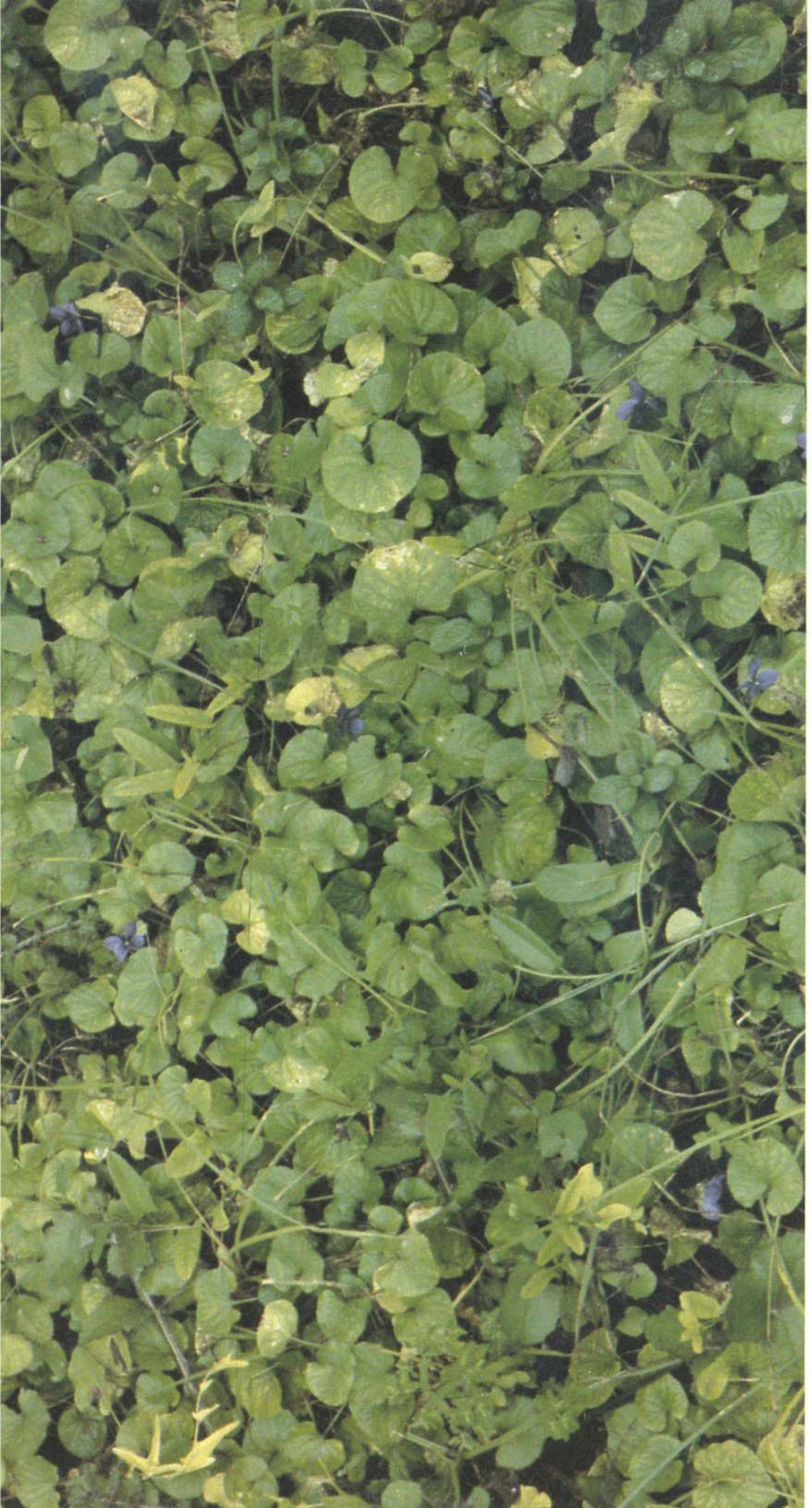

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A Harvest of Scents

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Cover: From millions upon millions of blossoms – jasmine, tuberoses and roses like these – and from the roots and leaves of other plants such as mint, geranium, basil and lemon-grass, the perfumers of today's Egypt, in an art millennia old, extract what the ancient Egyptians called "the fragrance of the gods" – the essential oils and waxes that provide most of the world's perfumes. Back Cover: A profusion of violet leaves and a scattering of blossoms await the pickers' skilled fingers at a Delta fragrance farm. Photographs by John Feeney.

◀ Soaring dramatically upward, this new bank building typifies the dynamic growth of Riyadh, impelled both upward and outward by the kingdom's Five Year Plan.

The Koran in the Cotswolds

WRITTEN BY JOHN LAWTON PHOTOGRAPHED BY IAN YEOMANS

The English Cotswolds, of which it is said, "Every road leads to a church," is not the kind of place you normally associate with the Koran – particularly the village of Northleach, where the bells of St. Peter and St. Paul peal out a popular hymn – "O Worship the King"– every three hours, day and night.

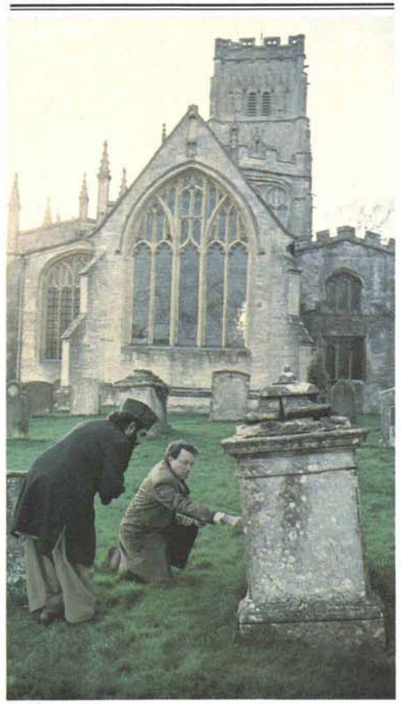
But, incongruous as it may seem, it is there, in the shadow of the 100-foot-high, honey-colored stone church tower, that the first full-length English-language version of the Koran was recently recorded – on over four miles of tape that will play for 41 hours.

The explanation, however, is simple. Northleach – once a center for medieval wool merchants, now a sleepy village nestled amidst the Cotswold Hills – boasts one of Britain's tiniest but most accommodating recording studios. A branch of a cassette-duplicating company, the studio is expert in producing special sound effects. More importantly, given the unusual nature of this project, the Northleach studio could allot the time needed to insure a meticulous and reverent recording. "None of the big London recording studios would have put up with us," says Sultan Salahuddin Siddiqui, managing director of the Wales-based Source Reliance International trading company which financed the project. "It involved an enormous amount of time and patience."

There were other, more important, problems too. One is the fact that Muslims regard the Koran as untranslatable. They believe that the language in which the Koran was revealed to Muhammad – Arabic – is inseparable from its message. Consequently, Muslims throughout the world, no matter what their native tongue, are expected to learn Arabic so that they can read the Koran and perform their acts of worship.

Siddiqui, nevertheless, was persuaded that the English-language recording was necessary. Because there are so many Muslims in Britain now (See *Aramco World*, January-February 1979), and because of the growing interest in Islam in the English-speaking world, he thinks the recording will be invaluable to Muslim parents whose children get little formal instruction in their faith, and to universities, colleges and libraries trying to satisfy the new interest in Islam. Furthermore, versions of the Koran do exist in other languages; they are considered "interpretations."

Siddiqui, therefore, approached the project in that spirit: he would produce an English interpretation of the Sacred Book, and to be certain that there would be no other theological problems, the firm secured permission to use the only English-language interpretation approved by Cairo's ancient al-Azhar University: that of Marmaduke Pickthall, an English aristocrat who spent most of his life in the Muslim East, embraced Islam, and later built one of Britain's first mosques at Woking.



Qari Rasul and Dr. Zaki in the Northleach churchyard.

Siddiqui's firm also took steps to ensure the accuracy of the oral Arabic – which was to be chanted first, before the English interpretation was added. This, historically, has been vital in the preservation of the authentic text of the Koran during generations of oral transmission. As traditionally authenticated pronunciation was important, as well as equally authenticated intonations and cadence, special schools were founded to be sure that those who recited the Koran did so without any variance from the traditional methods of recitation.

To maintain this tradition, the firm engaged a renowned Koranic chanter: Qari Ghulam Rasul of Pakistan, who started chanting the Koran at the age of five, and was appointed official chanter to the Pakistan National Assembly in 1972.

Flown in from Pakistan, Qari Ghulam Rasul spent hundreds of hours closeted in a tiny recording chamber chanting the entire 6,236 verses of the Koran in Arabic while, opposite him, Dr. Ya'qub Zaki, a Scottish Muslim, recited the English version of every line and, opposite them, on the other side of a large glass partition, British sound engineers Peter Rinne and David Chandler constantly monitored and manipulated a battery of flashing dials and colored buttons.

It was, they said later, a marathon performance: 84 hours of tape which had to be letter-perfect. As Mr. Siddiqui put it, "No errors of any kind are permissible in reproducing the Koran. We had to be very careful throughout."

They were. After each recording session the tapes were driven 90 miles to London for checking by Muhammad Ahmad Ovaisi, the imam of Wembley Mosque, and Qari Abdul Rahim, a respected judge of Koranic recitation contests. Between them they heard the entire track through five times.

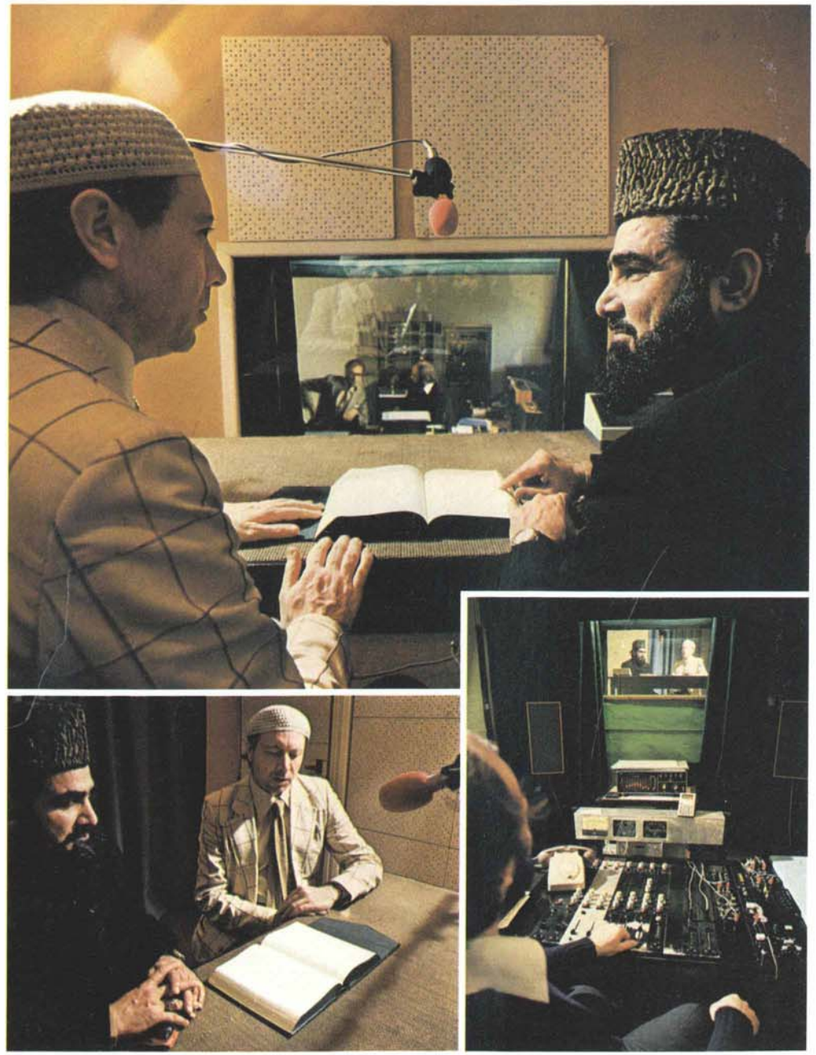
Next came the editing. Some 20,000 cuts and splices were required to perfect the Arabic and insert the English translation after every second verse; altogether recording and editing took about three months. "It was the biggest job we've ever done," recalls Rinne, who, most nights during that hectic time, slept in a room above the recording studios.

"The toughest problem," says Rinne, "was making it sound as though it had all been recorded at one time." There was also the difficult task of Anglicizing Dr. Zaki's voice. "We got most of the burr out of it, but there's still a faint Scottish lilt in the English translation," admits Rinne, a perfectionist.

On 32 cassettes – over 4 miles of tape – the Koran in English

Much of the sophisticated equipment Rinne used to record the Koran was built and installed in the Northleach studio by electronic whiz-kid James Scarlett, who founded the cassette company in his dining room six years ago. Although the company has produced educational and language material before, recording the Koran was the company's first experience with Arabic.

For Qari Rasul and Dr. Zaki, however, it was not. Rasul had already made two complete recordings of Muslim scripture; in 1974 he recorded the entire Koran in *tartil* (a particularly specialized style of chanting) in Lahore, and in 1976 completed a second full-length recording for Radio Pakistan. As for Dr. Zaki, he lectures on Islam frequently in such countries as the United States and South Africa and his appointments include the posts of lecturer in Arabic and Islamic studies at Lancaster University and chief adviser to the World of Islam Festival in London in 1976. He is a contributor to the *Encyclopaedia Britannica* and worked as assistant director on a series of six films entitled "The Traditional World of Islam," which have been twice screened on BBC Television.



Qari Rasul, at right in top photo, and Dr. Zaki chat and work in recording booth, while Peter Rinne monitors sound.

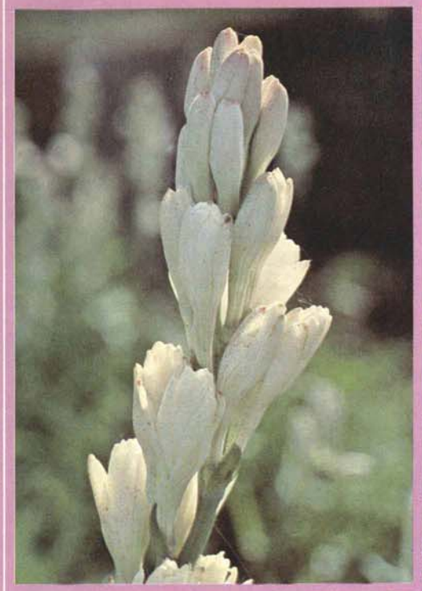
Despite these impressive credentials, the taping sessions were still a nerve-racking challenge: in addition to the other problems the team also faced a crucial deadline. George Allen and Unwin, publishers of Pickthall's translation, had given them six months to complete the recording before the copyright permission would be withdrawn.

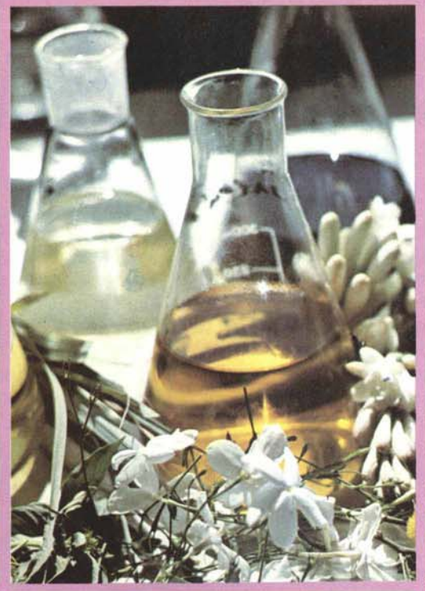
This was not simply a legalism; one earlier attempt to record Pickthall's translation – by the Sharjah Islamic Center of the United Arab Emirates – had foundered on the time clause. To SRI, therefore, each three-hourly rendering of the hymn by the bells of St. Peter and St. Paul was a maddening delay – as were the daily drives to London, the meticulous checking and re-checking of each word, and each of the 20,000 cuts and splices.

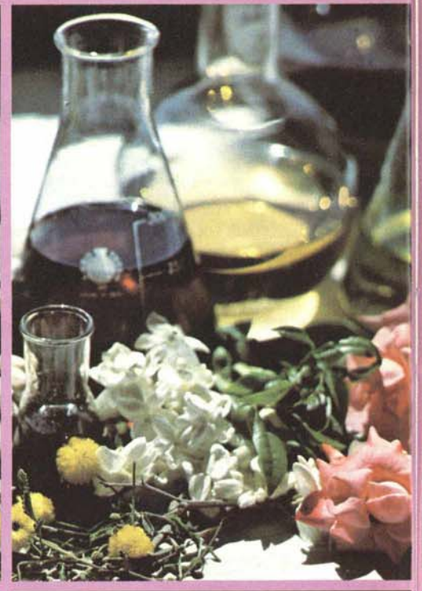
Occasionally, as the tension mounted, Qari Rasul would walk the narrow streets of Northleach, where once, during the annual showing of Cotswold wool samples, almost every European language could be heard, or, in the quiet churchyard, browse among the tombstones of the rich Northleach merchants who lavished their wealth on the town's fine 15th-century church. Then, refreshed, he would return to the studio with Dr. Zaki to resume recording.

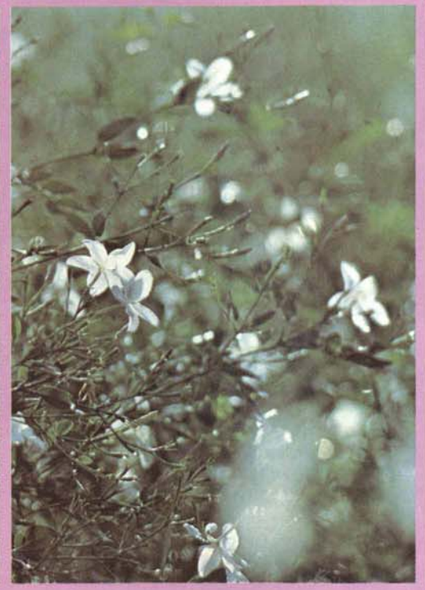
At last, however, shortly, before the deadline – at Christmas, 1979 – Siddiqui, Rinne, Chandler, Zaki and Rasul stood before a pile of 32 completed cassettes, exhausted but content. In combining technology with tradition they had produced – insofar as that is possible – an English recitation of the Koran for the English-speaking Muslims of Britain and the world.

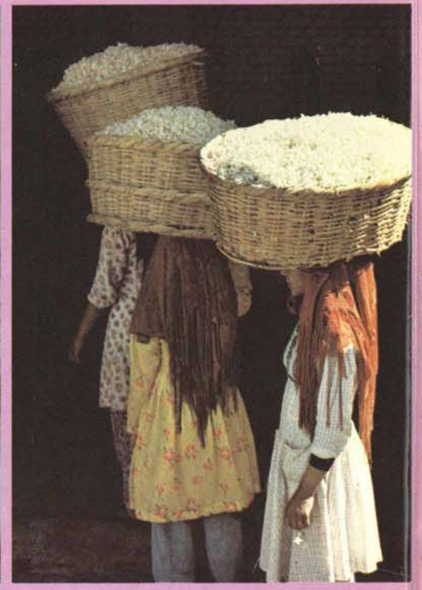
John Lawton, a regular contributor to Aramco World, *is the Editor of a new international English-language daily newspaper in London.*

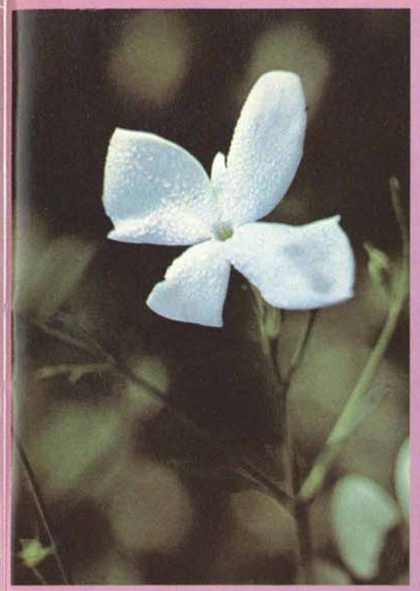


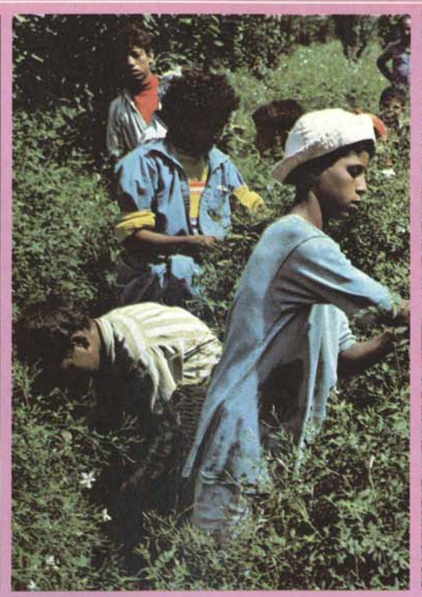


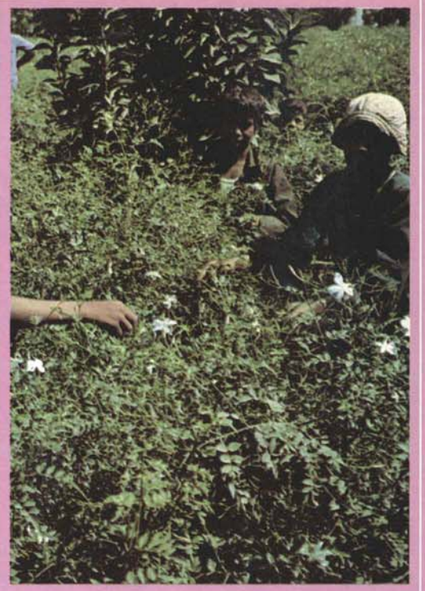












From the gardens of the Delta... A Harvest of Scents

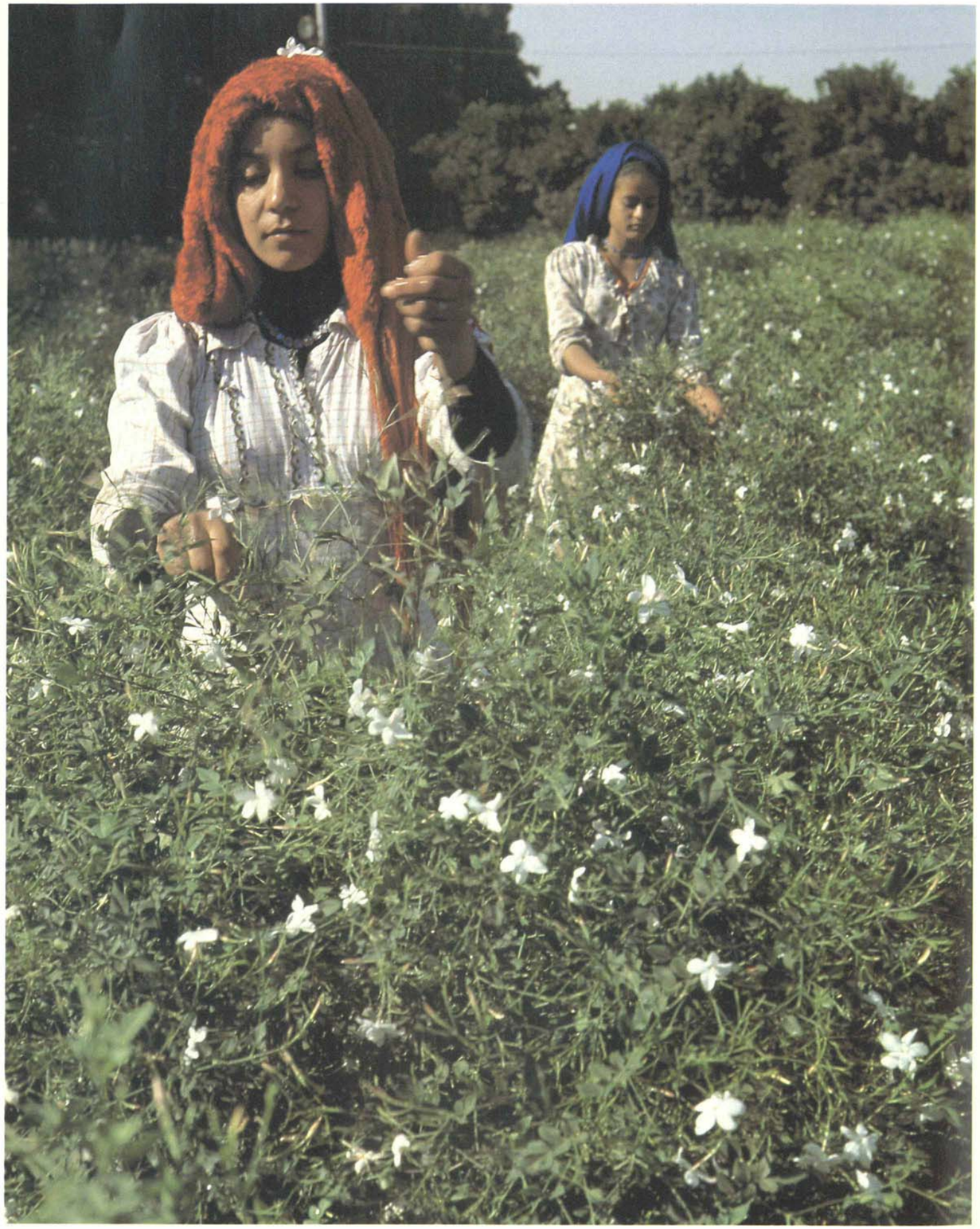
WRITTEN AND PHOTOGRAPHED BY JOHN FEENEY

In Egypt, perfumes have been important for millennia. As early as 2700 B.C. the Egyptians had discovered not only the joy of fragrance but the art of the perfumer. They developed enfleurage – extraction of scents by placing flowers between layers of purified animal fat – and later devised a technique to squeeze the basic oils from flowers with pressure (See *Aramco World*, September-October 1974).

Perfumes were used, of course, by women – often in cones or balls of scented ointment worn in the hair – but also by priests. The priests of Heliopolis, for example, offered scented resin to the sun-god at dawn, incense at noon and, at dusk, as the sun was setting, a mélange of six perfumes called *kuphi*. Indeed, one of the ancient words for perfume was "fragrance of the gods," and when the famous King Tut's tomb was opened in 1922 – after more than 3,000 years – the archeologists are said to have caught one elusive whiff of *kuphi*.

Since then there have been innumerable changes in Egypt. But to a large extent Egypt, more than any other country, still perfumes the world. Whether you dab a delicate ear lobe or spray a bathroom, more often than not the source of the fragrance is the Nile Delta. Fully 80 percent of the world's natural jasmine products, for example, come from Egypt, where specialists in this ancient art extract the aromatic oils from a profusion of flowers, leaves, roots and herbs and export them to perfumers in Paris, London, New York and even Moscow – an enthusiastic customer.

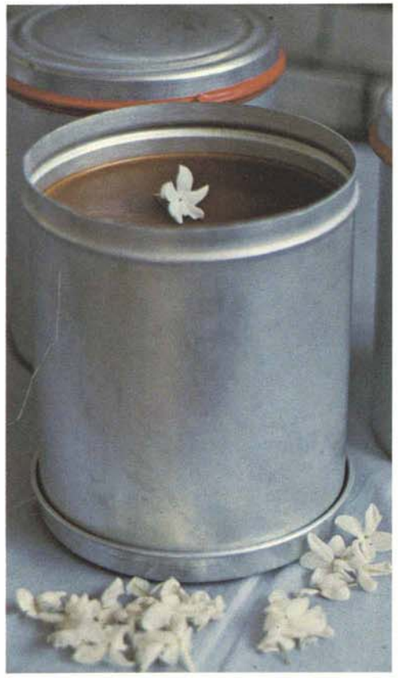
One specialist is Ahmad Fakhry, whose jasmine plantation north of Cairo typifies the glorious gardens that are the source of this "fragrance of the gods." Some gardens – like those in Upper Egypt's Maghagha region – may seem mundane: they grow onions and garlic. But other gardens grow coriander and cumin – aromatic plants cultivated in Egypt for 4,000 years – and even the onions and garlic are important. And the gardens at Haraneya, where jasmine, roses, cassia, lemon-grass, geraniums, basil and mint grow within sight of the ancient Pyramids



of Giza, and those north of Cairo by the Muhammad Ali Nile Barrage, with their carnations, violets and bitter orange trees – are breathtaking in their beauty. In September, for example, Ahmad Fakhry's jasmine plantation is a scented delight. At dawn, invisible clouds of perfume envelop visitors, and as the sun rises it discloses an undulating sea of green studded with millions of minute white stars, each bathed in a soft Nile dew.

Like many big Egyptian landowners, Ahmad Fakhry, under Egypt's agrarian-reform laws of the 1950's, lost most of his family land, but was allowed to keep just over 50 acres – and to choose *which* 50. "I chose mine in the Delta, at Shubra-Balula, 150 kilometers [93 miles] north of Cairo," Ahmad said; "because I could grow aromatic crops which don't take up too much space and can usually command a high price."

"Even so," he continued, "50 *feddans* was too small to support the operation of an extraction plant. But this was my dream, so we encouraged farmers nearby to also start growing scented flowers. Today, there must be 1,000 families growing jasmine in my area alone."



At left, girls pick jasmine blossoms one by one from a sea of green bushes on Ahmad Fakhry's Delta plantation. Over twelve and a half million *blossoms go into each 11-pound can of jasmine concrete, above, the concentrated export product.*

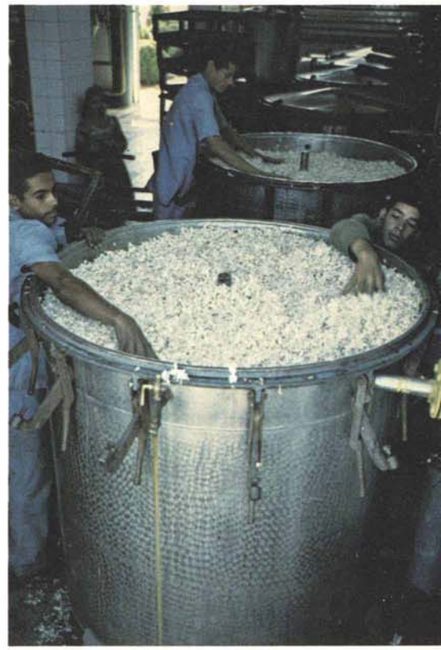
Growing – and harvesting – jasmine is not like growing and harvesting wheat. For one thing, children – not much taller than the jasmine bushes – do the harvesting; adults find the work back-breaking. For another, the work is extremely delicate. Each flower must be picked so as not to bruise its petals; bruising starts a chemical reaction which lessens the value of the flower's scent. Delta children, therefore, are particularly suited to the work; because they have always helped to pick cotton, using thumb and two fingers, they easily develop the deft touch essential to picking jasmine.

On the other hand, cotton pickers also have a habit of collecting handfuls of cotton before placing it in their baskets – and this too may bruise the jasmine. Each youngster, therefore, must be taught to place each blossom individually in his, or her, basket.

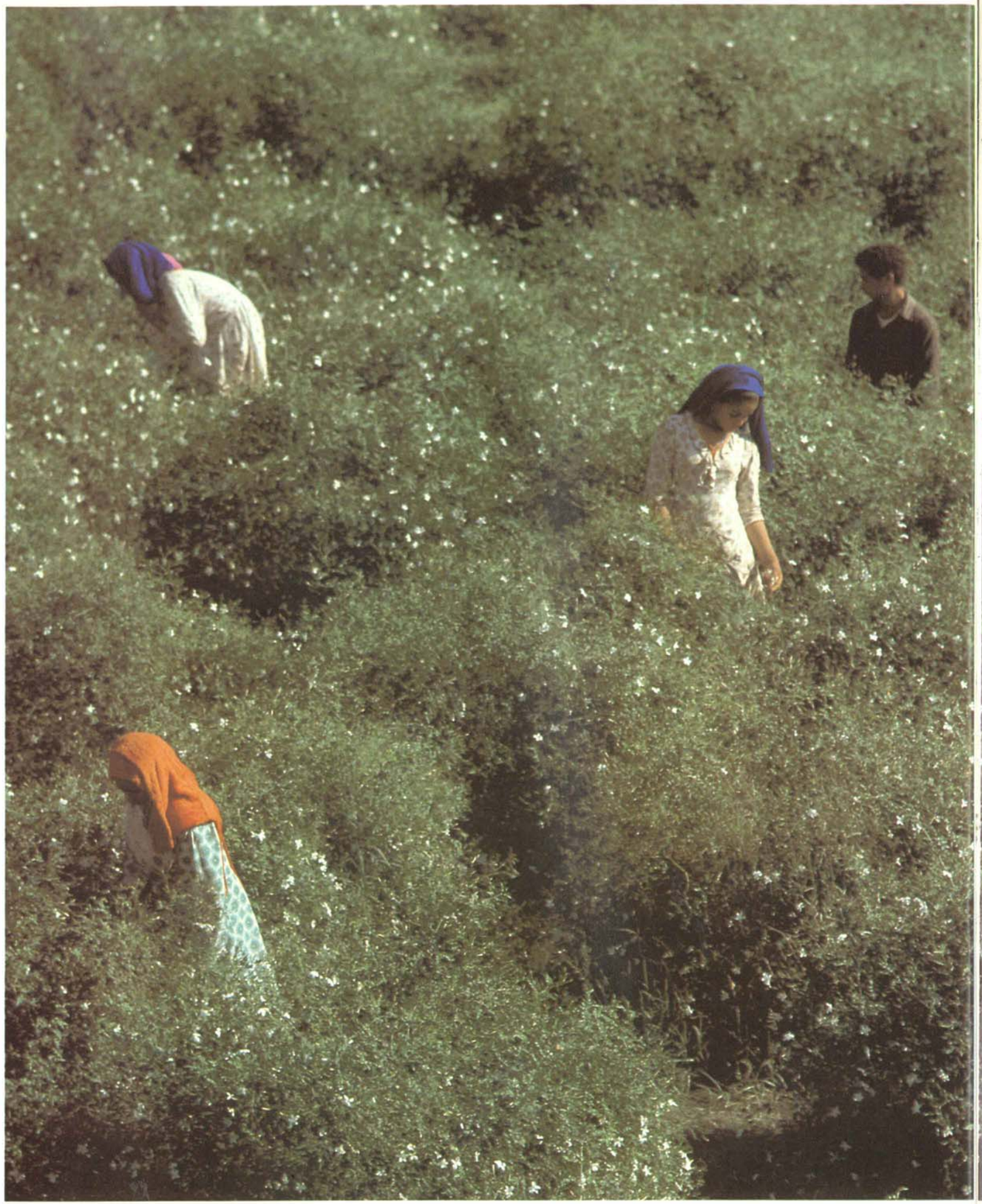
Another problem is moisture. Lovely as it is to behold, the sparkling Nile dew does not help the harvest, Fakhry says, because the perfume is affected by an excess of water. "Flowers free of natural humidity are the ideal, but of course we must take them as they come. Sometimes the locals spray their flowers before picking to make them weigh heavier, for we pay according to weight. But a simple chemical test quickly determines whether the jasmine water content is due to natural humidity or is induced 'canal' water. In any case, as we have such high humidity in our Delta regions, we do a daily centrifuge test to determine the humidity of the day. Upon this test we base the day's payment for the blossoms."

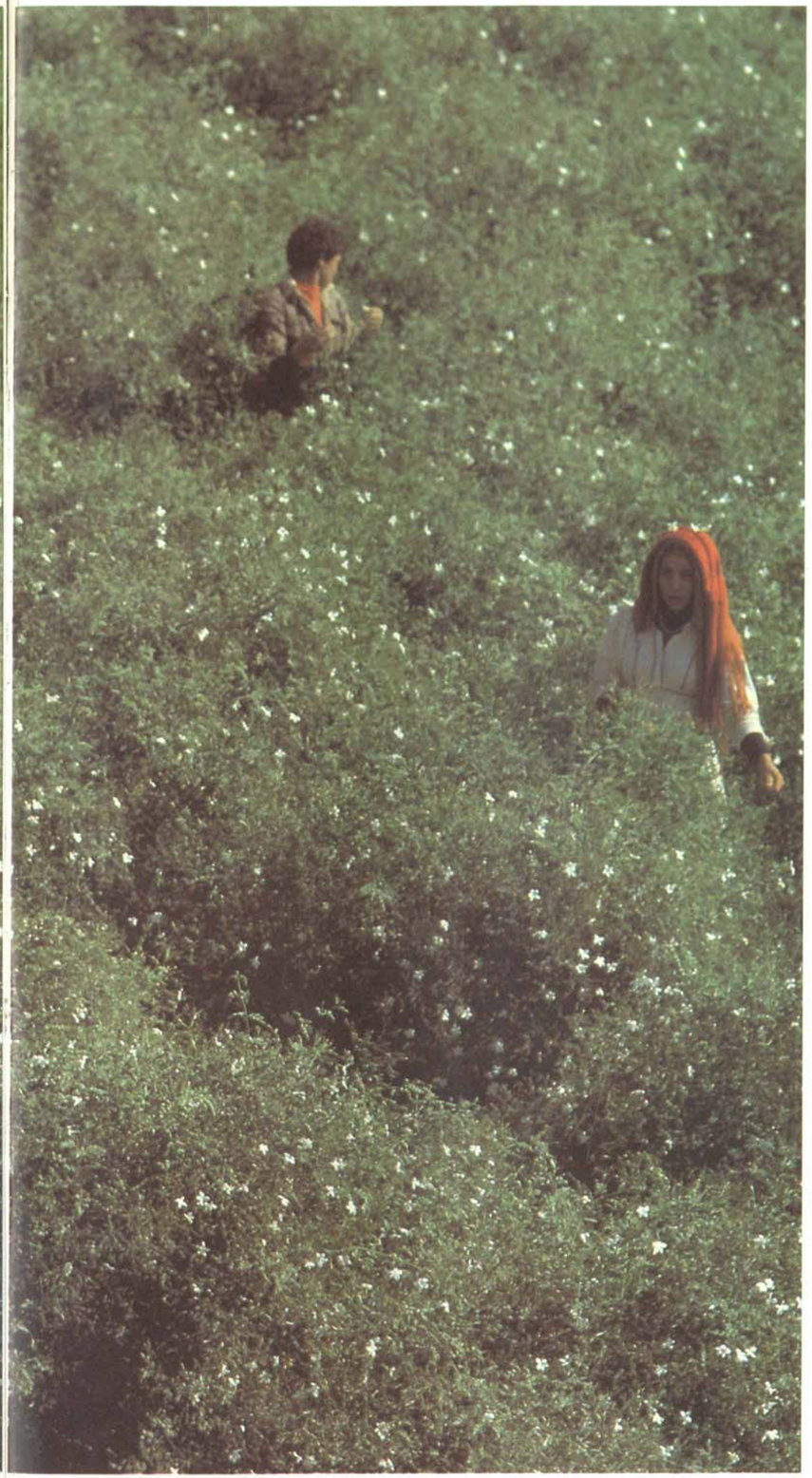
Statistics can be withering, but jasmine figures, to say the least, are mind-boggling: it takes 880 pounds of jasmine, or some two and a half *million* flowers, to produce just over two pounds of pure jasmine wax. Which means that one 11-pound can of jasmine, ready for export to Paris, is the scent of 12.5 million blossoms.

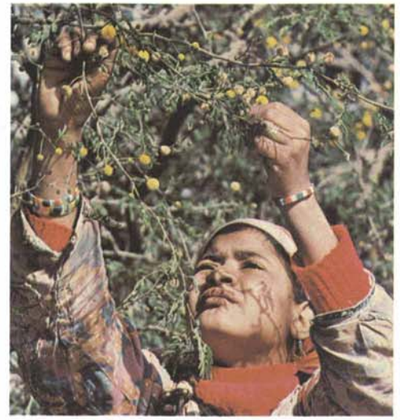
During the season, farmers start bringing in their baskets of flowers to the extraction plant from dawn onwards.

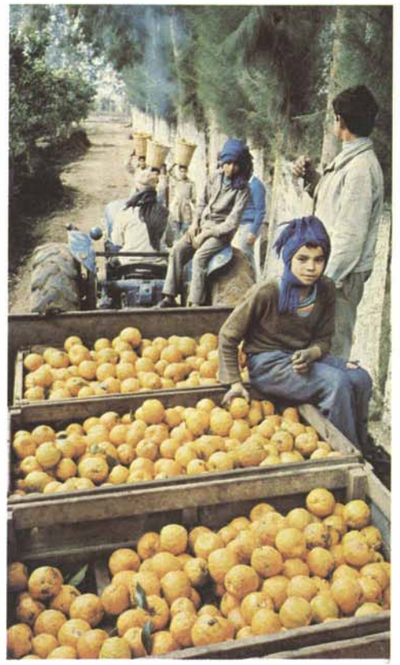


At left, above, boys fill the hems of their robes with blossoms plucked from spikes of lily-like tuberoses. Above, workers stretch to level off a vat of petals in an extraction unit, as they prepare to close the lid and introduce a solvent.









At left, jasmine pickers waist-deep in a twinkling ocean. Top, plucking puffy yellow blossoms of cassia, a relative of the mimosa. Above, young pickers ride home on a trailer-load of bitter oranges, a source of flavoring oil – and marmalade.

They come by bicycle, by donkey and on foot, and by 10.30 in the morning the day's harvest is over. It can't be any later because the quality of the scent changes depending on the hour the flowers are picked and the length of time they are kept before processing.

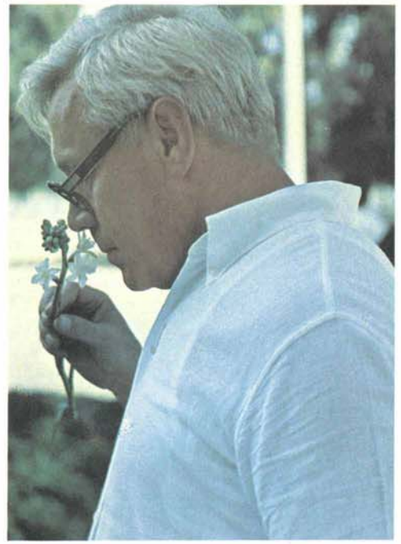
After weighing – and within minutes of arrival – the flowers are rushed to extraction units, since for perfumers this is an actual instance where "time is of the essence." There they are poured into steel vats. When the lids are closed and sealed, the perfumers add hexane, a highly refined solvent usually made from petroleum, and entirely free of aromatics and sulfur. Fifteen minutes later the process is complete: the hexane has drained the blossoms of their fragrant oils and what were once shimmering and scented petals have been callously dumped, a mountain of black pulp outside the plant.

The process, obviously, differs substantially from those of ancient Egypt, yet the concept is the same. In pharaonic times the flowers were placed between layers of fat and left there for several days while the fat slowly absorbed the perfume. For some flowers, like jasmine and tuberose – which go on exuding their scent long after they have been picked – this was very effective. But for others it wasted time. Orange blossoms, for example, contain no more scent than at the moment of picking. Furthermore, the ancient system, while good, was also very slow.

In today's processing, the next step is to distill the hexane until nothing is left but a soft, yellow substance containing all the essential oils and waxes of the flowers. Known as "concrete," this substance is then exposed to further, delicate distillation over low heat – a process kept secret by many firms – until the wax has been separated, leaving a clear liquid called "absolute". The wax is then used to make creams, the liquid to make expensive natural perfumes.

According to Fakhry and other perfumers, harvesting jasmine, and other scents, is a bit like wine-making. There are good and bad years – even vintage jasmine years – and some of the terms used are akin to French wine-making. Extracts from plants and seeds are known in the trade as *produit ordinaire,* while extracts from blossoms are *produit noble.*

"It took us many years of hard work," Fakhry says, "to establish our gardens, to build our factory, at a time when nothing could be imported. All our equipment had to be made here. The venture, I have always felt, lacks 'adventure'; working long hours with earth and plants, we rarely have time to think that someone's imagination in Paris or London may eventually create a ravishing perfume out of our labors. Our work is to harvest the raw materials and then, like mining raw gold, we leave it to others with an artistic sense to create the alluring magic formulas all the world desires."



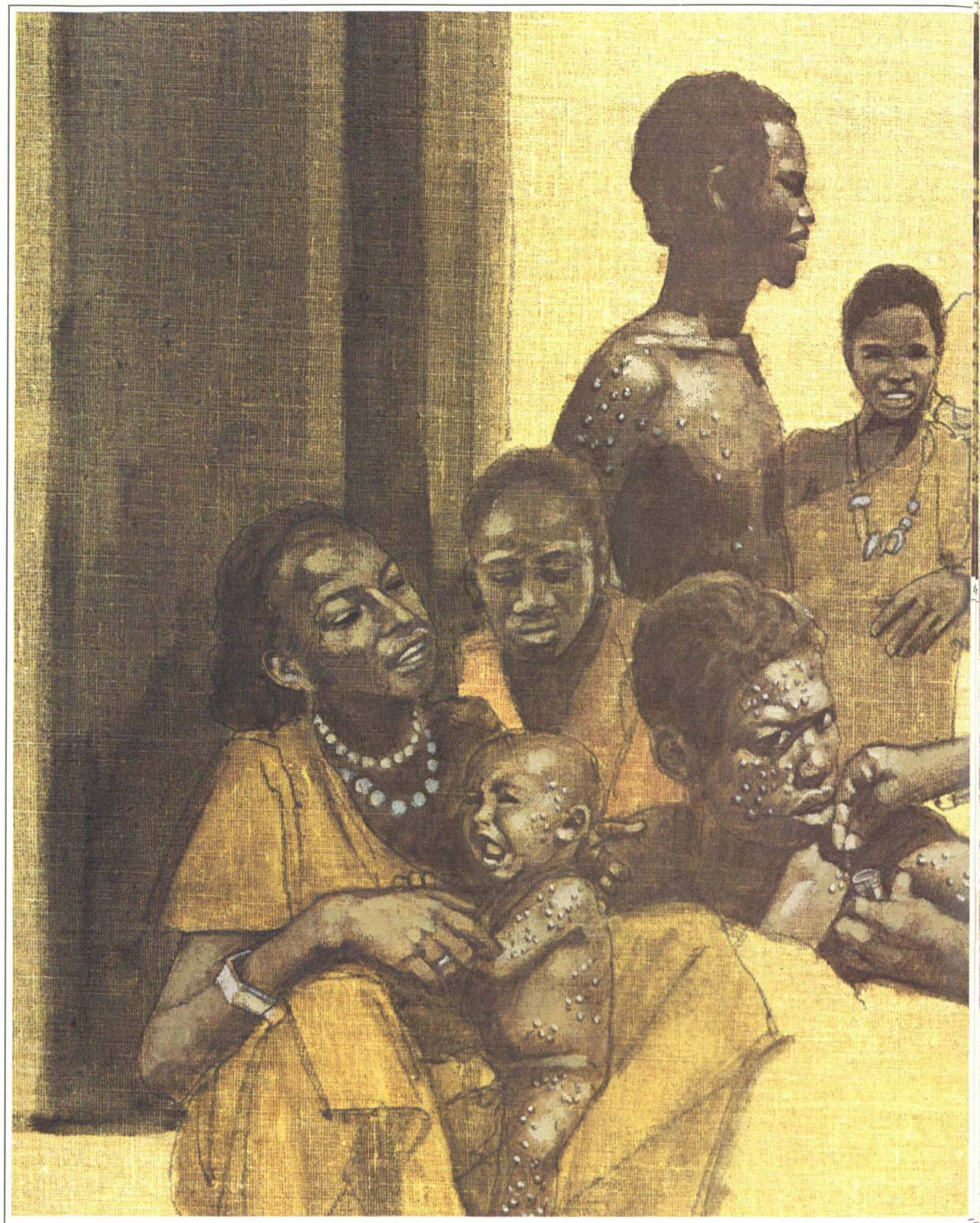
At left, workers fill baskets of bitter oranges and pass them up for steam processing. Orange leaves will be separately treated. Above, a French petal-pusher sniffs a tuberose blossom, comparing the scent with that of the tuberose concrete he sampled earlier, and, to be sure their scents earn dollars, buyers from abroad inspect jasmine bushes and talk with plantation managers.

Not all the plants used for perfume are as exotic as the jasmine. The orange tree, for example, is hardly exotic and the bitter orange is just that – bitter. But to the perfumer bitter orange is a vital ingredient. In early April its flowers are distilled into an essential oil called "neroli," used for eau de toilette, and in September its new green leaves are harvested to make *petitgrain* (which means, literally, "small or young leaves"), used to establish the fresh green smell found in scented waters like eau de cologne and in toilet soaps. By December the fruit is picked, sliced and steamed to provide "bigarade oil," used as a flavoring agent, and even marmalade, the best of which is always made with bitter rather than sweet oranges.

Yet the orange tree, and the bitter orange in particular, provides the most fragrance of any plant, tree or shrub in Egypt – particularly at night. Indeed, to drive through the Nile Delta at night in springtime, when the orange trees are in bloom, is one of life's loveliest experiences: mile after mile of dark night air scented with the perfume of orange blossom. But then night time is the best time for the joy of fragrance. At night, the flowers of Egypt are heavenly, whether bitter orange, jasmine or tuberose; at night in summer, for instance, a tuberose can give off new waves of fragrance every five minutes.

Jasmine, the tuberose and bitter orange, of course, are but three of the plants that provide Egypt with its magnificent harvest of scents. In addition there are various mints, used to flavor chewing gum and toothpastes; sweet basil, for house-sprays and scented waters; and what in France is called sweet-scented geranium. Its soft green leaves need just a gentle pressing between the fingers to produce a kind of fern odor widely used in men's sprays and, in some Muslim countries to flavor and scent a special cake eaten on the birthday of the Prophet – all supporting the saying that "the discovery of a new scent does more for the happiness of mankind than the discovery of a new star."

John Feeney, who is based in Cairo, does free-lance writing and photography between assignments as producer-director of Pyramid Films.



The Pox Upon Her

WRITTEN BY SUSAN McHENRY ILLUSTRATED BY MICHAEL GRIMSDALE

This May, in Geneva, the World Health Organization (W.H.O.) formally announced at the World Health Assembly that the disease called smallpox had been finally, and totally, defeated. According to W.H.O. spokesmen, "There has not been a single confirmed case of smallpox found in the world since October 26, 1977."

One of the world's most dreaded diseases, smallpox once killed up to 400,000 people a year and left hundreds of thousands blind, deaf or scarred. Caused by a virus, smallpox decimated Europe in 1614, accounted for half the deaths in London in 1629, and wiped out more American Indians than the repeating rifle.

According to W.H.O., the origin of smallpox is unknown, but apparently it dates back to ancient times. Researchers, for example, have found what seem to be smallpox scars on the mummified face of the Egyptian pharaoh Ramses V, who ruled about 1000 B.C.

To this day, no specific treatment for smallpox has ever been found — and, in fact, none is needed. W.H.O.'s victory, so triumphantly announced in Geneva May 8, was based entirely on a massive, worldwide effort to stamp out the disease by prevention rather than cure: by inoculation.

Inoculation is the introduction of a mild case of smallpox — or a similar disease, like the harmless cowpox — into the body, thus creating an immunity against a serious case.

Supposedly introduced for the first time in England by Edward Jenner in 1798, inoculation — in the form of variolation — was in use centuries before throughout the Ottoman Empire, and was introduced in England 79 years before Jenner by Lady Mary Wortley Montagu, one of the more remarkable women of her age.

— The Editors

The Pox Upon Her

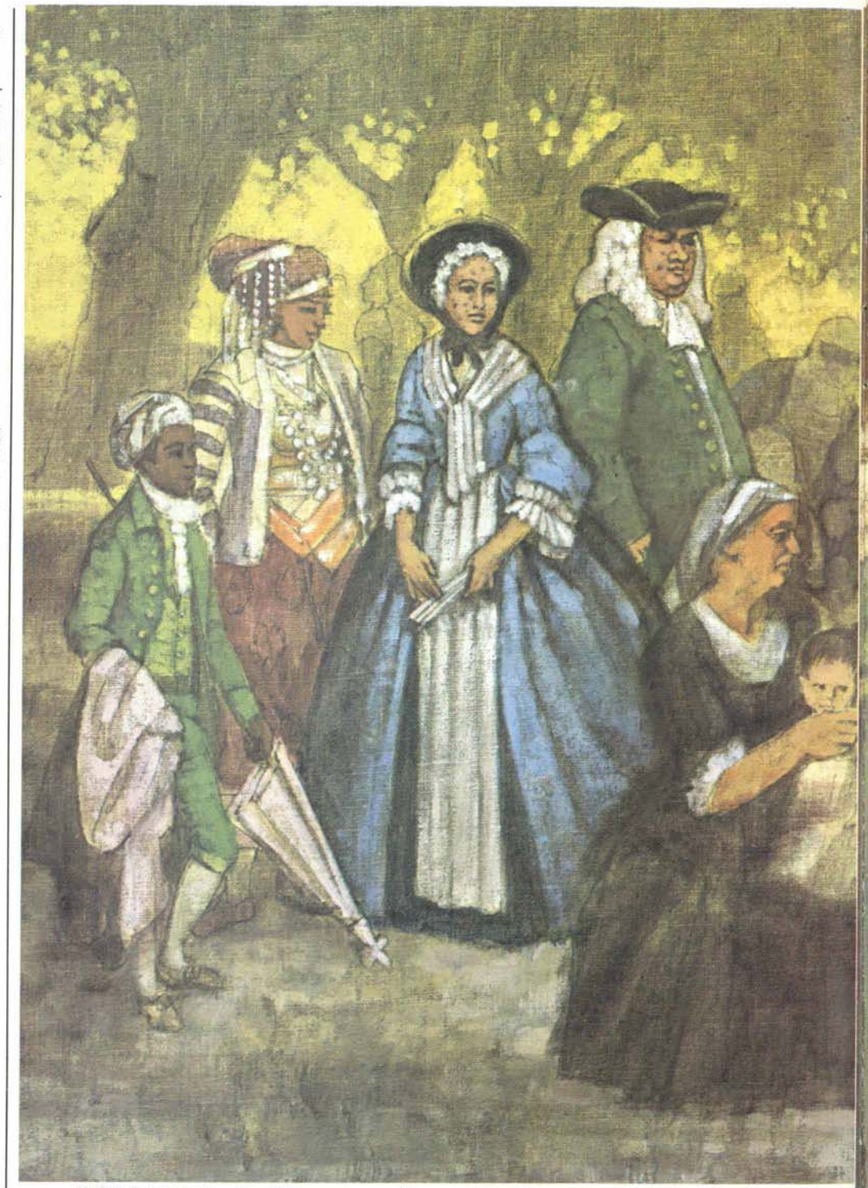
On April 1, 1717, writing from the Ottoman Empire, Lady Mary Wortley Montagu made medical history with one short but tremendously important paragraph:

> I am going to tell you a thing which I am sure will make you wish your selfe here. The Small Pox, so fatal and so general amongst us, is here entirely harmless by the invention of engrafting (which is the term they give it)... Every year thousands undergo this Operation, ... and you may believe I am very well satisfy'd of the safety of the Experiment since I intend to try it on my dear little Son.

It was important because Lady Mary's "engrafting" was nothing less than an inoculation – with dead smallpox virus – against smallpox, then one of the world's dreaded diseases; and the process she described, experimented with on her son, and later espoused vehemently in England, preceded Edward Jenner's development of cowpox inoculation by 79 years.

Because of Jenner, whose scientific development of cowpox inoculation was also rooted in variolation – the use of smallpox virus – neither the Turks, who apparently discovered the process centuries before, nor Lady Mary, who was among the first to bring the idea to the West, have ever received the credit due to them.

Lady Mary first went to Turkey in 1717 when her husband, Edward Wortley Montagu was appointed ambassador to the Ottoman Empire. An observant and perceptive woman, she almost instantly saw that smallpox – which was then ravaging Europe – was somehow kept at bay in Turkey. Perhaps because she herself had been cruelly scarred by smallpox, she began to make the inquiries that led her eventually to try "engrafting" on her own son and, later, to crusade for its use in England.



"When they are met ... the old Woman comes with a nutshell full of the matter of the best sort of small-pox and asks

Her efforts, it is true, met with only moderate success. But the effects of her courageous and broadminded support for variolation paved the way for the change in society's attitude that almost certainly made a difference in the reception of Edward Jenner's cowpox inoculation 79 years later.

Inoculation against smallpox, however, was but one of many astute observations which Lady Mary made of Turkish life. In an age when there was little understanding, and much misunderstanding, between Christian Europe and the Muslim Middle East, Lady Mary was remarkable for her objectivity in her encounters with this new, strange culture. Curious and energetic, she pursued diverse aspects of Turkish social customs and recorded them in a collection of brilliant letters which provide a colorful, detailed and sensitive picture of Turkish life as she came to know it, and left an indelible mark on the literary history of her times.

In describing her first visit to a Turkish bath, for example, she not only described in detail the five domed rooms – "paved with Marble, and all round it rais'd 2 Sofas of marble, one above another"– but also included a charming summary of Turkish women's "obliging civility" and an amusing description of their reaction to her "rideing dress" which, she said, "certainly appeared very extrordinary to them."

I beleive in the whole there were 200 Women and yet none of those disdainfull smiles or satyric whispers that never fail in our assemblys when any body appears that is not dress'd exactly in fashion. They repeated over and over to me, Uzelle, pek uzelle, which is nothing but charming, very charming.

The first sofas were cover'd with Cushions and rich Carpets, on which sat the Ladys ... but without any distinction of rank by their dress, all being in the state of nature ... without any Beauty or defect conceal'd, yet there was not the least wanton smile or immodest Gesture amongst 'em. They walk'd and mov'd with the same majestic Grace which Milton describes of our General Mother. There were many amongst them as exactly proportion'd as ever any Goddess was drawn by the pencil of Guido or Titian, and most of their skins shineingly white, only adorn'd by their Beautifull Hair divided into many tresses hanging on their shoulders, braided either with pearl or riband, perfectly representing the figures of the Graces...

[There were] so many fine Women ..., some in conversation, some working, others drinking Coffee or sherbet, and many negligently lying on their Cushions... In short, tis the Women's coffee house, where all the news of the Town is told, Scandal invented, etc... The Lady that seem'd the most considerable amongst them entreated me to sit by her and would fain have undress'd me for the bath. I excus'd myselfe with some difficulty, they being all so earnest in perswading me. I was at last forc'd to open my skirt and shew them my stays, which satisfy'd 'em very well, for I saw they beleiv'd I was so lock'd up in that machine that it was not in my own power to open it, which contrivance they attributed to my Husband.

what veins you please to have open'd. She ... puts into the vein as much venom as can lye upon the head of her needle."

Being a woman, and the wife of a diplomat, worked very much to Lady Mary's advantage. She was admitted and invited to places that other European visitors to the Ottoman Empire had never seen: the women's section of private homes, and even the residences of the wives of the Grand Vizier. On one such visit – to the home of the "Fair Fatima" – the music and dancing provided for her entertainment resulted in this almost lyric description.

> She made them a sign to play and dance. 4 of them immediately begun to play some soft airs on Instruments between a Lute and a Guitarr, which they accompany'd with their voices while the others danc'd by turns. This Dance was very different from what I had seen before. Nothing could be more artfull ... the

The Small pox, so fatal... amongst us, is here entirely harmless by the invention of engrafting... I intend to try it on my dear little son."

Tunes so soft, the motions so languishing, accompany'd with pauses and dying Eyes, halfe falling back and then recovering themselves... I suppose you may have read that the Turks have no Music but what is shocking to the Ears, but this account is from those who never heard any but what is play'd in the streets, and is just as reasonable as if a Foreigner should take his Ideas of the English Music from the bladder and string, and marrow bones and cleavers. I can assure you that the Music is extremely pathetic. 'Tis true I am enclin'd to prefer the Italian, But perhaps I am partial. I am acquainted with a Greek Lady who sings better than Mrs. Robinson, and is very well skill'd in both, who gives the preference to the Turkish. Tis certain they have very fine Natural voices; these were very agreable.

Lady Mary, however, went much deeper into Turkish culture than that. In her pursuit of intercultural understanding she talked regularly with such personages as the Effendi Ahmet Bey who, she wrote,

> gave me opertunity of knowing their Religion and morals in a more particular manner than perhaps any Christian ever did. I explain'd to him the difference between the Religion of England and Rome, and he was pleas'd to hear there were Christians that did not worship images or adore the Virgin Mary . . . He assur'd me that if I understood Arabic I should be very well pleas'd with reading the Alcoran, . . . tis the purest morality delivered in the very best Language. I have since heard impartial Christians speak of it in the same manner, . . .

Her conversations with the "Effendi Ahmet Bey" also dealt with Ottoman, Persian, and Arabic literature. To her friend, erstwhile admirer, and literary colleague Alexander Pope she wrote:

> He had explain'd to me many peices of Arabian Poetry, which I observ'd are in numbers not unlike ours, gennerally alternate verse, and of a very musical sound. Their expressions of Love are very passionate and lively . . . I pass for a great Scholar with him by relateing to him some of the Persian Tales, which I find are Genuine. At first he beleiv'd I understood Persian.

In an age when women's education seldom went beyond the niceties of social discourse and the skills of needlepoint, Lady Mary, clearly, was an exception. Although she had no formal education, she explored her father's vast libraries, reading plays and romances both in French and English. She also pursued the classics, taught herself Latin and, as the oldest daughter, helped her father entertain his intellectual friends, among whom were the noted writers Joseph Addison, Richard Steele, William Congreve and the physician and wit Dr. Samuel Garth. This exposure to some of the finest minds of the age undoubtedly played its part in developing her own exceptional talents.

Unfortunately, about this time, she was also exposed to smallpox, which had already taken her brother – in 1713, shortly after her marriage to Wortley – and now, two years later, would strike her too. Although she recovered, she sustained permanent scarring from her illness: the pitting of her face, and the loss of her eyelashes. For one who had been known from her childhood for her beauty as well as for her wit and intelligence, this disfigurement was a blow – as she made clear, after her recovery, in heroic couplets, the poetic form popularized by her poet friend Alexander Pope.

> Beauty is fled, and spirit is no more!
> Galen, the grave; officious Squirt, was there,
> With fruitless grief and unavailing care:
> Machaon, too, the great Machaon, known
> By his red cloak and his superior frown;
> And why, he cry'd, this grief and this despair?
> You shall again be well, again be fair;
> Believe my oath; (with that an oath he swore)
> False was his oath; my beauty is no more!

Against this background it is easy to see why, when she discovered that the peoples of the Ottoman Empire could protect themselves against smallpox, she opened her campaign with this graphic description to her friend Sarah Chiswell:

> The Small Pox, so fatal and so general amongst us, is here entirely harmless by the invention of engrafting (which is the term they give it). There is a set of old Women who make it their business to perform the Operation. Every Autumn in the month of September, when the great Heat is abated, people send to one another to know if any of their family had a mind to have the small pox. They make partys for this purpose, and when they are met (commonly 15 or 16 together) the old Woman comes with a nutshell full of the matter of the best sort of smallpox and asks what veins you please to have open'd.
> She immediately rips open that you offer to her with a large needle (which gives you no more pain than a common scratch) and puts into the vein as much venom as can lye upon the head of her needle, and after binds up the little wound with a hollow bit of shell, and in this manner opens 4 or 5 veins. The Grecians have commonly the superstition of opening one in the Middle of the forehead, in each arm and on the breast to mark the sign of the cross, but this had a very ill Effect, all these wounds leaving little Scars, and is not done by those that are not superstitious, who chuse to have them in the legs or that part of the arm that is conceal'd.
> The children or young patients play together all the rest of the day and are in perfect health till the 8th. Then the fever begins to seize 'em and they keep their beds 2 days, very seldom 3. They have very rarely above 20 or 30 [pustules] in their faces, which never mark, and in 8 days time they are as well as before their illness. Where they are wounded there remains running sores during the Distemper, which I don't doubt is a great releife to it. Every year thousands undergo this Operation, and the French Ambassador says pleasingly that they take the Small pox here by way of diversion as they take the Waters in other Countrys. There is no example of any one that has dy'd in it, and you may beleive I am very well satisfy'd of the safety of the Experiment since I intend to try it on my dear little Son.

Lady Mary was not, in fact, the first European to relay information on inoculation to England. Four years earlier, Dr. Emanuel Timoni, an Italian physician in Constantinople, had sent an extensive account of the practise of variolation to the Royal Society of Physicians and Surgeons in 1713, and it had been published in that organization's *Philosophical Transactions*. Two years later a physician who had acted as the Venetian Consul at Smyrna, Dr. Jacob Pylarini, sent another account to the Royal Society.

According to Robert Halsband's fine biography of Lady Mary, Dr Timoni's paper was probably not known to Lady Mary, although he was engaged by Wortley to attend his family when they arrived in Constantinople four years later. But it is likely that Dr. Timoni offered encouragement in the decision she made to inoculate her son – since he had inoculated his own daughter that same year.

The Pestilence of Abraha

WRITTEN BY CAROLINE STONE

If few people today know that Lady Mary Montagu introduced smallpox inoculation to England 79 years before Edward Jenner, even fewer know that the Arabs apparently identified smallpox as early as A.D. 570 and may even have developed a form of inoculation shortly afterwards.

Although unknown to the Greeks and Romans, smallpox is thought to be the disease that ravaged the Ethiopian armies during a siege of Mecca in A.D. 570 — the year the Prophet Muhammad was born. The source is a Sura in the Koran which reads:

> *"Have you not seen how your Lord did with the possessors of the elephants? Did He not bring their stratagems into error? And He sent against them birds of Ababil, who threw upon them seal stones and made them like devoured grain."*

The reference is to Abraha, the Ethiopian ruler of Yemen, and some commentators have interpreted the "seals" as the marks of smallpox.

Later the famous Arab physician al-Razi provided what is probably the first clinical description of smallpox — but added that some of his information came from the work of Aaron of Alexandria, who practiced at the time of the Prophet. According to A History of Medicine, *by Douglass Guthrie, al-Razi — usually called Rhazes — gives a clear description of both smallpox and measles, although he seems to make smallpox sound much less frightening than the appalling confluent smallpox of later centuries. His treatise was the standard work on the subject for almost 900 years, and as late as 1748, Thomas Stack of London wrote* A Discourse on Small Pox and Measles To which is Annexed, a Treatise on the Same Diseases by the Celebrated Arabian Physician Abu-Beher Rhazes...

This was much more than historical courtesy. Stack had searched England's libraries for an Arabic copy of the treatise, and then, having failed to find one, wrote to a friend in Holland asking him to reach the University of Leiden, "which I knew to be very rich in Arabic manuscripts." And although "it proved to be full of faults," Stack's new work on smallpox was firmly based on the information provided by al-Razi's study nearly 900 years earlier.

Meanwhile, smallpox had become a grave problem. By 1614 it was spreading through Europe — in a much more virulent form — and by 1629 was said to be London's principal cause of death.

In seeking a cure against this new plague, England, early in the 18th century, tried an ancient Chinese method of inoculation which involved communicating smallpox by inhalation. It did prove effective, but as it was excessively dangerous the method was not adopted. But then neither was the Turkish inoculation introduced by Lady Mary Wortley Montagu.

Remembering that the Chinese and the Turks had both experimented with smallpox inoculation long before Jenner, it is obvious that the origins are unclear. Lady Mary certainly — and reasonably — believed that the Turks developed it. In fact, there is a substantial body of evidence suggesting that the Arabs not only identified smallpox in the sixth century but developed a form of inoculation against it. In 1738, for example, Thomas Shaw, an Englishman, published a book on his travels in which he said inoculation was then known in North Africa. And in 1768 there emerged the memoirs of a Dutch pastor named Chais in which he wrote that an ambassador from Morocco had said publicly, in 1738, 60 years before Jenner, that inoculation against smallpox was common practice in Tripoli, Tunis and Algiers.

Perhaps the best evidence, however, comes from Patrick Russell, an English physician in Aleppo, who had thoroughly questioned Bedouins from throughout the Arab world and was convinced that inoculation had been common in the Arab East for centuries.

"The Ambassador's ingenious Lady, who . . . had made some useful Observations on the Practice, was so thoroughly convinced of the Safety of it, that She *resolv'd to submit* her *only Son to it . . found a proper Subject, and then the good Woman went to work; [I] inoculated the other Arm with my own Instrument, and with so little Pain to him, that he did not in the least complain of it."*

From the perspective of 1980 this decision may not seem as courageous as it was. In 1717, however, when the concept of inoculation was totally unknown in the West – and when there was no guarantee that the smallpox virus injected was as mild as it had to be – Lady Mary was actually risking her son's life. Yet a letter to her husband, away on embassy business, gives little more than a hint of her anxiety:

> The Boy was engrafted last Tusday, and is at this time singing and playing and very impatient for his supper. I pray God my next may give as good an Account of him . . . I cannot engraft the Girl; her Nurse has not had the small Pox."

It was not, however, quite as simple as those brief remarks indicate – as is clear in the account of Dr. Maitland, the British doctor who served as their embassy physician in Constantinople and performed the operation:

> The Ambassador's ingenious Lady, who had been at some Pains to satisfy her Curiosity in this Matter, and had made some useful Observations on the Practice, was so thoroughly convinced of the Safety of it, that *She* resolv'd to submit *her* only Son to it, a very hopeful Boy of about Six Years of Age: She first of all order'd me to find out a fit Subject to take the Matter from; and then sent for an old . . . Woman, who had practis'd this Way a great many Years: After a good deal of Trouble and Pains, I found a proper Subject, and then the good Woman went to work; but so awkwardly by the shaking of her Hand, and put the Child to so much Torture with her blunt and rusty Needle, that I pitied his Cries, who had ever been of such Spirit and Courage, that hardly any Thing of Pain could make him cry before; and therefore Inoculated the other Arm with my own Instrument, and with so little Pain to him, that he did not in the least complain of it.

Apparently the course of the boy's reaction to the inoculation was similar to the reactions which Lady Mary had heard of and seen. The swellings on his arms were followed in a few days by red spots on his face. Fever and thirst occurred for a brief time several days later, and approximately 100 pustules appeared – the pustules which, when they break in a real case of smallpox, leave deep and ugly scars. But this time they simply formed crusts and fell off, leaving no scarring, the only trace of the operation was the marks on his arms.

Shortly afterward, Lady Mary and her husband returned to England. Then, in 1721, another smallpox epidemic swept England and two physicians mentioned variolation – in a pamphlet and in a speech. No action was taken, however, until Lady Mary decided to inoculate her daughter as well – and stirred up a controversy that would endure until Edward Jenner finally succeeded in proving the worth of the process.

As in Turkey, Lady Mary – alarmed at the epidemic – asked Dr. Maitland, who had retired to the country following his return with the Wortleys, to inoculate her daughter. Dr. Maitland agreed and the operation was successful. As Maitland wrote later, Lady Mary's daughter was "neither blooded nor purg'd before, nor indeed was it necessary, considering the clean Habit of Body, and the Very cool, regular Diet she had ever been kept to from her Infancy."

Furthermore, he added, three "learned Physicians of the College were admitted, one after another, to visit the young Lady . . . and will on all Occasions declare, as they hitherto have done, that they saw Miss Wortley playing about the Room, chearful and well, and with the Small Pox rais'd upon her . . ."

There was another observer too: Caroline, Princess of Wales, Lady Mary's friend at court, who, in deciding to consider inoculation for herself, brought the process to the attention of the public – and touched off the controversy.

Still uncertain, Princess Caroline asked Maitland to perform the experiment on criminals, condemned to death at Newgate Prison, as an additional test – and six men volunteered. If they should survive, freedom was to be their reward.

Of the six, five inoculations ran the course as expected, and the sixth man had no reaction at all, since he had already survived the smallpox itself. The six were granted their freedom.

Caroline, Princess of Wales, asked Dr. Maitland to perform the experiment of inoculation on six condemned men – volunteers – at Newgate Prison. All six survived and were freed.

Still, Caroline was not totally convinced and in the spring of 1722 the experiment was performed again: on six orphans of the Parish of St. James and five hospital babies. As all the inoculations were successful, Caroline was persuaded and so was the King. He gave his permission and Caroline had two of her daughters, Princess Amelia and Princess Caroline, inoculated. When those inoculations were totally successful, other titled and noted families followed suit. Lord Bathurst, one of Lady Mary's friends, had all six of his children variolated. And Lady Mary wrote to her sister about "the growth and spreading of the inoculation of the small-pox, which is become almost a general practice, attended with great success."

Lady Mary spoke too soon. Shortly afterward a young servant in Lord Bathurst's household died after inoculation and so did the two-and-a-half-year-old son of the Earl of Sunderland. As a result variolation became the subject of a raging controversy with Dr. Maitland – for the defense – publishing a new edition of his pamphlet on variolation. Support also came from several eminent doctors in the United States; smallpox, and the controversy surrounding variolation, had spread to the New World too.

Among the opponents were both clergymen and doctors. The Reverend Edmund Massey, for example, wrote that inoculation was a "'dangerous practice' because it opposed the will of God, who visited disease upon the world either to try our faith, or to punish us for our sins."

William Wagstaffe, who issued a pamphlet on the subject concluded that:

> Posterity perhaps will scarcely be brought to believe, that an Experiment practiced only by a few *Ignorant Women*, amongst an illiterate and unthinking People, shou'd on a sudden and upon a slender Experience, so far obtain in one of the Politest Nations in the World, as to be receiv'd into the *Royal Palace*.

Lady Mary also entered the fray – in an essay submitted anonymously, as befitted a titled lady. It appeared under the title, "An account of the inoculating the small pox at Constantinople, by a Turkey-Merchant," but as it was severely edited it wasn't until more than 200 years later that the original essay, and its authorship, were discovered by Lady Mary's biographer, Robert Halsband, and printed with all its original literate force intact.

> Out of compassion to the numbers abused and deluded by the knavery and ignorance of physicians, I am determined to give a true account of the manner of inoculating the small pox as it is practised at Constantinople with constant success, and without any ill consequence whatever. I shall sell no drugs, nor take no fees, could I persuade people of the safety and reasonableness of this easy operation. Tis no way my interest (according to the common acceptation of that word) to convince the world of their errors; that is, I shall get nothing by it but the private satisfaction of having done good to mankind, and I know no body that reckons that satisfaction any part of their interest.

Mincing no words, Lady Mary explicitly blamed the physicians, rather than variolation, for the deaths and, with her usual perception and passion, attacked the heart of the issue. Calling it "murder," she clearly outlined the differences between the practical approach to variolation, as she had observed it in the Middle East, and variolation attended by bleeding and purging, as it was practiced in England.

> The murders that have been committed on two unfortunate persons that have died under this operation has been wholly occasioned by the preparatives given by our learned physicians, . . . I believe 'tis much to be doubted if purges or any violent method ever brings the body into a moderate temper, which may always be done by a cool diet and regular hours, . . . their long preparation only serve to destroy the strength of body necessary to throw off the infection . . . the cordials that they pour down their throats may increase the fever to such a degree as may put an end to their lives . . .

Though continuing to be controversial, the practice of inoculation grew in England and New England alike. Quoting a 1749 study by Thomas Frewen, Robert Halsband writes in the *Journal of the History of Medicine:*

> Within seven years of the initial operation, statistics proved its overwhelming effectiveness. Between 1721 and 1728, 897 persons were inoculated, of whom only 17 – two percent – died, presumably of the operation. In the same period, of a total of 218,000 deaths in England, over 18,000 (almost nine percent) died of the smallpox. As in Turkey, the best argument in favor of inoculation came from its practical success.

Sadly, some of Lady Mary's closest friends and relatives were among those who did not follow her example in the inoculation. When Lady Mary had the operation performed on her daughter, she had invited her sister, Lady Gower, to have her son inoculated at the same time. Lady Gower declined and the boy died two years later of smallpox. And so, in 1726, did Sarah Chiswell, the friend to whom Lady Mary had sent the letter from Turkey regarding the inoculation.

Inoculation, meanwhile, had spread to the continent as well as to the New World, and the great Voltaire suggested that, for the purposes of remaining alive and of keeping women beautiful, the French should adopt the practice. Although variolation was not adopted in France until 1750, it became a focal point for the philosophers of the Enlightenment in their opposition to conservative tradition, superstition and intolerance.

Lady Mary's embassy letters, published the year following her death in 1762, also became an acclaimed addition to the literature of the Enlightenment. In her own times, intellectual leaders such as Dr. Johnson and Voltaire praised them, Voltaire calling them "superior" because "they seemed written for all nations wishing to be instructed." In the 20th century, their contribution to the attitudes and literature of the Enlightenment is firmly established. "By virtue of their clear-sighted observation, their expansive tolerance, and their candid sympathy for an alien culture, they are Lady Mary's valid credentials for a place in the European 'Enlightenment'," wrote Robert Halsband.

In sum, Lady Mary made two contributions to history. She introduced, and fought for, inoculation against a dreadful disease, and in her lively, perceptive letters bridged the gap of ignorance that divided Eastern and Western knowledge and philosophies from each other.

Susan McHenry, a teacher and a free-lance writer in Topeka, Kansas, lived and taught for two years in Turkey and is now working on a collection of Turkish proverbs.

In the deserts of Jordan the art of the 'Umayyads

THE FRESCOES OF 'AMRA

WRITTEN BY PATRICIA BAKER
PHOTOGRAPHED BY VANESSA STAMFORD

The plan was to visit Qasr 'Amra, an eighth-century limestone bathhouse – part of a hunting lodge – in Jordan's desert some 60 miles east of Amman. But there was a problem. How to find it? The little "palace of Amra," as it's called, lies so far off the beaten track that few Europeans knew of its existence before 1907. Even today the unpaved trail is indistinct.

Still, we had to see it. Jordan, increasingly alert to its archeological treasures, had recently assigned a Spanish conservation team to clean the extensive – and daring – frescoes that decorated the inner walls of the baths, and to repair the plaster and the fabric of the building. So we searched until, luckily, we found a driver and an archeologist friend to guide us, and set out.

Until the Spanish team came, artistic knowledge of the frescoes was based almost entirely on the work of an Austrian artist called Mielich. Brought to the site in 1899 by the Czech archeologist Alois Musil, the first European to recognize the artistic importance of the 'Amra paintings, Mielich produced the drawings for Musil's book – which was to attract the attention of all those interested in Islamic art. Indeed, the book, together with a few later photographs, provided the basis for all theories and comments about the content and form of Arab art in the early Islamic period until recently.

Architecturally, Qasr 'Amra is relatively uninteresting. Only the bathhouse remains, an austere limestone structure, and there is none of the rich plaster and stone carving associated with other Umayyad palaces, like Qasr al-Hayr al-Gharbi and Qasr Mushatta. But the paintings are special; Arab physicians believed in decorating baths in bright, cheerful colors because, they thought, "a man loses some considerable part of his strength when he goes into a bath." To revive flagging spirits and "the three vital principles in the body, the animal, the spiritual and the natural," they advised that the walls of a hammam – a public bath – should be covered with pictures of hunting and fighting, of lovers and of gardens with trees and flowers. (See *Aramco World*, January-February 1978).

At the Qasr 'Amra, the artists followed that advice enthusiastically. They covered the walls and ceilings with paintings. On the ceiling of the Qasr 'Amra preparation room, for example, there are charming naturalistic portraits of birds and animals framed in lozenges: a gazelle scratching its ear, a bear playing a stringed instrument while a monkey gaily claps his hands, with, here and there, the odd human figure or head, strangely out of place.

Elsewhere in that room, huge figures of men and women decorate the walls. Above the entrance doorway, from the audience chamber, the wall is covered with a scene as yet unexplained: a figure propped on one elbow gazes down on an amorphous horizontal form, a winged cupid hovering above. At first this strange shape was thought to represent a shrouded corpse – scarcely a cheerful illustration for a bath – but others suggest that it shows two figures, perhaps lovers, enveloped in covers.

Similar themes predominate in the rest of the room, and in the chamber next door. On the opposite wall of this dressing – or rather undressing – room, a shapely woman is shown to the left of the window, sitting in a pensive mood, chin in hand, a towel across her knees. A companion on the right, his back towards the visitor, looks longingly on. And in the *tepidarium*, the "warm" room, among painted plants and trees similar to those in mosaic at the Umayyad mosque in Damascus, more females decorate the walls, standing, sitting and reclining, all proudly displaying the physical attributes most highly praised in early Arab poetry. In the *caldarium*, or "hot room," however, bathers faced a startling change of theme; for at Qasr 'Amra, on the ceiling of the dome, they could look up at the very vault of heaven: a painted astronomical chart, one of the earliest known surviving on such a scale.

In this early vault of heaven the twelve radii do not emerge from the center of the dome but from the ecliptic North Pole, with the constellation signs arranged accordingly. And although only some 35 constellations now remain, such favorites as Ursa Major and Minor are still visible and the signs of the zodiac are incorporated in readily recognisable forms. Sagittarius, for instance, is shown as a centaur, his human torso turning back to draw his bow, the classic pose for the Parthian shot.

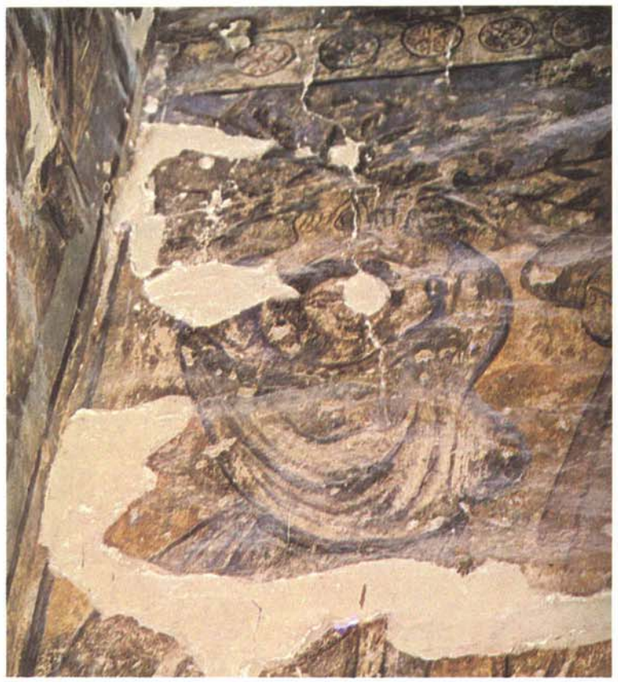
Interestingly, the order of the stars is reversed; they are depicted counter-clockwise around the dome, suggesting that the eighth-century artist copied a drawing without realizing that the astronomical order has to be reversed for a *concave* hemispherical surface like the inside of a dome.

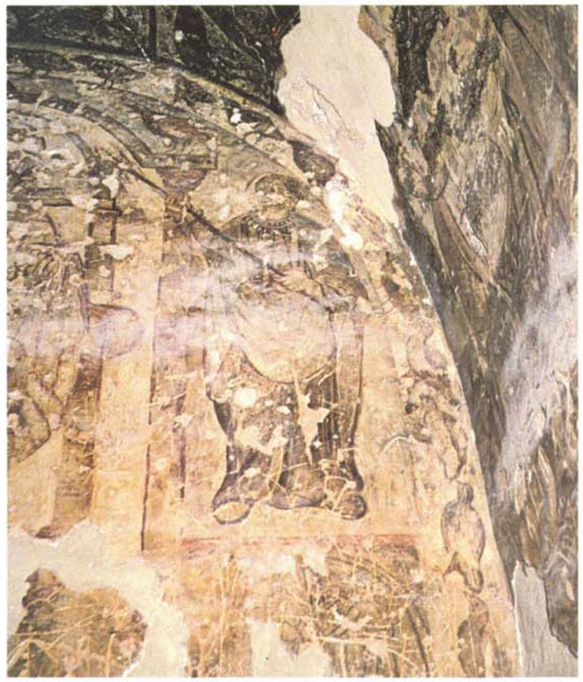
The hammam itself has a feeling of privacy, the rooms being no more than eight or nine feet square, and the wall paintings suggesting intimacy. But the main hall, from which one enters the baths, is the reverse. Every available inch of plaster is decorated: the walls, the two transverse arches and the three barrel vaults.

In the hall three themes dominate: work, relaxation and ceremony. Not surprisingly, though, the work element plays a minor role in the decorative scheme: it is seen only on the eastern vault of the hall and probably relates to the actual building of Qasr 'Amra: brickmakers, masons and carpenters — the latter operating a two-man saw of a type still used in Egypt today.

Below, more leisurely pursuits are represented. Athletes wrestle, exercise and fight alongside scenes of the hunt in full cry: wild donkeys racing, legs outstretched, heads forward and ears back across the length of the side walls, west and east. High up on the west wall, there is also a scene of the animals being corralled in a roped-off enclosure, the heads of the beaters with their torches appearing behind flags for a further touch of drama. At both ends of the east apse the hunt reaches its usual conclusion, with hunters on foot killing the animals at the north end and assistants skinning and jointing the carcasses at the other end. Although the scenes have strong links with Sassanian examples – such as the bas reliefs of Taq-i Bustan near Kirmanshah, Iran – the hunters at Qasr 'Amra are shown realistically, with bulging muscles, just like their counterparts on Rome's mosaic pavements.

The paintings on the arches are more leisurely still, with huge figures of females in sarongs holding plates or medallions





above their heads, while musicians and dancers, with flying scarves, appear below. More entertainers are painted on the arch spandrels – a dancer with swirling tunic snapping her fingers to the music of lute and flute players – while, on an opposite spandrel, a woman sits languidly on a couch, reaching out to accept a diadem or floral wreath proffered by a cherub.

The dominant figure in this hall, however, is the famous bather in the center of the wall, stepping gracefully out of a small pool, dramatically placed between an athletic meeting on the right and the important "six kings" painting on the left. Although the six kings are of far greater importance to the archeologist, the bather very nearly obscures them.

At the time of Musil's and Mielich's visit, enough detail of the six kings painting remained to identify four of the figures: Roderick, the ruler of Visigothic Spain – whose inclusion dates the painting to about 710 – a Sassanian shah, a Byzantine emperor and the Negus, ruler of Abyssinia. Who the fifth and sixth figures are is unknown, but some have suggested that they may be the Chinese emperor, a Turkish or Indian ruler or even a governor of Egypt. Thus the painting would include the main temporal rulers of the known world at that time. But why are these kings depicted here – in the company of dancers and bathing beauties – in a little bathhouse far removed from any major administrative or cultural center?

The Spanish conservation team may have confirmed the answer. Before being cleaned, a reclining figure on the next wall was just a vague shape resting on a couch, with the Greek word NHKH (victory) just visible. Now more details can be seen and some observers think the figure representing victory – with the six kings on the abutting wall – symbolizes the supremacy of the Umayyad dynasty over its political and territorial rivals, or perhaps the entry of the Umayyad family into the circle of kings.

The paintings have also yielded some clues as to who used Qasr 'Amra, particularly the regal image in the center of the far south wall in which an enthroned man, with a halo around his head, sits

under an arch. Below his feet, originally, there was a section of fresco (now in Berlin) showing fish, waterfowl and a boat complete with crew; while at his sides stood two attendants. The ceremonial quality of this painted scheme is made even more apparent by the rows of men and women, obviously members of the entourage, decorating the apse walls and the central vault surface.

This enthroned man then must be a portrait of the man who ordered the building of this little bathhouse, or who frequently graced it with his presence – a man who clearly saw himself at the center of his own world, controlling not only his fellow men but also perhaps the creatures of the air and of the sea; a man who surrounded himself with the kingly symbols of both the Byzantine and Sassanian Empires, and with images of pleasure and entertainment.

But who? At one time it was thought that Caliph Walid I built Qasr 'Amra: could it be Walid I? Probably not. The short prayer painted on the arch above the haloed head asked God's blessing on the "amir" or ruler, but one theory holds that it referred not to one of the Umayyad caliphs, but to an important member of that family, perhaps the heir apparent.

Either of two Umayyad princes would seem likely candidates: Walid II, who built Qasr Mushatta later, and Yazid III; each spent many years away from the administrative center of the empire before assuming the caliphate in 743 and 744 respectively. Both were renowned for their pleasure-seeking activities and Walid was particularly fond of evenings devoted to music and poetry during which he would sit "on the edge of a built pool, just big enough for a man to swim in." If delighted with the song or poem, we are told, he would jump in, inviting the performer to join him, and on one occasion his entertainers dressed as stars and constellation signs and danced – a detail that gives the astronomical painting in the Qasr 'Amra *caldarium* an added piquancy.

On the other hand, Yazid III, before he became caliph, led a similar, if more restrained, life and was fascinated with the history of the Sassanian kings. This, and the fact that his mother was a Persian princess, could explain the strong Persian element in the Qasr 'Amra paintings.

What could be more natural than for such young men, eager to hold political power but both thwarted by their predecessor Hisham's long reign of 19 years, to establish and organize miniature courts of their own? Their days would not have been fully occupied with matters of state; presumably the empty hours would have been whiled away enjoying the favorite pastimes of hunting and other sports, and relaxing with friends in the company of entertainers. At the same time, the status of such a prince would have to be immediately apparent to any visitor, tribal chieftain or local dignitary. All these elements can be seen in this little bathhouse, and probably were also present in the rest of the hunting lodge.

Admittedly, the meanings of most of the compositions on the Qasr 'Amra walls remain elusive for the present, but the borrowings from Byzantine and Sassanian imperial art are clear. History records that the Umayyad family consciously adopted court ceremonial from these two empires in an attempt to expand the tribal power base of the first four Umayyad caliphs and to assume a monarchic authority. At Qasr 'Amra, such political maneuverings take on a concrete form.

In any case, the paintings, some of the earliest still surviving, have an important place in the history and development of Islamic art. Furthermore, the bathhouse complex itself has such an intimate character that the frescoes also vividly reflect for us, 1,200 years later, the life style of an eighth-century Arab prince.

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Outward and upward, it's

RIYADH ON THE MOVE

RIYADH
ON THE MOVE

WRITTEN BY STEPHEN D. HAYES
PHOTOGRAPHED BY S. M. AMIN

The capital city of Saudi Arabia is moving.

Most people's reaction to such a statement would be one of bewilderment and surprise. But if you were to say this to a Riyadh resident, you might get a look of momentary puzzlement and then a knowing smile. For Riyadh *is* moving – to the north–at a rate, roughly, of nearly two miles a year.

Riyadh is on the move in other ways too. Four years ago, the population of the city was about 400,000 people. Now, it is approaching one million. Motor vehicle registration has increased more than 10-fold in the last six years, and the demand for electric power is increasing by more than 50 percent a year – the highest growth rate in the world – reflecting an urban dynamism almost without precedent.

Riyadh's massive modernization shares center stage with Jiddah's in a kingdom-wide urban development program for which the second Five Year Development Plan had earmarked $13 billion for municipal streets, sewers and drainage, along with a share of $8 billion allocated to housing construction, $3 billion for new hospitals and dispensaries, and further billions for schools, airports, power generation and other necessities.

As a result, the Ministry of Municipal and Rural Affairs budget has increased eight-fold in the past three years and now ranks third among all ministry budgets. Eighty percent of that budget is devoted to capital projects: roads, sewers, drainage, water supply and so on, much of it concentrated in the larger urban centers.

Growth of this kind, of course, is not an unmixed blessing. The price of growth, as many urban areas in the industrialized world have learned, is high: traffic congestion, air pollution, noise and – perhaps most distressing of all – the loss of old, charming and historic buildings, and irreversible changes in the character of the community.

In Riyadh, some officials have tried strenuously to lessen this impact, but the swift pace of growth has often frustrated their efforts. In most metropolitan areas of the world, people might reminisce about the way the city was 10 or 12 years ago. In Riyadh they reminisce about the way the city was 10 or 12 *months* ago. And the typical city growth pattern – expansion to the periphery, then decay of the center, and finally redevelopment of the inner city–has been compressed so drastically that expansion and revitalization are taking place simultaneously. A process that might take half a century elsewhere is being compressed into a decade on the Arabian Peninsula.

Change is less dramatic in the older part of Riyadh, but significant nevertheless. The traditional heart of the city is still the main mosque at the foot of Thumayri Street in Dira, but the mosque has just received a new stone facade; the central covered *suq* of Dira has been demolished and the handicraft, rug, fruit and vegetable *suqs* have been shifted into modern, open-air concrete stalls. Their previous site has become a parking lot for the ever-increasing automobile traffic, and there are now elevated walk-overs to facilitate pedestrian traffic.

The other center-city *suq* is the Batha Suq (sometimes called "the Kuwaiti *suq*"), a few blocks to the north of Dira. In spite of touches of modernization here and there, much of the traditional atmosphere has been preserved. One can still stroll down narrow alleys and back streets, watching people bargaining for everything from tomatoes to tea, from tape cassettes to gold bullion.

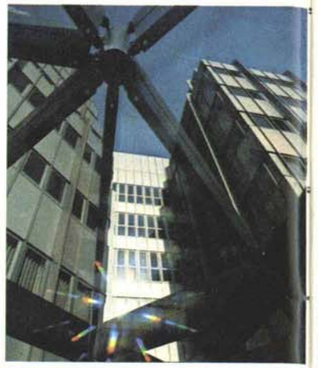
In many cases, efforts to preserve the landmarks of the past have been too late, and many handsome buildings have been bulldozed aside to make room for development. But there have been successes, too. One example is the al-Masmak Fort, the site of the dawn battle in January 1902 in which 'Abd al-'Aziz ibn Sa'ud captured Riyadh (See *Aramco World*, January-February 1965). Last year, the city's mayor signed a contract for the complete restoration of the old fort.

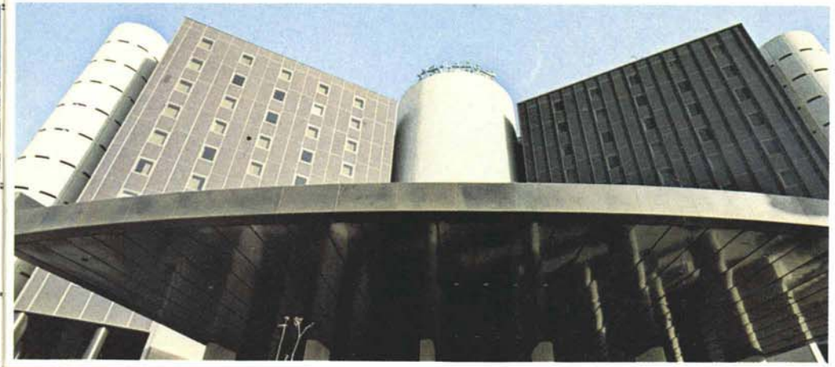
In the Malazz quarter, growth has also enveloped Abu Makhruq, known to Westerners as "The Camel's Eye"– the hill from which 'Abd al-'Aziz and his men launched their daring attack. Despite the growth, however, Abu Makhruq, which lay sere and crumbling a few years ago, has been preserved as the center of a city park, and will soon be ringed with bubbling fountains and stone walkways.

But if some of the buildings in Riyadh's historic districts are being preserved, they are also being overshadowed – literally – by the new commercial high-rise buildings of modern design which are springing up in the southern section of the city. Most prominent of these is the new Riyadh Bank building, soaring more than 20 stories above the Dira *suq* area and scheduled for completion this year.

This juxtaposition of the new architecture and old is rapidly becoming the theme, rather than the odd exception, in the center of the city. In this booming, bustling Riyadh, in fact, it is increasingly difficult to decide what *is* new. During most of the 1970's, for instance, the high, vertically striped blue and white water tower of Wazir Street served as the unofficial symbol of "new" Riyadh and the key landmark on the city's skyline. The disoriented visitor could always get his bearings by scanning the horizon for the water tower. But now, in 1980, the tower is nearly hidden amid the growing cluster of even newer, larger and more imposing edifices; it is now actually part of "the old," relative to the growth of the past two or three years.

Similarly, when the Saudi Arabian Monetary Agency (SAMA) moved its offices from Jiddah to Riyadh in 1978, its new, very modern twin-building headquarters





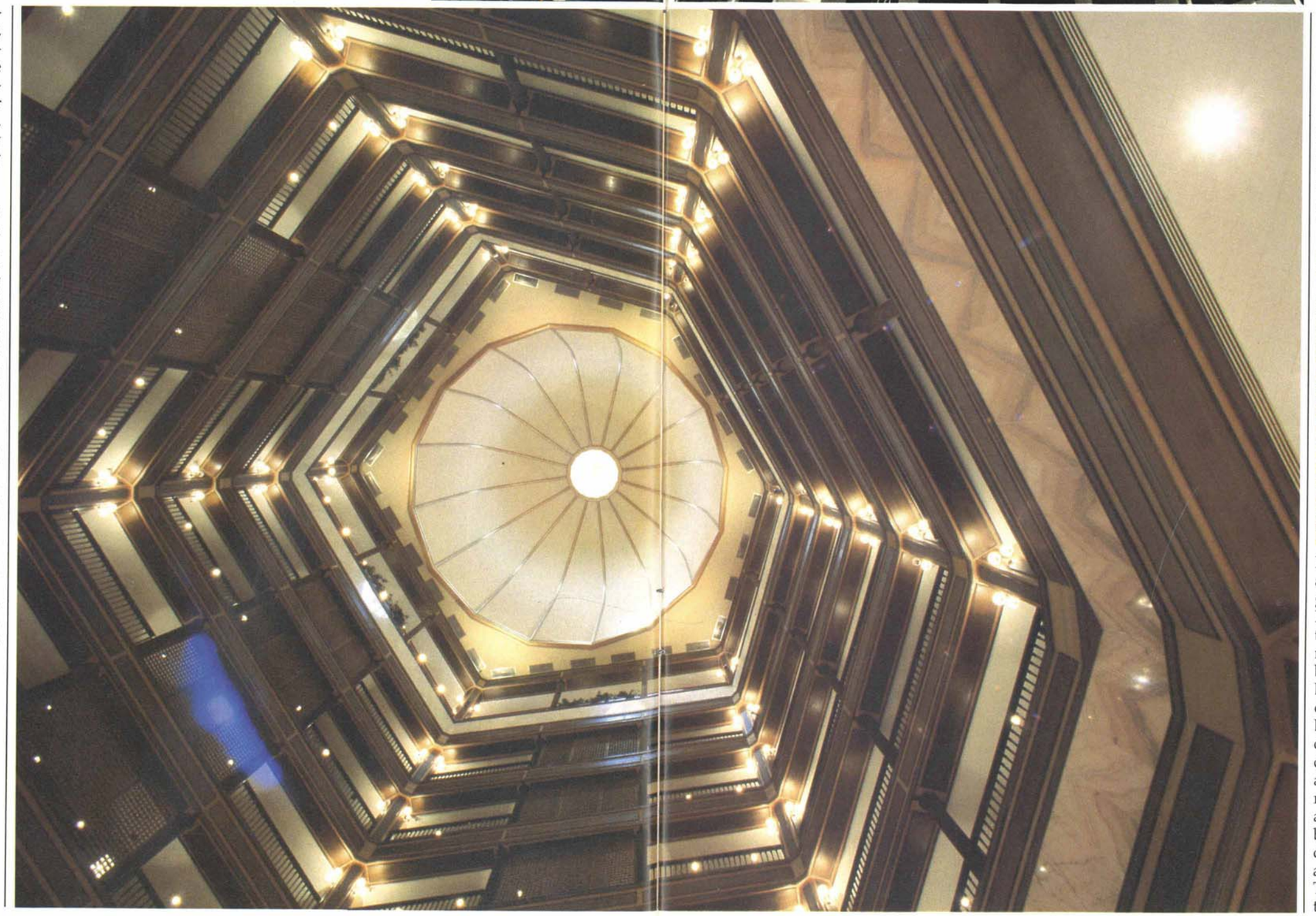
Below, left and right, two of the most striking architectural features of the Conference Palace Hotel are its seven-story-high skylighted hexagonal atrium lobby, and the gold-ribbed dome that towers over the growing city. At left, the wings of the Riyadh Palace Hotel appear to hinge on a massive cylindrical service core. Both hotels are recent additions on the capital city's skyline. At far left, a view of the Riyadh Residential Commercial Complex.

towered stark and alone above the surrounding structures. Twelve months later, the gleaming white offices were comfortably nestled in what some call an "edifice complex"– a cluster of buildings of comparable size and status on Shari' al-Matar (Airport Road). In addition to SAMA, virtually every other government ministry is now constructing – or has recently completed – a new headquarters building.

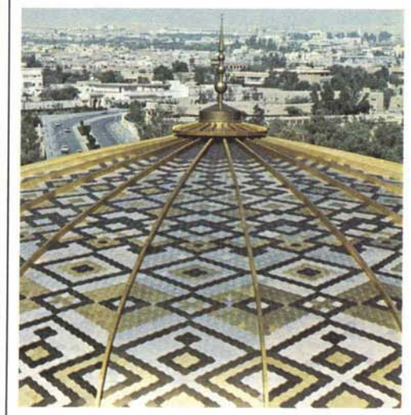
But the truly fundamental changes in the city are taking place even farther north. In 1975, the Sulaimaniya residential section, just west of the existing Riyadh International Airport, was literally at the edge of town. Last autumn, one could drive eight miles beyond Sulaimaniya – along a road which did not exist in 1975 – and still find construction. This is the "new Riyadh," rippling outward in waves of growth and soon to have its own shopping areas and commercial centers.

Looking at a map of Riyadh, one can see these and other growth areas of the city arching northeast and northwest beyond and around the present airport. A large valley, Wadi Hanifa, to the southwest of the old part of the city, inhibits expansion in that direction, but there are also several other factors pulling urban growth out to the northeast and northwest. To the northwest, along the road to the town of al-Diriya, ancestral home of the House of Sa'ud, the new campus of the University of Riyadh is currently under construction. When completed, it will not only be a showcase in the Middle East but, with a campus covering almost 250 acres, will be of immense extent as well.

Also to the northwest, very near the new university along the al-Diriya road, will be Riyadh's new diplomatic quarter. Presently, Riyadh is the only capital in the world that has no foreign embassies; they are all located in Jiddah on the Red Sea. But that will change in the 1980's with the gradual relocation of the diplomatic missions to



Riyadh. Work on the infrastructure of the new section has already begun, and by the end of the century this quarter of Riyadh alone will have a population of 25,000. Thus, the twin attractions of the new university campus and the diplomatic quarter – not to mention King Faisal Specialist Hospital (See *Aramco World*, July-August 1979), a planned sports complex and the new Ministry of Foreign Affairs – are spurring the expansion of the city to the northwest.



Expansion to the northeast has been almost as great. The magnet pulling the city's growth in this direction is the new Riyadh International Airport, now under construction and destined to be among the most modern in the world. The arrangement will be somewhat similar to that in Washington, D.C., where National Airport is the city's domestic terminal while more distant Dulles Airport serves in an international capacity. The existing Riyadh Airport, only completed in 1976, will become the "little airport close to town," and residential neighborhoods like Sulaimaniya, Ulayah and al-Rawdah – only a few years ago "out by the airport," literally at the edge of the desert – will probably come to be described as being in-town, near the "old" airport.
The main east-west artery from Riyadh to the Eastern Province, usually known as the

Red, white and blue and shiny new, Riyadh's fleet of public buses have been brought into service to help alleviate the city's frustrating rush-hour traffic jams.

Khurais Road, serves as the backbone of growth in the northeast. In addition to the new airport, government ministries, modern hotels and large residential sections are being built in this quadrant.

The explosive expansion of Riyadh's suburbs is taking place in leapfrog fashion, with buildings originally constructed seemingly in the middle of nowhere surrounded only a few months later by other construction. A more adventurous enterprise will then leapfrog out beyond that cluster to form another beachhead for further development. The Khurais Marriott, for example, one of the newest of the city's big hotels, located in the northeast development arc, stood strangely alone at first and seemed to be out of place in the harsh desert landscape off the Khurais Road. But within months it was surrounded by a growing matrix of residential and commercial development, and today is barely visible.

The day-to-day effects of such feverish growth have, of course, been difficult for residents. The city has become increasingly dusty from construction and construction traffic, causing both esthetic and physical discomfort. In a process familiar to American city-dwellers, newly completed streets are frequently "under construction" again and again as other agencies begin to install more sewage lines, power cables and telephone lines. Traffic routes are constantly being changed, so that even those who know the city occasionally become disoriented.

By 1980, nevertheless, there was some evidence that Riyadh's officials were beginning to solve some of these problems. In the 1970's, for example, a soaring population caused a dramatic rise in housing costs, but now residential construction is catching up with demand; in 1978, for the first time in a decade, housing costs actually declined. And with regard to hotels – once scarce – Riyadh now has an Inter-Continental Hotel, a Sheraton, two Marriotts, and a Hyatt under construction. The new hotels, almost without exception, are being established in the northern sections of the city.

Riyadh's traffic, often snarled, tangled and difficult, is improving too. The city now sports a fleet of shiny new red and white German-built public buses, which will help alleviate traffic congestion. In addition, numerous overpasses now dot the cityscape; others – all preassembled – are going up periodically. The intersection of Khurais and Airport roads, for example, was once one of the most congested in the city. It now has a "flyover" which was erected during the summer of 1978 – in four weeks.

In this and other ways, Riyadh's traffic patterns are being modified and redesigned. Only five years ago, Batha Street was the main north-south artery through the center of town, and until a year ago it had a large open drainage canal down its center. Today, the drainage canal is completely underground, Batha is but one of several north-south thoroughfares, and traffic is moving smoothly over a downtown "flyover" near the Kuwaiti Suq. By the early 1980's, furthermore, Riyadh will have a ring road – a beltway system that will allow traffic to go around the city rather than through the center.

Riyadh, as a consequence, is a vibrant city, undulating with rapid growth – so rapid that many streets are still unnamed, and there are no street addresses. But the names and the numbers will eventually catch up to Riyadh's expanding reality. The key question is not when streets will be named, when the next overpass will go in, or what the state of the housing market is – though these are important questions in their own right. The key question – indeed, the key to the heart and soul of Riyadh – is whether it can become a modern, indeed ultra-modern, city, and still retain the essence of Arabian life and culture.

It is a troubling question, no doubt. Despite the opportunities that construction of this magnitude offers – throughout the kingdom as well as in Riyadh – no specifically Arab-Islamic style of architecture has emerged. Instead, Riyadh and most other centers of growth have imported not only the building technology of the West but also its architectural themes.

Even in architecture, however, there are promising possibilities. In 1978, at a seminar on housing at the University of Petroleum and Minerals, a team of Saudi Arab students of architecture put forth designs which combined modern technology with traditional Arabian Gulf architecture (See *Aramco World*, January-February 1980). The chairman of the architecture department, moreover, argues that indigenous materials and traditional architecture – with such features as the lovely *mashrabiya* (See *Aramco World*, July-August 1974) – are far more suitable to the area than the imported themes.

To translate such ideas into actual buildings will be difficult, obviously, but not impossible. The development of Riyadh, a city on the move, has already shown how rapidly plans can become reality when those responsible decide that they will be.

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