ataba. It is the 13th chapter under the heading "Classes of physicians who were in Belad al-Maghreb (Spain) and stayed there". In the following pages we will mention the well known physicians whom Spain produced.

#### Ishaq Ibn Omran

He is a well known physician from Baghdad, he entered Africa during the rule of Zeyad Allah Bin al-Kalb al-Tamemi. The ruler gave him an offer in order to go to Spain, transportation to bring him from Baghdad and one thousand Dinars, and a letter signed by the ruler stating that the ruler agreed that Ishaq had the right to go back home as soon as he wanted to do so. By presenting Ishaq Ibn Omran, the medicine and philosophy appeared in Spain. He was intelligent as a physician and distinguished in compounded drugs and differential diagnosis. He stayed in Kayrawan (a city in Tunisia), well known by its mosque and university, it was the capital of Africa. He wrote in Kayrawan a number of books out of them his well known books are Nezhat al-Nafes, al-Fasd and al-Nabed. (141)

Ibn Abi Usaybe'ah mentioned an interesting story about what happened between him and the ruler Zeyad al-Dawalam Ibn al-Aghlab when Ishaq asked his permission to return to Baghdad according to the Contract:



"One day, the ruler Ibn al-Ashab, felt uncomfortable and one of his men brought him a yougart to drink. Ishaq advised the ruler not to drink the yougart as he was not sure whether it was fresh. But the ruler disregarded his advice and drank it on the advice of another physician. During the night he had severe pain. He called Ishaq and asked his advice again. Ishaq came and told him, "it is your fault that you did not follow my advice" and refused to give any treatment till they paid him one thousand Dirham. After he received the sum, he asked for some ice to be brought to him and asked the ruler to eat all the ice until his stomach was full. Then he forced him to vomit. After vomiting the ruler felt better, Ishaq then told him;

"You know , if the yougart, continued to your intestines you would have died, but I prevented it with my treatment. " The ruler was unfaithful indeed, because he asked his officials to stop paying Ishaq all his payments. Ishaq, therefore left for the market place of the city of al-Kayrawan, with him he carried a chair, and ink bottle, and some papers. He spent his days writing a subscription for people. Some people informed the ruler about Ishaq saying:"You gave Ashaq the chance to get a lot of money". The ruler approved that he was so foolish and he ordered Ishaq to be sent to prison and he hurt him by hard labour. Ishaq was brave enough and told the ruler of his foolish attitude. When the ruler came to the prison Ishaq said:

"I swear in the name of God that you "the so called" Master of the Arabs, are not so. I am telling you that you will never be in good condition, and you will lose your mind sooner or later, as I gave you a long time ago a drug that will damage your mind as a result of your behaviour with me."

Ibn Abi Usaybe'ah mentioned at the end of this story that the ruler spent his life as a crazy man. He lost his mind and died as a result of this condition.<sup>(142)</sup> Ishaq wrote a number of books and essays on drugs, the Colon, urine, and on drinks especially wine.

### Ishaq Ibn Suleyman al-Israeli

He was from Egypt and came to Kayrawan of Tunisia, a contemporary of Rhazes, he was the greatest physician of the Arabic civilization in the West. He was especially eminent as an oculist. After the fall of the Aglabitic ruler of al-Kayrawan, he entered the service of the Fatimid, al-Mahdi (908 - 934). His writings De elementis, De Febribus (looked upon by him as his chief work), and De urinea as classics and were translated into Latin in the eleventh century by Constantinus Africanus. These works were printed under the title Opera Ommia Isaci (Lyon 1515), and were in widespread use throughout Christendom. A book by Ishaq called "the Gukde of physicians, lost in Arabic but extant in Hebrew and translated into Italian by Soave (Giornale Veneto di Scienze Mediche 1861), contains many important maxims about the behaviour of the physician in the presence of the patient. His treatise De particularibus dietis (Padu, 1487) is supposed to be the first separately printed work on the subject of diet.

Ibn Abi Usaybe'ah mentioned that Ishaq al-Esraeli lived more than one hundred years, but we doubt about this completely as a number of references mentioned that his age was not more than sixty. But the true thing as mentioned by Ibn Usaybe'ah is that he stayed all his life as a bachlor. Therefore he had no children. One day, a friend asked Ishaq, " would you be pleased if you had a son?" "Not at all, I have written a book on fever and my book will be a method which will make my name live forever."<sup>(143)</sup>

Abo al-Qasim Khalaf Bin Abbas al-Zahrawi (al-Bucasis 4632-1013)

He is the most distinguished surgeon of the Arabic civilization. Abo al-Qasim Khalaf Bin Abbas al-Zahrawi was known in Latin as Albucasis or Abulcasis. He was born in the royal city, al-Zahra sometime between 936 and 940, where he studied, taught and practiced medicine and surgery until shortly before his death in 1013, two years after the sacking of his beloved country.

He was a contemporary of Ibn Sina, the surgeon Abo al-Qasim al-Zahrawi lived in Spain.

Most extant manuscripts give his father's name as "Abbas" and some contain his other nickname, al-Ansari, which suggests a linkage with the ancient Arabian tribes called Al-Ansari, the supporters of Mohamed at the sacred Muslim city of Median or Yathrib as ti was known earlier.

He was chiefly remembered for his book on surgery. This is mainly due to the fact that western scholars chose to translate only his surgical book al-Tasrif li-Man, Ajaz an-Ta'alif (aid to the one unequal to the large treatse).

He was skilled in the use of simple compound remedies and thus sometimes described as "the pharmacist - surgeon". He wrote the famous manual on surgery called al-Tasrif as an encyclopadic work divided into three parts, although it also includes sections on the preparation and dosage of drugs. The celebrated section, on surgery "are illustrated with drawings of about one hundred surgical instruments (Fig.no.7 ) There are descriptions of techniques for operating to relieve various conditions, including the amputation of limbs, the removal of foreign bodies. He invented many of the instruments in his book and in particular he devised a pair of forceps for use in midwifery. Al-Zahrawi, was no mean dentist either, it is said that he performed cosmetic operations to correct dental irregularities."<sup>(144)</sup>



There are interesting observations about disorders of teeth. He recommends the use of artificial teeth made of beef bone. He "presented in his masterpiece new ideas on wound cauterization and crushing stones in the bladder."<sup>(144a)</sup> He had made himself instruments, he had invented or modified including "an early form of forceps for use in childbirth."<sup>(144b)</sup> He included a number of observations and experience alike the observations and practices which are mentioned on surgical books and encyclopedias nowadays."<sup>(144c)</sup>

Al-Tasrif's voluminous compendium consisting of thirty treatise, is a compilation of the medical data that Abo al-Abbas accumulated during a career that spanned almost fifty years of training, teaching and practice. It is noticed that he had wide experience in treating accident victims and war casualties. He expressed his concern for the welfare of his students, whom he called "my children". He was ideal in his relationship with his patients, and took great care to win their trust and paid full attention for their cure and safety whether they were poor and lonely or rich and elite. He stressed the importance of good relationship among doctors and physicians. He also emphasized close observation of the individual cases and insisted on compliance with ethical norms and warned against dangerous and dubious practices that some physicians adopted for purpose of material gain.

His surgical treatise which in surgery held the same authority as did the Canon of Ibn Sina in medicine. He included "personal observation and statements that revealed to us not only an author who was familiar with the ancient text, but also a wise and skilled practitioner. It is also valuable in presenting a good account of the surgery of the period and in the numerous and invaluable illustration that it contains. It gives an excellent picture of the instruments used by the Arabian surgeon."<sup>(145)</sup>

His book acquired the most enormous reputation in the West, surgical teaching in France and Italy in the Medieval period was entirely based on his work. From al-Tasrif, all the great surgeons of the 14th Century drew valuable information, and regarded him as the greatest of ancient surgeons.

Especially interesting are the author's observations, in his introduction, on the reasons as to why surgery made but little progress among the Arabs. He attributed it to an inadequate study both of anatomy and the classic writers especially of Galen.

Some of his interesting observations concerned with arterial haemorrhage, he recommends the surgeon never to forget that the omnipotent God is watching his work and he, therefore, should never operate merely for the sake of gain. Also interesting are the indications for stones, for hernias, for the treatment of abdominal wounds. For injuries of the intestines, he recommends holding together the edge of the wounds and applying large cuts. He described Lithotomy with a special care, but also, the other operation in use at the time, such as trephining, amputations, the operations for fistula, goitre and dysembryonism.

For disorders of the bladder, he recommends the use of a silver catheter instead of the bronze catheter that had been used up to that time. Various sutures for wounds and particularly the double suture, are carefully described and all the instruments that the surgeon should use are specified in details. In the following is a sample of al-Zahrawi's statement on abscess of the uterus, proof that he is the most important Arabian writer:

"The uterus is liable to be affected with (1) cancer, (2) ulcers (3) small lumps (4) puritus (5) fistulae (6) fissures (7) warts (8) hot swellings i.e. abscesses.



'I (Abulcasis) will mention here only abscess that need incision with a scalpel. Examine first (the swelling), if you find it hot and it is pulsating, inflamed, and accompanied with fever and redness, do not be in a hurry to incise before ripening. (When ripe) and when these symptoms subside, then let the woman sit on a double seat let her rest on her bed, let her pull her two feet together to the lower part of abdomen, her thighs being apart, her arms under her knees. Tie her with a suitable tie. Let the midwife sit on the right side, use the vaginal speculum (which I have drawn). You must insert the speculum to the suitable depth of the vagina, do not insert it more, otherwise you will hurt the patient. If your speculum be longer than the vagina, apply pads over the vulva to prevent the instrument from going deeper. The spiral that moves in the speculum should be in the upper end. You hold the speculum your assistant turns round the spiral to open the cervix. When you see the abscess and touch it with the hand, and you find it soft and thin, you should incise it at its top with a broad scalpel. When pus is evacuated completely, insert in the wound a soft plug immersed in oil of roses or green oil to which some astringent has been added. Let the plug protrude from the incision in cervix. Apply wool around the cervix and on pubis soaked in infusion of mallow. After two or three days treat with the suitable ointment until it heals.

You may wash the uterus and wound by injecting water and honey to be followed by infusion of liquorice or aristolochia longa. Return to ointments afterwards.

If, however, you find that the abscess is deep into the uterus, do not approach it with the scalpel but treat it as I have mentioned in the Tagsim." (145a)

It is very surprising indeed that the Arabian historian Ibn Abi Usaybe'ah did not mention any information about our great



physician even he did not mention his name at all, although Ibn Abi Usaybe'ah mentioned from al-Zaher family a number of physicians and we are unable to find any reason to ignore or much better to miss this great surgeon

With the decline of the Caliphate, which was threatened internally by strife among the Arab dynasties, and externally by the growing power of Christianity, and the wars of the Orient and the Occident finished with the decline of the Empire. Eventually the Osman Turks by successful military invasion occupied a great part of the territories that had belonged to the Arab in the East. The school of Baghdad began to decline in the 12th Century, its most illustrious scholar moving to places where the rulers such as Saladin in Egypt still resisted the enemy, as Saladin was the founder of great hospitals and promoted the progress of medicine in every possible way.

In Spain, in spite of the wars that were prevalent, there occurred a period of great scientific progress which produced a number of famous physicians and philosophers. Al-Edrisi, Mohamed of the family of the Caliphs of Marocco, a scholarly ruler, who for political motives had to flee from Spain and find refuge at the court of the King of Sicily, wrote two important works on geography and also an excellent work on drugs. He, with the philosopher al-Kindi (d.c 873) wrote on medicine and pharmacology among many other subjects they were the best scientific writers. But the greatest of all and the most celebrated of them was Ibn Zuhr (L. Avenzoar) who was a contemporary of Ibn Rushd (L. Averroes). To complete this account of Arabic medicine in Spain, giving some explanation on each of the above scholars is very necessary

Ibn Zuher (L. Avenzoar) (1091 - 1162)

This is Abdal Malik Ibn Abi al-Ala, the teacher and the friend of Ibn Rushd. He is known as the "famous wise man". He opposed the philosophy of Ibn Sina and his speculations in medical matters. He was confident enough to express opinions contrary to Galen. He held empiricism who attached the greatest importance to practice. He is one of the first to discuss feeling in bones and the itch mite. He clearly expressed the tendency that was to be manifest throughout the Middle Ages and the Renaissance, namely, the separation of medicine and surgery, a condition that did great harm to the progress of science in the centuries that followed and gave rise to constant discussion and grave struggle between the medical and surgical castes and the lesser representatives of the profession such as the Barbers.

He left six medical books, the most valuable of which being al-Taysir Fi al-Mudawat Wal Tadber (simplification of therapeutics and diet).

Ibn Rushed (L. Averroes) (1126-1198)

Spain produced Ibn Rushed as great if not greater than a thinker and commentator of Aristotle. He, too, was a doctor by profession and his philosophy resembles that of Ibn Sina in many important respects. He was born in Cordova. Later became the Governor of Andalusia. He was a greater philosopher than physician. Therefore, he was called "prince of philosophy". His work (on Aristotle) was much studied in the early part of the Middle Ages and it was called by Dante the "grand commentary." Its influence in the Occident gave rise to that great intellectual movement known as Averroism, which is one of the most interesting phenomena in the history of medical and philosophical thought of the 14th Century.

His view was however, more Aristotelian and less new-Platonian than that of other Arabs as mentioned by Dr. Fuller (145a (1)) From him it was potentiality teaming with latent forms which actualised by the prime mover who is the first of the minds generated from God.

Last and lowest of the emanated minds in the human intellect, the mover of the lunar sphere. This, like Aristotle, active intellect is the height of universal and eternal truth, one and the same for all men in all times and places, which, as contemplative, reason, resides in each human individual independent of his other conscious operations. For Averroes, as for his master, the activity of contemplation is wholly impersonal, and, is so far as each one of us attains to it, he escapes from his particular personality and ceases to be himself. Moreover, as Aristotle, also thought, it is the only operation of human consciousness that is not supported by the body and that survives its dissolution. All, then, that is individual and personal in us is destroyed by death. The impersonal intellect in us alone remains undistinguished. There is no such thing as personal immortality.

Doctrines like the eternity of the Universe, the emanation of the spheres, and the destruction and death of the individual soul were as heretical in Islamic and in Christian eyes. Averroes knew it and sought to defend himself by a method not unlike the one used later by free thinkers to avoid condemnation. There are, he said, two kinds of degrees of truth, one is the philosophic and, the other kind is reached by theology, whose demands are satisfied by probabilities. It's grasped simple religious faith which is satisfied with imaginative pictures and symbols.

Ibn Rushed is an Aristotelian philosopher and commentator whose encyclopedic medical work "al-Kulleyat Fi al-Tibb" (generalities on medicine) is a collection of medical knowledge. He recognised the function of the retina and the fact of immunity in cases of smallpox.



This well known compendium, al-Kulleyat, was translated into Latin with the title of Colliget by an otherwise unknown Bonacosa in Padua in 1255, its chapter on respiration contains a remarkable critique of Galen which was made the subject of a special study.<sup>(145b)</sup> The translation of the second version of the Colliget was by Jacobus Mantinus (Venice 1552).

Ibn Abi Usaybe<sup>1</sup>ah gave some explanation about Ibn Rushed. He called him al-Kadi (the judge) "He was a friend of Bin Zaher. When he wrote al-Kuleyat, he believed that Ibn Zuher will write a book on al-Jezeyat and at the end, the two books al-Kuleyat and al-Jezeyut will be a complete book on medicine".<sup>(146)</sup>

But the fact is that the work of Ibn Rushed contained more Galenical discussion other than medical observations. As a sample of his medical writing we quote the following paragraph on the Uterus:

"The uterus" lies behind the bladder and rectum. It reaches a higher level than the bladder. It is fixed by many ligaments and is richly supplied with nerves. It is liable to enlarge and expand, and to contract and diminish. It has two cavities (i.e. those of body and of cervix) that lead to an external orifice. These cavities contain vascular openings that secrete menses. There are also two uterine tubes called uterins hornes having behind them the two ovaries. The ovaries are smaller than the testicles. The neck of uterus ends in vulva. The vulva has several protecting appendages. The opening is closed by the hymen which is richly supplied by tiny vessels, and which is made up of a membrane composed of longitudinal and transverse fibrous layers.

N.B. the vagina is regarded as a part of the vulva."<sup>(146a)</sup>

Ibn Abi Usaybe'ah mentioned that Ibn Rushed was "very intelligent, with good opinions, dressing in old torn clothes," His teacher was Ja'afar Bin Haron and he stayed with him for a long period and gained by his help a great amount of medical knowledge. When Ibn Rushed came to Cordova from Ashbelyah, he developed a good relationship with the ruler al-Mansour, but after a short period, the ruler ordered Ibn Rushed to leave Cordova and to live in Alyasaneh, near Cordova, and not to go out of it. There he had his first contact with Jews. It is said that there were two reasons which made the ruler angry with Ibn Rushed; first as Ibn Rushed behaved with disrespect towards the ruler. When Ibn Rushed saw the ruler he always addressed him "do you hear me my brother, instead of Amir (prince). Secondly; When he wrote a book on animals he included an impolite sentence "He saw this animal at the King of Barber" (He meant the ruler).<sup>(147)</sup> This leads one to believe that Ibn Rushed had more influence on Jewish and Christian thought than on Arabian.

Ibn Rashed left a number of books "some of them on Astronomy"<sup>(148)</sup> and among his many original contributions was "the observation that smallpox can only infect once."<sup>149)</sup>

Although, we believe that Ibn Rushed had more influence on Jewish and Christian thought than on Arabian, at the same time we must remember that his works played a major role - as Maj'd Fakhri said - in the development of western philosophy that the Renaissance painter, Raphael, in his school of Athens placed the Arab philosopher Ibn Rushed (Averroes) among the masters of Hellenic thought .

To end our account on the development of Arabic medicine in Spain we are listing below other physicians who appeared in Spain and were mentioned by Ibn Abi Usaybe'ah.

"Ibn al-Jazar, Ibn al-Semnah, Abo al-Kasim  
Meslemah Bin Ahmmad, Ibn al-Sameh, Ibn al-Safar, Abo al-Husan  
Ali Ibn Suleyman al-Zahrawi, al-Karmani, Ibn Khaldoun, Abo



Ja'afar Ahmad Bin Khamis Bin Omer Bin Domeh, Hamdan Bin Aban, Jawad al-Tabeb, al-Nasrari, Khaled Bin Yuzid Bin Roman al-Narani, Ibn Malouka, al-Nasrni, Ibn Malouka al-Nasrani, Omran Bin Abi Omaro, Mohamed Bin Fateh Talmoun, al-Harani, Ahmad and Omar sons of al-Harani, Ishaq al-Tabib, Yeheya Ibn Ishaq, Soleyman Abo Baker Bin Taj, Ibn Om 'al-Bawen, Sa'ad Bin Abid Raboh, Omar Bin Hafez Bin Bertek, Aspegh Bin Yeheya, Mohamed Bin Talmeh, Abo al-Walid Bin al-Katani, Abo Abdullah Bin al-Katani, Ahmad Bin Hakim Bin Hafson, Abo Baker Ahmed Bin Jaber, Abo Abdullah al-Malek al-Thakafi, Haron Bin Mousa al-Ashboni, Mohamed Bin Abdon al-Jabeli, al-Ozeri, Abdul Rahman Ibn Ishaq Bin al-Haythem, Ibn Julyul, Abo al-Arab Yousef Bin Mohamed, Ibn al-Bagh Honech, Ibn Wafed, al-Remely, Ibn al-Zahabi, Ibn al-Nabbash, Abo Ja'afar Bin Khamis Al-Tolytely, Abo Hassan, Abdul Rahman Bin Khalef Bin Askar al Darmi, Ibn al-Khayat, Moniaem Ibn al-Fawal, Murwan Ibn Najah, Ishaq Bin Kastar, Hasday Bin Ishaq, Abou al-Fadel Hasaaya Bin Yousef Bin Husday, Abou al-Fadel Hasaaya Bin Yousef Bin Hasday, Abo Ja'afar Yousef Bin Ahmed Ibn Hasday, Ibn Samjon, Al-Barri, al-Ghafeki, al-Sharef Mohamed Bin Mohamed al - Huseni, Khalof Bin Abis al-Zahrani, Bin Beklaresh, Abo al-Salf Jemeyah Bin Abdul Aziz Bin Aid al-Salt, Ibn Bajah, Abo Ja'afar Bin Mansour al-Tarjali, Abo Mohamed Ibn Pash, Abo al-Mayat Yousef Bin Morater, Abo Abdalah Bin Yazid Abo Morwan Abdul Malik Bin Kablal, Abo Ishaq Ibrahim al-Dani, Abo Yeheya Bin Kasim al-Eshbell, Abo al-Hakam Bin Gaandon, Abo Ja'afar Ahmed Bin Hassan, Abo Alalu Bin Abi Ja'afar Hamed Bin Hassan, Abo Mohamed al-Shazoni, al-Masdon, Abdul Aziz Bin Moslem al-Baji, Abo Ja'afar Bin al-Ghazal, Abo Baker Bin al-Kadi Abi al-AHassan al-Zabri, Abo Abdullah al-Nadrmi, Abo, Ja'afar Ahmed Bin Sabek, Ibn al-Hala Al-Hersi, Abo Ishaq Bin Tamlous, Abo, Ja'afar al-Zahli, Abo al-Arab Bin al-Romeyan, Abo al-Arab al-Kenenari and Ibn al-Assam. (219a)

The Arabian culture in Spain, after it was reconquered by the Christians remained to the small territory, but we must always



remember that Europe flirted and fought with Arab Islam in Greece and Italy. But nowhere was the relationship as long lasting, as strong and as mutually productive as in medieval Spain. Therefore, we notice that most of the historians nowadays are not neglecting this fact, so not wonder we find that when Andrew Lycett spoke to Don Francisco Utnay Sarda, Director of the Spanish Arab institute of culture asking him; "What do you regard as the greatest achievement of Arab culture in Spain?" He answered him; "The transmission of Oriental, Hellenistic and Renaissance and culture of Europe over the period from the 9th to the 13th Centuries, thus making possible the Renaissance in the West."<sup>(150)</sup>

However, Arabian medicine still flourished in Syria and Egypt in the 14th Century as we will see in the following pages.

#### B.2.5. EGYPT AND SYRIA

As mentioned above there are a number of physicians who appeared in the 14th Century, those who belonged neither to Baghdad nor Cordora but worked in Damascus and Cairo. The most important physicians who appeared in Damascus were al-Dakhwar and Ibn Abi Usaybe'ah, and Ibn al-Haythen and Ibn al-Nafis in Cairo. As we will deal in full detail in the next chapter with Ibn Aby Usaybe'ah, we will give in this chapter accounts of the achievements of the physicians of Egypt, then we will end this chapter on the development of Arabic medicine by giving some explanation on the state of hospital and medical practice during the heyday of Arabic civilization.

#### IN EGYPT

Ibn Abi Usaybe'ah wrote a special chapter (14th) on "the classes of well known from Egypt". The most important physician in Egypt was mentioned by Ibn Abi Usaybe'ah as Ibn al-Haythem, although

the most important physician of all was Ibn al-Nafis as we will mention later, but first we will start our explanation on Ibn al-Haythem.

### Ibn al-Haythem

He is Abo Ali Mohamed Ibn al-Hasan Ibn al-Haythem from Basra (a city in Iraq). Then he moved to Egypt and stayed there till the end of his life. He was very intelligent, familiar with all kinds of science. No one was equal to his knowledge of mathematics during his time. He was working very hard. He outlined and explained a great number of Aristotle's books and wrote a number of books himself. He was an expert in medicine and its related subjects in general but theoretically only as he did not practice medicine.

The friend of Ibn Abi Usaybe'ah, Alam al-Din Bin Abi al-Kasem Bin Abi al-Kasem Bin Abdul Ghani Bin Mozafer al-Hanafi al-Muhowdes, told him that Ibn al-Haythem lived at first in Basra and its counties and became a minister. He was always willing to do good and behave wisely. He devoted his time to science. They sacked him from his post as minister; as a result he resigned from all his services and left for Egypt and stayed in Cairo in al-Azher mosque, where he wrote a book each year. He was able to pay the cost of living there by selling his books, and spent the rest of his life in this way until he died in Cairo in 430. He wrote 44 titles and a number of essays as well. <sup>(151)</sup>

His fame came from "his treatise on optics which became known to Kepler during the seventeenth Century."<sup>(151a)</sup> He was considered one of the greatest investigators of optics of all time and an accurate observer and experimenter as well as theoretician."<sup>(151b)</sup>

The works of Ibn al-Haythem became known in Europe during the twelfth and thirteenth Centureis and the great historian Sarton mentioned that "Joseph Ibn Agnin referred to Ibn al-Haythem's

work in optics as being greater than those of Euclid and Ptolemy"<sup>(151c)</sup> and his works became known by "John Peckham, the Archbishop of Canterbury in 1279,<sup>(151d)</sup> and by the Polish physiciatrist Witels."<sup>(151e)</sup> and above all, Ibn al-Haythem's book (compendium of optics) was "very important to Leonardo da vance, and in the 17th Century it was very useful to the famous Kepler."<sup>(151f)</sup>

Ibn al-Nafis, Ali Ibn Abi al-Hazem (1210-1288)

The most important physician in Egypt was without any doubt Ibn al-Nafis, Ali Ibn Abi al-Mazem who came from Damascus to Cairo and became chief physician there. He wrote numerous commentaries on the Hippocratic writings and on the Canon of Ibn Sina. His work on Ibn Sina Canon is the most important work of the original thinker, Ibn al-Nafis. His work was Sharh Tashrih al-Canon (a commentary on the analysis of the Canon) in which he described pulmonary circulation of the blood three centuries before the Portuguese Servetus, generally credited with this discovery. "He described the lesser circulation three hundred years in advance of Servetus, and Realdus Columbus.....it constitutes an important chapter in the history of the discovery of the circulation."<sup>(152)</sup>

This was at a time when no one realised that blood circulated at all. It had been laid down by the Greek physician Galen, that there was communication between the right and left side of the heart., between which the blood passed directly. Though this was not, of course, the case this view remained unchallenged until the time of Ibn al-Nafis.

Ibn al-Nafis explained that there were no openings in the heart wall as Galen had said, but the blood passed from the right side to the left only through the lungs. In other words, he propounded



today's knowledge that there was a pulmonary circuit. Yet, although Nafis - who lived from 1210 to 1288 and was acknowledged as a great teacher and doctor, becoming the chief physician to the great hospital, he was the originator of this major discovery, it was not until 1553 that the first description of the pulmonary circuit was published and then it was credited to the Spaniard Michael Servetus.

"It was not until the early years of this Century, G Karni said, that the record was finally put straight when an Egyptian doctor Muhyi al-Din al-Tatawi found the manuscript of Ibn al-Nafis lying hidden under the dust of Centuries".<sup>(152a)</sup> Although it is agreed that Dr Karmi put the record straight after finding the manuscript of Ibn al-Nafis, we do not agree that it was found by an Egyptian physician, al-Tatawi, and this is mentioned again by "S. Katayah when he referred to P. Ghalwengi"<sup>(152b)</sup> who stated: "that by chance, when al-Tatawi was reading the manuscript of Ibn al-Nafis Sharah Tashrih al-Canon in a German library he discovered that Ibn al-Nafi was the first to discover the pulmonary circuit."<sup>(152c)</sup>

The first person to discover this was Abdul Karim Shehadah, a dermatologist, from Aleppo, Syria, who dealt with this matter. The author received an outline from Dr. Shehadah himself (12 years ago) on his ph.D Theses (Paris) entitled "Ibn al-Nafis and discovery of the pulmonary" a fact which he himself repeated on his article "in Arabic" "focus on the Arabic physician Abdul Latif al-Baghdadi".<sup>(152d)</sup>

The work of Ibn al-Nafis on the minor circulation of the blood was the most important discovery in the history of medicine therefore, he without any doubt is the first master, the real predecessor of William Harvey who discovered the other circulation of the blood in 1628." (153)

It has been queried, why Ibn al-Nafis collected the sayings of the previous scholar Ibn Sina on anatomy instead of writing a new book containing his knowledge on this subject. The answer to this is that, it is very necessary for anyone to have an idea from previous scholars especially Galen, as the anatomy of the human body was forbidden according to religious rules; although some physicians practiced it in secret, until the church gave permission . . . Even after this permission of the human body was carried out in limited numbers, "in Germany one year, in Spain once every three years and in France and England four times annually."<sup>(153a)</sup> Secondly Ibn al-Nafis followed a different method as he started at the beginning of each paragraph saying: Al-Shekh (Ibn Sina) said..... and he continued saying .....but I (Ibn Nafis) am saying.....then he mentioned his (Ibn al-Nafis) explanation and comments.

Thirdly, Ibn al-Nafis, in his introduction of his book considered the anatomy as an art and not science. As we know, the art gained by practicing, and science by searching, and he also distinguished between the anatomy as art and the anatomy as science as he mentioned that his introduction would help the understanding of science by the art of anatomy. He then said the anatomy is an art, science and method to reach the science and this method carried out by using some instruments which he mentioned in the fifth chapter under the instruments of anatomy." The reader of his book and his description will find that this kind of description is as a result of practicing the art of anatomy for a long period, moreover the reader will notice that Ibn al-Nafis, was, -in some way or another dealing with a new subject known nowadays as pathology when he explained the anatomy of veins and the different state of this kind of anatomy between the alive and dead person.

We mention some other physicians who appeared in Egypt as mentioned by Ibn Abi Usaybe'ah, although Ibn Abi Usaybe'ah himself, did not



mention anything on Ibn al-Nafis and this is we believe due to the fact that Ibn Abi Usaybe'ah died in 1270 and Ibn al-Nafis in 1288 after 18 years, and we think that his achievements were completed after the death of Ibn Abi Usaybe'ah.

The other physicians were the following:

"Boleteyan, Ibrahim Ibn Issa, al-Hassan Bin Zeyrek, Sa8ad Bin Tawfek, Khalof al-Toulani, Nestay Bin Jureyj, Ishaq Ibn Ibrahim Ibn Nestas, al-Balessi, Mousa Bin al-Azar al-Esraenli, Yousef al-Batrik, Aiyour Bin Aiyour al-Tamaemi, Sahlam, Abo al-Fateh Mansour Bin Sahlan Bin Mokasher, Omar Bin al-Mouseli, al-Haker al-Nafes, a Abo Bisher Tabit al-Mobasher Bin Fatek, Ishaq Bin Younis, Ali Bin Raduan, Efranem Bin al-Zafan, Salameh Bin Rahmoun, Mobarak Bin Slameh, Bin Rahmoun, Ibn al-Dyen Zaurbe, Belmozafer Ibn Mo'aref, al-Shekh Abo al-mansour Abdullah Sharah al-Din, Ibn Jume'ah, Abo al-Beyan Bin al-Modawar, Abo al-Fadel Bin al-Naked, al-Raes Mebat allah, al-Mowafaq Bin Shoa, Abo al-Bakak Bin al-Kad(ae, Abo al-Ma'ali Bin Temam, al-Raes Mousa Bin Meymon al-Kurtobi, Ibrahim Bin al-Raes Mossa, Abo al-Barakat Bin Say'a, al-Asa'd al-Mahali, al-Shekh al-Sadid Bin Abi al-Bayan, Jamal al-Din Bin Abi al-Hawafer, Fateh al-Din Bin Jamal al-Din Bin Abi al-Hawafez, Shehab al-Din Bin al-Zobeyer, Afdal al-Din al-Khonji, Abo Suleyman Dawoud Bin Abi al-Nona Bin Abi Fanah, Abo Sa'ad Bin Abi Suleyman, Abo Shaker Bin Abi Suleyman, Abo Nasser Bin Abi Suleyman, Abo Nasser Bin Abi Suleyman, Abo al-Fadel Bin Abi Suleyman, Rashid al-Din Abo Huleykah, Mohazeb al-Din Abo Sa'ad Mohamed Abi Malekah, Rashid al-Din Abo As'ed, Asad Al-Din Bin Abi al-Hassan and Deya'a al-Din Bin al-Bitar". (154)

#### IN SYRIA

The information on Syria is to be found in the book (Uyun al-Anba Fi Tabakat al-Atteba) of Ibn Abi Usaybe'ah. Although a translation



of chapter 15 is being given at the end of this chapter, we believe that a brief explanation on this subject is useful.

The physicians in Syria can be divided into several groups:

- Those in charge of work at the hospital
- Those who worked on their own and had dispensaries
- The physicians of Aleppo
- Private physicians of certain princes and
- Those who were mentioned briefly by name only

Ranking these physicians according to prestige and reputation is only possible as S. Jadon pointed out <sup>(154a)</sup> - in the case of those who served Salah al-Din and those who worked at the new hospital of Damascus, because each had a special type of work to meet the need of Salah al-Din or the hospital, and in consequence their biographies are full.

Syria was worthy of note for the number of physicians who came to her to live and practice medicine in the twelfth Century as she attracted physicians, scholars and others from all walks of life. Some of the reasons for this were:

- the movement of the centre of power from Baghdad to Damascus during the reign of Nour al-Din and from Egypt to Damascus during the reign of Salah al-Din
- the urgent need for physicians owing to the Crusaders
- the establishment of such institutions as hospitals with a school of medicine at the new (Bermestan) hospital of Damascus

Ibn Abi Usaybe'ah mentioned a number of physicians of Syria and the physicians of Salah al-Din whose biographies have been presented for us by him were eleven in number:

<u>NAME</u>	<u>GEOGRAPHICAL REGION</u>	<u>FAITH</u>
Ibn Khalaf	unknown (154b)	Samaritan
Abo Mansur	unknown	Christian
Abo al-Nazem	village in Huran district of Damascus	Christian
Abo al-Faraj	Iraq	Christian
Al-Naqash	Baghdad	Muslim
Ibn al-Mutran	Baghdad (154c)	Christian became Muslim
Al-Rahbi	al-Rahbah	Muslim
Ibn Musa	Egypt	Muslim
Al-Bayasi	Spain	Muslim
Al-Hajib	Damascus	Muslim

The significance of this chart is that four of these physicians were not Muslims, thus showing the tolerance of Salah al-Din to faiths other than his own, also seven were from countries other than Syria. Presuming Abo Mansur to have been from Syria, there is still indication that it was the centre of attraction for more than half of these physicians.

The bibliographies of a number of physicians show that a great number of them were already physicians when they came to Syria, Ibn Musa studied medicine at Cairo, Abo al-Foraj, al-Baghdadi at Cairo, Abo al-Foraj, al-Baghdadi and al-Naqash at Baghdad. This is an indication that they came to Syria in search of more income especially, the medical profession was classified by the later distinguished historian al-Qalqashandi "as being the highest paid of all professions."<sup>(154d)</sup>

Ibn Abi Usaybe'ah wrote that his grandfather wanted his sons to learn medicine because he knew it to be an honourable profession, greatly needed by the people and because he believed that those practicing medicine, although enjoying honour and wealth in this world came first in rank."

Ibn Abi Usaybe'ah appears to be in agreement with his grandfather by saying that medicine was one of the most honorable and profitable professions. He said it was his intention to write about the classes of physicians from the beginning of the profession, since it had not been done before, and he would provide anecdotes about those of the highest classes and divided them according to the period in which they had lived.

Syria was worthy of note for its numerous hospitals. Nour al-Din had recognised the need for more hospitals in Syria, and he proceeded to build them also with the ransom money for Crusaders.<sup>(154e)</sup> In this way one was built at Aleppo.<sup>(154f)</sup>

Indeed it would seem as if Ibn Jubayr saw a Marstan (hospital) in every district he visited in Syria from the nature of the question which he put to one of the Shekhs at Homs:

"Is there (in Homs) a Marestan in accordance with the town plans of these districts?"<sup>(154g)</sup>

He was especially impressed with the new Marestan of Damascus and recorded some information about it, saying that the daily expenses of this new Marestan were about fifteen Dinars, that it had superintendents who maintained records of the name of the patients and the kind of food and medicine prescribed for them and that the physicians were accustomed to go to the Marestan early in the day to visit and to prescribe the necessary treatment for the patients. The hospitals he concluded were one of Islam's great glories.

Nur al-Din appointed Mohamed Ibn al-Hakam to the important post of chief physician in al-Bermestan at Nuri.<sup>(155)</sup> This is the first time the office of chief physician is mentioned in Syria. It is therefore an indication of the importance of medicine at this time in Syria.



There is evidence that contemporary physicians and dignitaries of Syria were pleased with the contents of the work. The Minister Jamal al-Din Ibn Matrun also praised an author for a work which he considered to be without precedent. Another Minister who was also a physician, Amin al-Dawlah Ibn Ghazal told the father of Ibn Abi Usaybe'ah:

"I have heard that your son has written an unsurpassed book about the classes of physicians, those physicians who visit me are pleased with it. It is a book of great value and although I have more than 2000 in my library, there is none of this nature. I wish you would ask him to send me a copy of the work made for the Minister to whom he dedicated it, and in return he will receive a large sum of money and a role of honour.

Syria produced a great number of physicians. Some of the most important were; Muhib al-Din al-Dakware, Ibn al-Mutram (who was devoted to the practice of medicine, and was known for his medical treatment of both the elite and the common people) and Ibn Abi Usaybe'ah who was born in Syria and practiced medicine for a while in Egypt. He himself has mentioned a number of physicians who had preceded him. In the following pages we will end this chapter on the development of Arabic Medicine by giving some explanation on the Hospitals and also the medical education during the heyday of Arabic Civilization to complete the picture as they were the backbone of the medical profession.

#### B.2.6. Hospitals and Medical Practice

The teaching of medicine and the organization of sanitary services showed rapid and marked progress during the heyday of Arabic Civilization. It was in Islam, under the patronage of the Arabs, Caliphs that hospitals were first established, and they flourished in the Muslim world throughout the period of the Empire.

"Rafidah Jent" as mentioned by A. al-Badir <sup>(155a)</sup> was the first hospital in Islam. It was the one ordered by the prophet to be

pitched in the mosque on Kandaq day (a battle) so as to be accessible to the army and so was counted as the first field hospital.

Things did not change much until Ommyad Caliph, al-Waleed Ibn abdel Malik has assigned a special residence for lepers, where they were hospitalised at public expense. This was the first leprosarium in history.

Later, the Islamic capitals and larger towns were all provided with hospitals. The Caliphs and people of distinction competed in extending substantial funds for their superb elegance and orderliness. On their staff, some had the most proficient doctors of various specialisations, the most reputed pharmacists and the most highly perfected pharmacies. They housed servants, cooks and utensils which were unrivalled even the homes of princes and Caliphs. Generous appropriations in cash were granted to these hospitals so as to maintain their services to out and well as in patients.

Such abundance of hospitals in Islam was the result of advancement affluence and their distribution of wealth. It is recorded that Caliph Omar Bin Abdel Aziz used to go round with alms and find no one accepting them. Moreover, the Caliphs had the desire of publicising their honourable mention by serving the public and doing them good. Taqiy el-Din al-Maqrizi, an eminent historian stated that the first one who had built a Bamerstan and health centre in Islam was the above mentioned Caliph al-Waleed Ibn Abdel Malik in 88 A.H. (706). He supplied the hospital with highly paid interneers and ordered the lepers and the blind to be taken into custody and furnished with the means of comfortable living.

In his book "Tarkh al-Rusul Wal Muluk (History of Prophet and Kings) Mohamed Jasir al-Tabary said:

Al-Waleed was to the Syrians a very highly regarded person. He built the mosque of both Damascus and Medina. He also constructed the minaret, supported the lepers and furnished every invalid with an attendant and every blind person with a guide.

There were two kinds of hospitals, stationary and mobile. Hospitals could be; general such as those abounding in the Metropolitan cities like Baghdad, Cairo, Damascus and others. It would be interesting to note that Cordova in Spain with a population of 500,000 in the 4th Century A.H. (10th A.D.) had 50 hospitals, 500 baths, a public library containing 600,000 volumes in addition to 70 private libraries. Of these hospitals the most famous were al-Athudi in Baghdad, al-Mansoury in Egypt, al-Nouri in Syria and those in Tunisia and Andalusia. There were specialised hospitals like those which were constructed for a special purpose and were multifarious in Islam:

#### al-Leprosaria

We have already indicated that al-Waleed was the first to establish such sanatoriums. Yet the Arabs discerned the nature of its infection. About the transmission of this disease Ibn al-Quyyim al-Jawziya wrote a treatise in which he said: A leper smells rancid to those who sit near by, and communicates the disease by intercourse.

#### Prison Hospitals

At the beginning of the 4th Century A.H. (tenth A.D.) and in a



year fraught with disease, Ibn Issa Caliph al-Mugtadin Bellah's Minister, wrote to Sinan Bin Thabit a highly significant recorded message which was as follows:

"I have thought (God bless you) of those who are in detention and the possibility of being attacked by disease, due to their numbers and to the inadequacy of their premises. They are furthermore, impeded from looking after their interests and interviewing doctors for consultation on how to ward off the dangers of illness. So you are hereby instructed to select doctors whose job shall be to visit them in their jails regularly, supplied with medicine and syrup. They must extend their services to comprise all the other prisons, treating the sick and removing their ailments by offering them the appropriate medicines and drinkables."

This is the first time in history as far as we know, that medical care was extended to prison inmates.

### Mental Hospitals

In the early part of the Ommyyad 's rule there were founded several asylums to cope with the mentally ill or deranged. The Arabs used to consider imbeciles and idiots as destitute persons for whose case the state should be responsible. In his "social medicine" Rene Sand attested: The Muslims hold the mentally ill in respect, recommend tolerance in the handling of them and reserve them compartments for treatment in their hospitals. By and by they had asylums built to house them.

In the deed pertaining to the Waqf (endowment) by which the royalties were tied to al-Nouri hospital in Aleppo, we read the following: Each lunatic shall have two servants, to gake off his clothes every morning and bathe hime with cold water. Then, they shall dress him in spotlessly dean clothes and help him to perform al-Salat

(prayer) ritual. They shall have him listen to recitations from the Quaran by a good reader. Then they shall take him out, and in the open air should be allowed to listen to beautiful voices and musical tunes." This was the case in the Islamic East while lunatics in Europe were kept shackled with chains and fetters in asylums and prohibited from admission to hospitals. Their residence was lowly, their food meagre and bodies naked. They often died of negligence and severity of lashings.

Mental asylums occupied a special suite in general hospitals where the major doctors could visit patients and attend to them.

In his authoritative book on geography, al-Yagubi states: "In the city of Na'mcmiya there is a Hezkel monastery where lunatics are treated."

### Orphaneges and Nurseries

These houses were set apart for children bereft of their mothers and deprived of being breast-fed and cared for. The first to take action on appropriating such homes for a purpose was Muzaffar al-Din Kokbery, Governor of Arpil (549-630 A.H.). He appointed wet nurses and servants to attend to this social service.

### Infirmaries

Early in the Abbasid era, al-Maqrizi, the great hisotrian wrote: "al-Mansour inaugurated homes for the aged, the physically disabled and orphans and other homes for treating insanity". Al-Waleed Ibn Abdel Malik was the first who gathered them in specially equipped homes and assigned each invalid a servant.

As for mobile hospitals, there were those which could be moved from one place to another as need be. They were of three kinds;

### 1. Emergency Hospitals

The first such hospital was mentioned on the occasion of the Khandaq battle when "Sa'ad Ibn Ma'ath" was injured by an arrow.

### 2. Military Hospitals

Muslim armies had their hospitals administered by resident surgeons. Whenever the Caliph went to war he always had his doctors on his side to take care of him and the army. Ibn al-Mutran, for example, was so close to Salah el-Din that he accompanied him in all theatres of action. He had a special red tent with a very wide door. When the Sultan felt that his doctor was overworked, he ordered the appointment of another to attend to the soldiers. Casualties were transferred to female nurses. The Selucid Sultan Mahmoud had a mobile hospital carried on 40 camels and one of its doctors was Abdul-Hakam al-Maghraby (the Andalusian).

### 3. Ambulances

These were hospitals moving around in the chinaware, bowls and vessels of medical assistance for treating patients in need, or to manage casualties in time of epidemics. Sinan Iba Thabit was the first one to institute them. In another letter to Sinan from Minister Ibn Issa we read: " I have been thinking of those in the rural areas of Iraq, who may be attacked by illnesses with no doctors to help, because these areas have no professionals so could you please send doctors furnished with medical supplies and drinkables to travel around among the people and stay in each quarter as long as needed and then move to other quarters."

Further instructions of the same nature ran like this.



"Write to your medical assistants and;urge them to make rounds of the villages and places stricken with epidemics and raging diseases. If there are no roads to these places, they should wait until new roads are opened up or older ones are repaired. This being done, God will bless them."

The hospitals were not run fortuitously, but in accordance with a strict well-planned system. They were divided into separate sections, one for each sex having needs in instruments, equipments, attendants, maids, office boys, managers and supervisors. Each section had several pavilions for different cases like internal medicine, surgery, ophthalmology and bone setting. These were also subdivided so as to house those attacked by fever, mania, chills or diarrhoea.

The halls and rooms were relatively spacious. The hospital had a superintendent and each section a house physician who was the chief doctor. Drugstores were well supplied and equipped in specially chosen quarters of the hospitals. Abdul Abbas al-Qalaqahandi describing them as containing varieties of exquisite beverages, pastes, jam, perfumery and relevant exclusive ingredients in addition to precision measures, chinaware, bowls and vessels of different volumes and shapes. Every store was headed by a pharmacist assisted by a number of youth.

There were male and female nurses. It was the physician in Islam who encouraged midwifery and sanctioned the importance of health care to both mother and child and in providing the best skill possible. A good example is that given in al-Tasfif of al-Zahrawi as he devoted a complete section on midwives to perform their duties and if needed under the physicians's supervision with utmost care and proficiency.

A hospital had a director to look after its administration, which position was counted as a principal rank in the table of

organisation. In his book "Badi al-Zuhur Fi Waqu al-Duhur" (approx. marvels of flowers in the records of ages) Ibn Iyas testifies that the job of the director was a key position in the caliphate. It was charged to a deputy of the Sultan who went to his office in state honours.

Qalqashandi also says that the greatest professional positions in the Fatimid reign in Egypt were those held by the physicians. Among the titles of artisans and craftsmen, chief doctor was rated as top grade. Another high ranking job was that of the Caliph's private doctor who used to sit on the bench in the famous "Golden Hall" in the palace with four associates. When emergency arose, out came the servants or eunuchs calling on the required doctor to attend to the patients, who habitually were royal kinsfolk or distinguished courtiers.

Rich gifts and affluent repeated favours, and stipends were awarded by the Caliphs and Princes to the doctors including their amounts. For example, "Gebril Bakhtishu, a private physician and a favourite of the Caliph Harun al-Rashid, received a monthly honorarium of the equivalent of several thousands pounds

As for salaries, in general, the Caliph's doctors were paid 50 dinars a month, and 10 dinars for less one boarding at the palace. Those working in the hospitals received 15 dinars a month and had an equal amount for extra work making the salary rise to 30 dinars.

Furthermore, the hospitals adopted two ways of treatment: Outdoor when the patient received the medicine from the hospitals for home use, and indoor when he was admitted to the pavillion designed for his illness untill he was cured. A doctor in a section



could also be borrowed by another for consultation when necessary. Doctors also worked by rotation.

Clinical studies were given in the hospitals in addition to extra curricular seminars. Ibn Abi Usaybe'ah wrote; "I used to sit with Shekh (scholar) Radeyel Din al-Rahby and notice he inquired about ailments, how he diagnosed them and prescribed the cures. I had likewise, the opportunity to discuss with him illnesses and their effective remedies. In the hospital he had a fellow doctor, Omran by name, who was a brilliant physician. Nothing was more interesting and useful than to hear them discussing the profession". Describing his professors Muheb al-Din Ibn Abdel Rahim, Ibn Abi Usaybe'ah relates that "after making his round of his patients, he would retire to the library where one would find a great number of books on medicine. There he received the doctors, the personnel and the students to whom he delivered lectures for three hours before riding back home."<sup>(156)</sup>

In the hospital medical education was carried on and many students sought theoretical and practical training there. A good example of this as we mentioned Ibn Abi Usaybe'ah himself who was first trained at the Nuri hospitals in Damascus and then attended the Nasiri hospital at Cairo as well. "any prominent practitioners from al-Andalus came all the way to Cairo, Damascus, Baghdad to be trained at their hospital and get more experience in the profession. Others, such as al-Rhazes came from Persia to Baghdad for a similar purpose."<sup>(156a)</sup> It is very important to note from this state, that from early times it was obligatory for students to make long voyages, that the pilgrimage to Mecca and Medina which the faithful had to undertake at least once in a life time, often joined religious with scientific aims to get the kind of training on his way to pilgrimage at one of the medical hospitals.

Not only the history of al-Nouri hospital existed, but Cairo /<sup>(157)</sup> "Tunis, Fez and among others were centres of learning" and housed



collections of manuscripts and printed books covering the different Islamic description and other scientific collections "the great libraries of Zahirya al-Azhur, Zeytuna and Karawiyyon were direct descentants of the glorious libraries of Islam. They were the haven of the pious, preserving revered tradition, and also more often than not, the stronghold of the national struggle."<sup>(158)</sup>

The method of teaching medicine in our time has not changed much from that applied before. "The student started by studying tablet texts and then learning to write prescriptions. After training in associations with skilled doctors, he was granted a diploma authorising him to practice medicine, This was done upon oath before the supervising professor."<sup>(159)</sup> The teaching at the college of al-Mustansrya (Iraq) was the most advanced of the seventh Century. The college was thought to be the first in the world to introduce medicine and pharmacology into the regular curriculum."<sup>(160)</sup>

A doctor had ample opportunity and freedom to test and innovate ways and means for treatment. These tests were recorded in special books placed at the disposal of the profession. Such illustrious figures as Abo al-Bayan al-Modawar, Sahin Yussef Quskanash, Ibn Abi al-Fadel al-Nagid and Abdul Ma'alim Tammam Ibn Hibat Allah Ibn Tammam, had then registers in which they jotted down their experiences and noteworthy remarks. The renowned al-Rhazi left us a bood denoted to tales and stories of the sick.

Finally, these physicians did not ignore the influence left by the physician's outward appearance on his performance. They pre-conditioned that he must be shaved, neat in dress and carrying a brief-case containing medicaments, instruments and bandages. As he arrived on the scene he must declare that he seeks assistance from the God to help him in curing his patients.

This brief review of the level on which the medical profession stood at that time compared with that attained by the succeeding Arabs, attests that achievements of the former in medicine were genuine and unprecedented. We know of no earlier civilization to which this genuiness could be attributed or any other source from which it could been borrowed .

Towards the Middle of the 13th Century the Arabian power began to decline. In 1236 Cordova fell to Ferdinard II of Castile, in 1258 Baghdad was destroyed by the raven under Hulagu Khan the grandson of Genghis Khan "who had ravaged Asia and terrorized Europe". (161)

Although, suffering less than some other cities Baghdad was plundered, priceless libraries and works of art were destroyed, and many of the inhabitants were massacred.

The Mongols continued their destruction elsewhere in Mesopotamia and Syria and the great system of irrigation which had made the region fertile and prosperous for thousands of years was ruined. But as we mentioned before some physicians appeared in Syria after the decline of Arab civilization, a subject we will deal with in the next chapter and in particular about the most important physicians of that period, namely on the brilliant Medical historian and his masterpiece "Uyun al-Anba Fi Tabakat al-Attaba".

CHAPTER THREE

THE BIOGRAPHY OF IBN ABI USAYBE'AH

INTRODUCTION

- A: Ibn Abi Usaybe'ah who is who
  - A.1: Brief Definitation
  - A.2: His family
  - A.3: His life and studies
- B: Ibn Abe Usaybe'ah's Characteristics
- C: His Shekhs, Friends and Students
- D: His works
  - D.1: Yun al-Anbba Fi Tabakat al-Atteba
  - D.2: A translation of the Chapter Fifteen  
(the physicians of Bilad al-Sham - Syria)



## INTRODUCTION

As mentioned at the end of the last chapter, the Arabs continued the topical classification of knowledge. This classification is especially suited to Islamic and Arabic studies. Distinguished philosophers such as al-Farabi (d.950), Avicenna (980-1037), Alghazali (1058-1111), and Ibn Khaldour (1332-1402) had their own schemes of classification. Al-Farabi in his book Ihsaal-Uhum divided knowledge into sciences of language and its branches, propaedeutic sciences, natural and metaphysical sciences and the science of society and their branches.

Ibn Khaldun in his book "introduction of Ibn Khaldun" classified knowledge into three parts. The first part embraced al-Quran and al-Hadith and the rest of Islamic studies and the second part included philosophy and allied subjects. Linguistics and literature composed the third part.<sup>(162)</sup>

The Arabs did not neglect bibliography. One of the ancient books on the subject is al-Fihrist by Ibn al-Nadim. The author introduces his book as a bibliographical catalogue of Arabic books from Arab and non-Arab nations in all branches of knowledge, and bibliographical data on these books, their authors and their genealogies. This book is the first Arab book on bibliography that has come to us. The author divided his list into ten parts and each part into a number of classes. "It should be mentioned, however, that this is a practical classification. This book was edited by the Orientalist Flugel, who compiled an index of proper names in the book. This edition was published in Leipzig in 1871."<sup>(163)</sup>

One of the outstanding bibliographers was Mustafa Abdullah Haji Khalifah (d. 1656). His book entitled Kashf al-Zunun Bin Asami al-Kutub Wa al-Funun (dealing with names of books) is arranged alphabetically. The author mentioned thousands of books and dissertations, and treated about 300 subjects. It was published by the Ministry of Education in Turkey in 1940.

In the field of histography of Arabic Medicine Ibn Abi Usaybe'ah (1203-1270) was "the most distinguished historian of medicine."<sup>(164)</sup> His masterpiece Uyun al-Anba Fi Rabaqat al-Atibba (Sources of information on the classes of physicians) is an early collection of 400 biographies of leading Arabic and Greek physicians.

In the following pages of this chapter we deal in depth with the life of Ibn Abe Usaybe'ah and his achievement in the field of the history of Arabic Medicine.

As Hoppocrates should be regarded as the first medical historian because of the attempt that he made to interpret the work and concept of the physicians of the school of the preceding period Ibn Abi Usaybe'ah should be regarded as the first Arabic Medical historian for the account he gave of the physicians of his period; his work is especially valuable for its bibliographical references.

We will give first his background, then describe his life, characteristics and his work and conclude with an example of his writing.

## A. IBN ABI USAYBE'AH WHO IS WHO

### A.1. Brief Definition

"Ibn Abi Usaybe'ah Muwaffak al-Din Abul Abbas Ahmead Bin al-Kasim al-Saedi al-Khazaraji, physician and biographer born in Damascus in 600 (1203) studied medicine there, and afterwards in Cairo at the al-Nasini hospital. Among his teachers special mention may be made of the botanist Ibn al-Baitur in 634 (1236). He received a position in hospital in Cairo, which he exchanged in the following years for the office of physician to the Emir Izzal Din Aidemir in Sarkhad. There he died in 668 (1270)".<sup>(165)</sup>



## A.2. His Family

Ibn Abi Usaybe'ah was a member of a very good family who had a very good position, and were close to the court and rulers. At that period most of the members of the family were well-known and distinguished physicians, especially in the field of ophthalmology. His grandfather was known as Ibn Abi Usaybe'ah who was born in Damascus and lived there for a long period. He "served at the Court of King of Al-Nasser Salah al-Din Ibn Yousef Bin Ayoub, (his treatment was regularly successful). He was very interested in science and had a good relationship with such well known physicians in Damascus as Jamal al-Din Abi al-Hawafez and Ab al-Hajaj Yousrf al-Kahal (the oculist."<sup>(166)</sup>

Ibn Abi Usaybe'ah's father was also a physician, born in Cairo in 1575. When he became a young man Ibn Abi Usaybe'ah's grandfather let him be close to his friend Dr. Sihab al-Din and Abu al-Hajaj Yousef al-Kahal and stayed with them till he studied properly the medicine by their help and that of other top physicians, such as the president Mousa al-Kurtobi.

Ibn Abi Usaybe'ah's father was very clever in his profession especially in ophthalmology. Ibn Abi Usaybe'ah has given us an example of his ability to cure eye diseases. He said: "In the year of 609 the eye of Salah the servant of the King Abi Bak Ibn Ayoub was much afflicted, and it became weak. He had been examined by the best physicians and oculists of that time, and all of them failed to give the right treatment to cure the illness. When my father saw him he said; 'I will treat the eyes of this man, and he will recover his sight by the help of God'." He started the treatment till he succeeded. This was like a miracle, for it had not happened before. The King was very grateful and very proud of my father's knowledge. So he asked him to be one of the court staff and to accompany him at all times. The King did not accept my father's desire to stay in Damascus, so he accepted the King's offer and started his work in the year of 616, My father worked



at the Damascus Castle and the Nour Din the Great Bermistan till he died in 649. He was buried near Bab al-Ferdes a place close to the Quseyoun mountain in Damascus during the period of the King al-Naser Yousrf Bin Mouhamed the ruler of Damascus. (167)

It is good to mention that Ibn Abi Usaybe'ah's father was praised by a great number of people in all classes for his excellent achievements in the field of medicine especially in the treatment of eye diseases.

Ibn Abi Usaybe'ah's uncle Rashid Abo al-Nassan Ali Ibn Khalifah Bin Younis Bin Abi al-Kassem Bin Khabefak, was born in (Aleppo in 579) (168). He studied medicine with Jamal al-Din Bin Abi al-Hawafes, having previously studied al-Quran and mathematics with Takey al-Din Saleh Ibn Ahmad Bin Ibrahim Bin al-Hassan. Ibn Sulbman. He studied the Arabic language and Galen's books with al-Shekh Mowafak al-Din Abdul Latif Bin Yousef al-Baghdadi. His uncle also studied astronomy with Ali Abi Mohamed Bin al-Jadi, music with Ibn al-Dyjour al-Masri, Haq al-Din Ali Ibn al-Taban, Sehab al-Din al-Nakjouni and Shoja'a al-Din Bin al-Husen al-Baghdadi.

Ibn Abi Usaybe'ah tells us that "when my grandfather returned to al-Sham (Damascus), in the year 597, my uncle who was nearly twenty years old, started to practice medicine and teach it in Damascus". (169) He was working with Mowfak al-Din Abdul Rahim Bin Ali and Mohazab al-Din Abdul Latif Bin Yousef al-Baghdadi in the Bermasten which was built during the reign of King Nour al-Din Bin Zanki and studied art and Arabic. "My uncle taught all these sciences completely before he was twenty five years old."

"In 15 Ramadan 605 al-Sultan the great King Issa Ibn al-Malik Abi Baker Bin Ayoub summoned my uncle. He heard him and gained his respect, then he ordered him to be one of his staff at Court.

After that his achievements reached the ears of the King of Balabak, Majed al-Din Behram Shah Bin Izel Din Farkhashah Bin Shahan Shah Bin Ayoub. "Then he ordered him to be summoned with my grandfather because he knew my grandfather from the period of his father. When they arrived the King granted them a great sum of money and other presents. My Uncle became a very important person in the Court and he stayed with the kings most of his time."<sup>(170)</sup>

### A.3. His Life and His Studies

Ibn Abi Usaybe'ah's full name is Mowafakal-Din Abi al-Abbas Ahmad Bin al-Kasem Bin Khalifah Bin Younis al-Sa'adi al-Khouzragi.<sup>(171)</sup> He was born in Damascus in the year 600 h. in a very educated family, as we explained. After he studied literature and arts he began to learn medicine by his father's help. He wished to gain more knowledge in this field than he gained from his father, so he travelled to Cairo, the place where the best physicians were working. He worked very hard there in the al-Anseri Bermestan reading the books. In a very short period, he succeeded in gaining a very good knowledge in the field of medicine. As soon as the King heard about his knowledge, he ordered him to be appointed as one of the Court staff, but the King of Sarkhad, Izzek Din, wanted him to be summoned to work at his court. Ibn Abi Usaybe'ah accepted his offer and came to Sarakhad (one of the cities of Horan of Syria). (see Fig.No. 8 ) He liked the climate there and stayed in that city till he died in the year of 668 H.

Ibn Abi Usaybe'ah has told us about his studies in Cairo and Syria. He said: "when the Sultan appointed Mohazab al-Din Abdul Rahim Bin Ali as the head physician in the whole of Egypt and Bilad Alsham (Syria) I was at that time with my father, as he was serving the Court"<sup>(172)</sup>

Ibn Abi Usaybe'ah has told us about his activities in the Bermestan when he said: "at that time, al-Shekh Radey al-Din al-Rahbi, was in the Bermestan who was the eldest physician in the best position of all, and the most well known along with Muhazab al-Din and Omran. As soon as they were free from treatment of patients, I sat with al-Shekh Radeyal al-Rahbi and I began to know from him how he diagnosed the diseases, what he prescribed and why and carried on research into diseases in their treatment. In fact never were such fine physicians found in the Bermestan since it was built or even after that time."<sup>(173)</sup>

When al-Shekh Muwazeb al-Din lived in Damascus he started teaching medicine. A great number of well known physicians and others went to him to learn about the profession. Ibn Abi Usaybe'ah who was one of those people, "I stayed in Damascus in order to learn from him. But first of all, I was working in the camp when my father and Muwazeb al-Din were working in the court of al-Sultan. I went to see him with other people for this purpose, and started to study Galen books. I was with him when he was treating the patients in the Bermestan and I trained under his supervision and practices medicine. During that time, al-Hakim (physician) Omran was also with him, and as a result of meeting both of them at the Bermestan, very fine achievements were produced of their experience."<sup>(174)</sup> He says further "I got training and good experience under their supervision."<sup>(175)</sup>

Al-Hakim Omran was a good friend also to Ibn Abi Usaybe'ah. He was very proud of him as a teacher and as a friend as well. "I was working in the Bermestan and we 'Ibn Abi Usaybe'ah and Omran became good friends. He showed me kindness, goodness, a lot of knowledge of science and the way of medicine. His diagnosis and treatment of diseases were so marvellous that I am unable to describe."<sup>(176)</sup>

Ibn Abi Usaybe'ah moved to Sarkhad in the month of Rabe al-Awal



634 to serve the court of the Emir (prince) Izz al-Din al Mouazemi. He also studied under the supervision of another Shekh. His name was Rafi al-Din al-Jebeli, he was the president of Judges in Damascus. "He is (al-Jebeli) one of the Shekhs and I worked under his supervision. I studied at that time apart from Ibn Sina's book "al-Eshakat and al-Tanbehat and there was a good relationship between us."<sup>(177)</sup>

Another teacher of Ibn Abi Usaybe'ah was Shames al-Din al-Khosroshahi. He tells us "I met him (S.A. al-Khosorshahi) when he arrived in Damascus" and studied under his supervision "the book" Romouz al-Kunouz" as he was on good terms with my father."<sup>(178)</sup>

Mouwafak Ibn al-Mutran also was one of the physicians who taught Ibn Abi Usaybe'ah and this was in 623. "I studied in 623 under the supervision of Ibn al-Mutran a book of medicine especially the practical part of Abo Baker Mohamed Bin Zakareya al-Rahz and others as well, it was a very useful book and I gained some knowledge."<sup>(179)</sup> We may mention Shames al-Din al-Khouli who was very proud of him. He said, "I met him regularly and read under his supervision the book al-Tabera by Ibn Shalan."<sup>(180)</sup>

Ibn Abi Usaybe'ah also was interested in Engineering and he had some knowledge of the subject. He tells us."al-Sharaf al-Tousi came to Damascus, he was very distinguished in engineering, mathematics and medicine, no one was equal to him in knowledge at that time. I met him regularly."<sup>(181)</sup>

Moreover, Ibn Abi Usaybe'ah was a very good poet, he recited a great number of poems on a number of occasions. In one he praised "the physician Rafi al-Din al-Jebeli when he became the president of the Judges of Damascus."<sup>(182)</sup>

One of the characteristics of his study was that he was always trying to meet the best physicians whenever he could or to contact them by correspondence. When he (Mowafaq al-Din Abdul Lafit

al-Baghdadi the teacher of his father and uncle) stayed at Aleppo, I wished to travel there to meet him but I was unable to do so. But I always received his books and correspondence. He sent me a number of books and correspondence, in his handwriting and this is a letter which I sent when he was in Aleppo."<sup>(183)</sup> He praised him very much in the letter and expressed his willingness to meet him.

#### B. IBN ABI USAYBE'AH'S CHARACTERISTICS

Ibn Abi Usaybe'ah was without any doubt an example of a very good person with a marvellous knowledge in many fields. Medicine art, literature, engineering poetry, music and astronomy and other subjects and this was a result of his characteristics some of which we may mention.

He was very intelligent from an early age. Let us mention in this connection a letter of al-Shekh Mowafak Abdul Latif, who was the teacher of Ibn Abi Usaybe'ah's father. He writes, "I have always seen his intelligence since he was young."<sup>(184)</sup>

He was well versed in science. As evidence we may mention that "He read nearly one hundred books in addition to his books in medicine and other subjects."<sup>(185)</sup>

He was very respectful to his teachers. He tells us how nice it was to find that Shames al-Din al-Khousroshahi kissed a book because it was written by his Shekh in his own handwriting. "His situation became very important and I am proud of him because he respected his Shekh."<sup>(186)</sup> (teacher)

He was smart and well dressed. Indeed, as we find in many places

of his books giving us a full description of his friends and teachers, what they were wearing and their appearances. "He Shames al-Din al-Khouli) ....was good looking with a nice face."<sup>(187)</sup>

"He (Mouwafak Ibn al-Muttran)...was smart and well dressed, wearing rich dress."<sup>(188)</sup>

He was a dedicated patriot. He described with pride and admiration how the country recovered its land and how Kutez won the battle against the Tartars. The country reverted to its previous state. "I pray to God to keep the country in safety for ever."<sup>(189)</sup>

He was brave and averse to intrigue. He explains in detail the battle against the Tartars in Aleppo and Damascus and he mentions clearly how much of a coward was King Naser. He did not make any effort to defend himself against the enemy, and he gives a clear description how "the king ran away and the result of his cowardice was defeat and loss of his country."<sup>(190)</sup> He was brave indeed and as a brave man he never accepted cowardice from the ruler. Anyone who reads his description of the battle will have this reaction about Ibn Abi Usaybe'ah.

Ibn Abi Usaybe'ah hated an unfaithful person. He explained the role which was played by the physician Seyen al-Hafezi and his correspondence with the enemy to give some information about his country as a spy. At the same time he reported untrue facts about the state of the enemy which led his country feel that the enemy had very great power and would win the battle without any doubt. He added that although the Tartars won the battle and the physician al-Hafezi gained (a good position during their rule, yet the end of the spy is will known. The end is that he will lose his country, and this is what happened to al-Hafezi, who "escaped with the enemy to avoid being killed



by his own people when they won the battle under the leadership of King Kutez who became the king of Egypt and al-Sham (Syria)."<sup>(191)</sup>

He was faithful and kind to his father. His letter of Sharaf al-Din al-Rakbi which he sent when Ibn Abi Usaybe'ah was in Sarkhad at the Court of Prince, Izz al-Din Aybek al-Moazami - "who was the Sultan of Damascus 1218-1227)"<sup>(192)</sup> Sharaf al-Din asked Ibn Abi Usaybe'ah in his letter to him to return to Damascus since Damascus was incomparable to the city of Sarkhad because it was a paradise, and in order to be very close to his father who was living in Damascus. Sharaf al-Din said in his letter to Ibn Abi Usaybe'ah; "come back, as your father is sad and not feeling good since you left Damascus."<sup>(193)</sup>

Ibn Abi Usaybe'ah answered Sharaf al-Din showing how obedient he was to his father. Ibn Abi Usaybe'ah said in his answer;

"I have missed you very very much as the land misses the rain for a long time. Whenever I remember you, I find my eyes nearly full of tears.

Be sure, if some one asks me to choose the whole of the world or to be close to my father, I will choose the latter. No wonder about this feeling as he is very kind.

I will come back to the land where I grew up, to be not so far from educated persons."<sup>(194)</sup>

He had great affection for Damascus. In his poem to Mowafak al-Din Abdul Salam of Hama (city in the middle of the road from Damascus to Aleppo) he shows us how much he loved the city of Damascus. The following is an extract from that poetry.

"Maybe the time which I spent in  
Julak (Damascus) will come back again  
and home will be near after being so far  
I am very much looking forward to her boundary.  
How much I missed her citizens  
Damascus is the last aim for any one who  
wants to reach an aim and  
Every beauty is there and you may select what  
you want.  
If you are wise describe her because if you  
describe another city you will be foolish.  
Throughout the world you will never find a  
paradise like Damascus. (195)

He was proud of educated women. He mentioned with pride  
that the physician Abo al-Abass Ahmad Ibn Abi al-Fadel Assa'ad  
Bin Halwan was known as Ibn al-Alemeh (the son of the scientist)  
Alem (scientist (male) Alemeh (scientist female)). Ibn Abi  
Usaybe'ah said that "he is known as Ibn Alemah because his  
mother was Al-Emeh (scientist) of Damascus. She was known as  
the daughter of Damin al-Louiz." (196).

By giving this information about the daughter of Damin al-Louiz  
he wanted without doubt to tell us that he was very proud of her  
because she was educated and the name of educated women must be  
written in the history to remain forever as he did when he  
mentioned her in his book.

He was very proud of being Arab. In every poem, in many places  
he showed us how much he loved his country, her every city, loved  
her nation, her people, especially her physicians as he did when  
he wanted to give full details about the Arab physicians and  
their achievements and roles in the civilization as a whole.  
Moreover he told us without any doubt that the Arabs are very  
skillful and intelligent people and it is impossible to compare  
them with some other nation such as Persia. He said in his poems

to his friend the physician Saraf al-Din al-Rahbi when he was in Sarkhad in answer to his letter.

"I came to where I lost my gratitude.  
Do you think the skill of the Arabs is  
equal to the skill of the silly Persians?  
No, not at all."<sup>(197)</sup>

He was modest and grateful. These characteristics appeared in many places in his books. Let us mention his poem to his friend al-Rahbi, although al-Rahbi was his friend and both of them were good physicians . He started his poem by saying:

"Oh dear sir, you reached the highest rank  
Your knowledge and wisdom reached the highest level."

He was very modest. He considered the advice of his friend as an order he must do. He never forgot anything done by his friend. He sent to his friend Sharaf al-Din saying:

"Oh God, I am very grateful to you.  
You showed me kindness during the past time  
I will thank you forever and thanking your  
kindness for good is the best way to do so."<sup>(198)</sup>

He had a critical approach. In many places in his book we notice that the mentioned information about the physicians saying: I hear ...this and that, he told me this and that, and after he mentioned the information which reached him by some friend, afterwards he continued saying: But I say, with some comment about this information whether they were right or wrong.

In his explanation about the life of Radey al-Din al-Rahbi he gave some comments and explanation on his advice about the food and the eating and his views that: that it is necessary



to eat as soon as you feel or wish to do so, to care for the parts of the body and this leads to a long life.

Ibn Abi Usaybe'ah commented saying:

"I say the right way to say that the food must not be eaten without real appetite. One day I was reading a book of al-Rhaz about the arrangement of having the food. Al-Rhaze has mentioned that, the human being must eat twice a day. One said to him: do care about that advice, if not it will be harmful for the body. Ibn Abi Usaybe'ah continued, al Rhaze was right in his advice."<sup>(199)</sup>

He enjoyed himself. It is apparent to us that Ibn Abi Usaybe'ah had a fresh and young spirit. Moreover we notice that he spent some enjoyable times during his stay in Damascus. His friend asked him clearly in his poetry to come back to Damascus from Saekhad in order to return back again to the life of pleasure of playing music and his friend told him.

"Don't stay anywhere else, except at Damascus.  
Life is short  
Come back to enjoy your time among her beauties.  
Come back to pleasure, playing and music."<sup>(200)</sup>

The above advice of his friend without any doubt suggests that Ibn Abi Usaybe'ah had exciting times in Damascus, before leaving for Sarkhad a small town in the mountains of Houran. This fact is to be considered true, especially if we know that Ibn Abi Usaybe'ah admitted in his answer that he missed the pleasant life in Damascus and he was looking forward to coming back, again to Damascus, also because he considered his friend's advice as an order: He answered his friend.

"I am looking forward to come back to repeat the lovely days which we had before.

I believe that what you have advised is an order Without any doubt I will come back to the land Where I grew up."<sup>(201)</sup>

He wrote poetry. Ibn Abi Usaybe'ah was a poet. He mentioned a number of poems written by himself. Also he received a number of letters from his friends in the form of poetry. Anyone can read his masterpiece of poetry on "Damascus" which he sent to his friend Mowafak Abdul Salam <sup>'202)</sup>. He or she will find an excellent description, exactly, the same description as the well known poet Ahmad Shawki of Egypt. In his masterpiece on Damascus which he wrote after he entered the boundaries of Damascus for the first time. Because Ibn Abi Usaybe'ah was a poet he wrote a number of poems. Moreover he knew a great number of poems. In his book he mentioned a great deal of his friends, teachers and other physicians mentioned in his bibliographies. Above all he learnt by heart a number of them, even when he was writing his bibliography he was always thinking of his poetry and as soon as he remembered any part of a poem, straightaway, he wrote it down.

In his story about his father and the day when he had a copy of Manaf al-Aada of Galen, through a Persian merchant who came to Damascus and then gave it to Izze al-Din al-Sowayddi. Since that copy was the only copy available at that time in Damascus Ibn Abi Usaybe'ah said: "My father gave it to Ezz al-Din Bin al-Sowayaddi, then al-Sowayaddi thanked him by poem"- and straightaway we find that some part of that poem came to his mind and he found himself continuing saying "what come to my mind now from that poet is the following"<sup>(203)</sup> ....then he mentioned a part of it.

He was tolerant of love and passion. What a fantastic friendship there was between Ibn Abi Usaybe'ah and Emad al-Din al-Dinayseri. He has given us much detailed information about him, nearly eight pages on his life and nearly seven pages out of the eight concerns his poetry. When you read that poetry, you will find that Ibn Abi Usaybe'ah seems to us to have been the best friend of al-Donayasri, as he told him about his personal affairs and his private life. As still till now - the state of falling in love with someone is considered as a secret matter and the only one who will know that affair is the closest friend without doubt, especially, according to the oriental mentality. Therefore we may mention that Ibn Abi Usaybe'ah was the closest friend of al-Soweydi, moreover, he found an attentive ear about his private affairs from his friend. Also we will find that Ibn Abi Usaybe'ah was not ashamed of those affairs, on the contrary he mentioned it and told us in his book all his friends love poetry, and this fact leads us to believe that because Ibn Abi Usaybe'ah was proud of lovers as an example of that poetry we may mention the following. He said:

"I fall in love with a lovely moon.  
Like the peer, but the peer will get jealous of her.  
From the fire of my burning heart  
I sent her a letter  
I said in that letter: You are  
my lover and I will have you at any price."<sup>(204)</sup>

He was a dedicated linguist. An example of his admiration for a person who knows a number of foreign languages was great. We may give a case of his pride in his uncle Rashid al-Din al-Ibn Khalifah:

He told us with great pride "My uncle spoke Persian and knew the grammar of the Persian language. He recited poetry by Persians,



He also spoke Turkish"<sup>(205)</sup> This was an indication to his reader that it is very good to know many foreign languages and it is very necessary for a physician to speak, read and write a number of languages to enable them to discover the knowledge of the other nations.

He was a philanthropist. He mentioned with great honours the efforts which were made by the physicians mentioned in his book in the field of medicine especially regarding the building of the hospitals by donations from a number of noble physicians. As an example of this matter we may mention the son of a Judge of Balabak Bader al-Din and his effort to build the hospital.

"He, Bader al-Din, continued his efforts till he was able to buy a great number of houses and attached them to the great hospital which was built by the King Nour al-Din Mahmud Bin Zanki. He worked very hard till he succeeded in annexing the houses to the hospital and making the halls of the hospital very large since they were very small and unsuitable for patients and he rebuilt many of them to a higher standard and he connected the water and made it run in the hospital at the disposal of the physicians and patients. Then he continued;

"I found what he had done were marvellous efforts and those establishments will live forever and his name will get thanks for those efforts."<sup>(206)</sup>

And this, again, another call from Ibn Abi Usaybe'ah for every person who is able to provide some efforts or to donate some sum to build the hospital or to enlarge the existing hospital because God will not forget their efforts and their names will live for ever in history.

He was very accurate in his description of persons. In his writing and his description of persons, you will find an excellent description and he will make the reader imagine the person and make a real picture of his and feel that he is reading the life of a person who is familiar to him and known personally.

Let us see his description of one of the physicians: Najem al-Din Bin al-Mounfakh of Damascus who was born 593H. He said:

"He was brown, not fat, with skilled mind, very intelligent, spoke fluently, very clever, no one like him in research, no one able to compete with him in discussion, very nervous, and irresistible."<sup>(207)</sup>

He was fond of Arabic writing. As the Arabic writing has a different kind of writing according to the school belonging to each kind (see fig. no. 9 ) we notice that Ibn Abi Usaybe'ah loved Arabic writing and it was one of his hobbies.

In many parts of his book we notice that he always paid some attention to the condition of the copy of each book which reached him especially about the kind and type of writing and he praised the author of the books. It is not necessary to be the writer because at that time there were special groups of people known as scribes, the persons who wrote the book as dictated by the author, or the persons who wrote another copy of the original copy by copying from that copy. In most cases the original copy was written by the author himself. To have an idea, how much Ibn Abi Suaybe'ah was fond of the Arabic writing we may mention what he told us about Izz al-Din al-Soyadi, he said:

"Izz al-Din wrote by his handwriting a great number of books. Out of them, were handwriting belonging to the style of Ibn al-Bawab and the other complete handwriting which belonged to al-Kufi.

Every kind of his handwriting is considered much better than the shining stars, and more worthy than jewels."<sup>(208)</sup>

He was generous and proud of hospitality. He told us that one of the characteristics of Dr. Imnad al-Din al-Dansere that he was generous. He said: "I found that he had a spirit of Hatem."<sup>(209)</sup>

He was against Fanaticism. A test of Islam is to respect all religions and all nations. The religious for God and the fatherland for everyone. Ibn Abi Usaybe'ah gave an excellent example of this. He was a good friend of a number of Christian physicians. Moreover he told us with pride about their achievements, life, roles and contribution in our civilization. Let us mention what he told us in his biography about Abo al-Faraj. He said "His father (Abo al-Faraj's father) was the best of my friends His father Mowafak al-Din Ibn Ishaq Bin al-Kaf was a Christian from al-Kark. He was a friend who always showed his kindness and friendship towards me, during all of his time and his life he was taking care of our friendship in order to make it last for good. He was a distinguished man of his times, clever, he has a good memory. His handwriting in the style of al-Mawfoub was marvellous."<sup>(210)</sup>

He was well organised. He gave us some of the regular works of Rahbi during the week to show us how much he was well organised, He said: "He was well organised. He organised his time during the week: Saturday, going to the park for a walk, Saturday for him was a day of rest, he never worked on that day. Thursday for bathing, every Thursday, he usually went to the public bath and he paid the fees of bathing regularly. Friday for visiting his friends and a number of top classes, the best families and receiving his guests at home."<sup>(211)</sup>

Anyone will read these details of the plan of Ibn Abi Usaybe'ah's friend for a week will say that Ibn Abi Usaybe'ah was well-



organised as he told us these details with pride.

He was open minded. Ibn Ab Usaybe'ah told us that his father received one day a copy of the book by Galen, through a merchant from Persia who came to Damascus in 623. The physician al-Sowaydi asked Ibn Abi Usaybe'ah's father to send him this copy to read it. Ibn Abi Usaybe'ah told us that his father agreed to send the copy to his friend in order to read the western author's as he that believes every physician scientist, and nobleman must be open minded and read the other foreign authors. (212)

### C. HIS SHEKHS, FRIENDS AND STUDENTS

It may be useful now and before giving an explanation on the work of Ibn Abi Usaybe'ah to mention the Shekh of Ibn Abi Usaybe'ah, his friends and his students as mentioned by himself.

#### His Sheikhs

The word Shekh refers to the person who teaches people different subjects including the Quran. This word is still in use in many parts of the Arab World to refer to the person who teaches the Quran and other religious matters. With regard to Ibn Abi Usaybe'ah's Shekh. (teachers) we may mention the following foremost Shekhs who were teaching medicine and other subjects to the generation of Ibn Abi Usaybe'ah's father and then to the generation of Ibn Abi Usaybe'ah. All of them mentioned by Ibn Abi Usaybe'ah with great honour, and respect. He said:

"My Shekhs were Muhazab al-Din Abdul al-Rahim<sup>(213)</sup> Fagher al-Din al-Mardeni<sup>(214)</sup>, Saded al-Din Mahmoun Ibn Omar. , Rafe'a al-Din al-Jabeli.<sup>(215)</sup>

### His Friends

With regard to the friends of Ibn Abi Usaybe'ah we may mention the following physicians according to the following classification:

#### Those who told him some events and dates

His uncle Rashid<sup>(216)</sup>, Shekh Shames al-Din abi al-Fadel,<sup>(217)</sup> Hakim al - Din Khalil Bin Abi al-Fadel Bin Mansour al-Tonokhi,<sup>(218)</sup> Sadid al-Din Mahmoud Ibn Omar<sup>(219)</sup>, Abo al-Zaher Essmael<sup>(220)</sup>, Mouofak al-Din Ibn Ab Bouri, Ezel al-Din Abo Ishaq<sup>(221)</sup> Abo al-Fateh Bin Muhana al-Nesrani<sup>(222)</sup>, Shames al-Din Ibn al-Moutwa's al-Kahal, Radey al-Din<sup>(223)</sup>, Bader al-Din Ibr. Kadi and Shames al-Din al-Kutubi<sup>(224)</sup>.

#### Those who sent him poems

Jamal al-Din Mohamed Ibn Sayef al-Din al-Ameçi<sup>(225)</sup>, al-Hafez Najeb al-Din Abo al-Fateh al-Shybani<sup>(226)</sup>, Najem al-Din al-Labourdi<sup>(227)</sup>, Muhazab al-Din Abu Naser Mohamed Ibn Mohamed Ibn Ibrahim Ibn al-Khouder al-Halabi, Sharaf al-Din Isamael Ibn Abdulah<sup>(229)</sup> Sadid al-Din Ibn Rafekah<sup>(228)</sup>, Shames al-Din Fetyan.<sup>(230)</sup>

#### Those who copied from their books

Sarem al-Din al-Tabneni<sup>(231)</sup>, Abi Zakarl Yameya Ibn Isamel al-Bayase<sup>(232)</sup> Abdul Razak Ibn Ahmad<sup>(233)</sup> Abdul Karim al-Muhandes<sup>(234)</sup> Sadetah al-Sameri<sup>(235)</sup>, Mowafak al-Din Hebat al-Lah Abi al-Kasim Ibn Andul al-Wahab<sup>(236)</sup>.

We may mention also Rashid al-Din Ibn al-Souri who presented Ibn Abi Usaybe'ah "his books which contain some medical advice and thanked him for his present by a letter."<sup>(237)</sup>

Out of the above mentioned physicians, we may say that Ibn Abi Usaybe'ah was very proud of Muhazab al-Din Abdul Rahim more than the other Shekhs, also we may believe that one of the good friends of Ibn Abi Usaybe'ah was the noble of Damascus the Judge, Rafea al-Din al-Jabeli. Ibn Abi Usaybe'ah said, "It was a beautiful friendship between us".<sup>(238)</sup> But his best friend was Sadid al-Din Ibn Rafeka, no wonder about it, especially if we know that he told him all his private life and his love affairs.

#### D. HIS WORKS

In fact the masterpiece of Ibn Abi Usaybe'ah's book to which we have referred many times in the previous pages is Uyun al-Anba Fi Tabakat al-Attaba (Sources of information on the classes of physicians).

He wrote various works on medicine which are now lost, but which are mentioned incidentally in his masterpiece. Among them is "Isabat al-Munadjdi min, al-Tadjarib Wa al-Fawaid, Hikayat al-Atibba Fi Ladjat al-Adwa and Ma'alim al-Umam."<sup>(240)</sup> But he owes his fame to his Uyun al-Anba Fi Tabakat al-Attem. As our thesis is based on this work some information about this book is very important.

##### D.1. Uyun al-Anba Fi Tabakat al-Atteba

The book is a collection of over 400 biographies, which are of inestimable value for the history of Arabic science. It is a history of the healing art with biographies of educators and authors in medicine and allied sciences from ancient times to his time.

The work appeared in two versions; a major and a minor. The



latter was completed in 640/1242 and with the addition of new material drawn in part from the Tarikh al-Hukama of Ibn al-Kifit " d. Damascus 1248 containing 414 biographies of Greek, Syrian and Islamic Physicians, astronomers, philosophers. Printed by Leipzig Dieterlchsehes Vereags Buc Handburg (Theodun Weicher)"<sup>(241)</sup>

It produced the major recension 667/1268. From the two versions a not very careful copyist produced a re-written version after the author's death. The literary style of the Uyun, which contained some features of a popular style have been studied by A. Muller (see Figno.10) who also prepared an edition of the text based on the original versions, but this work was so badly printed in Cairo 1299/1882 that he had to include a long list of corrections and to "repeat the indices in a third volume which mainly contains the variants (Ibn Abi Useibia Herausgebe von August Muller, Konigsberg 1884)"<sup>(242)</sup> The Uyun was later published in several commercial editions and was reprinted in Beirut (Dar al-Fikr 1955 - 1956) and Dar Maktabat al-Hayat 1965 with some commentary by Dr Nezzar Reda (see Fig. No. 11 )

Before giving any more information about this important book, we must give some definition of August Muller who contributed to our history of Arabic Medicine, as without his marvellous effort on Ibn Abi Usaybe'ah this thesis was impossible to appear. His efforts led the Arabs to discover a great deal of 'knowledge' about their achievement in the field of the history of Arabic medicine.

Muller (Augustus) 1848-1892.

Biography of German orientalist, born in Stettin and died in Halle.

From 1864 to 1868 he studied classical and oriental philology in Halle and Leipzig. Trained in Halle in 1870. In 1874 and 1882 he was appointed extraordinary and ordinary Professor respectively in Halle.

His most famous writings are:

Die Griechen Philosophen in der Arabische Ueberlieferung  
(Halle, 1873)

Hebraische Schulgrammatik (Hebrew School grammar) (Halle, 1878)

Ibn Abi Ussaibia (Konigsberg, 1884)

Der Islam in Morgenund Abendland, in Onken's universal  
history (Berlin, 1885-87)

Jahresbericht uber Semitisch-Griechische Philosophie(1887-90)

Guide to the fourth and fifth editions of Caspari's Arabische  
Grammatik (Arabic Grammar) (Halle, 1876 and 1877)

Translation of proverbs for Sacred Books of the Old Testament  
(Leipzig and Baltimore 1893)

He also organised the catalogue of the library of Deutsche  
Morgenlandische Gesellschaft (Leipzig 1880-1881) and published  
the Oriental Bibliography (Berlin, 1882-92), continued by Kuhn  
and Scherman. (243)

The book of Ibn Abi Usaybe'ah"emphasizes the importance of the  
study and practice of the healing art which in Muslim tradition  
was sanctified and equivalent to theology." (244)

#### Aims of the Book

He thus reiterates that more attention should be given to this  
profession, its doctrines, regulations and precepts. He laments  
that although medical men contributed greatly to public health  
and human welfare, no one"has written a comprehensive biography  
in chronological sequence of ancient and medical sages and  
physicians and of their accomplishments." (245)

To know the author, his aims and the main objectives of his  
work, the introduction of his book is the main tool, as the  
introduction for any book is the doorstep of the full picture.

For this reason, the full text of introduction of Ibn Abi Usaybe'ah's book is given below.

"Praise be God who spread the nations on earth and who will raise the decayed bones, creator of the souls and healer of illness, who brings by his favour an abundance of graces, and who promised he who rebels against him the most painful punishment and indignations, disease and brought down cures (remedies) with complete craft and perfect wisdom. I testify that there is no God but Allah a testimony ending with paying back the souls, and purified - saved from the atourty of uttering evil and reasoning falsely and then degenerating. And I testify that our Master Mohamed is his slave and Prophet who was sent to all Arabs and non Arabs, who illuminated with the refulgence of his senderis brightness the darkest night, and who destroyed by his wondrous sword the haughty and the oppressors and rooted out with the truth prophecy the disease of polytheism. May God grant him his permanent and everlasting blessing as long as lightning flashes and clouds pouring down the rain, and bless His people, possessions of grace and generosity and bless His companions who made law, their aim, and bless His Immaculate wives, mothers of believers and all honoured and glorified."

After the above: The medical profession is the most honourable profession and the most beneficial profession and it is mentioned in the book of God and the religious laws. Even He makes the science of the body equal to the religion. The physicians said: There are two kinds of desire; good, and pleasure, both of these can be achieved for man by the gift of health, because pleasure which comes from the last life, and good from the last life, are both impossible to obtain without continuing health and strength of body. This can be achieved by the Medical profession because it takes care of present health and returns back long-lasting health. So it must, if as the medical profession is honourable and necessary We must succome it by being industrious in learning the whole of it in all its parts.



As many people practiced it and wanted to know its origin and its out from its origin till one time. There were in past times many physicians who were clever and favoured for their learning and their virtues, of which this book is a record and their own books a witness.

No one as far as I know has written a comprehensive, chronological biography of these ancient and medieval sages and physicians and of their accomplishments. So I am going to do so to mention some of their sayings, stories, jokes and discussions, and to list their books in order to show how much God belonged them to get science and made them intelligent and learned. We are in debt to their books and the knowledge which is contained in them. This is the debt of the student to the teacher and to the poor to the charitable. I have mentioned a number of physicians and philosophers who were so interested in Medicine and some information about their life, talks and the name of their books. I have mentioned each one in the right place according to their classes and ranks.

But regarding all physicians and all educated people and other people of other different branches of sciences, I will mention them - by the strength of God - in the book "Malem al-Ummam and Akhbar Thawi al-Hekam.

I have divided this book into fifteen chapters and named it, "Katab (the book): Uyun al-Ana Fi Tabakat al-Atteba". I have dedicated it to the friend the scholar judge the complete president Master of Ministers, the King of physicians, the Imman of Scholars, the Son of religious law, the loyal servant of the state, the perfection of faith, the stalwart of belief Abi al-Hassan Bin Ghazal Bin Abi Saed, (May God grant him happiness and his heart's desire).

From Allah I ask help and success. His is all power; His is all ability. (246)

1. The first chapter: on the reasons for the rise of the leading art and by whom and how it was originated.
2. The second chapter: physicians who started the art and left some legacy no matter how fragmentary.
3. The third chapter: Greek physicians - the descendants of Askelepios and the Asclepiads.
4. The fourth chapter: Greek physicians who became the disciples of Hippocrates.
5. The fifth chapter: Greek Roman physicians who appeared during Galen's time or subsequently followed him.
6. The sixth chapter: Alexandrian physicians and their Christian contemporaries.
7. The seventh chapter: Arab physicians in and around the early period of Islam.
8. The eighth chapter: Syrian physicians, whose mother tongue was Syriac and who lived during the first period of the Abbasid dynasty.
9. The ninth chapter: Biographies of scholars who translated the Greek medical legacy into Arabic and the patrons under whom they carried on their activities.
10. The tenth chapter: Biographies of physicians from Iraq and Northeast Syria (al-Jazirah and Diyar Baker)
11. The eleventh chapter: The physicians who appeared in Bilad al-Ajam (Persia) who wrote in Arabic.

The twelfth chapter: Biography of Indian physicians whose works were translated in Arabic.

The thirteenth chapter: Biographies of physicians in North Africa and Spain (al-Maghriband al-Andalus)

The fourteenth chapter: biographies of Egyptian physicians.

The fifteenth chapter: Biographies of prominent physicians of Bilad al-Sham (Syria) (247)

His last chapter 15 is translated in this thesis as an example of the writing of Ibn Abu Usaybe'ah to complete the discussion of the development of the Arabic Medicine.

## D.2. AN EVALUATION OF THE BOOK

Although the book of Ibn Abi Usaybe'ah's is considered the first book on Arabic medicine, he provides no mention of persons such as Ibn Nafis, who, like him, was a pupil of Ibn al-Dakwar (d.623/1230), but whom he disliked. He based his work on the bibliography productions of his predecessors, such Ibn Djuldjul, and a comparison between their text and that of Ibn Abi Usaybe'ah's shows how he either copies them or how this mass of raw material was amplified by successive additions.

Without any doubt, the author presents in these biographies a high degree of historical discernment, scholarship and competence. "Even by modern standards, his work can be considered one of the finest and most instructive among the early texts on the history and philosophy of the health science." (248)



With regard to the manuscripts, we are lucky, that several editions have survived, and most of them are kept in well known libraries of Oriental collections throughout the world: Damascus, Beriut, Cairo, Vienna, Paris, Leiden, Oxford, London. Some in excellent condition, all of them based upon the praiseworthy Cairo Bulaq editions of 1300/1882 and sequel of 1884 of Max Muller. In the British Library of London, there are three copies of this manuscripts as mentioned by Sani Hawarnah on his valuable book on the Arabic manuscripts

- Uyun al-Anba Fi Tabakat al-Attaba add. R.ch 7340  
210ff, 31Ls, 16 x 18.5 cm with margins containing titles and corrections, elegant Naskh, 20th Rajab 1011/1602, by Ibn Muh Shafi Mulla Zayn al-Abidin in Isfahan, who inserted also a complete table of contents as an index.
- The same on.3045 253ff. 33 Ls, 22 x 32.50 Cm, ordinary Naskh, 19ty Safer, 1297/1880 copied from the one at the National Library of Cairo
- The same: add 23346.

The first manuscript mentioned above add. rich 7340 as all editions, concludes (ff.209-210) with the bibliography of Yaqub Ibn al-Quff, his student, author of several books including the marginal notes (hawarshi) on the third book of Ibn Sina's Conon, which unfortunately have been lost. On the last page and in a different handwriting on biography of Ibn al-Nafis is inserted which is not found in most other copies. Although we believe that this is written by one of his students after his death, still these additional annotations are considered very important, since they throw further light on two of the most distinguished physicians during the early Mamluks periods in Syria and Egypt.

The first twelve chapters of the manuscripts add. 233364, plus a part of chapter thirteen are missing. And the remaining well-preserved part coincides with the text in vol.2,P.52 to the end of the Cairo - Bulaq 1882. It begins with the biography of Abu al-Salt Umayyah (1096-1134) from Daniyah 'Denia) in Eastern Spain, who was a poet, pharmacist, mathematician and musician.

On the title page of this very important copy there is a statement to the effect that it was copied from the author's autography bequeathed as a Waqf donated to the library Cabine (Maqsurah) of Ibn Urwah at the mosque, that others may benefit from it.

This book becomes even more significant in the history of the healing art when we relayed that this text has been recognized by Orientalists and other scholars since the middle of the 19th Century, (Wustenfeld, Lecleve). "A French translation of part of this book has been published by Sanguinett, (in Ja, Asiatique Paris 1854-6) and a German translation by Hamed Waly Berlin diss. 1910".<sup>(249)</sup> Recently (Algiers 1958), "H. Jahier and Abdel Kader Nour Coldine have edited, translated and annotated the chapter on the physicians of Bilan- al-Andlus".<sup>(250)</sup>

The copy of Cairo 2 vol. 1882 - 1884 supplemented by Ahmed Isa. Bey Mujah al-Ahba Faud al-Awaluni Faculty of Medicine Cairo .

To give an idea about the value of this book we will give below an interesting story mentioned by Ibn Abi Usaybe'ah himself and we will notice that this was very valuable, even for the Kings. Ibn Abi Usaybe'ah writes:

"Al-Sahib Amin al-Dawlah (the ruler) was my father's friend. He told my father one day 'Sadid al-Din, I hear that your son has written a book on the Tabakat al-Atebba (the classes of physicians) and not one has written anything like it before. All the physicians who visit me tell me that the book is very useful and breaks completely new ground. As you know I have a collection of nearly twenty thousand books, but I do not have any book on this subject. So I would like to ask your son to write a copy for me.'" Ibn Abi Usaybe'ah continued his story. "I understand at that time in Sarkhad, where the ruler was Prince Ezzal Din Aybak al-Moazami. My father wrote to me. When I received his letter, I came to Damascus and I brought my copy of the book, I called the scribe, Shames al-Din Mohamed al-Husayni who used to copy my books regularly because I liked his handwriting and because he was famous in Arabic literature. I told him the full story and he quickly copied my book. After I had bound the copy I wrote a poem praising al-Saheb Amin al-Dawlah. I sent the book to him through the president of the judges in Damascus Rafea al-Din al-Jabeli - one of the Shekhs - who had taught me the books of Ibn Sina al-Esharat Wa al-Tanbehat, and had become a close friend. When Amin al-Dawlah received my book and the poem he was very pleased and he admired my work. He sent me through the president of the Judges of Damascus a great amount of money and many presents. He thanked me and added: 'I wish you to let me know of any future work.'" (251)

Ibn Abi Usaybe'ah tells us another story about the value of his book, but this time he gives the opinion of a friend. He writes:

"Oh, Mourafak al-Din, you have the success of your dreams. By this book, you have reached the highest pre-eminence. In this book, you have told of the physicians of old; you have recalled their valuable heritage. For this book God gave you goodness in this life and for this book He will grant you goodness in the life to come." (252)



On the other hand he wrote only the best of his profession. There are some short biographies of Samaritans, Jews and Christians. The Samaritan physicians Ibrahim Ibn al-Khalaf who served Salah al-Din is mentioned very briefly and the biographies of three Christian physicians who served the same ruler are less than a half page in length, one of them a mere two lines.

Ibn Abi Usaybe'ah appears to have been prejudiced against certain physicians. He tells us of the disappointment of Rafi al-Din al-Hill, one of his teachers of philosophy, as well as a teacher of medicine and chief judge of Damascus, who upon examining a copy of the work in the presence of the author, found himself unmentioned. Criticizing Ibn Abi Usaybe'ah for referring to a physician who had been sentenced to death by Salah al-Din, he added, you mention this one, but you did not mention others who are better than he, and pointed to himself.

The above points will not prevent us to say that the previous information about the work shows that Ibn Abi Usaybe'ah was very important at that time and which makes it a very important reference for every physician who is researching the history of Arabic medicine now and forever.

In the following pages of this chapter we will give a translation of the chapter fifteen of this book the first translation of its kind - the chapter entitled the physicians of Bilad al-Sham (Syria) as the information on the physicians of Syria is bound in this valuable book.

C H A P T E R   F I F T E E N

The Physicians of

Bilad al-Sham

BY

IBN ABI USAYBE 'AH

TRANSLATION OF CHAPTER 15 OF  
YUN AL-ANBA FI TABAKAT AL-ATTEBA OF  
IBN ABI USAYBI'AH

In the following pages, a translation is given of Chapter 15 of Ibn Abi Usayb'ah's book Yun al-Anba Fi Tabakat al-Atteba. The Chapter is entitled - The Physicians of Bilad al-Sham (Syria).

Abo Naser al-Farabi

His full name was Ibn Mohamed Ibn Mohamed Bin Ozalegh bin Tarkhan. His city was Farab in Turkey. His father was a commander of the army. He was in Baghdad, then he moved to Damascus. He was a great philosopher and respected Imam. He was well known in mathematics, very intelligent, and had a good knowledge of medicine but he did not practice. He met Prince, Sayaf, of Daulah Abo al-Hassan Ali Ibn Abdulla Bin Hamdan al-Taklubi, the governor of Aleppo, 916-964, who was governor to scientists such as al-Mutanabi, Abo Firas and al-Farabi, the philosopher. I have copied down from some of the Shek's writings that al-Farabi travelled to Egypt in 338 and came back to Damascus in the same year. He died in Damascus in the month of Rajab 339. Prince Safy al-Daulah Ali Ibn Hamdan and members of his government said that he got four dirham silver everyday from Prince Safy al-Dawlah. He did not take care of his appearance, his home or his money. It is said that he ate lamb's heart with wine.

He wrote a number of books on statistics and the complete city which he started writing in Baghdad and completed in Damascus at the end of 330. Also on music, philosophy and al-Rhazes and fine sciende. <sup>(1)</sup>

Issa al-Raki

He was a celebrated physician in his day with a good knowledge of medicine and great skill in his profession. He worked at the court of Sayaf al-Dawlah and was one of his personal physicians. Abdul Allah Ibn Jebrel said that when Sayaf al-Dawlah sat down to eat,



twentyfour physicians sat down with him and Issa al-Raki was one of them. (2)

### Al-Yabroudi

His full name was Abo Al-Faraj Jarjis Ibn Yuhana Ibn Sahel bin Ibrahim. He was well known and distinguished in all branches of medicine. A Christian from Damascus told me that al-Yabroudi was born and brought up in Yabroud, which is a big village near Sadenaya with a great number of Christian inhabitants.

Al-Muluk "some citizens of Damascus told me that a baker bought some apricots and ate them with a hot loaf of bread. He felt dizzy after he had finished eating and fell to the ground. Although his neighbours thought he was dead, they asked some physicians to try to revive him; but they all failed. So everybody agreed that the baker was indeed dead. Therefore they washed his body, prayed and carried him to the cemetery. When they arrived outside the city, they met al-Yabroudi, who was a very clever physician. He heard the people talking about the so called dead man being brought to th tomb. Al Yabroudi asked for all the details. They told him everything. Then he said "put him down so that I can see him". He started to examine the body and to see the signs of death. He opened his mouth and gave him an emetic. Everybody was astonished to see the so-called dead man open his eyes, speak, get up and walk back to his shop alive." Al-Yabroudi died in the year four hundred and .... He was buried in al-Yaakebah church near Bab Toma (the Door of Toma) a place in Damascus. Al-Yabroudi's books include a critique of Ibn al-Moufaki. (3)

### Jaber Bin Mansour al-Sekari

He was from Mousal, a good muslim a very distinguished physician who had the highest reputation in his profession. His teacher was Ahmad Bin Abi al-Ashath and his pupil Mohamed Bin Thuals. He

lived all his life in Mousel, but his son Zafer moved to Damasc and stayed there.<sup>(4)</sup>

#### Zafer bin Jaber al-Sukari

His full name was Abo Hakam Zafer bin Jaber Bin Mansour al-Sukari. He was a good muslim and distinguished in medical profession, with a good knowledge of the sciences and the arts. He met Aba al Faraj ibn Aal Tabeb (the physician) and worked with him in Baghdad. He lived longer than his father. He was in Mousel in 482, but he moved to Aleppo and stayed there until his death. He taught a number of physicians in Aleppo. One of his books was on animals.<sup>(5)</sup>

#### Mawhoub bin al-Zafer

His full name was al-Fadel Mawhoub bin Zafer Bin Jabir Bin Mansour al-Sukkari. He was distinguished in Medicine. He lived in Aleppo.

#### Jaber bin Mawhoub

This is Jaber bin Mawhoub Bin Zafer bin Jaber Bin Mansour al-Sukari. He was well known and expert in medicine and lived in Aleppo.<sup>( )</sup>

#### Abo Al-Hakam

This is Abo al-Hakam Obeyad Allah Bin al-Mozafar Bin Abdullah al-Baheli al-Andalousi al-Morabe. He practiced medicine. He was well-known for his poetry and for his jokes. He loved pleasure and was very fond of drinking. He loved pleasure and drinking too much. He was musical and played the Aude (an arabic musical instrument).

He lived in al-Hajrin a house in al-Labadin. He often praised the al-Soufi family, who were the most powerful family in Damascus when Majed al-Din Abak bin Mohamed bin Bouri bin Atabek Taghteken was governor. He travelled to Baghdad and Basra and returned to Damascus, where he remained until he died on Wednesday, the 6th of Al-Kuda, 549. After he had been drinking at Zeyen al-Muhk Abk Tabib Bin al-Khayat's house, his face began to bleed. Next day he had some visitors who asked what had happened. So he recited a poem which he kept beside him and gave to anyone who asked the same question. When he looked in the mirror and saw the bleeding, he recited another poem. (It included some obscenities never used by educated persons). He was distinguished in medicine. He lived in Aleppo.

He praised Moayad al-Din Aba al-Fauares Bin al-Saufi and his brother Ezel al-Danlah. He wrote a poem describing al-Basra in Iraq and other cities when he was close to his death in the month of al-Kuadeh in the year 549. He recited the following poem and ordered his son to mention it after his death.

"My death and my end sadden me.

I hope my poetry will live on after me and mourn for me.

If it is possible, let me come back.

If I cannot return, do not hurry me to the tomb.

My family and any friends will say farewell.

They will leave and leave me alone in this awful place.

"If I've made you happy by dying and

You are glad that you have outlived me.

Remember my pupil, Da Keyor, is still with you.

I was pleased with him before my death and after.

When we were serious and when we had fun.

I entrusted my work to him, because he knows

That in a little while he will join me.

So do not forget the memory of Allah

There is no memory for us except the memory of Allah."



Abo al-Majed Bin Abi al-Hakam

This is Afadeh al-Dawlah Abo al-Majed Bin Abi al-Hakam Obeyad Allah Bin al-Mozafar Bin Abdullah al-Baheli, a celebrated ruler and distinguished scientist with a good knowledge of medicine, engineering and astronomy. He learnt music and played the Aude (an Arabic musical instrument). He was a singer as well. His father taught him medicine. He worked during the reign of the Sultan the just king, Nour al-Din Mahmoud Bin Zunki Attabek of Aleppo and Damascus who won the war against the crusaders in Syria and Palestine. He died in Damascus. Shames al-Din Abo al-Fadel Bin Abi al-Faraj al-Kahal told me that he saw him in Bemerstan (hospital) treating the patients, taking care of them, and prescribing drugs. After visiting his patients at the hospital, he went first to the castle, where the patients from the palace were and then to the palace itself. He sat in the great well furnished hall, which contained two cupboards of medical books. Physicians came to discuss with him. Many students studied under his supervision. Abo al-Majed died in Damascus in the year five hundred and.....(does not give the exact date).

Ibn al-Bathough

This is Abo Jaiafar Omar Bin Ali Bin al-Bathough al-Kaliai al-Makrebi. He was expert in compounding drugs. He had a good knowledge of diseases and their treatment. He stayed in Damascus for a long time. He had a shop in Allabadin. He sat in his shop, treating his patients or prescribing drugs for them. He prepared many drugs in the form of creams, tablets, and sold them to his patients, who benefited from them. His hobby was collecting rare medical books. He studied them and wrote comments on them. He wrote a commentary on Ibn Sina's book al-Canfon. He tried, rather unsuccessfully to write poetry. He lived a very long life

He lost his sight at the end of his life, because he had drunk too much as a young man which had cooled his body. He died in the year 575 or 576. He recited a poem on death and another in praise of Galen's book.

These are some of his books: Shareh Ketab al-Fousoul of Hippocrates, comments on Ibn Sina's book al-Cann'on.<sup>(9)</sup>

Hakim al-Zaman Abdul Moniem al-Jelyni

This is Abo al-Fadel Abdul Moniem Bin Omar Bin Abdullah Bin Hassan al-Ghassani al-Oundalezi, al-Jelayni. He was an outstanding figure of his time in the profession of medicine and the treatment of diseases of the eyes. He was brilliant in literature and poetry. He came from Spain to Damascus and lived there till he died. He had a long life. He had a shop in Alabadin for his profession. He was very close to King Salah al-Din Yusef Ibn Ayoub. He often praised him. He wrote a number of books on his orders, for which the King paid him a grant. He knew chemistry. He died in Damascus in the year six hundred and.....(Ibn Abi Usab'ah does not give the exact date).

He wrote a poem praising Salah al-Din and sent it to his camp near Akka during the war against al-Faranj. Salah al-Din received the poem in the month of Safar in the year 587.

Abdul al-Muniem al-Jeleyani wrote books on the following subjects, on art, behaviour, the wisdom of the Quran, the prophet, the war of Saldh al-Din in 583, the characteristics of Salah al-Din, which he wrote it in 569 and comments on compounding drugs.<sup>(10)</sup>

Abo al-Fadel Bin Abi al-Wakar

This is Ismael Bin Abi al-Wakar who came from al-Maiara (a city on the road from Aleppo to Hama north Syria). He lived in Damascus. He travelled to Baghdad, where he met many of the scientists and studied under them before coming back to Damascus. He was distinguished in medicine and related subjects. He was intellegent. He worked at the court of al-Sultan Nour al-Din Mohammed bin Zunki, who trusted him above all others as a physician. He was in attendance of the King both at the court and on his travel, and the king rewarded him handsomely. He died in Aleppo on 10th of Rajab al-Awal in the year 554.<sup>(11)</sup>

Abo Zakereya Yaheya al-Bayassi

This is Amin al-Din Abo Zakereya Yaheya Bin Ismael al-Andalousi al-Bayassi a distinguished scientist. He studied medicine and was distinguished in mathematics and science. He came from al-Maghreb (Morocco) to Egypt and stayed in Cairo for a while. Then he moved to Damascus and lived there. His teacher was Muhazab al-Din Abi al-Hassan Ali Ibn Issa Ibn Hebat Allah known as Ibn al-Nakash al-Baghdadi. He in his own hand wrote a great number of books on medicine and on other subjects. He made a number of engineering instruments for Ibn al-Nakash. He played the Oud. He studied music under Ibn al-Nakash. He served King Salah al-Din Yousef Bin Ayoub in the field of medicime.

After serving him for a period in BeKar he asked the King's permission to leave the court and live in Damascus. The King granted his request and gave him gifts as well as a regular sum of money as a reward for his service. He lived in Damascus until he died.<sup>(12)</sup>



Sakerah al-Halabi

He was a short man from the Jewish community of the city of Aleppo. He practised medicine. The Sheikh Safe al-Din Khalil Bin Abi al-Fadel Bin Mansour al-Tanoukhi said "When King Nour al-Din Mahmud Bin Zanki was in Aleppo, he fell deeply in love with a girl. She became very ill. One day when the King left Aleppo for Damascus, he left his beloved there. In fact he left his heart in Aleppo. He asked about her health situation. They told him that her health deteriorated. Then the King called in the physician Sakrah to examine her. Sakrah found that she could not eat and her moods fluctuated. After having treated her along with the other physicians, he told the servant that he wanted to visit her alone. She gave him permission. When he came he said to her, "My lady I will treat you with a treatment that will cure you very rapidly (if God allows) and you will never need anything further". She said "please do". He said, "I want you to answer me whatever I ask and not hide anything". She said, "yes I promise to do so without causing you any harm." He said "Who are your people"? She replied "Allaneyah" (a group of families from Persia who professed Christianity). He said "I know that Allaan in their own country are Christians, so tell me what did you eat in your own country?" She said, "beef". He said, "Lady what is your favourite drink?" She said "Such a drink", He said, "Do not worry, you will be cured and will recover your health." Then he went home and cooked a piece of cow meat. He gave some of this meat with milk, garlic and a loaf of bread and told her to eat. As soon as she saw the food her appetite returned and she ate until she was full. Then he gave her some drink saying "this is good for you." She drank it and feeling sleepy, went to bed. After that she became much better. Then he bought the same kind of food and drink for two days and afterwards she recovered completely. She gave him a tray full of jewels.

He said to her, "Thank you, but you must also write to the King telling him about your illness and how you regained your health through my assistance". She promised him to do so. In fact she wrote to the King and a letter thanking him and telling him that she had nearly reached the point of death but Sakrah had cured her by his treatment, which none of the physicians could understand her case except Sakrah. She asked the King at the end of her letter to send Sakrah a present. When the King read the letter, he summoned him. He showed his esteem and said. "We are grateful to you for your skill". He answered, "believe me your Majesty she was very near to death but God helped me to cure her to complete her life as he decides." The King was pleased by his answer and asked him "what do you want me to give you?" He answered "Your Majesty, I want 10 Fedans of Land, five in the village of Anadan (near Aleppo)" The King said "you will receive whatever you have asked for and all of it will be your property forever." Then he returned to Aleppo and became a very rich man. He was wealthy for the rest of his life and his sons were wealthy after his death.

#### Afif Bin Sakrah

This is Afif Bin Abdul Kaheer Sakrah a Jew from Aleppo. He knew the profession of medicine. He had sons and a large family, most of whom practised medicine and lived in Aleppo. One of his books was "an Essay on the Colon", which he wrote for King Salah al-Din Yousef Bin Ayoub in 584.<sup>(14)</sup>

#### Ibn al-Salah

This is the Sheikh Najem al-Din Abo al-Foutouh Ahmad Bin Mohamed Bin al-Sorri, known as Ibn al-Salah. He knew philosophy and was distinguished in medicine. He was from Hamadan, but lived in

Baghdad. The ruler of Mardin 1104-1152 Bin al-Kazi Bin Artek asked him to come with him and gave him a number of gifts. Then he moved to Damascus and stayed there till he died on a Sunday in 542. He was buried in al-Sofeyah cemetery outside Damascus. (15)

#### Shehab al-Din al-Sahrodi

This is Abo Hafez Omar Bin.....(not complete). He was outstanding in art, philosophy and astronomy. Al-Shekh Sadid al-Din al-Sahrodi came to see our Shekh Fakher al-Din al-Mardeni. They became friends. The Shekh Fakher al-Din told us "this young man is very intelligent. Never in all my life have I found anyone like him, but I am worried about him as he takes no care and this carelessness will be the cause of his death". When al-Sahrodi knew this he travelled from the East to Bilad al-Sham, then went to Aleppo, where he met the formal physicians and debated with them, prevailing against them all, so that they became very jealous of him and started to harm him. Therefore, King Ghazi Ibn al-Maler Salah al-Din Yousef Bin Ayoub - the Governor of Aleppo 1167-1215, the 2nd son of Salah al-Din - summoned him and the other physicians to discover what was the case of the trouble. Al-Sahroudi gave a full account at that meeting, speaking frankly, logically and scientifically. The King was so pleased and proud of him that he became even close to the court and this made the other physicians still more jealous. Therefore, they conspired to say that he did not believe in God, hoping to make the King so angry that he would have him put to death.

They sent a letter to King Salah al-Din in Damascus, which said, "if al-Sarhoudi stays here, he will corrupt everything and everyone including King Ghazi. If you allow him his liberty and let him travel from place to place, he will pervert every place he visits, because he is an enemy of God."



Therefore, King Salah sent a letter to his son, King Ghazi of Aleppo, which instructed him, "Shehab al-Din al-Sarhoudi must be killed. We cannot allow him to be free; we cannot permit him to live."

When al-Sarhoudi heard the news and realised that he would have to face death sooner or later, he begged the King to send him to some solitary place and not to give him any food or drink so that he might meet his fate. As a consequence, he spent the rest of his life alone in the castle of Aleppo without taking food or drink; he died at the end of 586 when he was 36 years old.

Al-Shekh Saïad al-Din Mohamed Bin Omar said when al-Shekh Fakhar al-Din al-Mardeni heard the news of his death he said "it happened exactly as I foretold, I knew that this was to be his fate". To continue my own account, al-Sahrud, had some knowledge of alchemy. He had some interesting experiences with this science, one of which is accounted in the following story.

"One day" relates the physician, Ibrahim Bin Abi al-Fadel Bin Sadakah, "I met him and walked with him through Bab al-Faraj (the city centre of Aleppo) to al-Midan al-Khaber (a place in the city) together with a group of students and others. He brought up the topic of alchemy and began talking about it. After he had walked on a little way, he stopped and said, "How beautiful is the city of Damascus. Look at all its delights." We looked and were astonished to see toward the East some tall buildings. They were clean, white, built close to each other, and were highly decorated. They had large windows, behind which we could see many beautiful women. We could hear the voices of singers. As we had never seen anything like this before, we spent an hour marvelling at this wonderful sight. I felt I was in another world."

Safey al-Din Khalil Ibn Abi al-Fadel al-Katib Shekh Deya al-Din Bin Saker told us that in the year 579, al-Shekh Shehab al-Din Omar al-Sahrordi came to Aleppo and stayed in al-Jalaweyah school of which the headmaster was at that time al-Shref, the president of

al-Hanafeyah Eftekhar al-Din. When Shehab al-Din went to hear a lecture which was given by the Shekh, he was wearing a dilak (a cheap long dress). He was holding a stick and a kettle. No one knew him, but when he spoke, it became clear that he was a distinguished man. The headmaster, Eftekhar, knew that he was a worthy man. Therefore brought out a very good dress and told his son to go to the poor man and tell him "my father sends his regards and invites you as a learned man to come to the lectures along with the other learned men. My father asks me to give you these clothes to wear when you come to the school." The son went to al-Shekh Shehah al-Din and delivered his father's message. He remained silent for an hour and then he said "look my son, put these clothes aside. There's a matter where I need your help." He took out a large jewel as big as an egg, incomparable in size and colour. He said to the headmaster's son, "Go to the market and find someone who wants to buy this jewel but do not sell it whatever the price before letting me know. Then I will tell you whether to sell it." The young man went to the market. A Merchant told him that he was ready to buy the jewel for twenty-five thousand Dinars. Then the merchant went to King Ghazi Bin Salah al-Din who was at that time the ruler of Aleppo. He showed him the jewel and told him that it cost 25,000 Dinars. The King was so struck by its size and colour that he offered to buy it for thirty thousand Dinars. The merchant said, "I must go to see Ibn Eftekhar al-Din to get his approval". Then he met Eftekhar's son and told him. "Go and discuss the price with your father (because the merchant thought that it belonged to Eftekhar al-Din). The headmaster's son went to see Shehab al-Din to tell him about the offer for the jewel as they had agreed. As soon as Shehab al-Din had learned the exact price, he took a large stone and broke the Jewel into fragments and said to the son of Eftekhar al-Din "my son, take these clothes and go back to your father. Kiss his hand for me, and tell him. "if I want to have a dress, I am quite able to get one, and I am not in need of his favours". The son went to Eftekhar al-Din and told his father what had happened, which greatly surprised him. Meanwhile, the King asked the merchant for the jewel, but the merchant replied him, "Sir



the owner is Ibn al Sharef Eftekhar, the headmaster of al-Jalaweyah. He has it. Then the King went to the school on his horse. He sat down in the hall, called Eftekhar al-Din and told him that he wanted the jewel. The headmaster told the King "It belongs to a poor man who is staying at the school". When the King learned that, he thought for a while and said "Oh Eftekhar al-Din, I think if I am not mistaken, that this man is Shehab al-Din al-Sarhoudi." Indeed the King was right and the man was al-Sahourdi. Then the King invited him to come and live in his castle.

He afterwards became a man of great importance and honour. He confronted all the other Shekhs. He started to speak to the citizens of Aleppo in an overbearing and disdainful manner, which infuriated them. They conspired to get him killed. It is said that although the King ordered his execution, he later became so angry with those who had advised him to execute al-Sarhoudi that he cast them into prison and imposed large fines on them.

Sadid al-Din Mahmud Bin Omran - known as Ibn Rakekah - told me that the Shekh used to wear very old clothes, not caring about his appearance or his livelihood. He related, "Once I was walking with him to the Mayfarkin mosque. He was wearing a short dress which was nearly blue, a length of cotton on his head and a pair of shoes that were too big for him. A friend of mine, seeing us together, came up to me and said, "Why are you walking with that beggar?" "Don't say that," I replied. "This is the greatest scholar of our time. This is Shehan al-Din al-Sarhoudi." My friend went on his way, astounded by what I had told him".

Some citizens of Aleppo told me that al-Sarhoudi is buried in Aleppo and that there are two lines of verse on his tomb.

His books include ; al-Taluehat, al-Lawheyah wa al Arsheyah, al-Alwan al Emadeyah (which he wrote for Emad al-Din Abi Baker Bin Kura Arslan Bin Dawoud Bin Artek, the ruler of Khurt Bert),



Al-Lahmah al-Mokawamal, an appendix to al-Talwehat, Haykel al-Nour, al-Ma,araj, al-Motarahat, and Hikmat al-Eshrak.<sup>(16)</sup>

Shames al-Din al-Kloubi

This is the judge of judges, Shames al-Din Abo al-Abas Ahmed Bin al-Klalil Bin Saladah Bin Jaiafar Bin Issa from the city of Khoy (in Bazerebejan). He was erudite in religious law and had a good knowledge of medicine. He was "a wise man, modest, good looking, generous and charitable. He was a good muslim, he used to say his prayers, keep the fasts and read the holy Quran. He came to Damascas during the reign of King Issa Ibn al-Malik al-Ade (1180-1228). He quarrelled with the sons of Salah al-Din. Shames stayed with the King who asked him to remain in Damascus and promised him whatever he asked. He had many pupils, who profited from his teaching. I went to meet him from time to time and studied the Tabserah of Ibn Sahlan under him. The King appointed him to the post of Judge of Judges in Damascus. He was very kind. He lived and gave lessons at al-Adeleyah until his death. He died, while still in his pains in Damascus on 7th of the month of Shaiaban in the year 637 as a result of a fever.

His books include - Tatemah Tafseer al-Quran of Ibn Khatib al-Ray. al-Naho, elrm al-Osoul, al-Kab al-Suetan which he wrote for King Issa Bin Abi Baker Bin Ayoub.<sup>(17)</sup>

Rafeia al-Din al-Jebi

This is Rafeia al-Din Abo Hamid Abdul al-Aziz Bin Abdul Wahid Bin Ismael Ibn Abdul Hadi al-Jebi. He was distinguished in Medicine, religious, law and natural science. He lived in Damascus. He taught in al-Azraweyah school in Bab al-Naser, I studied medical science under his supervision. He was a friend

of Amin al-Dawlah. After the death of the judge of judges Shames al-Din al-Khoubi, Amin al-Dawlah advised King Emad al-Din the ruler of Damascus to appoint al-Jebi to the post of the judge of judges. After his appointment in Damascus, he became very rich and people complained about his behaviour. He died in the month of Zey al-Hejah in the year 641. When he became the judge of judges in 638 I congratulated him by sending him a poem. The following are some of his books: Sareh al-Esharat and al-Tanbehat, which he wrote for Fakey al-Din Omar Ibn al-Malik Behram Sham Bin Farkh Shab Bin Shahensham Bin Ayoub, Ikntesar al-Kuleyat of Al-Cannon of Ibn Sina, Ketab Jamein Mafi Alasaned on the prophet's saying.

#### Shames al-Din al-Khasroshahi

This is Shames al-Din Abdul Hamid Bin Issa al-Khasroghahi (Khosroshah is a village near Tabriz). He knew the medical sciences and wrote medical books. His Shekh was Immam Fakher al-Din Bin Khitb al-Ray. He arrived in Damascus during the period of Salah al-Din al-Dawoud and stayed with him in al-Kark. Then he moved back to Damascus and lived there until he died in the month of Shawal in the year 652. He was buried on the mountain of Qaseyoun.

When he arrived in Damascus I met him, I admired him as he respected his teachers. When he died, both al-Shekh Izzue Din Mohamed Bin Hassan al-Ghanawi al-Urbarely and Nayme al-Din al-Labodi wrote a poem lamenting his passing.

Some of his books are Mukhtasar Ketab al-Muhazab fi al-Fekah ala Mazab al-Imman al-Shafei of Abi Ishaq al-Sherazi, Mukhtasar Kitab al-Shefa of Ibn Sina, Tetemet Ketab al-Bayeynat of Ibn al-Khatib. (19)

#### Sayfe al-Din al-Amadi.

This is Sayf al-Din Abo al-Hassan Ali Bin Abi Ali Bin Mohamed Bin Salem al-Taghlaisi al-Amedi. He served King Naser al-Din Aba al-Maiali

Mohamed, the son of King Takeyah al-Din Omer Bin Shahem Shah Bin Ayoub, the ruler of Hama (a city on the road between Aleppo and Damascus, famous for its windmills and stayed there serving him for many years until the year 617. When the King died he moved to Damascus. When he arrived King Sharaf al-Din Issa Bin Abi Baker Bin Ayoub showed him great respect and gave him a large sum of money and appointed him a teacher. He was a very successful teacher, impressing all of his audience with his way of teaching, and his knowledge. I met him and worked under his supervision on his books Romoz al Kunoz, because he was a close friend of my father. When I visited him for the first time I went with my father to his house. He was living in Damascus in a hall near the Adleyah school. After we had sat down and exchanged greetings, he showed us great kindness. Then he looked at me and said (and these are his exact words). "I never have seen a son like you." Safe al-Din lived in Damascus until he died in the month of Safar in the year 631.

Among Safe al-Din al-Amadi books are the following: Dakaer al-Hakak, Rumouz al-Kunoz, Lebass al-Arab, Ibkar al-Afkar Fi al-Osoul, Ghayat al-Maram Fi Flem al-Kalam, Kashf al-Tamoeha Fi Sharh al-Tambehah (which he wrote for King Ibn Takey al-Din, the ruler of Hama), Shayat al-Amal Fi Alem al-Jadal, Sharh Ketab Shehab al-Din al-Sharef al-Amal Fi Alem al-Jadal, Sharh Ketab Shehab al-Din al-Sharef al-Mouraghi Fi al-Dajal, al-Mabean Fi Maani al-Faz al-Hukama We al-Mutaka, Dalil al-Motamed, Gholaset al-Arabs, Moutaba al-Souf Fi Elim al-Arabs Moutaba al-Soul Fi Elim al-Osoul, and Manaeh al-Karaieh.<sup>(20)</sup>

#### Mowfak al-Din Bin al-Mutran

This is Mowafak al-Din Abo Naser Assiad Bin Abi al-Fateh Eleyas Bin Jarjis al-Mutran. He was distinguished in medicine. He taught Grammer, the Arabic languages, literature. His teacher was al-Shekh Hmana Taj al-Din Abi al-Yamen Zeyad Bin al-Hassan al-Kendi. He was born and lived in Damascus, where his father was also a physician. He travelled to many countries to gain more knowledge. He travelled to Rome to study and to get practical experience of



the Christian science. Then he went to Iraq and met Amir al-Dawlah Bin al-Talmez. He studied under his supervision for some time and read a number of medical books. Then he returned to Damascus and lived there till he died.

He was very intelligent and worked very hard. He wrote a number of medical books. His teacher was Muhazab al-Din Bin al-Nakash. Ibn al-Mutran was very charming, studied many subjects and liked expensive clothes. He served King Salah al-Din Yousef Ibn Ayoub. He was a very respected physician. He held an important position and wielded great power during his service at the court. He also acquired a great fortune at the same time, especially when we remember how generous King Salah al-Din was, for he showered gifts on all those who served him and on any of his subjects who appealed to him , as a result he died very poor.

He trusted Ibn al-Mutran. He always asked him to stay with him or travel with him wherever he went. Consequently Ibn al-Mutran was very proud of himself, even in the presence of the King.

Some one who knew Ibn al-Mutran told me this story about King Salah al-Din and his affection for Ibn al-Mutran. "One day King Salah al-Din was fighting a battle during one of his wars. It was well known that there was only one red tent in the camp, that belonged to the King and that no one had another like it. On this particular day, as the King was walking round the camp, he noticed another red tent, similar to his own. He was astonished and asked who owned the tent. When they told him that it belonged to Ibn al-Mutran, the King smiled and said, 'I knew the tent belonged to that foolish Ibn al-Mutran'. He ordered the tent to be pulled down. This so infuriated Ibn al-Mutran that he stopped performing his duties. He only resumed them after the King himself had come and talked to him, humouring him and giving him a large sum of money."

I was also told the following story:

"A physician named Abo al-Faraj al-Nasrani served for a time at the court of Salah al-Din. One day he said to the King, 'I have some daughters and I need some money for their dowry.' The King replied, 'write down everything you need and bring the list to me.' So the physician went away and wrote out a list of clothes, jewels, furniture and other items, together with their cost. The total reached nearly thirty thousand dinhars. When Salah al-Din saw the list, he ordered his accountant to buy all the items, omitting nothing. When Ibn al-Mutran heard the story, he became angry and did not come to his duties as usual, King Salah al-Din saw him one day and he noticed from his face that he was angry and guessed the reason for his anger. Then he ordered the accountant to pay him the same amount of money as he had paid Abi al-Faraj."

Our Shekh Muhazab al-Din also told me the following story about him and about his method of treatment.

"One day Asad al-Din Sherekoh, the uncle of Salah al-Din al-Ayoubi, who was at this time the commander of the army of Nur al-Din, the ruler of Aleppo and Damascus was visiting Homes (a city on the road between Aleppo and Damascus). He asked Ibn al-Mutran to come to see him. I went with him to the ruler. As we were walking along the road, we saw a very sick man, who was utterly debilitated by his sufferings. Ibn al-Mutran stopped and asked him some questions to discover the nature of his illness, but the man did not reply as he was too weak to talk. Then Ibn al-Mutran said, 'Eat snake and it will cure you.' After he had repeated his advice, we continued on our way to Homos. On our return journey we met a healthy young man, who greeted us and kissed Ibn al-Mutran's hands. We were so surprised at this that Ibn al-Mutran asked the man whether he had seen us before. He replied, 'Believe it or not, I am the man whom you told to eat snake. I followed your advice.' We were pleased to see the success of the treatment. We bade him farewell and continued on our way."

To continue my account, Mowafak al-Din Assiad Bin Eleyas Bin al-Mutran had two brothers, both of them worked in Medicine, one of them Hebat



Allah Bin Eleyas and the other.....(the author does not give the name).

Mowafak al-Din died in the month of Rabeia al-Awal in the year 587 in Damascus. I copied from the writings of Abdul Razak Bin Ahmad al-Ameri, the poet, a poem praising Mowafak al-Din Bin al-Mutran after he became a Muslim on 3rd of the month of Ramadan in the year 585.

The books of Mouafak al-Din are the following: Bustan al-Atteba wa Rawdat al-Albaia (his aim in writing this book was to sum up his whole medical knowledge), but he was unable to complete the work. I found two parts in the handwriting of our Shekh, the physician Muheab al-Din. The first had been copied under the supervision of Ibn al-Mutran. But Muhazab al-Din noted that Ibn al-Mutran died before he had read the second part to him. Al-Makalam al-Nasergah Mafez al-Saheb arranged this book very well and dedicated it to King Salah al-Din Yousef Ibn Ayoub. I found the original copy of this book in the handwriting of Jamal al-Din-known -al-Jamalah Ibn al-Mutran's clerk, al-Makalah al-Nejmeyah Fi al-Tadabeer al-Soleyah, (it seems that he wrote it for Najem al-Din Ayoub, the father of Salah al-Din, but when he died he dedicated it to his son). Ekhtesar Ketab al-Anuar of Kasdaneyeen by Abi Baker Ahmad Bin ali Bin Wahsheyah which he completed in the month of Rajab in the year 581, Lokez Fi al-Hukmah, Ala Mazhab Da, Wat al-Atba, al-Adweyah al-Mofrudah (not complete. He wanted to mention each drug and its use), Adab Tub al-Muluk. One of his son-in-laws said that when he died, he left a number of medical books and other comments in note form and that his brother took them and lost them afterwards. (21).

#### Muhazab al-Din Bin al-Hajeb

He was distinguished in the medical profession, knew mathematics,



literature and grammar. He was born in Damascus and lived there. He studied medicine with Muhazab al-Din Bin al-Nakash Sharaf al-Din al-Tosi, when he was in Mousel, he was the wisest man in Medicine and methematics and other subjects. Ibn al-Hajeb travelled with the physicians Mowafak al-Din Abdul Aziz to meet him and learn from him. They found him after he had gone to Tous, so they stayed there for a period. Afterwards, Ibn al-Hajeb travelled to Erbel, where Ibn al-Dahan al-Monajem was. He met him and worked with him and assisted him in his research. He copied some of his works from his own hand writing and returned to Damascus. Ibn al-Dahan, was known by Abi Shojaia and called him, Thoiayleb. He was from Baghdad and lived in Mousel for twenty years. Then he moved to Damascus where, King Salah al-Din encouraged him and gave him thirty Dinars. He was a good Muslim, he often fasted and stayed at the mosque for four months or more each year. For his sake, they built a special place in the mosque, in al-Kalasa. He wrote a number of books including al-Zeyag (which is perfect), al-Manbar Fi al-Faried (which is widely known, Ghareb al-Haeth 10 volumes, al-Khelaf Majdoul al-Wade. He worked very hard. He wrote a great number of poems. He went on a pilgrimage. When he went to Baghdad, he died there and was buried near his father's and mother's tomb after forty years away from his family.

Muhazab al-Din Bin al-Hajeb worked very hard, delving deeply into science. He had a good knowledge of engineering. Before he became distinguished in medicine he was a clock maker near the mosque in Damascus. Later he became famous in Medicine and became one of the top physicians. He worked in the great Beremestan (hospital) which was built by King Nour al-Din Ibn Zunki. Afterwards he served at the court of Takey al-Din Omar, the ruler of Hama, whom he served until he died. Then Ibn al-Hajeb returned to Damascus before going to Egypt, where he served King Salah al-Din until his death. After the death of Salah al-Din, he moved to serve King Ibn Takeyal-Din and stayed two years with him. He died in Hama (22)

Al-Sharef al-Kahal

This is Burhan al-Din Abo al-Fadalel Suleyman. He was from Egypt and moved to Bilad al-Sham (Syria). He was distinguished in the profession of al-Kahalah (the treatment of eye diseases). He worked at the court of King Salah al-Din Yosef Bin Ayoub till he died. (23)

Abo Mansour al-Nassrani

He was a distinguished physician, with a good knowledge of the treatment of drugs. He served King Salah al-Din Bin Ayoub for a number of years. (24)

Abo al-Najem al-Nassrani

This is Abo al-Najam Bin Abi Shaleb Bin Fahd Bin Mansoni . Bin Wahb Bin Kayes Bin Malik. He was a famous physician. Abo al-Fateh Bin Muhana al-Nassrani told me that Abo Najem's father was a peasant in the village of Hunan (south of Damascus). He was known by al-Ayar. When Ab al-Najem was a boy he went to the physician of Damascus and began his studies. Abo al-Najem served the King Salah al-Din Yousef Bin Ayoub and he enjoyed a very good position in the state. He served him for a period. He treated his family along with the other physicians. Abo Najem died in Damascus. In the year 599 he had a son called Amin al-Daula Abo al-Fatah Ibn Abi al-Najem who was also a physician. His book, al-Mohaz Fi al-Tib contains theoretical and practical knowledge. (25)

Fakher al-Din al-Saiati

This is Radwan Bin Mohamed Bin Ali Bin Rustom al-Khourasani al-Saiati (the clock maker) He was in Damascus. His father came from

Khurasan to Damascus and lived there until he died. He was the most famous maker of clocks and astronomist of his time. He gained a lot of money from his profession. He had two sons. The first was Baha al-Din Abo al-Hasan Ali Ibn al-Saiati the poet who was the best poet of his age. He died in Cairo. His book of poetry is well known. The other son was Fakher al-Din Radwan Bin al-Saiati the outstanding physician, and famous writer. Fakher al-Din studied medicine under al-Shekh Radeyal Din al-Rahbi and lived with him for some time. He was intelligent and diligent in his studies. He was further taught medicine by al-Shekh Fakher al-Din al-Mardeni, and literature by al-Shekh Taj al-Din al-Kenedi in Damascus. He served King Abi Baker Bin Ayoub (one of the Ayoub Kings of Egypt). He became a minister at his time. He also served King Issa Bin al-Malek al-Adel as a minister. He pleased the King by playing the Oud (the Lute). He was a follower of Ibn Sina in the field of medicine. He died in Damascus.

This is a verse from one of his poems.

" People are jealous of my position,  
Because I look down from my horse.  
I spent my night in study,  
While they spent their nights in sleep.  
How can they be equal,  
he who studied with him who slept?"

His books are: Takmel Ketab al-Kulay of Ibn Sina. Al-Harash on al-Canon of Ibn Sina and al-Mokhtarat in poetry and others. (27)

#### Shames al-Din Bin al-Laboudi

This is Shames al-Din Abo Abd Allah Mohamed Bin Abdan Bin Abd al-Wahid Bin al-Laboudi, a remarkable man at that time, the best physician in the medical profession. He travelled from Damascus to Bilad al-Ajam



(Persia), where he studied medicine under Najeb al-Din Assad al-Hamadani and other important physicians. He was also taught by the student of Ibn Sahlan, al-Yaed al-Elaki Mohamed. He was a brilliant man, energetic, distinguished in science, very acute in discussions. He was considered an example of a Good Sheikh. He served King Gheyath al-Din Shazi Bin, King Salah al-Din Yousef Bin Ayoub and stayed with him in Aleppo. He trusted him and continued serving him till the death of the King in the month of Junadi al-Kher in 613. After the King's death, he came to Damascus and stayed there practicing medicine in the grand Bermestan al-Nouri and died in Damascus on 4th of the Keiadah, in 621 at the age of 51.

Some of his books are: Al-Raiy al-Muataban Fi al-Kada Wal Kadr, Sharh Ketab al-Mulakhas of Ibn al-Khateb, j Resaluh Fi Jamia al-Maforsel, and Sharaah Ketab al-Masael of Hunyan Ibn Ishaq.<sup>(28)</sup>

#### Al-Saheb Najem al-Din Bin Allaboudi

This is Najem al-Din Abo Zarareya Yaheya Bin Sham's al-Din Mohamed Bin Abdan Bin Abdan Bin Abd al-Inahed, who was one of the best physicians of his time. He was intelligent and was learned in science, art and literature. He was born in Aleppo in the year 607. He came with his father to Damascus when he was young, already showing signs of his intelligence. His teacher in medicine was the Shekh the physician Muhazab al-Din Abd al-Ramm Bin Ali. There he became a very good physician. He served King Ibrahim (the Prince of Howes), Ibn al-Maler al-Mujahid Bin Assad Sherkewah Be Shazi the ruler of Howes and lived at his court serving him finally becoming a Minister. He was given many responsibilities and accompanied the King at all times, both on his travels and in the city. He went to Egypt to see King Najem al-Din Ayoub Ibn al-Malek al-Kamel after the King's death in 643. King Najem al-Din esteemed him and appointed him a supervisor of al-Diwan in Alexandria and paid him three thousand Dinars a month. He stayed there for a short period and then he returned to Bilad

al-Sham (Syria) to be responsible for the (Diwan) in Syria. He recited a poem when he returned from Egypt and read it near Bab al-Sardam in the month of the al-Kuiadah in 661. He wrote another poem when he returned from Egypt in the month of Jamad, al-Akher in the year 664 and recited it near Bab al-Saradeb. He wrote a third poem when he saw al-Khalil in his dream. He also wrote poems about Jerusalem ( when he returned from Egypt in the middle of Jamadi al-Awal in the year 666) and on other occasions.

Some of his books are Mukhtaser al-Keleyat of Ibn Sina Canon, Mukhtaser al-Masael of Hunayan Ibn Ishaq Mukhtasar al-Esharat Wa al-Tanbehat of Ibn Sina, Mukhtasar Oyour al-Hikmah of Ibn Sina. Mukhtasar al-Mulakhas of Ibnal-Khateb al-Ray, Mukhtabar al-Moamelen Fi al-Osobeyeen, Mukhtasar Kitab Okledeas, Mukhtasar Musadanat Okledeas, al-Lamaiat Fi al-Hikmah, Afak al-Eshaak Fi al-Hikmah, al-Nanaheg al-Kudeseyah Fi al-Oluun al-Hukmeyah, Kafeyat al-Hesali Fi Flen al-Hesab, Shnyat al-Slayat Fi al-Muhtaj Eleyah Okledeas Wa al-Mutawasetat. Tadjik al-Mabaheth al-Tubeyah, Tahkik al-Masael al-Khelafeyah, ala Tarek Masael Khelaf al-Fukaha, Makalah Fi al-Barshatha, Edah al-Raey al-Sakhef Men Kalam al-Moufwafak Abd al-Latif (which he wrote when he was 13 years old). Khayat al-Ehkam Fi Senaiat al-Ahkam, al-Risalah al-Soneyah Fi Sharh al-Mukademah al-Motarazeyah, al-Ayat al-Bayenat, Nezhat al-Nazer Fi al-Mathel al-Saer, al-Resalah al-Kamelah Fi Elun al-Jaber Wa al-Mukabelah, al-Resalah al-Mansourgah Fi al-Edad al-Wakfeyah, and al-Zrhi Fi Ikhtesar al-Zeyaj al-Mokarab al-Magni Ala al-Rasid al-Mujarab (29)

#### Zayen al-Din al-Mafezi

This is Zayen al-Din Suleyman Bin al-Moayad Ali Bin Khatib Okroba. He studied medicine, his teacher was a Shekh Mumajab al-Din Abd al-Rahm Bin Ali and gained practical and theoretical knowledge of the profession with his help. He served King al-Hafez Nour al-Din

Arselan Shah Bin Abi Baker Ayoub who was the ruler of Taibar castle (an ancient castle known to Dosarah between al-Rakah and Bales on the river Eupharates). He worked at Jaebur Castle. The King was very happy with his work, gave him full responsibility and trusted him totally, so that he became a very important man at that time. Zay al-Din had a good knowledge of art, literature poetry, and military affairs. He was a friend of the King's sons al-Naser Yousef Bin Mohamed Bin Ghazi, the ruler of Aleppo. Through Zay al-Din al-Hafezi's intervention he enjoyed the same position as before. Zay al-Din married the daughter of the Governor of Aleppo. He gained a great amount of money from this state marriage and when al-Malik al-Nasser became the ruler of Damascus he accompanied him. He again enjoyed the same position in the state. He was well known in medicine. He held the post of Commander of the Army. I sent him a poem on his appointment to express my feelings about his character.

"Zayal-Din is supreme in every office,  
The very pinnacle among the great,  
A prince accomplished in learning and in virtue,  
A prince renowned for his perspicacity and experience,  
In the art of medicine he is without peer,  
On the field of battle he has always triumphed.  
Many the patient he has cured as a physician,  
Many the enemy he has killed in his wars."

When the Tartars came from the East demanding that al-Malik al-Nasser surrender, go into exile and pay them a heavy tribute, Zay al-Din sent a message to KhaKan Mulako, the King of the Tartars, offering him his friendship. The Tartars were pleased. Then he sent them letters urging them to attack. Meanwhile he tried to frighten al-Malik al-Nasser, who was a coward, by making out that the Tartars were very strong and had a large army.



The Tartars therefore attacked Aleppo and were victorious after a month's fighting. When they entered the city, they killed the men, debauched the women and boys, looted the wealth ransacked the houses and destroyed the Castle and other buildings. King al-Malik al-Nasser was forced to leave Damascus. He invaded Egypt, but was defeated by the army of Egypt under its King al-Malik al-Mouzafat Sayafe al-Din Kutuz and lost his crown. The Tartars consequently took Damascas and won the war with ease. They appointed Zay al-Din Governor fo the city. He was surrounded by many troops and people called him King Zay al-Din.

Finally, however, King al-Malik al-Mozafur Kutuz invaded with a large Muslim army. He defeated the Tartars in a memorable battle In the valley of Kanian, where many Tartars died. Among those who escaped was Zay al-Din, who fled with wrath of his fellow Muslims. Bilad al-Sham (Syria) regained its independence, first under the rule of al-Malik al-Mouzafur (God bless him) and then of the Sultan al-Malik al-Zaher Ruker al-Din Bebar (1223-1277) who became the King of Egypt and al-Sham (Syria) (God grant him his crown forever) (30)

#### Abo al-Fadel Bin Abdul Karim al-Muhandes

This is Mo'ayad al-Din Abo al-Fadel Mohamed Bin Abdul Karim Rahman al-Marethy. He was born in Damascus. He was known as al-Muhandes. (The engineer). He studied Engineering before he learnt medicine. The first stage of his life was as a merchant. The people were pleased with his works. Most of the doors of the great Bermestan (hospital) which was founded by King Nour al-Din Ibn Zurki (God bless him) were made by him. Sadid al-Din told me that he had been told by Shames al-Din Bin al-Mutwaia al-Kahal who was his friend that he had studied science to be better in his job as a merchant to have wider ideas and knowledge. He said, at that time he was working in al-Khatoun mosque near al-Munab, west of Damascus.

Everyday he reached the place and at the same time he became familiar with a new knowledge when he finished the work, he studied till he finished the work, he studied till he learnt all the subjects and understood thoroughly. Then he studied the book of al-Majasti, and then he devoted all of his time to engineering.

To continue my account, he worked as an astronomer. He met al-Sharaf al-Sharaf al-Tousi who was well known in engineering and mathematics when he came to Damascus. He studied with his supervision and gained some knowledge with his help. He studied medicine under Ali Abi al-Majed Mohamed Bin Abi al-Hakam. He stayed with him and copied a number of his medical books. I found in sixteen books of Galen his handwriting. In the books, the reader will find the handwriting of Ibn Abi al-Hakam, the person who repaired the mosques, clocks and who looked after those clocks regularly. He got a regular payment for practicing medicine in the great Barmestan, he continued practicing medicine for many years till he died.

He travelled to Egypt. He studied the hadith (the prophet's sayings) in Alexandria in the year 572 under Rashid al-Din Abi al-Thana Hamad Bin Hebat al-Lah Bin Hamad Bin al-Fadel al-Harani and Abi Taher Ahmad Bin Mohamed Bin Ahmed Bin Mohamed Bin Ibrahim al-Salfi al-Sfhai. He studied literature and grammar at the same time as well and was a poet. He died in the year 599 in Damascus after a long illness. He lived nearly seventy years. One of his poems in his own hand described the crescent moon and was sent to Safey al-Din.

The books of Bin Abdul Karim al-Muhandes, Resalet Fi Maerefat Ramez al-Taknesr, Ro'yat al-Hellal, Ikhtesar kitab al-Akani of Abi Faraj al-Asfahani. He copied in his own handwriting many books and donated them to the mosque of Damascus, other than the book which he donated to the mosque of Ibn Arwah, al-Hurouls Wal Seyasah, al-Adeneyah al-Mufradah.

Mowafak al-Din Abdul Aziz

This is the Shekh Mowafak al-Din Abdul Aziz bin Abdul Jabar Bin Abi Mohamed al-Salmi. He was a very good man, who took great care in his treatment of his patients, especially those who were very poor. He gave them food and drugs free of charge and even gave them money. He was a good Muslim, a charming person, beloved by all. He studied at first in al-Ameneyah school in Damascus near the mosque, then he studied the medicine under Eleyas Bin al-Mutran, and gained complete mastery of this subject in which he became outstanding. He regularly met other physicians. He worked at the grand Bermestan (hospital) which was built by King Nour al-Din Mohamed Bin Zunki. Then he served King Abdul Baker Bin Ayoub living with him for many years and receiving large sums of money.

Mowafak Abdul Aziz died (God rest his soul) while still serving the King in Damascus from the disease of the colon on Friday the Twentieth of Zeyal-Kuiadah in the year 604. He was buried in Qaseyoun's mountain. He was born in 555 and was nearly sixty when he died.

Saad al-Din Bin Abdul Aziz

This is Saad al-Din Abo Ishaq Ibrahim Bin Abdul Aziz Bin Abdul Jabar Bin Abi Mohamed al-Salmi. He was like his father in looks, behaviour, knowledge and intelligence. He was a good muslim, and an honest man, learned in scholarship, faithful in religion. When he was in Damascus he used to stay in the mosque throughout the whole month of Rammadan (fasting) without talking to anyone. He oversaw the building of al-Han Baleyam school in the market place of al-Kame'a in Damascus during the reign of King Mousa Ibn al-Malik al-Adel according to the order of the Imammal-Muntaser, the caliph of Baghdad at that time. He was very good in medicine and all related subjects. He was born in Damascus in the year 583. He worked at the great Bermestan which was built by King Nour al-Din Zunki. Then he served King Aba al-Fateh Mousa Bin



Abi Baker Bin Ayoub and went to live in the East with him. He received many gifts and enjoyed power during the King's reign. When the King came to Damascus and received the crown from his brother's son King Dawoud in the month of Shaaban in the year 626, he came with him to Damascus and stayed there. The Sultan appointed him president of the physicians. He served al-Malek al-Ashraf until the date of his death (God rest his soul) on Thursday 4th of al-Muharam, in the year 635. When King Mohammed Bin Abi Baker Bin Ayoub succeeded in Jamadi al-Awal in the year 635, the new King ordered him to be given a position at court with the same responsibilities, allowances and benefits as he had enjoyed during his brother's reign. He served the new ruler for two years until the King died on Thursday at the beginning of the night of 22 Rajab 644. Saiad al-Din stayed in Damascus practicing medicine till he himself died (God rest his soul) in Damascus in the month of Jamadi al-Akher in the year 644. (32)

#### Rdayal Bin al-Rahbi

This is the Shekh Radayal Bin Abo al-Hajaj Yousef Bin Hayaarah Bin al-Hassan al-Rahbi, one of the foremost physicians, respected and renowned in public and in private and greatly esteemed by the King. He was very diligent in the pursuit of learning, hoping to do good to people. He was a kind, gentle man who never spoke disparaged or harmed anyone in his life.

His father came from the city of al-Rahah (on the River Euphrates, now known as Rahat Malik). He had a good knowledge of medicine, but was especially reputed in al-Kahalah (ophthalmology).

He was born in the island of Ibn Omar and lived in Nasebean (a city on the River Euphrates) and in al-Rahbah for many years. He travelled to Baghdad and other cities, where he practised medicine very successfully. In Egypt he met the Shekh al-Mourafak,

known as Ibn Jamea al-Mesri and learned a lot from him.

He arrived in Damascus with his father in 555 during the reign of King Nour al-Din Mahmoud bin Zanki Sadey al-Din. His father died in Damascus the following year and was buried on the Qaseyoun mountain. He used to go regularly to his shop to treat his patients and to copy out many books. He lived like this for a long time. He studied under Muhazab al-Din al-Nakash, which gave him the chance to meet King Salah al-Din Yousef bin Auoub. The King gave him a good position for the rest of his reign. He was paid thirty dinars a month and lived in the Castle and the Grand Bemarestan. Once he even refused to accompany the King on a journey.

When King Salah al-Din died (God rest his soul) on the night of Wednesday 27th Safar 589, his brother, King Abibaker Bin Ayoub, succeeded him rather than his sons. The new ruler ordered Raday al-Din to work wherever he was ordered, but he refused and requested permission to stay in Damascus. The King agreed and decided that he could keep all the privileges that he had enjoyed under Salah al-Din. Even after King Abibaker's death, when King Issa Ibn al-Malik al-Adel succeeded, his position was not affected. He was paid fifty dinars a month and given the right to go to the Grand Bemarestan until his death. (God rest his soul).

He taught medicine to a great many students, some of whom became leading physicians and teachers of medicine in their turn. Most of the physicians of Bilad al-Sham (Syria) were either his students or students of his students.

One of his earliest students was the Shekh Muhazab al-Din Abdul Rahim Bin Ali, who had previously studied under Ibn al-Mutran. He relates, "One day the Shekh Raday al-Din said to me, 'All my students here become happy and successful physicians who have done much good to their patients. He mentioned many physicians who had been his pupils. Some were leading members of the profession. Some were dead, others were alive. He refused to teach non-Muslims or those with no aptitude for the subject. He was proud of the profession



and esteemed it highly. He said to me, 'I never taught non-Muslims throughout my life. There were only two exceptions; one was Omran al-Esraeli and the other Ibrahim Bin Khalaf al-Sameri. I only accepted them because, after trying all manner of ways of getting me to teach them, they persuaded one of my closest friends to intercede on their behalf and him I could not refuse. They both ended up as eminent physicians'.

In 625 I studied under him the book of Abi Baker Mohamed Bin Zakareya al-Rahzi, especially the practical part, and other books. I found my studies very useful."

The Sheikh Raday al-Din was successful in trade, which he enjoyed. He was very careful about his own health. Jamal al-Din Abo al-Hannan Ali Bin Yousef Bin Ibrahim al-Kufti told me that Raday al-Din strictly observed the rules of health. He related, "I have been told that he had an excellent chef and used to ask for food whenever he felt hungry. Someone once asked him why he was so punctilious about this rule. He replied. 'To live out my natural span.' He was then asked, 'As you are very old and have nearly reached the end of your natural span, is it really necessary to observe this rule any more?' He answered, 'Although I will not live for ever, I want to enjoy the rest of my life, breathing the air and drinking the water. I do not want to hasten myself underground.' Indeed he observed his rule until he died."

My father was told a curious story about Raday al-Dan. He is reported to have said, "Do you know that since the day I bought this hall, where I've been living for the past twenty-five years. I have never once been in the room above? I haven't entered it since the day I inspected the property with a view to buying it."

Raday al-Din was born in the month of Jamadi al-Awal in 534 on the island of Omar. He fell sick on the day of Eid al-Adha in 630 and died (God rest his soul) in Damascus on Sunday 10th Muharam the following year and was buried on Qasyoum mountain. He lived for nearly a hundred years and did not lose his sight or his



hearing. At the end of his life he began to forget events that had happened recently but he could recall events that had happened a long time ago. He had two sons, the elder was Sharaf al-Din Abo al-Hasson Ali and the younger Jamal al-Din Othman.

One of his relatives who was with him during his last illness told me that Raday al-Din with his right hand felt the pulse in his left wrist, considered for a while and then expressed his sadness as he realised that he was approaching death. Then he moved his Zonkeyah (head cloth) and, facing death bravely, passed away.

Some of his books are: Shareh Ibn al-Tayeb of Ketab al-Fousaouf of Abocrat. Ekhtesan al-Masael of Hunyan (which he started writing, but did not complete.)<sup>(33)</sup>

#### Sharaf al-Din Bin al-Rahbi

This is Sharaf al-Din Abo al-Haasan Ali Bin Yousef Ibn Haydarah Bin al-Hasan al-Rahbi. He was born in Damascus in 583. He followed in his father's footsteps with a great love of reading and studying. He wrote many books and commentaries. He learnt medicine from his father and from al-Shekh Mowafak al-Din Abdul Latif Bin Yousef al-Baghdadi. He wrote some books on science with his help and the help of other Shekhs.

He studied literature, becoming pre-eminent in the field. He was a good poet. He liked solitude so that he could read and write and think. He was honest and proud. He was unwilling to go to the Court and meet the King. He worked for some time at the Grand Bermestan which was founded by King Nour al-Din Bin Zanki. When our Shekh Muhazah al-Din Abdul Rahim Bin Ali (God bless him) gave his house in Damascus to al-Awagaf to be used as a school for teaching medicine, he stipulated that Sharaf al-Din be one of the teachers, as he knew his great learning and wide understanding. He taught there for some time. Sharaf al-Din died (God rest his soul) on Friday 11th of Muharam 667.

The physician Bader al-Din, the son of the Balabak judge, and Shames al-Din al-Kutubi known as Khawatemi, both informed me that before his death Sharaf al-Din told his students and those who visited him that he would die in a short while at the moment of occlusion of two stars. "Tell people what I've just said," he urged them, "so that they may realise how learned I was during my life time right up to my death." In fact his prediction was fulfilled.

He recited a number of poems to me, including one on the death of his brother (the physician Jamal al-Din Othman) in the year 665. It ran:

"When I reached the age of eighty  
And all my loving family gone,  
I turned to melancholy dejection.  
Above all, my dear brother, it was your death  
That broke my heart and drained away my strength.  
The days gave me no solace  
Rather they made me disconsolate.  
Let me be patient in these forlorn days  
For my own time is close."

He sent me another poem which he had written in 635 on the death of King Mohamed Bin Bid Baker Bin Ayoub in Damascus.

When I was in Sarkhad, serving the Prince Ezzal Din Aybak al-AAzami, he sent me a letter in the form of a poem and I answered the letter in verse (Both of them were mentioned before: Characterists of Ibn Abi Usaybe'ah)

The books of Sharaf al-Din Al-Rahbi are the following: Khalek al-Ensan Waha'at Aiadaeh Wa Manfaiateha (an incomparable book), al-Hawashi Ala Ketab al-Canon of Ibn Sina and Hawashi Ala Shareh Ibn Abi Sadek of Hunyan. (34)

Jamal al-Din Bin al-Rahbi

This is Jamal al-Din Othman Bin Yousef Bin Haydarah al-Rahbi. He was born in Damascus. He was a noble man and a foremost physician. He learnt medicine from his father and other physicians. He was a good physician, who was marvellously skilled in his treatment. He served for many years at the great Bermestan which was built by Nour al-Din Bin Zanki (God bless him). He was interested in trade. He worked as a merchant. He travelled a number of times to Egypt to import goods, when the Tatars arrived in Damascus in 657, he left Damascus for Egypt, where he lived until he died in Cairo on the 20th of Rajab al-Akher in 658.<sup>(35)</sup>

Kamal al-Din al-Homsi

This is Abo Mansour al-Mozafar Bin Ali Bin Nasser al-Kurushi. He was a noble man and a celebrated scientist. He was very generous. He learnt medicine from al-Shekh Radya al-Din al-Rahbi and other physicians. He started reading al-Canon with the help of the physician and judge Baha al-Din Abi al-Thama Mahmoud Bin Abi al-Fadel Mansour Bin al-Hassan Bin Ismael al-Tabari al-Makhzoumi, when he came to Damascus taught him.

Sharaf al-Din travelled to Rome in 608. He studied literature with the help of al-Shekh Taj al-Din al-Kendi. He was interested in trade and most of his income came from the profits of trade. He had a shop in al-Khawaseen in Damascus. He was unwilling to earn money from medicine. This did not prevent the King and other persons from consulting him on their diseases in particular when they knew his proficiency in medicine. He was asked by King Abo Baker Bin Ayoub among others to serve him and stay with him, but he refused. He worked at the Great Bermestan which was built by the King Nour al-Din al-Zunki, treating the patients free of charge. Then he was forced to work officially and they paid him a regular salary. He stayed there till he died on Tuesday 9th Shaiaban in 612.



He wrote the following books: al-Resalah al-Kamelah Fi al-Adveyah al-Mushelah, Ikhtesar Kitab al-Hawi of al-Rhaz (left uncompleted), Makalah Fi al-Esterka, Taialek Alla al-Kuleyat of Kitab al-Canon, Taialek Fi al-Tub, Fa,alek Fi al-Bot (which he wrote on 1st Rajab 603) and Kitab al-Masa'ef of Ibn Ishaq (this is a great work).<sup>(36)</sup>

Mowafak al-Din Abdul Latif al-Baghdadi

This a Mowafak al-Din Abo Mohamed Abdul Latif Bin Yousef Bin Mohamed Bin Ali Bin Abi Assad - known as Ibn al-Labad. He was from Mousel, but he was born in Baghdad. He was, celebrated in science and of a very friendly disposition.

He wrote a number of books. He was, learned in grammar and Arabic language and knew art and medicine. He devoted himself to medicine and was renowned in this profession. He received a number of people as pupils. His father let him from his earliest years have the chance of learning under the guidance of a number of teachers, most notably, Mohamed Ibn Abdul Baki - known Ibn al-Batk, Abo Zarah Taher Bin Mohamed al-Kudsi, and Abo al-Kasemyehya Bin Thabet al-Wakel Yousef, Mowofak al-Din's father, was a brilliant scholar of the Quaran, Hadith (the prophet's sayings) and Islamic law. His uncle Suleyman Mowafak al-Din spent his time, working, reading researching and writing. I found a number of books in his handwriting, he made several copies of his own books and wrote out books by other authors. He was a friend of my grandfather and they enjoyed a close friendship when they were in Egypt. He taught my father and uncle literature. He further taught my uncle the works of Galen a subject in which, Mowafak al-Din was very interested, striving to understand everything in it.

He came to Damascus from Egypt and stayed there for some time. He was very helpful to his students. I saw him on his last visit to Damascus. He was a thin Shekh, neither tall nor short. He spoke well with a good turn of phrase. He was (God bless him) very proud of himself and disdainful of other physicians. He often

criticised the physicians of Bilad al-Ajem (Persia) and their books, especially al-Shekh Ibn Sina. I copied, from his own manuscript. He wrote as follows.

"I was born in the house of my grandfather in Darb al-Falozeg in 557. I studied under al-Shekh Abk al-Najeb. I never played. I spent most of my time listening. I got a certification from al-Shekh of Baghdad, Khurasan, al-Sham and Egypt. My father said to me one day: "All of the greatest people of Baghdad know about you. I hope that you follow their ways." I was learning at that time the art of writing, Arabic and the Quaran and poetry, especially al-Motanabi poems.

When I grew up, my father sent me to Kamal al-Din Abdul Rahman al-Anbani, who was the Shekh of Baghdad and a good friend of my father during their school days in Alnazenneyah (the school which was established by Nazah al-Mulk in Baghdad. He taught me the art of rhetoric. The knowledge that he taught was very recondite so that I did not understand any of it, while his other students were overwhelmed. Finally he announced "What I teach is too difficult for young people to learn. Therefore, I suggest that these students must go to see my former student, al-Wajeh al-Wash, who will teach them. If a student shows progress and the ability to study, I will be able to teach him." Al-Wajeh taught the sons of the President and of most of the important people. He was blind, but in good health and honest. He was very willing to teach me. When I visited him for the first time, he embraced me with both hands. He taught me with great kindness from morning until night. I attended his classes in the al-Zafereyah mosque. I felt that all his expositions were addressed especially to me. At the end I read out my lessons and he explained the difficult points, before we left the mosque. On our way back home, he asked me questions about my studies. When we arrived at his house, he brought out his books for me to read under his guidance until I knew them by heart. Then, when he went to teach Shekh Kamal al-Din, I stayed on to listen. By



the time that I had completed my studies I understood and knew more than he did. I passed most of my nights in reading and yet more reading, so that my learning grew.

"I began my studies with the al-Lameia (the Arabic grammar), which I mastered in only eight months. Every day I listened to his exposition insofar as his students recalled it. Then at home I studied his commentary, the commentaries of Shekh Omar Bin Hamzeh and Ibn Burhan and any other commentary that I could find. I passed on my knowledge to my best students, until in the end I could discuss each point with total confidence.

Then I studied Adab al-Katib of Ibn Kutubah (828 - 839) who was born in al-Kufah, lived and taught in Baghdad, became a judge in Daynor. Then I learnt Mushakel al-Quaran Laho and Khareb al-Quaran in a short period. Then I started reading al-Edah of Abi Ali al-Fasi. I learnt it in many months. I continued studying the commentaries for a long time until I had a full grasp of the subject. I learnt al-Takmelah in a few days, learning one section everyday. While I read other books, I continued reading al-Muktadab of Mubred (Abo al-Abbas 826 - 898) and the book of Ibn Drestewah (871 - 956). During this period, I did not forget to study the Sema al-Hadith and al-Tafakuh from our Shekh Ibn Fedlan in Dar al-Zahab which is a school built by Fakher al-Dawleh Bin al-Mutaleb.

Al-Shekh Kamal al-Din wrote one hundred and thirty books, mostly in grammar, Islamic law and Sufism. I learnt most of his books. He strated writing two large books, one of them on literature and the other on law, but he was not able to finish them. I learnt under his guidance a part of the book of Saybeweh (the greatest authority on grammar, who was born in Basrah and died near Sheraz). I started reading al-Muktadab, then I learnt it. I paid attention to Saybeweh's book and the commentary on it by al-Syrafii (903-938). Then I read al-Faraed Wa al-Oroui of al-Khatib Tabrezi, who was a special student of Ibn al-Shajari. With regard to Ibn al-Khashab I read Mane al-Zujaj by the writer Shahadah the daughter of Aberi."



Mowafak al-Din further wrote that one of his best Shekhs was the son of Amir al-Dawlah Ibn al-Telmuz. He praised him excessively and thus was proud of Iraq.

He went on: "One day a man from Morocco came to Baghdad. He was very well dressed, as he was a Sufi. He was such a handsome man that people were touched by his good looks even before they had made his acquaintance.

He knew Ibn Naeli, he said that he came from the son of al-Mutalathewah. He moved from Morocco when it passed into the hands of Abdul Moneiam. When he settled in Baghdad, he met the best physicians and the highest people including al-Radi al-Kazweni, and the Shekh of Sheks Ibn Skenah. I was one of those who met him. He taught me the introduction of al-Mesab and Ibn Beshad on grammar. He had mastered the books of Chemistry, the Talmast, all the books of Jaber, and the books of Ibn Wahsheyah. He met Imam al-Naser Den al-Lah, he was happy with him. Then he travelled and started to study very hard. He mentioned, "I gave up sleep and pleasure in order to devote all my time to studying the books of al-Ghazahi (the greatest philosopher 1059 -1111), al-Makased, al-Meayar, al-Mezan, and Mahak al-Nasar. Then I started reading all of Ibin Sina's book. I learnt al-Nagat, al-Shefa. I gained a great amount of knowledge. al-Tahsel, the book of Behemenyar, the student of Ibn Sina, the Sufism of Jaber Ibn Hayan and the book of Ibn Wahsheyah. The scholar who confused me most was Ibn Sina in his book al-Sinah."

He wrote: " In the year 585 I could not find anybody in Baghdad who could please my heart or my mind. Consequently I moved to Mousel, but even there I could not find a fellow spirit except al-Kamal Bin Younes, who was very learned in mathematics and law, but not in medicine. He spent most of his time in chemical research to the exclusion of everything else. I met many people. I refused many posts, but I finally agreed to work in the Ibn al-Muhaje al-Moalakath school and the Dar al-Hadeth, which is next to it. I stayed in Mousel for a year, working hard by day and by night.

The people of Mousel were very impressed by my erudition.

"I heard people talking about al-Shehab al-Saherwardi, the so-called philosopher, and claiming that he was the greatest scholar of this or previous ages and his work more valuable than the books of any previous writer on medicine. I became eager to find the truth, so I asked Ibn Younis to send me some of his books. He sent me al-Talwehat, al-Lamma and la-Maarej. I discovered on reading that people of that time had no understanding and were completely mistaken in their judgement. Many parts were wrong, and some downright foolish. He left some sections incomplete, pretending that they contained secrets revealed to him by God.

When I entered Damascus and found there a number of the most noble physicians of Baghdad, including: Jamal al-Din Abdul Latif, the son of Al-Shekh Abi al-Najeb, a group of the family of the president of the presidents, Ibn Taha al-Katib, Ibn Juhar, Ibn al-Attar al-Matob al-Wazwe and Ibn Hebayrah al-Wazer. I met al-Kindi al-Baghdadi al-Nahai. We had some discussions. He was a very respected Shekh, who was very intelligent and enjoyed a good position in the state but he was so proud that he angered his audience. I had several debates with him, which by the grace of God I won. This infuriated him so much that he lost his temper and became very angry.

I wrote a number of books in Damascus including, Gharèb al-Khatabi (I started writing it in Mousel. I wrote an outline for this book, I called it al-Mujard), al-Wadeh Fi Erab al-Fateh of nearly twenty sections, al-Alef Walam, Ruba, al-Zat Wal Sefat al-Zateyah al-Jareyah al-Senat al-Mutakalemen, which was a criticism of al-Kindi.

"I found Shekh Abdullah Bin Naeli living in Damascus at the West Mosque. His opinions had divided the whole city into two camps, those for him and those against him. Among his critics was al-Khatib al Dawlae. When I met al-Naeli, whose views on chemistry and



philosophy had aroused such controversy, he asked me to do some things for him. I felt that what he was asking me to do was dishonorable and out of the question for a man in my position. I told him so frankly. He disappointed me in his character. When I spoke to him about science, I found his knowledge very limited. Therefore, I told him, 'You are wasting your time. You should devote yourself to religious studies and will become the most renowned scholar in the subject. But abandon chemistry, as it does not suit your aptitudes.'

He was very downcast by what had happened to him and by what I had said. As he did not, however, heed my advice, I left him, but it was not the last time that I saw him.

He went to Salah al-Din of Akkar to complain about al-Dolei but he returned a sick man. He entered the Bermestan and stayed till he died. The Governor of Damascus took his book as he was interested in the subject. Then I visited Jerusalem and subsequently went to see Salah al-Din of Akkar. I met Baha al-Din Bin Shadad, the judge of the Army, who had heard of my popularity in Mousel. He was very pleased to see me and suggested that we should go to see Emad al-Din al-Kateb, whose house was near by. We found him writing a letter to al-Diwan, composing it directly without a draft. He told me that the letter was for my country. He talked about literature and then suggested that we should go to see the judge. When we arrived, the Shekh appeared so thin that it looked as if his body was nothing but a head and heart.

As he was writing and dictating to two men, his face and his lips moved with the words because he was trying to enunciate clearly, giving the impression that his whole body was writing. I discussed religious topics with him. He was pleased with me and said, 'Go back to Damascus, where you will find a regular payment and grant.' I replied, 'I want to go to Egypt.' He said, 'The time is not right as the Sultan is preoccupied with the loss of Akka and the slaughter



of the Muslims there.' I insisted that I wanted to go to Egypt and asked for his help. He therefore wrote a letter commending me to his deputy then.

His deputy, Ibn Sana al-Malik, who was a very powerful and much respected Shekh, met me on my arrival in Cairo and took me to a house where I could lodge, giving me a large sum of money. He introduced me to the officials in the city and told them that I was the guest of the judge. Consequently they gave me many presents. In every official mail, which used to come every ten days, the judge told the officials in Egypt to take care of me.

I stayed at al-Hajeb Loia Loia's Mosque (God bless him). My purpose in going to Egypt was to meet these men: Yaseen al-Seymeyae, the president Mousa Ibn Baymon al-Yahoudi and Abo al-Kasim al-Share'e. All of them in fact came to see me. I found Yasin a charlatan and humbug. Al Shakani told me that he knew alchemy. He said that he could do things, which Mousa Ibn Omran was unable to do. He could produce gold and anything in any amount and of any quantity. He claimed he could produce the waters of the Nile or a tent and that he and his friend could sit under the tent.

Mousa was a good man, but obsequious and sychophantic to the officials. He had written a book on medicine, which had simply been copied from Galen and five other books with hardly a single change. He wrote al-Dalalah, which was a book for Jews. He cursed anyone who wrote to him in a language other than Hebrew. When I read this book, I found it obnoxious as a calumny on the laws of religion.

One day when I was giving a lesson in the mosque, I noticed a man enter in very old clothes, with a charming face and fine features. Everyone round me acknowledged him respectfully. When I had finished teaching, the Imam of the mosque asked me if I knew the Shekh and told me this was Abo al-Kasim al-Sharei. I kissed

his hand. He came with me to my house and we dined together. We had a long discussion. He showed that he was one of the finest physicians of that time. Therefore, we met regularly. He was very interested in the books written by the physicians of the past and by Abi Naser al-Farabe, but I have not time for them as I believe that Ibn Sina is the epitome of medical learning, which can be seen in his books.

When I heard that Salah al-Din had conducted his war against the Franks and had returned to Jerusalem, I decided I must visit him there. Having collected as many old medical books as I could, I left for al-Kudes (Jerusalem) when I saw the great King. He filled my eye with beauty and my heart with love. He was condescending and gracious, affable and urbane. His courtiers imitated him. He provided for whoever was in need.

The first night that I attended his court there were many scholars there. He listened very attentively as the discussion ranged over many topics and he spoke, especially on the subject of building bridges. He was very concerned about the construction of the bridge in Jerusalem and the attendant excavation. He was himself involved in this project, even carrying the stones to set an example to others. He forced everybody to work on the bridge, rich and poor, strong and weak, even the judges, although nobody was eager to perform this labour. He himself usually began before sunrise and worked till noon. After dining and relaxing he returned in the afternoon to work until evening. He spent all night at home preparing his plans for the next day. Salah al-Din ordered that I should be paid thirty dinars a month. As his son was also paying me, I received altogether one hundred dinars a month.

I returned to Damascus and worked hard, reading and teaching the people in the mosque. Day after day I became more interested in the books, of earlier physicians, but rejected Ibn Sina. I discovered the falsehood of alchemy. I comprehended its true nature, its proponents and their lies. I was fortunate that I was not perverted by those two evils, alchemy and the books of



Ibn Sina. I thank God for this deliverance as many were corrupted by them.

Salah al-Din came to Damascus to see off the pilgrims to Mecca. On his return he was given a bath and was bled by somebody inexperienced. So that he sickened and died before the 13th. I was amazed by the grief of the people. They mourned as if they had lost one of the Prophets. I have never seen a people so sad at the death of their king. All his people loved him, rich and poor, good and bad, Muslim and Christian.

After his death his sons and friends quarrelled and divided the country into many parts. Most of them fled to Egypt as it was so wealthy and the King so good. I stayed in Damascus with al-Malik al-Fadel, who was the King's eldest son. King al-Aziz invaded Damascus and besieged his brother in the city. Because he had a disease of the colon, he withdrew to Murji al-Safar, where I went to see him. He granted my request to accompany him and gave me as much money as I needed and more.

I stayed with al-Shekh. We were together day and night until he died. During that time I was reading and teaching in al-Azhar mosque (mosque and university) in Cairo established by Jauhar al-Sukeli in 972) until four o'clock. At midday, people, used to come to study medicine and other subjects. At the end of the day I returned to al-Azhar mosque to teach another group. During the night I pursued my own studies. I lived like this till the death of al-Malik al-Aziz. He was a very generous, modest young man, who helped everybody. Despite his youth he was honest with money and women.

To continue my account: al-Shekh Moustafa stayed in Cairo for some time and enjoyed regular payments and gifts from al-Malik al-Naser Salah al-Din. Then the cost of living became very high and the country faced disaster because a plague destroyed the sheep. Al-Shekh Moustafa wrote a book describing the earth of this period



from what he had seen and heard. The reader will be shocked when he reads this account. The book is entitled *Ketab al-Efadhm wa al-Etebar Fi al-Omour al-Moshadah wa Hawadeth al-Moayanah*.

When the King Safa al-Din Abo Baker Bin Ayoub became the King of Egypt and Syria, al-Shekh Mowafak al-Din went to al-Kudes (Jerusalem) and stayed there for sometime. He frequently went to al-Aksa mosque (the great Islamic centre in Jerusalem). He taught many persons there and wrote many books. Then he moved in 604 to Damascus and stayed in al-Azeze Yah school, where he taught a large number of pupils. He was renowned in medicine and wrote many books on the subject. He had previously been renowned in grammar. He stayed in Damascus for a period and then moved to Aleppo and then to Rome where he lived for many years.

He served King All's al-Din Dawoud Ibn Behram of Arzenjan. He had a very good salary. He dedicated a number of his books to the King. The King was very generous, good, modest and interested in learning. He stayed serving him till the time of the ruler of Arzen.

Al-Shekh Moustafa al-Din Abdul Latif wrote in his autobiography "on 17th of Zel Ku'ada in 625 I moved to Arzen. In the month of Safar 625 I went to Kamakh, in the month of Jamadi al-Awal to Debreki, in Rajah to Malteyah and at the end of Ramadan to Aleppo. I observed Iid al-Fiter in Bahseta. I entered Aleppo on Friday 9th of Shawal. I found the city had doubled in size and became very rich under Ataben Shehab al-Din, who was a popular man beloved by all of his people because of his concern and justice."

He wrote: "I advised you not to rely on books alone, even if you are confident of your ability and understanding, but always get the help of a teacher. If your teacher is not very good, gain as much as you can until you can find a better one. You must always respect your teacher."

He also sent my father a letter which mentioned me, adding "I will come to Damascus just to teach him, if I possibly can". In any case he wanted to come to live in Damascus. He decided, however, that he must go to Baghdad, on a pilgrimage to present some of his books to the Caliphal-Mustanser Bellah, but when he arrived in Baghdad he fell sick and died (God rest his soul) on Sunday 12th of Muharam 629.

He was buried in Alwardeyah in his father's tomb. It was God's wish that, after having been away from Baghdad for forty-five years, he should finally return there to die.

Here are some of his thoughts which I have copied straight from his own handwriting.

"When you go to bed every night, consider what good has befallen you during the day and thank God for it, and what evil you have committed and ask God for forgiveness, promising not to do it again. Think of what good you may do on the morrow and pray God for his help so that you may perform it."

"My advice is, if you are rich, give him money, if you are poor, give him your thanks."

"When you read a book, make certain that you learn and understand it all, so that you can say to yourself, 'I have thoroughly mastered this book. I don't need it any more. Even if I lost it, I would not be sad.'"

"Don't study two subjects at the same time. Concentrate on one subject for a year or two or however long God grants you help. When you have mastered it, move on to another subject. But don't think that once you have mastered a subject, you don't need to study it any more. Far from it, you must continue studying it to keep abreast of new developments, which mean reading, thinking, teaching, practising, discussing and writing."

"If you are teaching or giving a lecture, don't mix one subject with another. Every branch of learning is complete in itself and has nothing to gain from the others."

"A man should study the history and read the books of the past, so that in this short life he will gain from the experience of the nations of old. He should get to know them, live with them, become their friend and learn their good points and their bad."

"The life of al-Sader al-Awal (by which he meant the Prophet) must be your example. Read the life of the Prophet and follow his deeds and his conduct. Try to do what he did insofar as you are able. Learn all about his life, his food, his drink, his clothes, his sleeping, his waking, his sickness, his medicines, how he acted towards God, his wives, his friends and his enemies. Learn all about him and try to follow him even a little, then you will be happy."

"Don't be over-confident; let other learned men examine your opinions and your conclusions. Compare your books with their books. Don't be hasty and don't be proud, for pride is a stumbling-block and leads to failure. If you do not frequent the learned men's houses, your knowledge will not be fresh. If you are not modest before people, they will not respect you. Anyone who cannot bear the toils of learning will not enjoy the fruits of knowledge."

"When you have finished studying and thinking, use your tongue to pray to God and thank him, especially when you go to bed, so that the name of God may be with you in your thoughts and your dreams. If you rejoice over the things of this life, remember your death and repent your sins. If you are saddened, remember the good in your life. Ask God for forgiveness. Keep death before your eyes and your learning and your deeds will help you at your end."



"If you want to commit a sin which God forbids, seek out some secret place. Remember that the people are the eyes of God upon each of us. He lets them see the good even if it is hidden and the evil even if it is hidden. The inner being is well known to God and God will show it to the people. So try to make your inner being even better than your outer being and your hidden life even better than what men can see."

"Do not feel sad if you do not receive worldly goods. The more you receive them the more you will abandon goodness. It is rare to find a rich man seeking knowledge except for those who are very intelligent, and become rich after they become harmed. I am not saying that life will ignore the man who searches after knowledge, but I am saying that he himself will not be in a position to take profit from life because his time will be spent on study."

"Life will reward you if you work and study all its facets. Anyone who studies diligently will become celebrated and respected by all. He will be offered important posts. Remember that knowledge comes from goodness. Learning shines out, lighting up the scholar and directing him on his way, just as it is easy to find the perfume merchant's shop and to guess what he is selling. Or as a man walking in the dark carries a lamp.

"A scholar is loved everywhere. His character prevents him from doing harm, from gaining a dubious profit, from trading mendaciously and from fawning on the powerful. One of my friends wrote:

'Let a man search for true knowledge,

Then the honour of that knowledge will keep him from disgrace.'"

I also copied out the following thoughts:

Make your talk general but distinctive. Do not be verbose, but succinct and clear so that whatever of importance you have to say it is expressed lucidly and in the most attractive way. Do not talk too simply like the common people. Rather talk less simply than the average man, but do not talk too far above his head."

He added:

"Don't speak nonsense. Don't talk about subjects other than your own. Don't keep silence when you ought to speak. Don't laugh and speak at the same time. Don't speak too much or keep on talking too long. Speak slowly with short pauses. Consider carefully before you say anything."

"Don't be defamatory in your speech. Don't be harshly sensorious during your lecture as it will make your talk discordant and deprive it of its usefulness; it will bring hatred upon your head and destroy your friendship."

"Be modest. Do not consider your position so high that your haughtiness will gall people. On the other hand, do not demean yourself so that people will not respect you."

The books of Mowafak al-Din Abdul Latif al-Baghdadi are Khareb al-Hadith (which contained the unknown talks of: Obeyed al-Kasem Bin Salam, Ibn Kutaybah, and al-Khatibi) al-Mujarad Mn Khareb al-Hadith, al-Wadehah Fi Erab al-Fateha, al Ale Wa Lam, Masalam Wahaweyah, Majmoui Masael Wahaweyah, Masael Nahaweyah wa Taalek, al-Kalam Fi al-Zat Wa al-Sefat al-Zateyah al-Jareyah Ala al-Senat al-Mutakalemen, Shakeh Awael al-Moufseel Khamas Maael Nahweh, Shareh Mokademe and Ibn Beshad, Sharh al-Khuteb al-Nabateyah, Shareh al-Madith al-Mutasalesel, Share Saben Hadithen, Sareh Arben Hadithen Tubeyan, al-Rad al-Ibn Khatib al-Ray Fi Tafserah Soret al-Ekhlal, Kashef al-Zalamah an Kedamah, Sharem naked al-Sher, al-Lewa al-Aziz, Kawanien al-Balakhah (written in Aleppo in 615), Hawashi Ala Ketab al-Khasaes al-Ensaf, Bayen Ibn Bani We Ibn al-Khashab ala al-Makamat, Entesar Ibn Bani, Kabsal al-Adlan Ekhtesar Kitab al-Senaeteyn al-Askari, Ekhtesar Ketab al-Amedah. (37)

Abo al-Hajaj Yousef al-Esraeli

He came to Egypt from, the city of Fez of Morocco. He was famous in medicine, engineering and astronomy. He studied medicine

in Egypt with the president Mousa Ibn Mamoun al-Kurtabi. Then Yousef travelled to Syria. He stayed in the city of Aleppo and served King Ghazi Ibn al-Naser. Salah al-Din Yousef Ibn Ayouh. The King trusted him as a physician. He also served Prince Fares al-Din Maymoun al-Kaseri. He lived in Aleppo and practiced medicine there till he died.<sup>(38)</sup>

#### Omar al-Esraeli

This is the physician Awhad al-Din Omran Bin Sadakam. He was born in Damascus in 561. His father was a famous physician. Omar's teacher in medicine was al-Shekh Radey al-Din al-Rahbi. He became distinguished in this subject theoretically and practically as well and became one of the leading physicians. The King esteemed him highly and trusted him as a physician and relied on his skill. As a result he gained a great amount of money from the Court. He wrote more medical books than any other author at that time. He refused to devote all his time to the Court, or to accompany the King during his travel for the purpose of treatment except once when the King was very sick. He treated him till he was cured.

King AboBaker Bin Ayoub and others tried to appoint him at the Court as a full time physician, but he did not accept the post. Prince Sarem al-Din al-Tabneni (God bless him) told me: That when he was in al-Karak during the reign of King al-Dawoud Bin al-Maljk, the King felt very ill, so he called the physician Omaran from Damascus. He cured him and remained with him some time until his health had improved. The King gave him a number of gifts and large sums of money.

The King offered him 2500 Dirham Nasereyah a month if he would accept the post of Court physician. Even offering to pay a year in advance, but he refused.



To continue my account:

The Sultan al-Addel continued to send him gifts and money when he was in Damascus. He went from time to time to the Grand Bermestan to see the patients there. Our Shekh Mohazab al-Din was there at the same time. Their collaboration ensured that the treatment there was of the very highest standard.

I was being trained in medicine by them at that time. I was astonished at Omran's knowledge of diseases and skill in treating them. To give an example, one day a man came into the hospital paralyzed. His previous physician had prescribed a decoction. When Omran saw him he prescribed a particular drug to be followed by a cupping. As a result of this treatment he recovered completely.

I saw him treat many infectious diseases which prostrated the patients, although other physicians could not cure them.

I have mentioned some of his marvellous drugs in my book al-Tajareb Wa al-Fawaed. The physician Omran died in the city of Homos, where he had examined the ruler, in the month of Jamadi al-Ola in 637

#### Mowafak al-Din Yaakob Bin Seklab

He was a Christian physician, the best of his time. He studied the books of Galen with great diligence and never tired of re-reading them. As he was intelligent he knew most of Galen's books by heart. Whenever he spoke about any medical topic he always referred to Galen. Moreover, whenever anyone asked him about a difficult case or to prescribe a special drug, he prefaced any remark with "Galen said this" or "According to Galen" "Galen mentions this in Chapter so and so page so and so." He gave all these details because of his great admiration for Galen.

He was my teacher at the start of my medical studies, when we were at al-Moaskar al-Moazami where my father was serving al-Malek al-Moazan. He taught me Hippocrates. I found his teaching excellent simple and clear, indeed incomparable. At the end of a lesson he used to sum it all up. He told me everything that Hippocrates had said on the subject quoting his exact words without a single mistake - something no one else could do.

When he was in Damascus he met the Shekh Muhazab al-Din Abdul Rahim Bin Ali at the Sultan's house, where the physicians used to gather to discuss medical affairs. Muhazab al-Din was more distinguished in copying as he was the translator of Galen's books.

He was skilful and successful in treatment. First of all he carefully diagnosed the disease and then prescribed a suitable drug according to Galen's recommendations, although taking into account subsequent discoveries. He was very diligent in his diagnosis of a disease. If he failed initially he returned to patient to re-examine the symptoms one by one, his condition and pain until he had found the real cause of the disease.

King al-Mo'aze thanked him for his outstanding skill remarking that it was only because of his excellent diagnosis that he had recovered.

Al-Yakoob knew Latin and translated several books from Latin into Arabic.

He was born in al-Kudes (Jerusalem) and lived there for many years. He was very close to some very dignified scholars who were monks in al-Sayk Church. He was learned in medicine, engineering, mathematics and especially in astronomy. He was sound in his judgement and astute in his intuitions.

Al-Yakoob initially studied medicine under Shekh Abk Mansour al-Nasrani, who set him on the right path. Al-Yakoob had a lucid mind and was sound in his views. Then he served King Issa Bin Baker

Bin Ayoub, the King, who had total confidence in his medical views and skills, offered to make him a Minister, but al-Yakoub refused, as he preferred to remain in his profession.

A disease had made him occasionally very irritable and caused him a great deal of pain as well as some difficulty in walking. The King, who was very generous to him, giving him a regular salary, asked him. "Why don't you treat your own complaint?" He replied, "Sire, the bone is damaged and there is no cure for that."

Al-Yakoub continued serving the King until the King's death at at 3 p.m. on a Friday in al-Kuadah, 624, in Damascus.

He was succeeded by his son al-Malik al-Naser Dawoud who granted an audience to al-Yakoub. The physician praised him and told him about his friendship with and service of his father. He explained that he had become old and weak and recited a poem written by Ibn al-Munkez. The King was so impressed by him that he gave him gifts of clothes and money as well as allowing him all the benefits that he had received in his father's time. He further commanded him to stop working in his old age.

Al-Yakoub died on Christmas Day in the month of Rajab al-Akher in 625.

#### Sadid al-Din Abo Mansour

This is the physician Abo Mansour Ibn al-Hakim Mowafak al-Din Ya'aKoub Bin Suklab, one of the foremost physician. He was distinguished in medicine and its practice. He knew all of its concepts. His father and other physician taught him his profession. He also studied under al-Imam Shames al-Din al-Khosroshahi in al-Karek. He served King Salah al-Din Dawoud, the son of the King Issa Bin Abi Baker Bin Ayoub, and stayed with him in al-Karek. He trusted him very much. Then Abo Mansour came to Damascus, and died there. (41)



Rashed al-Din Ibn al-Souri

This is Abo al-Mansour Bin Abi al-Fadel Bin Ali al- Souri. He was learned in medicine and was aware of its strengths and weaknesses and all its secrets. He was unrivalled in his knowledge of drugs - their composition, their names, their descriptions and their efforts.

He was born in 573 in the city of Sour in South Lebanon. In his youth he left Sour to study medicine under Shekh Mowafak al-Din Abdul Aziz and Shekh Mowafak al-Din Abdul Latif Bin Yousef al-Baghdadi. He gained a reputation as a physician and lived for two years in Kudes (Jerusalem) where he worked at the Bermestan. He became a friend of Sheikh Aba al-Abbas al-Hayani, who was a good teacher, especially about drugs, and a good Muslim. He passed on to him most of his knowledge. He was diligent in his study of drugs so that in the end he became without peer among physicians in this subject. He was, moreover, an honest, patriotic and brave man.

He served King Aba Baker Bin Ayoub on his travels in Egypt in 612. Obeying the King's summons, he left al-Kudes (Jerusalem) and lived at Court until the King's death. Under his son, King Issa Bin Abi Baker, he held a good position. He witnessed the King's battle against the Franks. He served the King at Demyat (a city on the Nile) until the King died. His son, who succeeded to the throne, was aware of his position and long service to the Royal family. He appointed him President of the physicians. When the King moved to al-Karek, he went to live in Damascus, where he formed a Council of physicians for the discussion of medical affairs.

He wrote al-Teryak al-Kabear, which was a very useful book. He wrote a large part of it during the period of al-Malik al-Mouazan. Rashed al-Din al-Souri died (God bless him) on Sunday the first of Rajab 639 in Damascus. Rashed al-Din Ibn al-Souri dedicated a medical manual to me. I sent him a letter of thanks including some poems. Muhazab al-Din Abo Naser Mohamed Bin Mohamed Bin Ibrahim Bin al-Khuder al-Halab wrote a poem in praise of Rashed

al-Din Ibn al-Souri, thanking him for his help.

Out of the books of Rashed al-Din al-Souri is al-Adweyah al-Mufradah. He started writing it during the period of al-Malik Mouazan, to whom it is dedicated. He mentioned all the days, including some new ones. Rashed al-Din used to go to places, where many special plants grew, such as the mountains of Lebanon, and Taalek and Fawaed Tubeyah (a commentary and medical manual, which he dedicated to me).

#### Saded al-Din Bin Rakekah

This is Abo al-Thana'a Mohamed Bin Omran Bin Mohamed Bin Ibrahim Bin Shoja, al-Shebani al-Hanoto, known as Ibn Rakkah. He was a generous man. Not only had he absorbed all the works of earlier physicians, but he was also a distinguished scholar of poetry. He wrote many poems on medical subjects. He drew all the plants exactly as he found them. His method of studying plants was marvellous. He used to observe and draw the plants at every stage.

His other books are: al-Jaj al-Ghawi Fi al-Adweyah al-Mufradah.

Saded al-Din was well versed in al-Kahlah (ophthalmology). He devoted many years to developing surgical techniques in treating the eye. Many patients recovered their sight after he had operated on them with the al-Makdah (an ophthalmic surgical instrument).

He had also studied astronomy. He was accomplished in grammar and literature, like his brother Moen al-Din, who was a renowned Arabic scholar and poet. Saded al-Din had further studied the Prophet's sayings.

Saded al-Din Bin Rakekah told me that he was born in 564 in the city of Hayani. The ruler, Nour al-Din Bin Jamal al-Din Bin Artek, had a pain in his eyes. Al-Shekh Faker al-Din, who had

been treating him for some days decided to travel and advised the ruler that Saded al-Din Bin Rakekah, should continue the treatment. He examined his eyes and cured him completely in a very short time. The ruler granted many gifts and a salary. Sadid al-Din told me that he was less than twenty at the time. He continued serving him and then served King Mohamed Ibn Taya al-Din Omar the ruler of Hama and stayed with him for some time. Then he travelled to Khelat (a city in Armenia) when King al-Awhad Najm al-Din Ayoub Bin Abi Baker Bin Ayoub was the ruler. He served Salam al-Din Bin Yagnesan, who was the brother-in-law of the King, as he had married his sister. Saded al-Din Bin Rakekah treated them from time to time by Nour al-Din Bin Zanki. The Sultan was paying him a regular salary. As I was also being paid to work at al-Bermestan, we became friends. I found him a very good, honest man, with a wide knowledge. His treatment was so successful that it defies explanation. He worked in Medicine till he died (God bless him) in 635. I had been in Sarkhad since 634 serving the ruler Prince Ezzal Din al-Moazami, as a physician. Saded al-Din sent me a number of poems.

The wife of the King was very generous. He stayed in Khalat till the King died, in Malazkard (a city in Arminia) on Saturday 18th Rabe'a al-Awal 609. Then he served King Aba al-Fateh Mousa Ibn al-Malek al-Adel and stayed in Mayafarken for many years. On 3rd Jamadi al-Akher, 623 Saded al-Din Bin Rekah arrived in Damascus to see the Sultan, al-Malek al-Ashraf. The Sultan esteemed him and gave him gifts, asking him to visit the house of the Sultan in the Castle from time to time and at the same time to treat the patients in the great Bermestan.

He also gave me a book of medical maxims. Here are some of them.

Don't eat after your meals.

Excessive love-making causes distress.

Don't drink after eating.

Don't drink when you are hungry until you have had something to eat.



He sent me one poem, which he had written to congratulate his friend Jalal al-Din Aba al-Fateh on his purchase of a house, and another dedicated to his teacher Shekh Fakher al-Din Mohamed Ibn Abdul Salam al-Mardeni.

The books of Saded al-Din are the following: Lutef al-Sael Wa Lutef al-Masael, Masael Hunayen, Kuleyal al-Canon of Ibn Sina, Mawdehat al-Eshtebah Fi Adweyat al-Bah, al-Faredeyah al-Shaheyah al-Kasedah al-Beheyah (written in Bayfarken in 615 for al-Malik al-Ashraf, Shah Armen, Kanoun al-Hukana Wa Ferdawes al-Nedama, al-Karad al-Matlaub Fi Tadbeer al-Maekoul Wa al-Masitrob, Masel Wa Ajwebatah Fi al-Hemeyat, Arjoza Fi al-Fased.<sup>(42)</sup>

#### Sadekah al-Sameri

This is Sadekah Bin Menja Bin Sadekah al-Sameri, one of the most distinguished physicians. He worked very hard, loving reading and researching. He was an erudite scholar in philosophy, having discovered all its secrets. He studied medicine and wrote a number of medical books. For many years up to his death, he served al-Malik al-Asraf Mousa Ibn al-Malek al-Adel Abi Baker Bin Ayoub in the East. The King esteemed him very much and trusted him as a physician. He gave him many gifts and a salary. When he died in the city of Huran in 620 he left a great fortune, but he had no children.

He wrote many poems on different occasions. The books of Sadekah al-Sameri are the following: Shareh al-Tawrat, Ketab al-Nafes, Talek Fi al-Tub (in which he discusses diseases and their treatment), a commentary on al-Fousol by Hippocrates (incomplete), al-Adweyah al-Mufradah, Makal on Masael Tubeyah. (in which he answers the questions of al-Assad al-Maheli al-Yahoudi). Makalah Fi al-Tawhed entitled al-Kunez Fi al-Fanez.<sup>(43)</sup>

Muhazab al-Din Yousef Bin Abi Saed

This is al-Shekh al-Imam al-Saheb al-Wazer.(the Minister) Muhazab al-Din Yousef Bin Abi Saed Bin Khalaf al-Samri. He was learned and renowned in medicine, but had also studied literature. He was preminent for his charity, his help to the poor and his honesty.

He studied medicine under the physician Ibrahim al-Sameri - known as Shames al-Hukama (the son of physicians) who had served King Salah al-Din Yousef, under al-Shekh Isamel Bin Abi al-Werar al-Tabib and under Muhazab al-Din Bin al-Nakash. He studied the literature under Taj al-Din al-Nakad Abi al-Yamen. He became a distinguished physician, famous for the success of his treatment.

He became a distinguished physician, famous for his successful cures. One instance concerned Set al-Sham, the sister of King Abi Baker Bin Ayoub. She was sick and bleeding badly. The physician treated her with appropriate drugs. He took her pulse and told her attendants, "Her pulse is still strong. Give her al-Kafour which will fortify her." She was given it in an elixir. The bleeding diminished and the fever abated. On the following day he repeated the dose and fully recovered her health.

One of the King's friends, al-Sahib Bin Shaker, related that one day the King suffered from a backache as a result of catching cold. In addition one prescribed an embrocaction of Jendebadester ( a kind of marine oil) another a salve, but al-Muhazab said a perfume would be better. The King was astonished. Al-Muhazab ordered some Khaleyah (a mixture of dried herbs), which he boiled. The King drank it and was cured.

Muhazab al-Din Yousef served Ezzel Din Ferhashah Ibn Shahan Shah Bin Ayoub. When the King died (God bless him) in Jamadi al-Awal in 578, he served his son, Majed al-Din Bahram Shah Bin Izzed Din Farkhashah and lived at court in Ba'alabek.

He became very wealthy. It was fortunate in that the King asked him for his views even on affairs of state. He gave such excellent advice that the King appointed him a Minister. His position grew stronger until he became the most powerful man in the whole country; everybody obeyed him.

Muhazab al-Din enjoyed the foremost position in the land until people complained about his family and relative. Many of them had come from Damascus to Baalbeck and received posts in all parts of the administration. They had behaved arbitrarily and irresponsibly, milking the public funds as they felt that nobody could stand up to them for fear of Muhazab al-Din. When the King heard about their speculation of the public funds, he summoned Muhazab al-Din and upbraided him for allowing it to happen.. He threw him and all his relatives into prison and forced them to return all that they had embezzled. The Minister remained in prison until he had lost everything. He was released and returned to Damascus.

I went with my father to visit him in his house to greet him on his return from Baalbek. I found him affable in his deportment and lucid in conversation. He died in Damascus on Thursday, 1st Safar 624. Here is one of his poems.

"If Life hurt me for a day  
It pleased me for a century  
If I lost my wealth,  
I replaced it with fame"

He wrote Shareh al-Tawrat. <sup>(44)</sup>



Al-Saheb Amin al-Dawlah

This is the Minister, the scholar, the perfect president, the best of Ministers, the master of physicians, the Imam of scholars, Abo al-Hasan Bin Ghazal Bin Abi Said. He was a Samaritan but he became a Muslim and changed his name to Kamal al-Din. Muhazab al-Din al-Sameri was his uncle.

Amin al-Dawlah was very intelligent. He was pre-eminent in medicine gaining so complete a mastery of its theory and its practice that he was without peer.

He worked initially for King al-Amjad al-Din Bamran Shah Ibn Ezzel Din Farkhshah Bin Ayoub, who trusted him and gave him responsibilities in the state. After the King al-Amjad had died (God rest his soul) at Damascus on Thursday 11th Shawal, 628, the new King, al-Saleh Immad al-Dinj Abi al-Feda Ismael Bin Abi Baker Bin Ayoub, appointed him a Minister. He ruled wisely, enhancing the power of his country. He increased the King's prestige by building tall buildings, founding schools, and fostering scholars and learning. No ruler was more illustrious.

He continued in this powerful position until the time of King Najam al-Din Ayoub, who on becoming King of Damascus, appointed Prince Moun al-Din, the Shekh of Shekhs, as the King's Deputy and King Ismael as Ruler of Baalbek. The latter moved there with his family in 643. Subsequently Amin al-Dawlah as Minitere succeeded in collecting a huge amount of money for King Ismael from the people of Damascus. Most of it was extorted by force with the connivance of the resident of Judges of Damascus.

When Prince Moun al-Din, the King's Deputy in Damascus, and Jamal al-Din Bin Matroun, the Minister of Finance in Egypt and a Minister in Damascus, as well as other top officials heard what had happened they decided to imprison him and force him to return the money. They, therefore, made a trap for him. He was summoned to court where he was received with the usual courtesies and respect. They

asked him "Either you may stay as you are in Damascus, or, if you prefer, you may join your Patron in Baalbèk." He replied, "I would rather go to King Ismael to serve him." Then he went and having collected all his wealth and property, even his furniture and having sold all his houses, he set out for Baalbek on Friday 2nd Rajab 643. As he left Damascus, he was arrested and thrown into prison and all his wealth was confiscated.

He was later sent to Egypt and gaoled in Cairo Castle with the rest of King Ismael's friends.

After the death of King Najam al-Din in Egypt in 647, King Yousef Bin Mohamed of Aleppo and the King of Damascus, with the support of the King of Bilad al-Sham and King Ismael, invaded Egypt on 8th Rabeiat, 648, but the army of Miser (Egypt) under King al-Moez Ezzel Din Aybek al-Turkmani, who had succeeded his patron, Najem al-Din, faced them in battle. At first the army of Bilad al-Sham had the advantage, but finally the army of Egypt triumphed. King Ismael was captured and executed.

Prince Sayaf al-Din al-Mushad Ali bin Omar told me "When Amin al-Dawlah heard the news in Cairo Castle that the Kings of Damascus were beating the army of Egypt, he asked his captors to release him and they consented. There were two other friends of King Ismael in the gaol, his family's teacher, Naser al-Din Bin Yaghmour, and the Kurdish Prince, Sayfe al-Din. The latter said, 'Let us wait until we hear definite news. If this rumour is right, our patron will release us and restore us to our former positions, but if it is wrong, it is better that we stay here.' But the Minister and Naser al-Din disagreed. They got out and began giving orders. After the battle, when King Ezzel Din al-Turkmani came to the castle he ordered both of them to be put to death. Amin al-Dawlah was hanged. One of those who saw his body after his excution told me that he was wearing the most excusite red shoes. The Kurdish prince meanwhile, was freed and given gifts."

The most astonishing circumstance is related by Prince Naser al-Din Zoukri, known as Ibn al-Alemah. When Amin al-Dawlah was in prison, he wrote to a renowned astrologer in Egypt, asking if he would have to stay in prison for long. The astrologer made his calculations and replied that he would soon be free and that he would be able to give orders and commend obedience again in Egypt for a while. This answer made him very happy, especially when he heard the rumour of the King's victory. He was confident that he would become a Minister again. In fact, he was freed, did give orders and did command obedience, just as had been predicted. But he did not know the final fate that God had decided for him.

Amin al-Dawlah collected many valuable books and scribes were always working for him. On one occasion he wanted a copy of the eighty volumes of the History of Damascus by Ibn Asaker (Ali Bin al-Hassan, 1105 - 1176). It is a very closely written book. He said, "Time is short. It is impossible for one scribe to do the whole job." He, therefore, divided the task among ten scribes, each copying eight volumes. They finished it in two years. This illustrates his interest in books.

When he was in Damascus as a Minister under King Ismael, my father was a close friend. He expressed an interest in my book and I wrote him a poem to thank him.

Amin al-Dawlah wrote al-Nahej al Wadeh Fi al-Teb, which is the finest medical treatise, covering all its principles. It is divided into five books. The first is on the nature of man, the three conditions of the body, types of disease, the parts of the body and the humours. The second concerns drugs and their effects. The third is on compounding drugs. The fourth deals with the causes, symptoms, diagnosis and treatment of diseases. The fifth is on internal diseases, their causes and treatment. <sup>(45)</sup>



My Uncle Rashed al-Din Ali Bin Khalefah

This is Abo al-Hassan Ali Bin Khalefah Bin Younis Bin Abi al-Kasem Bin Khalefah from al-Khazeraj from one of the family of Saad Bin Abadah. He was born in Aleppo in 579 (we have already given full details of his life - Ibn Abi Usaybe'ah's family)<sup>(47)</sup>

BADER al-Din Ibn Kadi Ba'alabek

This is the physician, the scientist Bader al-Din al Mouzafar Ibn al-Kadi, the Imam of the scientists Majet al-Din Abdul Majed Rahim Bin Ibrahim. His father was the judge of Ba'alabek. He grew up in Damascus and studied medicine there. God granted him with great wisdom. It is impossible to exaggerate his intelligence and virtue. He studied medicine with our Shekh, the physician Muhazab al-Din Abdul Rahim Bin Ali (God bless him) and he taught him medicine, for he thoroughly mastered its practical and theoretical sides. He worked very hard, as he had great aptitude. I have never seen anyone as diligent as he was. He was pre-eminent among physicians. He spent his whole time deepening his knowledge by studying, reading and learning. He learnt many medical materials. One example of the power that he showed throughout of his life is that he learnt by heart the full text of the book of Abdul Rahim Bin Ali, which pleased al-Shekh Muhazab al-Din very much. He accompanied him and stayed with him reading and studying together.

When al-Shekh Muhazab al-Din went to serve al-Ashraf Mousa Ibn al-Malek al-Adel, while he was in the East in 622, the physician Bader al-Din went with him and continued working with him. Then Bader al-Din served at al-Bermestan of al-Rukah. He wrote a good essay on al-Rukah and its climate (al-Rukah is a city on the river Euphrates East of Aleppo). He lived there for many years and worked on medicine with Zayn al-Din al-Omah (God bless him). Then

Bader al-Din moved to Damascus. Then King Mouzafer al-Din . Younis Bin Shames al-Din Mardoud Ibn al-Malik al-Adel became the ruler of Damascus in 635, he served him as a physician. The King, who liked him and gave him great support, appointed him the president of physicians and al-Kahlen (the oculists) by decree in the month of Safar 637. He improved the medical profession by his help and knowledge, as he always wanted to do good and was always thinking of improvements for example, he bought some houses to enlarge the school, as I have already mentioned. I found he devoted most of his time to the study of law.

He stayed in al-Kaleyjéyah school which was a donation from Prince Safel Din Ali Bin Kaleyj (God bless him) to al-Awagaf (donation dept). He studied the law at the school, which was very close to his house. He learnt many books and the holy Quran completely. He also studied al-Hadith (the prophet's sayings) and became very famous on those subjects. His teacher was al-Shekh Imam Shehab al-Din Abi Shamah (God bless him). Bader al-Din spent most of his time praying and helping Muslims. He showed his kindness and generosity towards me. I received one of his books "Mufreh al-Nafes". I wrote him a letter thanking him and I wrote a poem on this occasion. I wrote another poem for him in 645. The books of Bader al-Din Ibn Kadi Balabek are the following: Majaj al-Rukah (which displays his marvellous learning), Mufreh al-Nafis (in which he mentions drugs and heart complaints, it is a very useful book). He dedicated it to Prince Safe al-Din al-Mased Abi al-Hassan Ali Bin Omar Bin Kazel (God bless him), al-Meleh Fi al-Teb (in which he gives much useful information), Fawaed from Galen and other books. <sup>(48)</sup>

Shames al-Din Mohamed al-Kelli

This is the physician, the scholar Abo Abdallah Mohamed Bin Ibrahim Bin Abi al-Mahasen. His father who was from al-Andulas

in Morocco, he came to Damascus and lived there till he died. The physician Shames al-Din Mohamed grew up in Damascus. He learnt medicine under our Shekh the physician Muhazeb al-Din Abdul Rahim Bin Ali (God bless him) and stayed a long time with him. He taught him all the books of former physicians which are essential for every student. Moreover, the physician Shames al-Din studied the first book of al-Canon entitled al-Kuleyat and understood it thoroughly, therefore, they called him al-Kully. He studied many scientific books and practised medicine. He understood them easily. He spent most of his time studying. He was an excellent lecturer and was very clever in discussions. He served King al-Ashraf Mousa Ibn al-Malik al-Adel as a physician in Damascus until the King died (God bless him). Then he worked at the great Bermestan which was built by the King al-Adel Nour al-Din Bin Zunki (God bless him) treating the patients there. <sup>(49)</sup>

#### Mowafak al-Din Abdul Salem

He was a skilful physician with a wide knowledge of medicine. His conduct was exemplary, his views sound. He was from Hamah and stayed in Damascus and studied with our Shekh, the physician Muhazab al-Din Abdul Rahim Ibn Ali and other teachers. He was distinguished in medicine. Then he travelled to Aleppo and increased his learning. He served King al-Nasser Yousef Bin Mohamed Bin Ghazi, the ruler of Aleppo. He trusted him and helped him. When I wrote a poem describing Damascus and my nostalgia for the city, I inwrote a paasage in praise of him. (I have already referred to this poem).

When he went to Damascus and knew the mood of her people, the physician Mowafak al-Din travelled to Egypt. Then he served King al-Mansour, the ruler of Hamah, and stayed with him. He gave him a lot of money and put him in a very good position. <sup>(50)</sup>



Mowafak al-Din al-Mounfakh

This is the physician, the scholar Abo al-Fadel Asad Bin Halwan. He was from al-Mazah (a village near Damascus, well known for its prison. He worked in Medicine and became famous and distinguished in this subject. He served King al-Ashraf Mousa Bin Abi Baker Bin Ayoub in the East for many years. He left him and later died in Hamam in 642.<sup>(51)</sup>

Najem al-Din Bin al-Mounfakh

This is the physician, and scholar Abo al-Abbas Ahmad Bin Abi al-Fadel Assad Bin Halwan. He was known as Ibn al-Alemah of Damascus. (The sone of the scholar. This refers to his mother who was known as the daughter of Dahren al-Louz)

Najem al-Din was born in Damascus in 593. He was in appearance dark and thin, he was intelligent and sagacious, lucid in speech, perscipacious in discussion, a man without equal.

He studied medicine with our Shekh, Muhuzab al-Din Abd Rahim Bin Ali until he had mastered it. He bacame renowned in the field. He was well versed in logic and accompanied in literature and poetry. He played the Oud and wrote a beautiful hand.

He served King al-Masoud of Amed as a physician. The King favoured him and appointed him a Minister, but subsequently he was disgraced and stripped of all his properties. He therefore moved to Damascus where he worked as a physician, and was a distinguished figure in the State.

Najem al-Din was a vulnerable, overbearing man. He excited the envy of a group of men who conspired against him. I learnt this from a poem that he sent me.

At the end of his life he served King al-Ashraf Ibn al-Malik al-Mansour of Homes at Tel Basher (a castle in north Syria on the river Sajour) for a long time. He died (God rest his soul) on 13th al-Kuada 652. His brother told me that he died of poison.

The books of Najem al-Din Bin al-Munfakh are: al-Tadkek Fi al-Jame'a Wal Tafreek (which is a discussion of diseases, their differences and similarities), Tamweh al-Dakhawar (comments on his experiences), Shareh Ahadeth Nabaweyah (an exposition of the saying of the prophet about medicine), al-Muhmalat Fi Kitab al-Kuleyat, al-Madkhel Fi al-Teb, al-Elal Wal Amrad and al-Esharat al-Murshedah Fi al-Adneyah al-Mufradah. (52)

#### Ezz al-Din Bin al-Sowaydi

This is the physician and scholar Abo Ishaq Ibrahim Bin Mohamed of the family of Sa'as Bin Mouaz from al-Awes. He was born in Damascus in 600 and grew up there and became a very famous man at that time. He was very helpful, as a Governor, kind, faithful and brave.

He studied medicine until he had thoroughly mastered it. He met all the foremost physicians of the day and frequented the most distinguished, such as Shekh Muhazab al-Din Abdul al-Rahim Bin Ali, thereby acquiring much medical wisdom. He studied the art until he was pre-eminent in it. He studied Arabic and literature. As a poet he was without peer. His poetry was simple, correct and mellifluous. He was learned in all scholarship. He had a marvellous rapidity in learning poetry. I often found him learning a poem with different variations.

His father was a merchant from al-Soweda of Horan (in the Druze mountains). His father was a good, friendly and courteous man, who was a very close friend of my father's. Ezza al-Din and I

studied together with al-Shekh Abi Baker al-Sekelj (God bless him). We have been friends for very many years and I hope that it will continue and grow stronger.

Of all physicians, Ezz al-Din was the most cordial to his patients, most successful in his cures, and most clear-sighted in his understanding. He worked at the Bermestan of al-Nouri. He was attentive and solicitous to his patients until they recovered. He also worked at the Bermestan in Babo al-Mareed and at the castle of Damascus. He taught at al-Dekhwareyah school. He received a salary from all these offices.

Ezz al-Din wrote out in his own hand many medical books, including these copies of the Canon of Ibn Sina. He wrote a poem for me when I wrote this book.

The books of Ezz al-Din Sowaydi are: Al-Baher Fi al-Jawaher and al-Tazkerah al-Hadeyah Wa al-Zakherah al-Dafeyah Fi al-Tib. (53)

#### Immad al-Din al-Dawseri

This is the physician, the assistant of Immad al-Din Abo Abdullah Mohamed Bin al-Kadi al-Khatib Takey al-Din Abbas Ibn Ahmad Bin Obeyed al-Rabe. He was a virtuous, honest, unselfish and very intelligent man.

He was born in the city of Damascus in 685 and grew up there. He worked as a physician and having become learned in medicine, contributed to the health of the city and cured many patients. My first meeting with him was in Damascus, in the month of Zel Ku'adah in 667. I found him a very generous, friendly, kind and articulate man, and he recited an excellent poem as he knew all the rules of poetry.



He was without peer among physicians of this or previous ages. None was equal to him in poetry. He was further pre-eminent in the study of the law. He travelled from Denesar to Egypt. Then he returned to live in Damascus. He served al-Ader al-Nasereyah al-Yousefeyah at Damascus Castle. Then he worked in the great Bermestan of al-Nouri in Damascus. He told me many poems.

The books of Immam al-Din al-Danseari are: al-Makalah al-Murshedah Fi Darj al-Adweyah al-Moufradeh, Nazem al-Teryag al-Farouk, Ketab Fi al-Methrodetous, Takdemat al-Ma'Wrefah of Hippocrates, Arjozah and a book on poetry. (54)

#### Mowafak al-Din Yagub al-Sameri

This is the physician, the president of his time, the notability of his age, Yousef Yaqub B in Aghanaem. He was born and grew up in Damascus. He was very accomplished in medicine being well versed in both the theory and the practice.

His behaviour was excellent. He enjoyed a very good position among the foremost people. He was a distinguished figure at all times. People trusted him as his remedies were efficacious. He taught many physicians, who learnt much as his pupils.

He wrote a number of books which were concise, lucid and informative. The books of Mowafak al-Din Yagub al-Sameri are: Shareh al-Kuleyat of al-Canon of Ibn Sina, Hal Shokok Najem al-Din al-Muwafak Ala al-Kuleyat, al-Madkhel.Ela Elem al-Mantek Wal Tabeiay Wa al-Elahi.

He died in the month of Rahadan in 681. (55)

Abo al-Faraj Bin al-Kuff

This is the physician, the scholar, the loyal subject, Abo al-Faraj son of the Shekh, the scholar, Mowafak al-Din Ishaq Bin al-Kuff, one of the Christian Community of al-Karek. He was born in al-Karek on Saturday, 13th of al-Kaedah in 630. His father Mowafak al-Din was my friend and was faithful to our long friendship throughout his life. His son, Abo al-Faraj, showed his intelligence from his earliest youth. He was a handsome, quiet and very intelligent man who was interested in the history of physicians. For this reason, his father asked me to teach him. He stayed with me and I taught him until he learnt all the previous books, which were available.

He learnt Masel Hunayen and al-Fousoul and Taklemat al-Marefah of Hippocrates. He learnt their explanation, meaning and their principles. Then I taught him the books of Abi Baker Mohamed Bin Zakereyah al-Rhazi on treatment, Aksam al-Eskam, Jasem al-Olalal Fi al-Ajam and Moalajet al-Moalajah Wa Mouarat al-Moudawah. I taught him its principles and all its chapters and I helped him to understand its difficulties and its contents. When his father moved to Damascus to serve in the Diwan al-Sami, he moved with him and stayed there among noble men.

He studied medical science and a part of philosophy. His teachers were: al-Shekh Shames al-Din Abdul Hamid al-Khasro Shahi and Ezz al-Din al-Hassan al-Ghanawi al-Darer. He was also taught medicine by the physician Najem al-Din al-Mowafak and Mowafak al-Din Yaquob al-Sameri, al-Shekh Moayed al-Din al-Ardi.

Abo al-Faraj Bin al-Kuff worked as a physician in the castle of Ajloun and stayed there for a number of years. Then he returned to Damascus and worked at the Castle treating the patients. His

patients praised him for his effective treatment and they thanked him for his help.

The books of Abo al-Faraj are: al-Shafi Fi al Tubb, Shareh al-Kuleyat of the Canon of Ibn Sina (six volumes), Sharah al-Fousoul (2 volumes), Hefes al-Shama al-Emedah Fi Senuat al-Jejarah 20 essays, theoritical and practical in which he expounded everything that a surgeon need to know, Jame'a al-Gharad (1 volume), Hawash al-Thaleth al-Canon, Shareh al-Esharat, al-Mabahieth al-Mashrabeyah (not completed). He died in Jamadi al-Awal in 685. <sup>(56)</sup>



C H A P T E R 4

HISTORIOGRAPHY OF ARAB MEDICINE PAST AND PRESENT AND

PROPOSALS FOR FUTURE DEVELOPMENT

1. Historiography of Arabic Medicine Past and Present

A. PAST

- i. Is it Arabic Medicine or Islamic Medicine?
- ii. The Role of Arab Physicians
- iii. The Role of the Orientalists

B. PRESENT

Introduction

B.1: In the Arab World - in Syria in Particular

B.2: Syria in Particular

Introduction

B.2.1: Syrian Society for the History of Arabic Science

B.2.2: The First International Symposium for H.A.S.

B.2.3: Institute for H.A.S.

B.2.4: The International Conference on the History of  
Bilad al-Sham

2. The World and The Historiography of the Arabic  
Science at Present

3. The Arab Civilization and the other previous  
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3.A: General Background and Discussion

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4.A; An Account of Missing Factors

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1. HISTORIGRAPHY OF ARABIC MEDICINE PAST AND PRESENT  
AND PROPOSALS FOR FUTURE DEVELOPMENT

INTRODUCTION

Although the history of medicine represents a history of facts and processes, it should also be in part a biographic history. This includes the history of the great pioneers and those who made their indelible impression on medical progress as culture "has never been the sole prerogative of a single people or group of peoples. It flourished whenever and wherever conditions have been favourable to its growth."<sup>(254)</sup>

Biography "has been an important form of writing in the history of science ever since Fontenelle's famous eulogues in the 18th Century",<sup>(255)</sup> taking into consideration that "there has always been a certain malaise between the history of science on the one hand and the philosophy of science on the other".<sup>(256)</sup> It is desirable, therefore, to examine the development of this discipline and to praise famous men who played a marvellous part in the field of historiography of Arabic medicine by giving an account of the achievements past, present, then ending our explanation with some proposals and recommendations for future developments.

To give an account of the Arabic medical historiography, a brief explanation of the greatest historiography of science in general is essential.

It is not possible to write anything about this subject without mentioning Charles Singer (1876-1960) who worked first in Oxford where he published his studies in the history and method of science in 1917, thereafter followed by a number of books, among them The History of



Medicine in 1928, The History of Science in General in 1941 and finally in his comparatively old age, the splendid feat of producing five volumes, with the aid of others as editors and contributors, on The History of Technology in General (1954-1958).. It is useful to refer to what J. Needham has said in his address to the XV International Congress of the History of Science, Edinburgh, August 1977 about this great historian of science:

"Charles Singer also did something which I have not known other historians of science to do- he bought very widely in the field, much more so than he actually needed for his own work, and then with the expenditure of a little time in describing the items he would sell them again through dealers and successfully add to his research funds."

Other historians of science were Sudhoff, Sigerist and George Sarton (1884-1956) (Fig no. 12 ), the author of Introduction to the History of Science, which consists of three volumes in five parts. Although we will give a suitable picture of this great historian, when we deal with the role of Orientalists, later in this chapter, it is good to refer to him now and to repeat that "his memory will remain alive to those in the Near East who knew of his genuine endeavours to bring out what the Arab-Muslim mind has done in the field of science and for reconciliation."<sup>(257)</sup> Indeed nowhere else do we find so much information on the analysis of the Arabic civilization and philosophy of science and technology as we find in Sarton's writings, especially his introduction.

Before we deal with the development of the Arabic medical historiography, past and present, we must mention that we meant by the past that the period which lasted from the decline of the Arabic Civilization which started at the end of the thirteenth Century after the Hüllaku entered Baghdad in 1258 till the year 1975, the year before the First International Symposium on the History of Arabic Science, which was held at the university of Aleppo, Syria between 5-12 April 1976, the date which we considered as a new trend in the field of the history of Arabic Science.

Although some historians considered that the decline of Arabic medical civilization lasted till the year 1599, but this does not mean that the science has stopped, because "it continued slowly..... and some physicians with good respect appeared as Hajaj Ibn al-Kasim (1584 d.) and Dawoud al-Entaki (1599 d.) who was the last physician to represent Arabic medicine."<sup>(258)</sup> A fact which is repeated by Leclere saying that "the decline of Arabic medicine ended on the death of al-Entaki."<sup>(259)</sup>

#### 1.A. ARABIC MEDICAL HISTORIOGRAPHY IN THE PAST

Two points must be taken into consideration. Firstly, as already stated - Hippocrates should be regarded as the first medical historian because of the attempts that he made to interpret the work and concepts of the physicians of the schools of the preceding period, especially when one reflects on the difficulties made by the paucity of preserved data. His book on Ancient medicine indicates the high regard in which he held the works of his predecessors. Secondly, the definition of the past which we explained above. We believe that to give a full picture of this important topic, we must discuss in some detail a number of points in order to reach at the end a just view of Arabic civilization and its role in the

previous and present civilization. The points which we refer to are the following:

- (i) Is it Arabic medicine or Islamic medicine?
  - (ii) The role of the Arabic physicians in the field of Arabic medical historiography and
  - (iii) The role of the Orientalists in the field of Arabic medical historiography.
- (i) Is it Arabic medicine or Islamic medicine

To give an answer to this question it is very important to explain, first, the definition of the Arabic medicine as mentioned by the historians.

Some authors insist on giving the explanation that "the Arabic medicine is everything that has been written in medicine and related subjects during the Arabic Islamic civilization", as mentioned by Brown in his book. The Arabic Medicine (1921), and by Campell in his book "Arabic Medicine". (1926)

Other historians of medicine insist on naming it as "Islamic Medicine" as Manfred did, <sup>(260)</sup> as he pointed out that some of the Arabic physicians were not Arab, by race.

It has been called "Arabic" firstly because it owed its inception to Arabs initiative and Arab patronage, and secondly and more importantly because the Arabic language was the medium in which it developed. "The individuals who took part in its growth represented many ethnic groups, and at least in the beginning professed different faiths. For example among the first translators, physicians and astrologers who were attached to the Abbasid court were many Syrians



Christians and Persians, such as Ibn Qurrah, and some from non Arab lands such as Khawarizmi. Although this is true, the author who mentions this fact also proves without any doubt that he is trying to put a wide gap between the Arabs and Islam. But we believe that it is an unacceptable attempt.

Arab history is a very long one, and we must pass over the role the Arabs played in the foundation of civilization as a whole concerning the differences in the sources of the cultural heritage, it must be noted that these are not so much sources of disunity as impoverishment as they are of enrichment and fertility. The pharaonic culture to the Egyptian, the Assyrian and Babylonian culture to the Iraqi, the Phoenician culture to the Lebanese are not factors that weaken or undermine Arabic civilization and culture. On the contrary, they are springs of creativity, enrichment, and variety. This cultural wealth has become an integral part of the heritage which Arabic culture has assimilated and renewed. It is fundamentally as al-Rasi said <sup>(261)</sup> - an international wealth for all the peoples of the world not to be confined to the peoples of the area in question. The time when some used to speak of "the pure civilization has irrevocably passed. Such theories are now remnants of the epoch of decadence. What we are experiencing today is the product of all civilizations that have appeared on our land and the sum total of its people's experience. Arabic civilization came to Crown all earlier enrichment of that culture.

It is very unjust, indeed "to look at our history and feel that it is an empty or shameful history before Islam. On the contrary, it is a history that goes back many centuries and the most important thing which kept it up till now and for good is the Arabic language which was "much respected among the Arabs as a whole before and after Islam."<sup>(262)</sup>

No doubt, the rise of Islam is the greatest revolution in Arab history, because it represented in religious terms an extract of all kinds of previous beliefs which were found in the Arab lands, and politically, because it enabled the Arabs, to fuse into one civilized country to play a major role in human history. "Islam which found its characteristics in the life of the Prophet as far as the Arab is concerned is an historical event and because it is very deep and wide so it is connected directly with the life of the Arab."<sup>(263)</sup>

Therefore, "the most important civilization which appeared during the Middle Ages," <sup>(263a)</sup> was established on a base of two factors, the Arabs and the Islam and the civilization during Islam "played a major role in the recent civilization of the Arab world."<sup>(264)</sup>

But we must insist, that any attempt to put a gap between the Arabs and Islam is unacceptable as we mentioned before. Each of these two words is complimented by the other. Indeed, as Islam arose in the Arab land, the Prophet Mohamed is an Arab and He is a member of the most honourable Arabic family. The Quran, the Islamic law was in the Arabic language and the Arabs themselves carried out the responsibilities of spreading Islam to other nations. So it is not surprising to see one author saying "the word of Islam means the Arab and the word Arab means Islam."<sup>(265)</sup> As a result, the Arabic language became an essential language of the state, throughout the great state. Therefore most of the Persian, Indian, Greek sciences were translated into Arabic and most of this heritage was written in Arabic, so it is no wonder that one historian says "the Arab who knew nothing of the terminology of arithmetic, engineering medicine and philosophy became in a short time, able to explain the medicine of Galen and other previous civilization."<sup>(266)</sup>

Some one may say: "what about the physicians who were not Arabs by race?" To this question, we refer to one of the most important physicians, namely Ibn Sina. He was Persian by race, but we must not forget the fact that he lived in the Arabic Empire, practiced in it, wrote in it, and his writings were



in the Arabic language and enjoyed with the respect of the Arab rulers and the Arab people alike as they considered him as an Arab, especially as they were Muslim and followed what the Prophet Mohammed, said in one of his sayings (Hadith): "To be an Arab, it is not necessary to be born from an Arab mother or an Arab father, but whoever speaks Arabic is an Arab as his tongue is what important". Therefore, we consider Ibn Sina Abi more or less an Arab.

For those who are trying to name medicine as the Arabic medicine - and they are a very small number indeed, just because they are trying to avoid the word "Islam", and most of this are very small, and are Christians - to those we refer to one of the most important philosophers of the Arab world who played a very important role in the recent Arab civilization who said although he is a Christian: "The Prophet Mohammed was for all the Arabs, so let nowadays all the Arabs be for Mohammed."<sup>(267)</sup>

It is time to stop arguing about this matter, especially as we notice that the Orientalists and most of the historians of the West called us Arab and Muslim. When J. Lozon wrote on the Arabic civilization, the German J. Hill on the Arabic culture, they dealt with the same subject as B. Lewis in "The World of Islam", Thomas Arnold on "The Heritage of Islam", and Safouri in "Introduction to Islamic Civilization".

(ii) The Role of Arabic Physicians in the Field of Arabic Medical Historiography

The Arab physicians played without doubt a major role in the field of medicine as we mentioned before. The Arab physicians also contributed to the history of medicine. Some writers stated that "the Arabs founded the history of medicine. Before them, the history of medicine is unknown. They wrote



on the previous medicine and present medicine and on the people who worked in this profession".<sup>(268)</sup> Although we believe strongly that the Arabs contributed to the field of medical historiography, we cannot agree with the author when he states that the history of medicine was unknown, as we still believe - as we mentioned before - that Hippocrates should be regarded as the father of medical history.

The Arabs contributed to the field of history of medicine by what they wrote about disease through a great number of reference books, which may be considered as a complete encyclopaedia in the field of medicine and which stayed the most important source for teaching medicine all over the world, especially in Europe. We refer to Ibn Sina, al-Rhazi, Sahrawi, and others. This fact must not allow us to neglect the most important fact that the book "on Ancient Medicine" is the first book in which the history of medicine is considered. It is stated:

"Medicine has long had all the means to hand, and has discovered both a principal and a method, through which, the discoveries made during a long period are many and excellent....."

With regard to the historiography of Arabic medicine, research has been carried out over the past two centuries by Western Scholars in particular, a matter we will deal with later. Some carried out by the Arabs. In the initial stage of the Arabic medicine some physicians, such as Ibn Hunayn, began to write history of medicine "based on the earlier of John the grammarian".<sup>(269)</sup> Then by the 4th and 10th Century a number of historians, philosophers, and physicians appeared and wrote on the history of medicine, such as the well-known historians Abo Suleyman al-Muntiqi al-Sijistani and his student Abo al-Hayan al-Tawhedi in Baghdad, Ibn Julhil and Qadi Sa'ned al-Andalisi in Maghreb.

Next came al-Fahrist of Mohammed Ibn Ishaq and Akbar al-Ulum Be Akhbar Hukamah (News of science on the news of physicians) by Jamal al-Din Ibn Yusef (d.646/1248).

We must refer also to the masterpiece Ihsa'a al-Ulum (classification of Science) of the great philosopher al-Farabi who was born in 259/870 approximately, why "approximately" because the book does not mention the date of birth "but estimated according to his date of death 339/950".<sup>(270)</sup>

This book, which is considered an encyclopedic work, became a very necessary tool for all researchers and historians, as al-Andulusi (d. 463H/1070) says in "Its very necessary for all students of science researching in this subject"<sup>(271)</sup>.

The same sentence about the importance of this reference book is mentioned again by al-Kafti,<sup>(272)</sup> Ibn Abi Usaybe'ah<sup>(273)</sup>, and Ibn Khulukan<sup>(274)</sup> in his book "the introduction of Ibn Khulkan"<sup>(275)</sup> he wrote a special chapter in the classification of science."

Moreover, this reference book was translated many times: by Yuhana Jean de Seville of Spain (d.1157), Gerard de Cremona (d.1187)<sup>(276)</sup> and by Farmer "into English in 1931. This book became well-known in all Arab countries as soon as it appeared in the early fourth Century.

It spread rapidly among all historians and bibliographers and they made it as a guide for them in their writings in the subject of the classification of science. It is worthwhile therefore to mention the classification of the sciences according to the "Ihsa al-Ulum (the classification of science) of al-Farabi.

CLASSIFICATION OF SCIENCES

1. Science of language and its branches:

- element pertaining to all languages, such as grammar diction and recitation prosody

2. Logic and its branches:

- categories
- peri Hermenias
- prior analytics
- posterior analytics
- topics
- sophistics
- rhetorics
- poetics

3. Præpaedetic sciences and their branches

- arithmetic
- geometry
- opetic
- astronomy
- music
- science of weights
- mechanical devices

4. Natural and metaphysical sciences

- A. Natural sciences
- principles of natural philosophy
  - study of simple bodies
  - generation and corruption
  - accidents pertaining to elements
  - minerals
  - plants
  - animals



- B. Metaphysical sciences - science of being qua being  
principles of science  
discussion of non material bodies

5. Science of society and their branches

Juṣiṣprudence and theology Kalam

This work of al-Farabi and the other works which have been mentioned before such as al-Sijistani, al-Tawhidi, Ibn Juljul and al-Andulusi, these works in turn served as bases for the major works of the 7th and 13th Century which mark the peak of writing on the history of Arabic medicine, namely our famous "Uyun al-Anba Fi tabakat al-Atiba of Ibn Abi Usaybe'ah, The Tarikh al-Hukama (the history of physicians) of Ibn al-Qift, Wafayat al-A'ayan (the Demise of Eminent men) of Ibn Khabkan Abo al-Abas Ahmad Ibn Mohamed (Egypt, al-Saadah Press 1928) and Kashaf al-Zunun and Asami al-Kutub Wa Funun (nearly guide to the name of books and arts) of Mustafa Ibn Abdullah (d. 1067) (the Islamic press, Tehran). These works complemented the vast amount of information on the history of medicine contained in actual medical treatises such as the Kamel al-Sinah (the perfection of the Art) of al-Majusi. Together, with the work of Ibn Abi Usaybe'ah they have enabled scholars to trace the general historical develop Arabic medicine, while the particular features continue to be filled through the study of individual physicians and treatises.

Some Arab physicians and historians made some efforts on this matter after that time such as the following authors.

- Juma, H, Mohamed Lufi: Falasefet al-Eslam (the philosophers of Islam) al-Taraqi press, Damascus, 1946.
- Zayed, Ahmad: Moso'ah al-Ulum al-Arubeyah (encyclopedia of Arabic Science) al-Amereyah press Bulaq, 1889

- Zadah Tash Kebra Muftah al-Sa'adh (the Key of Happiness) al-Mainef al-Nezameyah, Haydar Abad al-Dukin 1910.
- Kahalah, Omar: Moejan al-Moejan al-Moalefun (Dictionary of authors) al-Taraki press, Damascus 1960
- Mahmoud Ibrahim. Ather al-Arab Wa al-Islam Fi al-Nahdah al-Arabeya. (The effect of Arab & Islam on the recent Arab Civilization) al-Hajah al-Meruyah, Cairo 1970

Although, the above authors are very useful, but in fact the most important role in their matter has been played by the Orientalists, a matter which we will explain in the next following pages.

(iii) The Role of the Orientalists on the Arabic Medical Historiography

The Orientalists are those foreign scholars who studied the Arabic Culture "the history of Arabs, Islam and Muslim peoples, and their habits."<sup>(277)</sup>

It has been said a number of times that the reasons for writing about the Arabs and Muslims in the Western media is political and sometimes economic. Sometimes it is very easy to notice this reason, and sometimes it is difficult to do so, as usually this writing is covered by logical and scientific views. Nevertheless we must not forget the great role that the Orientalists played in the field of the history of Arabic civilization. We must also not forget that thousands of our teaching professors and academic researchers graduated under those Orientalists. For all of these reasons, we are going to give in the next pages some explanation about them and their role in this matter.

The Appearance of the Reason for their Development

The Orientalists appeared in the Middle Ages and they developed due to the following factors:

- \* The Arabic Conquests of Spain and other Mediterranean areas which led to the contacts with the cultural movement of Europe after they entered the South of France.
- \* The Crusade Wars which encouraged the contact between the West and East and gave the Orientalists the chance of discovering a wide range of culture and thoughts and of studying this new culture.
- \* The fall of al-Asetanah which led the spreading of the Arabic culture and Turkey gave the Orientalists, again, the chance to study the heritage of the Arabs.
- \* The foundation of professional associations and societies for Oriental studies such as the Royal Asiatic Society and the French Asian Societies. Some of their outstanding members studied Arabic civilization.
- \* Transferring a great number of Arabic books and manuscripts to European Libraries during the Crusade wars and during the crises which led to the loss of the Arabic territories in Spain, Italy and elsewhere.
- \* The merchants also contributed in this matter. They carried the most precious manuscripts and sold them cheaply. It is said that the libraries contained at that time "250,000 manuscripts and most of these manuscripts are found in Leningrad Moscow, Paris, Berlin, London, Leipzig, Munich, Vienna, Leiden, Oxford, Cambridge, Rome, New York, Chicago and New Delhi." (278)
- \* The conferences which were organised and held by the Orientalists and the researchs of those conferences which took place first in Paris in 1873.



\* The efforts of the institutes of Asian and African studies in the University of London and to the studies which were carried out by the Orientalists of this institute.

Although, the date of the appearance of the Orientalists was in the Middle Ages as we mentioned before and became one of the major sources of knowledge in the nineteenth Century due to the development of translation which started at the end of 18th and early 19th Century, in fact, the Orientalism started before this date, nearly in "1312, when the church council in Vienna issued a decree to establish a number of posts in Arabic, Greek, Jewish, Syriac in the univierity of Paris, Oxford, Poland."(279)

It appeared first among the Monks, the most well known was Jarir the Frenchman, who moved to Spain to study Arabic in order to study Arabic civilization. In the first years of the 12th Century Gerard de Cremona (1114 - 11187) translated the books of Ibn Sina and al-Rhazes and it is said that he "translated 70 volumes in all fields of knowledge on science, literature and medicine and all the original copies of these books were lost and only the Latin copies remained."(280)

#### The Orientalists and Sarton in particular

Most of the Orientalists wrote a great number of reference books and painted clearly the role of our civilization on human civilization as a whole. At the same time some of them, although they paid good efforts on the subject, unfortunately showed an aggressive view, especially towards the Prophet Mohamed. For instance, Wells, although he wrote many chapters on the History of Arabs, gave full details about the development of the Arab Civilization, but "did not give required respect towards our Prophet Mohamed."(281)

The fact does not mean that we must forget the others who spent most of their lives studying the previous civilization and tried to place it in its rightful place among the other civilizations. "One of the great events in the whole of history is Islamic Civilization in its decline. Islam stayed during 5 Centuries from 700 to 1200. The leader of the whole world, in power, discipline, justice, morality, standard of living and the development of scientific research and medicine and philosophy."<sup>(281)</sup>

It is true that the Orientalists have looked at all aspects of our civilization. They studied and are still carrying on their research. Many of them, especially in the first stage, were searching for evidence to show that our civilization "is not original and it was a copy of the previous civilization."<sup>(282)</sup> But on the other hand, a great number of them throughout the world paid marvellous efforts on the history of our civilization. This makes us explain the development of the schools of Orientalists through all the world. But before doing so, we feel that it is very important to give an explanation about the life of the great historian of science, J. Sarton, because any study of the Orientalists will be considered incomplete without a discussion of the lives of Becker, Muller, Steinthal, Noldke, Brockelmann, Goldziher and Sarton which leads to a full picture about their works and their role and their varied contribution.

J Sarton is the first historian who put the history of Arabic science in general "clearly and very strongly on the map of the history of general science."<sup>(283)</sup> In his masterpiece, "Introduction to the History of Science," which was published in 1927, pointed out the genius of Arabic Scholars by dividing the development of science in the world into many stages, and gave each stage a name of one of the prominent scholars at that time. So we will find a number of Arabic scholars mentioned in the stage of Vol. 1 (From Homer to Omar Khayam).

No doubt a great number of articles and books have already been written on the life and contribution of Sarton. It would not have been necessary to rewrite a biography again about this great historian of science, in particular of those American or European countries. But with regard to Arabic countries, in Arabia and Africa - where this thesis has its major connection - the situation is different. Indeed he is much loved and respected,<sup>(284)</sup> but very little known or understood. Therefore we will write about the debt we owe this great man.

George Alfred Leon Sarton was born at Ghent-Flanders, Belgium on August 31st 1884, -his father a prominent engineer in chief for the state railroad. At the age of sixteen he entered the University and at the age of twenty one he decided to take some post graduate scientific courses "to get into closer touch with life."<sup>(285)</sup>

He was very intelligent, the outstanding talent of his genius were soon recognised, as in 1908 he was awarded a gold medal in chemistry from the university of Belgium. In 1911 he graduated from the university of Ghent with a doctoral degree in mathematics. Then he planned his life's work, as mentioned by himself:

"Soon after I had obtained my doctor's degree, the purpose of my life was determined .....to explain the development of science across the ages and around the earth, the growth of main knowledge of nature and of himself."<sup>(286)</sup>

To attain this objective by:

" 1. The creation of an international journal devoted to the history and philosophy of science and its cultural influences.



2. The composition of a manual with bibliographical data to record and document the main facts of scientific history and facilitate future studies for its partial fulfilment in the introduction which he first visualized to extend from the Greek miracle to A.D. 1900, to be completed in about ten years, and to be continued in three volumes."(287)

It is (the first issue of vol. 1 appeared in March 1913) and to the introduction he devoted the best part of his life's energies and because of them, he is best remembered. During the first World War in 1914 he had to flee with his family via the Netherlands to England and finally arriving as a refugee at New York city in April 1915.

"He taught at Harvard from 1919 until his retirement in 1951. He was appointed a full professor at Harvard in 1940, and continued his residence at Cambridge, until his death on March 22nd, 1956."(288)

Sarton travelled to the Middle East where he improved his Arabic in order to have a real and true picture of the Middle Ages. "where he lived through his investigations, for years" without mastering the language of the Quran for the sake of understanding Islamic Civilization."(289)

He stayed at the American university of Beirut, he focussed his attention on the Arabic culture. After returning from Beirut he became acquainted with Charles Habib Malik the Lebanese politician (b.1906) as the latter was studying at Harvard university. For over three years, they met for two hours, twice a week to perfect his knowledge of Arabic to be able to use it in research.

During his stay in Beirut he delivered two lectures in English on the history of science in Syria and Palestine and "prepared Arabic summaries published in al-Kullyah."<sup>(290)</sup>

A third lecture, delivered March 16th 1932 at the Islamic Society (Jameyat al-Makased al-Khayreayah al-Eslameyah) was translated into Arabic by Abdulah al-Mashnouk.

"Only Syria, among the Arab countries of the Middle East and Africa paid him due homage."<sup>(291)</sup>

The modern thinking of Sarton especially when he praised the great achievements of the Islamic period, "was bitterly frowned upon and rejected by many of his Western colleagues."<sup>(292)</sup> They never forgave him for this "offense". Sarton paid highly. He lost the sincere friendship of many, while others, 'secretly' stood vehemently against him, and attempted in vain to frustrate his plans and endeavours."<sup>(293)</sup>

The death of Sarton at Cambridge, Mass. (U.S.A.) March 22nd 1956 was a personal loss to many and "his memory will remain alive to those in the near East who knew of his genuine endeavours to bring out what the Arab-Muslim mind has done in the field of science and for reconciliation."<sup>(294)</sup>

Indeed not only because he studied Arabic and worked hard preparing his reading assignments at home while maintaining a constant correspondence with leading scholars in Arab Land, or because he showed the interest in Arabic Affairs and in the understanding of the Arab personality and point of view, but also because nowhere else do we find so much information on the analysis of Arabic Islamic history and philosophy of science and technology as we find in Sarton's writings, especially in his introduction.

"To say the Arabs were nothing but imitators is all wrong.

Their hunger for knowledge is the most original contribution, along with initiative, clear vision and inventiveness. Their accomplishments constituted the main link between the North East and North Africa and the West, as well as between Central Asia, including the great cultural centers in Iran, and the Buddhist Orient. The Arabic Islamic contribution during its Golden Age was so great that it baffles human expectations.

Therefore there is no reason why the Arabs of today should not emulate their ancestors and assume again a position of world leadership."<sup>(295)</sup>

Indeed as Sabra stated "He was the first and most dynamic scholar to give a prominent place to Arabic Islamic Science and technology as he did in Isis, the introduction and other publications for over four decades of prolific life. These contributions go beyond mere transmission of an ancient and classical legacy leading to new significant observations, conclusions and ideas."<sup>(296)</sup>

But for almost a Century before Sarton completed his five volumes introduction, several Orientalists had been producing very important works on the Arabic Civilization. To name a few, we mention Wusterfeld, Choulant, Ahlwardt, Mueller, Houstma, Fluegel, Suter, Brockelmann, Pertsh, and Meyerhof. To complete the picture we will give some explanation about the Oriental institutions which spread throughout the world in the following pages.

#### The Oriental Institutes

During the 15th and 16th Centuries we notice that the characteristics of the Orientalist was religious and started by some missionary group. The first Arabic School was established during the 17th Century in Leiden, Holland and then the Oxford School in England and The Bell Institute in Leiden, Holland which was established by Bell who printed a great number of Arabic books. One of his teachers as F. Hitti said "knew the Arabic language completely



and visited Mecca and al-Madina in secret."<sup>(297)</sup> In the 18th and 19th Century the Oriental Institutes became more important in Europe and they started to teach Arabic. The first oriental school was The Royal Oriental School of Italy which was established in 1827 then in Vienna.

During the 20th Century the School of Oriental Languages was established and it opened on 23 February 1917 to teach the language of the Oriental and African countries with special interest of their, literature and history and culture. One attempt had been made before, namely the Oriental institute of Indian Oriental Company but it closed after eight years. The University College and Kings College London started teaching Arabic in the early 19th Century. One of the departments of the University College is the School of Modern Oriental language and one of the lecturers in this school, was A. Salmoni, the author of English and Arabic dictionary in 1889.

We must also mention the very good effort of Dr. F Hitti in this field who was able to establish the Arabic and Islamic studies all over the U.S.A. He organized the Arabic collection of the university there which contained very rare books on the Arabic Civilization in nearly 2500 very precious Arabic manuscripts.

We must also refer to L. Brofensaf, born in 1894, who was a visiting professor at Cairo University. He wrote a useful book "The Arabic Civilization in Spain". Due to his efforts in the field of Arabic Language and Civilization he has been appointed as professor of the literature College of Paris University, Director of Islamic studies Institute and President of Scientific Studies in Paris Universities. After this brief information in general, some more explanation on an international level is necessary, especially in Holland, Italy, Germany, England, U.S.A. and Russia.

### Holland

Holland has paid special attention to the history of Arabic Civilization since the Middle Ages and they inclosed their interest in this field due to good relationship between them and the Muslims in Indonesia and other East Indian Islands. The university of Leiden established a Centre for Scientific research and this centre was an introduction to Arabic studies. In the middle of the 19th Century it established a very large Islamic school and it helped to give an account of the Islamic civilization especially if we know that the library of Leiden university, contained a great number of rare Arabic books and manuscripts. The authors of the Arab World often printed on each copy of their books the well known sentence:

"This copy has been compared with the copy which was printed in Leiden" to prove that it is an authoritative book. The Leiden press has printed a great number of Arabic masterpieces, such as Ibn Ishaq, al-Rhaze, Ibn Sina.

One of the outstanding scholars was Van Voten who was very interested in the Arabic Civilization. He wrote a book: "Mafeteh al-Owlum of al-Khawarezmi (the Key of al-Khawarezmi's Science). One of the encouraging figures from the Orientalists of Holland was the publisher M. Brill who encouraged the authors to write on the Arabic Civilization and do research in the field. The leading books in the Arabic Civilization were printed by this publisher under the supervision of a great number international orientalists who spent most of their life serving Arabic Civilization.

### Italy

The Italians also paid very good attention to the Arabic studies especially as Italy is very close to the Arabic Countries and



it is very easy to travel and make contact with the Arab people, especially during the rule of the Arabs of Sicily and other parts of Italy. One of the greatest Kings of Sicily was Fredrick the Second, who was himself an educated person. He was very interested in the Arabic language and taught and studied the Arabic Civilization. Even his people thought that he became a muslim of his great attention and interest in Arabic Civilization. He established Naples University and made it a leading centre of Arabic science in Italy. One of his great works is the sending of M. Scott to Cordova in Spain to translate the "comments" of Ibn Rushed into the Italian language. He also gave his very good support to the university of Salorno which showed a special interest in Arabic Medicine.

The other factors which lead to the spread of Arabic studies rather than the Arabs themselves were the bishops, because they encouraged the people to study Arabic in order to understand the Bible.

Telleno 1872-1928 is one of the distinguished scholars who served Arabic Civilization. After he had got his ph'D degree in 1903, he got a fellowship to go to Cairo. When he returned, he became a professor at the Oriental Institute in Naples, and Sicily and Rome. He was elected as one of the Linguistic Committee in Egypt. He was interested in Arabic Civilization, especially in Astronomy. He travelled to Spain to study and copy out the original copy of "Zayj al-Batani Fi Illem al-Falale".

He published the book in Arabic, then translated it into Latin and wrote a commentary in three volumes. He suffered a lot in order to be able to make contact with the Arabic culture and its people. His daughter Mary described how much they suffered when they travelled in al-Ta'if (Saudi Arabia)



"We slept on our way to al-Raef in al-Seal village in a very small room which was empty, without any furniture, no windows, with a door, but without a lock. It was very easy for the cats and dogs and other animals to enter into this tiny room. The only 'luxury', furniture in this room was a pair of uncomfortable chairs. We slept on them with our clothes on."<sup>(298)</sup>

### Germany

The first scholar of Germany who was very interested in Arabic civilization was Gostaf Feal (1801-1889). He was the first to write a book on the history of Islamic civilization based on the books of Muslim scholars. His writing on the Arabic civilization gave the Orientalist the fact that: the knowledge of the Arabic languages, first and the study of the Arabic manuscripts in depth in the second place are the two principles for any successful Orientalist. He must take them into consideration before taking any step in his research on Arabic Civilization.

We must refer also to Brockleman, born 1868, who published a very important encyclopedia containing all the Arabic books and authors, whether the books are still available or lost. For the importance of this masterpiece, the Arab League has translated this very useful encyclopedia along with its indices under the supervision of Dr. Abdul Halim al-Najar.

The Orientalist Carl Becker who became the Minister of Education of Federal Republic in 1876 wrote a number of studies on the Arabic Civilization.

### The United Kingdom

The role of the United Kingdom was also very important in the field of Orientalism. One reason was political according to the policy of the U.K. in the Middle East during the last centuries. But it is not just to say that the political reason was the only factor, because the Arabic culture came to U.K. through two ways.

- the Arab people who came to U.K.
- the European scholars who came to U.K. from Spain Italy, Sicily and other European countries and encouraged the U.K. scholars to engage in the orientalism and research into Arabic Civilization.

The movement started in the U.K. at the beginning of the 11th Century. M. Scott, Muller, Roberts were among those who started their studies in this field. Robert of Manchester translated Arabic books in Chemistry into Latin on 11 Feb 1944 and this book was read all over Western Europe.

After the death of Scott the movement developed very slowly due to the decline of the Arabic culture, as a result of the Hullahas' invasion and the result was loss of a very precious collection of reference books on Arabic Sciences. The other factors were the ending of the Arabic rule in Spain, the unrest in Europe, the difficulty of contact between the East and West. In the 16th the movement began to develop rapidly especially after the establishment of Oxford and Cambridge Universities.

It is very necessary to mention at this stage, about the excellent collections on Arabic Civilization which are available at the excellent libraries of the U.K. The Bodlean Library which was considered the most important centre for

reference material was established in 1603, and contains the collection of Edward Book which consists of 420 manuscripts and other materials which were presented by the leading Arabic scholars.

The British Museum Library which was established in 1753 and the oriental department was established in 1892. There are two sections, one for printed books and the other for manuscripts. The oldest manuscript available at the library is in Medicine entitled: al-Fazi Wal Mushtazi by Ibn Abi Shath. It was copied in 348 the very year of its composition.

Another with a special collection of Arabic sciences is the John Reylands Library in Manchester, and Wellcome Institute for the History of Medicine.

#### Russia

After the revolution in 1917, Russia encouraged the scholars to research on the oriental studies and to search on the Arabic collection of books and manuscripts available at the universities of Moscow, Leningrad, Tashkent, Azerbaijan and Kazan.

A great number of Arabic presses were available in Russia. The government arranged reindexing and classification of all the Arab printed books and manuscripts in the library of Leningrad which is considered the greatest collection in any library in the world.

#### U.S.A.

We noticed the great efforts of Dr. Philip Hitti and his marvellous role in the development of the orientalism on previous pages, which led many scholars to be engaged in this field. Moreover, it forced the government to play



another role by supporting all this research and to praise the Arabic Civilization as President Eisenhower did on June 28th 1957 at the opening of the Islamic Centre in Washington.

"Civilization appeared first in the Middle East. The principle methods which led to the improvement of life and to the development of thought, have proved that they will live forever, and no one will be able to destroy them. In fact some of these methods were elements which distinguished Arabic culture." (299)

#### The Arabic Civilization in the Orientalists' Writings

The Orientalists wrote many books on all aspects of Arab Civilization. They researched into every branch of Arabic sciences. Although we are not going to discuss the concept of their writing this stage - as we will deal with it later in this chapter - we feel that it is useful to mention that thousands of articles, books, and researches about Arabic Civilization were written and most of the scholars throughout the Arab world are still studying these materials and always refer to them in their publications. Some of those books are the following.

- Encyclopadia Universals, Paris 1968-1976
- The Middle East Contemporary Survey, Holmes & Meirem publishers, New York.
- The New Encyclopedia Britannica.
- Henry Smith Williams: The Historian's History of the World, New York, 1904
- H.G. Wells: A Short History of the World, London, 1920
- Claude Cahen: Lilsam de origines au debut de Lienpine Ottoman, Bordas, Paris, 1968

- J.D. Pearson: Index Islamicus, Cambridge, England 1958
- Encyclopaedia of Islam, Leiden 1913-1934, New editor 1960
- Short Encyclopaedia of Islam, Leiden, 1953
- Jean Sawaget: Introduction a Lu Histoire de L'Orient, Paris, 1942, 1946
- The Cambridge History of Islam Edited by Holt, Lanton, Lewis, Cambridge England, 1970
- The Legacy of Islam 2nd ed, Fdte by Schacht and Bosworth Oxford, 1974
- Theodor Noldeke: Sketches From Eastern History, London 1872
- Regis Blachere: Le Coran, Que Sais Je, Paris, 1960
- Richard Bell: Introduction to the Quran, Edinburgh 1953
- W. Montgomery Watt: Mohamad at Mecca, Oxford 1953
- A. Guillaume The life of Mohamed Oxford 1955 and least not last
- Maxime Rodinson: Mohammed, Paris 1961.

One may ask "Is it worthwhile to discuss all this information about the Orientalists?" Without any hesitation the answer is "yes , by all means." They started collecting Arabic manuscripts from early days before the Arabs. They studied the manuscripts and produced a great number of researches about our civilization and they published these researches, and by this step they served our civilization by introducing the state of the Arabic sciences to other nations. They translated a great number of Arabic books to other languages and this resulted in introducing the original masterpieces of the Arabic sciences before the European and other scholars and lastly, we must remember that thousands of Arabic scholars in all fields of science have graduated under the supervision of the Orientalists and returned back home and there all of them have played and are still playing the leading role in the development of their countries. But we must know exactly how we must study them. How we are to research on these authors and what we must take from them and what we must ignore.

B. HISTORIOGRAPHY OF ARABIC MEDICINE AT THE PRESENT DAY

INTRODUCTION

The situation of Arabic Science Historiography nowadays is different from the state in the past. One of the distinguished changes in this matter is the attitude of the Arabs themselves towards their science in general. They have become more engaged in searching this field due to the modern Arabic scientific civilization and due to the role of Arabic scholars who graduated from Western universities under the supervision of the Orientalists and their participation in changing the thoughts of the Arab people as a great number of these scholars became teachers and prominent figures in their societies.

One of the remarkable events in this field is the establishment of the Institute for the History of Arabic Science at the University of Aleppo, Syria on 12 April 1976- as we will explain later- which may be considered as the starting point of the Academic search in the field of Arabic Science. But before starting to explain this, a brief detail about Arabic Scientific Modern development is useful.

Most of the books which deal with the topic stated that modern "Arabic Scientific development started in Egypt when the French physician Antoine B. Clot (1768-1793) founded the Medical School in 1827 in Abi Za'abal (which moved to al-Kaser al-Ayeni in 1835) and also it is known that the first Medical Scientific book was "al-Kawel al-Sareh Fi al-Tashreh (the clear sayings about Anatomy) by Bayel translated Y. Antouri, Bulaq 1832.

"It is possible to say that the Arabic development started when the French came to the region (Egypt) in 1799 and science began at that time in Egypt and from there later spread to the Middle East....He brought with him modern medical methods



and in 1827 Mohamed Ali (the Ruler) gave his permission to Colt to establish the Medical School in Abi Zabal".<sup>(300)</sup>

But S. Katayah proved that the physician of Aleppo Saleh Afendi Ibn Naser Alah al-Saloum (d.1670) studied and translated long before Y.Anjouri - one of the founders of the European Medical development namely: Paracelseus. He "translated both The New Medical Chemistry of Paracelseus and other books by one of Paracelseus's student. "The Royal Chemistry". Both manuscripts are available in most of the Oriental libraries and we have two copies of them in the city of Aleppo. This means that the modern medical development was started in Aleppo a long time before Egypt, as the book was written in the first half of the 17th Century."<sup>(301)</sup>

This trend of translation of the famous books of the European scholars and the academic staff of the Arab world who came from the West and other Arabic historians, all of these factors led to the foundation of Arabic Nationality and encouraged the scholars to pay more attention to their past civilization in order to strengthen the position of the Arab World and to let them be the first people who must carry out this task and not the Orientalists - in order to present the picture very truly and clearly and by scholars who are more concerned about this picture because it is their picture. This leads us to explain the exact state at present of the Historiography of Arabic Science ( medicine , one of its branches) in the Arab World.

## B.1 In The Arab World - in Syria in Particular

### a. Specific Arab Countries

We sent a questionnaire on 1 October 1979 to all universities and academic institutions of each Arabic country to give us up-to-date information about this matter. Below we give a brief of the answers which were received:

Lebanon

- Arabic University of Beirut: "The History of Arabic Science in one of the subjects of the fourth year studies. Dept. of philosophical and social sciences, Art faculty. The lecturer is Dr. Omar Farukh".<sup>(302)</sup>
- Lebanese University: "No, there is no department teaching the subject of the history of Arabic Science."

No, there is not any journal published by the university dealing with the subject.

There is no plan to teach this subject in the future due to recent situation of our country."<sup>(303)</sup>

- American University of Beirut:  
"No, there is no institute or dept to teach the subject "History of Arabic Science."<sup>(304)</sup>

Egypt

Cairo University:

No there is no institute or dept teaching the subject of the history of Arabic Science."<sup>(305)</sup>

Al-Azhar University:

"No, there is no institute of department teaching the history of Arabic Science.

There is nothing specialised on this subject published by the university.

The subject of history of Arabic Science included with other subjects in the department of History as the Islamic civilization and the effect of Islamic civilization in Europe.

At the university, the faculty of Medicine and the faculty of science may give an outline on this subject."<sup>(306)</sup>

The American University in Cairo

No, there is no dept teaching the history of Arabic Science."(207)

Kingdom of Saudi Arabia

King Faisal University:

No, there is no department teaching the subject, no there is no plan up till now to do so, or in the future.

No there is no journal on this subject published by the university."(308)

Algeria

University of Constantine:

"No, there is no institute or department teaching this subject."(309)

Yeman Arab Republic

Sana'a University:

"No, there is no institute neither any plan nor any journal specialising in the history of Arabic Science."(310)

Iraq

Al-Sulaymaneh University:

"No, there is no institute or department teaching the subject of history of Arabic Science."(311)

Al-Mustansari Yah University:

"No, there is no institute or department teaching this subject."(311a)

Al-Mousal University:

"No, there is no department teaching this subject, but the department of history of Art Faculty teaches this subject for the scientific faculty students. Faculty of medicine and science help in this matter.

No, there is no plan to establish such a department at present. No, there is no special journal on this subject. The journal's articles on this field are published in the university.



"The journal of the university or in al-Rafedyan journal which is published by the faculty of Art."<sup>(312)</sup>

The information is unlocated. Although we sent two letters to the University of Baghdad, we did not receive any answer from the officials there. The only information we may mention on this concept is that there is an attempt to establish an institute similar to the institute of the University of Aleppo in Baghdad.

## B.2: SYRIA IN PARTICULAR

### INTRODUCTION

In Syria the city of Aleppo in particular was the first city in the Arab world to put the historiography of the Arabic Science in its rightful place and to start to research in this field academically. No wonder Aleppo, since Aleppo for a hundred years is considered the country of any scientific development, from here started the modern scientific development by one of the physicians of Aleppo, Salem Afandi Bin Naser Allah al-Salam.

As we have seen on previous pages - for a long time Aleppo had the contact with the West, as Aleppo was enjoying a very excellent time, especially during the 17th and 19th Century. She was enjoying a Golden Age, since she was a very important commercial centre with daily contact with other countries, Great Britain, Holland, France, India, China, Japan and Iran. "In 1556 it was estimated that the export of Aleppo had reached one hundred thousand Doukah on 1770 and the annual trade volume of Aleppo alone reached to 18 million French Francs and the total quantity of exported and imported textiles from and to Europe in 1775 reached to "6820" Balah"<sup>(313)</sup> One of the French tourists who visited the city in the 18th Century has said that Aleppo was the biggest commercial centre in all the empire

of the Sultan and she was in 1800 the "most important city of the Ottomem Kingdoms followed by Cairo and Istanboul." (314)

"The previous reference which is found in the library of Mary, Okaret, and tel-Merdekh gives proof of their Golden Age." (315)  
Due to this position a great number of scholars and physicians came to Aleppo from Europe, among who come to the city were the Russel family. Alexander and Patrick. Both physicians. They travelled between 1742-1768. Because of the importance of Aleppo at that time "they wrote a book and gave a full detail about the city. The book, was entitled "The Natural History of Aleppo" and was printed twice, the first time in London in 1756 and the second time also in London in 1974". (316)

Therefore it is not surprising to find that Aleppo was very important towards the Golden Age, not only regarding the Golden Age of Aleppo, or Syria, but regarding all the Arabic Civilization. Therefore, we find a number of scholars of the city of Aleppo and other cities of Syria (25 in all) had been invited to a meeting called by Prof. Dr. A.Y. al-Hassan, Rector of University of Aleppo, Syria. As the author was one of these who attended the meeting we found that all the participating agreed with the views of Prof al-Hassan who spoke in detail about the National tasks of Arab Scholars towards Arabic Civilization and the necessity of Arab scholars conducting research about Arabic Science and not leaving this task to the Orientalists who have played and still are playing a very useful role towards the Arabic Civilization, Of course with the exception of those who were against the Arabs as a whole. At the end of that meeting which took place in the Senate Council of the University of Aleppo (Fig No13) on 14 May 1975 it was agreed to establish a Syrian Society for the History of Arabic Science. Some details about this society are useful as it is the first of its kind on the Arabic World up till now.

**B.2.1: Syrian Society for the History of Arabic Science**

At the end of the above meeting the participants who were from different cities of Syria elected the executive Council of the society as follows:

Dr. A Ya al-Hassan, President University of Aleppo President

Dr. Kh Maghout, Vice President for Academic Affairs,

University of Aleppo

Dr. A K Shehadeh, Professor Faculty of Medicine University

of Aleppo

Dr. M B Maki, Professor, science Faculty, University of Aleppo

Dr. T I Kayali, Professor, Faculty of Medicine, University of

Aleppo

M. Imnam Secretary, University of Aleppo

Dr. I Khanem: Librarian, Faculty of Agriculture.

At the time of the foundation of the Syrian Society for the History of Arabic Science on 14 May 1975 the total number of members was 25, but the total has increased at the end of 1976 to 66 Active members and 27 honorary members distributed as follows according to their countries: 68 Syria, 2 Palestine, 5 Jordan, 1 Saudi, 2 Iraq, 1 Sudan, 2 Egypt, 6 U.S.A., 1 Poland, 1 Russia, 1 Germany, 1 India, 1 Canada and 1 France.

The first general meeting of the Society was held during the first International Symposium for the History of Arabic Science at Aleppo University between 5 - 12 April 1976.

The second general meeting was held at Aleppo University on 6-7 April 1977, twenty scholars from Syria attended the meeting; one of the most important studies of the scholars was the search of Dr. Foud Sezeken the distinguished scholar Professor of the History of Science at Farnkfurt University, Germany, who came specially to attend the meeting and delivered a grand lecture "The role of Arab Scholars on the Development of Astronomy."



Along with the annual meeting there was an exhibition of the Institute for the History of Arabic Science.

The following are the most important recommendations adopted at the Annual meeting.

1. Establishment of departments and national committees, related to the Society, starting with a department for the History of Medicine and pharmacy.
2. Enrolment of the Society and its national committees in international unions of history of medicine, technology mathematics or any other scientific fields and encouragement of members of the Society to participate in Congress. Furthermore, candidates in the Symposia are to submit original and unpublished papers to the responsible board for approval.
3. Starting cooperation on the Institute for the History of Arabic Science and the Institute of manuscripts of the League of the Arab States to serve the different aspects of the Arabic heritage."<sup>(317)</sup>

The third Annual meeting was held in Aleppo on 12-13 April 1978, the fourth in April 1979 and the fifth was held at the end of April of 1980.

The other steps which followed the establishment of the Syrian Society for the History of Science were:

1. The first International Symposium for the History of Arabic science which was held at the University of Aleppo 5-12 April 1976.
2. The establishment of the Institute for the History of Arabic science at the University of Aleppo which took place during

the first International symposium for the History of Arabic Science although the promulgation of the Degree for the Establishment of the Institute was on November 4th 1976.

As the above two steps played and still are playing a very important role in the field of the History of Arabic Science, especially, as they were the first steps of its kind to occur in all the Arab countries. Therefore, some explanation about each of them is very necessary.

**B.2.2: The first International Symposium for the History of Arabic Science Aleppo University 5 - 12 April 1976**

This symposium was held on the occasion of the foundation of the Institute for the History of Arabic Science and the Syrian Society for the History of Science - as mentioned before - under the auspices of the President of Syria who asked Dr. Mohammed Ali Hashem the Minister of Higher Education to be his representative on this occasion who delivered an address praising the role of the foreign scholars in Europe and USA who encouraged the studies on the field of the History of Arabic Science.

"It is very necessary here to mention proudly, the very good efforts which have been carried out and still exist by individual, faithful Arab scholars and foreign scholars, in Europe and U.S.A. who are an example of the truth. We feel that it is our task in this region to unite the efforts and coordinate the information. Therefore we organized this symposium in order to be the first activity of the Institute for the History of Arabic Science, who will be responsible for this task, and will open its doors to every devotee of science and truth, Arabian and Foreign to work at it, to criticize it, or translate or search to reach at the end to the

ability to write our Arabic History of science and to put this history before the Arabs to be a guide for them and to be an example of the effort to all who seek this information on this subject all over the world."<sup>(318)</sup>

As the author was one of those who attended this seminar we noticed that the numbers of the participants was good enough especially as it was the first of its kind to be held on this topic in the Arab World. The participants were 65 scholars, Arabs and foreigners. From the United Kingdom the participants were: Dr A. Zaki Iskander and G. K. Karmi of the Wellcome Institute for the History of Medicine, Dr Donald Hill and Dr I. N. Hall. They delivered 67 papers, of which 36 were in Arabic and 31 in foreign languages. They were:

- 2 papers on the history of science in general
- 36 papers on basic science
- 9 papers on the history of engineering, technology and agriculture
- 18 papers on medicine and related subjects
- 2 papers on the history of social science.

At the same time some exhibitions were organised on this occasion in at the Halls of the institute for the History of Arabic Science. The Exhibitions were:

- Arabic Scientific Instruments
  - Arabic Scientific Manuscripts
  - the Arabian Astronomer Ibn al-Shater
  - Arabic products
  - Portraits of leading Arab scholars
- and - Publications of the Institute for the History of Science and the University of Aleppo.

All these exhibitions gave a good picture of the activities of Arab scholars and their role in the development of the different branches of sciences.



To complete the picture of this important event we mention below the recommendations of the symposium. They were as follows:

- 1. holding a symposium on the History of Arabic Science by the Institute for the History of Arabic Science regularly every three years.
- 2. issuing a journal on the History of Arabic Science with an editorial board from leading scholars from all over the world to publish studies in Arabic and other languages.
- 3. holding a special study group from time to time in the field of the History of Science.
- 4. Issuing a newsletter to give an account of the activities of the Institute for the History of Arabic Science and other Institutes, who are interested in the field and to prepare a list of names and addresses of all those who are engaged in these studies in the world.
- 5. Inviting distinguished scholars in the field of the History of Arabic Science by the Institute for the History of Arabic Science. Visiting Professors would deliver lectures and give the Institute advice on its research.
- 6. Giving special attention to Arabic manuscripts, studying, translating and publishing all the important ones.
- 7. Writing an encyclopaedia by the top specialists on the History of Arabic Mathematics, Physics, Technology and Medicine in Arabic and in other languages
- 8. Establishing Institutes or Departments or Professorial Chairs in the History of Arabic Science in each Arabic University and teaching the History of Science, especially the History of Arabic Science, to the Students of Science and Humanity Faculties.

As recommended, the Second International Symposium on the History of Arabic Science was held in Aleppo from 5th to 12th April, 1979 under the patronage of the President of the Republic. "More than two hundred scholars participated in it and they delivered a number of studies and most of them pointed out the importance of this symposium." "No doubt this symposium is the most scientific symposium in the world, especially as it attracted scholars from all over the world. Moreover, the organisation was marvellous. It is a chance for me to meet with a number of my colleagues and exchange views on the History of Science." (319)

The third major development in this field was the establishment of the Institute for the History of Arabic Science of Aleppo as the leading Institute in this field in all the world. Some explanation about it is given below.

### B.2.3: The Institute for the History of Arabic Science

We explained before that the establishment of the Institute was on the occasion of the first International Symposium on History of Arabic Science in April 1976, although the Institute was opened before the required degree had been issued. No harm to mention here that some negative efforts were faced by the person who played the first role in the establishment of the Institute, namely Professor Dr A.Y. al-Hassan, the Rector of Aleppo University, especially when he was abroad. As the author was a witness of these efforts, which were unfortunately due to some personal reasons. But after a long struggle along with the support of those who were looking forward to the creation of the Institute, the Rector at last succeeded and the dream of scholars came true, especially after the issue of the following decree No. 1905 dated November 4th, 1976:

Organisational Decree

No. 1905

The President of the Republic,

In accordance with the Articles of Law No. 1, 1975,  
governing the organisation of Universities, especially  
Article XXI,

Decreases the following:

Article I.

A higher institute for research called "The Institute  
for the History of Arabic Science" shall be founded at  
the University of Aleppo to undertake the following  
tasks:

- a. To bring to light the Arabic scientific heri-  
tage by the collection, classification, criti-  
cal verification and publication in Arabic and  
foreign languages of its source materials.
- b. To prepare and publish in periodicals scholarly  
studies in the field of Arabic science.
- c. To train promising scholars in carrying out  
research in the various fields of the Arabic  
scientific heritage.
- d. To utilise the efforts of Arabic and foreign  
scholars in bringing to light the Arabic  
scientific heritage by publishing their studies.
- e. To grant academic degrees to students of Araabic  
science.

Article II.

Admission into the Institute is open to University  
graduates.



Article III.

The Prospectus of the Institute and the academic degrees mentioned in paragraph (e) of the preceding article will be confirmed by a subsequent decree. Those degrees may not be granted before the end of five years after the foundation of the Institute.

Article IV.

This decree is to be promulgated and referred to officials concerned for implementation.

Damascus

12.11.1396 A.H.

(November 4th, 1976)

The President of the Republic.

The reasons in vindication were stated as follows:

"The study of the History of Arabic Science has become a necessity at this stage of the transformation which the Arabic nation undergoes for our youth's acquaintance with the scientific achievements of the past Arab generations will surely inspire them with confidence and enhance their scientific and technological progress in this century.

The study of Arabic science, however, is not to be a mere regression into the past; rather, it is an appreciation of Arab geniuses and their contributions to humanity, as well as an incentive to young generations to resume the march started by our forefathers and to keep track of their paces for the purpose of laying down the bases for scientific research geared to the requirements of society and its developments.

It has, therefore, become incumbent that we, ourselves, should undertake the task of bringing our scientific heritage to light, to publish its monumental works and to show the extent to which it had for several centuries contributed to the enrichment of knowledge and science, now that this task has long been performed mostly by orientalists." (320)

At the time of the establishment of the Institute, there was also started a special Library belonging to this Institute. The first collection of the Library came from some libraries of Aleppo, such as al-Awqaf Library, and from some private libraries, for the citizens of Aleppo are well known from a long time to be interested in collecting books.

"The rich citizens of Aleppo are interested in collecting books and make special elegant cupboards to keep these books for a variety of reasons: the benefit of the subject matter, as decoration for their houses, in the belief of the citizens that collecting books is a way to gain wealth and as a mark of respect to those who will be in need of those books who will be forced to borrow them because they are unable to buy them." (321)

The total number of the Library of the Institute for the History of Arabic Science is as follows (up to 1979):

- Arabic books	:	4,100
- Foreign books	:	3,650
- Arabic journals	:	32 titles
- Foreign journals	:	119 titles
- Manuscripts	:	300

Moreover, there is a special section for manuscripts on microfilm. Although the Library is a young one, it is

considered one of the most important specialised library in the History of Arabic Science.

According to the previous decree of the president, another decree was issued giving full details about the staff, the budget and other administrative matters. Some distinguished scholars are usually invited to the institute to help in directing the research while as Prof Sami Hamerne of U.S.A., other scholars are working as part time as Prof Edward Kennedy of American University of Beirut. In fact, the "institute enjoys at this time a very good position due to its activities in this field, which has led to important developments which have been praised by a number of scholars throughout the world." (322)

As Dr. G Saliba, professor, History of Arabic Science, New York University has said: "The I.H.A.S. of Aleppo University is the first establishment of its kind in the Arab World, which lets scholars pay their attention to the important role which was played by the Arabs in the development of the science with all its branches." (323)

Some of the most important activities achieved by I.H.A.S. and I.S.H.A.S. and the Syrian science for the science are the following:

The birth of the journal for the History of Arabic Science. The institute after long studies has been able to publish the "journal for the history of Arabic Science". (Fig. No.14 )

The first periodical of its kind denoted to the History of Arabic Islamic science and technology in its widest scope, and the first issue was in 1977. It is published by-annually; in spring and the fall. The Managing editors and Board of Editors include distinguished scholars from different countries of the world as we see in the following names of the Board of Editors and the Advisory.



Board of Editors

Ahmady al-Hassan	Rector University of Aleppo
Sami K Hamarneh	Smithsonian Institute, Washington U.S.A.
Donald Hill	London U.K.
E.S. Kennedy	American Research Centre in Egypt, Cairo
Roshdo Rashed	C.N.R.S. Paris, France
A.I. Sabra	Harvard University
Ahmad S. Saidan	University of Jordan, Amman

Advisory Board

Salah Ahmad	University of Damascus Syria
Mohamed Asimor	Tajik Academic of science and technology USSR
Peter Bachmann	Orient Institute du Deutschen Morgenlaendischen Gesellschaft, Beirut, Lebanon
Ahmad Shaukat	
Chatti	Red Crescent Society, Damascus, Syria
Abdul Karim	
Cehade	University of Aleppo, Syria
Taufic Fahd	University of Strasbourg, France
Willy Hartner	University of Frankfurt W. Germany
Mohamed Fauzi	
Mossein	University of Cairo Egypt
Albert Z.	
Iskandar	Welcome Institute for the History of Medicine London U.K.
John Murdoch	Harvard University. U.S.A.
Seyyed Hossein	
Nasr	Imperial Iranian Academy of philosophy, Teheran Iran
David Bingree	Brown University, Rhode Island U.S.A.
Fuad Sezgin	University of Frankfurt, W Germany
Rene Taton	Union International d'Histoire et dela philosophy des Sciences, Paris France
Juan Vernet	
Gernet Gines	University of Barcelona Spain

Ad'yah Halab: An annual periodical on archaeology, History of Art and science. In Arabic and English vol. 1 (1975) 368 pp. vol 11 (1976) 345.

I.H.A.S. Newsletter

Books

The Institute also published and distributed the following publications during the ceremony of the establishment of the institute.

- Hassan, Ahmady: Taqu al-Din & Arabic mechanical engineering, with the sublime methods of spiritual machines. An Arabic manuscript of the 16th Century. In Arabic, 165 pp 1976
- Kataye Salaman: Les Manuscrits mechanical et pharmaceutiques dans les Bibliothéque publiques de Alep. In Arabic 440 pp
- Shawki Galal A: Mathematical works of Baha al-Din al-Amli 956 - 1033/1547 - 1622 in Arabic 207 ,1976.
- Kennedy, E.S:  
Ghanem, I. (Eds) The life and work of Ibn al-Shatir, an Arab Astronomer of the 14th Century. In Arabic and English 172 pp 1976.
- Kennedy, E.S: The exhaustive treatise on shadows by Abu al-Rayhan Mohamed, Ahmad al-Birani in English vol 1. translation vol 11 commentary 281 pp 1976.

"A number of international publishers from France, Germany England and U.S.A. contacted the institute to get the right of distribution of the institute publication"<sup>(324)</sup> This is indeed proof of the importance of the publication.

\* Traditional Crafts of Syria

The Institute prepared a major work on the traditional Syrian crafts and industries as an important reference book for the scholar interested in this field. Rewards have been assigned for all those who were able to submit useful information on certain craft or industry.

\* Collaboration with the Institute for the History of Science and Technology

U.S.S.R

The Institute for the history of Arabic Science has started a collaboration with the Institute for the History of Science and technology which is related to the Academy of Science in U.S.S.R. This collaboration included an exchange of publications between the two institutes, in addition to original theses and papers for the forthcoming issues of the journal to be secured for the list of H.A.S. by the institute for the History of Science and Technology

The Institute in Aleppo nominated the president of the Tajik SSR Academy of Science, as an advisory editor for the panel of editors of the journal for the History of Arabic Science.

It is worthwhile to indicate that the Institute in Moscow, under the direction of Professor S.R. Mikulinsky has been undertaking the study of the History of Arabic Science for some time.



The Institute not only collaborated with the above institute but also made contacts with all specialized institutes for further co-operation.

\* Museum of Science and Technology

It has been planned to set up a museum of science and technology to aid the university council of Aleppo. A body of members has been formed to supervise the steps leading up to the fulfilment of the project.

\* The participation with the Specialized Conferences

The Institute participated in most of the specialized conferences. The participants presented a paper related to the field of the conference concerned. Some of the Institute's participants were elected as representatives e.g. "Dr. S Qataye was elected representative for Syria to the International Society for the History of Medicine during the XXVI Conference held in Plovdiv, August 20-25th 1978."<sup>(225)</sup> Moreover, the Rector of the university of Aleppo and the Director of I.H.A.S. Prof. Dr. A.Y. al-Hassan was "elected a member of the advisory committee of the Institute of the Arabic manuscripts"<sup>(326)</sup>

During the conference, the I.H.A.S. participated with a selection of I.H.A.S. publication. The journal for the History of Arabic Science attracted particular attention because of its good quality of production and high scholarliness. For all these activities, the other specialized organizations, contacted the Institute to build a good relationship and to co-operate with the Institute for the benefit of the history of science in general. One of the first organisations which located and invited the Institute to be a representative for

Syria was the International Federation for the History and Philosophy of Science. It is worthwhile to mention here in this context and before ending the state of the historiography of Arabic Science in Syria about the effort of some scholars who from Damascus University and other scholars who are interested in the History of Belad al-Sham (Syria the great). They organised an International conference and invited the scholar to participate at each conference. Although this effort cannot be compared with the efforts of the Institute for H.A.S. of Aleppo, because that was an academic effort, which was known by all in the world. But this fact will not prevent us from mentioning something about this effort.

B.2.4: The International Conference on the History of Bilad al-Sham

The first International Conference was held in 1974 under the auspices of the University of Jordan. The participants dealt with the studies which concerned the History of the first ten centuries concerning Bilad al-Sham since the rise of Islam. The second conference in this field was held again, between 27 December 1978 and 3 January 1979 and this time under the auspices of Damascus University. The theme of the conference was the study of the History of the last five centuries of the History of the Bilad al-Sham namely from the Ottoman's rule till the end of the second world war. More than 70 scholars participated and delivered nearly 50 papers. It is noted that some different views existed among the participants especially "the views upon the period of the Ottoman rule. Some of them did not find anything about that period, except the dark side.

This trend was led by S.Ashour. Although the Turkish scholars tried to insist about the good relationship between the Turkish and the Arab, the role of the Turkish minorities on this concept."<sup>(237)</sup>  
The third international conference on the History of Bilad al-Sham was held in Amman, Jordan on 1st Saturday 19th April 1980 under the chairmanship of the Prince Hassan. 120 papers were

presented on Palestine.<sup>(328)</sup> "The participants discussed in particular the importance of the City of Jerusalem as the place of religion from the time of Ibrahim al-Khalil till the rise of Islam."<sup>(229)</sup> King Hussein of Jordan himself addressed the conference and stressed that the city of Jerusalem is an Arab City before the birth of the prophet Mohammed. One of the recommendations at the end of this conference was establishing an Arabic Centre for Historical research in the region."<sup>(330)</sup>

Although the efforts of the participants are useful in some ways in the field of the historiography of the Arabic civilization, we feel that the co-ordination is very important and there is no need to waste these efforts on this concept but on the contact. The efforts must play an important part in the task of the Institute of the H.A.S., especially as the Arabs are one nation, with the same language, customs, religion and History. Indeed, that the countries of Bilad al-Sham "enjoyed important position in the International political and economic policy."<sup>(331)</sup>

But we must strongly state that the very important position which we may enjoy when we start to study on the position only as Arabs as a whole and not as Bilad al-Sham or Bilas al-Magreb. Therefore all of our studies and research efforts must always begin from the point of the Arab unity not from Bilad al-Sham unity of Bilad al-Magreb unity, but the unity of Bilad al-Arab as a whole (The Arab Fatherland). It is necessary to mention at this stage to give up this function and let the efforts to go along with the very important effort of these scholars of the Institute of the H.A.S. as the heritage of the Arabs is one unity unable to be divided as we will mention later on the paragraph of the proposal for the future development at the end of this thesis.



2. THE WORLD AND THE HISTORIOGRAPHY OF THE ARABIC SCIENCE  
AT PRESENT

Today, a number of scholars all over the world are carrying out, some research in the field of the History of Arabic Science Medicine is one of its branches. In USSR there is an active movement to publish the Arabic Scientific masterpiece and to translate them into Russian. Some of the scholars who are interested in the subject are Dr. Mohamed Azemoui, President Tajekstan Academy, Dr. Meykoleneski Director, of the Institute of the History of Science and Technology who published the book, Mechanism in the Middle East and Dr. A. Khaler Ghalulen, in Germany, the university of Tugingen Frankfurt. Some of the scholars who are interested in the subject are M. Olman (Tubigen) R. Degen(Gensen Uni), P. Kontesh (Munich Uni), T. Nagel (Bonn Uni.) and the most distinguished historian F. Seizken of Frankfurt University.

Below we are listing some scholars who are working on this field in France, Turkey, England and U.S.A.

<u>Country</u>	<u>Institute</u>	<u>Scholars</u>
France	The Scientific research centre Paris	T.Beynki (French Institute for Arabic Studies) K H Jawish (National Centre for Scientific research) R al-Rashid (Paris University) T. Fahd (Strasbourg. University)
Turkey	Awkara Estanboul University	U/A

- England
- Wellcome Institute - A.Z. Eskander
  - on the History of (Wellcome Institute)
  - Medicine - G.H. Karmi
  - (Wellcome Institute worked at the Institute of A.S.
  - Donald Hill, researcher on the History of Arabic Technology
  - A.N. Hall (Belfast University)
- SOAS, and the Institute Islamic Festival
- U.S.A.
- Brounx Pittsburgh - J. Merdok
  - Universities - J. Saliba
  - Southern - A.H. Sabara of Harvard University
  - Washington - H.Dolus Florida University
  - Harvard University - A. Dybos Chicago University
  - which established a- N. Kalajamer California University
  - post (chair on the - R. Lemi New York University
  - History of Arabic - S. Hamam. h Smithsonian Institute
  - Science in 1972)with who is considered the most
  - the assistance of important scholar author on
  - Kuwait University the field of the History of
  - Arabic Science and who wrote
  - the largest number of books
  - in this field.

There are other scholars in Iran, Pakistan, Poland, Norway, India and other countries who are interested in this subject especially U.K. and most of them have Arab nationality but living or settling in the Arab World.

We are pleased to say that there are some business men who

have a great interest in the field of Arabic Civilization and are trying in some way to play a role in this field. We may mention in this context S. Shukri who "along with the help of Sir Harold Bealy, five years ago, established the International Islamic Festival which lasted three months and still on of his dreams is to publish an Islamic encyclopaedia about our civilization".<sup>(331a)</sup> Lastly and not least the International Islamic Festival which was held in London in April 1976 was an important effort to serve our civilization, "the event which took place in London the West and at the same time of the establishment of the I.H.A.S. in Aleppo the East. Both events faced each other in spite of the great distance of each city and the different features of each society to express their pride in our civilization."<sup>(331b)</sup>

### 3. THE ARAB CIVILIZATION AND THE OTHER PREVIOUS CIVILIZATIONS

#### 3.A: General Background and Discussion

Before the rise of Islam, many civilizations had come and gone - as we explained in the first chapter and produced sciences of various domains of reality and with different orders of perfection. The two outstanding were civilizations of Egypt and Mesopotamia had already produced medicine and mathematics of extraordinary quality "although what we have received from the Egyptian medicine was little"<sup>(332)</sup>, before the Greek philosophers and scientists came upon the stage to theorize about them and to develop them further. Being themselves upon this long tradition of the study of the heavens as well as the world of nature, the Greeks in turn produced Thales, Phthyagoros, Plato and Aristotle within a relatively short period of less than three centuries before the centre of their scientific activity shifted to Alexander.

There in the heart of Egypt, at the moment of the twilight of Greek power and the dying gasps of Ancient Egyptian civilization



a new synthesis of Greek, Egyptian and Oriental learning was achieved leading to one of the most prolific periods of the History of Science, which produced such men as Euclid, Ptolemy and indirectly Galen, figures who entered Arabic (Islamic) civilization.

It is important for an understanding of Islamic Science to realize that the Graeco-Hellenistic heritage reached Islam not directly from Athens but through Alexandria, that Plato was seen mostly through the ideas of the Neoplatonists and Aristotle through Alexander, Aphrodisias and Themistius. Alexandria in its combining of mystical elements with rigorous logic, in synthesizing various scientific traditions, in basing all the sciences upon a hierarchy related to the mode of knowledge, and in many other ways, is a historical anticipation of Arabic Science and in fact became transformed into Arabic Science in the same manner that the Alexandria of Ptolemy and Origen became transformed into the jewel of Islamic Egypt.

But the transmission of the Graeco Hellenistic tradition to Islam was not a direct one. Several centuries of Christian history lie between the Golden Ages of Alexandria and the rise of Islam. Alexandria became transformed into a major intellectual centre of early Christianity, then to undergo severe rivalries with other centres of Christian power, especially Constantinople and Antioch, and finally to bear witness to the death of its scientific activity under the pressure of Byzantine Emperors, a death which symbolized forcefully by the hanging of Hypatia, the daughter of Heron, in one of the squares of the city and the burning of its fabulous library. But before this the main intellectual activity of Alexandria had been transmitted to Antioch, thanks to the fierce rivalry that had come into being between the Monophysite and Nestorian churches of the East on the one hand and the Byzantine church on the other.

But the Christian centres of the Near East where Greek was taught and Syriac used as the language of science and learning was not the only channel which linked the intellectual life of antiquity to that of Islam "there developed among the people of Harran, a religion known to Muslims as Sabaeism."<sup>(333)</sup> that combined elements drawn from Babylonian religion with the more esoteric aspects of the Greek tradition. The Harrarians were heir, therefore, to the astronomical and astrological teaching of the Babylonians as well as to Neopythagoreanism and Hermeticism Independent of Christian centres of learning they transmitted to the Muslim many aspects of the Graeco-Hellenistic heritage, and independent of the Greek world certain aspects of Babylonian mathematics and astronomy which are reflected in Muslim sources, but have not been found in Greek ones.

As far as Persia is concerned, it too transmitted to Arabic civilization many sciences, some of its own and some ultimately of Greek and Indian origin. During the Sassanid period, Persians developed Jurdishapur, near the city of al-Ahwaz, as a university centre, which in fact grew steadily until it became heir to both Antioch and Edessa, a haven for men of learning everywhere and by the time of the fall of the Sassanids, most important centre of learning in Western Asia, particularly in the field of Medicine Jurdishapur was a "cosmopolitan gathering place, where Persian, Greek and Indian men of learning met and worked together in many fields especially in Medicine."<sup>(334)</sup> This school more than any other was the living link between Islamic Science and the ancient world. "The scholars found a great source of science in Iran and South Iraq, they benefited of them and added their knowledge to their science."<sup>(335)</sup>

As for India itself, its scientific tradition, especially in mathematics, including astronomy and medicine "and pharmacy, toxicology,<sup>(336)</sup> reached Islam through a number of Indian men of learning, who were invited to Baghdad and other Arabic

intellectual centres. Of course, the Indian science entered into the Islamic world again, through the writing of al-Bayruri in the 5th to 11th Century.

Finally a word must be said of the Far East. It is true no traces of the Chinese Scientific tradition are visible within the Arabic civilization at the moment of the founding of the Arabic sciences and that we must wait until after the Mongol invasion for the official transmission of Chinese scientific works through their translation into Arabic. But there is no doubt, that there was some kind of earlier contact even with China. The transmission to the Arab world of such important Chinese technological inventions as the making of paper and the appearance of certain definitely Chinese elements such as the Ming-Tang in early Arabic Alchemy are witness to contacts which were not merely bound to business transactions, but which possessed intellectual and scientific aspects.

The actual process of transmission of the sciences of ancient civilization from such languages as, Greek, Syriac, Sanskrit, and Pahlavi into Arabic is one of the most remarkable instances of cultural transmission in human history. "Nevertheless the translation of the majority of the important scientific work of about 150 years 2nd to 8th to the 4th to 10th was no mean task. Thanks to such masters of translation as Hunayn Ibn Ishaq."<sup>(337)</sup> And to the concerted efforts of Caliphs, Princes and Viziers of the Arabs during the heyday of Arabic civilization. The main scientific works of such men as Hippocrates, Aristotle Theophrastus, Euclid, Ptolemy, Dioscorides, Galen and many others were rendered into a precise Arabic. Moreover this was done with the help of an oral tradition which has made of these translations something that is often more true to the original Greek, Syriac or whatever other language was involved



than most modern translations. Thanks to this movement, Arabic became the most important scientific language of the world for many Centuries and the ground was prepared for the rapid growth of Arabic Sciences properly speaking. "The West woke up at the end of the Middle Ages to lay the first stone of the modern civilization with the help of the Arabic masterpieces which were translated from Arabic into Latin and they started to learn this language because it was the main language in the European Universities, till the late Middle Ages."<sup>(338)</sup> "especially after the contact with the West."<sup>(339)</sup>

Therefore, Arabic civilization after the rise of Islam became heir to the intellectual heritage of all the major civilizations and it became a haven written which various intellectual traditions found a new lease of life, albeit transformed within a new spiritual universe. This point must be repeated, particularly, as so many people in the west wrongly believe that Islam acted simply as a bridge over which the ideas of Antiquity passed to mediaeval Europe. As a matter of fact nothing could be further from the truth, therefore we will give some account of the state of the Arabs in the field of History of Science and the Arab Civilization and the Western Civilization. Then we will give some proposals for future developments.

### 3.B: The State of the Arabs in the History of Science

There is a belief that has lasted for a number of centuries that the development of science especially in the Mediterranean region, has two stages: the first is the Greek, and the second which began with Western modern civilization. We noticed that in the past Century a number of attempts were made by some scholars, for example Otto Neugebauer of Denmark as "F Seizken explained"<sup>(340)</sup> all these attempted aims not to find a relation between the Greek civilizations, but moreover, they want to say that the position of the Greek is not at the first in the field of History of Science, but also they gained all the previous

civilization. Although, all the studies have proved that more than two thousand and five hundred years before the Greeks, saw a number of developments that made the position of the Greeks to be in the middle not at the beginning. We noticed a number of Western scholars trying to find a relation and connection between Patlemois 12th Century and Cokericus 15th Century in Astronomy, between Galen 12th Century, and Kasaliyos 16th Century in Medicine

But it is impossible for any scholar of the Renaissance age to build the science of that age with the science of the Greek without mentioning the marvellous development of Arabic Civilization. Even in one who is considered very faithful to the achievements of the Arabs, J. Sarton, "who is one of the great scholars, we find sometimes that he gives untrue facts when he said "The Arabs not only transferred the previous ancient science to European, but although they found a new science but it is sure that none of them reached the brilliant stage of the Greeks."<sup>(341)</sup> It is not true, indeed as we mentioned that the science of sight, will be connected forever with Ibn al-Hathem who reached a marvellous thought not reached before. Even the thoughts of the Greeks were very little compared with the thoughts of Ibn al-Hathem, Jaber Ibn Hayan and the chemistry is another idea of their wrong thought. The Arabs criticised even the Egyptian chemistry which became ridiculous during the Greek period and they laid down the principles of their chemistry . Ibn Khaldoun laid down the principles of social sciences and the philosophy of History.

A. Tmenbi said that "Ibn Khaldoun in his Introduction wrote a philosophy for History, without any doubt this philosophy is the greatest achievement of any brain at any place and at any time."

The medical works became the original sources for teaching medicine in Europe for more than five Centuries. They said that Arabic medicine was merely a transferring method of the Greek medicine; moreover they said it is just a translation. The role of the Arabs was that they introduced the Greek Science to the West. Some other "scholars as Lucien Leclene said that the Arabs, transferred the previous at the beginning but then they found a new science."<sup>(342)</sup> We believe that the Arabs did not get from the Greeks only but also from the Indians, Syriac, Byzantine and other previous civilizations. They did not get everything from the Greeks. They translated poetry brilliantly, they mixed what they got from medicine and philosophy of the Greeks and established the Arabic Medicine and produced new discoveries:

Ibn al-Nafi "the first to describe the small blood circulation."<sup>(343)</sup>  
The Arabic physician A. Latif al-Baghdadi criticised Galen and referred to his description that the lower jaw is of two parts and he al-Bachdai assured that this is just one part."<sup>(344)</sup>  
The German orientalist Fredron How, described in his studies on Arabic medical manuscripts of the Risalet al-Rhaze, that he "found in the essay on the reason of the cold which came to Abi Zad al-Balkhi during the Spring when he was smelling flowers, so the scholars found that Ibn al-Rhaz was the first in history to describe the cold which is caused by the sensation of smelling the flowers."<sup>(345)</sup>

Indeed not everything belonged to the Greeks, in the history of ancient civilization, as the Assyrians studied Astronomy and they "found some relation among the stars and the human life and gave the number some magic characteristics."<sup>(346)</sup> The same thing was found in the medicine of Hippocrates. Some of the Fanoun medical characteristics are found in the medicine of Hippocrates "which shows that much of Greek medicine came from Egyptian medicine."<sup>(347)</sup> The anatomy of Galen came from Egyptian medicine because all the religions except the Egyptian did not allow the opening of dead bodies. Although they did not prevent the opening of some bodies.



Another example of the misbehaviour of scholars towards the Arabic civilization is Singer's statement that "the reason which let us to say that there was no middle ages regarding mathematics is that when the civilization settled in Europe when the European gained the original Greek Civilization, at that time it was able for the European to start the work from what the Greek left." It is unjust indeed. What about the Arabic Jibera science, the arabic Indian arithmetic? Who found the number nine and zero? Who said the application of algebra in engineering? All these facts were never known to the Greeks. It is impossible for the West to start without the achievement of the Arabic civilization. Randall said "It is true that the Arab gained from Indian the methods of numbering and the thought of al-Gebuer. Without them, the modern scholars were unable to build anything on the mathematics of the Greeks." Although Randall did not give the exact role of the Arabs in this field, we find another historian "Baron Caradi Fou stating that the discoveries of mathematics of the Arab is a principle for recent civilization. Sarton also stated that "the modern science is a mere continuous of the the Greek science and never this science will exist without that science." Is it true also that the Greek science is merely a continuous and transferring of the other science as Egypt, and Babylon and this science (the Greek) will not be able to exist without these sciences. As we know, when the Europeans started to translate the Arabic authors to Latin at the time when they passed the dark ages, they were ready to understand these Arabic sciences and to teach all of these sciences at the Universities and at that stage found a number of scholars to explain these sciences and the brilliant European civilization did not appear till the latter part of the 15th Century and the beginning of the 16th Century.

If we are to have an idea about the number of books which were translated, we find that Leclere in his book on the History of Arabic medicine gave the fact that the total number of these

books was not less than 300. He stated "Thus a number of new documents spread all over Europe during the 12th and 13th Centuries which filled a gap and was a reason for the spreading of the teaching. We will not be surprised of the scientific movement which became characteristic of the 13th Century and to find a number of great scholars, well-known, becoming eager to benefit from the Arabic science." He continued "the Greek science books in general were one hundred in number, and the number of Arabic books was two hundred. " From this fact we can be sure of the revolutionary movement which was caused by the translation of the Arabic authors to Latin and what benefit the European Scholars gained.

Indeed these translations were a principle aid in the development and the spread of the Arabic science in the West. This led another scholar Sadeyo to express his view about this movement. "Therefore we find the effect of the Arabs on the West appeared in all branches of modern civilization."

G. Luban said "We are unable to mention any European scientists before the 15th Century who discovered anything except copying the Arabic books. Roger Bacon, Leonard Aleyezi, Arnold al-Felanofi, Raymond Lull, and Albertus Magnus and other scholars of the Middle East gained a great amount of knowledge from the Arab scholars. So it is not surprising to see that Kaberi says "unless the Arabs appear in history the cultural movement of Europe will be delayed for a number of centuries".<sup>(348)</sup>

The European scholars were unable to look on the Arabic science academically and to criticize them till the time of Leonard Dafenchi (1452-1519). So the argument among the old and the new in Europe lasted three centuries from the age of translation till the age of Leonard Dafenchi. A number of scholars wrote

books on medicine and other subjects but all of them were based on the Arabic authors and the Greek writings. These authors became a very important teaching collection in European Universities. For them we pay a great tribute as they were as continuous of the Council which the Arabs put on in Baghdad first, and then in Cordoba and other Arabic Cities. They were very brave as they faced during the dark ages the death, but they were able to transfer and gained and taught all the Arabic science, all over the Western Europe arguing bravely the very old mentality and at the end made this knowledge as one of their basic principles of civilizations. At the beginning of the 16th Century, a number of scholars appeared and started the modern scientific age.

At the beginning of the Renaissance in Europe we found a number of scholars stand against the Arabic civilization, although during the 17th and 18th Century, they started again to gain and benefit from the Arabic Civilization. Teykobrah died in 1601, Keller died in 1630, Lablous died in 1827, as the most famous scholars of Astronomy in Europe they referred to the Arabic writing. The surgery of Abi al-Kasem continued to have influence till the 17th Century and the pharmacology of the Arabs continued in practice till the beginning of the 19th Century

Before ending this section some notes be included. The Arabs appeared in the field of science and the production of the scientific thought began at the beginning of the first Century of Hijrah. Arab society began to establish in the Middle of the first Century of Hijrah from various societies, different cultures and number of tongues and the Arab World, became a centre enabling each culture and society to contact with others. It created a new age for thought and helped the others to contact each other. .



The Rulers did not stand without any action toward foreign cultures. Anyone who says that the Arabs were unable to answer the circumstances will say, this is not true. The Arabs were the ones who received the heritage of the previous civilizations as such as Babylon, geographically at least as F. Ceizken said - They never were without any contact with their neighbours who had great cultures. The marvellous development of poetry before Islam the early development of grammar and other sciences such as Botany, Music before the translation of the Greek books, all of these examples are proof of their contacts with other cultures.

The reason the Arabs could contact the other cultures without any difficulty is very clear. It is Islam. Rosenthal explained why: "we must understand the view of Islam toward the science itself.....Islam was the basic role of not only the religious life but also to the humanity, life from all its sides. The Islam was the major role for running toward sciences and to open the doors to reach the human knowledge, without it , the translation became more just a translation of those who benefit the practical life only."<sup>(349)</sup>

The period of getting which began early - the first Hijri Century - developed and led to the stage of creation in the middle of the third Century (Hijri) as we explained before. But one of the most marvellous characteristics of this stage, is that the Arabs stayed considering themselves till the middle of the 5th Century as some example of the Greek scholars although they reached new astonishing results.

The Arabs gained at the beginning from Greece, Persia, Syria and translated, and they were were very much in need to do so to understand the contents of the books because they were living with them in one society. For this they had to give up their prejudice against foreign teachers and become open minded to them and uncritical, although they did on many occasions,

even in the early stage of leaving these science. But as F Ceizken stated, their criticisms were special ones, with style known as the style of the Arabic scholars. Their criticism was according to the moral principles of the Arabs. This is not surprising, if we know that all the Arabs remember the saying: "Stand up for teachers, and pay them full respect. The teachers should be considered nearly as prophets."

So they criticized without forgetting that the present scholars are in debt to their predecessors and no need to insult any of them, if they made any error or mistakes. They also remembered that it is good to criticize, but not too much in order not to cause any harm and insult to others.

Another note of comparison between the state of Arab and Latin in the field of gaining from other cultures:

The Arabs started to get knowledge from foreigners according to the order of Islam, but Latin scholars refused to get knowledge from their political and religious enemies. They hated those who gave them their knowledge. These factors led to a psychological complexity and to a loss of the factors of clarity and truth but both of these were the characteristics of the Arabs when they contacted other cultures.

The spirit of being against the Arabs and their sciences lasted till the time of R. Bacon 1210-1290 who owed the Arabs for all his scientific results which came from the Arabic books in Latin. Ruymundus Luhhus died 1315 "spent his life and efforts against Arabic science and wrote a number of books. It is found that most of them came from Arabic writings."<sup>(350)</sup>

But on the other hand it is apparent that some scholars started to defend Arabic civilization and gave the truth and showed a just picture about their role in the development of science as

a whole, "One of the most distinguished of those scholars was Andneus Alpagus who moved to the East and stayed in Damascus for more than thirty years because he loved the Arabs and their civilization. He practiced medicine then he returned to Padua in 1515 and translated many books from Arabic into Latin out of them Ibn al-Nafis's book."<sup>(351)</sup>

Although a great number scholars got benefit directly or indirectly from Arabic writings, the position of the Arabs was forgotten during the 16th and 17th Century till the 19th when a new element appeared with the appearance of the Orientalists who gave the Arabic Civilization a suitable position. One of the important scholars who was the first one to lead this trend was Jakob Reiske and such historians as J.W.Goethe, and Alexander Von Humboldt helped him; although their efforts were not enough to have a complete effect on the general trend.

After all the above we can say as the Arabic scholars A. Sarb a said "the Arabs not only assimilated Greek science but also made themselves masters of its methods and techniques," (252) Their role did not consist merely of handing over to Europe what they had earlier acquired from the ancients, rather, having digested what they learned from their predecessors, they were able to enrich it by new observations, new results, and new techniques. ;Not all of those accomplishments were transmitted to the West by the wave of translation from the Arabic into Latin in the 12th and 13th Centuries.

The importance of the Arabic contribution to the History of Science is not in doubt, but much of its contents and many of its details are still unknown. The excellent manuscripts in this field stored in Libraries scattered all over the world - in Europe - in America, in Asia and in the Middle East



and vast majority of them have been neither published, nor examined. To unfold their contents will require hard work and devotion of many scholars over many future generations." This with other proposals as we will deal with it in the next pages will lead at the end to the proper position of our civilization and its role in the History of Science, among the other civilizations, past and present.

#### 4. PROPOSALS FOR FUTURE DEVELOPMENT

##### 4.A: An Account of Missing Factors

In attempting to give an account of the future development of the History of Arabic Science in general and Arabic medicine in particular in Syria, we found ourselves confronted by a situation which is in some respects gloomy, and yet in other respects it is hopeful, for there is a growing awareness of the part which the I.H.A.S. of Aleppo, can play in an educated and improved society. It is from this institute, the historians of the Arabic Sciences of the future will come.

We begin, then, with some considerations of those things which are lacking and they are many:

##### Lack of staff

The lack of qualified staff is one of the main factors affecting the History of Arabic Science not in Syria alone but in the whole of the Arab World. The total number of staff is very low indeed in both quality and quantity, especially when compared with other overseas institutions, in particular, the librarians. In every meeting and in article after article, the main features of Arab Librarians have regularly been stressed: their long and honourable antiquity and their present unsatisfactory

condition. A particularly grave aspect of academic librarianship in most of the Arab World is the very extreme low scale for librarians who are classified very low in Government pay scales that it is difficult to attract the ablest young people into the field. For instance a graduate's salary from the faculty of medicine or engineering is let us say, 800 Syrian Pounds per month, which is the same as the Librarians and other graduates, but there is an allowance of 50% of the salary per month for specialists in medicine or engineering and 100% if he works in a government organisations. This is not applicable in the case of professional librarians.

Moreover, in the case of 80% of the qualified librarians, their knowledge in the field is still out of date and if one asks one of them what are the new developments in libraryship, on what are the modern techniques in use, one will find that no one has the ability to answer. Some contributory factors are the absence of professional periodicals in the libraries and the fact that most of the librarians do not participate in international conferences or in the regional seminars. Nor do any of them attend courses.

#### Lack of specialized books

There is a general lack of books and an unbalance in what books there are. Books are published in small editions without a national distribution, because there is not distribution network. In a way it is what medieval book production was like - books on religion, literacy subjects, but in particular no books on history of Arabic Science, except those published by the Institute from the H.S.A. in recent days.

#### Lack of Money

The lack of money is not the basic problem. The expansion of

education at all levels was already brought about a substantial increase in financial allocation. The picture is made depressing because a good deal of the money which is spent is wasted. The Ministry of Awqaf in Syria for instance spent in 1973, 9,853,000 Syrian pounds as part of the Third National Plan. If we examine the details of the expenditure (353) we will not find anything used for the purpose of the very valuable manuscripts although the manuscripts of al-Awqaf are in a very bad state. (see table below)

	<u>Syrian Pounds</u>
Repairing old mosques	245,000
Completing new mosques	555,000
Repairing old buildings	555,000
Establishment of new mosques	159,000
Completing the new buildings	2,318,000
Establishment of new buildings	5,384,000
Establishment of new tombs	497,000
General services	200,000
Total	9,853,000

Lack of money in the overall budget of ministries and universities is not the real problem; the real problem is the tiny percentage of the total available that is set aside for the materials of History of Arabic Science and in particular the manuscripts and other specialised publications and the situation seems about to be a vicious circle - not enough money in the budget to attract good staff, not enough good staff available to justify the raising of salary scales.

#### Lack of specialised Journals on the History of Arabic Science

Another great need in the Arab world is for a specialised journal



on the History of Arabic Science in most of the Arab World. At present the only journal of all the Arab countries is the joint for the H.A.S. which is published by the Institute of H.A.S in Aleppo. We were surprised to find that none of the Academic and research universities in all the Arabic World - as they stated in their letter to the author, published a specialized journal or even had plans to do so.

#### Absence of teaching of the History of Arabic Science

A factor regarding the History of Arabic Science as a whole has been the complete absence of teaching of the History of Arabic Science in most of the universities of the Arab World. We will not find any chain in any university except the Institute for the H.A.S. in Aleppo although, even in this Institute the only one of its kind in the world - till now did not start to teach this subject.

The only lectures on the field of the History of Arabic Science are given in some universities in the field of the history of Arabic Medicine, although the lectures of this subject are unspecialized in this field. Moreover, the subject is not considered in the syllabus as a major or even a principle subject. Again we discovered this fact from the Arab Universities.

If the picture thus far seems gloomy in the extreme, there are compensating factors which must not be ignored. One of the most important factors is indeed the establishment of the Institute for the History of Arabic Science in Aleppo. Among other developments is the establishment of a similar institute in Iraq as well called Markez Ehay al-Turath al-Arabi.

In fact, the third National Plan of Syria payed attention to the role of the Scientific research in the community. Among the principle aims of this plan were:

"to encourage scientific research in Ministries and scientific establishments, to help in solving the problems encountered in the economic and social development plan, and to endure enough scientific staff by sending students abroad and importing experts and making available to them adequate equipment and facilities."<sup>(354)</sup>

At the international level, therefore, a number of important agreements have been achieved with some international centres and the Institute for the History of Arabic Science, which had earlier been considered almost impossible.

#### 4.B: Recommendation

It is imperative in a study like this to provide not only factual information and criticism of the current state of the History of Arabic Science and the History of Medicine, one of its branches, but also some recommendations that might be considered for providing better development of the History of Science in general and the History of Arabic Medicine in particular. We think the basic needs in these areas - not in Syria alone, but in all the Arab countries - are:

#### \* The Creation of a Hard Core of Librarians in the History of Arabic Science

This can be achieved by

- (a) sending some of the non-qualified staff who are working in the Institute for the History of Arabic Science in Aleppo and any similar Institute for study abroad, and

for those with an adequate knowledge of the English language, for postgraduate courses in England, where a number of libraries with materials on the field of the History of Arabic Science are in existence.

- (b) Sending some of the non qualified undergraduate staff to training courses in modern Libraries and those with English language to libraries in England, the reminder to the American University of Beirut, Kuwait University since "the University of Kuwait Library is a turning - point in the History of Arab Librariship"<sup>(355)</sup> and to the Arab Institute for manuscripts in Cario.
- (c) Granting fellowships to students holding degrees in science, economics, engineering and medicine to study abroad, especially in the institute for information and documentation in Berlin, and the Institute of Information science at the technical university at Germany since "the German Democratic Republic is perhaps one of the most organised countries in Europe in the field of education for information and science."<sup>(356)</sup>
- (d) Making the salary scales of Head highly qualified librarians equivalent to the salaries of professors in the universities. All qualified personnel should be accredited with status and conditions of service rebated to those accorded professional status on an equivalent level in other professions. Only in this way will personnel of the necessary calibre be attracted to and retained in the professional and a "brain drain" be avoided.



### Translations

The first function of this service would be to make translations on History of Science literature into Arabic. As half of the output of published papers are in English, and the other half are shared between Russian French and German. The greater part of this knowledge is inaccessible to most of those who deal with this subject, for linguistic reasons, so the need for this translation service is one of the most valuable services.

Again it is a very expensive step and a most difficult one due to the shortage of translators, and the production of good translators is highly skilled power. But for all these reasons, the idea of establishing a regional translation certainly attached to the Institute H.A.S. in Aleppo, servicing a group of countries has much to recommend it, particularly when , as in the case of Arab speaking countries, there is a unifying basis, provided by the common mother tongue and moreover as our language has been an international and scientific language for a hundred years and this centre will help in the writing in scientific development of Arabic." "It is important to note that some of the technical terms which are used by al-Jazari or Takey al-Din since a hundred years ago are closer to the current technical terms used nowadays by the Arab engineers in Syria. It is necessary to start preparation to publish a dictionary on the technical terms which were used because this dictionary will be a help in translation of the modern engineering science into Arabic."<sup>(357)</sup>

### Teaching History of Arabic Science

It is time to start teaching this subject at the universities and at the research institutes taking into consideration four forces making History of Science in which are discussion by Professor Dr. L J Pongratz."<sup>(358)</sup>

1. The logic of science
2. The development of neighbouring science
3. The social and cultural conditions only
4. The creative mind

Through the medium of the creative mind the three forces pointed above can influence the development of science. There is no other way these forces can work but through the brain, the consciousness and the activity of the scientific man.

It is true that we found many children at school know more about cowboys than they know about Tarek Ibn Zeyad. It is true that often a young student can easily remember a music star, but does not know anything about Hassan Ibn Thabet. Moreover if we asked any Arab students at the university to tell something about Ibn Sina or Ibn Abi Usaybe'ah, unfortunately the answer will be disappointing. Therefore we will discover at the end of this comparison among the Arabs present and the West present in our mind that "the result will be against the Arabs Present at all levels from the child at the nursery to the professor at the University."<sup>(358 a)</sup>

For this reason, we think that it is very important indeed, to start to teach this subject, this task is not only the responsibility of the universities but also the responsibility of the educational authorities. We must start from early stages of education. At the university, the task will be at the academic level. Therefore, we must be more specific and not deal with the subject as a whole but to teach each branch at the Faculty concerned of course along with a number of lectures on the History of Arabic Sciences, as a whole.

But we must take into consideration that the subject must be one of the principle subjects in order to let the student pay careful attention to the matter. We must pay attention to those who are going to give the lectures in this field although we know that the specialized Arab persons on this subject are not available at all in the Arab World, but most of those give lectures on this subject as we have been told from the letters we received from the Arab Universities - are some academic staff with special interest on this subject. This fact leads us to mention the next two recommendations. But before, we must mention that we must start teaching the History of Arabic Science for the first year students of the faculty of science and the History of Arab Medicine. The teaching of the History of Arabic Science is very important for many reasons. One of them is a historical reason to enable the development of the civilization and to understand the human being and his development. The second reason is a philosophical reason to understand the meaning of science to give confidence for those educated Arab persons - some of whom are still in confusion about the ability of the Arab their role in the development of science and this confidence as Prof. A al-Hassan said <sup>(359)</sup> to give more spirit and determination to build the society. There is moreover a idea which is called by Prof. A al-Hassan the; National reason: As most of the Arab Universities are still teaching some scientific subject in two languages and still some of them are in doubt about taking any steps toward teaching some subject as medicine and others in Arabic.

We feel that there is no need for any fear in this matter as "Israel" from the first date of the Establishment of the University in Jerusalem and the University of Technology in Hayfa after the first world war, started to teach science in Hebrew. Not "Israel" only but also Denmark are teaching the science in their national language. As a result of



teaching the History of Science and and Arabic masterpieces of our scholars a long time ago the Arabs will discover their international scientific language. that the language of the holy Quran is the scientific language during the middle of 8th - 11th Century as Sarton said and became the only key to the culture at that time

As far as Syria is concerned we are sure due to the number of physicians available who are with special interest in the History of Arabic Medicine, that the possibility of making the History of Arabic Medicine a principle subject at all the Universities in Syria taking into consideration that the teaching of the History of Medicine should demonstrate the profound truth and should travel again over the pathways of the past.

Thanks to this study, the physicians of tomorrow, while showing the new problems posed for him by science, scrutinizing with serenity the new facts produced, and testing them without bias, will return for inspiration to the inexhaustible sources of the past. It will then often happen that"he will hear a familiar voice from the far distance time which will awaken in him the echo of ideas inherited from his ancestors. It is with profound emotion and the feeling of encouragement given to his work as a scientist that he will listen to the counsels and teaching of those who have been before."

### Fellowship

In order to encourage students or graduates to study the History of Arabic Science on any branch of science we think the only way to do so is to grant well paid fellowships for students for graduate courses, or for postgraduate courses,

in one of the universities of Europe or U.S.A. This is because we will not find anyone who is going to study this subject supporting himself by his own money. We mentioned well paid fellowship, due to the fact that the fellow who came from Syria to this country for example, for postgraduate courses receive an astonishing allowance, not enough even for the expense of renting accommodation. At present the grant for the graduate fellow is as little as £170 per month for a bachelor and £240 for a married fellow. Taking into consideration the high cost of living in London we will find that it is true and it is right not to find, anyone who will accept to study the History of Arabic Science without well-paid fellowships, because it is impossible for any physicians or engineers in any part of the Arab World to accept to do so as this means wasting time, money and efforts.

There is no harm in mentioning the fact that most of those who showed interest in the History of Arabic medicine of Arabic technology are very rich academic staff who reached this stage, simply we may call it "satisfied and richest stage".

#### Foreign Scholars

Another way to help is to provide the specialised scholars to give lectures on the History of Arabic Science in the University of the Arab World. Some well known scholars with special interest in this field, from all over the world must be encouraged to pay a visit to the Institute of H.A.S. in particular and Arab universities to deliver some lectures and to direct research on this field at these Institutes for some time. This step will give the scholar the chance to live in the society and to learn the language if he or she were to stay for a long period and thus learn the language as it is very important and useful a tool to each scholar as the language is the only

key to research in any civilization and this fact led some of the Orientalists to travel to the Arab World, stay there and to learn and study in Arabic civilization as Sarton did when he travelled to Lebanon and Syria, because most of the foreign scholars are in need to know more about the Arabs as the actor Antony Quinn said "we are in need to know more about the Arab".<sup>(360)</sup> A great amount of misunderstanding in the West for the role of Arabic Civilization exists. The Arabs are the persons concerned to correct this misunderstanding. The same thing happens nowadays when we see a number of students who come from abroad to study the English language in order to be able to study modern western civilization at all levels.

#### Arabic Manuscripts

Indeed, there is no doubt about the importance of the Arabic contribution to the History of Science. But much of its details are still unknown completely as the great number of Arabic manuscripts are stored in libraries all over the world, even the manuscripts at the libraries of the Arab world and the majority of those manuscripts have been neither published nor examined. A plan to unfold their contents will require hard work and devotion by many researchers. Some general principles should guide the researcher especially in the field of the History of Medicine. He should give himself for the higher task, he should give close attention both to distant events and to the more recent facts which are connected with the past by so many more or less obscure threads. In the History of Medicine as in the History of art and philosophy everything has an immutable rhythm. Everything, as Hippocrates says is human and everything is divine.

It is difficult indeed to search in the History of Science and



History of Arabic Medicine especially the History of Arabic Medicine, since the national beliefs will effect in someway the search, although the science should not belong to any nation and to search logically and not to let any element to affect his way of searching and this is "one of the most principle characteristics of the scholars."<sup>(361)</sup>

We must also, take into account that many factors are very necessary to anyone who is going to carry out any research in the field, these factors are :

- 1) to devote all the time of the scholar to his research and to give him no more responsibility other than research in his field.
- 2) to work hard
- 3) the scholar must be unselfish and at the same time the government must provide the amount of money which is required to carry out his research on the manuscripts as this task requires a great amount of money.

Other recommendations concerning the manuscripts rather than the task of researching and examining and publishing the suitable ones is to put a plan to reserve our manuscripts whether those are available at our libraries and those which are still in the hands of the individuals in their private collections. History told us that a great number of our manuscripts were removed from the Arab World by theft or by sale at a very cheap price. This was due to the fact that up till now a number persons did not care about this precious wealth of our civilization.

In Aleppo alone, Sami al-Kayali estimated the number of manuscripts at the libraries of Aleppo are more than twenty

thousand or thirty thousand manuscripts. But they moved abroad to different libraries in the world and the number of manuscripts became at last mere five or six thousand manuscripts.<sup>(362)</sup> The British Orientalist Edward York before his return to his country from Aleppo a hundred years ago brought with him "nearly two thousand manuscripts which are nowadays the main part of the Bodelin Library of Oxford, who again returned to Aleppo in 1911 and told us about "an operation which ended the loss of a great number of manuscripts."<sup>(363)</sup>

The main factor of this trend is that the government organization till now did not pay special attention to their heritage. Even recently they still did not know the exact value of those manuscripts. To give an idea about this misunderstanding we may mention the following recent case.

"A great number of Arabic/manuscripts which belonged to a private collection of an Aleppo Citizen, who wanted to sell them to the I.H.A.S. After collaboration of the Committee which was established to deal with this matter the Committee offered him a sum, but surprisingly he refused to sell them at that price. Not surprisingly the reason was that a foreign dealer gave him an offer equal to more than twenty times the offer of the government organization."<sup>(364)</sup>

The other recommendation regarding the manuscripts we may mention is the protection and preservation of those manuscripts and other rare books as we explain below.

#### PRESERVATION OF MANUSCRIPTS AND RARE BOOKS

The Arab countries lie partly in, and partly out, of the tropics

but most of them experience for at least a few months of the year a hot climate (Syria for a period of three months) in those states which receive seasonal rainfall climbing and dropping from time to time. Insects and fungi proliferate in a climate of this kind. Therefore, protection of manuscripts and rare books against injurious insects and from mildew, prevention of damage by dust-storms and protection of the building and equipment in extremes of climate is necessary.

In fact the insects which cause most damage are termites, cockroaches, silverfish, and other kind of pests. The best means of ensuring thousands of manuscripts and rare books is to prevent insects gaining access to them. As this is generally impossible owing to the design and construction of the buildings, it is necessary to make certain that, once inside building, an insect will quickly die. Modern buildings constructed of concrete and air-conditioned, provided almost 100% protection against insects, but many stocks have to operate in buildings that were designed many years ago, where a daily or nightly infestation by insects is experienced. Thanks to the modern chemicals and scientific study of the habits of insects concerned, it is now possible to prevent all kinds destruction that had occurred throughout the past three thousand years.

Benefit from the activities carried out by International  
Organization of the History of Science

To meet some of the basic needs required for the improvement of the task of the search on the History of Arabic Science in Syria in general and Arabic Medicine in particular not in Syria but all over the Arab World, International organization for the History of Science and Medicine can play a leading and most influential role. So Syria needs to co-operate with the whole world.



"Mr Pearson, former Prime Minister of Canada, is not unaware of the difficulties attending co-operation particularly when co-operation in the whole world is more important than even before. The difference in the rate of development among nations over the past 150 years has caused considerable stress.

Professor P. Harvard-Williams says "Mr Pearson is talking about co-operation, primarily on an economic scale, but in fact this embraces all kinds of human activity. There is a world wide preoccupation between North and South, East and West, richer and poorer industrialised and agricultural...The paramount, long term interest of all nations, rich and poor is in the creation of a world in which all the world's resources, human and physical, are part of the greatest possible use."<sup>(364 a)</sup>

Therefore it would be worthwhile asking Unesco to take part in this matter to continue her full support and assistance to the I.H.A.S. by granting some scholarship for visiting Professors and for graduate courses as the cost of staff is very high. The International Federation for the History and Philosophy of Science should therefore continue the explanation of this idea since the main objective of this organization is to give particular attention to all of these matters all over the world.

#### At the National and International Level

Contribution must start at the local level, regional and national level. We gave recommendation at the local level some room still exists to some suggestions at the regional

level, we mean to find a core of co-ordination among the institute of H.A.S. and the similar list which was established recently in Baghdad and belongs to the Baghdad University, for instance, establishing a special committee to write the efforts of both institutes to put a plan for the future development. Also some kind of federation among the Society for History of Science in each country to reach proper development in this field.

On the national level, we may suggest the following: - to attach the Institute for H.A.S. to the Arab League in order be the Institute for the Arab World as a whole and get the utmost care, allocation and support not only at the National level but also at the International level as the Arab League enjoyed a good relationship with all international organization. One of the major advantages of this step is the attaching of the Institute of Arabic Manuscript to the I.H.A.S. accordingly - to establish a society for these scholars with special interest in the field of History of Science as a whole and at the end establishing a Federation for the History of Arab Science, with a headquarters in Aleppo with the I.H.A.S. to write our history of science and as "the History will never forgive those who run away from writing of the History."<sup>(365)</sup>

- To create a worldwide atmosphere of co-operation among scientists working on the history of science in Islam and to keep track of their work through a trust to assist scholarship in Arabic Islamic Studies, and to promote understanding and appreciation of Arabic Islamic culture and civilization on an international scale. One of the basic purpose of the trust is the writing of a multi-volume work on the history of science and technology during the Arabic Islamic Civilization to fill the greivous gap in the knowledge and understanding of the History of Science and Technology, to

produce an interconnection within the Arab World through the History of Science and reawaken the spirit of scientific endeavour in order that an integrated history of science may be produced by rejoining broken links to bring to limelight the achievements of great Arab Scientists.

Finally what is certain is, there is always room for those with ideas and a capacity to work in order to get these ideas accepted and fulfilled.



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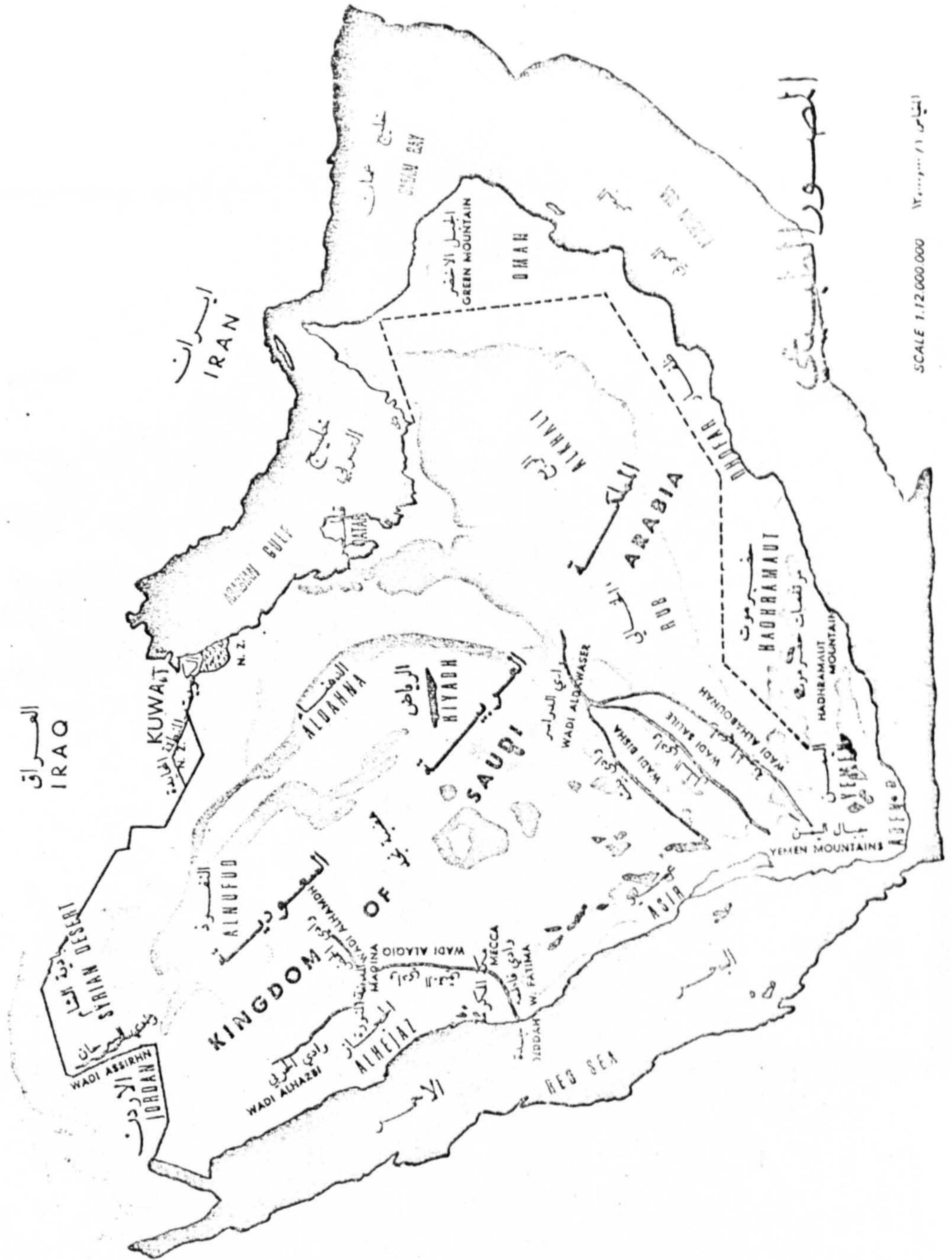


Fig. 1  
Hippocrates





Fig. 2  
Aristotle



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Fig. 3  
Kingdom of Saudi Arabia  
Map



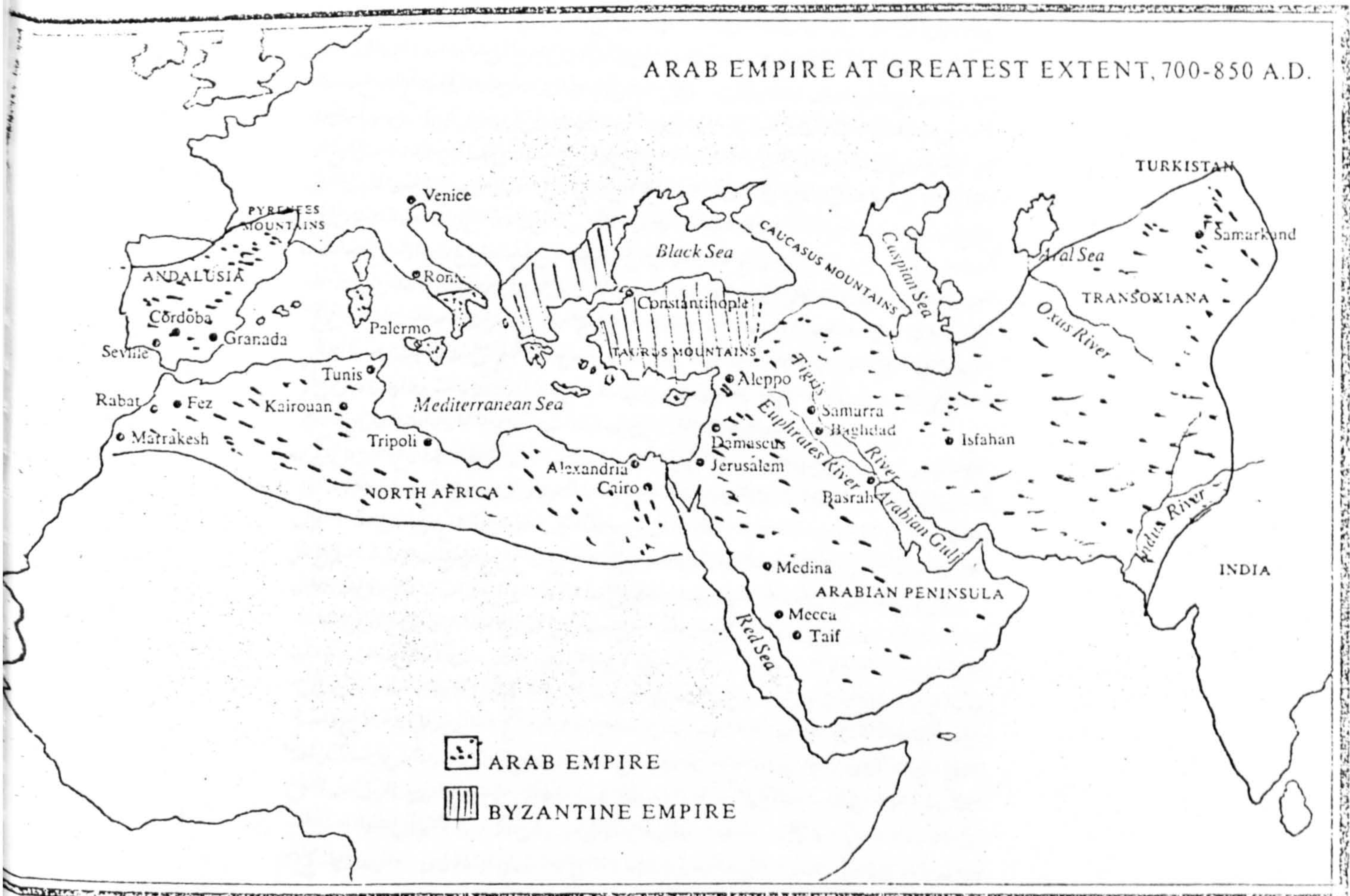


Figure 4 Arab Empire







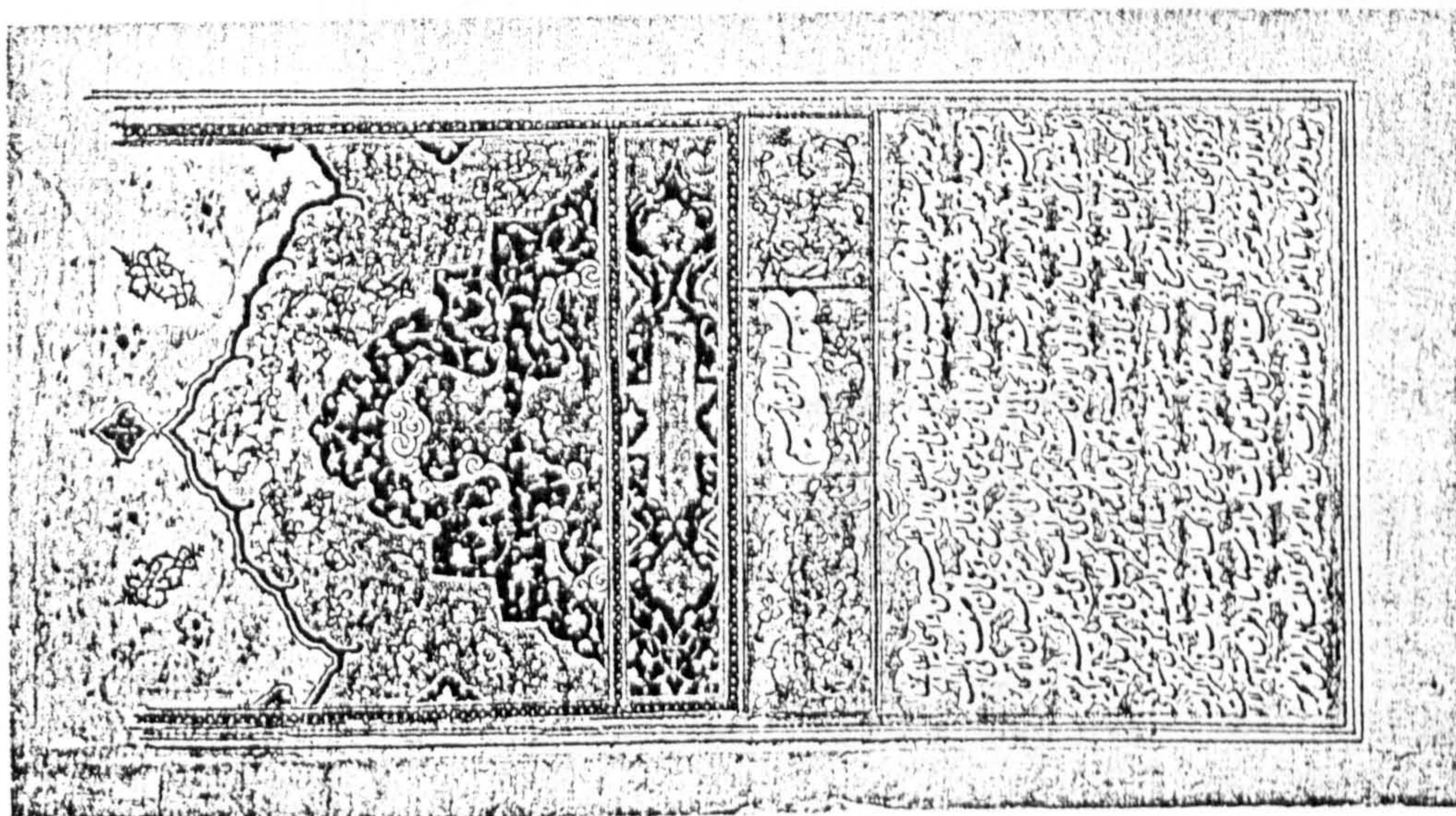
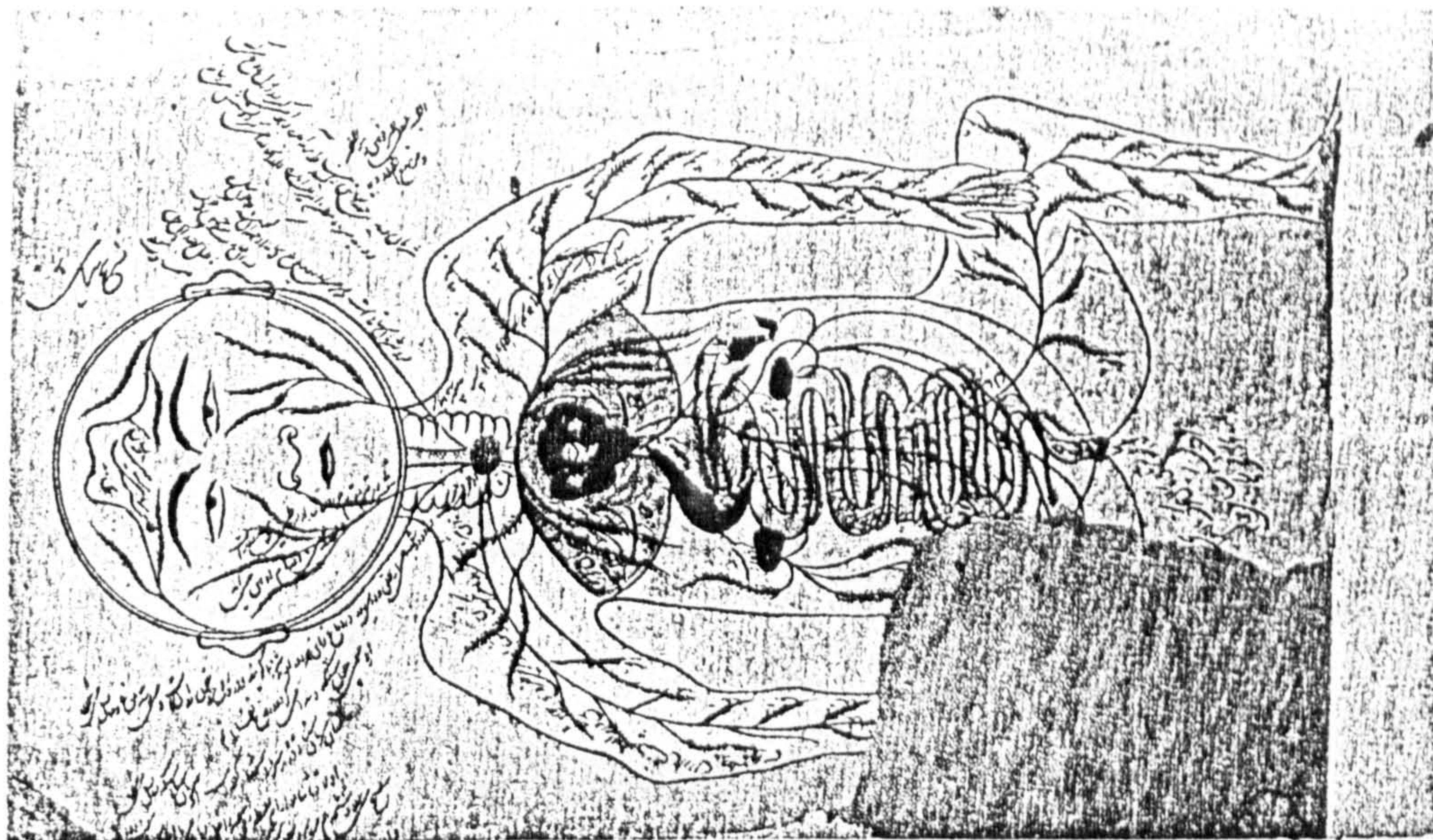


Fig 6  
Al-Cannon of Ibn Sina



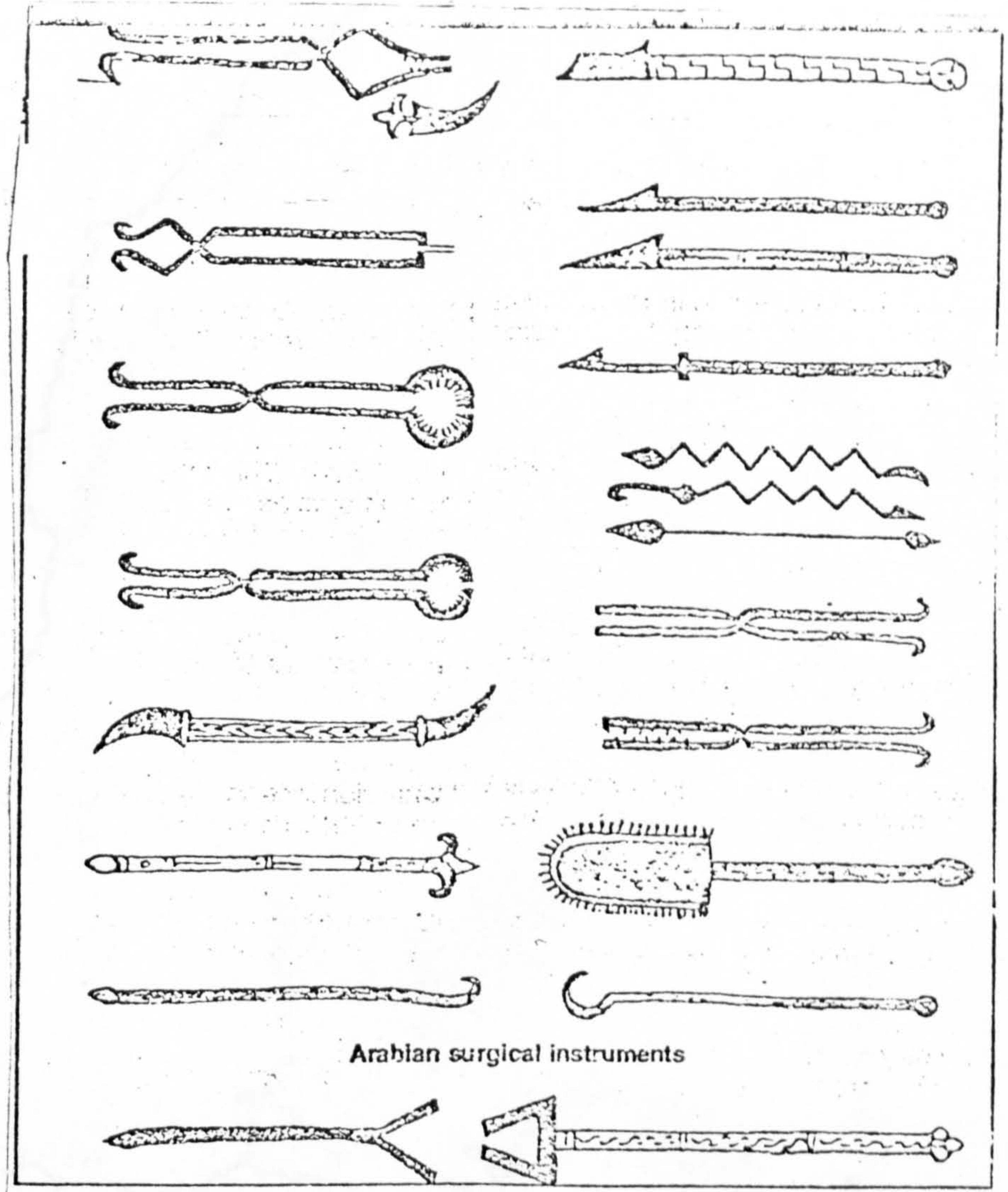


Fig 7.  
Surgical instruments of al-Zahrawi



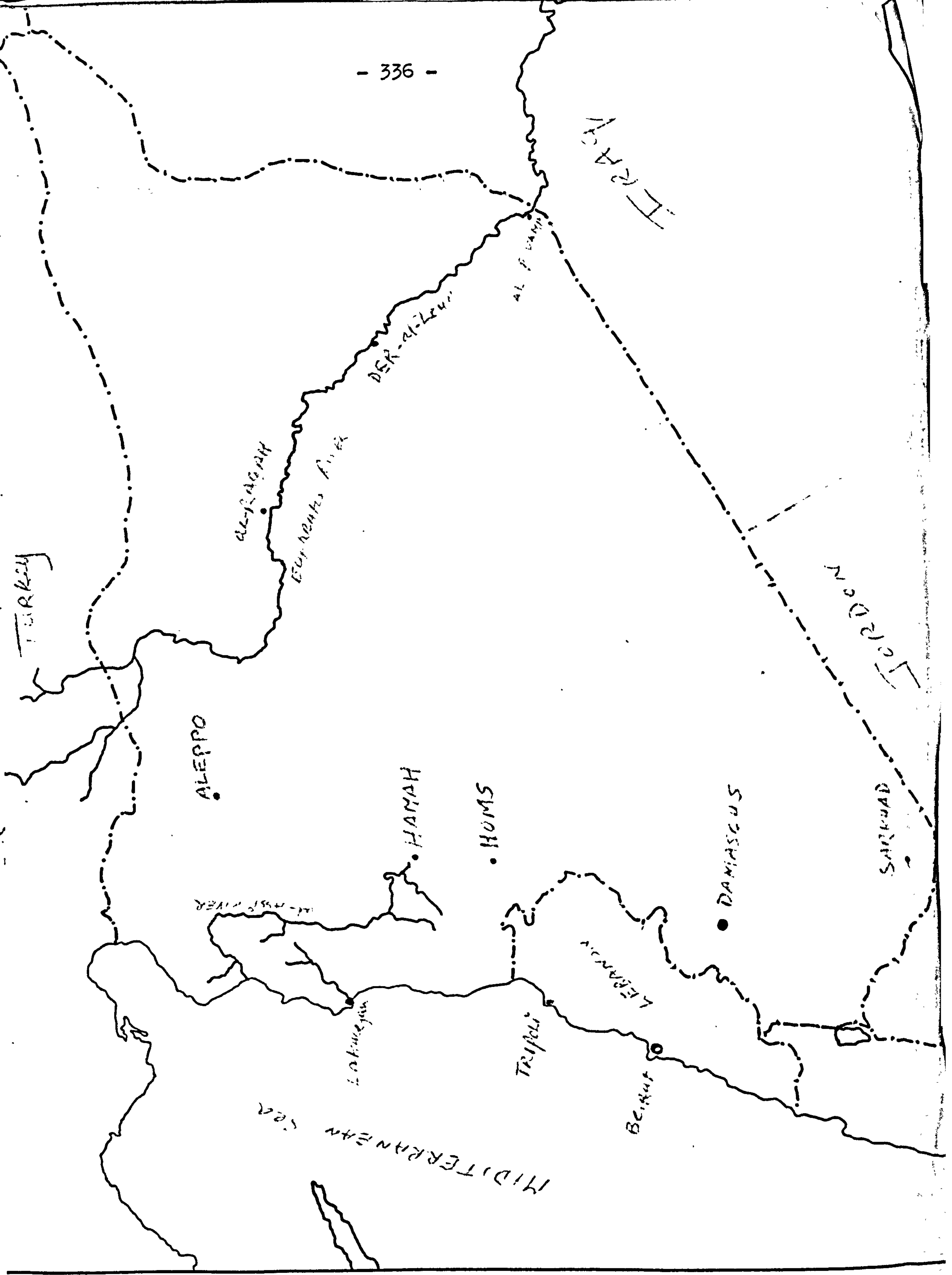
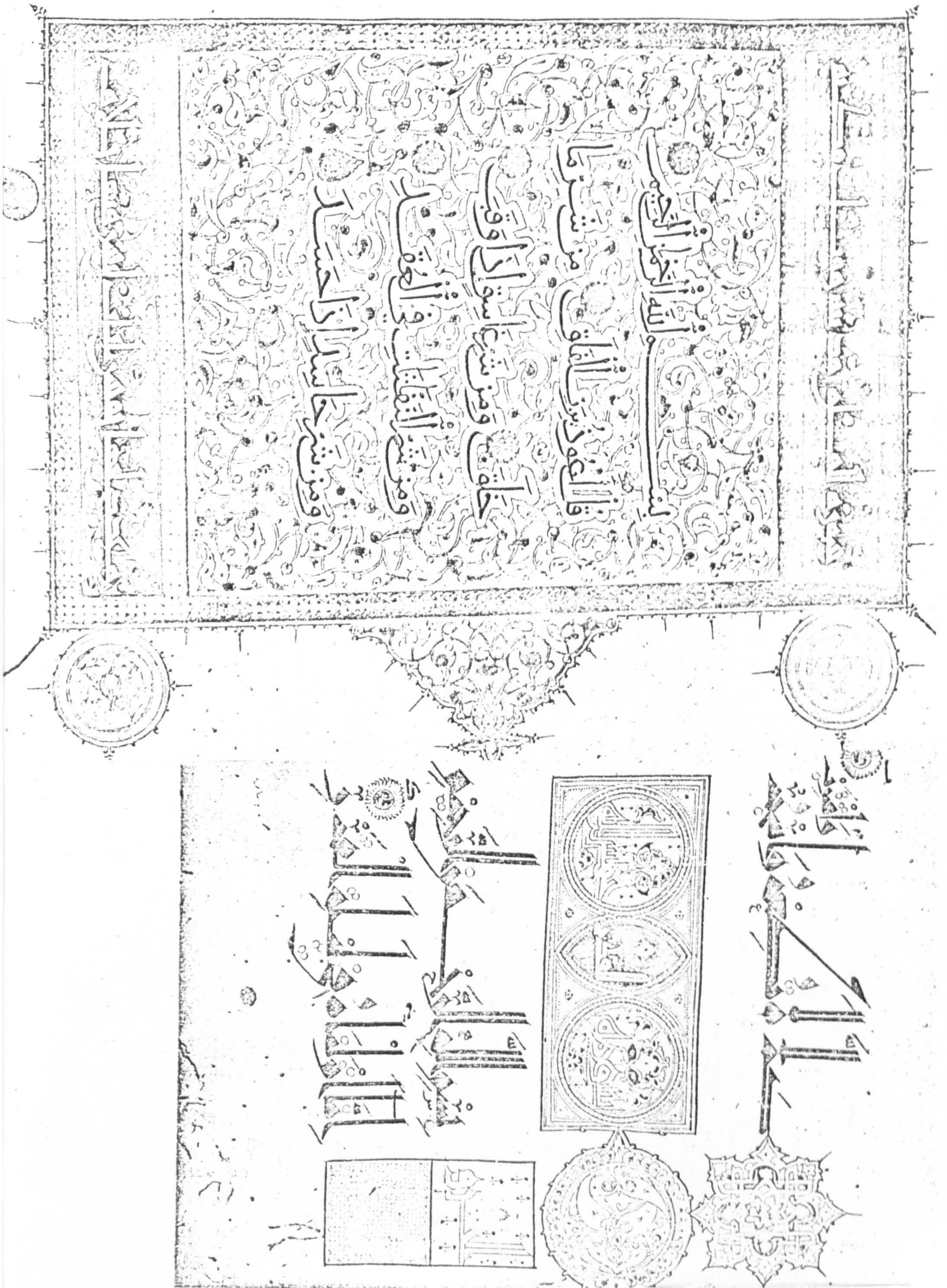


Fig. 8  
Syrian Arab Republic



Fig. 9  
Arabic Calligraphy





Philosophisch-philologische Classe.

Sitzung vom 8. November 1884.

Herr Kuhn legte eine Abhandlung des Herrn August  
Müller in Königsberg vor:

„Ueber Text und Sprachgebrauch von Ibn  
Abi Useibifa's Geschichte der Aerzte.“

Im Vorworte zu meiner Ausgabe der Arztgeschichte  
des Ibn. Abi Useibifa habe ich die Gründe dargelegt, durch  
welche ich verhindert worden bin, den genannten Text mit  
ausführlichen Prolegomenen einzuleiten. Von dem, was man  
in solchen zu suchen pflegt, habe ich einen Teil, die *Lebens-*  
*Beschreibung*<sup>1)</sup> des Autors und eine allgemeine Charakteristik  
seines *Werkes*, inzwischen in den Verhandlungen des VI. Inter-  
nationalen Orientalisten-Congresses zu Leiden nachgeholt; mit

1) Ich will hier noch die Stellen des Ibn Abi Useibifa selbst  
anführen, welche für seine Biographie von Belang sind: I, 281, 6;  
II, 53, 4; 118, 5. 27; 120, 22; 123, 26; 132, 28; 133, 9; 171, 10; 172, 3;  
173, 9; 174, 18; 194, 1; 198, 29; 202, 12. 15; 207, 18; 209, 5; 212, 28;  
214, 9. 18. 29; 217, 7; 219, 28; 221, 28. 32; 234, 24; 237, 1; 242, 6. 17;  
243, 12; 246, 26 ff.; 260, 20; 268, 2. Vgl. ferner den Index unter

رشيد الدين علي بن خليفة

[1884. Philos.-philol. hist. Cl. 5.]

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Fig 10.  
Müller & Ibn Abi Usaybe'ah

Oriental 125



MUELLER



عُيُونُ الْأَنْبِيَاءِ

فِي

طَبَقَاتِ الْأَطِبَّاءِ

تأليف

موفق الدين أبي العباس أحمد بن

القاسم بن خليفة بن يونس السعدي

الخزرجي المعروف بـ

ابن أبي أصيبعة

شرح وتحقيق

الدكتور زار رضا

منشورات دار مكتبة الحياة - بيروت



Fig. 12  
George Alfred Leon Sarton





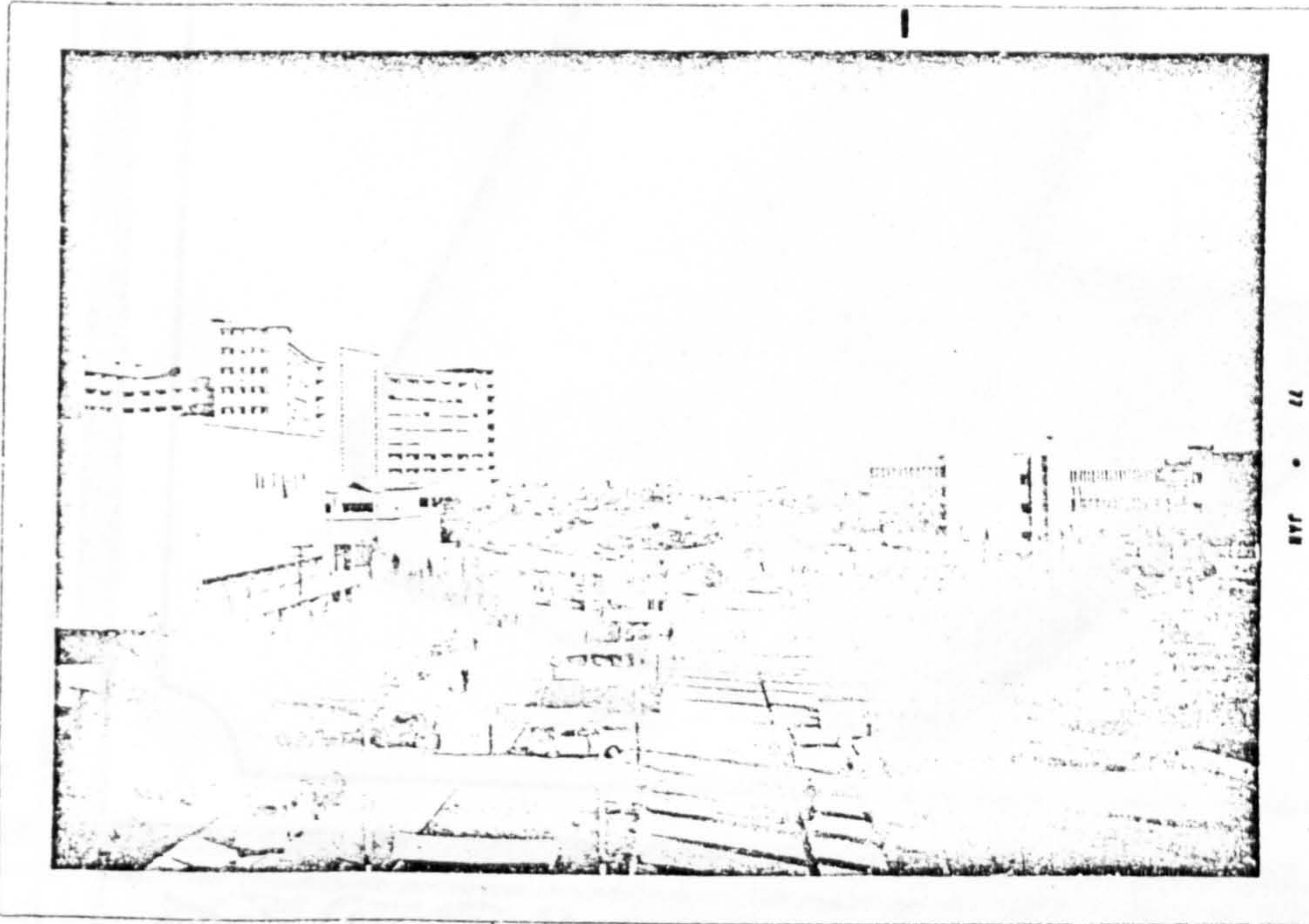


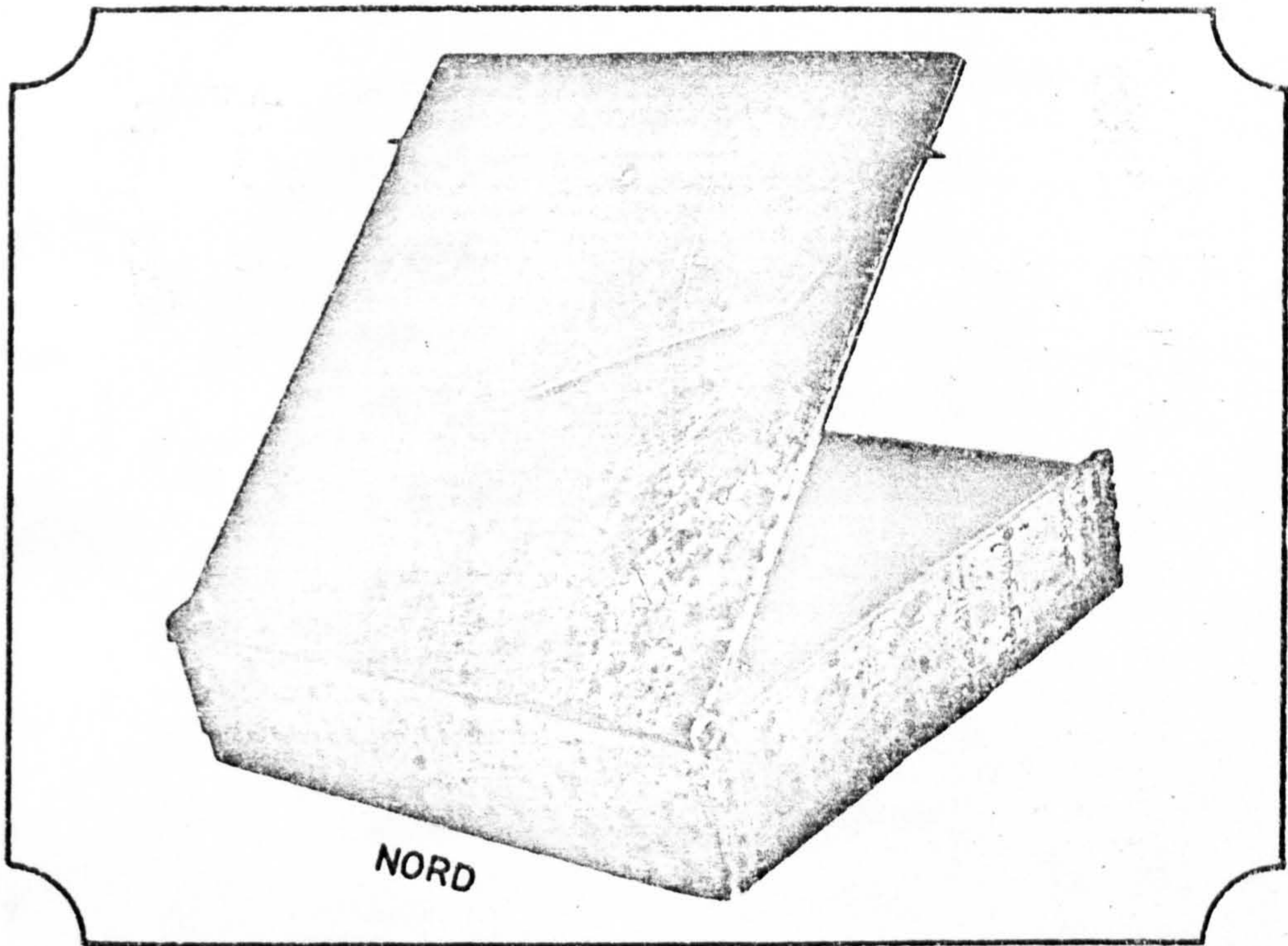
Fig. 13  
Aleppo University

Institute for the History of Art  
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Nov. 1977



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TYPING ERRORS

<u>Page</u>	<u>Wrong</u>	<u>Correct</u>
3	littoral	tittoral
9	Times	lines
14	Axlepius	Asc lepius
14	pholosophers	philosophers
18	Codifier	confider
25	hygien	hygiene
36	Kadijan	Khadijah
36	270 A.D	570 A.D.
38	a calip	a caliph
39	al-Wahid	al-Walid
39	al-Divan	al-Diwan
39	al-Watiq	al-Wathiq
40	abuot	about
57	his	This
67	This	Then
73	Efshan	Esfhan
84	gukde	guide
90	medica	medical
93	vear	near
95	cordoya	cordova
97	iderectly	indirectly
102	expecially	especially
103	ot	to

TYPING ERRORS

<u>Page</u>	<u>Wrong</u>	<u>Correct</u>
103	Homo	Homos
106	urning	burning
110	al-Tasfif	al-Tasrif
114	raven	revenge
116	Ibn Khaldoue	Ibn-Khaldoun
117	histography	Historiography
117	Rabagat	Tabaqat
119	expecially	especially
121	Kindnedd	kindness
124	Seyen	Sayef
139	al-ana	al-Anba
140	phisicians	physicians
142	Sami Hawarnah	Sami Hamarnah
143	Bihan	Bilad
144	Mourafak	Mowafak
226	Sahrawi	Zahrawi
229	develop	development of
230	Moejan	Moejam
238	expecially	especially
261	Syrian Science	Syrian Soc. for the History of Science.
261	by-annually	bi-annually
261	Roshdo	Roshdi
265	onferences	conferences



TYPING ERRORS

<u>Page</u>	<u>Wrong</u>	<u>Correct</u>
266	present us	prevent us
267	Bilas	Bilad
268	Awkara	Ankara
271	wasy .	ways
271	Alesandria	Alexandria
272	fo	of
273	Bayruri	Bayruni
276	al-Bachdai	al-Baghdadi
279	Hijram	Hijra
282	Sarb	Sabra
286	joint	journal
299	institute	Institute

Abd Allāh I

عبد الله

Abū Bakr al-Rāzī → al-Rēzī

أبو بكر الرازي

Abū Fitrās al-Hamdāni

أبو فراس الحمداني

Abū Ḥayyān al-Tawḥīdī

أبو الطيب التوحيدي

Aḥmad b. Tūlūn

أحمد بن طولان

Alexander the Great/Alexandre

الاسكندر الكبير

Alhazen → Ibn al-Haytham

ابن الهيثم

‘Alī b. al-‘Abbās al-Madḡūsī

علي بن العباس المجوسي

‘Alī b. ‘Abd Allāh al-Tūsī

علي بن عبد الله الطوسي

Avenetan, Avemattan → Ibn al-Haytham

Avennasar → al-Fārābī

Avenzoar → Ibn Zuhr, Abū Marwān

Averroes → Ibn Kūshd

ابن الهيثم  
الفارابي  
ابن زهر  
ابن رشد

Bayt al-ḥikma

بيت الحكمة

Bukhārāshū

بخارايشو

Dimashk

دمشق

Diwān

ديوان

Fakhr al-Dawla

فخر الدولة

al-Fārābī, Abū Ibrāhīm Ishāq

الفارابي

Faradj

فروج

Farouk → Fārūq

فاروق

Fārsī

فارسي

al-Fārūk → ‘Umar b. al-Khaṭṭāb

الفاروق

Fās

فاس

Fāṭima bint Muḥammad

فاطمة بنت محمد

Ghālib b. ‘Abd al-Raḥmān

غالب بن عبد الرحمن

Ghannāta

غزناطه

Ghassān al-Kūfi

غسان الكوفي

Ghazāl

غزال

Ghiyāth-al-Dīn

غياث الدين

Ghulām

غلام

Ḥabīb Allāh

حبیب الله

al-Ḥādī Yahyā

الحادي يحيى

Ḥadīth

حديث

Ḥadīth Kuḡsī

حديث قيسي

Ḥadjar

محاجر

al-Ḥāfiḡ

الحافظ

al-Ḥakam b. ‘Abdal

الحاكم

al-Ḥakam b. al-Walīd

الحاكم بن الوليد

Ḥakīm

حكيم

Ḥalab

الحلب نور الدين

al-Ḥalabī, Nūr al-Dīn

الحلبى نور الدين

al-Ḥamdānī

الحمداني

Ḥamdī

حمدي

Ḥamza b. ‘Abd al-Muṭṭalīb

حمزة بن الخطاب

al-Ḥidjari

الحجري

Ḥidjra

هجرة

Ḥippocrate

أبو قراط

Ḥisāb

حساب

Ḥishām

هشام

Ḥishām b. al-Ḥakam

هشام بن الحكم

Ḥoms → Ḥimṡ

حمص

Ḥubb

حُب

al-Ḥukamā

الحكمة

Ḥūlāgū

حوللگو

Ḥunāyn b. Ishāq

حنين بن اسحاق

Ḥusām al-Dīn

حسام الدين

Husayn

حسين

Ibn	ابن	Islām	اسلام
Ibn Abī Ijātim al Rāzī	ابن أبي الخطاب الرازي	Ismi'īl	اسماعيل
Ibn Abī Uṣaybi'a	ابن أبي أصيبعة	Istanbul	استانبول
Ibn al-A'rābī,	ابن العربي	'Izz al-Dawla	عز الدولة
Ibn 'Asākir,	ابن عسكرا	'Izz al-Dīn	عز الدين
Ibn 'Āṭham al-Kūfī	ابن عثام الكوفي	Jews → Yahūd	يهود
Ibn al-'Aṣṭār al-Isra'īlī	ابن العطار الإسرائيلي	Kādi	قاضي
Ibn Bahlūl	ابن بهارول	al-Īḡādī al-Fāḡī	القاضي الفاضل
Ibn Baṭṭūta	ابن بطوطه	Kadī	قاضي
Ibn Bukhtūshū'	ابن بختيشوع	Kalāfa	خليفة
Ibn Buṭlān	ابن بطران	Kalafat	خليفة
Ibn al-Haytham	ابن الهيثم	al-Qayrawāni	القيراواتي
Ibn Ḥazm,	ابن حزم	Kemāl al-Dīn	كمال الدين
Ibn Ishāq	ابن اسحاق	Khalaf	خليفة
Ibn Isrā'īl al-Dimashkī	ابن اسرائيل الدمشقي	Khālid,	خالد
Ibn Khaldūn, 'Abd al-Rahmān	ابن خلدون	Khalīfa	خليفة
Ibn Khallikān	ابن خلكان	Khalīl	خليل
Ibn al-Kuffī	ابن الكوفي	Khalīl Allāh	خليل الله
Ibn Rushd	ابن رشد	al-Kh(w)ārizmī	الخوارزمي
Ibn Sīnā	ابن سينا	Kharṭūm	خبر كرم
Ibn Zuhr	ابن زهر	Khaṭīb	خطيب
Ibrāhīm	ابراهيم	al-Khayyāt	الخياط
Iyās	ابن ابي اسحاق	al-Khāzin,	الخازن
Imād al-Dīn	عماد الدين	Khilāfat	خليفة
'Imād al-Dīn Zankī	عماد الدين الزنكي	al-Kifī	الكفي
Iṣfahān	اصفهان	al-Kindī,	الكندي
Ishāq,	اسحاق	Kirīm	كريم
al-Iskandar	الاسكندر	Kitāb al-Aghānī	كتاب الأغاني
		Kitāb al-Ḥiyal	كتاب الحيل
		Kitāb-Tidjān	كتاب التيجان
		al-Kuds	القدس



al-Kūfa الكوفة  
 Kur'an قرآن  
 Kur'uba قرطبة  
 Kutuz كوتوز  
 Libraries → Khizana كتاب  
 Livres → Kitāb كتاب  
 Lubnān لبنان  
 Luṭfi لطفي  
 Madīna مدينته  
 Madjīd al-Dīn سيد الدين  
 Madjlis مجلس  
 Madjlis Kutub مجلس الكتب  
 Maghrib مغرب  
 Mahfuz محفوظ  
 Mahmūd محمود  
 Mamlūks مملوك  
 al-Ma'mūn المأمون  
 al-Manšūr المنصور  
 Māristān → Bimāristān مستشفى  
 Mazhar مظهر  
 Mehemmed محمد  
 Miftāh al-Hikma مفتاح الحكمة  
 Miṣr مصر  
 Mongols مغول  
 Mosque → Masjid مسجد  
 Mu'ammār قاهر  
 Mu'āwiya معاوية  
 al-Mu'ayyad مؤيد

Mu'azzam, مبارك  
 Mubārak مبارك  
 Muḥammad, Prophet محمد النبي  
 Mu'izz al-Dawla قهر الدولة  
 Muṣṭafā مصطفى  
 al-Mustanṣir المستنصر  
 al-Mu'tasim المتعصب  
 al-Mu'tazz المتعظ  
 Muwaffaq موفق  
 al-Muẓaffar المظفر  
 Nadim, نديم  
 Nuṣrat al-Dīn نصرة الدين  
 Olive (oil) → Zaytūn زيتون  
 Omar Khayam عمر الخيام  
 Osman → 'Uthman عثمان  
 'Othmān عثمان  
 Palace/palais → Kaṣr قصر  
 Qatar → Kaṣar قطر  
 Rabī'a ربيع  
 al-Raḥbī الرحبي  
 al-Rāzī, Abū Bakr Muḥammad الرازي ابو بكر محمد  
 Reṣhīd → Raṣhīd رشيد  
 Ridā' ردا  
 Ridwān رضوان  
 Sa'd al-Dīn سعد الدين  
 Sa'īk, صارق

مصطفى  
 مبارك  
 محمد النبي  
 قهر الدولة  
 مصطفى  
 المستنصر  
 المتعصب  
 المتعظ  
 موفق  
 المظفر  
 نديم  
 نصرة الدين  
 زيتون  
 عمر الخيام  
 عثمان  
 عثمان  
 قصر  
 قطر  
 ربيع  
 الرحبي  
 الرازي ابو بكر محمد  
 رشيد  
 ردا  
 رضوان  
 سعد الدين  
 صارق

Sayf al-Dawla

سيف الدولة

Selīm

سليم

Shaykh

شيخ

Shihāb al-Dīn

شهاب الدين

al-Ṭabarī,

التبري

Tādj al-Dawla

تاج الدولة

Tādj al-Dīn

تاج الدين

Tafsīr

تفسير

Tātār

تتر

Umar

عمر

Umayya

امية

Umayyad(e)

الأمويين

Waqf

وقف

Wālī

والى

al-Walīd

الوليد

al-Walīd b. 'Abd al-Malik

الوليد بن عبد الملك

al-Wāsiṭī,

الواسطي

Wazīr i,

وزير

Yacoub → Ya'kūb

يعقوب

Yahyā

يحيى

Ya'kūb

يعقوب

Yuḥannā

يوحنا

Yūnus,

يونس

Yūsuf,

يوسف

Zafār → Zufār

ظفار

al-Zāfir

الظفار

al-Zahāwī,

الزهاوي

Zahīr

المدينة الظاهرة

al-Zāhiriyya madrasa

الزهاوي أبو القاسم خلف

al-Zāhrāwī, Abu 'l-Kāsim Khalaf

Zakī al-Dīn

زكي الدين

Zankī

الزنكي

Zayd

زيد

Zaydān

زيدان

Zayn al-'Ābidīn

زين العابدين

Ziyād

زياد