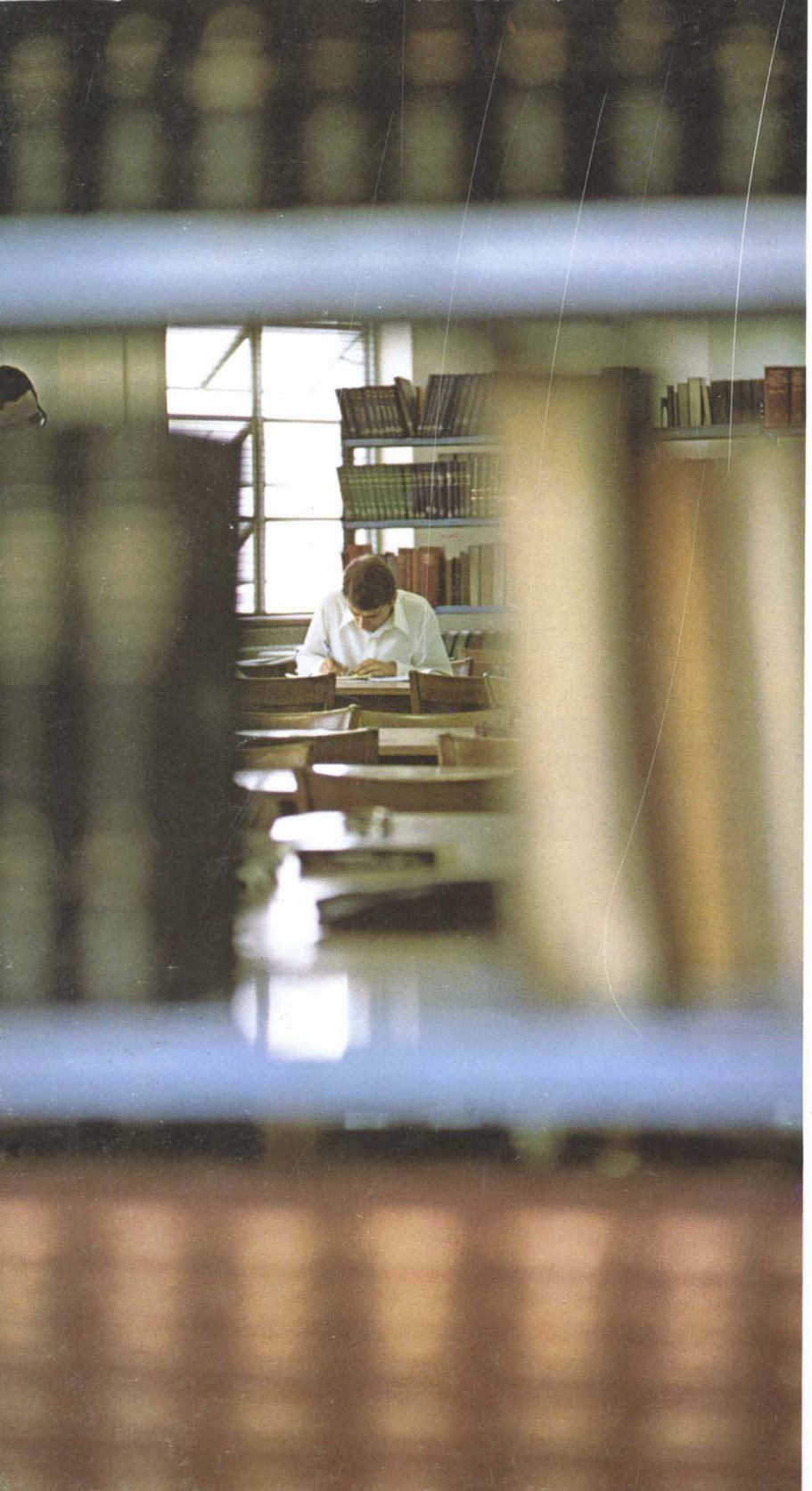

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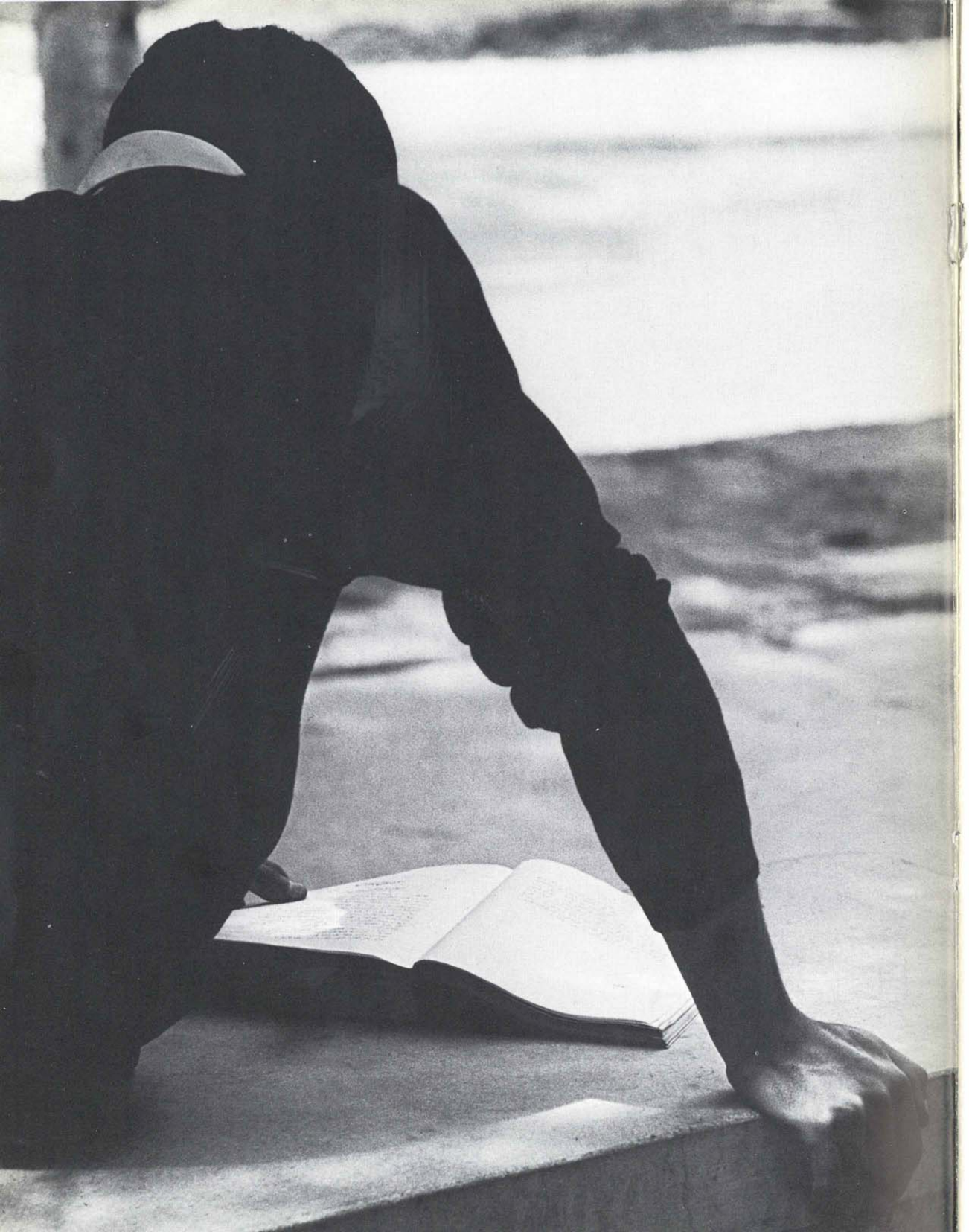
QUEST FOR KNOWLEDGE: A SPECIAL ISSUE



Quest For Knowledge

The near-reverent quest for knowledge by early Arab scholars, and the contributions to learning by Islamic scientists and mathematicians are familiar stories to most persons who know history.

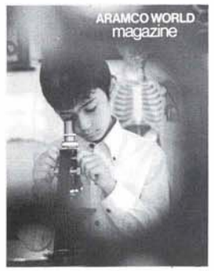
Less familiar, we think, is the story of a new quest, one which began with the 19th-century awakening after 500 years of intellectual decay under the heavy hand of the Ottomans but which has accelerated in the last two decades and is now moving ahead at a phenomenal pace.

Part of the story can be seen in the statistics that a team of *Aramco World* researchers and writers compiled during 1969, and that show how urgent most Arab nations today think modern, universal education is. To cite just one finding, during the last 10 to 15 years elementary school enrollment, faculties, classrooms and budgets have at least—at the very least—doubled, and in some cases have increased tenfold.

The statistics of growth, however, are meaningless by themselves. Just as vital is the context in which growth occurs, the failures as well as the successes, the obstacles as well as the bright hopes. All these we have tried to describe in what we hope is a fair look at the efforts of many dedicated individuals in the Arab world who see in education the foundation of the stability and progress they desire for their people, their countries, and, above all, their children.

—THE EDITORS

ARAMCO WORLD magazine



Cover: In a modern chemistry laboratory in a Lebanese public school, a young Muslim boy at a microscope typifies the astonishing changes that the growth and improvement of education at all levels are effecting today throughout the once-stagnant Arab East.

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Out of the tradition of the Prophet himself, a university...

STEEPED IN GLORY

BY LESLIE FARMER/PHOTOGRAPHY BY TOR EIGELAND

Acquire knowledge. It enables its possessor to know right from wrong; it lights the way to heaven; it is our friend in the desert, our society in solitude, our companion when friendless; it guides us to happiness; it sustains us in misery; it is an ornament among friends, and an armour against enemies.

There are two faces to Egypt's Al-Azhar University. One is new, barely 10 years old; the other is nearly as old as Islamic civilization. Between them stand 1,000 years of history.

The new face can be seen in a Cairo suburb where, amid the new faculties of Al-Azhar, members of Egypt's college generation study, gossip, scrutinize medical specimens or the growth of a new strain of plant. The old, the parent faculty, is a few miles away, in the heart of medieval Cairo, where crescent-topped domes, colonnaded courtyards and a mosque with delicately carved and patterned minarets suggest what it may well be in 1969: an embattled citadel of a traditional way of learning, now gone stale, but steeped in glories 10 centuries old.

Long before Muhammad, Greek and Roman learning had already penetrated the Eastern Mediterranean. The Museum of Alexandria was perhaps the world's first great academic institution and the school of law in Alexandria, where sixth-century jurists helped complete Justinian's code of laws, was famous around the world.

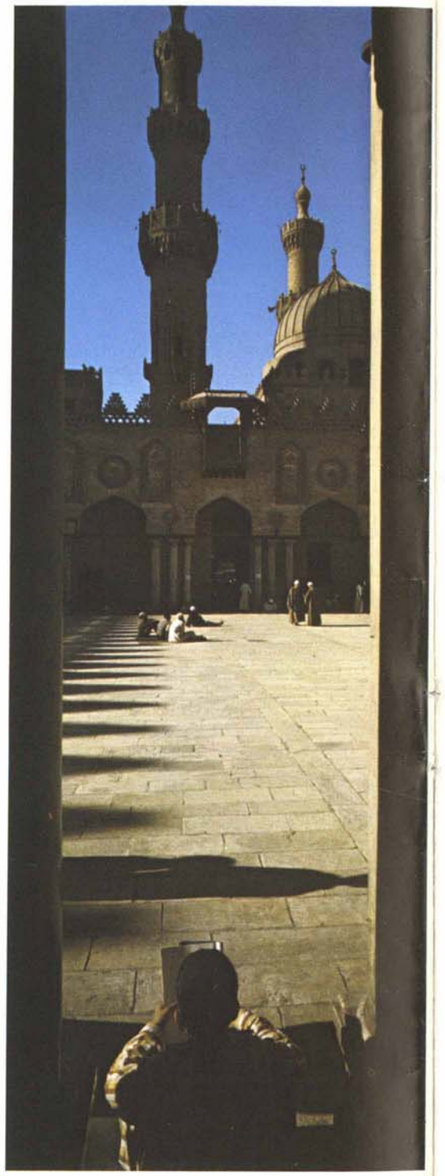
But such schools could not long outlast the empires that had supported them—and in any case their influence had never been able to reach very far into the forbidding desert hinterland. Thus, in the seventh century, in the Arabia into which the Prophet Muhammad was born, an educated man was considered to be one who could express himself well in prose and poetry and had mastered archery and horsemanship. Education, as defined today, did not exist.

Muhammad soon changed that. He set up a school—Islam's first—to teach the Koran, and reading and writing, the skills necessary to sustain and pass on religious learning. The school was an enclosure connected directly with the Prophet's small mosque in Medina. There some of Muhammad's companions taught men, women and children.

It was a simple pattern—the inextricable linking of learning and religion—but in many parts of the Arab world it continued well into this century.

At first, and until the middle of the eighth century, those desiring an education simply went to the nearest mosque, where classes centering on the Koran and the *Hadith* (the traditional sayings of Muhammad) provided the basics of literacy as well as moral instruction. Then, about the beginning of the Abbasid dynasty, a more formal system began to crystallize, which in some ways resembled the Calvinist schools of puritan America.

A child began his education at about the age of eight, in a school run either in connection with the mosque or in the mosque itself. The curriculum of such a school centered on the Koran, the child's reading primer. Writing, penmanship, stories about the Prophet and his companions, grammar, arithmetic and poems were also taught, with great stress on memorization, and an application of the rod to the soles of the feet. Girls attended school along with their brothers, but were not encouraged to take in much more than basic religious training.



The first real academy of higher education in Islam, apart from a mosque, was Al-Nizamiyah, founded in Baghdad in 1065 (about 100 years before the University of Paris) by Nizam al-Mulk, the Persian vizier of two Seljuk sultans. The Nizamiyah had as its backbone the Koran and Arabic poetic classics. Many of its students held scholarships—a contribution to such institutions being considered a meritorious act—and all were boarders. The Nizamiyah type of school, the *madrasah* (literally, "a place for study"), spread throughout the East, as far as Samarkand and to the West as far as Morocco, and certain organizational features were, supposedly, adopted by the early European universities.

Meanwhile, the mosque continued to serve most communities as a free education center, often, as in the case of Al-Azhar in Cairo, Zaituna in Tunis and Qarawiyyin in Fez, Morocco, becoming the nucleus of a university.

The mosque of Al-Azhar was founded in Cairo in 970, only one year after the city itself, by the Fatimid general, Gawhar. Eighteen years later, the Caliph Al-Aziz made it an academy and by the time another 18 years had passed Al-Azhar boasted nearly 5,000 students from all parts of the Muslim world, and several hundred professors. Its specialty then was theology, as Cordova's came to be philosophy and Baghdad's science, but it also offered such diverse courses as Islamic law, Arabic language and literature and occasionally medicine, music, mathematics, logic and astronomy.

Students at Al-Azhar, for whom not only tuition but bed and board were free, were lodged according to national groupings. Scholarships and bequests from the rich and pious made such support possible—and helped assemble a large library long before the invention of the press during the 15th century made books available in such quantities in Europe.

Teachers, for whom a position at Al-Azhar was the equivalent of one at Oxford today—the great Ibn Khaldun, considered to be the founder of sociology, gained part of his reputation lecturing there—sat on low stools or on the floors of the different courts or halls and lectured. Students sat around on mats taking notes. After the lecture, there would be an informal period of discussion and questions.

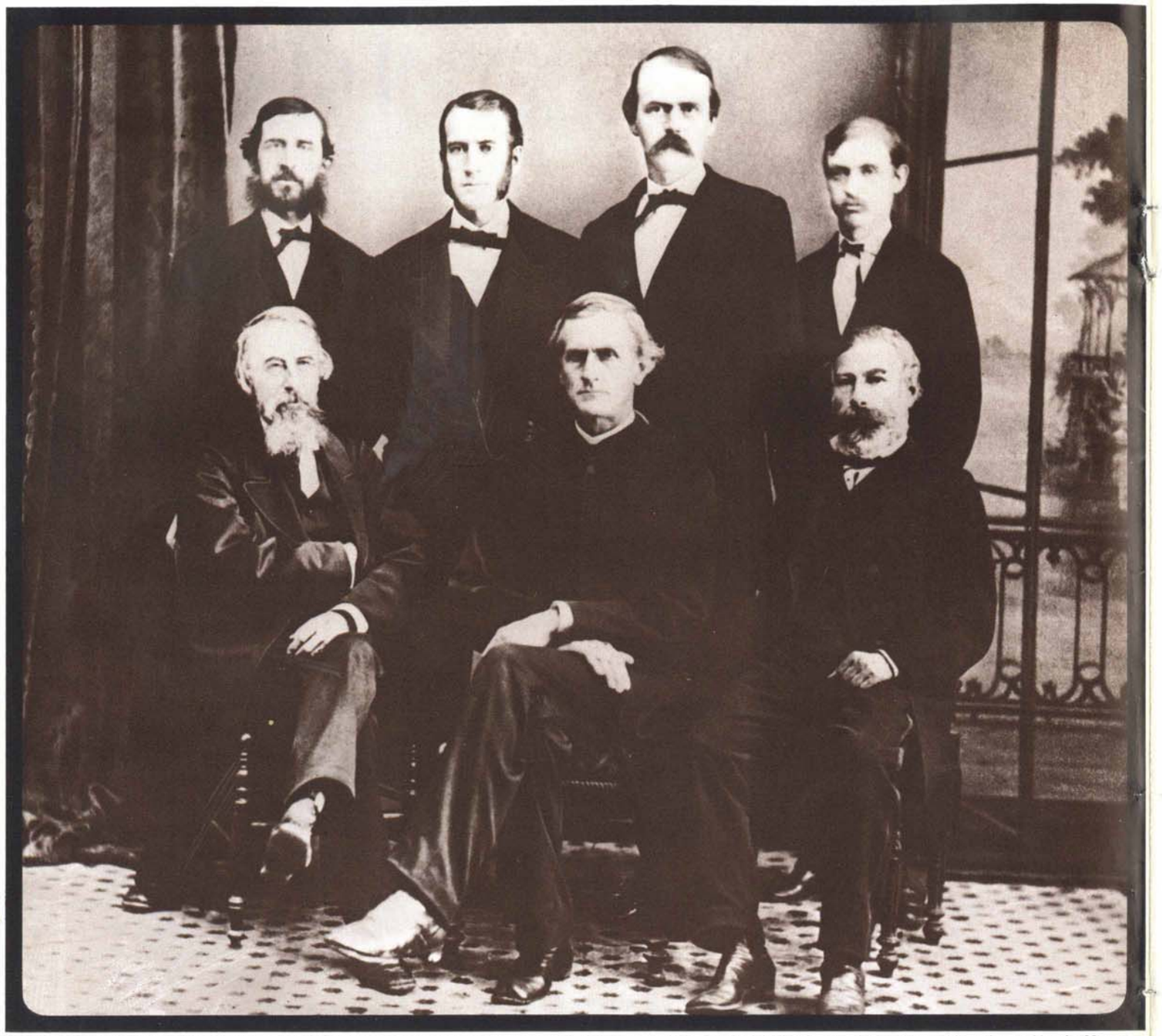
There were no prescribed courses of study or time limits for a student's stay at Al-Azhar or at other universities like it. Entirely at the teacher's discretion a student was himself given a license to teach what he had learned from his master. Prodigious memory work and the use of the Koran as a base for studies of many kinds continued to be notable features of this system.

The contributions to civilization made by the scholars of Islam—some, like Ibn Khaldun, connected with the universities, some not—were numerous. The poet Umar al-Khayyam, a gifted mathematician, helped produce a calendar almost as accurate as the Gregorian one in use today throughout the West. The oldest works on arithmetic and algebra were written in Arabic. Arab geographers kept alive the idea that the world was round and thus contributed to the discovery of the New World. But long before Columbus sailed, the tide of Islamic education—indeed of most aspects of Islamic civilization—had ebbed, as, increasingly, a reverence for the past stifled its critical and scientific spirit. Arab sciences, whose history after the Abbasids was one of stagnation and then decline, were followed not long after by philosophy and literature. By the 13th century the decline was well underway, and the great university-mosques such as Al-Azhar had begun to retreat to an increasingly elaborate theology which they would teach with little change for the next five centuries.

In the 19th century, however, Arab intellectualism began to waken, as Muhammad Ali imported European ideas and methods into Egypt and opened up Lebanon and Syria even more to the influence of western missionary schools. It was a slow awakening but against the often more dramatic background of great political and military events it continued to pick up momentum. Political independence, after World War II, spurred development even further.

All this while in Cairo, almost untouched, secure within its cloistered courtyard, Al-Azhar maintained the traditions of early Islamic instruction introducing no serious changes in either content or method until the 1930's. Then, in 1961, the U.A.R. government took a radical step: it created secular faculties at Al-Azhar and updated the religious faculties. This move left special areas of concentration in Islamic and Arabic studies undisturbed but added instruction in business administration, agriculture, medicine, industry, pedagogy and languages. Thus the grip of the ages on Al-Azhar was broken at last, but without, one hopes, crushing the spirit which in their golden age raised Islam's schools to a pinnacle of learning epitomized in the injuction of Islam's Prophet and the founder of Islam's first school: "Go in quest of knowledge even unto China."

Leslie Farmer is a frequent contributor to Aramco World Magazine.



Sometime between 1870 and 1874 the faculty of the Syrian Protestant College sat for this formal portrait. Seated, center, is the Rev. Daniel Bliss, founder of the college and its active president for 36 years.

WIND FROM THE WEST

For good or ill they came... with money, with science, with ideas... the new ideas of another world...

BY A. L. MILLER

Photographs courtesy of Jafet Memorial Library, American University of Beirut.

In San Francisco in 1945, 30 of the delegates to the first meeting of the United Nations immediately discovered a common bond: they were all graduates of the American University of Beirut, that large, unique, symbol of western contribution to the rebirth of education in the Arab East. (ARAMCO WORLD, March/April, 1966).

AUB is no newcomer to the Middle East. It was founded in 1866. But it is still far from being the West's first or only contribution to an area that had given so much to the West centuries before. As early as 1734, in fact, in the Lebanese village of Antoura, a Lebanese priest placed under Jesuit administration the first European school in the area—one still operating today—and about 40 years after that the Lazarist Brothers founded a school for boys in Damascus. Indeed, in Syria and Egypt, all the initial contributions came not from America but from France.

According to one AUB historian, French influence in the Middle East is attributable only partly to Napoleon's Egyptian conquest. The main reason, he said, in addition to France's "special relationship" with the Levant, is that as a child Muhammad Ali, who was to rule Egypt for nearly 40 years, was cared for by the French proprietor of a tobacco shop. When he instituted his sweeping efforts to modernize Egypt, instruction—in engineering, medicine, agriculture and law—was in French, even when it required interpreters. The result was that French culture penetrated society and became a lasting influence. (As late as 1952, there were more French schools in Egypt than schools of any other foreign country, even Great Britain, after years of political domination.)

In the meantime, Ibrahim Pasha, Muhammad Ali's son and a man dedicated to improvement of the Arabs under his rule, had opened up Syria to the influence of the foreign Protestant missionaries who had begun to work in Lebanon and Palestine as early as the 1820's. It was a move that would later prove beneficial but then, it merely provoked a clash between the new missionaries and the various French and Arab Christian communities.

The problem was that the Protestants, forbidden to proselytize among Muslims, and lacking indigenous Protestants, began to seek converts from among the long established Catholic and Orthodox communities. It is not surprising, therefore, that as soon as the missionaries began distributing their Arabic Bibles and opening their schools, the Maronite and Greek Orthodox clergy became inhospitable, and even, sometimes, threatening. The Maronite Patriarch and the Greek Orthodox Archbishop finally forbade their followers to send their children to the new Protestant schools on threat of excommunication; a threat that proved more effective with the Maronite community than with the Orthodox, many of whose children attended American schools from the first.

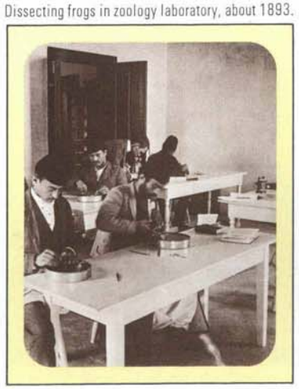
Just ten years after the first American school was founded in Beirut, a mission report mentioned six such schools in the area, all elemental—the common text was the *New Testament;* there were few students, irregular classes, and untrained teachers—yet at least as good as the local schools and probably a shade better. These schools, the *madrasahs*, attached to a mosque, and others run by the various Arab Christians, were not very good. One indication of the general standard of education in the area in the 1830's is that when Ibrahim Pasha offered Egyptian books to Syrian schools in a wide range of available titles, a grand total of only 1,596 was ordered.

Until about the middle of this century, the two decades that began in 1860 were perhaps the most important 20 years in the development of modern higher education in the Middle East and yet they began most inauspiciously. In 1860, clashes between Druzes and Christians in Lebanon and Muslims and Christians in Syria ended in the massacre of thousands and led, not for the first time, to foreign intervention. France, Britain, Russia, Prussia, and Austria together guaranteed the independence of Christian and Druze Mount Lebanon in 1861, making it an island of relative independence within the Ottoman Empire.

Nevertheless, a few years later, American missionaries were permitted to establish their Syrian Protestant College. The establishment of this college—later to become the American University of Beirut—was to have a visible impact on education in the Middle East. As one reaction to its opening, a graduate of Al-Azhar established a school in Beirut and within nine years the Jesuits founded the University of Saint Joseph. It wasn't the effect the founders had in mind, but for education generally, it was all to the good.

Right through the end of the Ottoman Empire and then during the period of French and British mandates between the two wars, western private schools continued to open. Robert College, in Istanbul, for example, had been founded in 1863; as early as 1869, the Society of Friends established several, including one in Ramallah, in what was then Palestine; and there were many "colleges" in the European use

Dissecting frogs in zoology laboratory, about 1893.



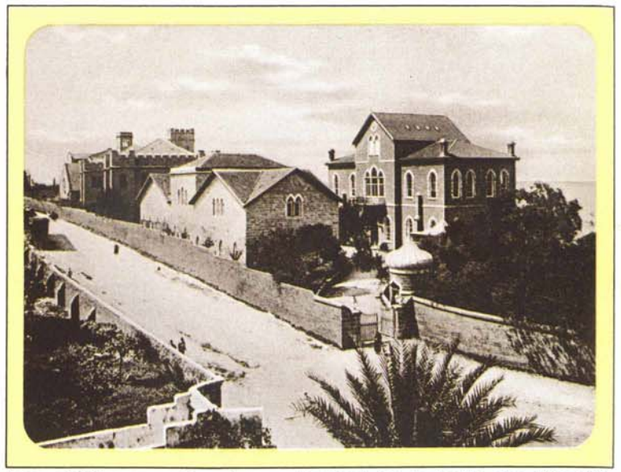
Half of a stereoscopic viewing card, SPC students in 1882.

of the term as a private school through the 13th grade. There were also the British-founded Victoria College in Alexandria (1882); International College founded in Izmir, Turkey in 1891 and later moved to Beirut as a preparatory school for AUB; Aleppo College, also founded in Turkey and moved to Syria from Gaziantep in 1924; Baghdad College, founded by the Jesuits in 1932 to serve Iraqi Catholics; and Damascus College founded in 1945.

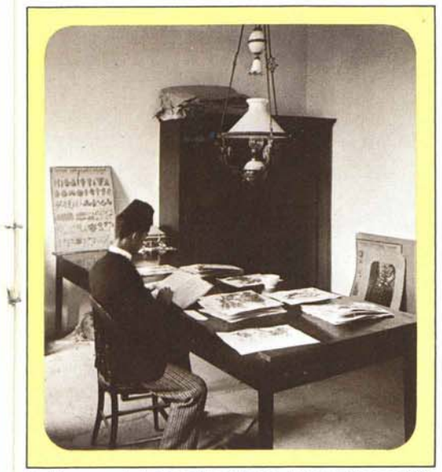
None of this, it should be pointed out, came cheaply. According to Philip Hitti, the distinguished historian, from 1820 to 1959 the United States alone, largely through missionary groups, footed a bill of about $400 million—second only to the American investment in Middle East oil. The Jesuits, too, must have quite a bill. And investment—in terms of people as well as money—continues. The U.S. government, the foundations, the traditional church groups, plus American exporters, businessmen and industrialists are all involved in education. One recent example: in the wake of the 1967 Middle East war, one organization, Near East Emergency Donations Inc. (NEED), provided nearly $1 million for refugee education by helping the emergency UNRWA tent schools, then supporting several vocational and teacher training institutes in Jordan, and finally by providing scholarships for outstanding students. And recently, International College, the largest of the American-sponsored secondary schools, in a gesture of confidence in the future of progressive education in the Arab world, has launched a campaign to raise $6 million for expansion purposes.

Dollars and buildings, of course, tell only part of the story; the rest is a matter of assessment: how has this western influence affected the education of young men and women in the Middle East today? Or, basically has the influence been for good or ill?

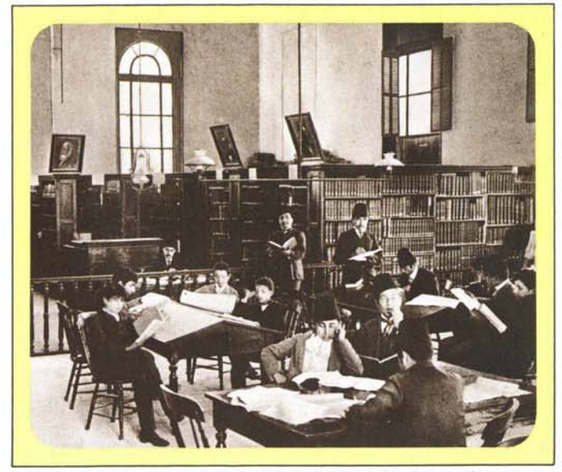
Although there is no doubt that the overwhelming majority of these early western missionaries and educators acted with the best of intentions and with selfless dedication, the situation which slowly developed in the Mediterranean Arab countries—in which numerous private secondary schools, each with its own individual western-oriented educational philosophy competed more or less along religious lines for the children of the middle classes, had some disturbing implications.



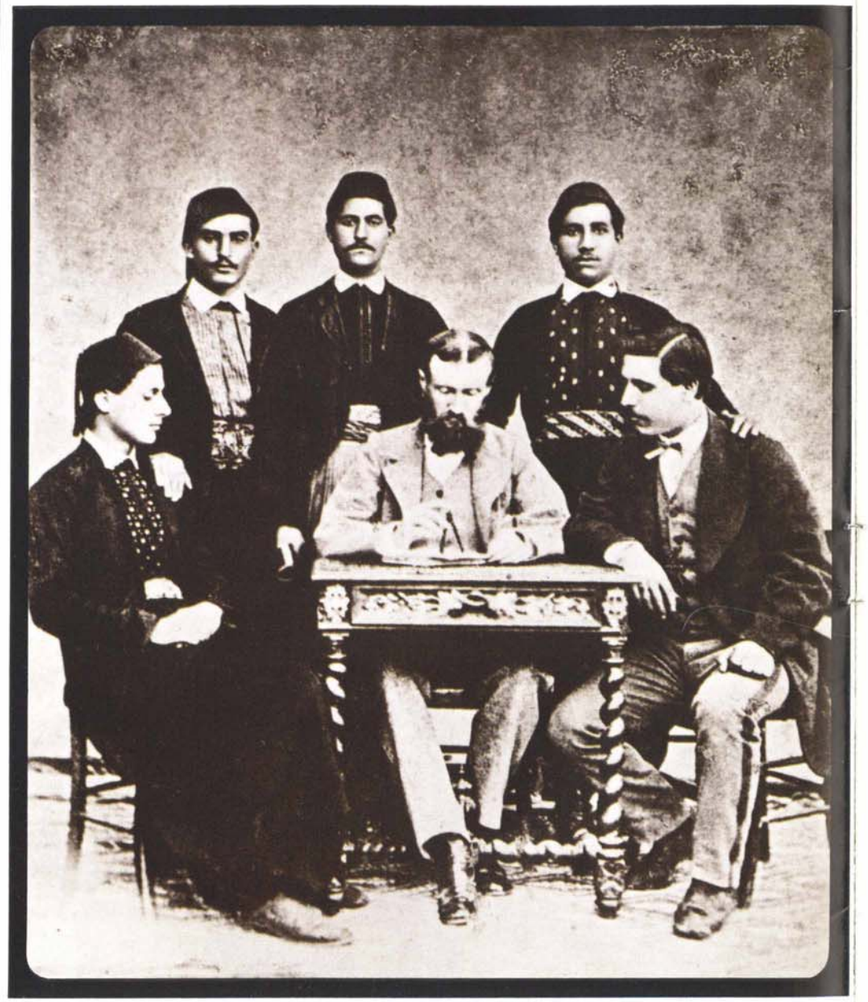
A view of SPC campus and the gate across Bliss Street from the hospital taken before 1900.



Studying pressed plant specimens in the botany workroom, 1893.



A view of the college library as photographed sometime before the turn of the century.



The first Syrian Protestant College graduates and an instructor; the class of 1870. The five all went on to positions of influence.

For one thing, it meant that at many institutions (with the exception of the Syrian Protestant College, which indeed spawned a rebirth of interest in Arabic), the Arabs' own rich history and culture was often neglected—even totally ignored—while students studied the French Revolution and memorized the poetry of Shakespeare (whom they sometimes called, as though determined to assert a kind of pride of nation, "Shaikh Isbere"). The Arabic language itself was frequently slighted to the point that the educated classes spoke French or English in the home. More serious, however, was the fact that private schools released the ruling powers—from Ottomans to the mandate powers—from any obligations to provide education.

It is doubtful, of course, whether nations whose domestic educational policies were still in flux would have acknowledged any obligation, but the fact remains that public education, in today's terms, was neglected. In Lebanon, for example, only two public high schools existed when independence came.

Another questionable aspect of the western educational legacy is the Baccalaureate examination, an educational straitjacket which France clamped on Syria and Lebanon. This system, already considerably modified by the French in France, and dropped in Syria still binds Lebanon's pupils to memorization of obsolete, irrelevant, even incorrect material and discourages inquiry and original thought.

On the other hand the legacy of foreign languages has not turned out to be any handicap. In fact, French, spoken throughout North Africa, Egypt, Lebanon and Syria, and English, common in Lebanon, Jordan, Egypt, Iraq, Kuwait and Saudi Arabia, are now valuable tools in the Middle East's drive toward modernization.

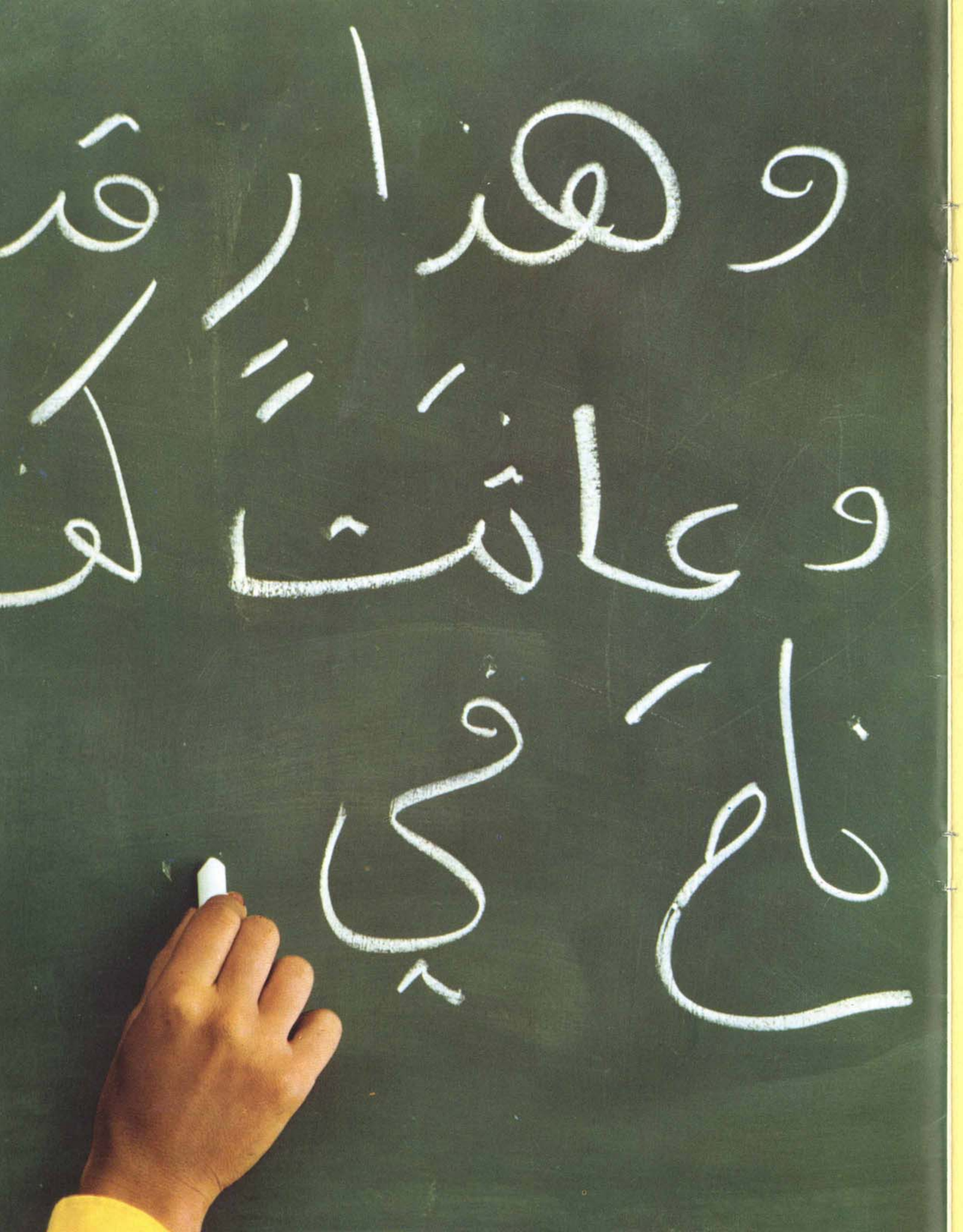
Arab educators have discovered that medicine and science are best taught in the language in which the latest texts and technology are coming out. (The founders of the Syrian Protestant College reluctantly reached that conclusion years ago, and one indication that they were right is the fact that Arab doctors at AUB's medical school were practicing open heart surgery within two years of its inception in the United States.)

The education of Arab women, and certainly coeducation, have also been hastened by the influence of western ideas. In 1905, the Syrian Protestant College opened a school of nursing and in 1924, as AUB, it accepted girls in the school of Arts and Sciences and became the only coeducational institution of higher learning in the Middle East. It was a short-lived distinction, because the Egyptian State University at Cairo admitted women students just four years later.

In 1924, too, the Junior College that became the Beirut College for Women was founded. Coeducation, at university level, is now the rule, rather than the exception. In Saudi Arabia where tradition frowns on coeducational activities, the brand-new King 'Abd al-'Aziz University in Jiddah includes a women's college where several dozen girls arrive each day in traditional *aba*, slip it off once inside to study in short skirts and patterned hose. And Riyadh University, counting several hundred girls on its rolls, plans to add a women's college soon.

The West, then, has obviously contributed a great deal to education in the Arab East. Most Arab engineers, doctors, and lawyers study western programs, often in institutions like AUB or St. Joseph that are a product of the West. Whatever modern methods of instruction Arabs use today are borrowed from the West. And many concepts, though they might have developed anyway, were at least accelerated under the influence of the West; coeducation is one example. On the other hand, most Arab countries, like other emergent nations, still need indigenous educational approaches to fit their particular situations. If the West can aid in this development of more relevant systems of education for Arab countries, that could be an even greater and more enduring contribution to education in the Arab East.

A. L. Miller, a graduate of Williams College and the University of Michigan, is Chairman of the English Department at International College, a U.S.-supported preparatory school in Lebanon.



TARGET FOR TOMORROW

Target date? 1980. Problems? Plenty. Target? Universal education.

BY ELIAS ANTAR
PHOTOGRAPHY BY PETER KEEN
AND KHALIL ABOU EL-NASR

If progress in education can be compared to a space shot, the Arab states are now in that critical phase where blastoff has been successful but the delicate task of getting into orbit still lies ahead.

In the past 15 years such Arab countries as Egypt, Syria, Lebanon, Jordan, Iraq, Kuwait and Saudi Arabia have initiated a remarkable expansion in education. They have put unprecedented numbers of children into school, added facilities so fast that in certain cases they have increased by 400 per cent, and boosted expenditures to nearly 20 per cent of their total state budgets (the complexities of educational financing make it difficult to reach an exact figure).

And despite the political and economic uncertainties of the region even larger expenditures are forthcoming. Aware that the key to space age societies is education, most of the Arab states are already planning for the schools and teachers they will need to achieve a vital goal they have targeted for the 1970's: universal education.

Governments have borne the brunt of the expansion because private education, although it too has grown in the past 15 years, now takes in only between seven and fifteen per cent of total enrollment in the countries mentioned above, except in Lebanon, where there are more pupils in private schools than in state-run schools.

In general these countries have a 12-year system of general education, up to and including high school, divided into three parts: six years of elementary school, three years of preparatory school and three years of secondary school, after which graduating students can go on to universities or higher institutes of learning, or start their working lives. Kuwait differs; it divides the 12-year period into three sections of four years each —elementary, intermediate and secondary.

Most of these countries have compulsory education through elementary school, but Jordan has extended this to the preparatory cycle and Kuwait to the intermediate cycle. State-run schools are free—although some charge nominal prices for books. Coeducation in elementary school is not unusual but most Arab parents are still too conservative to accept this in the remaining six years of schooling, so boys and girls are usually taught separately between the ages of 12 and 18, when most students graduate.

The education of girls in the Arab world has taken tremendous strides in the past 15 years, despite the reluctance of rural parents to send a girl to school when she could be helping in the fields. In urban areas, the opposite is true; a girl cannot augment the family income unless she has an education which allows her to find a job. This is one reason why the percentage of schoolgirls in the cities is much higher than in the countryside. In Egypt, girls make up about 33 per cent of total enrollment all over the country, and the figure for Kuwait, Lebanon and the schools operated by the United Nations Relief and Works Agency (UNRWA) is nearly 45 per cent. Experts estimate that when the number of boys and girls is nearly equal, then the Arab countries will be approaching universality in elementary education.

Curricula in Arab schools are much the same as in schools in other parts of the world, but most courses, including science and mathematics, are given in Arabic. Languages taught are usually English or French or both. It is generally conceded, however, that even more emphasis needs to be placed on foreign languages, for although many graduates obtain a practical working knowledge of a language, it is only the most gifted students who emerge from secondary school with true fluency. Education officials say that if they manage to overcome the language barrier, Arab secondary school graduates who go on to universities abroad have no great difficulty in following the courses and generally do well.

A brief box-score will show what several key countries have achieved in education below the university level in recent years. Dollar figures refer to the budgets of the ministries of education, which operate and finance all state-run schools, teacher training schools or institutes and vocational training schools. Other figures, however, encompass private schools and refer to academic education only.

EGYPT: (Pop. 33 million, about 70 per cent of all those above age 15 illiterate). In 1964/65, the Ministry of Education spent $161 million, double the figure nine years previously. In 1966/67, there were about 4,300,000 children at school at all levels, compared to about 2,300,000 in 1955/56. Schools in the same period remained close

to 9,300 but teachers increased from 72,500 to 122,000.

SYRIA: (Pop. six million, illiteracy about 40 per cent). Expenditure in 1966/67 was $43.8 million compared to $22.2 million six years previously. In 1967/68 there were 955,000 boys and girls at school compared to 559,700 in 1960/61. The government built 1,788 schools in the same period, bringing the total to 5,680, while elementary teachers alone increased from about 15,000 to 20,700 in the same seven years.

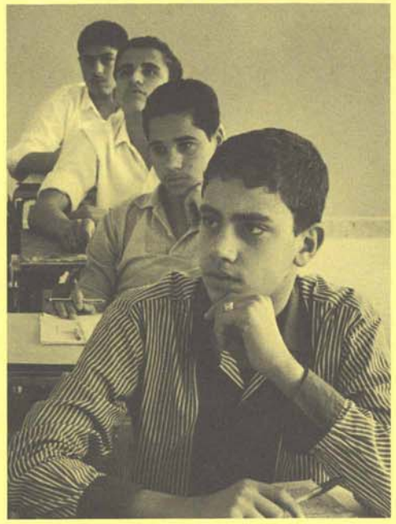
LEBANON: (Pop. about two million, illiteracy estimated between 15 and 30 per cent). This tiny country is the only one in the Arab Middle East where private schools outnumber those run by the state. Nevertheless government expenditures rose from $6.2 million in 1956 to $33.8 million in 1968—an increase of more than 400 per cent in 12 years. Enrollment rose from 238,500 in 1956/57 to 502,900 in 1967/68, schools increased from about 2,100 to more than 2,700 in the same period, and teachers more than tripled, from 7,900 to 26,500.

SAUDI ARABIA: (Pop. estimated six million, close to 90 per cent illiterate). This country was a late starter in the education race. As late as 1953 when the Ministry of Education was established, there was only one secondary school in the entire kingdom. By 1959/60, the education budget was $28.7 million but only eight years later, in 1967/68, it had reached $106 million. In the same eight years, enrollment rose from 101,200 to 271,000, schools from 640 to 1,350 and teachers from 4,600 to 13,500.

JORDAN: (Pop. estimated two million, about 60 per cent illiterate). Because of the upheavals, territorial losses and population shifts caused by the 1967 war, figures for this country cannot be considered conclusive. Ministry of Education figures show that expenditure rose from $226,000 in 1950 to $16.5 million in 1967. In the same 17-year period, enrollment rose from 75,400 to 252,350 and schools from 394 to 1,384 and teachers from less than 150 to more than 5,300. A vital role in expanding Jordanian education is played by UNRWA, which operates elementary and preparatory schools for children of Palestine refugees.

IRAQ: (Pop. eight million, 70 per cent illiterate). Expenditures in the nine years from 1955 to 1964 rose from $28 million to $103 million. Enrollment between 1955/56 and 1967/68 increased from 410,900 to 1,171,400 and by 1967/68 there were 5,460 schools and 52,640 teachers.

KUWAIT: (Pop. 500,000, illiteracy about 40 per cent). This tiny but now rich nation had no schools at all until 1936, when the first one opened and 600 pupils attended. By 1953/54, expenditure was $7.7 million and 12,800 pupils went to 41 schools staffed by 721 teachers. In 1968/69, the respective figures were $76.6 million, 120,550 pupils, 212 schools and 7,317 teachers. Students in



Kuwait want for nothing, having free meals, clothing and transport added to free tuition and books.

Not surprisingly, this kind of educational blastoff has brought problems as well as benefits. Enrollment has advanced at such a fast pace that it has outstripped the available resources of the governments concerned which, some educators contend, must do even more just to keep up with population growth and other pressures that will be exerted on their educational systems.

Like a chain reaction, the problems start at elementary school level and make themselves felt all the way up to university, and even outside the educational systems themselves. The first obstacle is lack of space. Construction of elementary schools has not kept up with enrollment, and the result has been the introduction of a system of shifts in which more than one school unit uses the same building. In some schools there are as many as three shifts using the same building almost around the clock.

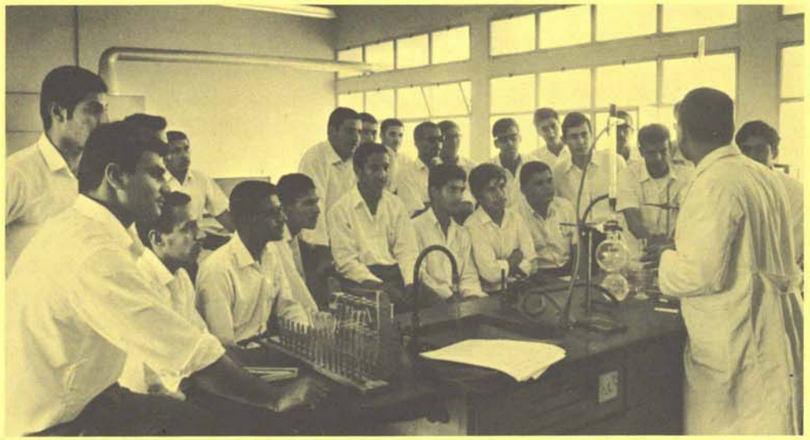
The problem is not helped by the fact that many school buildings are private homes or villas pressed into service as schools. "These conditions produce an environment unsuitable for proper education," says Dr. Matta Akrawi, Chairman of the Department of Education at the American University of Beirut.

At the present rate of growth in elementary education, enrollment is doubling every ten years but construction or renting of new schools has been increasing by only 30 per cent over the same period. Partly because of lack of space, about one million school-age children in Egypt, 400,000 in Iraq and, according to available estimates about 100,000 in Lebanon, cannot get into school. Since the number of pupils is outstripping available facilities, says one educational planner, "the term compulsory education is meaningless. There is simply no place to squeeze everyone in."

The construction of new schools must be accelerated and planned in such a way as to overturn the present situation: too many schools in urban areas and too few in the countryside. In some countries at present, the number of schools in towns, where 30 per cent of the people live, exceeds all those in rural areas, where 70 per cent of the people live.

Another problem that must be solved if the present rate of growth is to be maintained, let alone increased, is the shortage of qualified teachers. At the elementary level teachers are increasing by only 50 per cent every decade compared to double this rate for student enrollment.

All the countries have set up teacher training institutes to meet the need. Egypt has more than 70 teacher training institutes, Syria 20, Lebanon 7, Jordan 9, Saudi Arabia 7 and Iraq 32. But still this is not enough. Dr. Fahim Qubain, in his book *Education and Science in the Arab World*, points out that most elementary school teachers in the area have had a maximum total of only 13 years of schooling before they meet their first class, and in many cases it is nine years or less. In Jordan, about two thirds of all teachers have only an ordinary secondary school certificate, although the



Increasing attention is being given to laboratory work in high school science courses although facilities are sometimes limited.

government tries to remedy this by giving them in-service training. Lebanon's seven teacher training institutes graduate about 500 teachers a year—half the minimum needed.

"The average student/teacher ratio at elementary level in the Arab world is about 30-1 but this may be deceptive," says Dr. Akrawi. "For one thing, it is computed on the basis of all teachers, not the qualified ones only. Since it is an average figure, it means that the ratio in some cases may be as high as 60-1 or 70-1 and this is usually in urban areas of high population density."

Kuwait has managed to avoid this. Its student/teacher ratio is 12-1, one of the most favorable in the world, but to achieve this it has had to import most of its teachers from other parts of the Arab world. Saudi Arabia also follows the same practice, about 40 per cent of all teachers being non-Saudis, although at the elementary level Saudis are now beginning to outnumber foreigners.

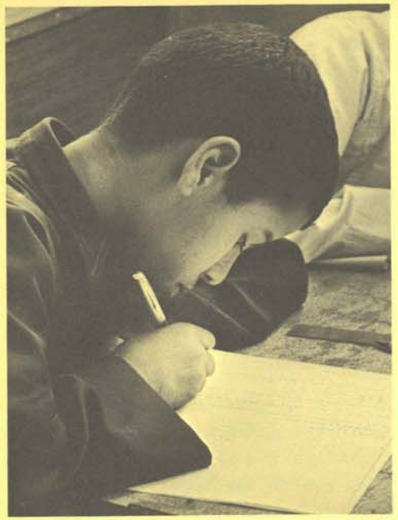
One of the difficulties in persuading young Arabs to become teachers, even if enough facilities to train them were available, is the generally low pay scale and lack of opportunities for advancement.

These pressures at the bottom of the educational ladder are making themselves felt at the preparatory and secondary school levels, where facilities and adequate numbers of teachers are also lacking. The result is a very severe pruning system. Of all the pupils who start elementary school, about one third drop out along the way. Of those who finish elementary school, some 60 per cent do not go on to secondary school. With the dropouts in secondary school itself, the result is that something less than 20 per cent of pupils who started the 12-year cycle emerge with a secondary school certificate.

Even so, many specialists agree, this is still too high in view of the available seats at universities. Dr. Habib Kurani, education professor at AUB, estimates that only about 15 per cent of those who graduate from secondary school enter universities. "The remaining 85 per cent usually find themselves with very little or nothing to do. They have a diploma, but they find that government administrations are full of clerks with diplomas. It is usually difficult for them to find the kind of jobs that they think they are entitled to, and this breeds discontent."

One answer to this situation is to channel as many elementary school graduates as possible into non-academic fields where they are more needed. Governments have tried to cope with the problem by establishing vocational training schools that produce the technical specialists all the developing Arab countries need in increasingly large numbers. Most have such institutes, not only for technical training, but also for agriculture, commerce, home arts and other areas. Egypt, in fact, stipulates that only 40 per cent of elementary school graduates can go on to academic secondary schools, the remainder thus being more or less forced to go into vocational training schools if they want to continue their education. Even

Tree of evolution and student-made biology displays brighten a corridor in Kuwait.



Universal education is the ambitious target for the next decade.

so, vocational training facilities are not enough to meet the potential number of students available, and this is a cause for worry among many planners. "We are educating a generation of young people who will produce a crisis because they will be out of touch with the economic mainstream of their countries. We need people who are suited to the economic realities of their countries," says Dr. Kurani.

One of the difficulties in getting more students into vocational training schools, even if there were enough of them, is the high regard most Arabs have for an *academic* diploma. In many parts of the Arab world, particularly rural areas where the general level of education is low, the holder of a secondary school diploma commands considerable respect and admiration, even if such a diploma does not suit him for any available jobs. The hope for the future, Dr. Kurani believes, is that with increasing mechanization of agriculture, the use of solar energy and other technical advances, the appeal of an academic diploma will dwindle and more useful citizens will emerge from the specialized schools.

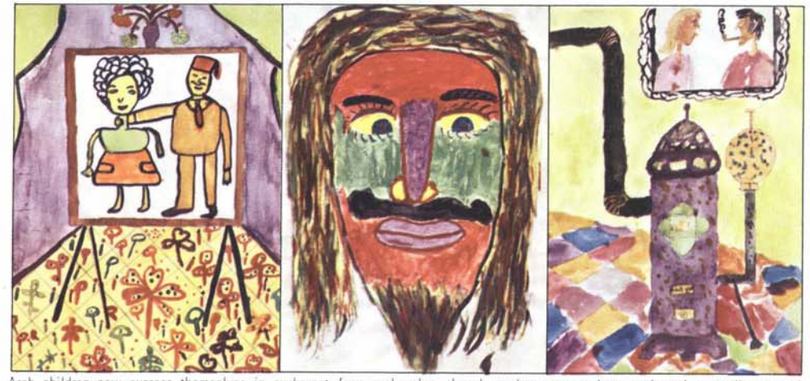
Another major problem is that the increase in the "quantity" of education has produced a decrease in "quality." Dr. Abdel Aziz el-Kousy, director of the Arab League's Regional Training Center for Educational Planners in Beirut, says this is unavoidable when an area witnesses such a sharp rise in the number of school children in so short a time. The "quantity versus quality" argument finds supporters for both sides, but most Arab education experts agree that even with the drawbacks resulting from the boom in education, it must continue and increase until quality catches up.

It is generally conceded that teaching methods in the majority of schools are out of date. "Elementary teaching is non-functional and divorced from the life and environment of the student. It does not encourage his imaginative process," writes Dr. Qubain. Dr. el-Kousy says progress in quality is held back by "a conservative, introspective method of teaching." Teachers are usually satisfied if a pupil can recite a given lesson by heart, regardless of whether he understands it or not. "To teach is to stimulate learning. Education is one with life. But most teaching nowadays is by rote, like taking an empty glass and filling it with water," comments Dr. Kurani. Most ministries of education, for instance, have departments of audio-visual teaching, but these new techniques have penetrated practically nowhere in the field.

Nevertheless, say the specialists, the answer is not to cut down the number of students so as to increase the space and time available for learning, but to go on expanding while at the same time working to improve teachers and build more and better facilities. "I would rather have as many elementary schoolchildren as possible at school to get some kind of education—even if it is not the best—than to have a whole new generation of illiterates," argues Dr. Akrawi. "It is better perhaps to have the bread without the butter than to have nothing at all. After all, we are still developing nations and our education is going through its growing pains. When England and France, for instance, started their education boom towards the end of the last century, they were in the same situation." Even in the United States, the great citadel of public education, a high school diploma was considered an achievement as late as the 1930's.

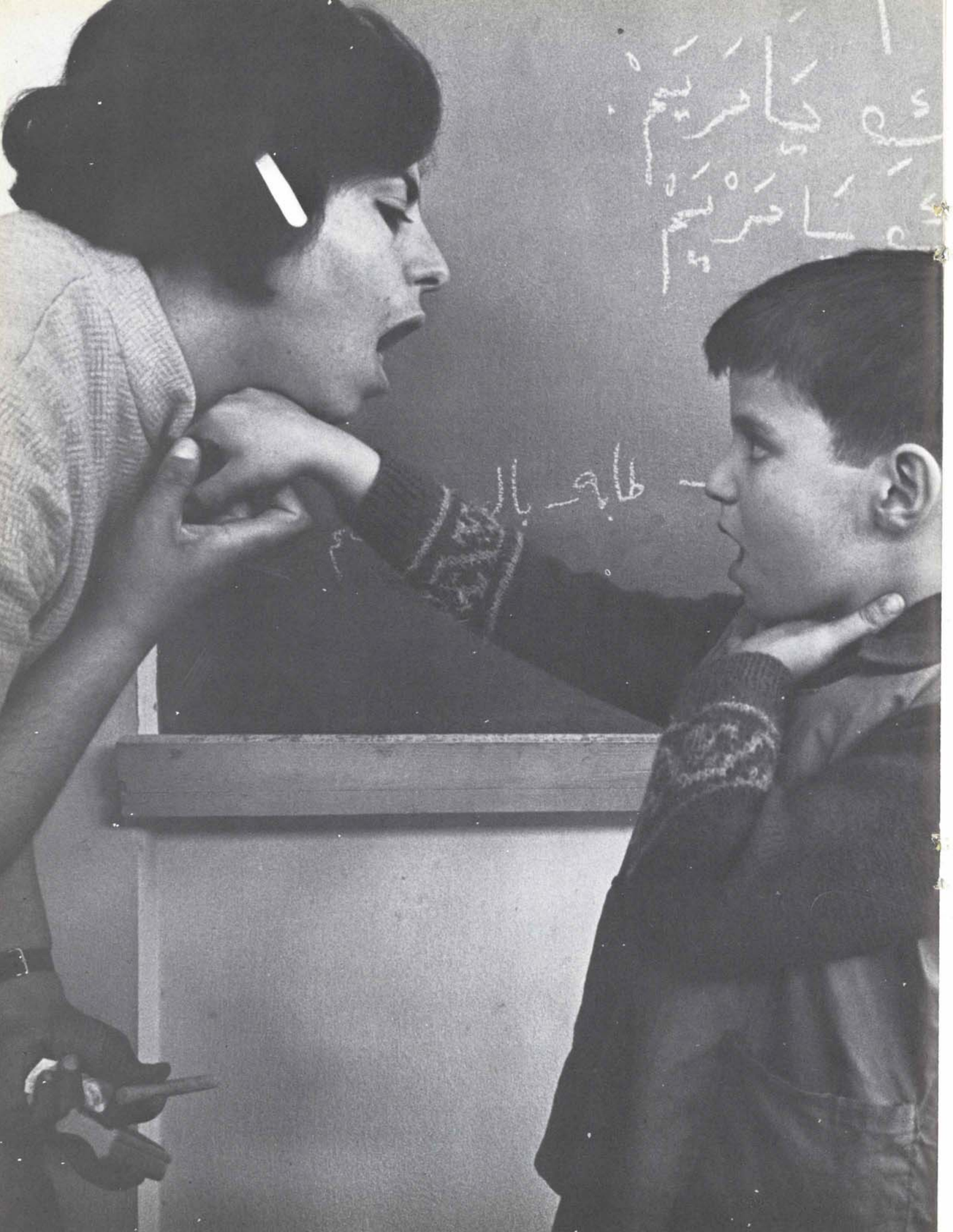
Already there are encouraging signs on the horizon. Syrian officials claim they will have all the trained teachers the country needs by next year. Jordan has a 10-year plan to make schooling universal by 1980 and to build centralized preparatory and secondary schools that should ease the classroom shortage. Saudi Arabia plans to wipe out the need for foreign Arab teachers at preparatory and secondary levels within five years (thus not only solving its own problem, but freeing large numbers of teachers to return to schools in Iraq, Syria, Jordan and Lebanon). With better teacher training, planning, educational research and administration to cope with the needs of the future, there is no reason why, eventually, education in the Arab states should not move smoothly into orbit.

Elias Antar, a frequent contributor to Aramco World, *has covered much of the Middle East for the Associated Press.*



Arab children now express themselves in exuberant form and color, though student art was long neglected, even discouraged.

Unlike past students, committed to studying by rote, young people today are turning to imaginative library work and creative study. Still, more change is needed, especially at elementary levels.



In addition to the efforts aimed at developing regular academic education, Arab governments have recognized the urgent need for special schools, both to train the technicians and skilled workers needed in a developing technological society, and to help those whose physical handicaps make modern urban society a particularly difficult challenge. Accordingly, nearly all the Arab countries now have government-run vocational training schools to turn out such specialists as mechanics, electricians, plumbers, lathe operators, radio repairmen, agricultural technicians, surveyors, tilemasters, carpenters and so on. Pupils who have gone through the normal six-year elementary stage go on to these schools instead of entering regular preparatory and secondary schools. Usually they are trained for three or four years before graduating. Some go on to higher training institutes, but most at this stage go straight to work.

Egypt, which lays heavy emphasis on industrialization, allows only 40 per cent of the pupils who have finished elementary school to go on to regular secondary schools. The rest either enter vocational training schools or commercial schools or drop out of the educational system. In 1967, this country had 216 technical, agricultural and commercial schools in which 136,486 boys and girls were enrolled. In the same year, Iraq had 36 such schools, including 16 home arts schools for girls only. Total enrollment was 8,632 students.

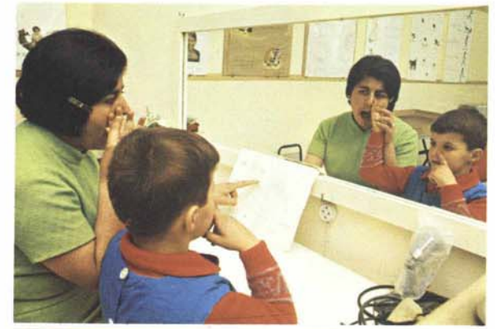
In Syria in 1968 there were 22 industrial and commercial schools with a total enrollment of more than 5,300 students and Jordan had 17 schools, including two nursing schools, with 2,408 students registered, plus 342 Palestinian refugee students enrolled in vocational training schools operated by the United Nations Relief and Works Agency. Saudi Arabia came next with 11 schools offering training to 877 students, followed by Lebanon with nine schools and 1,831 students. This latter country, because its economy relies heavily on tourism,

THE SPECIAL NEEDS

For special needs, special education...

PHOTOGRAPHY BY TOR EIGELAND AND KHALIL ABOU EL-NASR

Along with growing governmental support for special education, religious and charitable groups maintain their traditional interest in aid for the underprivileged and the handicapped, as in the Foyer des Malades in Lebanon where young deaf mutes of any faith learn to speak in a school run by Father Roberts, an English priest.



has a school to train Lebanese in the operation of hotels, with graduates specializing in administration, cuisine and service, and in 1971, with United Nations' participation, plans the world's first institute of international tourism. In addition to the government-run schools, Lebanon has a large number of private vocational training schools which vary widely in their standards, some of them being established simply as money-making ventures. Kuwait, with its great financial resources, has three superbly equipped technical and commercial schools with 1,139 students.

While stimulating the specialized education of youths who will contribute heavily to the modernization of Arab countries in the future, governments have not forgotten boys and girls who are handicapped and require special forms of education. Most of the countries have schools to teach the blind, deaf, dumb, mentally retarded, physically handicapped or socially maladjusted.

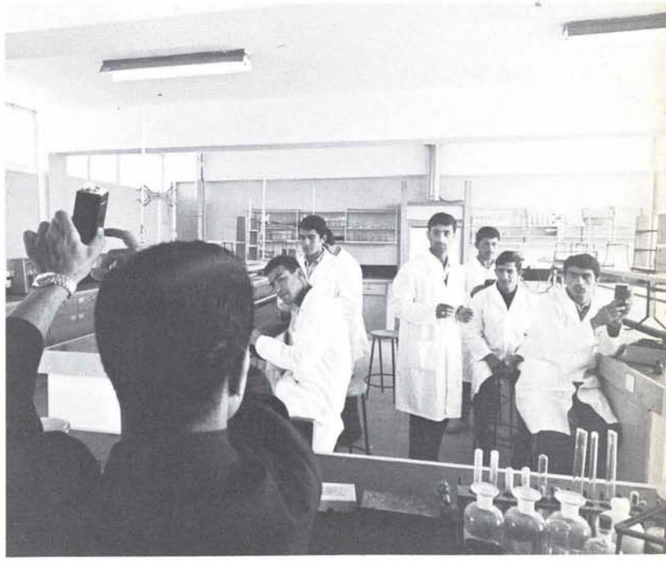
Kuwait, for instance, has built an academy which includes institutes for the blind, the deaf and dumb, the mentally retarded and paralytics. A total of 505 students of both sexes receive elementary education in these institutes, with many going on to specialized vocational training. Egypt in 1967 had 30 such schools with 4,265 students, including a school for children afflicted with rheumatic fever.

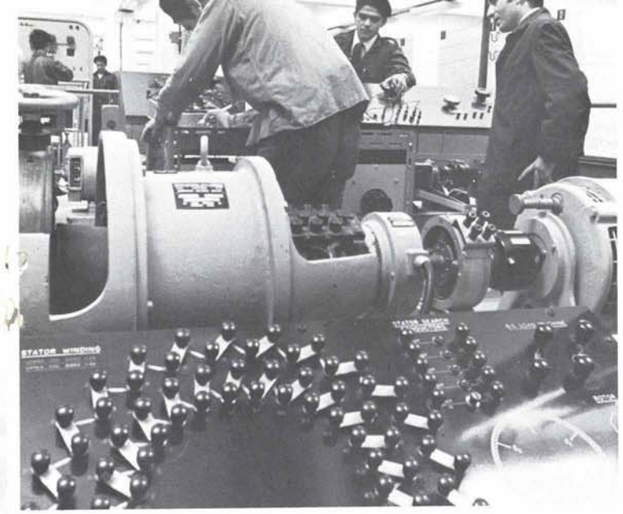
According to an April press release, Saudi Arabia had seven institutes for the blind with 875 pupils and two institutes for the deaf and dumb with 115 students. Jordan had six schools for the socially maladjusted with 285 students and now plans to establish one school each for the blind, the deaf and dumb and the mentally retarded.

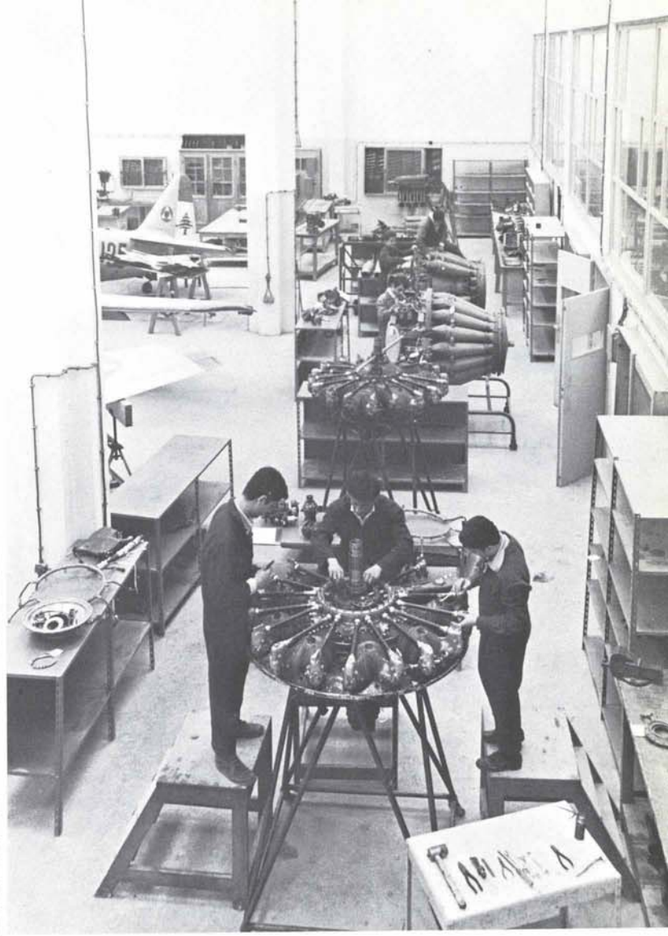
In their efforts to reduce illiteracy and eventually wipe it out, most Arab countries with a high percentage of illiterates have instituted programs of adult education. Saudi Arabia has 550 adult education schools with a total enrollment of 34,824. Kuwait has opened 49 such centers with more than 20,000 people registered and Jordan operates 126 anti-illiteracy classes teaching the rudiments of reading and writing to 2,567 adults.

The United Nations Relief and Works Agency (UNRWA), aside from its program of primary education for Palestinian refugee children, also maintains a number of technical or teacher training institutes—or combinations such as this one in Siblin, Lebanon—whose graduate teachers and technicians are in demand throughout the Middle East.

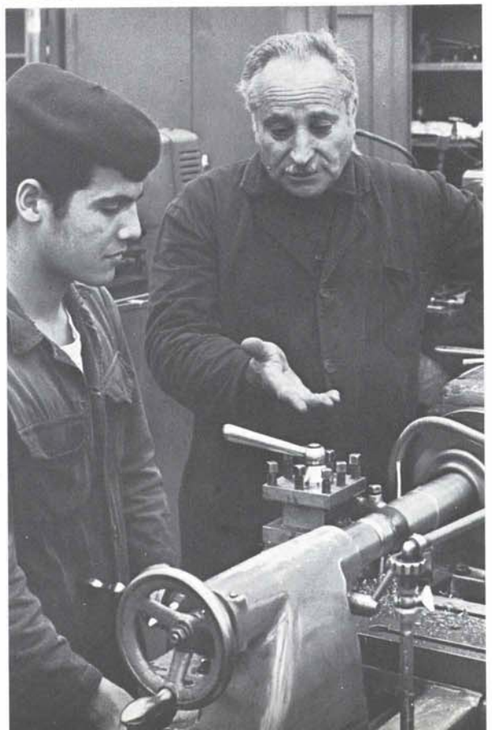
Like Switzerland, Lebanon leans heavily on the tourism industry. At the government's Hotel School young men—and a few young women—combine academic courses with practical training in hotel and restaurant management, bartending or haute cuisine, then, diplomas in hand, spread out across the Arab world and Europe.

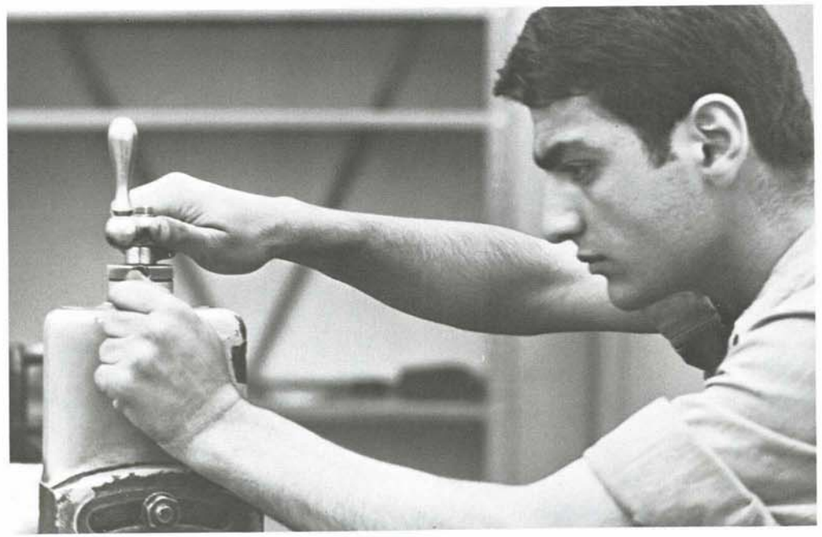


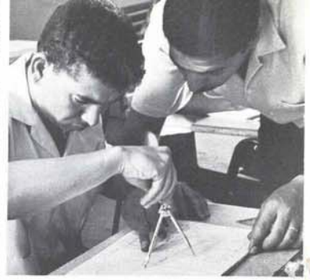


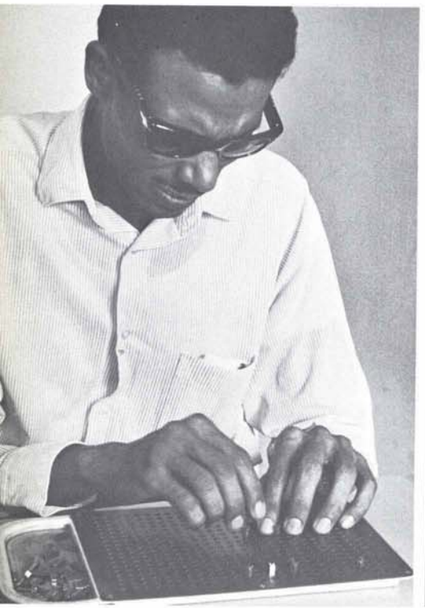


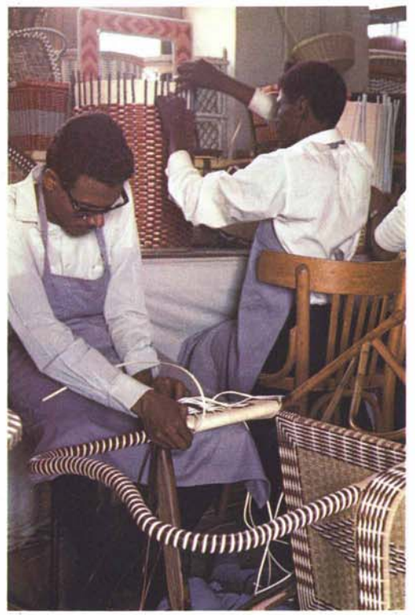
Next door to the Hotel School at Lebanon's vocational training complex in a Beirut suburb are extensive shops where young apprentices study such subjects as electricity, electronics, television and aviation mechanics under the watchful eyes of experienced technicians. Such practical training is of special importance in emerging countries where in the past the prestige of an academic diploma has often outweighed its utility and burdened the country with an "educated" but unemployable "elite".



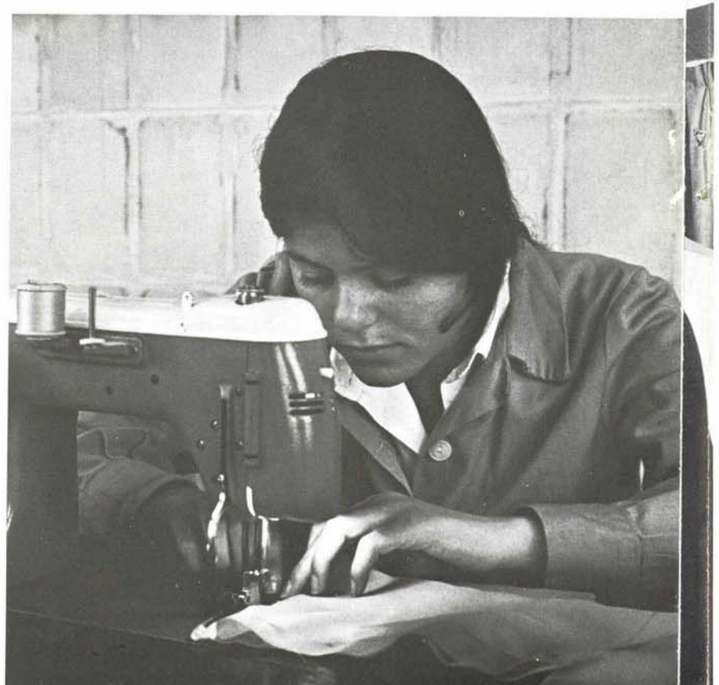


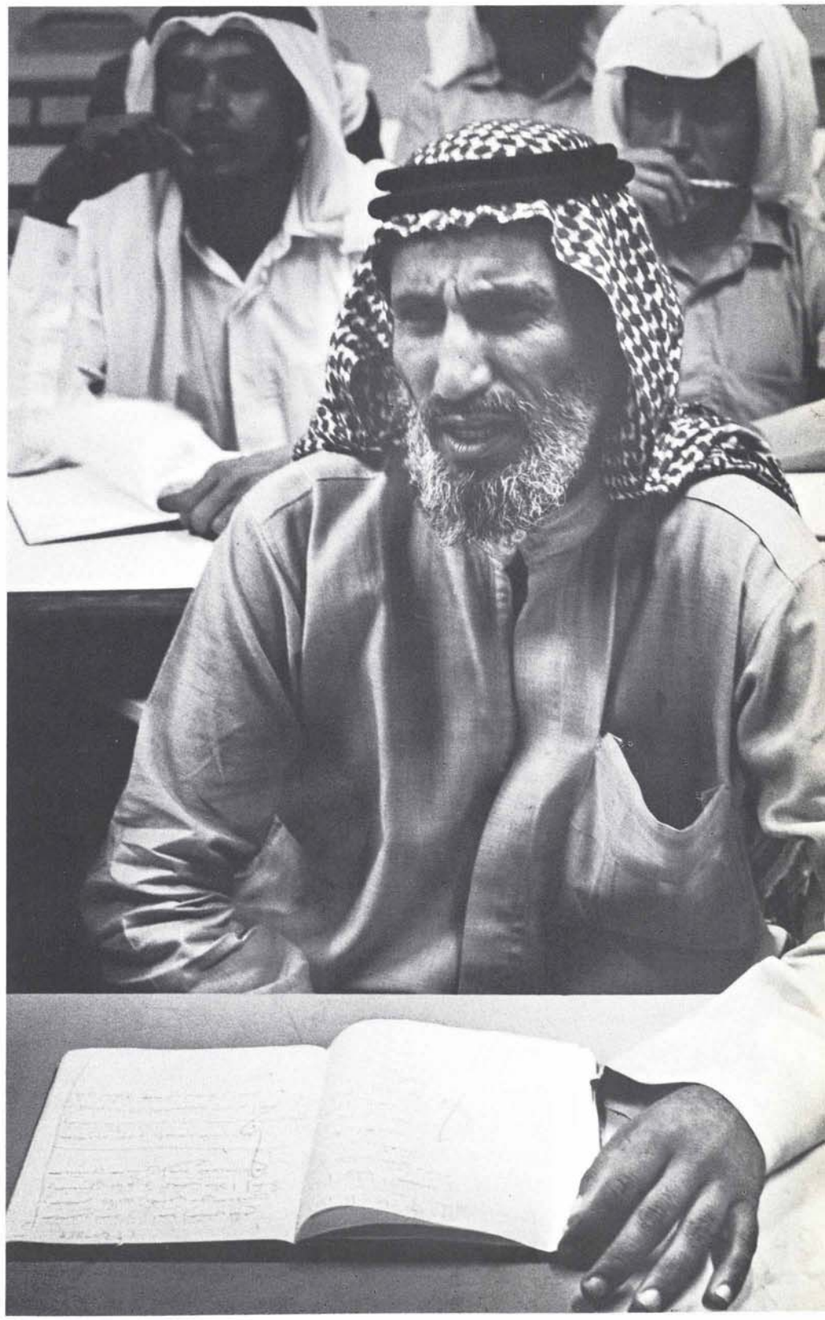






The young, tiny state of Kuwait has an ambitious program of special education for the handicapped which first offers elementary education to deaf or blind youngsters and then vocational training that enables them to be self-supporting. Handicapped Kuwaiti girls can learn many trades: beautician, typist or seamstress. A deaf young man, besides such special skills as lip-reading, might study technical drawing or typesetting. The blind may complete a program of arithmetic and reading and writing in braille with training in leather work or manufacturing wicker furniture. Another special need is anti-illiteracy courses for adults to teach them the basics of reading and writing and permit them to catch up with their own children.

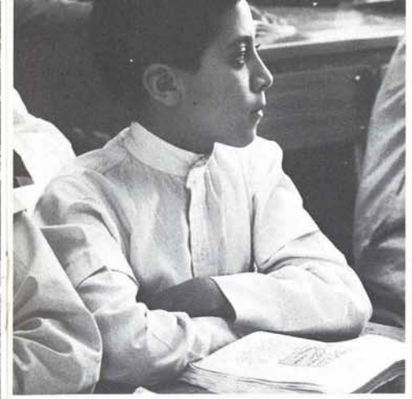


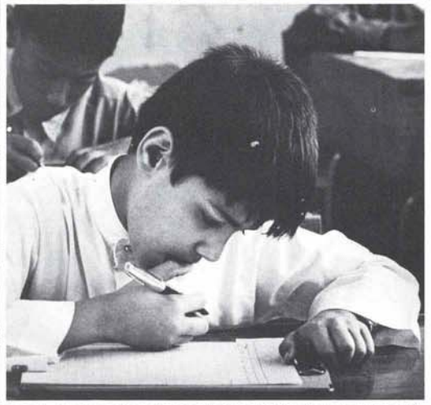


In a country where education is as valuable as oil, Aramco tries...

TO SHARE THE BURDEN

BY BRAINERD S. BATES





In towns near their operations Aramco and Tapline have built—and turned over to the national school system—45 schools where sons and daughters of employes and other children from the area study.

For an oil company, Aramco often gets involved in some odd projects: public health, medical research, agriculture, home loans. None of them, however, has had a more important effect than its participation in and contributions to education in Saudi Arabia.

One of its more direct contributions has been the construction and maintenance of 37 schools in the kingdom's Eastern Province: 26 elementary schools, 11 intermediate (24 for boys, 13 for girls), plus eight built in Saudi Arabia by the Trans-Arabian Pipe Line Company, one for boys and one for girls at each of the company's four pump stations. Although originally planned for the education of employes' children, these are public schools which become part of the national school system as soon as completed and are open to all children in the region.

Indirectly Aramco also helps send college students abroad for study by financing, but not administering, a scholarship program for 60 students who have no connection whatever with the company. Students receiving this aid are chosen by the Ministry of Education.

A third contribution is made through grants to institutions. Aramco, for example, recently donated $100,000 to the two-year-old King 'Abd al-'Aziz University of Jiddah, a semi-private university only partly subsidized by the government. Other grants have been made to such institutions as the American University of Beirut, International College, the Beirut College for Women, and refugee schools.

Not the least of the company's involvement in education are its own programs of training and education for employes, programs so broad that at one time one out of three Saudi employes was enrolled.

These programs got their start in the mid-1940's when the world's suddenly vociferous demand for oil created an equally compelling need for numbers of skilled workmen. To meet it Aramco established what it calls Industrial Training Centers in Abqaiq, Dhahran and Ras Tanura. In these centers workers could attend classes in the particular academic and commercial subjects which each man's supervisor believed would help him in his work (**Aramco World**, January-February, 1965).

With the quiet but steady expansion of basic public education in the Middle East, however, the centers have to make continuing adjustments. Where Aramco once had to put through vast numbers of young men who lacked a rudimentary educational background for employment, the company today can now demand—and get—employes from all over the country who have at least ninth-grade-level schooling. This means that Aramco's training staff can now concentrate on smaller groups at a higher level, and offer intensive courses of richer content.

Instituted recently was a seven-year English program which brings learners up through high-school-level proficiency in this language of the international oil business. Mathematics, taught in the "new" mode, begins at third-year level and goes through the eighth. There are courses available in typing, bookkeeping and commercial math, and for Saudi Arab employes slated for technical careers within the company, there are science courses spread over a five-year span. A trainee can spend three years on general science, then concentrate on biology, physics and chemistry, the latter taught through the laboratory-discovery "chemstudy" method.

Courses such as geography and history, though having no direct application to oil producing and refining, are also offered in the training centers, since, for one example, employes who are scheduled to go abroad for advanced study under company sponsorship often need such purely academic subjects to satisfy basic admissions requirements.

The training staff offers courses to supervisors too; the most comprehensive fills 160 hours, requiring a participant's full-time attendance for an entire month, during which the employe is exposed, to cite some examples, to safety talks by experts, case-history problem solving, and the innovative "sensitivity training" all aimed at improving management techniques and developing supervisors.

The wholesale improvement in public education has drastically changed the role of the company's Industrial Training Shops too. With government vocational schools in Hofuf, Riyadh, and Jiddah now turning out plumbers, masons and carpenters, the training shops, which used to teach only the basic vocational skills needed for the petroleum industry, can concentrate on instruction in more sophisticated skills. One 12-month course, for example, trains Saudis in the maintenance and repair of certain complex, highly sensitive refinery instruments which need constant attention by experts.

Saudi employes who show exceptional promise are often given opportunities for advanced trade courses or higher education abroad, usually in the United States. Those selected for this program receive a year of preparatory training in the U.S. before entering a vocational institute or junior college where they apply themselves to such fields as diesel technology, accounting, aviation mechanics, electronics, applied engineering, or the liberal arts.

Those who qualify both by reason of their performances at the first stage and career plans as determined by the company, go on for degrees in such subjects as petroleum engineering, political science, hospital administration and public health. At any one time Aramco has about 150 of its high-potential Saudi Arab employes studying abroad, all expenses paid, at such U.S. institutions as Bucknell, George Washington University, the University of Michigan and Stanford.

In all, during 1968, more than 2,000 Saudi employes studied at industrial training centers and shops; nearly 200 took supervisory and management courses in Saudi Arabia, and 180 were assigned to study and train in all fields in the United States during the year.

Naturally, many thousands of the Saudi Arab citizens Aramco has trained have stayed on as more-productive and, presumably, happier employes. But other thousands have left taking their skills and experience with them, some to become business entrepreneurs themselves, some to simply work elsewhere in the kingdom. The result, if accidental, has been a wide diffusion of vocational and commercial skills and academic knowledge in Saudi Arabia, and another step forward for a country to whom education is as valuable as its oil.

Brainerd S. Bates is a staff writer in the Aramco Public Relations Department.

"... the campus has grown in seven years to include 300 hilly acres of pine forest where, in 12 handsomely-designed new limestone buildings, the student body ... goes seriously about the business of education."

TODDLER

BY WILLIAM TRACY/PHOTOGRAPHY BY KHALIL ABOU EL-NASR

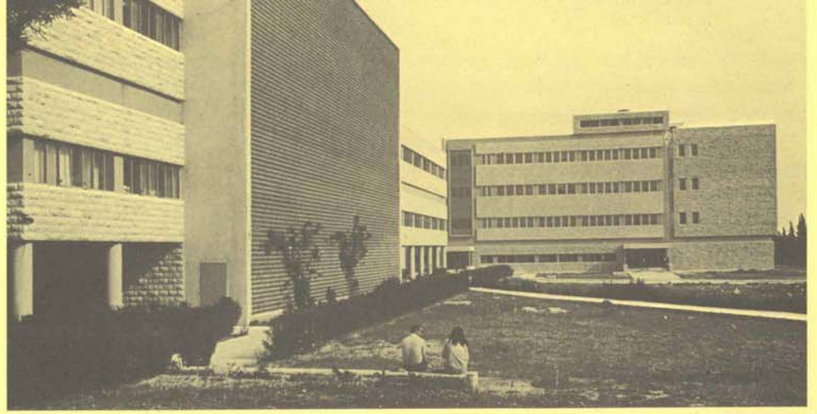
September 2, 1962
In the Hashemite Kingdom of Jordan, a University shall be established which shall be called 'The University of Jordan,' and its site shall be at Jubeiha, near the capital of our Kingdom.

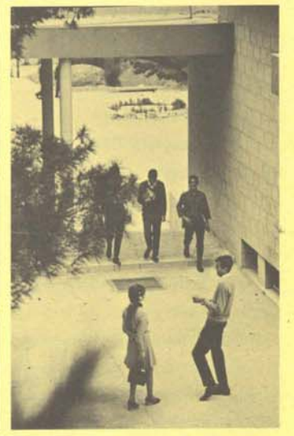
—Al-Hussein ibn Talal

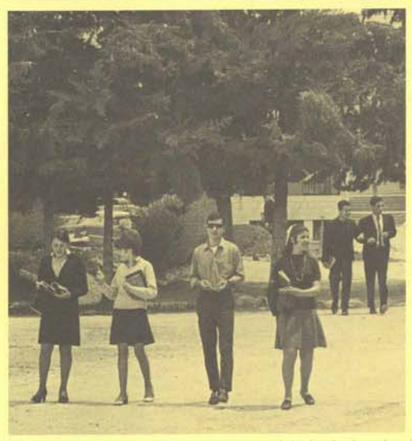
In 1965, as Lebanon's venerable American University of Beirut prepared to celebrate its proud centennial, a three-year-old toddler called the University of Jordan was just adding its second and third schools: Science, and Economics and Commerce. The first school, the Faculty of Arts, had only begun teaching a few years before, in December, 1962, with few funds in hand, but a fistful of hopes and ideas. It had a Royal Decree calling for an autonomous national university, two old buildings, 167 students, including 18 girls, and eight faculty members of whom five were part-timers. It certainly did not look like a challenge to any of the older universities of the Arab world.

Last June, however, when all three faculties first graduated classes together, it had become apparent that even AUB might be in for some competition. For the University of Jordan is an institution with ideas. At least two foreign experts said recently—with only a little hesitation—that they wouldn't be surprised to see her eventually contending for the position of second best university in the Arab East.

It is not just that the campus has grown in seven years to include 300 hilly acres of pine forest where, in 12 handsomely-designed new limestone buildings, a student body of 2,603 (one quarter girls) and a faculty of 438 go seriously about the business of higher education. There are universities in the Middle East with bigger campuses and many with larger enrollments. But at the University of Jordan there seems to be that difference in attitude and spirit which many people think should be part of the very definition of "university." From president and professor, from the student who insists the visitor join him for a moment on a campus bench, one hears again and again in surprisingly colloquial, even fashionable, campus English, "Here we are building a university." They are not talking about the bulldozers and the stonemasons so clearly in evidence around







"... immediately apparent at the University of Jordan is the relaxed manner in which young men and women meet ... on the campus."

"We had to begin where others ended,... not where they started..."

them, but about things like "free debate," "independent research," "interaction with society," "flexibility," "academic personality," and, the concept that sums it up, "living university."

"Most students," says one administrator, "will not remember half of the *facts* they learn here, but we consider attitudes and behavior as important as knowledge, and we feel that every single procedure in the university should be educative." Another asks, "What good is development technology alone without a development attitude?" A professor adds, "If we just want to build another university, then why bother? There are plenty around. No, our hopes are a bit more ambitious than that."

They wear their youth like a badge. "The University of Jordan was established in the seventh decade of the twentieth century," wrote Dr. Nassir al-Din al-Assad, first president, "and not in the nineteenth century, nor in the first quarter of the twentieth century. Hence ... we had to begin where others ended, not where they started. The University has tried to take advantage of the long experience of others. It has not, as yet, become fettered with the chains of burdensome traditions and inflexible regulations."

A departmental chairman agrees: "In a way, we were fortunate in starting so late. An older university has a much harder time in changing its character. It's the new university that can set the pace."

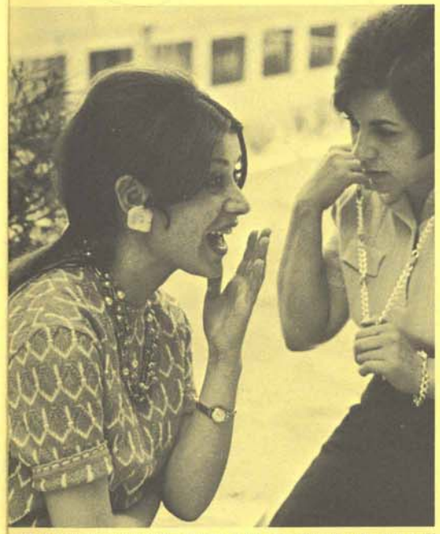
What are some of the "differences" that keep Jordan University sprinting ahead? Most important, those connected with the university seem to agree, is that this is a new kind of experiment in the Arab world—an attempt to establish the first completely *autonomous* national university. It has no administrative ties to a government or a ministry of education and it guards its independence jealously. To help it do so—and to help it find sufficient funds to operate—it has an independent board of trustees made up of ten private but influential citizens including, for example, three former prime ministers.

The mood on campus seems to be that the university should not exist solely to supply the immediate needs of government, to crank out high school teachers, technicians and civil servants. It has a broader idea of service than this and longer-range

"... we consider attitudes and behavior as important as knowledge, and we feel that every single procedure ... should be educative."

"A professor adds, 'If we just want to build another university then why bother? There are plenty around. No, our hopes are a bit more ambitious ...' "

"Coeducation ... came from not having enough money."



"Even enlightened families were reluctant to allow daughters to go."

goals. It receives from the Jordanian government a subsidy which has averaged about 10 per cent of the university's yearly budget. It also receives directly the income from a customs tax equal to one per cent of the value of all imported goods. But it relies heavily, too, on gifts from a number of private Jordanian companies and individuals as well as from several foreign foundations such as Ford and Gulbenkian, and other Arab governments such as Kuwait and the Trucial States.

Tuition at the university is free, but since space is limited, only about one-third of the applicants are accepted. Students do pay about $30 in registration fees, and boarding students pay roughly that much each month. Currently the government covers all expenses for the approximately 1,500 students (more than half of the total enrollment) who have been cut off from their families in the occupied West Bank of Jordan by the war. Another 300 students receive scholarships, principally offered by the Ministry of Education, but also by other organizations such as the United Nations Relief and Works Agency (UNRWA), which provides 25.

Another feature that sets the University of Jordan apart from many Arab universities (and some in Europe) is that like most American institutions it does not permit "external students"—those who register at the university then show up only for year-end examinations. For generations of Arab students such study meant not imaginative, independent reading and research but simply memorization of prescribed texts or routine copying and absorbing of lectures—when attended. "It was a general complaint all over the Arab world," says one professor, "that students were concerned with nothing but cramming in facts and coughing them up for exams." At the University of Jordan, students who fail to attend more than 10 per cent of their classes are not allowed to take their examinations.

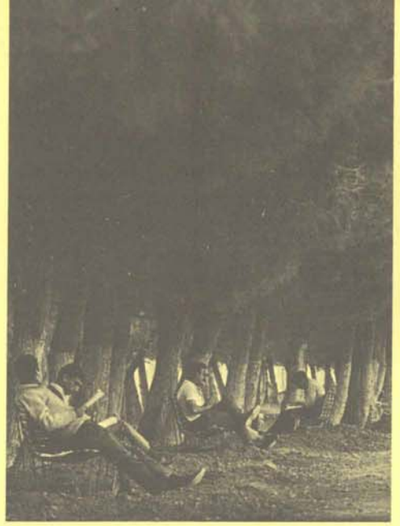
Those examinations, incidentally, are not overly emphasized; they count for only 70 per cent of the course grade. "I myself never give an exam based solely on the text or my lectures," says one young professor, "though mind you, there are a few around who used the traditional approach before coming here, and still prefer it. I suppose it's tempting for a certain kind of teacher, when half the students don't come and those who do are human sponges. I don't say we have the problem beaten here but I feel that our direction is right."

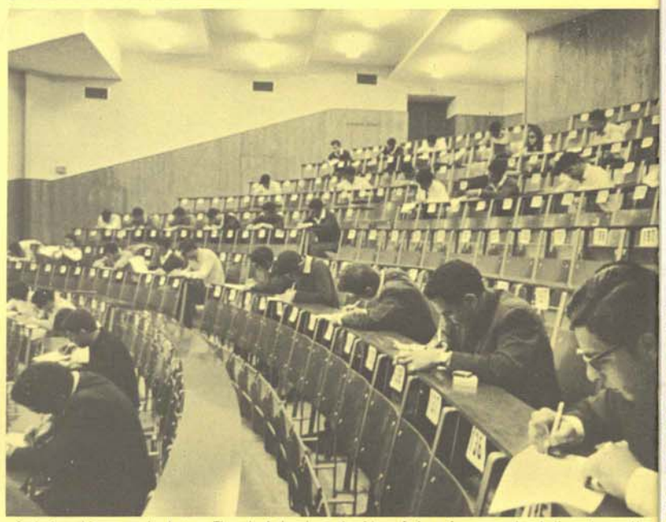
With texts, canned lectures and facts de-emphasized, classes at the University of Jordan have more lively discussion, and both laboratories and libraries are in constant use. The library has grown to about 75,000 volumes, one quarter in such languages as English, French, Persian and Turkish. Arabic is the principal language of instruction, of course, especially in the first two years, but teachers and students feel free to switch to English when it is helpful, as for example when discussing recent western technology.

At present the University of Jordan offers a graduate program leading towards an M.A. or Ph.D. only in the Department of Education in the Faculty of Arts. But now that the basic disciplines are being taught and all three faculties have graduated seniors, the university is looking towards the applied studies and hopes to open faculties of engineering, agriculture and medicine, perhaps as early as 1972. Meanwhile, an independent agricultural research station now uses part of the university grounds and the new Amman General Hospital, which will eventually be used as a 650-bed teaching hospital, is already under construction at one end of the campus on a hilltop loaned to the city by the university.

One charming difference in atmosphere that is immediately apparent at the University of Jordan is the relaxed and casual manner in which young men and women stroll, argue, and laugh together on the campus. There is a certain natural fellowship which immediately sets the students well apart from their colleagues in many parts of the Middle East, even, surprisingly, from those in free and easy Beirut where too-sophisticated boys and girls often overdo trying to impress each other. "Students are keenly aware of the necessity that this *has* to happen," says one visiting American professor. "Every time you see a boy and a girl walking across the campus together you're witnessing a revolution. And because it is important to them, students are highly critical of shallow personal relationships."

In Jordan, families who could possibly find the money have always sent their sons





"... both boys and girls really feel they are building a new society, according to one professor. They feel that things can be better. They don't laugh at the idea of the reformer or the dedicated man."

away for higher education (more than 2,000 in 1967) but even very wealthy or enlightened families were often reluctant to allow their daughters to go since it meant living far away from home in such free and easy societies as Beirut and Cairo. When the university opened a few miles outside Amman, however, parents could no longer stand up to their daughters' pressures.

"Coeducation was one good thing that came from not having enough money," an administrator admits, chuckling. "If funds had been available there probably would have been conservative pressures to have two sections of the university, for men and for women. Then it would have been very hard ever to join them."

The students, both boys and girls, really feel they are building a new society, according to one professor. They feel that things can be better. They don't laugh at the idea of the reformer or the dedicated man. They would understand completely, for example, the attitude of one of their Jordanian professors who turned down—for the present at least—an offer to work for one of the international agencies in Paris at four times his university salary. "There are just too many exciting things expected right here during the next few years," he said.

For students whose families don't live in the city there are two small hostels on campus. Eventually, university planners say, they hope to have about 25 per cent boarding students. With less than that number the campus would seem dead at night, they believe. It would cease to serve as a nucleus for sports events, for club activities, concerts, plays and public lectures. The library would have an empty ring to its halls. With all boarders, on the other hand, the university would become a self-contained and remote little island. "That we *don't* want," they say. "We want to create a certain intellectual climate in which the city and the neighboring villages feel our impact and we give the community a return on the support it has given us."

If you've been thinking that this kind of advanced and liberal thinking—still rare enough among teachers, administrators and planners on campuses in the West—seems unusually abundant in the Arab East, you have a point. But somehow the proud young University of Jordan has come up with the lion's share.

William Tracy taught English in Jordan, Kuwait, Lebanon, Saudi Arabia and Syria before joining Aramco World *in 1967.*

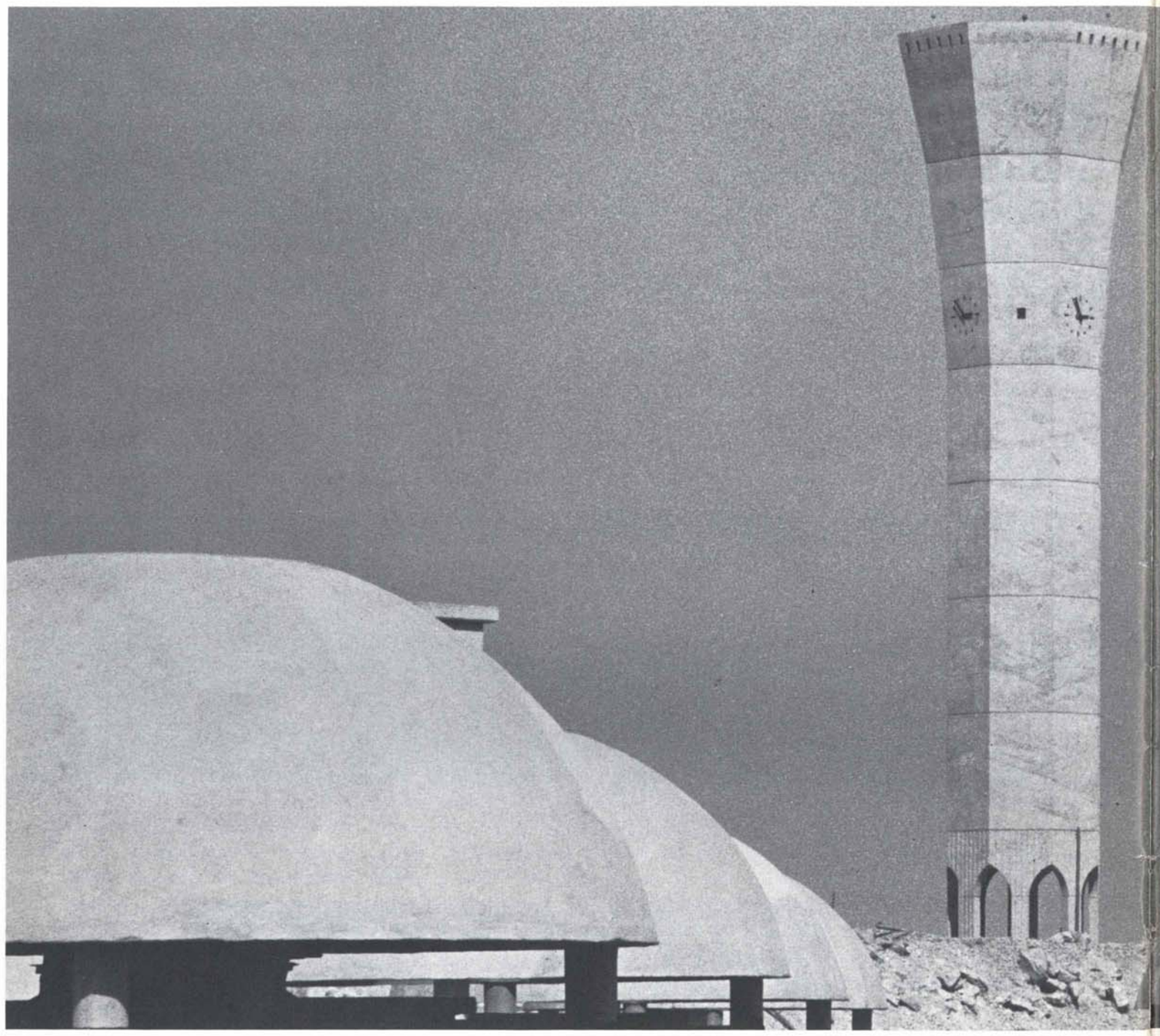
"A departmental chairman: 'In a way we were fortunate in starting so late. An older university has a much harder time in changing its character. It's the new university that can set the pace.'"

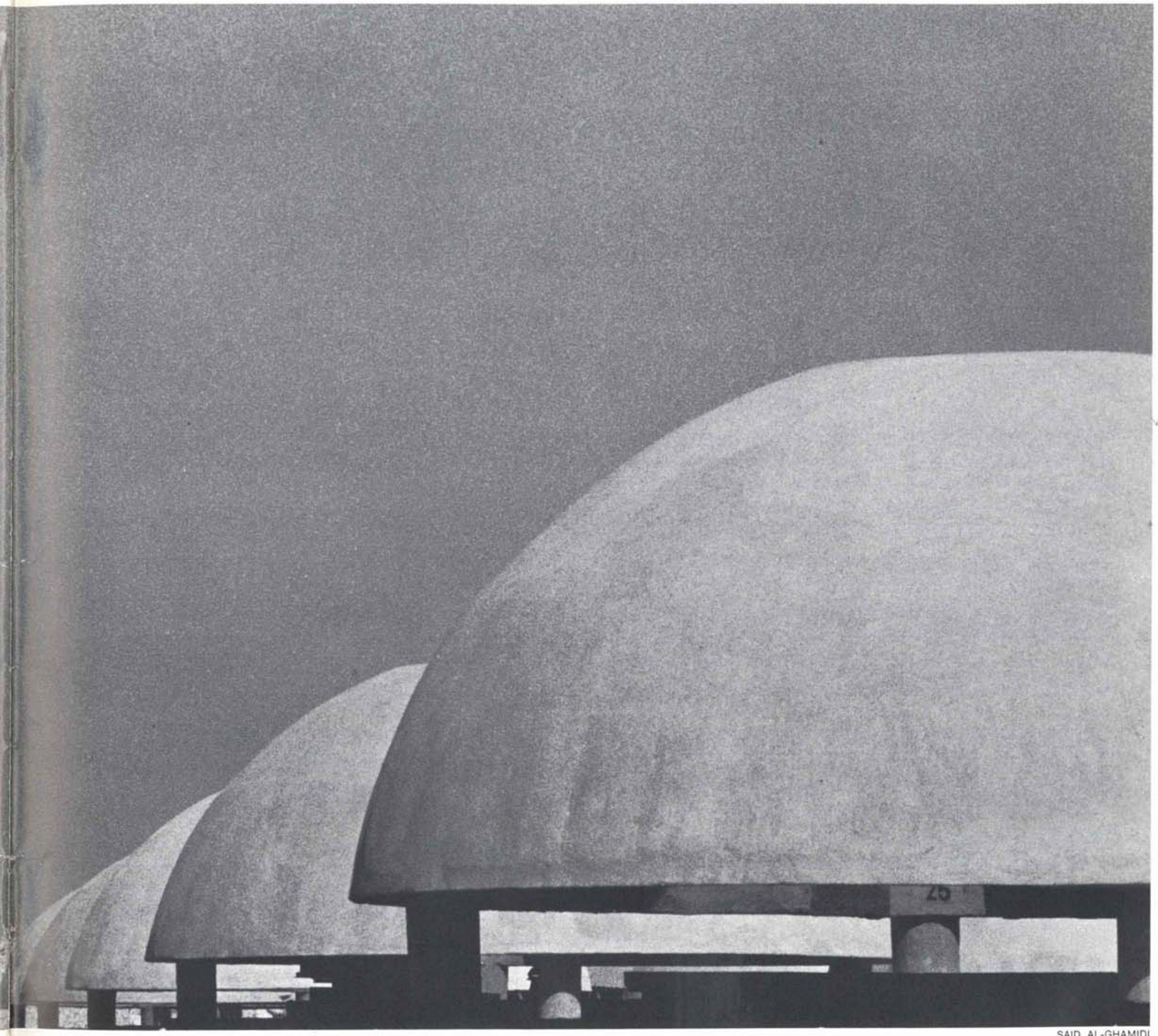
"From president and professor, from the student... one hears again and again... 'Here we are building a university.'"

BY DANIEL DA CRUZ

THE NEW BREED

Out of 27 Arab colleges and universities 18 have been founded since 1946.





SAID AL-GHAMIDI

If, in his choice of heroes, a youth tells the world what sort of man he would be, if only he had more money, more time, more talent, half the Arab world would be filled with Haroun al-Rashids, Saladins, Omar Sharifs and similar statesmen, warriors and movie actors. Remarkably though, the other half would be occupied by Ibn Khalduns, Avicennas, Averroes, Ibn Battutas, and other legendary Arab historians, scientists, physicians and wise travelers, for the Arabs have always regarded scholarship with almost mystical reverence.

There was a time, in the golden age of Muslim science and letters, when reality approached the ideal. Aspiring scholars from Italy, England and France journeyed through hostile forests and across uncharted seas to sit at the feet of Arab savants in Cordova and Granada in Spain, Kairouan in Tunisia, Salerno in Sicily, and in Baghdad, where the great Muslim university, Al-Nizamiyah, was established the year before William the Bastard's conquest of England. Even Oxford University in its early days supported a Chair of Arabic, and well-educated Europeans read Arabic along with their Latin and Greek.

With the Turkish subjugation of the Arab East, however, this brilliant era, already declining, ended. In five centuries of Ottoman rule *no* public national universities were opened in the empire's Arab provinces. As late as the 1940's when France and England reluctantly gave true independence to most of the Arab countries, there were only six modern universities in the whole Arab world.

Model of Saudi Arabia's College of Petroleum and Minerals.

Since then, there has been a phenomenal change. As if reaching back to their illustrious past, the Arab nations in less than 20 years have constructed 18 universities and boosted enrollment in some cases by 1,000 per cent.

Mere numbers, of course, don't tell the story, and—statistics in the Middle East being still more art than science—figures are not always up to date. Nevertheless, even conservative estimates are impressive.

In 1945, a mere 15,000 students were receiving university education in Egypt. By 1964 that figure had leaped to 150,000. In Iraq during the same period enrollment soared from less than 2,000 to over 20,000, and in Syria it jumped from just over 2,000

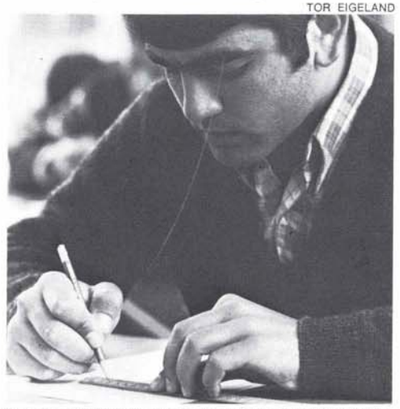
for example, where education is almost a national resource, out of a total enrollment of some 27,000 in its universities and other institutions of higher learning, fully 12,000 come from neighboring countries. The national Lebanese University, now with 6,500 students crowded into temporary buildings, has already started to build a totally new campus that planners estimate will eventually cost $60 million and accommodate 15,000. Yet Lebanese students themselves still go abroad in large numbers, particularly for graduate studies.

In all, about 25,000 students from the Arab world study outside the Middle East each year, principally in the United States and Western Europe. Last year Saudi Arabia had about 2,000 young people abroad, in nine Arab countries plus Turkey, Iran and Pakistan, and in 10 countries in the West. Of these, about 120 were girls and 260 were post-graduates.

Years ago, Daniel Bliss, first president of the Syrian Protestant College (later AUB), gave two reasons why he had wanted to establish his institution in the Middle East. For one, the practical missionary wrote in his *Reminiscences*, sending students overseas in large numbers "would require more money than the people could pay and more than the benevolent would furnish." Secondly, and more important, he explained, education abroad "unfits" students by taking them "out of sympathy with their own people."

Most Arab educators today would agree. Depending on foreign universities for nearly all of one's graduate-level education, for example, could be unsatisfactory if the resulting Ph.D's become trained experts in the needs and problems of other countries rather than their own. One would hope that a graduate school in an Arab national university would be more closely attuned to Arab problems than, for example, a graduate school in Wisconsin. One education expert believes that the present relationship of Arab universities to the outside world can be compared to the situation in the United States between, say, 1866 and 1896. Then tens of thousands of Americans went to Europe for specialization. When they returned they helped to found a new breed of institutions like Johns Hopkins, Chicago, Michigan and Cornell, and the United States was on its way to becoming self-sufficient in higher education.

TOR EIGELAND



An estimated 300,000 were enrolled in Arab universities in 1968.

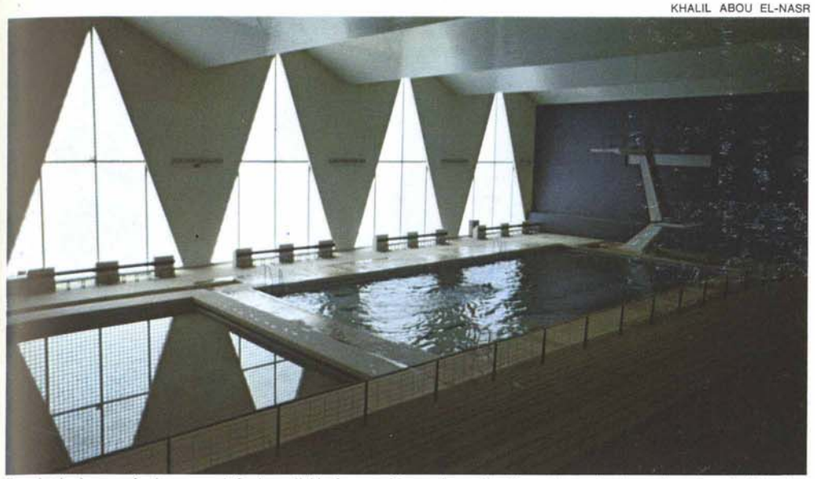
Such signs of change are present throughout Arab education. Where demonstrations, textbooks and lectures are used in place of actual laboratory experience, administrators recognize (even if they can't always do anything about it) the urgent need for a more experimental approach to the sciences. Younger faculty members think in terms of making their institutions "research worthy." While massive on-campus research in the American style (controversial and top secret—or otherwise) is still unheard of, the direction is clear. At the first UAR Physics Conference held in Alexandria in April, 1968, for example, some 180 Arab scientists contributed 157 papers in ten areas of physics, pure and applied, theoretical and experimental.

Today, Arab countries spend up to 20 per cent of their national incomes on education, an allotment of priorities clearly visible in the new generation of colleges and universities rising in the Middle East: institutions like the University of Jordan, Kuwait University, Riyadh University and the College of Petroleum and Minerals.

One of the new breed, Kuwait University, was inaugurated in 1966 with two distinctions for a Middle Eastern university: there was *no* shortage of money, so that from the first the highest quality in instruction was the order of the day; and with few exceptions the original administration and faculty were all Arabs.

Kuwait University has four faculties already functioning: the Faculty of Science, Arts and Education; the University College for Women; the Faculty of Law and Shari'a; and the Faculty of Commerce, Economics and Political Science. Plans are being made to add faculties of medicine, dentistry, pharmacy and engineering in the near future. During its formative years the university occupies the handsome brand new Khalidia Secondary School for Girls in Kuwait City, but architects are already at work on plans to spread a new complex of buildings across 1,200 acres at nearby Massilla.

KHALIL ABOU EL-NASR



Few institutions so far have enough funds available for amenities such as this all-weather swimming pool at Kuwait University.

This is a new concept in the Middle East where even the few public supported universities in existence were housed in a collection of cheerless old buildings originally designed as offices or apartments and where the student body was exposed to political currents, as well as dry lectures, to crowded streets rather than spacious campuses, to the acrid smoke of coffee houses instead of the heady fragrance of campus rally bonfires.

In its curricula, the university covers quite a bit of ground too. In the first three years it has established full-fledged departments in disciplines as diverse as accounting and auditing, geography, English language and literature, penal law, and social and financial legislation. Four-year courses in these and other subjects follow prescribed class structure with no latitude for electives. In its early years, especially, the emphasis will be to graduate as many well-prepared, well-rounded students with a bent for teaching as possible, so that they may be sent abroad to specialize before returning to take posts at the university itself. Until then, Kuwait University must rely entirely on professors from other Arab countries, principally Egypt. But a more highly qualified faculty would be hard to find in the Arab world. Every member of the professorial staff must hold the Ph.D. degree and their publications in half a dozen languages fill several library shelves.

Kuwait University has embarked on a program perhaps unique in the annals of education. It is nothing less than to raise the national standard of education, barely at the stage of literacy before the discovery of oil, to that of a modern nation capable of producing its own engineers, physicians and administrators—all in a generation. The excellence of its staff and its physical plant, which despite its temporary nature includes such innovations as a modern language laboratory, and one of the first planned libraries in the Middle East (it now has 115,000 volumes, 800 periodicals), gives promise that the university will live up to its ambition.

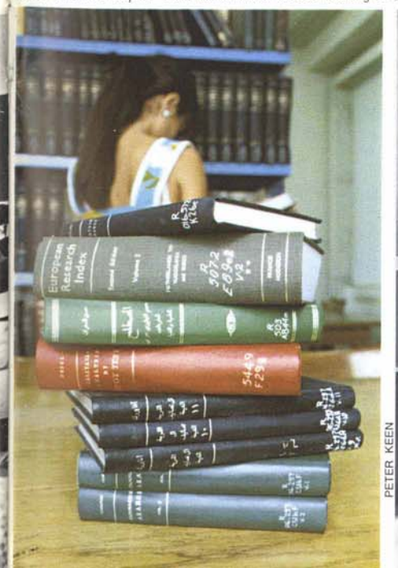
Equally devoid of academic ivy is Saudi Arabia's Riyadh University, founded in 1957, which has faculties of engineering, education, arts, science, commerce, pharmacy and agriculture, and a School of Medicine scheduled to open, with the collaboration of the University of London, this year. The newest university of all, however, is Jiddah's King 'Abd al-'Aziz University, which a group of citizens bravely opened only two years ago—with a one-year "Orientation Class" for about 90 students.

More and more often today, Arab students are expected to attend classes and to think about lectures, not just copy them in notebooks ...

KHALIL ABOU EL-NASR

... while teachers require them to do more outside reading ... and work closely with them on laboratory experiments and in research.

PETER KEEN



KHALIL ABOU EL-NASR

PRINCIPAL FOUR-YEAR COLLEGES AND UNIVERSITIES IN THE ARAB WORLD

All figures are approximate and are based on the school year 1967-68. In a few cases they are estimates based on the most recent statistics available. Founding dates may in some cases represent an original school faculty of the four-year degree-granting institution.

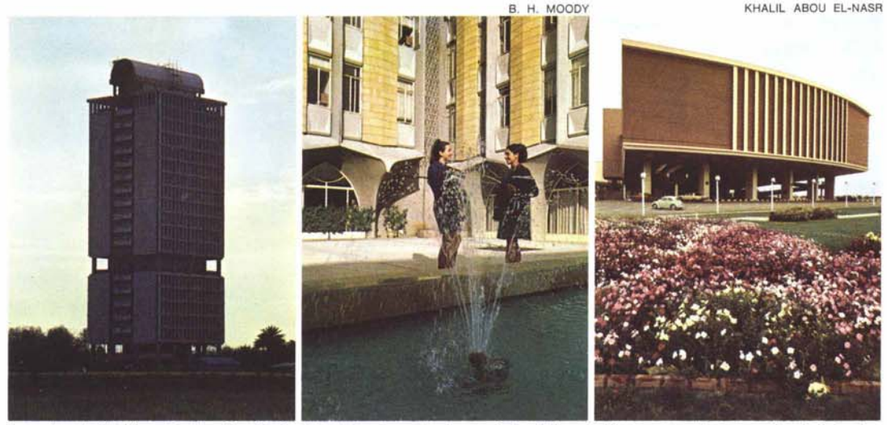
NATIONAL UNIVERSITIES

	YEAR OF FOUNDING	STUDENT ENROLLMENT Men	(Total)	Women	FACULTY	BUDGET	LANGUAGE OF INSTRUCTION
UAR							
1. Cairo University	1908		– 57,450 –		2,380	$17,800,000	Arabic/English
2. Alexandria University	1942		– 37,700 –		930	11,000,000	Arabic/English
3. Ain Shams University	1950		– 31,250 –		1,025	9,100,000	Arabic/English
4. Assiut University	1957		– 7,350 –		700	4,600,000	Arabic/English
Lebanon							
5. Lebanese University	1953	6,850		1,160	475	2,000,000	Arabic/English/French
Syria							
6. Aleppo University	1937		– 4,350 –		210	1,000,000	Arabic/English/French
7. Damascus University	1924		– 27,400 –		575	4,000,000	Arabic/
Jordan							
8. University of Jordan	1962	1,660		540	125	3,400,000	Arabic/English
Iraq							
9. Baghdad University	1958	17,950		6,100	1,500	15,600,000	Arabic/English
10. Mosul University	1967	1,000		250	110	3,100,000	Arabic/English
11. Basra University	1967	650		150	30	2,000,000	Arabic/English
Kuwait							
12. University of Kuwait	1966	470		420	70	5,800,000	Arabic/English
Saudi Arabia							
13. Riyadh University	1957	1,470		110	210	850,000	Arabic/English
Sudan							
14. University of Khartoum	1956	3,000		300	660	—	Arabic/English
Libya							
15. University of Libya	1956	1,800		200	150	—	Arabic/English
Tunisia							
16. University of Tunis	1960		– 8,500 –		160	—	Arabic/French
Algeria							
17. University of Algiers	1909		– 9,700 –		690	—	Arabic/French
Morocco							
18. Mohammed V University	1959	5,640		980	300	—	Arabic/French

PRIVATE OR FOREIGN INSTITUTIONS

UAR							
19. Al-Azhar University	970 (1962)	16,000		1,400	710	$ 5,400,000	Arabic/English
20. American University of Cairo	1919		– 750 –		65	—	/English
Sudan							
21. University of Cairo (Khartoum branch)	1955	3,000		300	50	—	Arabic/English
Saudi Arabia							
22. King 'Abd al-'Aziz University	1967	70		30	17	950,000	Arabic/English
Lebanon							
23. American University of Beirut	1866	2,450		900	550	12,000,000	/English
24. St. Joseph University	1881		– 2,800 –		80	—	Arabic/French
25. Arab University of Beirut	1960		– 16,000 –		120	—	Arabic/English
26. Beirut College for Women	1924	—		610	70	650,000	/English
27. Haigazian College	1955		– 350 –		35	165,000	/English

B. H. MOODY KHALIL ABOU EL-NASR



A new breed of buildings: faculty offices for Baghdad University; a dormitory at Beirut College for Women; an auditorium at Kuwait University.

in 1949 to more than 34,000 in 1964. One recognized authority puts the 1968 enrollment at Arab universities at about 300,000 students, with another 25,000 studying abroad. It is estimated that one out of every 330 Arabs is now a university graduate, as compared, for example, with one out of every 200 Englishmen. About one in five students is a woman.

The size of the various universities is also impressive: Cairo University has 57,500 students, for example, Alexandria University 38,000, Damascus University 27,300, the University of Baghdad 24,000.

It goes without saying that such explosive growth would create problems. One is overcrowding. Another is the extension of an already questionable system.

Overcrowding is a result of two characteristics of university life in the Arab world: the belief by governments that Arab universities should provide undergraduate instruction for the greatest possible number, on the reasonable grounds that the Arab world of today is in greater need of many competent men and women in many fields than an elite of narrow specialists; the belief by families and students that a university education is at once the birthright of bright young citizens of all classes and a passport to either high-paying jobs or the security of government civil service.

As a result, classrooms and lecture halls are crammed beyond their capacity; admission and graduation standards must constantly struggle against popular and political pressures; and the teacher shortage worsens. The student-teacher ratio in the U.A.R. university system, not the worst in the area by any means, stands at an unsatisfactory average of about 36 to 1.

As to the system, the custom is for the professor to enter the lecture hall, deliver without interruption a set speech from notes, and leave immediately when the bell rings. The old chestnut about a lecture being "the process by which the contents of a professor's notebook is transferred to a student's notebook without passing through the heads of either" is still no laughing matter in many Arab faculties: it is the tragic reality. It is also commonly thought that if students copy professors' lectures as nearly verbatim as possible and memorize great chunks of textbooks they can rest secure in the knowledge that it is on this material and no other that the final examination will be based. Seminars in the American fashion, with give and take between professors and students, are the exception.

Professors have problems too. Although the prestige of a professorial appointment in the Arab world is great, pay is low. Many moonlight to make ends meet and some, especially in engineering and sciences, flee to the sanctuary of government service and private industry or follow their students abroad. The resulting chronic shortage of teachers of pure and applied science leaves many new students no choice but to enroll in the humanities, law, or social science faculties even though there is a crying need in some Middle East countries for doctors, engineers, research scientists and agriculturists.

One young Arab physicist has listed what he feels will be the four major challenges for the Arab academic world in the decade of the 1970's: (1) medical education with the focus on the problems of public health as well as traditional patient-centered care, (2) scientific research to develop petrochemical industries commensurate with the Arab world's oil resources, (3) social research to help ease the strains of urbanization and the emergence of the Arab women, and (4) increased graduate-level work to train the faculties needed to staff the booming undergraduate colleges.

At the present rate of growth, educational experts say, there could be a 100 per cent increase in enrollment during these next ten years. This means that by 1979 there might be an additional 300,000 young men and women studying at Arab undergraduate institutions. (Most of the anticipated growth will be in North Africa and the Arabian Peninsula, where in recent years there has been a significant expansion of secondary education.)

Almost certainly the demand for advanced level studies will be greatest in the UAR (where already there is one graduate student per seven undergraduates), but it will also probably be felt in Lebanon, Iraq, and even Jordan. To meet these demands, experts say, will require an estimated 30,000 new faculty members and a financial investment of an additional $1 billion yearly.

Despite the expansion at home, there are also thousands of young Arabs who study outside their own countries. In Lebanon,

B. H. MOODY

TOR EIGELAND

KHALIL ABOU EL-NASR

The demands for advanced level study in the next decade, Arab education experts say, will require the investment of enormous human and financial resources.

The regular freshman program began last year.

Another institution, semi-autonomous but founded after considerable more planning and with governmental support, is the College of Petroleum and Minerals in Dhahran.

The Petroleum College opened its doors September 23, 1964 with 69 students, nine professors, and, sure enough, in premises originally designed as offices. There, however, the resemblance to older Arab institutions of higher learning ended. For one thing, the college is largely independent; for another, English, the language of international 20th-century technology, is the language of instruction; for a third, the curriculum is highly technical. All freshmen, for instance, in addition to five hours daily of English instruction, take chemistry, physics, mathematics, and shop work-graphics, plus non-credit courses in library usage and typing.

As its name implies, the College of Petroleum and Minerals is Saudi Arabia's West Point in producing a field army to help wrest the nation's riches from its soil. Fittingly enough, the new campus, now being built to accommodate an expected 1985 enrollment of 2,800, is located atop a prominence of the Dammam Dome, one of the world's historic oilfields. The school this fall expanded its original English Orientation Program and Junior College to include a College of Applied Engineering with chemical, civil, electric and mechanical engineering departments. The unusual five-year course of study (leading to the Bachelor of Applied Learning degree) is made up of a three-year program, plus a year of preparatory study on one end and a year of industrial experience on the other.

A year from now a four-year College of Engineering Sciences and two years from now a College of Sciences will be inaugurated, both leading to Bachelors degrees in their fields. At that time all undergraduate science and engineering studies now being pursued by CPM students abroad will be offered at Dhahran. Foreign study will be reserved for those going after Masters' and Doctoral degrees.

Students at the Petroleum College currently come from nearly all the Arab and many non-Arab Muslim countries, and few could find circumstances more congenial to serious scholarship. All receive tuition and living-cost grants. Most get generous pocket-money allowances as well. Classes are small, the international cadre of teachers is highly professional and well-paid, and the college community is so close-knit that students must often wonder whether after-hours activity—play-reading, foreign language clubs, book discussion groups, swimming and tennis—all shared with the faculty, can really be educational when it is obviously so much fun.

Just as Arab higher education in general has years to go before it comes of age, the College of Petroleum and Minerals needs a while yet before it becomes a little M.I.T. of the Middle East. But it is already an exciting place to study for the future of their nation is not only figuratively in the students' hands, but literally beneath their feet.

Daniel da Cruz is a free-lance writer who has written for the National Review, *the* Reader's Digest, *and* Business Week.

KHALIL ABOU EL-NASR

Administrators recognize the urgent need for a more experimental approach to the sciences. Here a conservative Muslim girl at the University of Jordan learns anatomy firsthand in a biology laborat