The Unesco Courier

A window open on the world

a golden age of Arab culture

December 1977 | 30th year | 2.80 French francs

TREASURES
OF
WORLD ART

126

People's Democratic Republic of Yemen

The man from Derah'il

A rare example of pre-Islamic Arabian art, this alabaster statuette (46 cms. high) depicts a moustached and bearded man at prayer. His name, "Amm'alay from Derah'il" is inscribed on the base of the statuette, which was fashioned in the 2nd century B.C. by a sculptor of the Himyarite people of southern Arabia.

The Unesco Courier

DECEMBER 1977 30TH YEAR

PUBLISHED IN 16 LANGUAGES

English	Japanese	Dutch
French	Italian	Portuguese
Spanish	Hindi	Turkish
Russian	Tamil	Urdu
German	Hebrew	
Arabic	Persian	

Published monthly by UNESCO
The United Nations Educational, Scientific and Cultural Organization
Sales and Distribution Offices
Unesco, Place de Fontenoy, 75700 Paris
Subscription rates
1 year : 28 French Francs
2 years: 52 FF
Binder for a year's issues: 24 FF

The **UNESCO COURIER** is published monthly, except in August and September when it is bi-monthly (11 issues a year). For list of distributors see inside back cover.
Individual articles and photographs not copyrighted may be reprinted providing the credit line reads "Reprinted from the **UNESCO COURIER**", plus date of issue, and three voucher copies are sent to the editor. Signed articles reprinted must bear author's name. Non-copyright photos will be supplied on request. Unsolicited manuscripts cannot be returned unless accompanied by an international reply coupon covering postage. Signed articles express the opinions of the authors and do not necessarily represent the opinions of UNESCO or those of the editors of the **UNESCO COURIER**. Photo captions and headlines are written by the Unesco Courier staff.

The Unesco Courier is produced in microform (microfilm and/or microfiche) by: (1) University Microfilms (Xerox), Ann Arbor, Michigan 48100, U.S.A. ; (2) N.C.R. Microcard Edition, Indian Head, Inc., 111 West 40th Street, New York, U.S.A. ; (3) Bell and Howell Co., Old Mansfield Road, Wooster, Ohio 44691, U.S.A.

The Unesco Courier is indexed monthly in the Readers' Guide to Periodical Literature, published by H. W. Wilson Co., New York, and in Current Contents - Education, Philadelphia, U.S.A.

Editorial Office
Unesco, Place de Fontenoy, 75700 Paris - France
Editor-in-Chief
René Caloz
Assistant Editor-in-Chief
Olga Rödel

Managing Editors

English	Edition :
French	Edition :
Spanish	Edition : Francisco Fernandez-Santos (Paris)
Russian	Edition : Victor Goliachkov (Paris)
German	Edition : Werner Merkli (Berne)
Arabic	Edition : Abdel Moneim El Sawi (Cairo)
Japanese	Edition : Kazuo Akao (Tokyo)
Italian	Edition : Maria Remiddi (Rome)
Hindi	Edition : H. L. Sharma (Delhi)
Tamil	Edition : M. Mohammed Mustafa (Madras)
Hebrew	Edition : Alexander Broido (Tel Aviv)
Persian	Edition : Fereydoun Ardalan (Teheran)
Dutch	Edition : Paul Morren (Antwerp)
Portuguese	Edition : Benedicto Silva (Rio de Janeiro)
Turkish	Edition : Mefra Arkin (Istanbul)
Urdu	Edition : Hakim Mohammed Said (Karachi)

Assistant Editors
English Edition : Roy Malkin
French Edition : Philippe Ouannès
Spanish Edition : Jorge Enrique Adoum

Research : Christiane Boucher

Illustrations: Ariane Bailey

Layout and Design : Robert Jacquemin

All correspondence should be addressed to the Editor-in-Chief in Paris

ISSN 0041 - 5278
N° 11 - 1977 MC 77 - 3 - 338

Cover

This 18th-century ceramic tile is a representation of Mecca, the goal of Islamic pilgrimage and the city to which Muslims turn in praying. In the heart of the city is the Ka'ba (literally, "cubic edifice"), the ancient shrine venerated by Muslims the world over. This small stone building is draped with black brocade which is changed each year. Embedded in one of its corners is the "Black Stone" which, according to tradition, dates back to the time of Abraham. It is the starting point for the ritual procession around the Ka'ba.

Among the great civilizations of world history, Arab Islamic culture of the classical age occupies a place of major importance. Between the 9th and the 13th centuries this brilliant and original civilization left a distinctive mark on a vast territory stretching from Baghdad on the Tigris, across the Near East, the Middle East and North Africa to the Iberian peninsula. Its influence was felt in many other parts of the world, and it served as an indispensable link between Antiquity and the medieval Western world.

A GOLDEN AGE OF ARAB CULTURE

Cities that blossomed in the desert

by Mohammed A. Sinaceur

NO lapidary phrase, however brilliant, can fully evoke the complexities of a culture, and anyone who sets out to describe the achievements of a civilization should take care to avoid over-simplification. This warning has particular force in the case of Arab civilization, whose origins lay in a message of universal significance among a people which stormed the ramparts of Eastern and Western powers alike.

Time-honoured judgements of the type: "Arab civilization is above all a reflection of its nomad ancestry" are neither wholly true nor wholly false. They should be regarded as shortcuts across a dual reality: the reality of facts and the reality of the impressions that the facts provoke.

For although Islam was born in the desert, its development was accompanied by urbanization on a remarkable scale. The builders of the Muslim empire were also great founders of cities such as Kufa, Basra, Baghdad (the largest city in the world during the 9th century A.D.), Shiraz, Damascus, Aleppo, Cairo, Kairouan, Tunis, Mehdia, Algiers, Tlemcen, Cordoba, Saragossa, Sijilmasa and Timbuktu.

It is undoubtedly a paradox that a people born and raised in the desert wastes should be inspired to create or revive so many cities. Where did this impulse come from? Did it reflect a need to settle down, to create "with the solidity of stone" a cradle for the infant religion? Was it to provide the body politic—the state—with continuity and stability?

This was certainly the case. But there was also another factor: the crucial importance of trade (to which Mecca owed its very existence) and its expansion on a scale matching that of the then-known world. The great economic and social revolution that was Islam may explain how a desert civilization also came to have the strongly urban flavour whose importance has all too often been neglected by the historians of world urban movements.

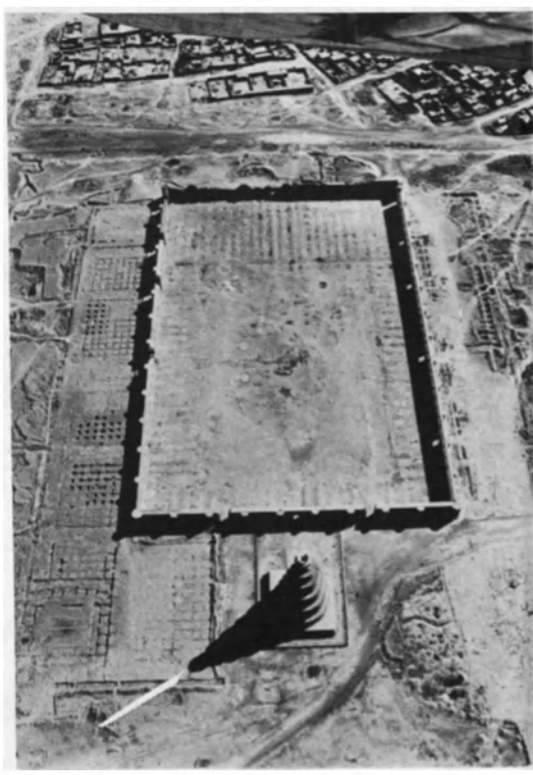
Arabia was a thoroughfare, the crossroads of trade routes linking the great civilizations of East and West. At its hub, halfway between the Yemen and Syria, was Mecca, whose interests lay in securing the highways along which its fortunes flowed. To keep peace, it wove a fabric of alliances between the desert nomads and the city clans.

Islam brought into contact, and frequently supplanted, the earlier civilizations along this thoroughfare, reviving the embers of many an ancient settlement and building new cities, either to control the trade routes that stretched from China to Spain, or to serve as staging posts on them.

Muslim conquest opened vast territories to the city-builders. Urbanization progressed by leaps and bounds, from Mesopotamia, where it existed already, to Syria and Egypt, where it was in decline, and to Africa, where it had long been dead.

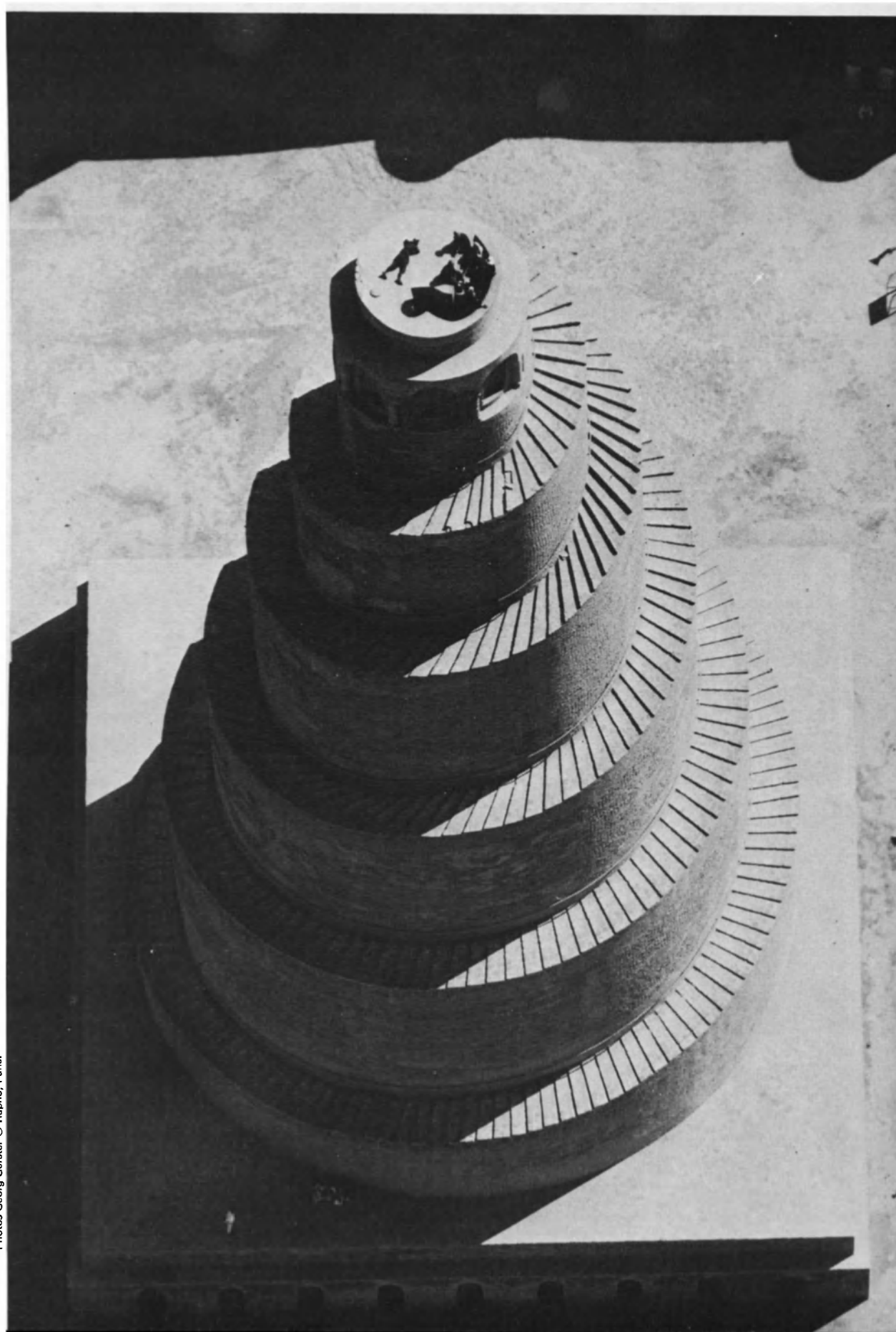
Ancient settlements enjoyed a new lease of life, and their size, population and social and economic importance increased accordingly. Thus, 10th-century Baghdad had more than a million inhabitants, Damascus and Cordoba between 300,000 and 400,000, and Cairo half a million.

These figures are all the more impressive when we remember that the flourishing cities of medieval Europe had populations of scarcely more than 30,000 or 40,000, and



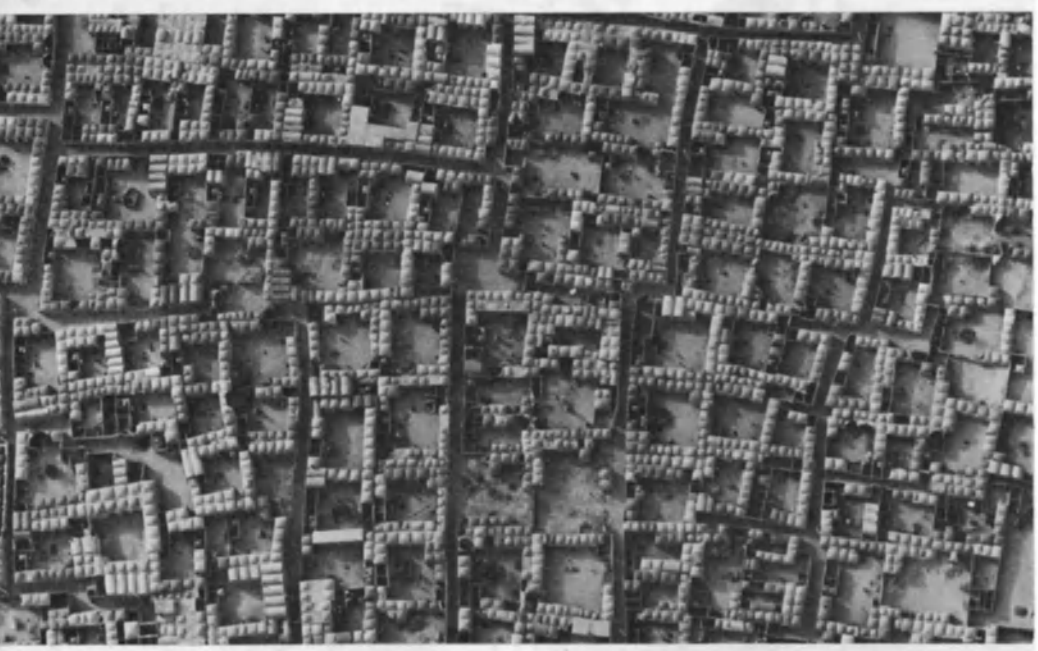
MOHAMMED ALLAL SINACEUR, *head of Unesco's Division of Philosophy, was formerly a department head at the French National Centre for Scientific Research and later professor of sociology at Hassan II University in Casablanca (Morocco). He has published a number of articles, most of them on philosophical problems and the history of mathematics.*

In this issue of the *Unesco Courier* writers and historians from the Arab world examine some facets of this great cultural flowering. Unesco is currently developing a comprehensive programme of studies on Arab culture. It aims to bring out the "authenticity, cohesion, unity and universality" of Arab culture, as well as throw light on the contribution of Arab Islamic culture to other cultures, and their interrelations. Finally, in 1979 Unesco will organize a major conference on cultural policies in the Arab world.



The city is one of the most outstanding achievements of Arab civilization, often representing a triumph of ingenuity over unfavourable natural conditions. And at the heart of the city is the mosque. Left, the precinct of the great mosque at Samarra (Iraq), capital of the caliphs of the Abbasid dynasty between 838 and 889 A.D. Covering an area of some 38,000 sq. metres, it was one of the largest mosques in Islam. The outer wall, with its 16 entrances, is still dominated by the 50-metre-high Al-Malouiya spiral minaret (right) once linked to the mosque by a bridge.

Photos Georg Gerster © Rapho, Paris.



Photos Georg Gerster © Rapho, Paris.

that Paris, for example, did not reach the 300,000 mark until the 14th century.

Such rapid growth established the city's ascendancy over the surrounding countryside, which became a source of food and manpower. It would be wrong, however, to assume that the city lived entirely off the land, for the latter was generally too poor to provide all the commodities required by a sophisticated society. Indeed, isolated and backward rural communities were more of a threat than a help to the cities, whose preoccupation with the need for security along the caravan routes led them to form alliances with nomadic tribes and to leave the peasants in a commercial backwater, cut off from the tide of orthodox Islam.

The 14th-century Arab historian Ibn Khaldun noted the stubbornness of these country-dwellers, frequently entrenched in mountain fastnesses, and their meagre contribution to the prosperity of the great Muslim cities.

This dependence on trade explains the importance of the merchants, not only along the highways of Arabia but in far-off Africa as well. It was they who fitted out the caravans which made their way across the sandy, stony wastes towards Tinduf, Tripoli and Benghazi in the north, and towards Timbuktu, Kano and Abech in the south.

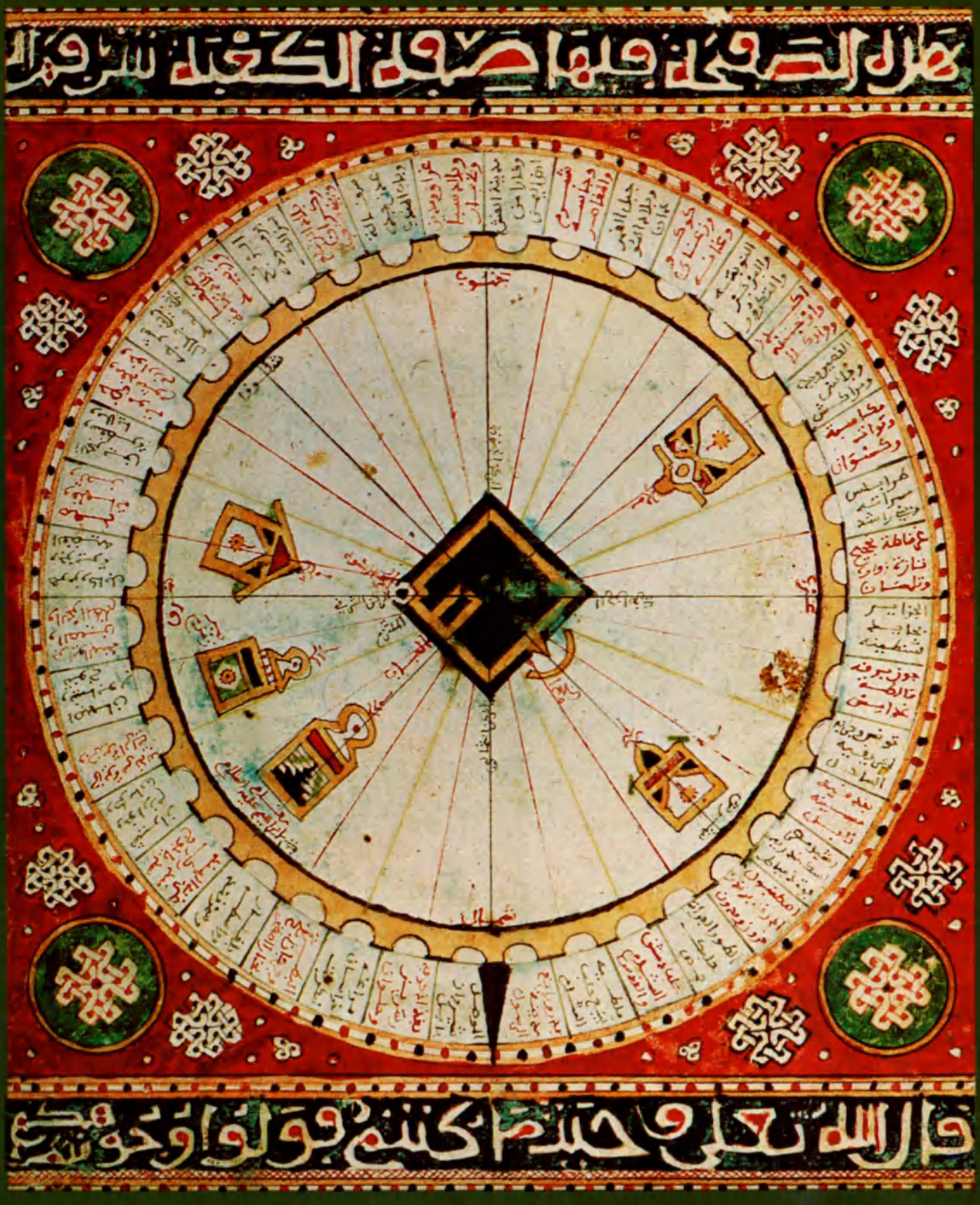
All these cities shared a common origin as meeting-places for the enterprising camel-drivers of the Sahara and a handful of equally enterprising businessmen from the towns of the Mediterranean coast. Their creation was a complex process, sometimes involving the settlement of previously nomadic tribes along the fringes of the desert.

Mazy desert townscapes

In the midst of barren desert, tightly packed settlements have formed and clustered around wells and waterholes. Left, three aerial views, each taken from a different height and angle, show the one-storey houses and labyrinthine alleys of Souk El Oued (Algeria). Each dwelling has a courtyard that is separated from—yet at the same time joined to—its neighbour by windowless walls.

One of the most delightful literary portrayals of everyday life in Arab countries during the Middle Ages is the *Maqamat* (or "Assemblies"), a collection of tales written by Al-Hariri (1054-1122). Opposite, a scene painted for an illustrated edition of the *Maqamat* produced in Baghdad (Iraq) in 1237. It shows two travellers in conversation with a passerby near a village. In background are the mosque and its minaret, and the arches of the bazaar, thronged with merchants and their customers.

Photo © Bibliothèque Nationale, Paris



Compass points of Islam

Frontispiece of a 16th-century atlas by Muhammad Sharfi of Sfax (Tunisia). Round the edge of the circle are the names of the Islamic countries. They are connected by lines to the Ka'ba (at centre), the sacred shrine at Mecca containing the Black Stone, an object of veneration dating back to pre-Islamic times. The corner in which the Stone is fixed is known as the black corner, the others being named the Yemen (south), Iraq (north) and Syrian (west) corners, from the lands to which they approximately point. Note that the north is shown at bottom of "map", according to a practice often followed by Arab cartographers.

The prosperity of these trading centres and the wealth and prestige of the great merchant adventurers were reflected in their buildings—in palaces, mosques and colleges known as *madrasahs.* (See article page 35).

The layout of the city reflected its economic and social role. At its heart lay the *suq,* the market district, and at the heart of the *suq* stood the principal mosque, symbol of a discipline which transcended the petty constraints of day-to-day affairs. This marriage of the sacred and the secular, of piety and profit—which can still be seen today in the *suqs* of such cities as Fez and Tunis—recalls the remark attributed to the Caliph Omar, that "in all things, the bazaar and the mosque are in harmony".

Not far from the *suqs* were the *funduqs,* warehouses and lodgings for the merchants, and the *qaysarriyya,* where precious goods were kept under lock and key. The same neighbourhood contained the place of the money-changers and sometimes a mint.

This was the core of the city. Around it lay a veritable labyrinth of little streets and lanes, each lined with the open-fronted workshops of groups of craftsmen busily weaving, carving, dyeing, beating out copper and generally engaged in the thousand-and-one activities of their trades.

To an outsider, fascinated by the mystery of blind, trellis-shaded alleys, streets that kept the secrets of houses hidden behind high, windowless walls, and thoroughfares noisy with the hubbub of the market, this workaday world, in which merchant and broker rubbed shoulders with journeyman and porter, must have seemed like chaos.

But system was there, and nowhere more so than in the person of the *muhtasib,* who as the symbol of municipal authority was responsible for the regularity of dealings and for the maintenance of Islamic order, the overriding precept of which was to do good and to prevent evil.

The *muhtasib's* specific functions varied from city to city. In Fez, for example, he was officially appointed by the central authorities to supervise transactions, to inspect weights and measures, to fix prices and to oversee the functioning of the ovens, the markets, the manufactories and the public baths.

In Ottoman Cairo, this task was assumed by a senior officer of the *Odjaq* (the militia of the pasha's government), assisted by a team of agents including a treasurer, a secretary, a scalesman and a punishment squad.

His writ ran over much of the Cairo markets, and more particularly over activities connected with the production of edible and consumer goods. He was also responsible for the collection of taxes levied on imported foodstuffs. On his tours of inspection he was preceded by a scalesman, carrying a weighing instrument fitted with standard weights, and followed by a punishment squad, ready to administer summary chastisement which was sometimes severe.

But the tiresome business of quality control was less appealing than pomp and circumstance, and the "inspector of weights and measures" tended to be seen more frequently at the official ceremonies of the trade guilds than among the stalls of the market-place.

Like those of the *muhtasib,* the functions of the guilds also varied in different times and places, but the guilds were all related in one way or another to the *futuwwa,* a complex institution characteristic of the Islamic city.

The *futuwwa* (a name derived from the word "fata", meaning a young man, and by extension a "gallant and generous person") was a professional association of craftsmen, membership of which was subject to initiatory rites. According to the great traveller Ibn Batuta, who encountered such groups in the 14th-century Muslim world, the creation of these brotherhoods of young men pledged to comradeship and mutual devotion probably originated at an early date, before the reign of the Abbasid dynasty (which began in the mid-8th century).

These groups strengthened the structure of the guild system, which imposed discipline and cohesion on the urban community in cities such as Fez, where the term *futuwwa* appears to have been unknown. Through the guilds everyone knew everyone else, everyone was linked by the same grapevine of information and subject to the same unwritten laws, transgression of which was discouraged by the deterrent of judgement by one's peers.

In some parts of the Muslim world, particularly in Egypt, detailed and systematic treatises were written about the *futuwwa,* describing such rites as the initiation ceremony, in which new members were invested with a knotted waist-cord. (See also article page 12).

These texts ascribed to the *futuwwa,* and to the different trades and crafts of its members, a mystical or religious origin. Thus, the ceremony of the waist-cord was traced back to the investiture of Ali, "Commander of the Faithful" and cousin and son-in-law of Muhammad, around whose waist the cord was placed by the Prophet himself, who had been initiated in the same manner by the angel Gabriel.

The whole question of initiation and the transmission of skill and authority inevitably brings to mind the religious fraternities, the mystical equivalents of the guilds.

The religious order of the dervishes recruited most of its members from among the artisans and merchants, who also provided the membership of most of the guilds. The relationship between the two types of association is a complex one, reflecting the deep interpenetration of spiritual and professional life. Moreover, both types assumed a more or less definitive form at the same moment in history. The moral code thus drew its strength from the well-spring of religion.

From the 16th century onwards, the guilds and religious fraternities seem to share the same attachment to tradition and the same principle of submission to authority. Thus apprenticeship of all

kinds, whether manual or intellectual, was seen as a process of initiation involving the transmission of knowledge through a master-pupil relationship.

In cultural terms, this is significant. The world of the corporations of craftsmen and traders and the worlds of the mosque and the university had many points of contact. The "wise man", who was both the caretaker of religion and the guarantor that its laws were applied, became a dominant figure in the intellectual and moral life of the urban community.

Intellectual life was dominated by the traditional Islamic sciences, inherited from the Greeks and subsequently developed. The new Islamic city, whose foundations were set in the soil of more than one ancient civilization, provided favourable conditions for the development of medicine, astronomy and mathematics, sciences which could be applied to satisfy new needs.

Intellectual activity was intense, nurtured sometimes by polemics, frequently by research, and invariably by the spirit of inquiry which underlies all human contact and which served as the tap-root of an urban culture that was cosmopolitan in its diversity.

Among many controversies which illustrate this intellectual ferment is one concerning the relationship between Arabic grammar and Greek logic. In the course of a debate on the subject, recorded by Abu-Hayyan at-Tawhidi, the distinguished philologist As-Sirafi confounded the logician Matta by obliging him to admit that linguistic precision took precedence over logic, since imprecision was a source of obscurity and nonsense, and was thus totally illogical.

We may detect behind this spirited defence of Arab culture the pride of men whose empiricism and open-mindedness led them to prefer the deciphering of divinely inspired realities to the sterility of deductive reasoning.

But if the outlook that was advocated, taught and ordained was an essentially pragmatic one, this urban culture, imbued with liberty and humanism, by no means neglected its religious origins. Nor did it neglect the diverse and powerful currents of pre-Islamic Arab culture, whose value was increasingly recognized, firstly as a component of a specific cultural identity and later as an indication that a society which had not lost its vitality was determined to resist decline.

But there came a moment when the tide of innovation was checked by a counter-current which carried it into the backwaters of traditionalism. The result was that thought, creativity, teaching and belief became increasingly hidebound. In an atmosphere of rigidity, stratification and introspection, the religious fraternities, the guilds and the principle of authority in education became the pillars of religious, economic and intellectual life.

In spite of such setbacks, however, Arab culture continued to evolve under the profound imprint of the city. The university, practising the "commerce" of science, was in itself a guild par excellence. It played an essential role in urban life as a school for the city's administrators and the source of its moral inspiration, while its activities, like those of business and trade, generated a culture that facilitated communication.

And if, as we have seen, the rural world was neglected in the alliance between the cities and the nomad tribes, there can be no doubt that urban prosperity, cultural efflorescence and commercial prosperity invariably went hand in hand.

Thus the cities were not merely dots on the economic map. They were also focal points of an intellectual network, centres of religious life and stages on the pilgrims' ways.

It was traffic, the coming and going of persons and goods throughout the Muslim world, that unified all aspects of Islamic life. The journey to a centre of trade was also a journey to a centre of study and of culture. A pole of attraction for the merchant was also a magnet for the scholar.

This explains why culture leap-frogged over the peasantry from metropolis to metropolis, uniting almost all the cities of Islam in a single pattern. There was a greater degree of mutual understanding and communication between Cordoba, Fez, Baghdad and Samarkand than between these cities and their surrounding rural areas.

Islamic culture thus served not only as a highway for communication but also as a bridge which facilitated the creation and maintenance of a strong degree of unity in urban life. It is significant that throughout the territories of Islam there was no real system of hostelries or inns. It was the *funduq* and the mosque that welcomed the traveller and found him lodging.

The urbanization of Islam spread far and wide, bringing wealth and the civilization of the city to the doorstep of the West, whose own Renaissance developed out of this flow of learning.

This phenomenon was unprecedented in the history of cultures and civilizations. Never before had there been a movement as complex, as vast or as rich in potential for unification on a world-wide scale. From Baghdad in the East to Cordoba in the West, from the West to Byzantium, and from Christian Byzantium to the Muslim Orient, new territories were opened up for trade and new circuits established for the transmission of religious, intellectual, economic and political ideas.

Under the impact of the city-builders of Islam, the pulse of universal history assumed a different rhythm, one that would be felt right up to the present day. What traveller could deny the truth of these words: "You will discover no new countries; you will discover no new shores. The city will be with you everywhere". The omnipresent city!

The cities of Islam were garden cities. Jealously guarded behind walls whose height discouraged curious eyes lay an enchanting domain of water and domesticated greenery. Gardens brought life to "a patch of desert", provided a setting for "unworldly dreams" and offered an invitation to "thoughtless yet thoughtful" reveries.

Such silence and immobility were luxuries, perhaps; they are even more so in today's fast-moving industrial age. But should we not endeavour to preserve and restore something of this peaceful universe of infinite horizons, where beings and elements alike sing praise to human friendship in a world eternally young?

■ **Mohammed A. Sinaceur**

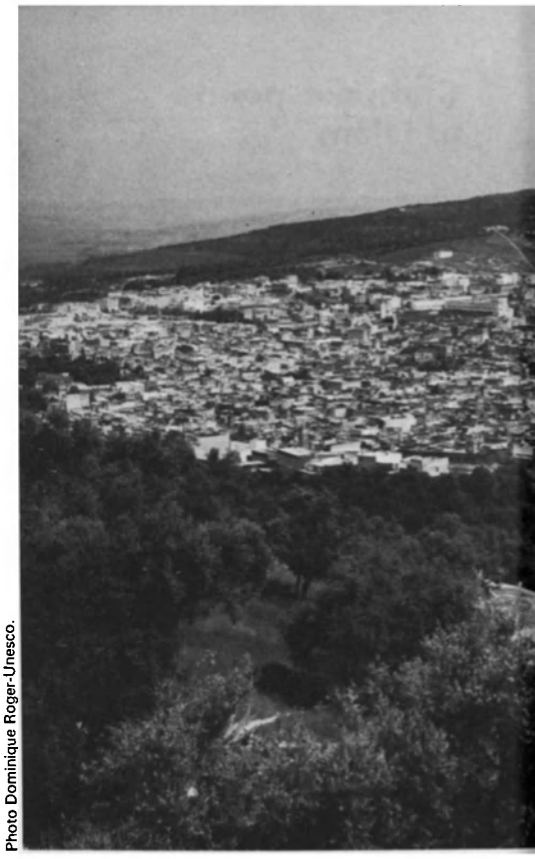


Photo Dominique Roger-Unesco.

Photo Roland Michaud © Rapho, Paris.

Preserving the historic Medina of Fez

One of the most prestigious centres of ancient Islam and once the capital of Morocco, the labyrinthine Medina of Fez still looks much as it did in medieval times. With its industrious population of artisans and tradesmen—leatherworkers, saddlers, potters, tanners, tile-makers and enamellers, woodcarvers and weavers—the Medina is bursting at the seams. The conservation of such a unique site, rich in historic monuments, poses difficult problems. The Moroccan government, in collaboration with Unesco, is drawing up a master plan to preserve the historical character of the Medina while adapting it to modern needs.

CONTINUED PAGE 12

1

Photo Lengyel-Unesco.

1. Monumental gateway was part of the ramparts surrounding medieval Fez. Its elegance attests to the city's reputation as a great artistic and intellectual centre.

2

2. Olive groves surround the jumbled rooftops and slender minarets of Fez. In the foreground, the old city.

3

3. Stalls line the narrow, cobbled streets of the Medina. On this "thoroughfare" sheltered by bamboo matting, everything from herbs to jewellery is sold.

4. *Muqarna,* or "honeycomb" ceiling graces Al Qarawiyin Mosque. The largest in north Africa, it can accommodate some 22,000 worshippers.

4

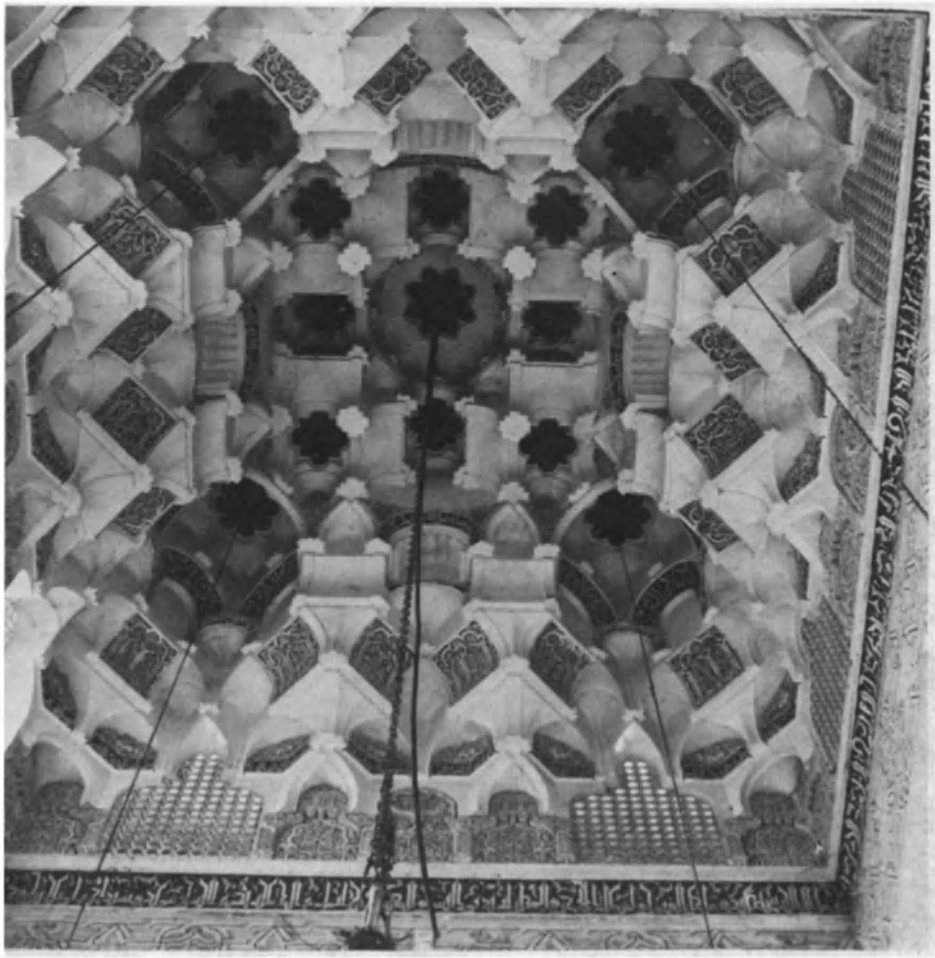


Photo © Jean Mazenod, Paris.

FEZ *(continued)*

Fez is known in Arabic as *Fas* or pick. According to one tradition, the city is so named because its founder Moulay Idris buried a pick on the site of the new settlement in 790 A.D. to symbolize its vocation as a centre for craftsmen. Craftsmen belonged to a trade corporation, or guild, which supervised the training of apprentices and carefully controlled the price and quality of manufactured goods. At right, a tannery where workers dye leather in large, round vats. Tanneries, like other trades involving pollution, tended to be located on the edge of Islamic cities. Nearby, a vendor (far right) proudly displays his woven baskets, another of Fez's traditional crafts. In the Middle Ages, raw materials and finished goods were stored in lavishly decorated warehouses known as *funduqs* (below).

Photo Roland Michaud © Rapho, Paris.

Photo Louis-Yves Loirat © Rapho, Paris.

BROTHERHOODS OF THE BAZAARS

the guild system united apprentices, artisans and master-craftsmen in the service of a common ideal

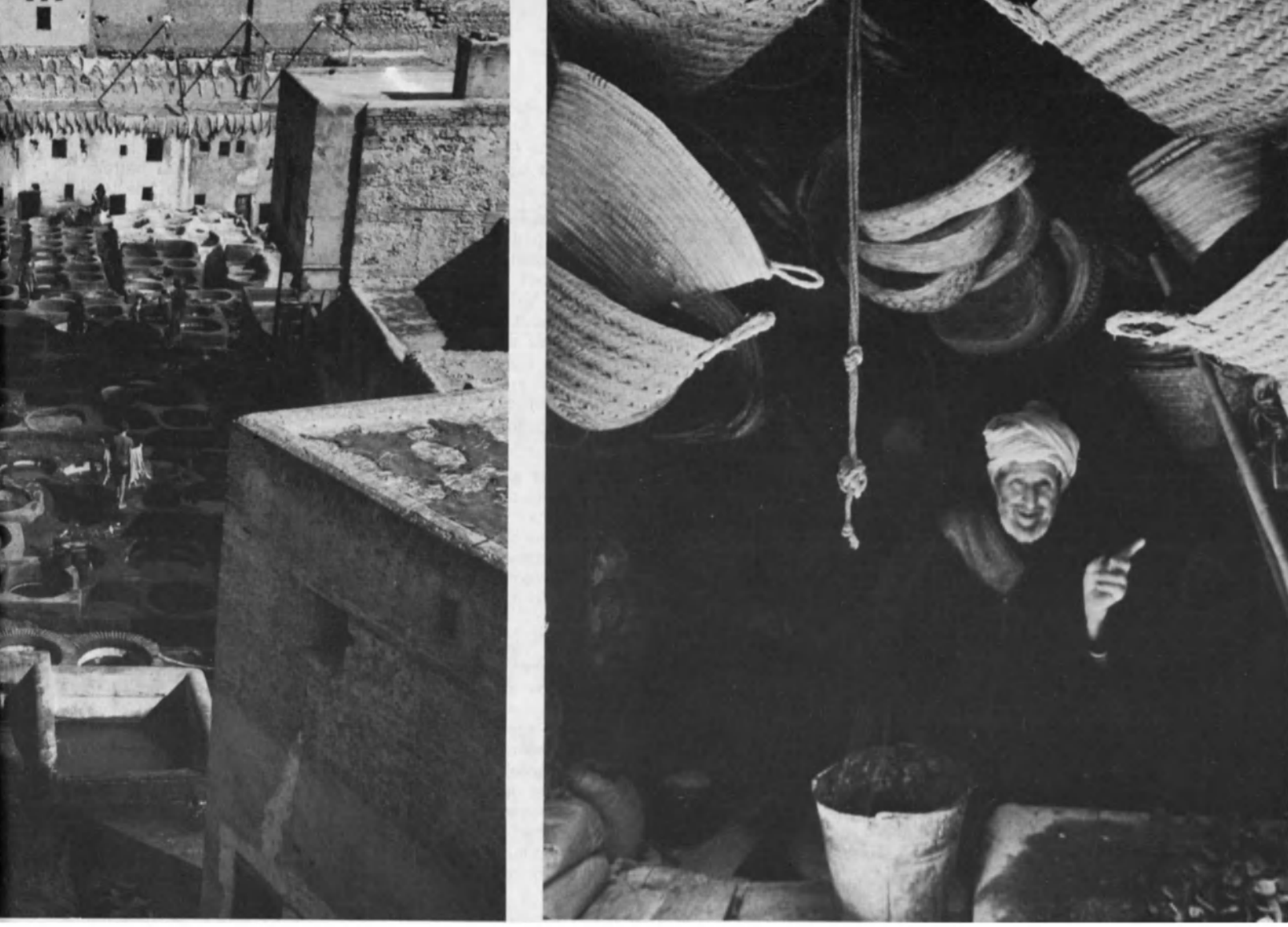


Photo J.-N. Reichel © Top-Réalités, Paris.

by Yusuf Ibish

IN Islamic cities, everyone engaged in economic production, distribution and services belonged to the guild system. With the exception of high government officials, army officers and theologians, the population was organized into guilds according to their crafts and trades.

Not only artisans and merchants belonged to guilds, but also people such as singers, brokers, auctioneers, musicians, story-tellers, donkey drivers and boatmen.

The guild system embraced owners of starch factories, tanneries, dye-works, sulphur workshops and similar activities which were located, not in the bazaars but on the edge of the city, "because of the bad smell".

There is ample evidence that other guilds existed for those who had no shops but worked outdoors or at home, such as painters, pipe-cleaners, water carriers, sherbet vendors, barbers, couriers, lamp-bearers and midwives, as well as such government employees as slaughterhouse workers, employees at the mint and tax collectors.

In fact, everyone belonged to the guild system, whatever his status : rich and poor, Christians, Muslims and Jews, native-born citizens and resident aliens.

The social and conceptual basis of the guild system was transmitted orally from generation to generation. The members of a guild in a traditional Islamic city considered themselves first and foremost as members of the community of believers (*Ummah*). The bond that held them together was neither nationality nor ties of race or blood but a belief in the Oneness of God and in the duty to bear witness to Him not only through lip-service but through all their daily endeavours.

Hence there was—and still is—no separation between religious and secular activities in Islam. Before God and under the revealed Law, a Muslim stands on an equal footing with other Muslims.

The guilds were integrated in a social and conceptual system closely connected with the mystic Sufi orders. By joining a Sufi Order, a Muslim attached himself to a master (*shaykh*) and, through him, to an unbroken chain of masters going back to the Prophet and through him to all the previous Prophets as far as Adam and his Divine Creator.

Usefulness to the community consisted of being truthful, helpful, generous and kind to other men, and also of achieving proficiency in a craft or trade and providing services needed by others.

Such proficiency could only be acquired through hard work under the skilful guidance of a master-craftsman and through being initiated in a guild. Like the religious orders, each guild had a chain leading from its master back to the patron saints. The concept of the guilds was thus perfectly harmonious : each guild was linked to the others by a common origin.

As far as the links governing relations between different guilds are concerned, we know that the masters of guilds attended the initiation ceremonies of guilds other than their own and gave proficiency certificates to craftsmen from other towns. They corresponded with and occasionally visited one another, to harmonize standards of production, beauty and prices in their respective cities.

The first connection between a young apprentice and his craft came when a master took him into his workshop. In the presence of members of the guild the *Fatihah* (the opening chapter of the Quran) was recited and the apprentice was said to have entered the guild's first "gate".

YUSUF IBISH *is professor of political sciences at the American University of Beirut (Lebanon) where he specializes in Islamic literature and thought. A fuller version of this article will appear in a forthcoming study on the Islamic city, to be published by Unesco.*

An apprentice received no wages for a number of years, his family comforting themselves with the thought that he was learning a craft from his master and was being integrated into the community through his guild. Until he was initiated, he was not allowed to open a shop of his own.

When an apprentice had mastered the craft which he had been learning since boyhood, the members of the guild began urging his master to initiate him. The master would often delay the ceremony, but without discouraging the apprentice. "This man is doing well," he would say, "but his time has not yet come." Or else: "That fellow has the makings of a good craftsman, but his syrup is still thin", meaning that he should remain eager and diligent in his work.

When the master felt that the time was ripe, he ordered the *shawish,* an official specially appointed to supervise the markets, to give the candidate a green twig of basil or some other fragrant plant. The apprentice took the twig with a great show of gratitude, kissed it and placed it on his head.

The master registered his name with those of other candidates, if there happened to be any, so that they might be initiated together, and the date of the ceremony was fixed. The *shawish* then went off to invite the elders of the guild, and anyone else he wished to have at the initiation ceremony.

Since guilds had no house of their own, the ceremony took place in one of the city gardens or in the house of a member of the guild. The ceremony began when the *shawish* led in the initiate, with his hands folded respectfully on his breast, to a green carpet in the middle of the assembly. Thereupon the deputy master of the guild ordered the *shawish* to recite the *Fatihah* in a loud voice, while all present prostrated themselves on their knees.

After everyone had recited the *Fatihah,* the deputy proceeded to "the girding of the belt" (either an ordinary sash or a shawl). He raised the candidate's hands from his breast to the top of his head, stretched out the belt, and wound it round the initiate from his waist to his ankles. Drawing the edges of the sash from the back to the front, he tied them in three knots, in honour of the master of the guild, the initiate's own master, and the *shawish.*

Only the head of the guild was allowed to untie the first of the three knots, so that the initiate knew beyond any doubt that it was to him that he owed obedience. The second was untied by the master-craftsman, so that the initiate should know that it was to him that he owed his skill. The *shawish* untied the third knot.

These knots also symbolized the pact that bound the initiate to the other members of the guild, who henceforth considered him as their brother. When the three knots were untied, the deputy then appointed one of the masters present to be the initiate's "trade father". More often than not, the initiate's own master became his trade father, but he was allowed to choose someone else if he wished. The trade father had to guarantee the initiate's conduct and be answerable for all his offences.

Next the master of the guild gave the initiate the following advice: "My son, all the guilds are trades which hold a position of trust as regards money, property and lives. Your trade is like your property; guard it with all your might. If you receive people's money, do not abuse their trust by squandering it. Beware of betraying the members of your guild, for the traitor shall surely be judged."

He then turned to those present, and asked: "What say you, brethren and artisans and masters; is this initiate worthy of becoming an artisan?" To which they replied: "Yes, he is worthy and deserving."

The trade father then approached the initiate to administer the solemn pledges. Facing one another, they both bent down with their right knee touching the floor, before approaching each other until their right thumbs and their left knees were touching.

Next, the trade father grasped the initiate's right hand in his own, and each held the thumb and forefinger of the other with his own thumb and forefinger.

Meanwhile, the *shawish* covered their hands with a handkerchief or towel, so that outsiders could not see the sign they were exchanging. The father then said to the postulant: "Swear to me by the oath of God and His Apostle that you will not betray the members of the guild or play false with the trade." To which the postulant agreed.

Then the *shawish* led the initiate, with the sash over his shoulder, round to the guild elders to receive their recognition and congratulations.

When the initiation was finished, everyone sat down to a simple meal called the *Tamlihah* (Salting). Salt had great symbolic value for the guilds, because it created a bond among men who shared it, and because artisans were known as "the

Photo © Dominique Darbois, Paris.

salt of the bazaars", meaning that they earned their living by sweat and patience.

An artisan could graduate to the rank of master by passing an examination of proficiency in his craft. If he qualified he was brought before an assembly of the guild which decided whether or not he was worthy of promotion.

In some cases, the artisan was required to produce a sample of his finest work before his promotion was considered. This "masterpiece" was put before the assembly, and if found to be defective, the man's promotion was postponed, for the guild was above all concerned to maintain its reputation and high standards.

Masters who had attained an influential position were called elders or notables. They assisted the master of the guild in his functions and helped the market inspector (the *muhtasib*) to keep law and order in the bazaars. They were known for their conscientiousness, high moral character and thorough knowledge of the affairs of the guild.

The appointment of a new master of a guild was not always easy and smooth, because it was usually decided by consensus, although in some guilds the office was handed down from father to son. This was not considered inconsistent with the principle of selection, for the office could only be inherited with the approval of the elders of the trade who took into consideration the candidate's past services and reputation.

The master held office all his life, that is, as long as he was physically and mentally able to discharge his duties in a just and upright manner.

It was also the duty of the master to ensure that the regulations of the trade were respected and to penalize those who infringed the privileges of the craft. For example, when a weaver produced a piece of cloth that fell short of the customary standards of length and breadth, the master of the guild would cut it into pieces and hang it up in the market as a warning to all.

Similarly, when a member of a guild was found guilty of sharp practice, the master sent the *shawish* to shut his shop, which could not be opened again without his approval and that of the elders. If a goldsmith was found guilty of adulterating his metal, the master of the goldsmiths overturned his anvil so that he was unable to work until the master gave his permission. Traitors and thieves were usually expelled and "a war without quarter was waged against them."

The master of a guild was also called upon to find work for labourers, whom he recommended to master-craftsmen. He alone had the right to initiate skilled apprentices and to promote artisans to the rank of master-craftsman.

It was also his privilege to grant permission to a master to open a new shop in the guild's bazaar or its section of the bazaar. He negotiated with the government on matters concerning his guild, especially those relating to taxation.

He settled disputes among the guild members, mobilized them in emergencies and led them in public ceremonies and processions.

In short, the master of a guild was not only its head but the symbol of its very existence. Furthermore, his powers transcended the bazaar, for he was an important figure in the residential areas where the guild members lived.

The grand master of the guilds enjoyed great authority in the Islamic city, for he was the head not of only all the guilds but also the Sufi orders. In some cases he was also the doyen of the *Ashraf*, the descendants of the Prophet. In this triple capacity he ruled over the guilds and through them the bazaars, which meant that everything that was produced and distributed in the city as well as all its services were under his control.

As grand master of the Sufi orders, he co-ordinated the affairs of the "Lodges" and supervised their trust funds. High-ranking civil servants and army officers who were not organized in guilds generally belonged to a Sufi order and so they too fell under the authority of the grand master.

His authority in the city was such that he only nominally acknowledged the suzerainty of the political rulers. In various ways his spiritual authority counterbalanced the temporal power of kings and sultans. It should not be forgotten that many rulers in Islamic history were also members of the Sufi orders and submitted to their inner hierarchy even if they were political rulers. This of course does not mean that the grand master was a "political" figure in the modern, Western sense of the term; it simply means that he was, in the absence of a caliph, the symbol of stability in Islamic society.

Under the influence of Sufism, Islamic guilds emphasized the moral and spiritual basis of manual skills. Craftsmanship had to reflect the artisan's "inner state", regardless of economic incentives or other rewards. When an artisan seeking promotion presented a sample of his work to his

Photo Stephanie Dinkins © Parimage, Paris.

Dazzling patterns

The carpet weavers' corporation (far left a Berber woman at her loom) was always one of the major guilds in Arab-Islamic cities. Not only did Muslims need prayer mats but also, reminiscent of their nomadic origins, brightly coloured ornamental rugs to decorate their walls. At left, cloth-sellers in the sun-stippled bazaar of Marrakesh, in Morocco.

guild his own spiritual evolution was evaluated, as well as his handiwork.

Perfection of human nature and striving in the path of God were seen as twin ideals for every artisan, no matter how humble his craft.

The 19th century saw the decline and gradual disappearance of various guilds in the Muslim world.

The influx of competitively priced European manufactured goods in the wake of colonial rule or under colonial pressures put local artisans out of work. In many instances, the colonialists were looking for raw materials and markets and hence their first victims were the local manufacturers.

The reorganization of government under colonial rule and the introduction of new systems of taxation weakened the powers of the traditional authorities and hit the crafts severely. For example, the authority of the guild masters was undermined when they lost their power to decide who could open a shop in the bazaars. New, oppressive taxes and duties caused many trades to be taken over by Europeans because they were exempted from taxes.

Modern transportation systems changed not only methods of carrying goods back and forth, but also the traditional trade routes. From 1880 onwards, the *hajj* (pilgrimage) from North Africa no longer passed through Cairo, a change which had a devastating influence on local trade. The building of the Hijaz railway linking Damascus and Medina had similar consequences.

The population explosion in the 19th and 20th centuries accelerated the pace of sedentarization and urbanization in the Muslim world, and many cities became overcrowded. This process was accompanied by the erosion of traditional social and economic ties.

It is not surprising, therefore, that the guild system in the Islamic city is gradually coming to an end, and with its disappearance more than an outward expression of social and economic solidarity is being lost. It is a direct spiritual threat. The Swiss Orientalist Titus Burckhardt has summed up the situation in a masterly way (1):

"I knew a comb-maker who worked in the street of his guild. He was called Abd al-Aziz (the salve of the Almighty) and always wore a black *jellaba*—the loose, hooded garment with sleeves—and a white turban with a *litham,* the face veil, which surrounded his somewhat severe features.

"He obtained the horn for his combs from ox skulls, which he bought from butchers. He dried the horned skulls at a rented place, removed the horns, opened them lengthwise, and straightened them over a fire, a procedure that had to be done with the greatest care, lest they should break.

"From this raw material he cut combs and turned boxes for antimony (used as an eye decoration) on a simple lathe; this he did by manipulating, with his left hand, a bow which, wrapped round a spindle, caused the apparatus to rotate. In his right hand he held the knife, and with his foot he pushed against the counterweight. As he worked he would sing chapters of the Quran in a humming tone.

"I learned that, as a result of an eye disease which is common in Africa, he was already half blind and that, in view of long practice, he was able to 'feel' his work, rather than see it.

"One day he complained to me that the importation of plastic combs was diminishing his business: 'It is not only a pity that today, solely on account of price, poor-quality combs from a factory are being preferred to much more durable horn combs,' he said. 'It is also senseless that people should stand by a machine and mindlessly repeat the same movement, while a craft like mine falls into oblivion.

" 'My work may seem crude to you, but it harbours a subtle meaning which cannot be explained in words. I myself acquired it only after many long years, and even if I wanted to, I could not automatically pass it on to my son, if he himself did not wish to acquire it—and I think he would rather take up another occupation.

" 'This craft can be traced back from apprentice to master until one reaches our Lord Seth, the son of Adam. It was he who first taught it to men, and what a Prophet brings—for Seth was a Prophet—must clearly have a special purpose, both outwardly and inwardly.

" 'I gradually came to understand that there is nothing fortuitous about this craft, that each movement and each procedure is the bearer of an element of wisdom. Not everyone can understand this. But even if one does not know this, it is still stupid and reprehensible to rob men of the inheritance of Prophets, and to put them in front of a machine where, day in and day out, they must perform a meaningless task.' "

■ **Yusuf Ibish**

Photo Georges Viollon © Rapho, Paris.

(1) *Fès, Stadt des Islam* (Fez, City of Islam), Fribourg, Switzerland, 1960.

A thousand-and-one trades and crafts

Everyone, from sherbet vendors and midwives to donkey drivers, belonged to a trade corporation in the old Arab cities. At left, the bustling market at Gardaia, Algeria.

Photo © Almasy, Paris.

God's gift of writing

Scribes enjoyed great prestige, as writing was considered one of the major skills God gave to man. A numerous and powerful group in Islamic society, they were employed in the civil administration of the caliphs and were often very highly paid. Much of classical Arab literature is a product of the scribal profession.

Medieval department stores

Retail selling in the Muslim world has changed little since medieval times. The *suq*, a large covered market with shops grouped according to the goods sold, is still, after a thousand years, one of the most characteristic features of Islamic towns. Below, a view of the vaulted *suq* at Aleppo (Syria).

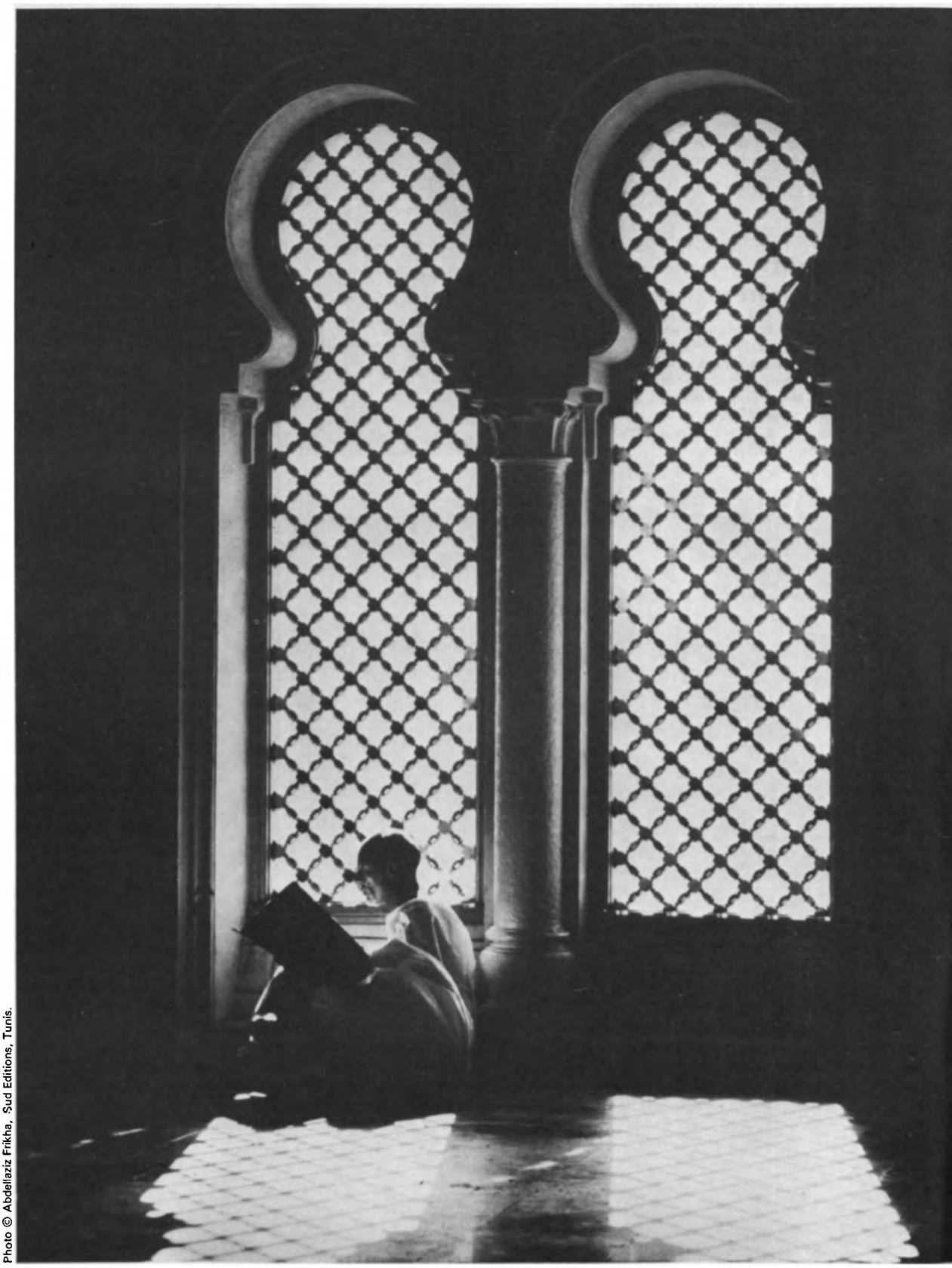
Photo © Werner Forman Archive, London.

Photo Unesco.

Lessons for a lifetime

Apprenticeship to a master craftsman was the only way to learn a trade and, as such, was an integral part of the guild system. Above, boys learn how to emboss copper plates at a school of Islamic arts and crafts in Tripoli (Libya).

Scholars whose learning



In the silence of a mosque at Mecca, a pilgrim studies a sacred text. The mosque has always been a centre of learning as well as a place of worship.

knew no bounds

by Mohammed Arkoun

HISTORY offers no example of a dynamic, innovative system of thought that has emerged and flourished in the absence of a number of favourable conditions.

Territorial expansion is one such condition. The possession of mineral, agricultural and industrial resources is another. Other important factors include financial power, the mastery of technical and trading skills, a high quality of urban life and the development of favourable relations between cities and their surrounding countryside.

Most of these conditions were met, to varying degrees, in the Muslim empire which extended from Iran to Spain between the 7th and 12th centuries A.D. Discussing the position of "Islam confronted with barbarian Europe" in this classical period of Arab-Islamic civilization, the French historian Maurice Lombard lays particular emphasis on the extraordinary nature of developments and accomplishments in the years 800-1000.

"As the result of the territorial expansion which followed the wave of conquests, the Muslim world encompassed... those countries whose soil was most fertile: Mesopotamia, which owed its wealth to its remarkable system of irrigation; Egypt, the granary of the ancient world; and the vast plains of North Africa and Andalusia, which provided abundant supplies of wheat and oil for the Roman world."

The Muslim empire also included the "major mining areas in the Caucasus, North Africa and Spain. More specifically, it took in all of the world's known gold mines—those of East Africa, the Urals, the Siberian Altai, India and, above all, those of the Sudan, whose outflow supplied the Mediterranean world until the era of the great discoveries".

Within its confines fell "the main centres of industrial production such as the cities of Mesopotamia, of Syria and of Egypt, as well as the world's great ports, with their vessels, shipyards and mariners: the ports of the Red Sea and the Gulf, the Syrian halts, Alexandria, and the cities of the Straits of Messina and Gibraltar."

As Lombard points out, the Muslim world held "the monopoly of the rich transit routes of the Far East, of Central Asia, of the Indian Ocean and those running from the African hinterland to the Mediterranean... In fact, it commanded access to the entire network of international trade routes, whether continental, spanning Asia, maritime (the Persian Gulf and the Red Sea), the caravan routes through the Sahara to the Sudan, or the Russian rivers flowing into the Baltic from the Caspian Sea.

"Finally, and perhaps most important of all, within the frontiers of the Muslim empire lived the world's most seasoned traders, with their age-old techniques and ancient commercial traditions." (1)

An awareness of the material conditions in which a system of thought can develop and flourish does not necessarily imply a belief that intellectual life is subordinate to and dependent on those conditions. The extent to which cultural activity influences and transforms the material aspects of civilization, and vice versa, must be re-examined in each social and cultural context and in each historical setting.

Hence it is imperative to seek new perspectives and to reinterpret classical Arabic thought in the light of modern knowledge.

The appearance of the Quran was an historic event of supreme importance because it signalled the advent of a religion of universal dimensions. Taking this as a starting point, it is possible to trace several major periods in the development of Arabic thought.

The classical period, which lasted from the early 10th century to around 1300, may be seen as a kind of summit, and its formative period, stretching from 632 to 900-950, as the road leading up to it. Then came a period of relative decline (from 1300 to 1800): an era of innovation in some parts of the Muslim world, but in others an age of conservatism. This phase was in turn followed by what has been called the "Arab Renaissance", which roughly covers the period from 1800 to the present day.

Classical Arabic thought explored a multitude of subjects. With varying degrees of emphasis, it examined matters of strictly religious concern, ethics, jurisprudence, politics, social and economic questions, theology and philosophy. Linguistics, aesthetics (literature, music, painting and architecture), science and technology, as well as history, geography and cosmogony were other fields of inquiry.

This multiplicity of interests points to an extraordinary degree of intellectual curiosity. Specialization, however, never overrode the desire to relate the various disciplines to each other and to weld the different branches of knowledge into a coherent whole.

Motivated by a strong desire to resemble God, Who "embraces all things in His wisdom," as the Quran expresses it, the intellectual of the classical period was a humanist open to knowledge in all its forms. The excessively rigid, modern lines of demarcation between law, ethics, aesthetics, history and the natural sciences were virtually non-existent at this time.

The word *adab,* which today signifies "literature", in the classical age referred to a general intellectual attitude towards the world-at-large, knowledge, private and public behaviour, a literate humanism, and the special form of civilization which developed in Islamic cities between the 7th and 13th centuries A.D.

The various branches of knowledge explored during this period at first overlapped and interreacted. Little by little, however, they were to become distinct entities, as social and cultural conflicts developed.

All types of knowledge and all disciplines recognized by classical Arabic thought were encompassed in the religious perspective opened up by the Quran. For the Quran did more than talk about a unitary God, Judge and Creator, as revealed to Muhammad. Not only did it establish a religious relationship between the believer and his Creator-Benefactor, it provoked

MOHAMMED ARKOUN, *of Algerian origin, is Director of the Institute of Islamic Studies at the University of Paris. A noted authority on Arab intellectual history, he has lectured widely in American and European universities. He is the author of many studies on Arab civilization and thought, including* La Pensée Arabe *("The Arab Mind") published by Presses Universitaires de France, Paris 1975.*

(1) Espace et Réseaux du Haut Moyen Age, *Mouton Publishers, Paris-The Hague, 1972.*

Unesco translations of Arabic literature

To make the great wealth of Arabic literature more widely known, Unesco has for many years promoted the translation and publication of major works in Arabic. Notable titles that have appeared in English are:

IBN RUSHD (AVERROES). **On the Harmony of Religion and Philcsophy (Kitab fas Al-Maqal).** Translated by George F. Hourani. Luzac and Co., London, 1961. 126 pp.; **The Incoherence of the Incoherence (Tahafut at-Tahafut).** Translated with an introduction and notes by Simon van den Bergh. Luzac and Co., London, 1954. 2 vols. Vol. 1,373 pp.; vol 2, 219 pp. (Philosophy).

AL-GHAZALI. **O Disciple! (Ayyuha'l Walad).** (Bilingual edition) Translated by Georges H. Scherer. Catholic Press, Beirut, 1951. 28 pp.; 30 pp.

AWWAD, Tawfiq Yusuf. **Death in Beirut.** Translated by Leslie McLoughlin. Heinemann, London, 1976. 190 pp. (A novel).

HILAL, Al-Sabi'. **Rusum Dar Al-Khilafah (The Rules and Regulations of the Abbasid Court).** Translated with an introduction and notes by Elie A. Salem. Lebanese Commission for the Translation of Major Works, Beirut, 1977. 134 pp.

FORTHCOMING

IDRIS, Yussef. **Arkhas Layali** (The Cheapest Nights). Translated by Wadida Wassef. Peter Owen, London, 1978.

Major works that have been published in French include:

AVICENNA. (Ibn Sina). **Livre des Directives et Remarques (Kitab Al-Isarat wa l'tanbihat).** Translated with an introduction and notes by A.-M. Goichon. Commission for the Translation of Major Works, Beirut. Vrin, Paris, 1951. 553 pp. (Philosophical treatise).

IBN KHALDUN. **Discours sur l'Histoire Universelle** (Al-Muqaddima). Translated with an introduction and notes by Vincent Monteil. Commission for the Translation of Major Works, Beirut, 1967-68. 3 vols.

Please do not send orders to Unesco. Order through your usual bookseller.

an unquenchable intellectual curiosity which extended to all areas of knowledge.

Insofar as ethics and law were concerned, the development of a code of religious law had to take account of social relations, trade and production, property, and personal status in public and private life. However, the norms of religious law had to be based on the precepts of God as recorded in the Quran or on those of the Prophet expressed in the *hadith,* and not on the arbitrary judgement of the human lawmaker.

Since men could not interpret these divine precepts properly without reference to the testimony of successive generations of Muslims following the initial Revelation, history, theology and the study of languages came into the picture. Philosophy too had a place in this scheme of things to the extent that it provided methodological and conceptual tools.

A striking illustration of the correlation of all these intellectual disciplines was the great Quranic commentary of Fakhr al-Din al-Razi (d. 1209), in which the full range of human knowledge was brought to bear on the exegesis of the sacred text.

The same interdependence of intellectual disciplines was found in philosophy, which was clearly distinct from the strictly religious facet of classical Islam, even to the point of apparent contradiction. This is amply demonstrated in the running controversies over the respective roles of reason and faith, the dichotomy between rational and religious knowledge, between rational judgements and those of religious law.

But the fact remains that philosophy and theology overlapped whenever ethics, politics and metaphysics came into play, just as religious law made use of logic, mathematics, rhetoric and the natural sciences—branches of knowledge studied by the philosophers.

The interpenetration of philosophy and theology can be seen in the work of the Mu'tazilites, advocates of rationalism applied to all fields, not least to religion, and in that of humanists such as Jahiz. The tendency to synthesize became even more marked in the 10th century, with the grammarians, the juridical theologians, men of letters, medical doctors, and the encyclopaedists, such as the Brothers of Purity. To put the matter in a nutshell, at this stage, the intellectual climate was exceedingly dynamic and open-minded.

History and geography, as they were understood at the time, provide further evidence of the tendency towards universalism and the empirical verification of data. A spate of universal histories appeared in which the chronological recording of events (especially after the coming of Islam) superseded mythical references to prophets, ancient Persian kings, and the sages of Antiquity. Travellers, missionaries and merchants, wandering the length and breadth of the Islamic empire, added their own observations to a geographical corpus already rich in information and descriptions of prevailing conditions.

The tale of *Ajib and Gharib* in the *Thousand and One Nights* (2) provides a significant example of the intermingling of history, geography and literature. In it, specific historical events became the plot of a splendid tale in which the collective mind projected and rediscovered its desires, beliefs and symbols.

This link between the humanities and literature can be found in the work of several writers, notably that of the great scholar Al-Biruni (d. 1048), whose thinking was in many respects astonishingly "modern". (See *Unesco. Courier,* June 1974).

(2) Un conte des Mille et Une Nuits, Ajib et Gharib, *translated into French with a commentary by André Miquel, Editions Flammarion, Paris, 1977.*

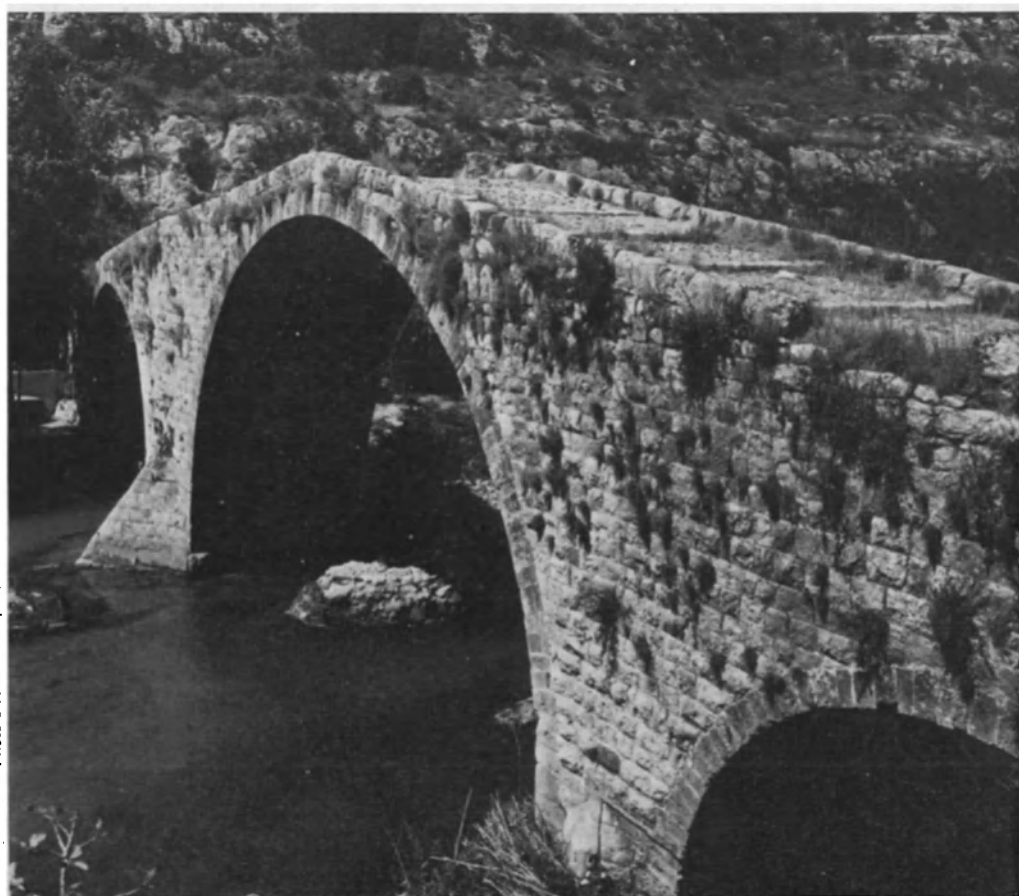


Photo Ciccione © Rapho, Paris.

In Seville, the Giralda (or "weathervane") was built in 1171. Within, ramps allowed two horsemen abreast to reach the top without dismounting.

Photo G. Martin © Rapho, Paris.

SEVILLE

Trio of towers

Along a virtually straight line, three holy places of Islam were built in the 12th century by the Almoravid dynasty, the rulers of Morocco and Muslim Spain. Their minarets were all fashioned along the same lines.

RABAT

The Hassan Tower in Rabat, begun in 1196, was never completed. Surrounding it are hundreds of truncated columns, which once supported the roof of the mosque.

Photo © Jean Mazenod, Paris.

MARRAKESH

The minaret of the Kutubiyya in Marrakesh. The original building, begun in 1140, faced in the wrong direction and was replaced in 1195.

Photo © Almasy, Paris.

The intercontinental trade routes traced by the Arabs were also the arteries along which their culture spread through the medieval world. Left, a bridge built by Arab engineers across the Nahr al-Kalb or "River of the Dog" in Syria.

Broadly speaking, the period was characterized by a running confrontation between two basic approaches, the one rationalist, following lines traced by the Greeks, the other traditionalist, concerned with the direct meaning and implications of the sacred texts (the Quran and the *hadith*).

Nonetheless, many thinkers chose to ignore this distinction. They were often men of great stature, such as Ibn Sina (Avicenna, d. 1037), Ibn Rushd (Averroes, d. 1198), and Ibn Khaldun (d. 1406).

Although there existed an intellectual meeting ground for the various social groups within the Islamic empire which were gradually exposed to the life and culture of the cities, rivalries arose between different schools and "sects", sometimes even leading to street brawls.

Dissident groups and movements arose in reaction to forms of orthodoxy supposedly accessible to everyone, but in fact reserved to "official" Islam, whether Sunnite, Shiite or Kharijite, depending on time and place.

The tendency to see these scissions as purely religious still prevails in the Muslim world. But in the light of modern historical sociology, it becomes clear that they were closely linked to the social and cultural conflicts of the period. The demands of newly-Arabicized converts for equality and access to positions of responsibility may be taken as a case in point. In the political context of the Abbasid Caliphate, for example, these demands could only be formulated in religious terms.

The Kharijite movement is another example: strictly religious by definition, it arose out of the nomads' opposition to an authoritarian, centralized state.

In yet another setting, Shiite Islam's following expanded significantly with the

Photo © Suleymaniye Library, Istanbul.

The scholars of the order known as the Brothers of Purity (Ikhwan as-Safa) held a distinguished place in 10th-century Arab cultural life because of their vast scientific, philosophical and religious knowledge. Above, an illustration from their encyclopaedic work "The Epistles of the Brothers of Purity." Two of the authors are shown with a scribe and servants.

conversion of non-Arabs (*mawali*), who were for the most part former client-peoples—craftsmen and merchants in the new urban centres which were created or revitalized by the Arab conquest (Basra and Kufa in particular, as well as Baghdad and the Iranian cities).

By the same token, social and economic changes in the 8th and 9th centuries gave rise to new groups of dissidents: the urban poor, the dispossessed Arab tribes, and the peasants, among others. Their discontent found expression in the various Shiite factions opposed to the existing power structure.

It becomes clear, then, that these social and economic conflicts were at the root of the controversies among the various schools of theorists, theologians, mystics and jurists who were responsible for the maintenance of doctrinal orthodoxy and official Islam.

Islam is characterized by a long-standing conflict between personal questioning, on the one hand, and obedience to tradition, on the other. This conflict evolved out of the social divisions and tensions generated by rival groups in the cities. It should be noted that the return to tradition became more pronounced as the rivalry between Sunnites and Shiites abated, or as one or the other acquired the status of official religion.

It was in the 11th century that the educational system and institutions which would ensure continuity in religious life and its expressions came into being.

Till then, *adab*—culture understood in the broadest sense—developed and was passed on in "scientific circles", which attracted large numbers of disciples, and were maintained by the viziers, princes, rich merchants and humbler men devoted to the pursuit of knowledge. Then too, there were the bookshops, where men of every rank and station met to exchange ideas, a tradition which still lives on in the Arab world today.

Theology was taught in the mosques, which were the centres of intense social and cultural activity, as well as being houses of prayer.

In the 11th century, a succession of events began to shake the power of the Muslim world and to threaten its prosperity. Surging out of Central Asia, the Seljuq Turks settled in Mesopotamia and took power in Baghdad, encouraging the restoration of Sunnite Islam and ending the Shiite domination of the preceding century. Even as Muslim Spain was in the throes of political fragmentation, waves of Egyptian nomads swept across North Africa and destroyed the existing power structures.

Arab Islam stood at the threshold of a period fraught with danger, under the double threat of internal disintegration and destruction by external forces—the Crusades of the 12th and 13th centuries, the Mongol invasion of the 1200s, and the Spanish Reconquest, which was to last until the 16th century.

Arab Islam withstood all these dangers, developing a cultural heritage transmitted through the madrasahs (see article page 35), and through educational institutions for mystics and (from the 13th century onwards) for members of the religious brotherhoods. Philosophy, inseparable from medical science and practice, was "dispensed" in the hospitals.

But the most salient factor was the evolution of the madrasah, from the 11th century on. Originally an intellectual training ground where ideas were freely discussed and exchanged, it gradually became a centre of scholasticism. Once it acquired official status, the madrasah was transformed into an institution for teaching the precepts of a given school or brotherhood to the exclusion of all others. Divergent views were presented, explicitly or implicitly, as deviationist, if not plainly heretical.

The madrasah was an institution of learning with a single chair occupied by a master recognized by a given school of religious law. Sunnite Islam alone had four such schools (Malikite, Hanbalite, Shafii and Hanafite), each with its own madrasahs.

Specialized institutions modelled on the madrasahs, known as Houses of the Quran or the *hadith* also proliferated. Their masters awarded diplomas only when the student correctly repeated a number of formulae, logical exercises, and solutions which corresponded to the traditions of his school.

Learning was transmitted by recitation before the master and by the diligent study of manuals, bibliographies and anthologies.

The weight of this medieval scholasticism increased as Western Europe tightened its economic grip on Mediterranean Islam.

In this way an idealized and constricted vision of an "orthodox" Islam gradually emerged. This image, forged under the defensive imperatives of a community threatened from within and without, is still very much alive today.

Thus, contemporary struggles for national liberation and the Palestinian tragedy, for example, have only served to consolidate the ideological role of Islam and of the Golden Age of Arabic thought.

The redefinition of philosophical and historical perspectives is today a matter of the utmost importance. It is common knowledge that Arab intellectuals are engaged in the urgent tasks of economic and social development. Consequently, such urgent and relatively simple tasks as the preparation of new, critical versions of the great classical texts are either postponed or carried out imperfectly.

There is much talk about economic development, much less about cultural underdevelopment. One consequence of this is the existence of vast gaps in our knowledge of societies with particularly impressive pasts. This is true of the entire field of Arabic studies.

To my mind, we should be thinking in terms of a new world cultural order closely related to the new world economic order towards which we are working for the first time in history.

■ **Mohammed Arkoun**

The delights of music ranked even higher than the pleasures of the chase. Below, musicians and hunting scenes on an 11th-century ivory plaque, produced under the Fatimid dynasty which rose to power in northwest Africa in the 10th century.

Photo © Staatliche Museen, West Berlin (German Fed. Rep.), from "Les Ivoires" by M. Longellé-Tardy, Paris 1977

CLASSICAL ARAB MUSIC

The making of a mode

by Bernard Moussali

THE study of music was an indispensable part of every cultured man's education in the Arab world between the 9th and the 13th centuries. No fully educated man could afford to be without at least a working knowledge of the subject nor without some degree of mastery of its skills.

An epicurean love of life, eroticism and praise of the Muslim city were among the favourite themes of musicians of this period, who drew their inspiration from pre-Islamic and classical Arab poetry, especially from the *qasida* or ode. A collection of their works, the famous "Book of Songs" transcribed in the 10th century by Abu-l Faraj al-Isfahani, reveals a society that was at once complex, highly cultivated and open to all kinds of intellectual speculation.

In the 9th century, the practice of classical music reached a peak of accomplishment at the court of the Abbasid caliphs of Baghdad. This led, from the 9th century on, to far-reaching advances in musical theory and the creation of a musical terminology which formed the basis for the subsequent development of Arab, Persian and Ottoman music from the 14th to the 19th centuries.

At the beginning of the 9th century, classical Arab music was already a century and a half old. It had evolved from its pre-Islamic origins and had undergone Persian and Syrian influences, to form a tradition that was essentially vocal. It could be rhythmic or non-rhythmic, and was probably based on a number of series, or "scales", comprising five or—in a more refined form—seven "sounds" of varying importance.

BERNARD MOUSSALI, *Lebanese musicologist, is currently engaged in research on the development of Arab music in Egypt, Syria and Iraq during the 19th and early 20th centuries.*

It was thus a modal system, involving notes of indeterminate pitch, specific scales and melodic improvisations.

This music was defined in terms of *naghma,* or melody, which concerned its vocal components, and *isba'* (literally "finger"), which—as the name suggests—concerned the position of the fingers on the accompanying stringed instrument.

The performers of a given melody all obeyed the same rhythm, singing in unison or at intervals of an octave. Polyphony—the combination of two or more melodic lines—was only an accidental or secondary feature used for purposes of momentary embellishment.

The instrumental accompaniment, which was closely related to the text, was provided by percussion or plucked string instruments. The former consisted for the most part of small drums of the tambourine family, such as the *duff,* which was sometimes fitted with small copper cymbals. The latter comprised instruments of the lute family, including the two-stringed *tunburs* of Baghdad and Khorasan (probably of Arab and Persian origin respectively) which were similar in their narrow-bodied, long-necked form but different in their tuning. Also used were the "*'ud*" lutes, four-stringed instruments with wide bodies and short necks which were invented by Mansur Zalzal at the end of the 8th century in an attempt to combine in one instrument the sounds produced by earlier models.

This chamber music, although governed by strict rules, left performers a large measure of freedom to display their imagination through improvisation. Pride of place went to soloists, whose aim, whether as singers or instrumentalists, was to provoke in the listener an emotional response known as *tarab,* which was specific to music.

Arab music was created by three categories of performers. First came the singers, some of whom, like Ibrahim al-Mawsili (c. 743-806), attained great celebrity. Next came their accompanists, who were either native-born Arabs or Arab by adoption and protégés of the Abbasid caliphs. Finally there were the famous female musicians and dancers who were brought as slaves from many countries and were generally trained in their art by the singers.

Each composition, jealously protected by its creator against plagiarism, was transmitted by ear, sometimes with the help of private systems of notation, secret codes and other aids to memory. Transmission took place either from father to son or from master to pupil on a fee-paying basis, with the master repeating the song until the pupil had learned it by heart. In the case of pupils who were slaves, apprenticeship was paid for by their owners.

Unlike the merchants and shopkeepers (see article page 12), musicians were highly competitive and not interested in forming lasting associations or guilds. Solidarity was conspicuous for its absence. Ziriyab, who was expelled from the court of the Abbasids as the result of the schemes and threats of the illustrious Ishaq al-Mawsili, was only one musician to undergo the bitter experience of being ousted by a rival.

Instrument-making was an equally individualistic process, each musician manufacturing his own from models handed down by his teacher.

The Caliph al-Ma'mun (786-833) created at Baghdad a "House of Wisdom" where Greek, Syrian and other manuscripts were translated into Arabic. One result of this work was to make known the musical theories of Aristotle, Aristoxenes, Nicomachus and Ptolemy. Ishaq al-Mawsili was among the first to adopt the Greek notion of music as "the science of making melodies" and as the study, on the basis of ancient principles, of vocal and instrumental sounds alike.

In the late 9th century, musicians, writers and philosophers began to speculate on the nature of their music, initiating a movement which lasted until the 13th century. In Iraq and Iran, the outstanding representatives of this wave of speculation were the mathematician al-Kindi (d. 874), one of the earliest musicologists; a circle of anonymous Shiite philosophers known as the "Brothers of Purity" (late 10th century); and the physician and philosopher Ibn Sina, also known as Avicenna (980-1037).

Another great theorist was Al-Farabi (d. 950), a Syrian philosopher who wrote a famous "Treatise on Music". (See "Unesco Courier", June 1973). In Egypt, Ibn al-Haytham (c. 965-1039) was a versatile writer who produced numerous commentaries on the work of his predecessors. Finally, the new musical theories reached the Maghrib, through the work of the Andalusian philosopher Ibn Baja (d. 1138).

The volume of these studies and exchanges points to a musical life of great intensity. All the authors and theorists considered music to be a "scientific art" comparable to arithmetic, geometry and astronomy, and devoted their attention to acoustics, composition and rhythm as well as the study of musical instruments. Big gaps still remained in the study of the transmission of sounds and the relationship between acoustics and physiology, but instrument-making took a step forward with the development of the *qanun,* a form of cithar whose strings are plucked.

None of the scholars working between the 10th and 13th centuries found a satisfactory solution to the problem of recording Arab music through a system of notation. Although some attempts were made to introduce a form of alphabetical notation, it was not widely adopted because musicians were afraid of plagiarism.

Music also gave rise to a branch of the occult sciences. This was the science of "correspondences", which was practised in such esoteric circles as the Brothers of Purity and involved investigation of the relationships between music and the elements, the animal, vegetable and mineral worlds, and colours.

The practical outcome of all this research was the extension of the Abbasid mode throughout the Arab-Islam world.

In the Maghrib ancient musical traditions were renewed and the notion of related compositions, or "suites", was developed. In Andalusia, the late 9th century saw the creation of the *muwashshahah* songs, poems set to music and freed from the constraints of classical Arabic metre. Under the influence of Ziriyab and his followers, this new wave of exploration in the field of rhythm sent out ripples to all the corners of the Arab-Islam world.

Another major source of musical development was created by the "whirling dervishes" (*Mawlawiyya*), a brotherhood founded by Jalal al-din al-Rumi in the 13th century. The dervishes devoted themselves to musical studies which may have been based on Pythagorean theories and systematized the processes of initiation to music and sacred dance.

In the late 13th century, Safi al-Din al-Urmawi established a musical terminology and solved the problem of scales in Arab music in his "Epistle to Sharaf al-Din" and above all in his seminal "Book of Musical Modes". Even more important was his methodical use of the term *maqam* (position), a mode in classical Arab and Turkish music which heralded their modern forms.

The homogeneity of Arab music has thus persisted until the present day. Notwithstanding differences of mode, rhythm and composition, it remains firmly rooted in the "classical" artistic and cultural heritage of the Arab world.

■ **Bernard Moussali**

Colour pages

Page 25
An illustration from a 13th-century illuminated manuscript of the *Maqamat* (see captions pages 6 and 48): a scholar gives a lecture in front of a well-filled bookcase.

Page 26
Ducks and a tortoise, a lion and jackals are depicted in two scenes from *Kalila and Dimna,* a celebrated book of moralistic beast fables translated into Arabic by Ibn al Muqaffa (8th century) from a Persian version of the Indian *Fables of Bidpai.*

Page 27
Another scene from *Kalila and Dimna* illustrating a dispute between crows and owls.

Page 28
A sea-going boat from the *Maqamat.* Arab navigators established new sea routes linking Asia, Africa and Europe, as well as devising a new technique for navigating by the stars.

Page 29
In this miniature from Pseudo-Galen's *Book of Antidotes* (see caption page 51), a pharmacist supervises work in the fields.

Page 30
Two more scenes from *Kalila and Dimna:* the tortoise and the monkey and the cormorant and the crayfish.

Page 31
Mosque scene from the *Maqamat:* the imam, or prayer leader, addresses the faithful from the *minbar,* or pulpit.

Photos © Bibliothèque Nationale, Paris.

فقال ايم الله للحق احق ان يتبع وللصدق حقيق بان يستمع انه يا قوم لنجيكم منذ اليوم قال فكان الجماعة

ارتابت بعزوته وابت تصديق دعوته فتوجس ما هجس في افكارهم وفطن لما بطن من استنكارهم وحاذر ان

[illegible] ثم قال يا رواة القريض واساة القول المريض ان خلاصة الجوهر

[illegible] الشك وقد قيل فيما غبر من الزمان عند الامتحان يكرم الرجل او يهان


برطلة
تحلفا
برطلة
متوجعة


وأبيه حتى صار صاحب أمره

ملك الغربان قال لذلك الغراب بعد ايام كيف استطعت
قامه مع البوم فانه يقال لدع النار شيء ايسر من صحبه الاشرار
س والكسونه معهم فقال الغراب ان ذلك لعلى ما وصفت ولكن
ذو اللبيب اذا كان بين اظهر عدوه وهو يريد من الامر ما يرجوا به


القرآن ثم قرأ بعد أساطير ملأها ورخارف جلاها وقال اركبوا فيها بسم الله مجراها
ومرساها ثم نفس تنفس المغرمين أو عباد الله المكرمين وقال اما انا


غلجوم
نرطان

الزمان فقال إنا لله وأفوض أمري إلى الله ولا حول ولا قوة إلا بالله

لم يبق صاف ولا مصاف ولا معين ولا معان

وفي المساوي بدا التساوي فلا أمين ولا ثمين

ثم قال لهامتي النفيس وعديها واجمعي الرقاع وعديها فقالت لقد عددتها لما

استعدتها فوجدت يد الضياع قد غالت إحدى الرقاع فقال تعساً لك يا لكاع أنجرم

ظبطات كما يقال ما به قلبة والجعاظ الأحمق وقيل المنشحط عند الطعام ٥

والشناطير والتعاطل والعلظم والبظر بعد والإبعاظ

الشناطير جمع شنطير وهو الشيء الخلق والعناطل تلازم الجراد والكلاب عند

السفاد والعلظم الخطمي ٥

هي هذي سوى النوادر فاحفظها لتفقوا آثار الحفاظ

The madrasah (literally "the place for lessons") was the university of the medieval Arab world. The curriculum was centred on the Quran, Islamic theology and law, but a variety of other subjects such as grammar, literature and mathematics were also taught in some madrasahs and are still taught today. Students were well looked after. Not only was tuition free, but food, lodging and medical care were also provided. Left, traditional scene of instruction in a 13th-century manuscript. One pupil recites for the teacher while another pulls the ceiling fan.

The three R's in the mosque

The pursuit of learning as a sacred duty

by Hisham Nashabi

THE most outstanding characteristic of Islam is its repeated insistence on unity: the unity of God and the unity of the spiritual and the worldly aspects of life, of the religious and the secular.

Islamic education reflected this aspect of Islam by considering the various branches of knowledge as a cohesive unity. Hence practically no subject was barred from study in the mosque.

The acquisition of knowledge was also considered a religious obligation. This explains why the ulemas, scholars trained in religion and law, have always occupied a high position in Muslim society.

Seen from this viewpoint, education is not only a means of achieving knowledge for its own sake or for the sake of truth. Nor is it simply a means of becoming a good citizen nor of earning a living. It is first and foremost a way to moral and spiritual development.

Islamic society frowns on the scholar who refrains from passing on his knowledge to others. People are in duty bound to transmit their learning, thus guaranteeing that the stock of human knowledge will be preserved and, in the course of time, enriched. This attitude may be considered as the historical antecedent of what is today referred to as the "democratization of education".

The mosque, as an educational institution, was the first and most effective instrument to ease the transition of Arab society from an early stage in which the oral tradition was a dominant characteristic to a more developed stage based on the written tradition.

The Prophet Muhammad brought a message which was essentially represented by a book, indeed *The Book,* the Quran. The study of the Quran immediately became the core of intensive educational activity. Reading, writing and arithmetic were primarily aimed at a better understanding and appreciation of the Quranic text and the application of what it taught.

And yet the oral tradition, deeply rooted in the Arab mind since pre-Islamic times, was not abandoned. On the contrary, it was institutionalized and systematically organized in the new Islamic society.

The story-tellers, poets and narrators who were the repositories of this oral tradition continued to perform their functions after the coming of Islam, side by side with the educators of the new society.

All these educators unanimously believed that a good memory was the most valuable quality in a student, since the highest aspiration of the first Muslim scholars was to learn by heart both the Quran and, if possible, the *hadith* (traditions concerning the acts and sayings of the Prophet).

During the reign of the first four caliphs (the Prophet's successors as head of the Muslim community), Muhammad's companions followed their leader's example in expounding the different aspects of Islam to their fellow citizens. Apart from the emergence of the mosque as an educational institution, there were no significant developments in Islamic education during the first century of the Hegira (1).

However, the Arabic language attracted the attention of scholars at an early date. It began to be studied in the mosques, where it soon occupied a place of honour in the curriculum.

The beginnings of theological debate in the Muslim world also date from this period, when the first "circle" to discuss theology met in the mosque of Basra (Iraq).

The 9th and 10th centuries saw the appearance of great Muslim jurists, theologians and linguists, as well as the creation of the *kuttab,* which became the most widespread institution of elementary education in the Muslim world. The *kuttab* developed in response to the needs of the new Islamic city, where the ability to write in Arabic was necessary for transcribing the Quran, as well as being an essential qualification for government posts. As a rule each *kuttab* had a single teacher, but in some cases there were two or more, one of whom always specialized in Quranic studies. The homes of the ulemas and the shops of "paper merchants" were also used for educational purposes.

Major developments in Muslim education occurred in the 10th and 11th centuries, when the mosque became a veritable public university as well as a place of worship and a community centre. The "circles" formed in the mosques were of high intellectual calibre and produced a number of outstanding works.

Two new institutions of learning also appeared during this period: the "Houses of Wisdom" and the "Houses of Science." Unlike the mosques, they were not places of worship and their activities, which were purely academic, were not strictly related to the religious sciences. On the other hand, some of the academic pursuits which took place in the mosques may have been of a secular nature: it should never be forgotten that in Islamic society the secular and the religious are inextricably interlinked.

Translation was the principal activity of the House of Wisdom founded in Baghdad sometime during the reign of the Caliph Al-Mansur (754-775) or that of Harun al-Rashid (786-809). In its golden age during the reign of Al-Ma'mun (813-833) this great library became an academy where eminent scholars translated Greek and ▶

HISHAM NASHABI *is director of the Makased Institute of Islamic Education in Beirut (Lebanon). He is professor of history at the American University of Beirut and at Beirut University. A fuller treatment of the subject of this article will appear in a forthcoming study on the Islamic city, to be published by Unesco.*

(1) Hegira: the Muslim era, which began in 622 A.D., when the Prophet Muhammad left Mecca and settled in Medina.

The great Qarawiyin mosque in Fez is the centre of one of the world's oldest universities, founded in 850 A.D. and still active today in the teaching of Muslim law. Students sit around their lecturers in a circle, following a tradition dating back to the earliest days of Islam.

Photo Sabine Weiss © Rapho, Paris.

Indian works into Arabic and studied and discussed a range of scientific subjects.

The first "House of Science" known to history was created in 10th-century Egypt. Houses of Science had more students and teachers than Houses of Wisdom and concentrated on mathematics and the medical sciences rather than translation. It should be noted that mathematics then encompassed arithmetic, algebra, geometry, astronomy and music.

The 12th century saw the development of the state-sponsored colleges known as *madrasahs* (from the Arab word *darasa,* "to learn"). These institutions are generally associated with the vizier Nizam al-Mulk, who established the famous Nizamiyah of Baghdad between 1065 and 1067. (See facing page.)

In medieval times medicine was considered a branch of philosophy, and as such it attracted the attention of several Muslim philosophers, such as Al-Farahbi and Avicenna. Medicine was taught in the mosques, but medical studies flourished above all in an institution known as the *bimaristan,* which was the equivalent of the modern teaching hospital.

Although the mosques, *kuttabs,* houses of wisdom and science, madrasahs and hospitals were the main educational institutions in Arab cities, the ulemas and the apprenticeship system practised by the guilds and the mystic orders also played an important role in educational life.

The Muslim educational system had only two levels: the elementary and the advanced. Children between the ages of five and ten had no option but to attend the *kuttab,* where they were taught to read the Quran and to memorize as much of it as they could. They also picked up writing from copying passages from the Quran and learned a little arithmetic. Sometimes poetry and "wise sayings" were also taught at this level.

Kuttab education lasted roughly five years. The educational system did not provide an intermediate or pre-mosque stage, and a pupil who wanted to continue his education after leaving the *kuttab* had to find a "circle" in a mosque or a madrasah which would introduce him to advanced studies.

In most cases, however, a pupil would choose to take up a trade or craft when he left the *kuttab,* becoming apprenticed to a master craftsman who was often his own father or another member of his family. (See article page 12).

Muslim teachers made a sharp distinction between the methods to be used for educating children on the one hand and adolescents and adults on the other. At the *kuttab* level, reliance was placed almost exclusively on learning by heart, on the grounds that memory is usually most active during childhood and must be fully exploited.

In subjects other than the Quran it was generally accepted that the teacher should proceed "from the simple to the difficult" and adapt his teaching to the pupil's capacities. Avicenna insisted on the importance of taking into account the child's temperament and natural aptitudes before preparing him for a particular career or profession.

The most characteristic feature of Muslim education in the mosque was the "circle", a group of young scholars gathered around a teacher who sat with his back against the column of a mosque. This practice, later followed in the madrasahs, dates back to pre-Islamic times and is still followed today.

At first teachers lectured from memory without referring to a text. Soon, however, they began to use notes, and in the

CONTINUED PAGE 52

The Madrasahs
The first universities in the Arab world

by Badr Eddin Arodaky

THE first school in the Arab world was the mosque built at Medina in the 7th century by the Prophet and his Companions. From then until the 10th century mosques were used to bring the new faith to the people and to instruct them in their religion. But, as social structures and the values and rules that governed social life became more complex, the Islamic community began to face new problems.

A century after the Prophet's death in 632 new forms of teaching became necessary: study circles were held not only in the mosques but also in the palaces, in the streets and even in the market places. The teaching was no longer limited to the Quran but also covered literature, poetry, grammar, and other subjects.

Groups of grammarians, students and onlookers gathered in Baghdad's Mirbad Square, and classes in jurisprudence, poetry and grammar were often held in one and the same mosque.

These classes and study groups constituted a kind of "free university", for the teachers were not subject to any particular restrictions or obligations and students were free to choose among the available classes, discussion groups and study circles.

This ferment of activity shows a high degree of social and cultural cohesion. The transmission of knowledge by men and books and the contribution made by the various cultures which came together in the melting-pot enabled Arab culture to achieve unprecedented development and impetus in every field of learning.

During the reign of the Abbasid caliphs in Baghdad (from 750 A.D. to the end of the 13th century) religious education became a branch of learning in its own right, with some teachers specializing in the Quran, the *hadith* (acts and sayings traditionally attributed to the Prophet) and jurisprudence, while others studied Arabic language, literature and history. The study circles also grew in number and quality during this period, forming the nuclei of what were to become the *madrasahs,* colleges intended for adults who had already received primary education in private schools or mosques.

In the 10th century, the madrasah emerged as an independent institution distinct from the mosque, although madrasahs—at least in the early days—were set up either for a single jurist or for teaching the tenets of a particular school of jurists

These establishments soon came under the control of the ruling power and were subject to its "planning". The degree of control and the type of planning were partly determined by the very nature of the conflicts between the Abbasid caliphs and the Fatimid dynasty.

The Fatimids, who controlled Syria and Egypt after 969 A.D., tried to wrest power from the Abbasid caliphs in Baghdad, whose rule was based on the strength of the Seljuq Turks and who, from 1055 onwards, controlled the entire eastern flank of the Muslim world.

This power struggle was paralleled by a religious struggle, a frequent occurrence in Islam, where religious, political and temporal issues so often intermingled.

The Fatimids spread their doctrine of Shiism through intensive preaching, chiefly in the mosques of areas outside their control. These preachers, who were trained at the university of Al-Azhar in Cairo, the chief seat of Shiite learning at that time, met with stiff resistance from the Seljuqs.

Nizam al-Mulk (1018-1092), Grand Vizier of the Abbasids, drew up an educational policy whose long-term aim was to contain and subsequently smash the Fatimid advance. The implementation of this policy began with the creation of the Nizamiyah Madrasah (named after the Grand Vizier), the first "university" of the Arab world. It was founded by the public authorities, who controlled, financed and administered it.

Located in Baghdad, the political and intellectual centre of the caliphate, the Nizamiyah was much more than the first public college. Officially opened in 1065 under the patronage of the caliph himself, it was to serve as a model for all the madrasahs of the Muslim world during the next 200 years.

First of all, other madrasahs modelled their organization on that of the Nizamiyah, whose status as a public institution was explicitly set out in the foundation deed drawn up by its head, Nizam al-Mulk. The establishment was managed by the Vizier himself or by his personal representative. For the duration of their studies (from four to six years), the students received a grant covering the cost of food, accommodation and miscellaneous expenses. The madrasah also contained a large number of masters' and students' lodgings, while its library received gifts and legacies of books.

Its methods of recruiting staff were also imitated. The teachers, who had to belong to the Shafii school, were appointed by the head of the Nizamiyah or by his representative. Their salaries were drawn on a special account, something like a modern endowment fund.

Its curriculum was also imitated by other madrasahs. Students and teachers alike had to belong to the Shafii school, and while teaching methods depended on the individual teachers (who were chosen from among the great scholars of the age), the syllabus had a purely religious purpose, being designed to equip students to defend the principles of Shafiism against Fatimid and Shiite propaganda.

The madrasah was thus an institution of higher education in which religious disciplines such as the study of the Quran and jurisprudence were complemented by Arabic language and literature, poetry, arithmetic and other subjects. Students were only admitted after attending schools or study circles in mosques.

Two centuries later, the Nizamiyah was overshadowed by another madrasah, Al-Mustansiriyah, created in 1227 and named after its founder, Caliph al-Mustansir. The caliph wanted to make the new madrasah into an intellectual centre capable of reviving the cultural splendour of the golden age of such caliphs as Harun al-Rashid or Al-Ma'mun.

Unlike the Nizamiyah, it did not limit its teaching to that of a single school but taught the doctrines of the four schools of law of orthodox Islam. This intellectual open-mindedness was reflected in the madrasah's construction, which comprised four *iwans* (porticoes or wings), one for each school. In addition to religious knowledge, many other subjects, such as mathematics, medicine, pharmacy and geometry, were taught there.

It also differed from the Nizamiyah in that the number of students was fixed, being limited to 308: 62 in each of the four schools, 10 for the study of the Quran, 10 for the *hadith,* 10 for medicine, and so forth.

Thirty years after its foundation, the Mustansiriyah was destroyed by the Mongols who captured and destroyed Baghdad in 1258. The madrasah's books were thrown into the river, and its teachers were drowned. After this assult the conquerors rebuilt the madrasah, and it continued to function as such until the coming of the Ottoman Turks, who turned it into a caravanserai.

The third great madrasah, Al-Azhar in Cairo, remained a sanctuary of Shiism and a training centre for its new converts right up until the fall of the Fatimids. With the advent of the

---

BADR-EDDIN ARODAKY, *Syrian sociologist and writer, is a staff member of the university of Damascus. He has published many studies on the sociology of culture..*

Ayyubite dynasty in Egypt in 1171, its influence waned, only to revive some years later when it became the centre of Sunnite teaching. Al-Azhar was modelled on the other two great madrasahs.

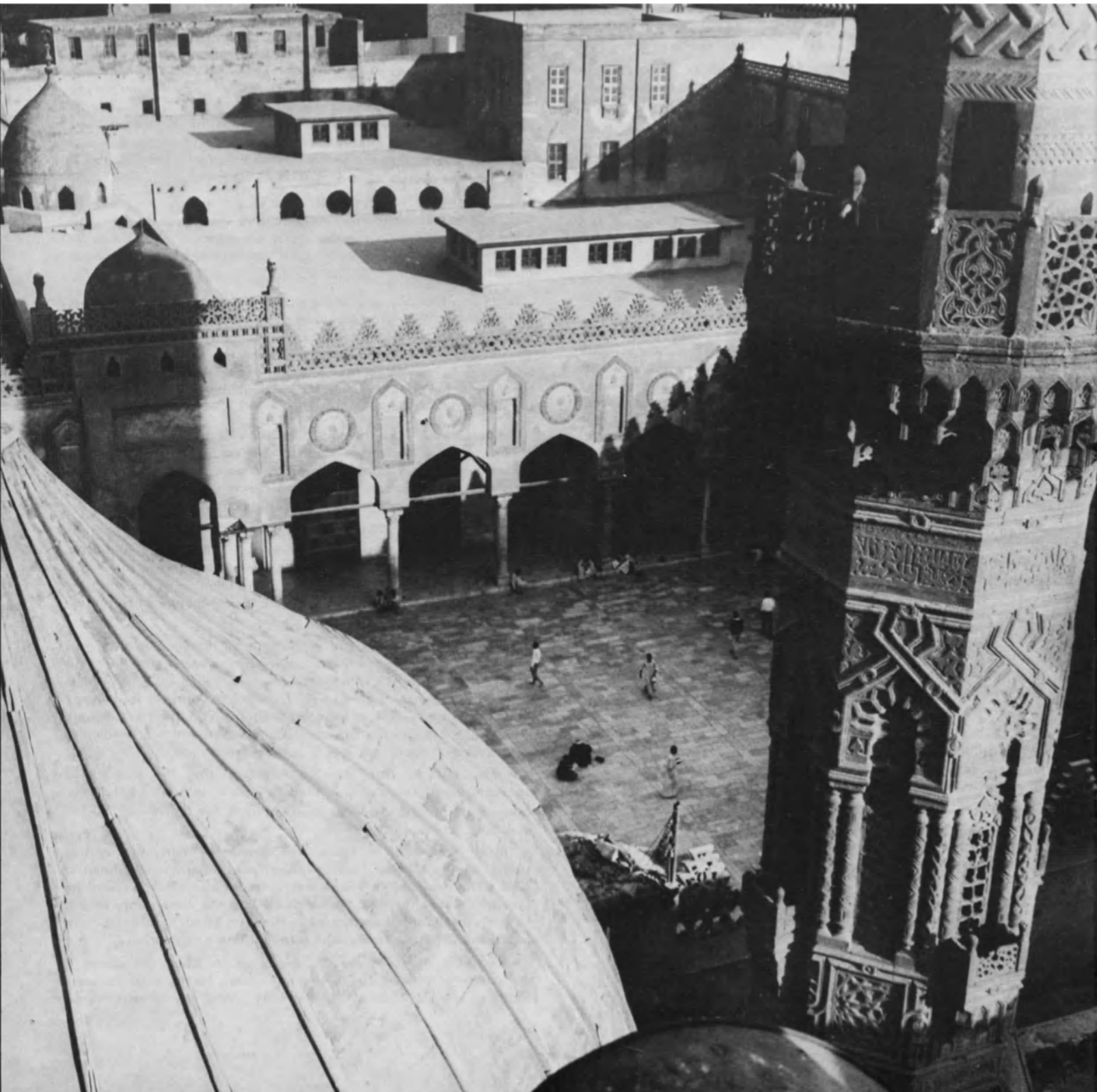
During the 13th century all three served the same cause, but, whereas Al-Azhar continued to develop and spread its influence throughout the Islamic world, the other two madrasahs, weakened by the ravages of the Mongols and torn by the conflicting ambitions of local rulers, declined and eventually disappeared. Al-Azhar, on the other hand, is still—over 1,000 years after it was founded in 970—the greatest religious university in the Arab world. (See facing page).

Al-Nizamiyah, Al-Mustansiriyah and Al-Azhar, the three great universities of the Muslim world between the 11th and 13th centuries, were taken as models for educational institutions in other Arab cities: the Zahiriyah in Damascus (1264), the Nasiriyah in Cairo, the famous Zaytunah of 14th-century Tunis, and the equally famous Qarawiyin at Fez in Morocco.

For four centuries all these madrasahs played a major role not only in the political and religious spheres for which they had been founded, but also in the expansion and enrichment of Arabo-Islamic culture.

■ **Badr Eddin Arodaky**

Cupola and minaret dominate the courtyard of Al-Azhar ("the splendid"), the great Cairo mosque which has been a teaching centre for the entire Muslim world for more than 1,000 years. When the great Egyptian writer Taha Hussein was a student there at the turn of the century, education at Al-Azhar was still much as it had been in medieval times. Today Al-Azhar has facilities for studying every discipline of the natural and social sciences, in addition to its institutes for traditional Islamic and Arabic studies.



Schooldays in Cairo

A great Egyptian writer looks back on his childhood

by Taha Hussein

Taha Hussein, who died in 1973, was one of the greatest Arab writers of modern times. Born in Egypt in 1889, he became blind at the age of three but nonetheless pursued his schooling in Cairo, first at the famous Muslim university of Al-Azhar and then at the newly-founded Egyptian university. Later he continued his studies in Paris, where he obtained his doctorate at the Sorbonne. In his masterpiece, *Stream of Days,* Taha Hussein retraced his childhood and adolescence through the experience of a hero who is simply referred to as "the child". His account of his student days in Cairo in the early years of the 20th century is both poetic and accurate.
The following extracts from *Stream of Days* show that the teaching methods then used at Al-Azhar were strikingly similar to those current in the Arab-Islamic world ten centuries earlier. However, reforms carried out shortly after the period Taha Hussein describes brought profound changes and a degree of modernization to Al-Azhar.

WALKING beside his companion, the child crossed the courtyard. As his foot touched the low step marking the entrance to Al-Azhar, the University, his heart grew heavy with modesty and humility; his spirit soared with pride. Step by step he advanced, across matting so worn that the floor appeared in places as if offering to the feet of the visitors the blessing of its touch, of contact with holy ground.

The child loved Al-Azhar at this moment of dawn as the worshippers finished their morning prayers and gathered—their eyes still heavy with sleep—in circles around the columns of the mosque, to await the teacher who would give a lesson on the *hadith,* or traditions, or on dogma or theology.

Here and there, a teacher was beginning his lecture in the weary tones of one who has awakened early to say his prayers, who has not yet breakfasted, and whose body is still drained of strength and energy. The voice was tranquil, gentle, slightly wavering.

"In the name of Allah, the Merciful! Glory to Allah, the All-Powerful! May His blessing and salvation lie upon our Lord Muhammad, the noblest of the Prophets, on His family and His Companions! This is what the author tells us, may Allah preserve his soul and enlighten us with his wisdom, amen!"

...At dawn, the voices were supplicant, rising like an appeal to the benevolence of the ancient authors. At midday, they were militant, launched like an army against its enemies. This contrast both amazed and amused the child. Staying close to his companion, he negotiated the two steps leading to the *iwan,* the portico surrounding the main courtyard of the mosque.

His companion settled him beside the teacher's stall, which was linked by a heavy chain to one of the sacred columns.

"Sit here. You will hear a *hadith* lesson. When my own lecture is over, I will come and fetch you."

The subject of the lesson was the basis of Law, and the teacher was sheikh Radi, may Allah preserve his soul. The text was taken from the *Tahrir,* by the 15th-century author Kamal ibn Humam.

The child listened in fascination to the words, with feelings in which panic, ardour, respect and veneration were inextricably intermingled. The basis of Law! What could that possibly mean? Who was the sheikh Radi? *Tahrir?* What a strange word! Kamal Ibn Humam! Could any names be more magnificent? Knowledge was indeed like a boundless ocean, and an intelligent man could do nothing better than plunge into its waves...

...For the moment, however, he must listen. Understanding would come later. How many times did he turn the same phrase over and over in his mind before it began to make sense! He had learned little, but he had gained respect for knowledge, a profound feeling of deference towards scholars, an awareness of his own ignorance, and the determination to work as hard as he could!

Sitting there beside the column and playing with the chain, the child listened as the sheikh went through the *hadith* lesson. Oh, he understood the lesson perfectly. His only objection was to the avalanche of names and prepositions which the teacher poured over the heads of his pupils. "So-and-so said, according to so-and-so, as it is related by so-and-so..."

What was the point of jumbling all those names together, of piling up all those prepositions? The child waited impatiently for the sheikh to get to the text of the *hadith.* The text was what mattered; the commentary could be set aside...

...The child wondered when he would become a full member of the university. For the moment, he was just a child, listening carefully and conscientiously to two lessons...

At last, the great day arrived. At the end of a Law lesson, the child was told to present himself for the test in recitation from the Quran which served as the entrance examination.

The news that he was to be examined in an hour's time dismayed him. Uncertain, anxious even, he hurried to the Chapel of the Blind, where the examination was to take place. But as he approached the examiners, his fear vanished. He sat down to wait patiently until they had finished with the previous candidate, and then, suddenly, one of the examiners called his name. He took his place in front of the jury. They asked him to recite the *Sura* of "the Cave", but he had scarcely begun when they asked him to recite the *Sura* of "the Spider". After a few verses, they interrupted him again.

"That's enough, blind boy," said one of the examiners. "You have passed!"

The child was shocked. The examination had been meaningless, and in no way a test of recitation. He had expected them to demand a recitation at least as long as those his father asked of him. He went away, delighted with his success but furious with the examiners and scornful of their methods. Before they left the Chapel of the Blind, his brother drew him aside, and one of the servants circled his wrist with a string, sealing the ends with lead.

"It's all over," said the servant. "Congratulations!"

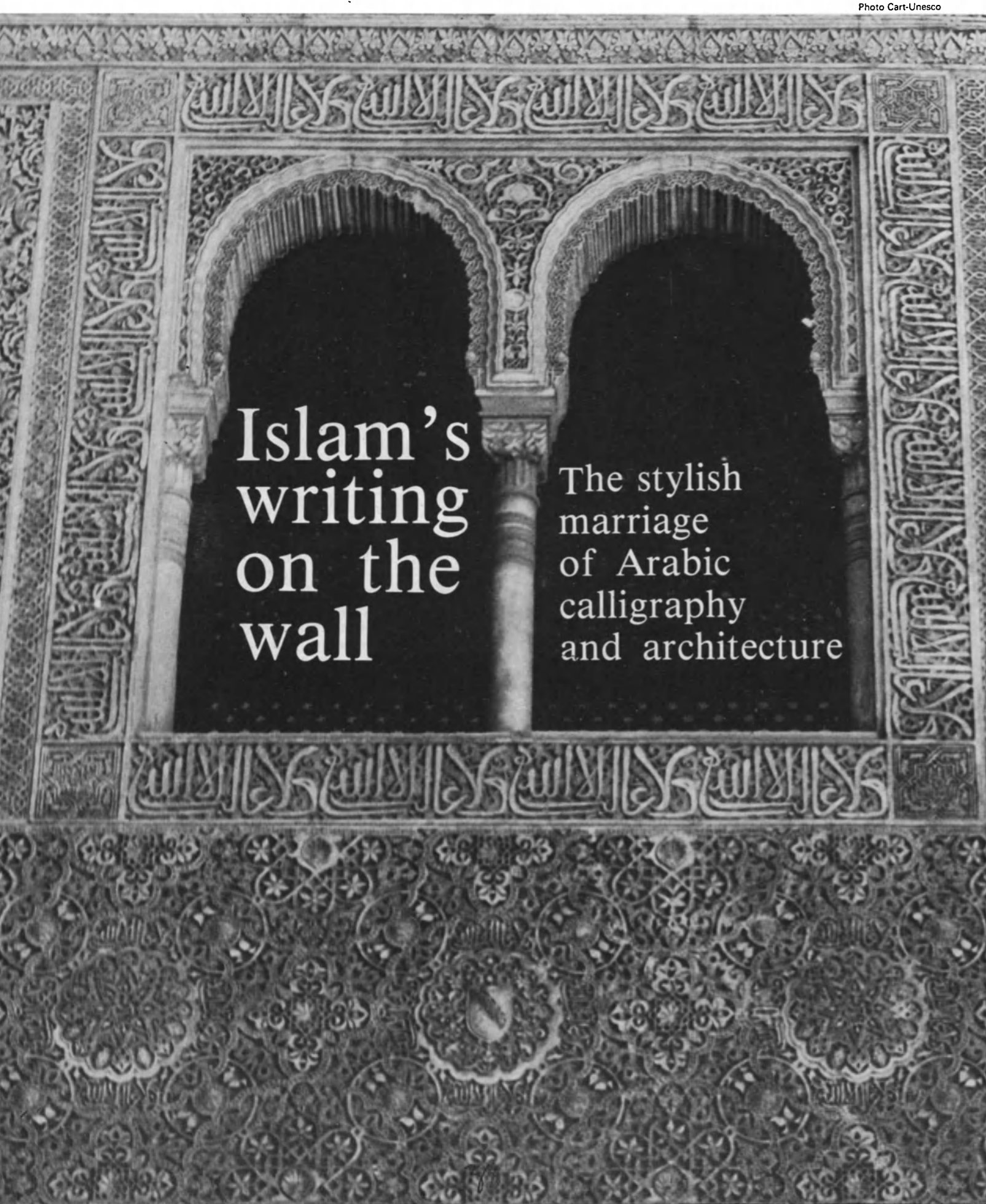
The child could not understand the meaning of the curious bracelet. His brother explained that he must wear it for a week, until the medical examination, when his health would be checked, his age estimated, and he would be vaccinated against smallpox.

But he remained fascinated by the bracelet... It was the symbol of his success in the examination. He had taken the first step...

■ **Taha Hussein**

In the Arab Islamic world, calligraphy was widely used in architecture both for the message of its text and as pure decoration. Architects and sculptors sometimes covered entire walls in palaces or mosques with rich combinations of Arabic script, stylized plant motifs and geometric forms. The walls of the Alhambra palace (below) in Granada (Spain) abound with Arabic inscriptions exquisitely carved in stucco. Built in the 14th century, the Alhambra is one of the oldest Arab palaces to have survived intact and one of the jewels of Arab architecture.

Photo Cart-Unesco



Islam's writing on the wall

The stylish marriage of Arabic calligraphy and architecture

by Mustapha El Habib

THE Arab contribution to the historical, religious and linguistic aspects of Islamic civilization can be easily identified and distinguished from the other great creative forces that shaped the world of Islam. It is much less easy however, to disentangle the Arab thread from the skein of influences that went to form the art and architecture of the Muslim world.

And yet the Arabs and the Arab genius undeniably left a mark on the plastic arts of Islam. There is, after all, a fundamental difference between the art of such ancient and homogeneous cultures as those of Mesopotamia, Egypt and Persia, and the art forms that were rapidly developed by the earliest Islamic societies.

But let us first examine some key facts about the culture and history of the world that confronted the Arabs as they moved up out of the Arabian Peninsula towards the Middle East.

Modern studies tend to focus mainly on the Greco-Latin and Persian cultures which played a fundamental role in shaping the profile of Islamic civilization. But other forces were at work, too, and none more so than the Yemen with its ancient and distinguished Arab culture. According to Arab authors, the Yemen contributed to such important features of Islamic civilization as civil engineering and the organization of urban life.

We also known that in the north of the Arabian peninsula, on the frontiers of Byzantium and Persia, there were other centres of Arab culture, influenced by many years of contact with their powerful neighbours, yet conserving a distinct personality of their own.

Among the most important of these centres were the principalities of the Palmyrenes (in present-day Syria), the Lakhmids (Iraq) and the Ghassanids (Syria).

Situated at an oasis in the Syrian desert, on the caravan route from Damascus to the Euphrates, the city of Palmyra is noted for its economic, political and artistic achievements. During the 3rd century A.D., the Palmyrenes joined forces with Rome in challenging the power of the Sassanid dynasty, which ruled Persia from 226 to 651. The rapid conquest of Egypt and Asia Minor by Zenobia, the celebrated queen of Palmyra, foreshadowed Arab expansion a few centuries later. Rome, not yet in decline, was startled by this lightning progress and turned against Zenobia. Her troops were defeated and Palmyra was sacked by the emperor Aurelian in 272 A.D.

The fall of Palmyra paved the way for the arrival of another Arab people on the Middle-Eastern stage. These were the Lakhmids, who originated in the Yemen and whose capital was the city of al-Hira in Iraq. By faith Nestorian Christians (1), the Lakhmids struck a delicate balance in their relations with Rome and Sassanid Persia.

Patrons of the arts, and of poetry in particular, they enjoyed considerable influence at the Sassanid court, while their own capital, according to ancient texts, was a place of exceptional beauty, with numerous princely palaces.

Al-Hira was the meeting-point of three different cultural streams: Persian, indigenous and pagan Arabic, and Byzantine. It was here that Arabic writing was developed, that an urban Arab culture flourished, and that Christianity assumed the form in which it would be carried into the deserts of Arabia.

The Ghassanids, another Yemenite Arab people which had settled in Syria, professed a Monophysite form of Christianity (2). In the early 6th century they joined forces with Byzantium against Persia and the Lakhmids.

The Ghassanid rulers carried the development of Arab culture to a high pitch of refinement. They played an active role in the urbanization of Syria and were once thought to have been the founders of Damascus.

The defeat of the Ghassanids by the Byzantines in 592 A.D. and of the Lakhmids by the Persians in 613 A.D. left the Arabs of the Syrian and Mesopotamian deserts in disarray.

But it was not long before they found new allies. Doubtless remembering their common origins in the southern part of the Peninsula, and united in hatred of their former overlords, they welcomed the new wave of conquerors which, shortly before the death of the Prophet, swept up northwards from the Hejaz region of the Red Sea coast. They rallied to the banners of their Islamic kinsmen, and eventually adopted their religion.

The progression of the Arab converts to Islam towards the Fertile Crescent—the semicircle of rich land that stretches from Egypt to Mesopotamia—was thus more than an isolated and unexpected event which challenged the supremacy of the Greco-Latin and Persian civilizations. It was a chapter of history deeply rooted in the Middle-Eastern past, and one which marked revival as much as revolution.

The nomad of the Hejaz and his Arab kinsmen drew their inspiration from a historical, cultural and religious heritage which had been steadily growing along the banks of the mainstream of history since the pre-Christian era.

Any assessment of Arab artistic creativity should not be confined to a purely quantitative analysis of the plastic arts of the nomads. It should take into account the whole of Arab society of that time, whose common experience, shared by nomadic and sedentary Arabs alike, ranged beyond the limits of the Hejaz region, and even of the Arabian Peninsula. This approach should help us to understand the rapidity with which an original Islamic art came into being.

When he built the house in which he would spend his exile in Medina, the Prophet Muhammad created a new type of construction whose layout was to inspire the so-called hypostyle Arab mosque (whose ceiling is supported by pillars).

All forms of creativity involve borrowings and outside influences, but one basic feature that distinguishes the mosque from the places of worship of other religions, such as Christianity, is a direct reflection of the ancient nomadic custom of sitting side by side in a row during desert halts. As worshippers, they adopted

(1) Nestorianism: the doctrine imputed to Nestorius (c. 380-451) according to which distinct divine and human natures are to be attributed to Christ.

(2) Monophysitism: the doctrine that recognizes in the person of Jesus Christ only one nature rather than two, divine and human. It is today professed by the Armenian and Syrian churches as well as the Coptic Church of Egypt and Ethiopia.

"Eternal glory and everlasting renown", reads the Arabic inscription on this small ivory plaque. Carved with the flowery, cursive script known as "thuluth", the plaque was produced in Egypt or Syria in the 13th or 14th centuries.

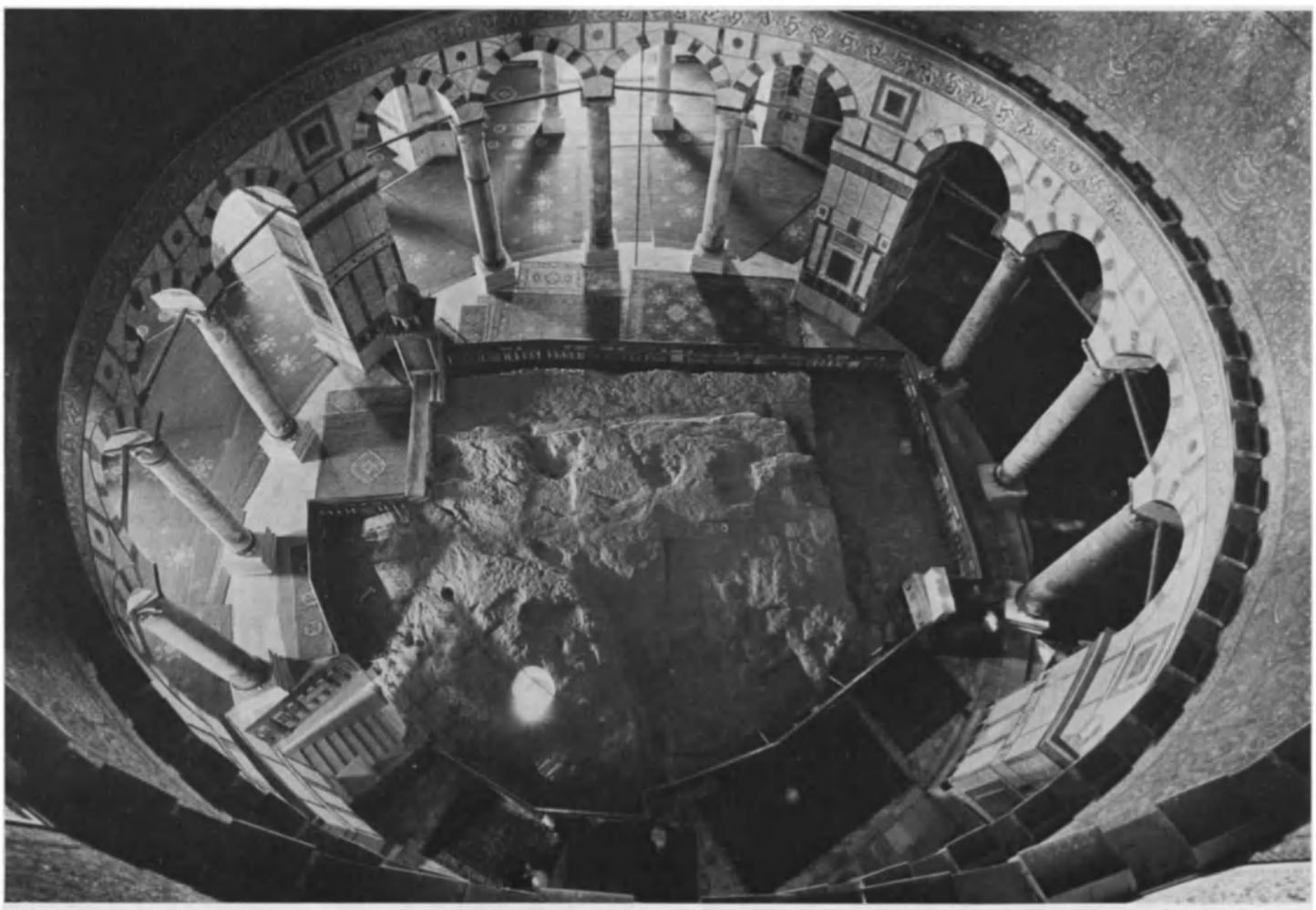
Photo Luc Joubert © Réunion des Musées Nationaux, Paris

MUSTAPHA EL HABIB, *Tunisian specialist in Arab Islamic art, lectures at the Ecole du Louvre, Paris, on Arabic epigraphy and paleography. Curator of the Maghrib (North African) arts department at the Museum of African and Oceanian Arts in Paris, he has written widely on many aspects of Islamic art and civilization.*

Photo Luc Joubert © Louvre Museum, Paris.

The Holy City of Jerusalem

Jerusalem is one of the holiest places of Islam. In earliest Islamic times, milestones were set along roads leading to the city for the benefit of travellers and pilgrims. Above, a milestone inscribed with its distance from Jerusalem and with the name of the Ommayad caliph Abd al Malik, the builder of the famous Dome of the Rock (right). Inside this sacred shrine, which was completed in 691, a circular colonnade surrounds the Holy Rock (below). Also known as the Mosque of Omar, the Dome of the Rock was built in the ornate Byzantine tradition and was lavishly decorated with polychrome mosaics. Together with the nearby Mosque of Al Aqsa, it is one of the most important of all Islamic shrines.



Photos Georg Gerster © Rapho, Paris.

the same alignment, and this explains why their prayer halls were of greater width than length.

This architectural innovation accompanied the Prophet's revelation of a new type of religious institution: one in which every political, religious, moral or social issue concerning the community could be raised.

Additions to mosque architecture after the death of the Prophet are all direct or indirect consequences of his original initiatives. Among the former are the minaret—the tower from which the faithful are summoned to prayer—which is a development of the custom practised during the Prophet's lifetime, of issuing such summonses from the highest roof in the vicinity of the mosque; and the columns and capitals which are derived from the roof-supporting palm-tree trunks of the original prayer hall at Medina.

Indirect consequences are seen in the *mihrab,* the prayer niche in the centre of the wall closest to Mecca, the holy city of Islam; and the epigraphic decoration which replaced the figurative ornamentation of pre-Islamic Arab monuments.

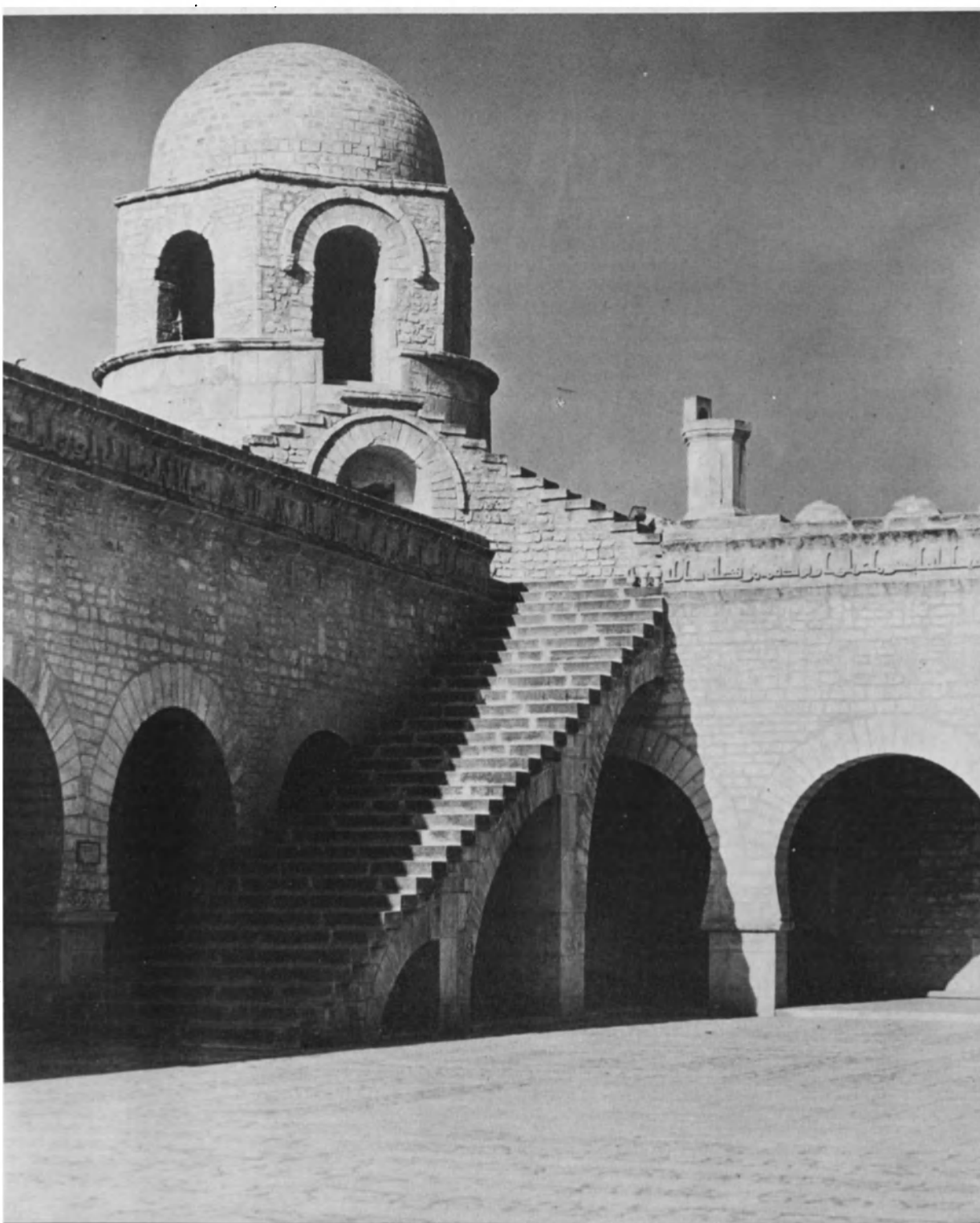
Islamic architecture was carried to perfection as a result of constant technical improvements under the first Arab dynasties. Thus, written sources state that a kind of concrete was used during the first centuries of the Hegira. It was made of chalk, sand, clay and rubble which hardened to a rock-like consistency.

This explains why Arab Islamic monuments are not merely graceful, but extraordinarily resistant to wear and tear. Some 9th-century mosques and castles in the Iberian Peninsula have survived until today in a perfect state of preservation.

The problem of roof supports was solved in different ways. Sometimes, columns from earlier monuments were used, but in Eastern and Western Islam, the columns of antiquity gave way to slender shafts and expansive capitals reminiscent of the world of plants and trees, and more particularly of the palm groves among which Muhammad and his companions lived.

The specific character of the Arab mosque was finally established when the architects revolted against the bare surfaces and the angular and rectangular forms favoured by their Greek predecessors. This refusal found expression in two new lines of research, one concerning the structure of the mosque, the other concerning its decoration.

In each case, the aim was to dispense with angularity, and to revive the ornamental tradition which, in Mesopotamia, Persia and Byzantium alike, had been brought to a peak of perfection after thousands of years spent in repeating the same patterns.



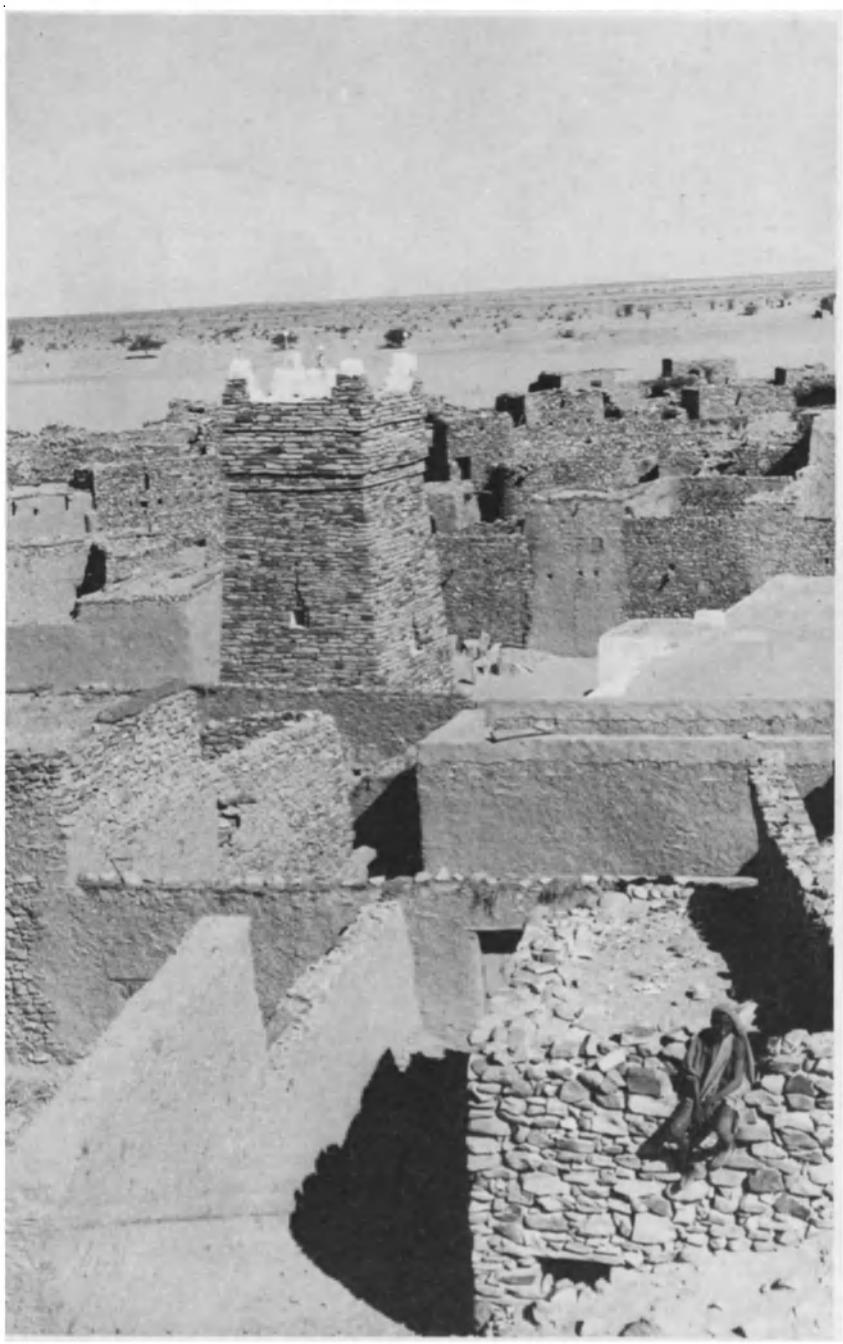
Built before 850 A.D., the Great Mosque at Susah (Tunisia) is one of the oldest in the Arab Islamic world. Right, a corner of the main courtyard, lined with arcades. A frieze in ornamental Arabic script runs along the top of the wall, forming part of the fabric of the architecture.

Photos Naud © Afrique-Photo, Paris.

Places for worship in desert and city

Left, in Southern Algeria, deep in the Sahara, passing worshippers have used rows of stones to mark out an enclosure for prayers. A Muslim can pray to Allah wherever he happens to be—as long as he faces Mecca. To designate the direction to be faced during prayer, mosques have a niche or alcove known as the *mihrab* in the wall facing Mecca. In the great mosque of Cordoba (Spain), the mihrab consists of an entire room, resplendent with a forest of columns and a cupola (right). Built by Abd ar Rahman in 785, the mosque is an outstanding example of Arab Islamic architecture in Andalusia, complex in design and rich in decoration. A more modest example of Islamic religious architecture is the mosque of a Mauritanian desert community at Chinguetti (below). At the other end of the Arab Islamic world, the *muezzin* (below left) calls the faithful to prayer from leaning minaret of Mosul (Iraq).

Photo Georg Gerster © Rapho, Paris.



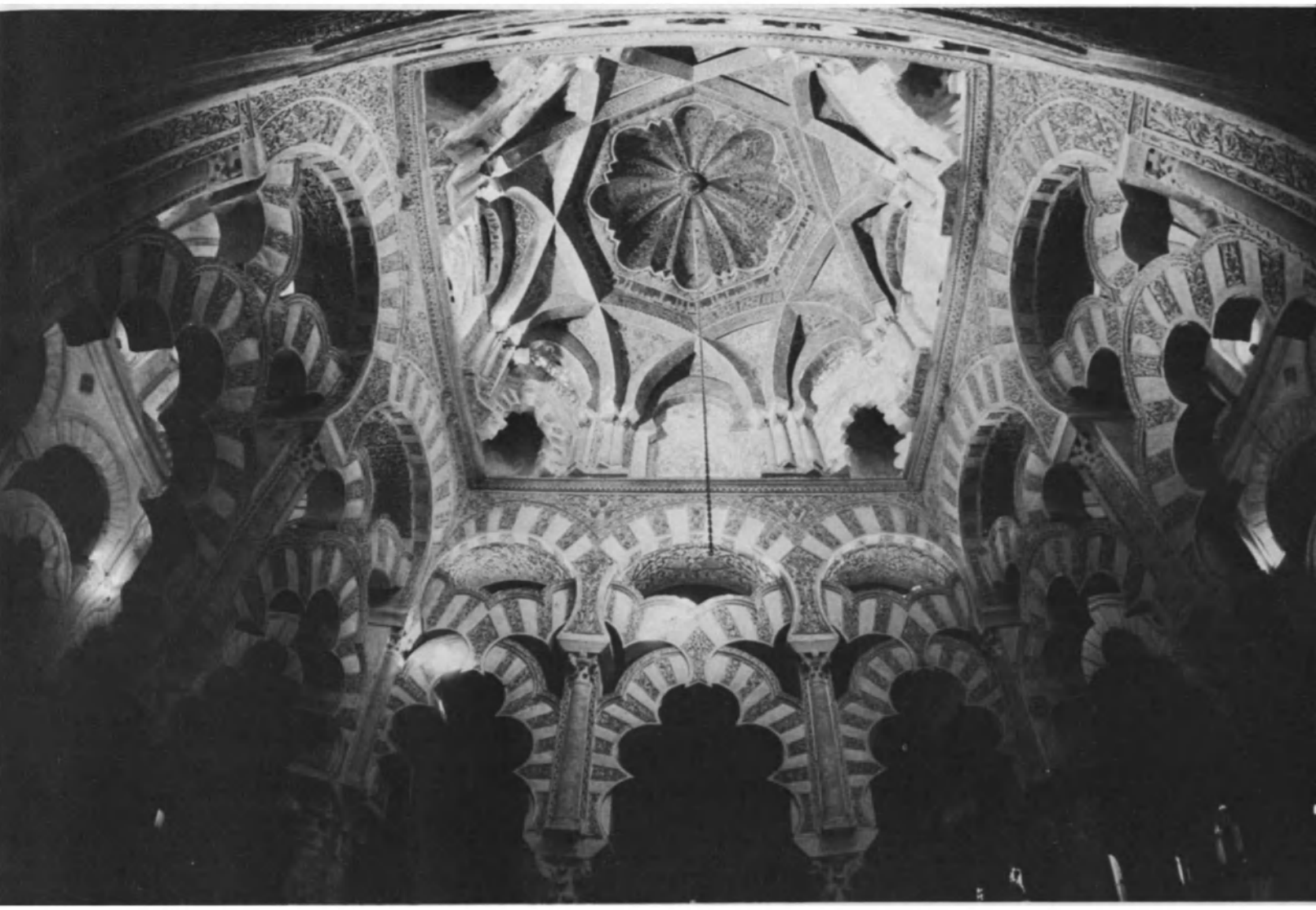


Photo Georg Gerster © Rapho, Paris.

The first line of research led to the development of the cupola, the dome, the arch and the so-called *muqarna* work, which had the ornate appearance of a honeycomb or stalactite.

Research in decoration led to the invention of the arabesque, a style of ornamentation involving fancifully-twisted plant motifs, capable of expressing rhythmic movement and suitable to the Islamic preference for completely filled surfaces.

The mathematical precision of the arabesque would in the 16th century find, an admirer in the Italian painter Raphael, who introduced it into the art of the Renaissance.

But no account of the quest for new ways of decorating the mosque would be complete without mention of Arab ornamental epigraphic art, whose history is closely related to that of the arabesque.

No civilization has made more use than Islam of writing for ornamental purposes. A written Arabic alphabet, composed of somewhat rudimentary Semitic characters inscribed from right to left, either separately or linked in a cursive hand, was already being used in the Arabian peninsula in the 5th and 6th centuries A.D., before the appearance of Islam.

Early Arab authors mention the importance which the Prophet Muhammad attached to writing as a means of propagating the Muslim faith, pointing out that his entourage included not only his companions, whose task was to learn the revelations of the Quran by heart but also a number of scribes entrusted with the task of transcribing the revealed message.

As Islam spread throughout the Arabian Peninsula, there was an increasing need to instruct the faithful in the art of writing the Quranic language, and we are told that after the battle of Badr against the pagan Meccans, the Prophet liberated every literate captive who agreed to teach the art to ten young Muslims.

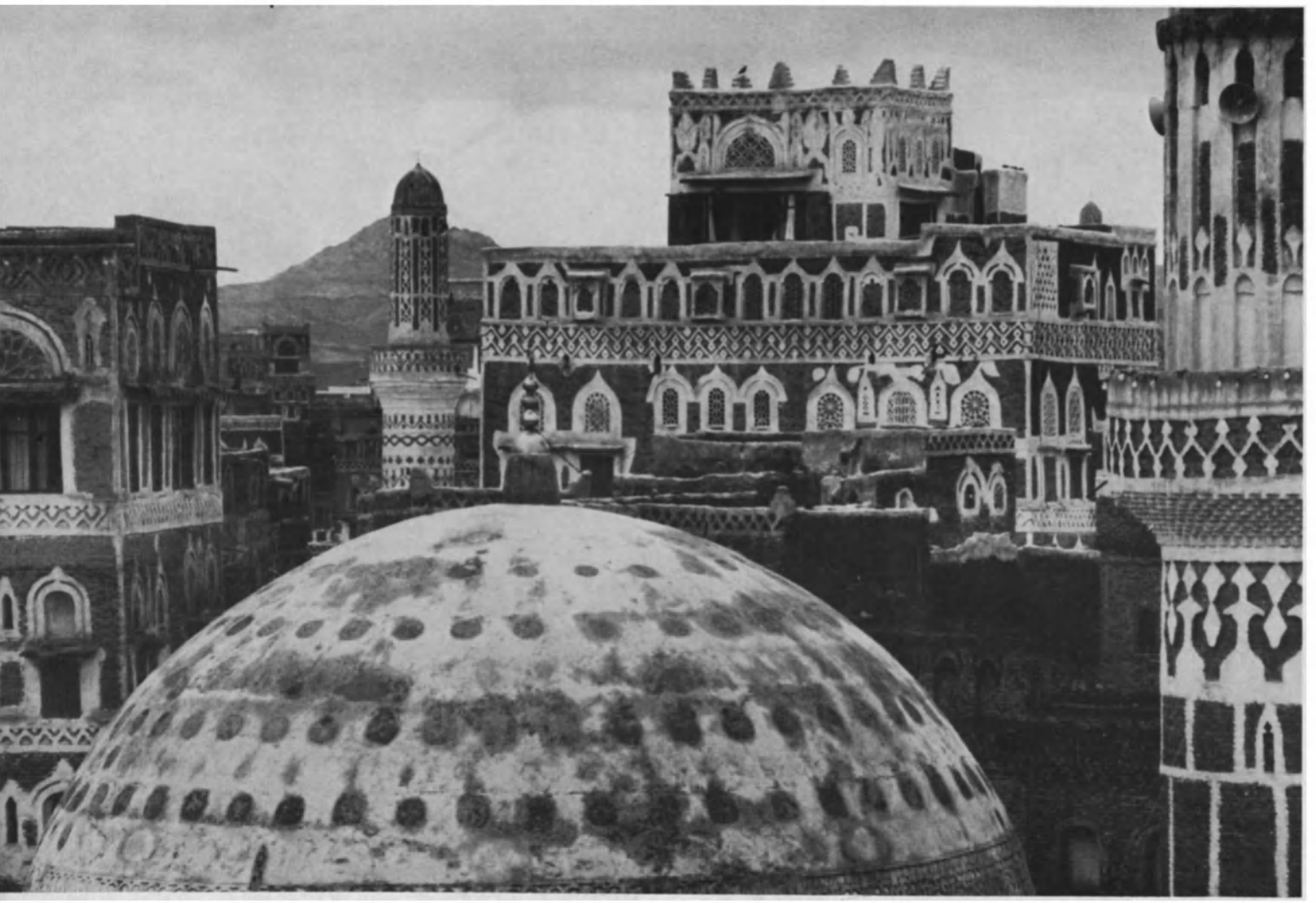
With the extension of the faith, and in the space of a few years, Arabic writing, as the vehicle of the divine revelation, was adopted by all the converted peoples. Today the script is used not only in Arabic, but also in languages as varied as Persian, Hindustani and Malay, as well as a number of languages of Black Africa. Until the reforms of 1928, it was also used in Turkey.

The aesthetic qualities of Arabic script, which were clearly apparent early in the Islamic era, stem from the individual characters themselves and the symmetrical manner in which they are related to each other in composition.

These qualities, coupled with the religious prestige of the Quranic language, soon made Arabic writing the object of embellishment, and led to the creation of calligraphy, the earliest and the most "Arabic" of all the plastic arts of Islam whose invention is ascribed by modern specialists to Ali ibn Abi Talib, cousin and son-in-law of the Prophet.

Rapidly "democratized", because it was an art which all literate Arabs could practise without distinction of wealth or social status, calligraphy was also considered to be the noblest of occupations, since it was through writing alone that the revealed message of the Quran could be given a tangible form.

After the initial, formative period—considered to cover more or less the first century of the Hegira—Arabic writing in its two forms (angular and cursive) was systematically developed. From a number of possible alternatives, the angular form which finally emerged as the basic model is the script known as "Kufic", from the city of Kufa in Iraq, which was one of the greatest centres of classical Arab culture. This script was used at an early date to transcribe the text of the Quran, so that it came to be used throughout the Islamic world.



Photos © Yvette Vincent Alleaume, Paris.

Kufic writing employed characters reduced to their simplest form, so that decipherment depended as much on their context as on their shape. It became the subject of artistic experimentation which reached a peak of perfection in the late 8th and early 9th centuries in a type of ornamental inscription which determined the whole art of Arabic calligraphy.

Angular Kufic served as the basis for other styles of writing, which included "foliate" Kufic (in which the spaces between the strokes were filled with plant motifs which at first sprang organically from the letters themselves), "plaited" Kufic (in which a procession of upright letters stretched away towards infinity against a floral background, and which found particular favour in the Maghrib); and "geometrical" or "quadrangular" Kufic, generally used for decoration on buildings, in which the letters of the inscriptions were made from materials such as baked or unbaked brick.

In the 10th century, a fluent cursive script known as Nashki and used by scribes and scholars for inscriptions on papyrus, began to be employed for the transcription of Quranic texts. The main difference between Kufic and Nashki is that Kufic letters are static, while Nashki characters are linked together in an undulating, uninterrupted line.

Guided for the most part by the rules of angular writing, the famous calligrapher and Abbasid minister Ibn Muqla (d. 939-940) invented a mathematically proportioned cursive script. This writing was perfected and amplified by another great Arab calligrapher, Ibn al-Bawwab (d. 1022), who laid down the rules of cursive script which would enable subsequent generations to practise the art of calligraphy in a manner that was both free and rational.

In this brief survey of the Arab mosque and Arabic calligraphy, we have tried to throw light on a little-known aspect of the Arab contribution to Islamic civilization and to place the Arabs in their context among the other great creative peoples of the Arabian peninsula, with whom they lived in close contact for so long.

However, until a comprehensive history of pre-Islamic Arab civilization is written, the nomad of the Hejaz and his kinsmen in northern and southern Arabia will remain shadowy figures, and their contribution to the art of Islam will remain a matter of conjecture.

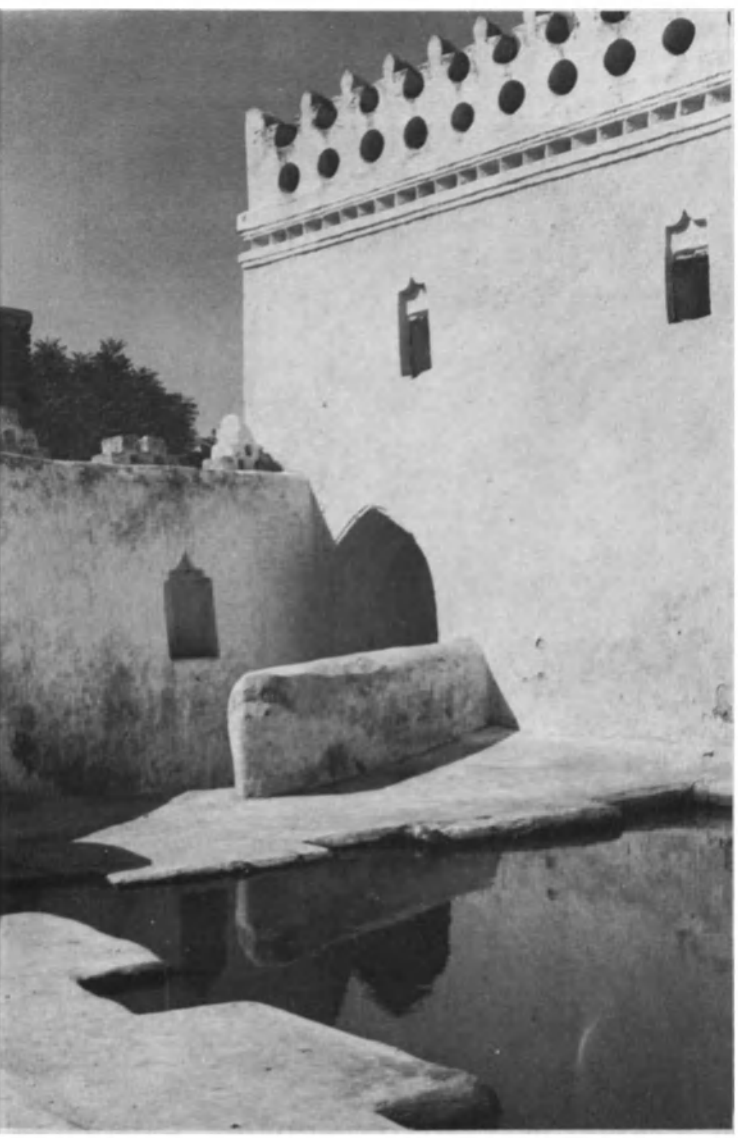
Ancient Arab sources, which have up to now been victims of neglect or misinterpretation, contain a wealth of information which might be used in the investigation of monuments which the historians of Antiquity described as magnificent, but which have long since disappeared.

Only when these sources are tapped will the history of Arabia cease to be merely a field for speculation on a mundane sequence of battles, diplomatic intrigues and genealogies, and will help us to appreciate the true originality of Arab art. Only then will it be possible to write the history of an art that is truly Arab, and not merely Islamic.

■ **Mustapha El Habib**

Embroidery in brick and stone

The Yemen is one of the oldest centres of Arab civilization. Throughout its history, this mountainous yet fertile country (widely known in Antiquity as *Arabia Felix*—fortunate Arabia) has always preserved distinctive and original forms of cultural expression. It today comprises two independent states: the Arab Republic of Yemen and the People's Democratic Republic of Yemen. Yemeni towns and cities are renowned for the beauty of their architecture. Left, townscape in Sanaa, capital of the Arab Republic of Yemen. The façades of the tall terraced houses are resplendent with white, brown and green ornamentation; the windowpanes are of multicoloured stained glass. Right, a cascade of domes and arches in the ancient town of Sadah. Below, ablutions basin in one of the many mosques in Zabid.



How Arabic became the international language of science

by Salah Galal

CLASSICAL Arabic science was a vast and complex enterprise that was effectively launched by the early Abbasid caliphs at Baghdad shortly after 750 A.D. For at least 600 years thereafter it maintained a vigorous existence, gradually spreading over a geographical area that extended from Andalusia to the lands beyond the Amu Darya River in Central Asia.

Arabic rapidly became an international language of science to a greater extent than any other language had ever been.

SALAH GALAL, *science editor of the Egyptian daily* Al Ahram *since 1959, is also editor of the Arabic edition of the World Health Organization's monthly* World Health. *The author or translator of many scientific publications, he is correspondent of the weekly science journal* Nature.

Until the caliphs organized the translation into Arabic of ancient Greek and Syriac scientific texts, Arabic had been the language of poetry, of the Quran, and of the recently developed disciplines concerned with Islamic religion and with the Arabic language itself.

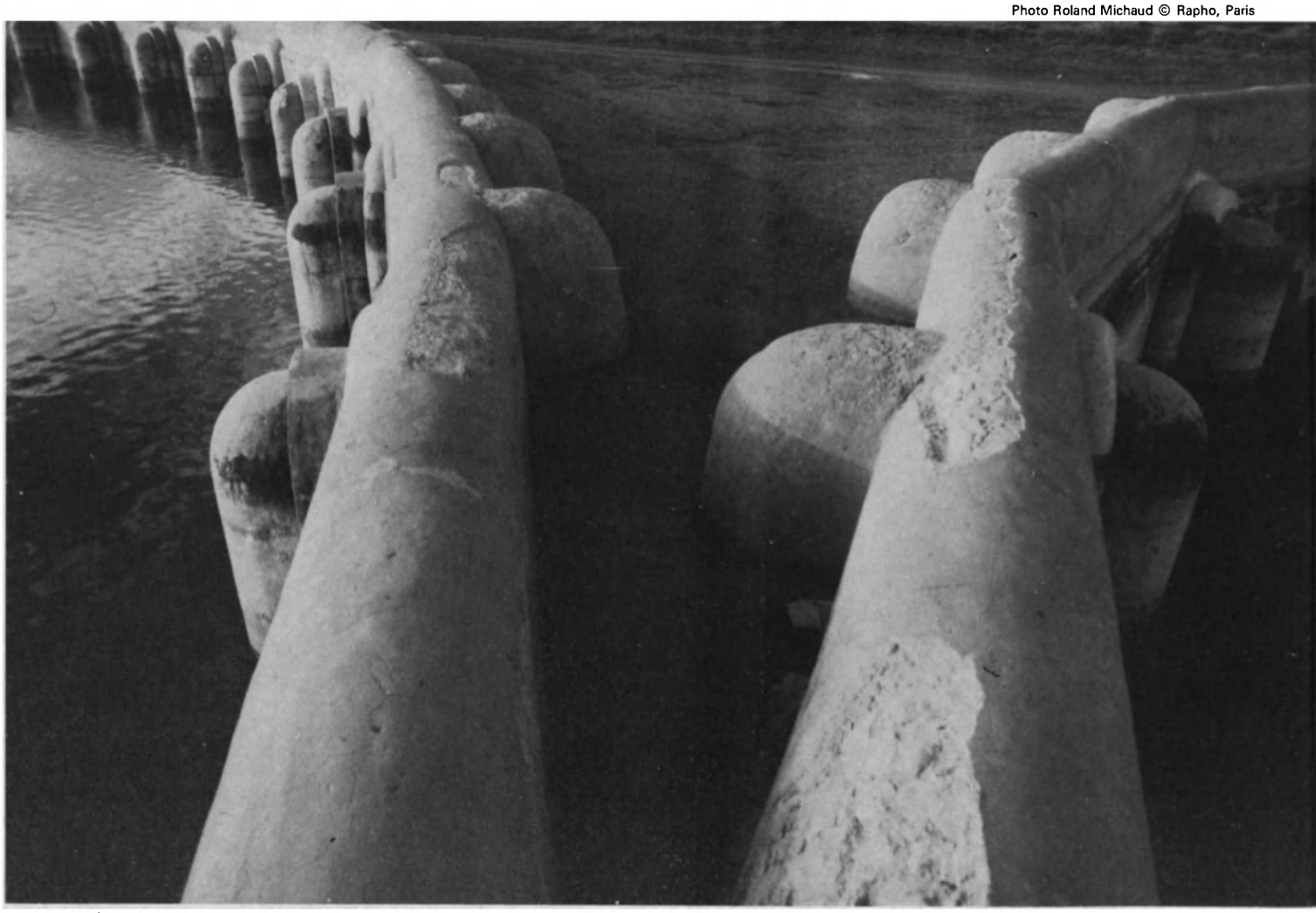
By the 11th century the great scientist Al-Biruni was describing Arabic as the language most suited for scientific expression. But he was speaking after the event. The ninth-century decision to turn Arabic into a vehicle for scientific tradition that had previously been alien to it was an act of great originality and imagination.

Islamic achievements in optics were solidly based on the foundations laid by the ancient Greeks. Ptolemy's treatise on optics was translated into Arabic early on, and a Latin version was made from Arabic in Sicily in the 12th century. The treatise now survives only in the Latin version, both the Greek original and the Arabic translation having been lost.

Some Arabic authors, as a result of the translation of their works into Latin, became widely known under Latinized names: Al-Razi as Rhazes, Ibn Sina as Avicenna, Ibn Rushd as Averroes, and so on. Their books were widely read and frequently cited and quoted by writers in the West.

In the 10th century, Ibn al-Haytham formulated a theory of vision quite distinct from any other that existed then or had existed earlier. He was a mathematician,

Photo Roland Michaud © Rapho, Paris



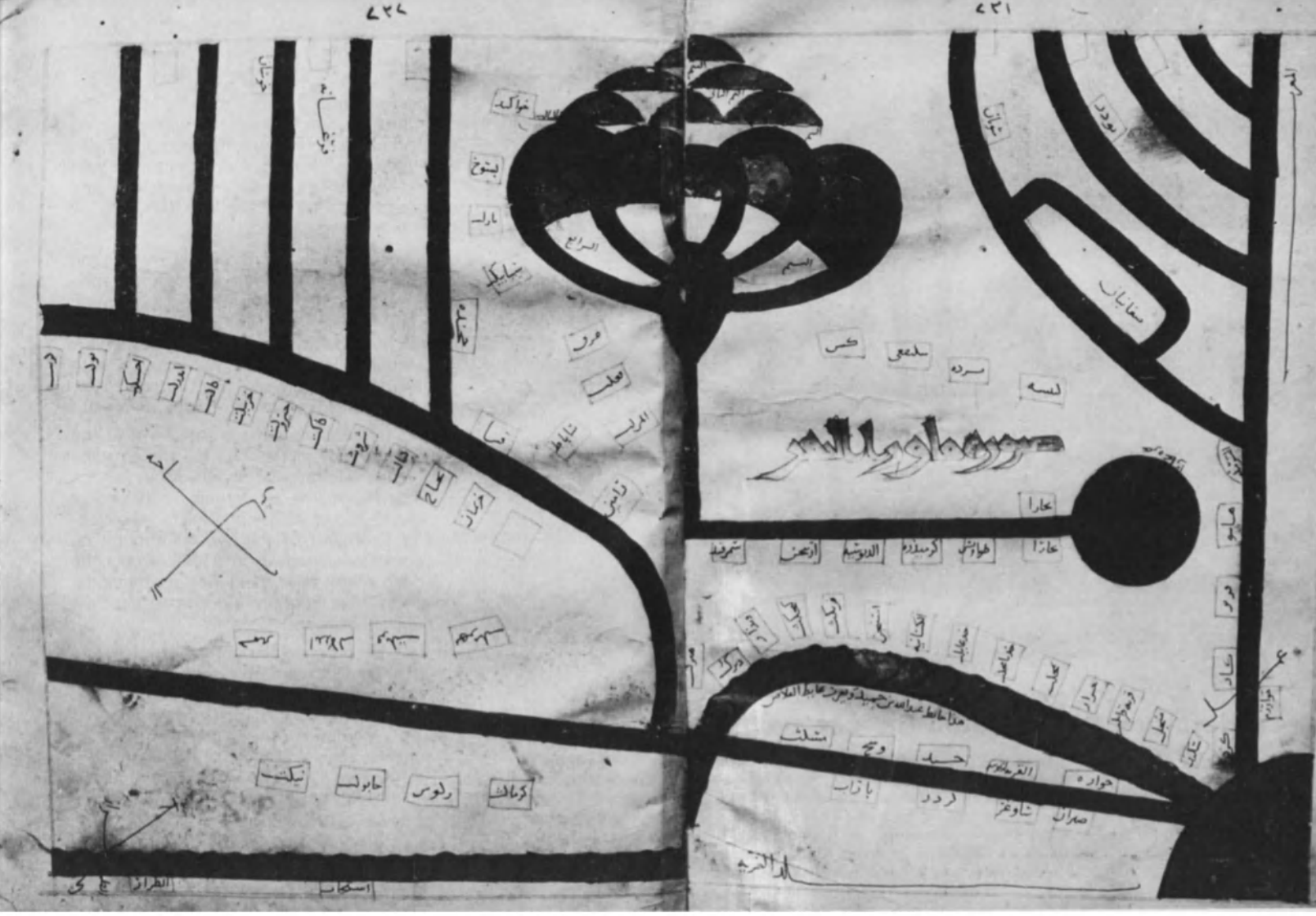


Photo Roland Michaud © Rapho, Paris

Left, the great reservoir at Kairouan (which means "encampment" in Arabic) in Tunisia, built in 862. A 48-sided polygon (128 m. in diameter) it is the most impressive of a series of hydraulic projects realized by the Emir Abu Ibrahim Ahmed of the Aghlabid dynasty. Adjoining it is a smaller (17-sided) polygonal reservoir with a diameter of 37 metres.

Above, map of Central Asia by the 10th-century geographer Ibn Hawqal. The title, inscribed in Kufic script, reads "Picture of what lies beyond the river" (the Amu Darya). In margin at right are the words "the Maghrib" (where the sun sets). (See also caption on page 9).

not a natural philosopher, but he combined physical doctrines with mathematical methods.

From natural philosophers Ibn al-Haytham derived the idea that vision occurs when a "form" emanating from an object enters the eye. As a mathematician, he was impressed by the geometrical approach taken in the works of Euclid and Ptolemy.

His own contribution can be characterized as an attempt to apply the geometrical method to the physical doctrine of forms. He tried to show how a form capable of representing the visible features of an object, whether large or small, can enter through the pupil and make its way to the brain, where the process of vision is completed. To achieve the synthesis he desired, Ibn al-Haytham was led to alter important, sometimes essential, components of earlier theories. At the same time, he formulated questions that had never been conceived before.

Ibn al-Haytham's *Optics* is a large and comprehensive work that includes, not only a new theory of vision, but also important discussions of the propagation, reflection, and refraction of light and colour. Its superiority to the treatises of Euclid, Ptolemy, Al-Kindi, and Ibn Sina, all of which were translated into Latin, soon became clear to Latin medieval writers. In the 13th century, Roger Bacon frequently referred to Ibn al-Haytham as "the author on optics".

Almost all branches of the healing arts in Islam were indebted more to the indefatigable efforts of Hunayn ibn Ishaq Al Ibadi (809-873) and his team of translators than to any other ninth-century author or educator. Together with his students and associates, Hunayn made the most important medical writings of the Greeks available in Arabic, and established a solid foundation for the development of Arabic medicine by devising a distinctive methodology, which was followed, modified, and perfected during the following century.

The physician Ibn Butlan elaborated on the six "non-natural principles" that had been identified earlier by Hunayn: clean air, moderate diet and drink, rest and work, wakefulness and slumber, evacuation of superfluities, and emotional reactions and involvement.

If these six principles are kept in equilibrium, he maintained, health results; if abused or imbalanced, sickness occurs. Ibn Butlan also recommended the utilization of fine music to lift the morale of patients and help speed their recovery.

The development of Arabic clinical medicine and therapeutics reached its peak in Andalusia, in the works of the physician-statesman Ibn Wafid and in the medical writing, teaching, and practice of Ibn Zuhr (known in Latin as Avenzoar). In his famous *Book Facilitating the Study of Therapy and Diet,* he dealt with the diagnosis and treatment of diseases, describing, possibly for the first time in medical history, certain chest abcesses and pericardial diseases. He also emphasized medical experimentation, as well as clinical observation, treatment and pathology.

It was under the patronage of the Arab caliphs that hospitals were first established and flourished in the Muslim world. The early Arab concept of the hospital became the prototype for the development of the modern hospital—an institution operated by private owners or by government.

The great 10th-century philosopher and physician Al-Razi considered hospitals of primary importance in providing practical training in the medical profession and in

Photo © Apostolic Library, The Vatican

Hercules the celestial dancer

In his *Book of Fixed Stars,* the 10th-century astronomer As-Sufi followed the ancient practice of representing the constellations by animal or human figures or objects. Above, representation of the northern constellation Hercules is from a 13th-century manuscript version of As-Sufi's work. According to tradition, Hercules is depicted as a dancer, but although he is elsewhere shown as a youth with a scimitar, here he is bearded and weaponless. This version of *The Book of Fixed Stars,* produced in the North African city of Ceuta, is the only known western Islamic manuscript to mention its place of origin.

An eye on the heavens

The illustrations produced in 1237 by the artist Al-Wasiti for Al-Hariri's classic tales known as the *Maqamat* are an outstanding example of medieval Arabic art. (See also pages 6 and 25). These miniatures and their surrounding text, which describes the adventures of a witty and resourceful figure named Abu Zaid, are today preserved in the Bibliothèque Nationale, in Paris. Below, a scene with a scientific flavour: Abu Zaid measures the height of the celestial bodies with an astrolabe.

Photo © Bibliothèque Nationale, Paris.

disseminating health information. The Adudi hospital in Baghdad was a striking example of an institution which performed such a role. It had 24 doctors on its staff and was equipped with lecture halls and an ample library. In the late 10th century, its fame spread far and wide.

Among Arabic authors who wrote on ophthalmology and eye diseases, a branch of medicine that received special attention in the Muslim world, Hunayn ibn Ishaq was perhaps the first to write a systematic manual on ophthalmology, complete with diagrams. His work was developed by later authors and has survived until today.

In ten treatises written between 840 and 860 and completed by his student and nephew, Hubaysh, Hunayn discussed the anatomy of the eye, brain, and optical nerves, as well as the physiology, diseases, and treatment of the eye. Although he copied extensively from Greek works, he added many new, personal observations. Al-Razi was possibly the first to describe pupillary reflexes.

Arabic progress in ophthalmology reached a peak around the year 1000 in the work of Ali ibn Isa, an oculist of Baghdad. His book *A Treasury for Ophthalmologists* was a comprehensive summary of all the achievements of the past. His contemporary Ammat ibn Ali Al-Mawsili was the first to introduce the technique of suction removal of cataracts. He devised and used a hollow needle for the purpose, a technique revived in 1846 by a French doctor, Blanchet.

This high level of performance was continued by Ibn al-Haytham (Alhazen) and in a guide for oculists written by Muhammad al-Ghafiqi of Andalusia. Al-Ghafiqi illustrated his manual with pictures of the surgical instruments he used in performing eye operations.

The physician-philosopher Ibn Rushd once stated that "whosoever becomes fully

Stalactite fantasy in a royal chapel

The royal chapel built in Palermo around 1140 by Roger II, ruler of the Norman kingdom of Sicily, is famed for its richly painted wooden ceiling (detail at right) with "stalactite" vaults arranged in a honeycomb design. The paintings, depicting scenes from princely life, were executed by Muslim artists and constitute the largest surviving ensemble of Muslim painting. Specialists believe that they were probably produced by artists following Mesopotamian traditions and influenced by the pictorial art of Fatimid Egypt (11th century) or of Tunis.

Photo Michel Desjardins © Top Réalités, Paris

وهذه صفة الفرس المسطوح على ظهره

Anatomy of a thoroughbred

Knowledge of the animal world was highly valued in Islamic civilization, for animals, along with plants and minerals, were regarded as essential to the cosmic equilibrium. Animals such as the horse were frequently depicted in works of art and literature, and were also studied scientifically. This anatomical study is from a 15th-century Egyptian manuscript now preserved in the university of Istambul.

Photo Roland Michaud © Rapho, Paris. University of Istambul Library, Turkey

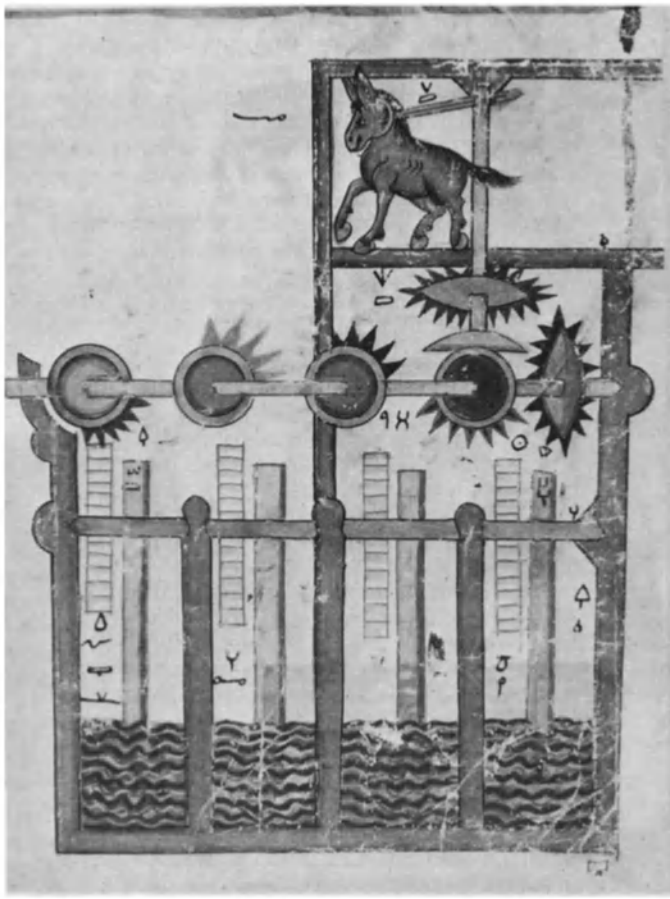


Photo © The Metropolitan Museum of Art, Rogers Fund, 1955, New York.

familiar with human anatomy and physiology, his faith in God will increase". This statement explains why surgery was accepted by the Arabs from the early days of Islam (1). It also explains why Muslim surgeons were among the first to use narcotic and sedative drugs in operations: Islam teaches that God has provided man with a great variety of natural remedies to cure his ills. It is man's obligation to identify them and to use them with skill and compassion.

The greatest achievements in medieval surgery, however, are attributed to Az-Zahrawi of Moorish Spain. An important part of his medical encyclopaedia, *The Book of Concessions,* deals with obstetrics, paediatrics, and midwifery, as well as with general human anatomy. The surgical part of the encyclopaedia contains a discussion of cauterization, the treatment of wounds, the extracting of arrows, oral hygiene, and the setting of bones in simple and compound fractures.

He used antiseptics in the treatment of wounds and skin injuries; devised sutures from animal intestines, silk, wool, and other substances; and developed techniques to widen urinary passages and explore body cavities surgically. His surgery contained about 200 surgical instruments that he himself designed and depicted in his writings. Such instruments, with modifications, were later used by many surgeons in Christendom as well as in Islam.

(1) Editor's note: in some parts of the Western world, the dissection of human bodies was prohibited for religious reasons.

Donkey-driven irrigator

Most Arab countries are arid, and water management has always been a major concern in Arab civilization. One problem faced by Arab engineers was how to raise water from streams and canals for irrigation or domestic use. In his celebrated *Treatise on Mechanical Devices,* the great 13th-century inventor Al-Jazari described in detail the construction of an array of mechanical devices, including water-raising machines such as the donkey-powered irrigation system shown at right. The donkey turns an upright pole connected to a series of toothed wheels. The wheels are linked to four water scoops (here submerged), which rise in succession and empty their contents into a canal.

Photo from "The Book of Antidotes" © Bibliothèque Nationale, Paris.

Herbs for healing

A *Book of Antidotes* attributed to the Greek physician Galen was translated into Arabic and widely used in medicine. Detail at right is from an illuminated manuscript version produced in 1199, probably in Iraq. It shows two medicinal herbs used for treating poisonous bites. The name of each herb is annotated in Arabic.

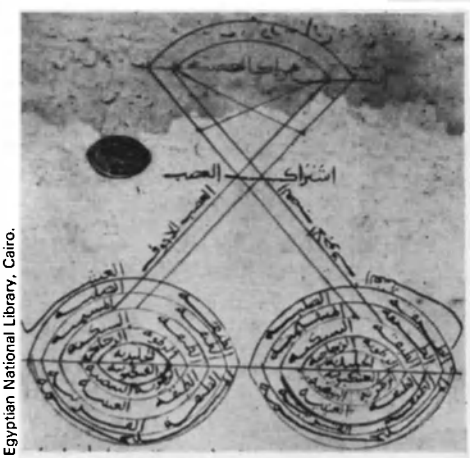


Photo Roland Michaud © Rapho, Paris. Egyptian National Library, Cairo.

New theories of vision

Ophthalmology was a branch of medicine which received special attention throughout the Islamic world. Scientists such as Ali ibn Isa, author of a famous Arabic *Treasury for Ophthalmologists,* added new theories and experience to the knowledge they inherited from the Greeks. Left, diagram showing the interconnection of the optic nerves is from a treatise on ophthalmology in the Egyptian National Library, Cairo.

Az-Zahrawi's discussion of mother and child health and the profession of midwifery is of particular interest in the history of nursing. His text imples the existence of a flourishing profession of nurses and midwives in general practice, which explains the reluctance of many conservative Muslim families to seek the assistance of male doctors in normal childbirth. Skilled physicians and obstetricians such as Az-Zahrawi instructed and trained midwives so that they could carry out their duties with competence.

Pharmacy, as a recognized profession, is an Arab-Islamic institution. It became an independent science—separate from, yet co-operating with—medicine, and it was practised by skilled and trained specialists. It achieved this status around the year 800, under the patronage of the Abbasid caliphs. The first privately owned and managed pharmacies were opened in the early 9th century in Baghdad, the Abbasid capitl, where drugs and spices from Asia and Africa were readily available. Within a short time, pharmacies sprang up in other large cities of the Islamic world.

In Arab mechanical technology two main categories of machines were produced: firstly those designed for use, such as mills, water-raising devices, and war machines; and secondly, devices designed to cause wonder and aesthetic pleasure within courtly circles.

The inventors of ingenious devices, or "automata", such as Ibn al-Razzaz al-Jazari, also designed useful machines. They were thoroughly familiar with the work of carpenters and millwrights, from whom they derived much of their vocabulary and many of their techniques, tools and mechanisms.

The most impressive array of automata were displayed in Al-Jazari's monumental clocks. Circles representing the Zodiac, the sun, and the moon rotated at constant speed; birds discharged pellets from their beaks onto cymbals to sound the hour; doors opened to reveal small figurines. At regular intervals musicians such as drummers, trumpeters and tambourine players performed on their instruments.

These automata were usually actuated by a float sinking at a constant rate in a water reservoir. Their mechanism involved the use of complex hydraulic systems which later reappeared in Europe during the Industrial Revolution, and incorporated a type of conical valve which was first mentioned in the West by Leonardo da Vinci and which came into general use in Europe during the 16th century. A great deal of research still remains to be done before the sources of Leonardo's ideas can be fully established, but it seems likely that he had access to some of the translations from Arabic made in Toledo in the 12th century.

Arab technology was essentially based upon the use of the effects of water pressure and air pressure. Most of the mathematical relationships that underlie these physical phenomena had not then been identified, and so engineers had to draw upon a large fund of practical experience.

Two types of mill have been known since classical times, one with a vertical waterwheel that drives the millstones through a pair of gear wheels, the other with a horizontal-vaned water-wheel with direct drive to the millstones. It has been computed that the second type could reach an output of 10 horsepower with an efficiency of 75 per cent. From the accounts of geographers and travellers, we know that both types of mill were widely used in the Islamic lands for grinding grain and for industrial purposes.

The five full-scale machines described by Al-Jazari were all designed to raise water, and four of them incorporate features that are of great significance in the history of machine technology.

There is ample evidence that knowledge of Arabic science, medicine, mathematics, and philosophy was transmitted to Europe in written form, but very little evidence that engineering ideas were disseminated in this way. Technological ideas have frequently been carried from one culture to another by travellers' reports, by the observations of commercial agents, and by direct contacts between craftsmen. Until modern times, such cross-fertilization was probably more frequent and more fruitful than written communications.

Arabic culture, including its contributions to the life sciences, reached its highest stage of development between the 9th and the 11th centuries, and experienced a number of major revivals during the 12th and 13th centuries. During this period the West was just beginning to awaken from the Dark Ages.

From the 12th century to the Renaissance, via translation and copying activities in Spain, Sicily, and Syria, the bulk of Arabic writings in all fields was made available in Latin. Despite the poor quality of translation and scholarship that prevailed in the West at that time, these Latin versions revived the spirit of learning in Western Europe during the late Middle Ages.

In the life sciences, Arabic authors not only preserved the classical achievements of the ancients but also added new and original data to the fund of human knowledge, thereby contributing to the well-being of all men everywhere.

■ **Salah Galal**

THE 3 R's IN THE MOSQUE

(Continued from page 34)

course of time the writings produced by the great early masters became textbooks for their successors and their students. In many cases teachers simply read out and commented on these ancient texts, a method which led to the stagnation of Muslim education for several centuries.

Discussion and questioning were two other features of education in the mosques. Students often engaged in heated debate with their teachers and professed opinions which were at odds with theirs. At the same time they remained highly respectful of their teachers' views. An art of dialogue and discussion regulated by clearly defined rules thus developed in Muslim academic life.

In the early days of Islam, Muslim scholars travelled far and wide to collect hadiths which certain elders had committed to memory, but which had never been written down. Later scholars journeyed in search of unusual Arabic expressions and syntax, and eventually the practice of travelling "in search of knowledge" expanded to include all other fields of academic life.

"All knowledge is ultimately religious and is acquired in God's name". This principle underlies the transmission and acquisition of knowledge in the Muslim world. Any secular calling must be placed in a divine setting, and in the last analysis the purpose of education is to serve God.

■ **Hisham Nashabi**

A major contribution to scientific progress

The Arabs were not only responsible for major innovations in science and technology. Through their translations of Greek and other scientific works of Antiquity they also ensured the transmission of knowledge that contributed to the subsequent flowering of Western science.

Arab scholars played a key role in the development of such scientific disciplines as astronomy and mathematics, as well as medicine, natural history, geography and agronomy. One outstanding example is the 9th-century mathematician Al-Khawarizmi, the creator of algebra (from the Arabic *"al-jabr"*), who also gave his name to the word "algorithm", today used in arithmetic. This great scholar, who has been called "one of the greatest mathematicians of all times", also elaborated a method of finding square roots and made important advances in trigonometry.

The development of Arab scientific thought and its impact on medieval Europe and world scientific progress have been discussed in several articles in the *Unesco Courier* (especially the June 1974 issue). More recently, Unesco's international scientific quarterly *Impact of Science on Society* also devoted a special issue to "Science and the Islamic World" (May-September 1976).

Letters to the editor

IMAGES OF AFRICA

Sir,

Congratulations on your issue "The Changing Face of Africa" (May 1977). Ola Balogun's article on the significance of African sculpture gives a clear exposition of ideas which a European mind often finds difficult to grasp.

However, I should like to make a few comments on the illustrations and photo captions. Firstly, the mask from Gabon shown at the bottom of page 16 is probably Pounou and not Fang, as indicated in the caption, even though it may have come from Fang country.

As for the Dan mask from Liberia shown on page 16, to my mind it is not a "masterpiece" worthy of inclusion in the 4 pages you devote to illustrations of African masks. The Dan have produced thousands of more notable masks.

Finally, many different interpretations can be given to the tiny ornamental "proverb weights" shown on pages 24 and 25. For example, the two crocodiles with the same stomach suggest that even though a family has several mouths, it feeds a common stomach. The moral is that people should subordinate their personal interests to those of the group.

A.J. Safaris
St. Maur-des-Fossées
France

Sir,

Your issue on African culture (May 1977) was fascinating. African art is a source of constant enrichment and has a timeless quality, like the art of Assur, Sumer, Oceania and pre-Columbian America.

As far as the cinema is concerned, however, it cannot be said that foreign film companies use Africa as a place to get rid of their duds. According to friends of mine who live in Upper Volta good-quality and relatively new (not more than a year old) films are shown there.

Claude Lambert
Epinal
France

Sir,

As a teacher, ethno-historical researcher and music columnist, I should like to congratulate you on your issue "The Changing Face of Africa". It is a pity that the *Unesco Courier* is not better known among South African educationists and writers.

I hope one day that your magazine will be printed in our language, Tsonga, which is spoken in South Africa, Rhodesia and Mozambique.

Risimati Mudunwazi Mathonsi
Ga-Rankuwa
South Africa

IN PRAISE OF RUBENS

Sir,

I should like to offer my sincere congratulations on the July 1977 issue of the *Unesco Courier,* devoted to the 400th anniversary of Rubens' birth and to the life and work of Spinoza and Leewenhoek.

The quality of the articles and the visual presentation, both in colour and black and white, make this issue of the *Unesco Courier* one of the best ever.

Alberto Wagner de Reyna
Ambassador of Peru to Unesco
Member of Unesco's Executive Board

Sir,

I congratulate you most warmly on the issue of the *Unesco Courier* devoted to Rubens. It really is a very interesting piece of work and I would welcome another issue of the same kind.

I am glad to take this opportunity to say how much I appreciate the quality and variety of the articles you publish.

J. Baugratz
Paris

ARISTOTLE UNDER FIRE

Sir,

I should like to take issue with Constantine Despotopoulos's article on Aristotle in your October 1977 issue. It is a great mistake to praise so debatable a personality in a magazine read by young people. The great English philosopher and statesman Francis Bacon (1561-1626) roundly condemned Aristotle, and so did Bertrand Russell, who wrote that Aristotle's intellectual influence made him "one of mankind's greatest scourges."

Marx's reference to Aristotle as "the greatest thinker of Antiquity" is superficial. Aristotle was quite incapable of imagination or prediction for he was completely prejudiced by the ideas of his time.

The following quotation from Aristotle's *Politics* illustrates my point: "If the shuttle could weave cloth all by itself, if a bow all alone could bring forth the desired sounds out of a cythar, then architects would no longer need workers, nor masters slaves." By this, Aristotle meant to show that such possibilities were absurd. However, machines had existed since the time of the Pharaohs, although Aristotle did not seem very familiar with this subject. He proved himself to be an enemy of progress and a supporter of slavery.

Jean Pilisi
Issy-les-Moulineaux
France

SPINOZA AND JUDAISM

Sir,

The article on the philosopher Benedict de Spinoza in your May 1977 issue made very interesting reading.

Our members celebrated the three hundredth anniversary of Spinoza's death, and in Paris we held a ceremony of commemoration devoted to this great man, to his universal thought and to his relations with Judaism. Men of different creeds, as well as atheists, put forward various views about Spinoza, but none of their conclusions tallied with those which the author of your article seems to reach.

Spinoza was excluded from the synagogue, but he never broke with Judaism and in spite of powerful pressures and subtle attempts to convert him, he never joined a Christian church. He remained a student of Hebrew, a Judaic scholar and the author of the first Hebrew grammar. Many letters reveal his courage and adroitness in answering points made by his non-Jewish friends. To avoid dependence on the church, he turned down a chair at the university of Heidelberg which was, like most universities at that time, dominated by the clergy.

Finally, certain passages in your article seem to me to attach too much importance to the place of money in the Jewish community.

Spinoza's ideas have been criticized by philosophers from many viewpoints, but the opposition of certain Jewish thinkers to the concepts he formulated are above all philosophical or theological. In the eyes of most Jews, his condemnation was unjust and would have been unthinkable a century later. The most important thing is that his philosophical system marked the starting point for many developments in modern religious, political, ethical and scientific thought.

S. Hoffenberg
Permanent Delegate to Unesco
B'nai Brith International Council

THE GERMANS IN LATIN AMERICA

Sir,

I greatly enjoy the *Unesco Courier,* and especially liked the recent issues on Rubens and the Acropolis. However, in your fascinating issue on Latin America (August-September 1977), an important matter was left out: the contribution of the Germanic peoples (the Swiss, Alsatians, Austrians, Bavarians, and peoples from the Rhine, Hamburg, Berlin, and so forth) to Latin America.

Though Germans emigrated in greater numbers to North America, German geographers and astronomers often served in Portuguese and Spanish ships in the 16th century. The King of Spain offered land to German settlers, which they called Venezuela, or "Little Venice", even though they came from Bremen and Hamburg.

In the 19th century, hundreds of thousands of emigrants from Germanic countries settled in southern Brazil, Argentina and Chile. In southern Brazil, there are towns with such names as Hamburgo, Germania, and Oberlandia.

Today there are some 5 million South Americans of Germanic origin. They have played, and continue to play a leading role in architecture, medicine, industry, the economy and politics.

J.-L. Fronville
Hangest-en-Santerre
France

TOWARDS WORLD SOLIDARITY

Sir,

I have been an enthusiastic *Courier* reader since I was at secondary school 10 years ago. I particularly enjoy your articles on history and archaeology, as well as those on science, geophysics and ethnography. For me, the magazine is a continuing source of enrichment and awareness of world problems, as well as a means of creating solidarity and unity among peoples.

Mme. Thirion-Chiroux
Savigny-sur-Orge
France

UNESCO NEWSROOM

Libya gives $1 1/4 million to General History of Africa

Libya has agreed to contribute $1,220,000 to Unesco's project for a general history of Africa. The contribution will ensure publication of the eight-volume work in Arabic, French, English and several African languages.

Bookshelf on Arab Islamic civilization

UNESCO BOOKS AND PERIODICALS

• *Islam: the Perenniality of Values:* theme of Unesco's international quarterly *Cultures* (Vol. IV, No. 1, 1977) 22 Francs.

• *Cultural Policy in Tunisia,* by Rafik Said. 1970, 56 pp. (8 F); *Cultural Policy in Egypt,* by Magdi Wahba. 1972. 95 pp. (8 F). Both published in Unesco's "Studies and Documents on Cultural Policies" series.

• *Islam and the Race Question,* by Abd-al-Aziz Abd-al-Qadir Kamil. 1970. 65 pp. (6 F).

• *Education in the Arab region viewed from the 1970 Marrakesh Conference,* by Mohammed A. El-Ghannam. 1971. 57 pp. (6 F).

• *National Science and Technology Policies in the Arab States,* present situation and future outlook. 1976. 214 pp. (20 F).

SEE ALSO BOX PAGE 20

OTHER BOOKS

• *The World of Islam: Faith, People, Culture,* edited by Bernard Lewis. Thames and Hudson, London. 1976. 360 pp. (£12.50).

• *The Arabs in History,* by Bernard Lewis. Hutchinson, London. 1966. (£2.50).

• *Art of Islam: Language and Meaning,* by Titus Burckhardt. 1976. 204 pp. (£12.50); *Islamic Science: an Illustrated Study,* by Seyyed Hossein Nasr. 1976. 273 pp. (£12.50). Both published by the World of Islam Festival Publishing Company Ltd. and distributed by Thorsons Publishers Ltd., Wellingborough, Northants. U.K.

• *Early Islam,* by Desmond Stewart and the editiors of Time-Life Books, Time Inc., New York. 1967 (2nd impression 1970). 192 pp.

• *The Genius of Arab Civilization: Source of Renaissance,* edited by John R. Hayes. Phaidon Press, Iver, Bucks., U.K. 1976 (£15).

PHILIPPE OUANNES

Shortly before this issue went to press, on the morning of 23 November, we learned of the sudden death of our friend and colleague Philippe Ouannès, editor of the French edition of the *Unesco Courier*. He was 38 years old. He had spent the previous day in our midst, putting the finishing touches to this issue on Arab culture, his own special field (he had taught Islamic literature at the University of Paris). Philippe Ouannès contributed more than anyone else on our editorial staff to the conception of this issue. It is thus a last tribute to his ability, courage and generosity, as well as a reminder of all that the *Unesco Courier* owes to him and loses with his death.

Arab states adopt declaration on education and development

Ministers of Education and Ministers of Economic Planning from the Arab states met in Abu Dhabi (United Arab Emirates) between 7 and 14 November 1977 for a conference on educational policies in the Arab world. Addressing the conference, organized by Unesco in collaboration with ALECSO (the Arab League Educational, Cultural and Scientific Organization), Unesco's Director-General, Mr. Amadou-Mahtar M'Bow, stressed that the Arab states faced the challenge of moving from a traditional to a modern society, while mastering their technological development and the process of urbanization. At the end of the Conference, delegates unanimously adopted a declaration reflecting their determination to accelerate the process of development guided both by the achievements of modern science and technology and by their traditional values, which are the vehicles of progress. The Declaration, which shows that the Arab states have opted for the democratization of education, also calls for a strengthening of regional co-operation and solidarity to benefit the region's financially less privileged countries.

Atoms for peace

On 18 November 1977, the U.N. Postal Administration issued a set of commemorative stamps on the theme "Peaceful Uses of Atomic Energy". As a member of the U.N. system, the International Atomic Energy Agency (IAEA), founded in Vienna in 1957, "seeks to enlarge the contribution of atomic energy to peace and health throughout the world". For further information about this stamp issue, please write to U.N. Postal Administration, Palais des Nations, CH-1211 Geneva 10, Switzerland.

Sorbonne honours Unesco's Director-General

The Sorbonne (University of Paris) bestowed an honorary doctorate on the Director-General of Unesco, Mr. Amadou-Mahtar M'Bow, on 18 November 1977. In an address given during the ceremony, Mr. M'Bow stressed that one of the university's most important missions today is its commitment to the service of the national and international community united in its aspiration for a new world order based on solidarity.

Milestone in environmental education

At the first-ever Intergovernmental Conference on Environmental Education, held in Tbilisi (U.S.S.R.) from 4 to 26 October 1977, delegates from 60 nations adopted a declaration defining how education can help cope with environmental problems at national and international levels. The conference organized by Unesco and the U.N. Environment Programme (UNEP) recommended that environmental education should be part of teaching programmes at all levels. Specialists in environmental teaching should be trained and efforts should be made to educate professional groups whose activities affect the environment.

U.N. *Development Forum* launches business edition

Development Forum, the United Nations monthly publication on world economic and social affairs, will launch a new fortnightly *Business Edition* in January 1978. Undertaken on a co-operative basis by the World Bank, the U.N. Development Programme (UNDP) and the U.N. Centre for Economic and Social Information, which has published *Development Forum's* general edition for the last five years, the new edition will provide comprehensive information on the goods and services required for development projects, thereby stimulating more competitive marketing. According to U.N. Secretary-General Kurt Waldheim, the new edition will help to "better acquaint the business world with the broad conceptual framework on which United Nations development policies are based." The subscription rate in the introductory offer is $150. For further information, please write for a prospectus to *Development Forum,* Subscriptions Department, United Nations, CH 1211 Geneva 10, Switzerland.

African arts on film

The 2nd World Black and African Festival of Arts and Culture ("Festac '77") has been recorded in a half-hour colour 16 mm film made by Nigerian television and Unesco. The film, written and directed by Philip Gaunt, features music, dancing, drama and exhibitions at the festival held in Lagos in January and February 1977. For further information please apply to Press and Audiovisual Information Division, Unesco, Place de Fontenoy, 75700 Paris.

Flashes...

• *Each year 6 million tons of petroleum are dumped into the world's oceans, according to experts of the U.N. Environment Programme (UNEP).*

• *Mr. Michel Debeauvais of France has been appointed director of Unesco's Paris-based International Institute of Educational Planning.*

BRODARD GRAPHIQUE, COULOMMIERS. – Dépôt légal C 1 – Décembre 1977 – IMPRIMÉ EN FRANCE *(Printed in France).*

Unesco Courier Index 1977

January

WHO OWNS THE OCEANS? (M.E. Gonçalves). The law of the sea (M. Ruivo). Unesco and the Oceans. New wave in oceanography (D. Behrman). Last of Leviathan (Photos). Hidden dynamos of Neptune's powerhouse (K.N. Fedorov). Marine pollution (D. Behrman). Test tubes in the sea (T.R. Parsons). Expedition FAMOUS (X. le Pichon). Art treasures: Mayan dignitary (Honduras).

February

EBLA: Syrian metropolis of 4,000 years ago. (P. Matthiae). The Acropolis in danger (A.M. M'Bow). Churches of Lake Tana (B. Abbebe). Henna for happiness (J. Saksena). After literacy, what next? (S. Malya). Bolivar and the Congress of Panama (A. Uslar-Pietri). Art treasures: Mask with half-moon eyes (Zaire).

March

UNESCO AND THE WORLD AHEAD. Unesco's Medium-Term Plan. Signposts for 1982 (A.M. M'Bow). Birthright of Man. In search of a lasting peace. Science, technology, man and society. Man—the centre of development. Education. An equal chance for everyone. Man and the environment. Communication—more than a one-way street. Books for all. Art treasures: Blue idol (New Hebrides).

April

WORLD DEBATE ON INFORMATION. Unesco and communication (M. Makagiansar). Unesco and news agency development. Caribbean news agency (H.N.J. Cholmondeley). Cross-cultural communication (J.A. Willings). TV's one-way traffic (H. Topuz). Non-aligned countries' news pool (P. Ivacic). A voice from the Third World (R. Najar). The mass media and society: (1) A Soviet viewpoint (Y.N. Zasursky and Y.I. Kashlev); (2) An American viewpoint (W.G. Harley). The 'Symphonie' experiment (E. Ll. Sommerlad). Art treasures: Rice-spoon fit for a queen (Ivory Coast).

May

THE CHANGING FACE OF AFRICA. Africa rediscovers its cultural roots. African sculpture (O. Balogun). Masks from 20 countries (Photos). Art that explains the universe (P. Ahyi). Africa's proverbial wit and wisdom (T. Aka etc.). A song for every season (S. Mbabi-Katana). New African theatre (D. Nwoko). Awakening African cinema (F. Bebey). Art treasures: Twin with open eyes (Canada).

June

RUBENS. 400th anniversary (M. Makagiansar). Portrait of the artist (R. Avermaete). Mansion for a master; Vive la femme! (Photos). Stamps. Colour pages. Rubens the diplomat (F. Baudouin). Spinoza (B. Rekers). Van Leeuwenhoek (J.W.M. La Rivière). Art treasures: Childhood radiance (Belgium).

July

A HALT TO DESERT ADVANCE. Are deserts man-made? (M. El-Kassas). The climate as accomplice (F.K. Hare). A precarious balance upset (V.A. Kovda). Sands of wrath (H.E. Dregne). Battle against destruction (A.G. Babaev and N.S. Orlovsky). Onslaught on the Nile (F. El-Baz). Study in survival (C. Grenot and R. Vernet). The poor man's energy crisis (E.P. Eckholm). Great green walls of China. Art treasures: Winged ram (Spain).

August-September

LATIN AMERICA. (L. Zea). The blacks in Latin America (A. Carpentier). The Afro-Brazilian experiment (G. Freyre). Where gods and men have mingled (J. Amado). A matter of life and death (O. Paz). The Passion according to the Yaquis; Fiesta of death (Photos). Avant-garde art (A. Uslar-Pietri). Colour pages. The Andes (P. Macera). Communities in crisis (J.E. Adoum). Paraguay (A.R. Bastos). The 'Black Legend' (R.F. Retamar). Extravaganza of baroque (Photos). The tango (C.F. Moreno). Spanish overseas (M.A. Morinigo). Victoria Ocampo (J. Rigaud). Unesco and Latin America. Art treasures: The man in the bird's beak (El Salvador).

October

THE ACROPOLIS IN PERIL. (C. Bouras). Caryatids in need of care (Photos). The Acropolis in Antiquity (J. Travlos). The Parthenon (Photos). Athenian democracy's grand design (M. Andronicos). Citadel in praise of peace (A. Diamantopoulos). Pericles and Plutarch. Acropolomania (Photos). Village life among the ruins (J. Lacarrière). Aristotle (C. Despotopoulos). Art treasures: Athena (Italy).

November

RACISM IN SOUTHERN AFRICA. Apartheid (A.M. M'Bow). U.N. campaign against apartheid (E.S. Reddy). South Africa: facts and fiction (L. Rubin). South Africa's captive work-force. Namibia moves to independence (S. MacBride). Namibians train for tomorrow (H.G. Geingob). From Rhodesia to Zimbabwe (M. O'Callaghan). Apartheid in sport (S.A. Ogouki). Unesco and apartheid. 30-year-struggle for human rights (K. Vasak). Text of Universal Declaration of Human Rights. Art treasures: Prehistoric bison (France).

December

A GOLDEN AGE OF ARAB CULTURE. (A. Sinaceur). Brotherhoods of the bazaars (Y. Ibish). The Arab Mind (M. Arkoun). Music (B. Moussali). Colour pages. Education (H. Nashabi). The Madrasah (B. Arodaky). Al-Azhar university (T. Hussein). Calligraphy and architecture (M. El-Habib). Science (S. Galal). Art treasures: The man from Derah'il (People's Dem. Rep. of Yemen).

Where to renew your subscription

and place your order for other Unesco publications

Order from any bookseller or write direct to the National Distributor in your country. (See list below; names of distributors in countries not listed, along with subscription rates in local currency, will be supplied on request.)

AUSTRALIA. Publications: Educational Supplies Pty. Ltd. P.O. Box 33 , Brookvale, 2100, NSW. Periodicals: Oominie Pty. Subscriptions Dept., P.O. Box 33, Brookvale 2100, NSW. Sub-agent: United Nations Association of Australia, Victorian Division, Campbell House, 100 Flinders St., Melbourne (Victoria), 3000. — **AUSTRIA.** Dr. Franz Hain, Verlags-und Kommissionsbuchhandlung, Industriehof Stadian, Dr. Otto Neurath-Gasse 5, 1220 Wien. — **BELGIUM.** "Unesco Courier" Dutch edition only: N.V. Handelmaatschappij Keesing. Keesinglaan 2-18, 2100 Deurne-Antwerpen. French edition and general Unesco publications agent: Jean de Lannoy, 112, rue du Trône, Brussels 5, CCP 000-0070823-13. — **BURMA.** Trade Corporation N° 9, 550-552 Merchant Street, Rangoon. — **CANADA.** Renouf Publishing Co. Ltd., 2182 St. Catherine Street West, Montreal, Qué H3H 1M7. — **CYPRUS.** "MAM", Archishop Makarios 3rd Avenue, P.O. Box 1722, Nicosia. — **CZECHOSLOVAKIA.** — S.N.T.L., Spalena 51, Prague 1 (Permanent display); Zahrancni literatura, 11 Soukenicka, Prague 1. For Slovakia only: Alfa Verlag — Publishers, Hurbanovo nam. 6,893 31 Bratislava — CSSR. — **DENMARK.** Munksgaards Boghandel, 6, Norregade, DK — 1165, Copenhagen K. — **EGYPT (ARAB REPUBLIC OF).** National Centre for Unesco Publications, N° 1 Talaat Harb Street, Tahrir Square, Cairo. — **ETHIOPIA.** National Agency for Unesco, P.O. Box 2996, Addis Ababa. — **FINLAND.** Akateeminen Kirjakauppa, Keskukatu 1, SF-00100 Helsinki 10. — **FRANCE.** Librairie de l'Unesco, 7, place de Fontenoy, 75700 Paris, C.C.P. 12598-48. — **GERMAN DEMOCRATIC REP.** Buchhaus Leipzig, Postfach 140, 710 Leipzig or from Internationalen Buchhandlungen in the G.D.R. — **FED. REP. OF GERMANY.** For the Unesco Kurier (German ed. only): 53 Bonn 1, Colmantstrasse 22, C.C.P. Hamburg 278650. For scientific maps only: GEO CENTER D7 Stuttgart 80, Postfach 800830. Other publications: S. Karger GmbH Karger Buchhandlung. Angerhofstrasse 9, Postfach 2, 8034 Germering/München. —**GHANA.** Presbyterian Bookshop Depot Ltd., P.O. Box 195, Accra; Ghana Book Suppliers Ltd., P.O. Box 7869, Accra; The University Bookshop of Ghana, Accra; The University Bookshop of Cape Coast; The University Bookshop of Legon, P.O. Box 1, Legon. — **GREAT BRITAIN.** See United Kingdom. — **HONG KONG.** Federal Publications 4 (HK) Ltd., 5A Evergreen Industrial Mansion, 12 Yip Fat Street, Aberdeen. Swindon Book Co., 13-15, Lock Road, Kowloon. — **HUNGARY.** Akadémiai Könyvesbolt, Váci u. 22, Budapest V; A.K.V. Konyvtürosok Boltja, Népköztársaság utja 16, Budapest VI. — **ICELAND.** Snaebjörn Jonsson & Co., H.F., Hafnarstraeti 9, Reykjavik. — **INDIA.** Orient Longman Ltd., Kamani Marg, Ballard Estate, Bombay 400038; 17 Chittaranjan Avenue, Calcutta 13; 36a, Anna Salai, Mount Road, Madras 2; B-3/7 Asaf Ali Road, New Delhi 1; 80/1 Mahatma Gandhi Road, Bangalore-560001; 3-5-820 Hyderguda, Hyderabad-500001. Sub-Depots: Oxford Book & Stationery Co. 17 Park Street, Calcutta 70016; Scindia House, New Delhi; Publications Section, Ministry of Education and Social Welfare, 511 C-Wing, Shastri Bhavan, New Delhi 110001. — **INDONESIA.** Bhratara Publishers and Booksellers, 29 Jl.Oto Iskandardinata III, Jakarta; Gramedia Bookshop, Jl. Gadjah Mada 109, Jakarta; Indira P.T., Jl. Dr Sam Ratulangie 47, Jakarta Pusat. — **IRAN.** Kharazmie Publishing and Distribution Co., 139 Shah Reza Ave., opposite to University of Teheran, P.O. Box 14/1480, Teheran; Iranian Nat. Comm. for Unesco, Ave. Iranchahr Chomali No. 300, B.P. 1533, Teheran. — **IRAQ.** McKenzie's Bookshop, Al-Rashid Street, Baghdad. — **IRELAND.** The Educational Company of Ireland Ltd., Ballymount Road, Walkinstown, Dublin 12. — **ISRAEL.** Emanuel Brown, formely Blumstein's Book-stores, 35 Allenby Road and 48 Nachlat Benjamin Street, Tel Aviv; 9, Shlomzion Hamalka Street, Jerusalem. — **JAMAICA.** Sangster's Book Stores Ltd., P.O. Box 366, 101 Water Lane, Kingston. — **JAPAN.** Eastern Book Service Inc., C.P.O. Box 1728, Tokyo 100-92. — **KENYA.** East African Publishing House, P.O. Box 30571, Nairobi. — **KOREA.** Korean National Commission for Unesco, P.O. Box Central 64, Seoul. — **KUWAIT.** The Kuwait Bookshop Co., Ltd, 2942, Kuwait — **LESOTHO.** Mazenod Book Centre, P.O. Mazenod, Lesotho, Southern Africa. — **LIBERIA.** Cole and Yancy Bookshops Ltd., P.O. Box 286, Monrovia. — **LIBYA.** Agency for Development of Publication & Distribution, P.O. Box 34-35, Tripoli. — **LUXEMBOURG.** Librairie Paul Bruck, 22, Grande-Rue, Luxembourg. — **MALAYSIA.** Federal Publications Lot 8323, Jl.222, Petaling, Jaya, Selangor. — **MALTA.** Sapienzas, 26 Republic Street, Valletta. — **MAURITIUS.** Nalanda Company Ltd., 30, Bourbon Street, Port-Louis. — **MONACO.** British Library, 30 bd. des Moulins, Monte-Carlo. — **NETHERLANDS.** For the "Unesco Koerier" Dutch edition only: Systemen Keesing, Ruysdaelstraat 71-75, Amsterdam-1007. Agent for all Unesco publications: N.V. Martinus Nijhoff, Lange Voorhout, 9, The Hague. — **NETHERLANDS ANTILLES.** G.C.T. Van Dorp & Co. (Ned Ant.), N.V., Willemstad, Curaçao. N.A. — **NEW ZEALAND.** Government Printing Office, Government Bookshops at: Rutland Street, P.O. Box 5344, Auckland; 130, Oxford Terrace, P.O. Box 1721 Christchurch; Alma street, P.O. Box 857 Hamilton; Princes Street, P.O. Box 1104, Dunedin; Mulgrave Street, Private Bag, Wellington. — **NIGERIA.** The University Bookshop of Ife; The University Bookshop of Ibadan, P.O. 286; The University Bookshop of Nsukka; The University Book-shop of Lagos; The Ahmadu Bello University Bookshop of Zaria. — **NORWAY.** All publications: Johan Grundt Tanum (Booksellers), Karl Johansgate 41/43, Oslo 1. For Unesco Courier only: A.S. Narvesens Literaturjeneste, Box 6125, Oslo 6. — **PAKISTAN.** Mirza Book Agency, 65 Sharah Quaid-e-azam, P.O. Box No. 729, Lahore 3. — **PHILIPPINES.** The Modern Book Co., 926 Rizal Avenue, P.O. Box 632, Manila D-404. — **POLAND.** Orpan-Import, Palac Kultury i Nauki, Warsaw; Ars Polona-Ruch, Krakowskie Przedmiescie No. 7.00-901 WARSAW. — **PORTUGAL.** Dias & Andrade Ltda, Livraria Portugal, rua do Carmo 70, Lisbon. — **SEYCHELLES.** New Service Ltd., Kingsgate House, P.O. Box 131, Mahé. — **SINGAPORE.** Federal Publications (S) Pte Ltd., No. 1 New Industrial Road, off Upper Paya Lebar Road, Singapore 19. — **SOMALI DEMOCRATIC REPUBLIC.** Modern Book Shop and General, P.O. Box 951, Mogadiscio. — **SOUTH AFRICA.** All publications: Van Schaik's Book-store (Pty.) Ltd., Libri Building, Church Street, P.O. Box 924, Pretoria. For the Unesco Courier (single copies) only: Central News Agency, P.O. Box 1033, Johannesburg. — **SOUTHERN RHODESIA.** Textbook Sales (PVT) Ltd., 67 Union Avenue, Salisbury. — **SRI LANKA.** Lake House Bookshop, 100 Sir Chittampalam Gardiner Mawata P.O.B. 244 Colombo 2. — **SUDAN.** Al Bashir Bookshop, P.O. Box 1118, Khartoum. — **SWEDEN.** All publications: A/B C.E. Fritzes Kungl, Hovbokhandel, Fredsgatan 2, Box 16356, 10327 Stockholm 16. For the Unesco Courier: Svenska FN-Förbundet, Skolgränd 2, Box 150 50 S- 104 65, Stockholm. — **SWITZERLAND.** All publications: Europa Verlag, 5 Rämistrasse. Zurich. Librairie Payot, rue Grenus 6, 1211, Geneva 11, C.C.P. 12-236. **TANZANIA.** Dar-es Salaam Bookshop. P.O.B. 9030 Dar-es-Salaam. — **THAILAND.** Nibondh and Co. Ltd., 40-42 Charoen Krung Road, Siyaegi Phaya Sri, P.O. Box 402, Bangkok:Suksapan Panit, Mansion 9, Rajdamnern Avenue, Bangkok; Suksit Siam Company, 1715 Rama IV Road, Bangkok. — **TURKEY.** Librairie Hachette, 469 Istiklal Caddesi, Beyoglu, Istanbul. — **UGANDA.** Uganda Bookshop, P.O. Box 145, Kampala. — **UNITED KINGDOM.** H.M. Stationery Office, P.O. Box 569, London, S.E.I., and Government Bookshops in London, Edinburgh, Cardiff, Belfast, Manchester, Birmingham, Bristol. — **UNITED STATES.** Unipub, Box 433 Murray Hill Station, New York, N.Y. 10016. For "Unesco Courier" in Spanish: Santillana Publishing Company, Inc., 575 Lexington Avenue, New York, N.Y. 10022. — **U.S.S.R.** Mezhdunarodnaya Kniga, Moscow, G-200. — **YUGOSLAVIA.** Jugoslovenska Knjiga, Terazije, 27, Belgrade; Drzavna Zalozba Slovenije, Titova C 25, P.O.B. 50-1, Ljubliana.

The city of the Prophet

After preaching for 13 years in Mecca, Muhammad settled in Yathrib, a town some 500 km away, where he remained until his death. Yathrib became known as Madinat al-Nabi or "City of the Prophet", or simply Medina (Al-Madinah)—the city. This 17th-century Mamluk tile from Egypt shows a schematic view of the Holy Places of Medina, notably the dwelling of Muhammad, on which later Arab mosques were modelled.