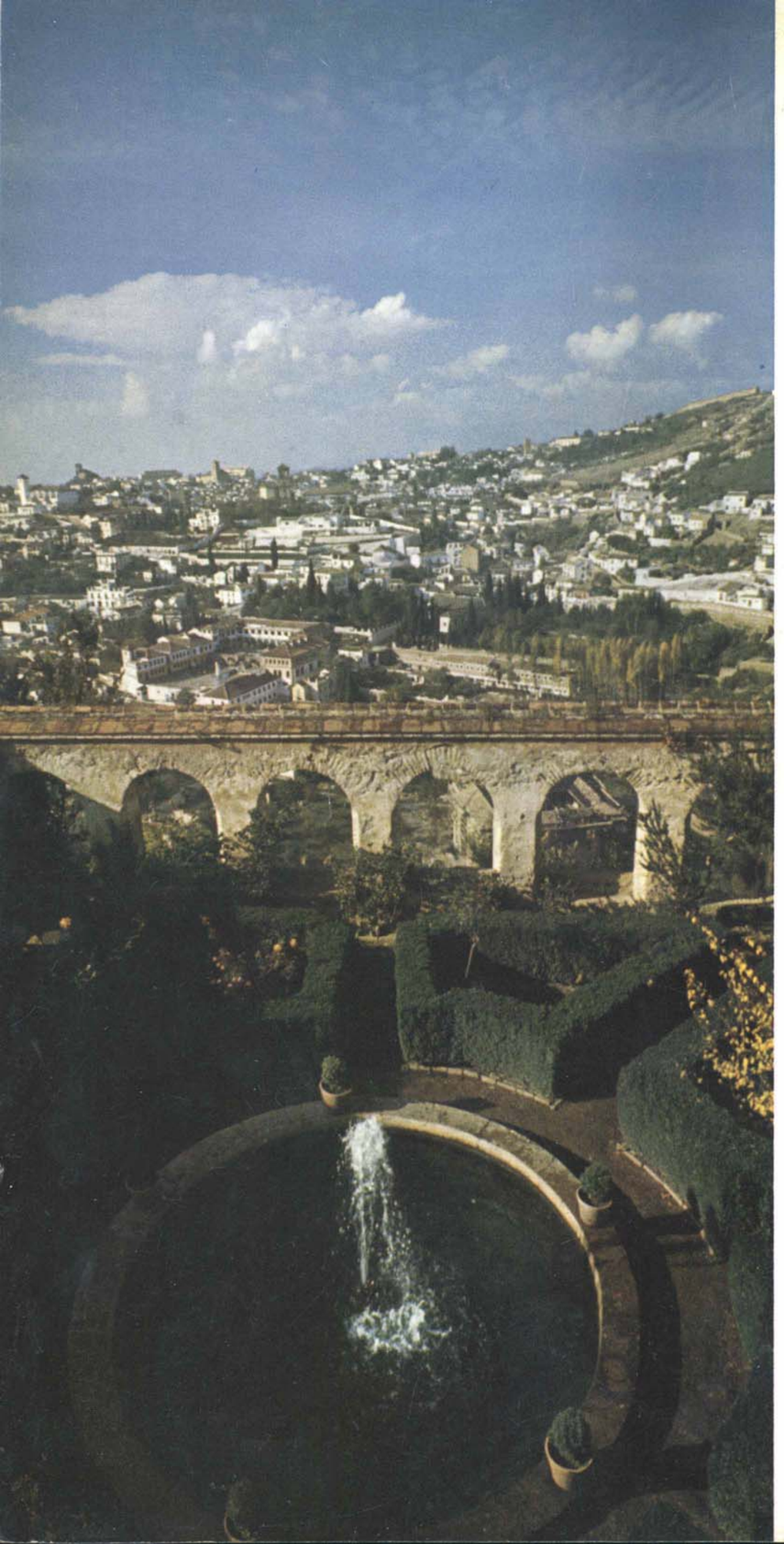

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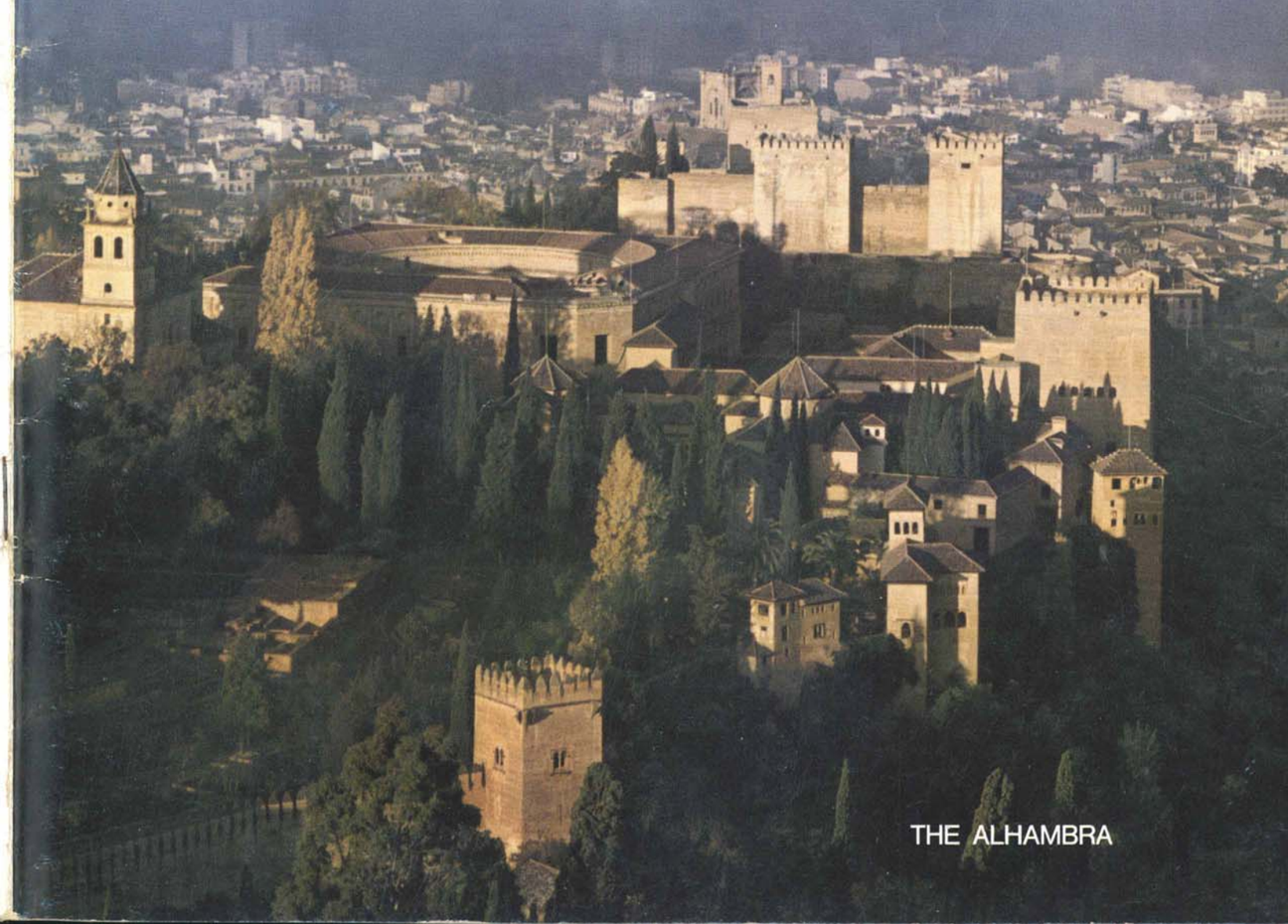

THE ALHAMBRA

ARAMCO WORLD

VOL. 18 No. 3 PUBLISHED BIMONTHLY MAY-JUNE 1967

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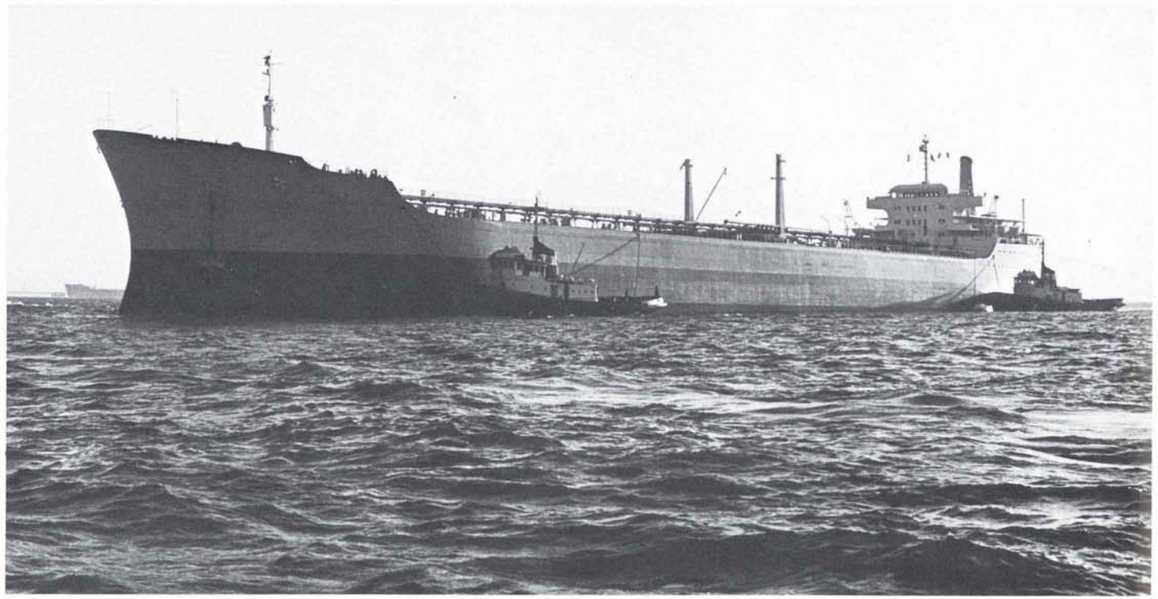
Cover: The Alhambra—"The Red Fortress"—stands in a green park on a hill some 500 feet above the city of Granada not unlike the way the Parthenon stands above Athens. Below is a plain that stretches to the Mediterranean Sea 40 miles away and above are the Sierra Nevada foothills from which photographer Tor Eigeland took this view of the walls and towers of the fortress in the clear soft light of dawn.

THE FLEET'S OUT...

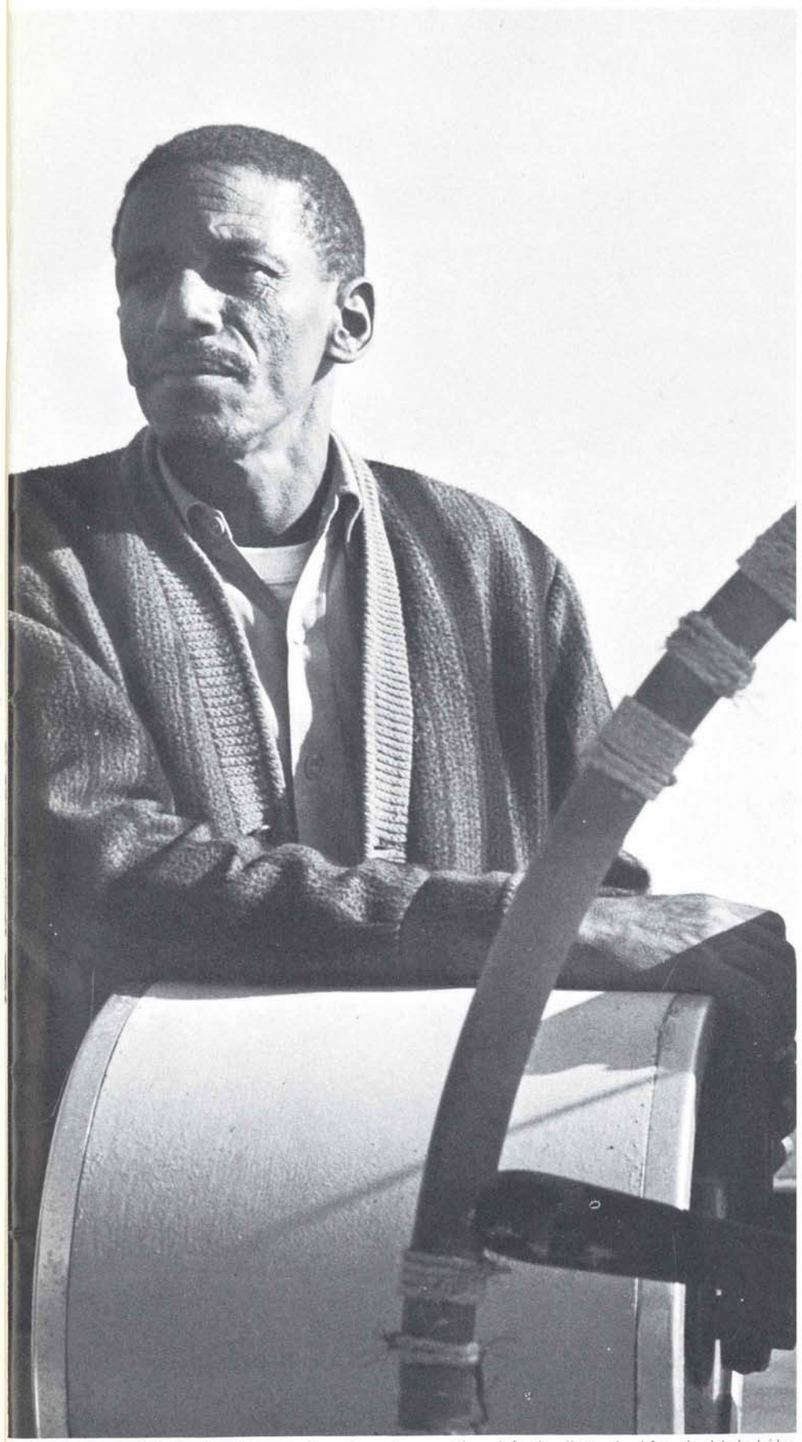
PHOTOGRAPHY BY KHALIL ABOU EL NASR

At the request of the harbor pilot, already aboard the 57,000 ton tanker Jalta, Aramco's tugboat Abqaiq 4 moves out of the harbor to meet the incoming ship as it approaches Ras Tanura.

... out working, that is, at any job you want to name.



Responding to the harbor pilot's commands, the tugboats Abqaiq 4 and Abqaiq 6, sometimes pushing, sometimes pulling, carefully move the Jalta to its mooring in the Ras Tanura harbor.



Tugboat Captain Salim ibn Saad Dausary waits at the engine room telegraph for the pilot to signal from the Jalta's bridge.

Aramco is an oil company, not a shipping company, but the men who work and live around Ras Tanura on the Arabian Gulf sometimes wonder. Ras Tanura, site of an Aramco refinery, also serves as home port for one of the largest fleets of working vessels in the Middle East, a motley collection of strong, squat craft which no one will ever confuse with the Cunard Queens but which can nudge giant tankers around like plastic sailboats, fight fires, tow cranes and drilling rigs up and down the Arabian Gulf, tend deep-sea divers, service offshore wells and haul cargo. There is even one that can provide a floating, air-conditioned hotel for 126 men.

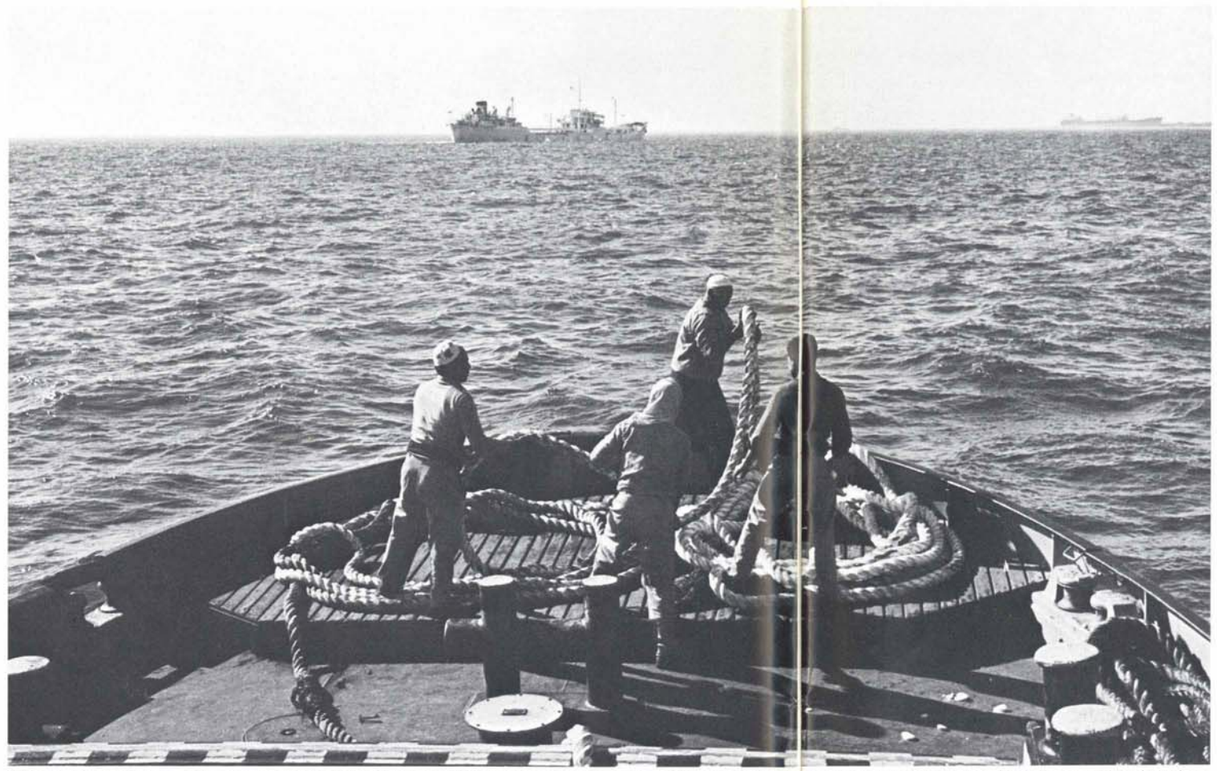
Some 30 years ago the ships that Aramco had most to do with were the lateen-rigged dhows of the Arabian Gulf and a herd of camels, then known, in what would become a well-worn cliché, as "ships of the desert." The dhows, sailing from the coast of Bahrain Island, helped carry to the coast of Saudi Arabia a mountain of supplies and a small party of geologists who had theorized that since there was oil in Bahrain there might well be oil in Saudi Arabia too. They landed at a town called al Jubail, loaded the supplies on the waiting camels and set off to see how valid that theory might be.

The geologists, of course, did find oil and not many years later ships from all over the world came steaming up the east coast of the Arabian Peninsula, some seeking oil, some bringing supplies for the Eastern Province's booming communities and for the booming oil industry. Meanwhile, since there were no deep-water ports to take those ships and since lateen-rigged dhows could neither handle the vast amounts and weights of material and equipment nor provide platforms for offshore drilling, Aramco found itself with the beginnings of a marine division and a mushrooming fleet of launches, barges and tugs with which to haul provisions, lay pipelines, and, among other tasks, nudge tankers into place at the new Ras Tanura pier. In the meantime, too, Aramco's quest for oil had pushed into the Gulf, creating a demand for drilling barges, tenders and launches to transport men, tools and supplies.

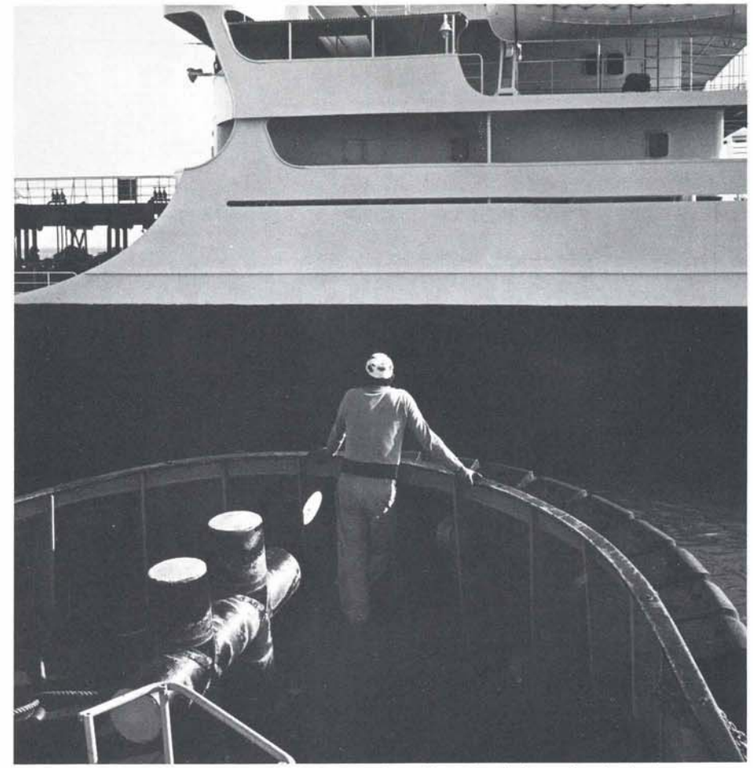
Since those days some 75 vessels have joined Aramco's fleet, served their hitches and retired—some to honorable but less demanding service elsewhere, others to a sandy grave at Ras Tanura where their

rusting hulls are buried in the sand to reinforce the sand spit that links the shore with the loading area. Today, according to a recent inventory, Aramco's Marine Division can deploy up to 36 vessels, each with its own special duty to discharge, but all designed to cope with the variety of unusual and demanding tasks required by the export of petroleum and the constantly growing offshore production operations. They include two 292-ton, 2,000-horsepower tugs used for docking; two 570-horsepower tugs to tow pile drivers, cranes and barges; eight other tugs of 165-250 horsepower (some of which are fitted with powerful hoses and pumps with which to fight fires, others with the compressors necessary to tend divers); 11 barges, 10 launches, one drilling workboat, a high-speed, aluminum-hulled launch, and—the pride of the fleet—*Barge 136*.

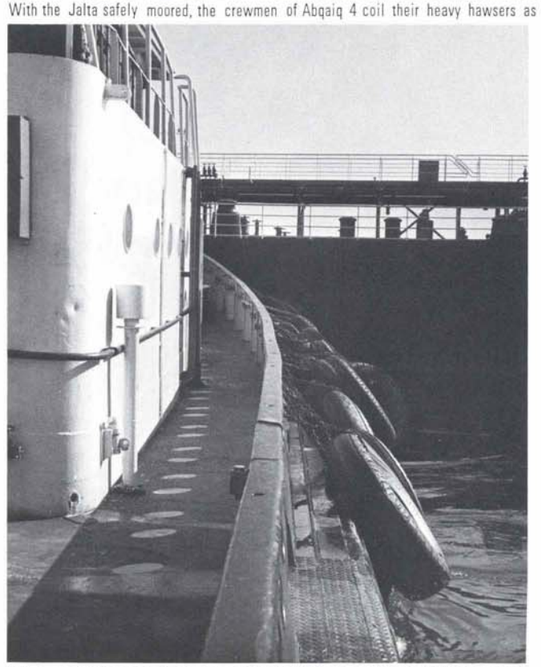
Barge 136 is the biggest and hardest-working vessel in Aramco's fleet. Because of her size she was, inevitably, tagged the "Queen Mary"—to the annoyance of her captain and 14-man crew who insist that *Barge 136* is a perfectly adequate name for their rugged craft. Although she displaces only eight feet of water, her deck is as big as a football field and she requires the combined power of two to three tugs to move her around to her various assignments. With the apparently chaotic, but in truth extremely efficient, jumble of equipment aboard, she can manage a number of important jobs. Her 500-horsepower engine can generate tremendous amounts of power. After a fire at Safaniya several years ago, for example, *Barge 136* anchored offshore and supplied the camp with power 24 hours a day for more than 40 days. She has enough space and a big enough galley to house and feed 126 men—as she does when there are no shore facilities for drilling crews working near the coast. Her sturdy decks have also been used for drilling and well "workover" and can be adapted for laying pipe. The "Queen Mary's" principal job, however, is heavy lifting. With a crane at the stern reaching up 130 feet above the water, and four hocks extending forward 44 feet, the barge can reach down under water to a depth of 35 feet and then hoist a 250-ton load 85 feet in the air. During one test she raised 320 tons without settling more than 17 inches into the water. Not long ago, while anchored at the



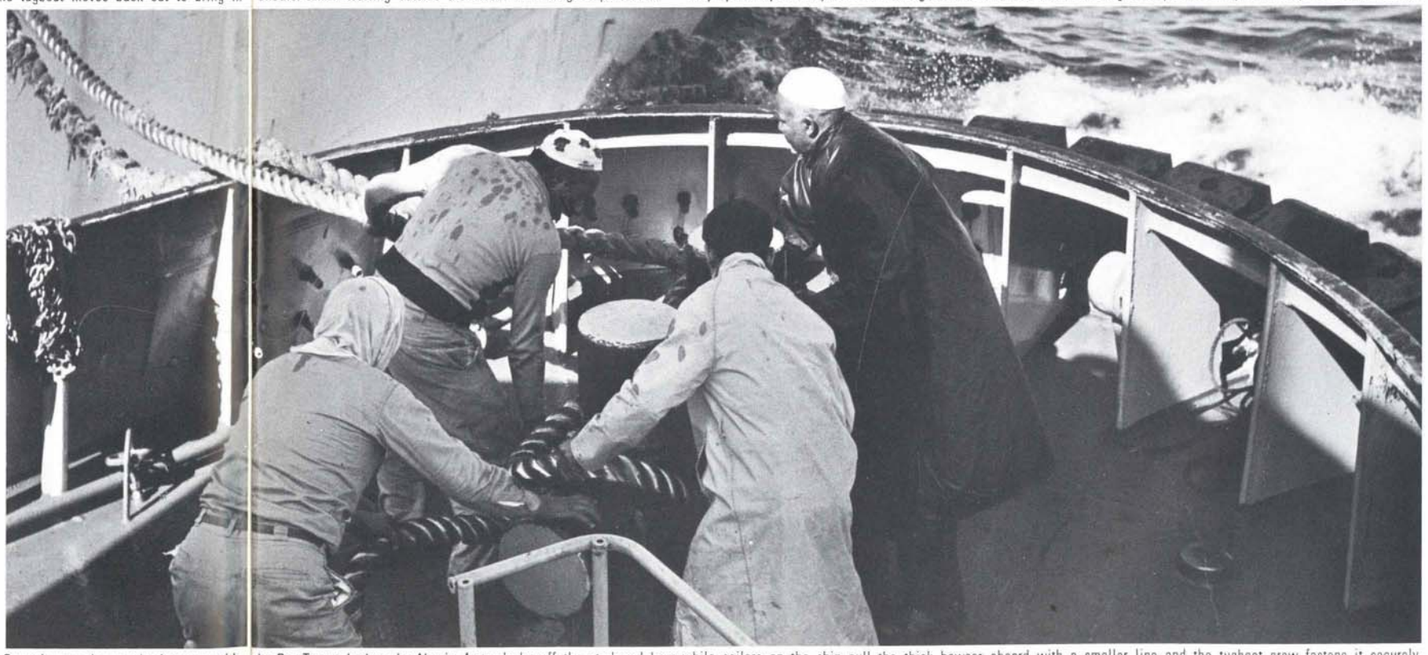
With the Jalta safely moored, the crewmen of Abqaiq 4 coil their heavy hawsers as the tugboat moves back out to bring in another tanker waiting outside the harbor for a cargo of petroleum.



Abqaiq 4 creeps slowly towards the huge side of a loaded tanker waiting to be pushed away from the pier into open water.

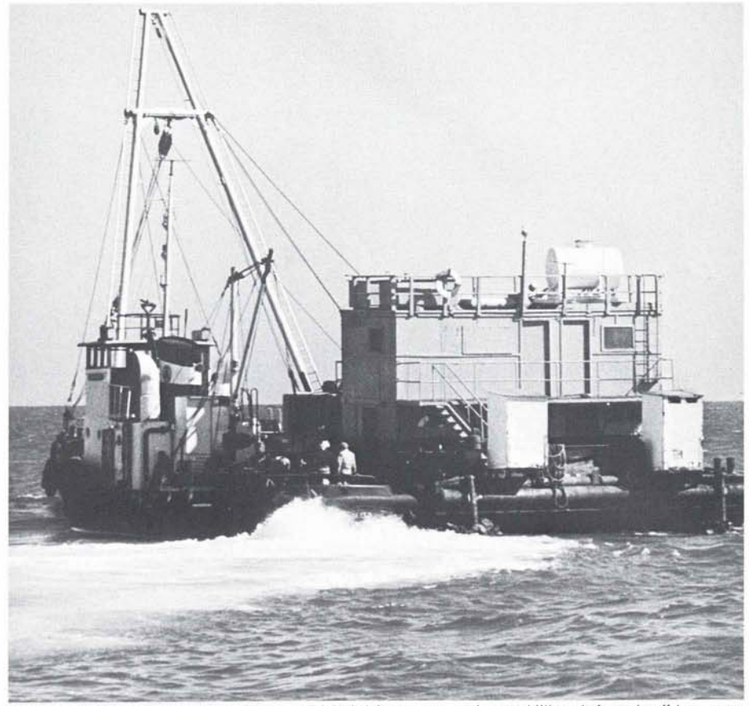


With a row of tires as bumpers, the tug gently nudges the tanker away from the pier.

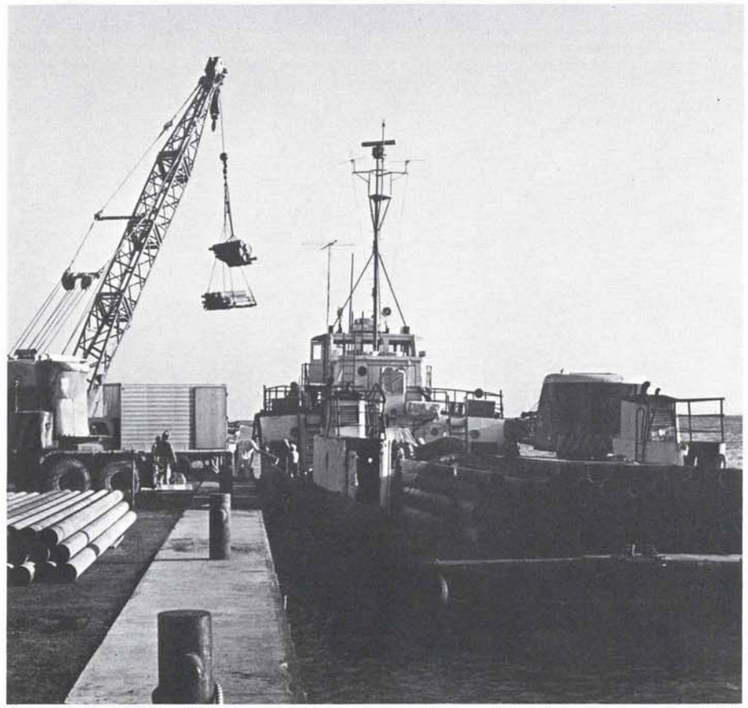


Preparing to take a tanker in tow outside the Ras Tanura harbor, the Abqaiq 4 stands by off the starboard bow while sailors on the ship pull the thick hawser aboard with a smaller line and the tugboat crew fastens it securely.

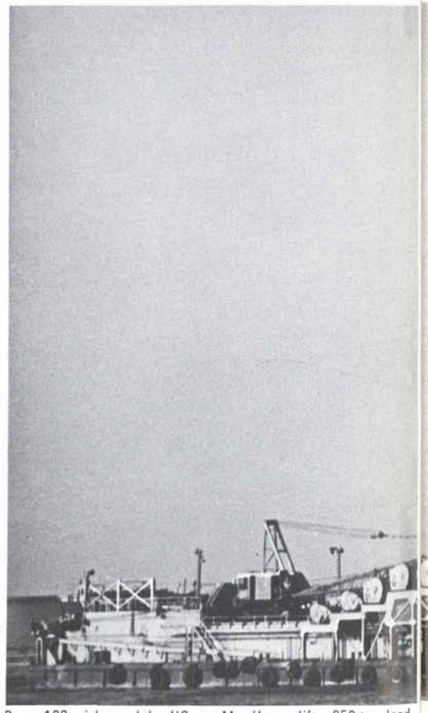
Aramco tugboats Qatif 8, Dammam 14 and Qatif 7 tow Drilling Platform No. 1 to a new job site about 20 kilometers offshore in the Arabian Gulf near al Jubail. During the move the drilling platform's three legs tower almost as high as the oil rig itself.



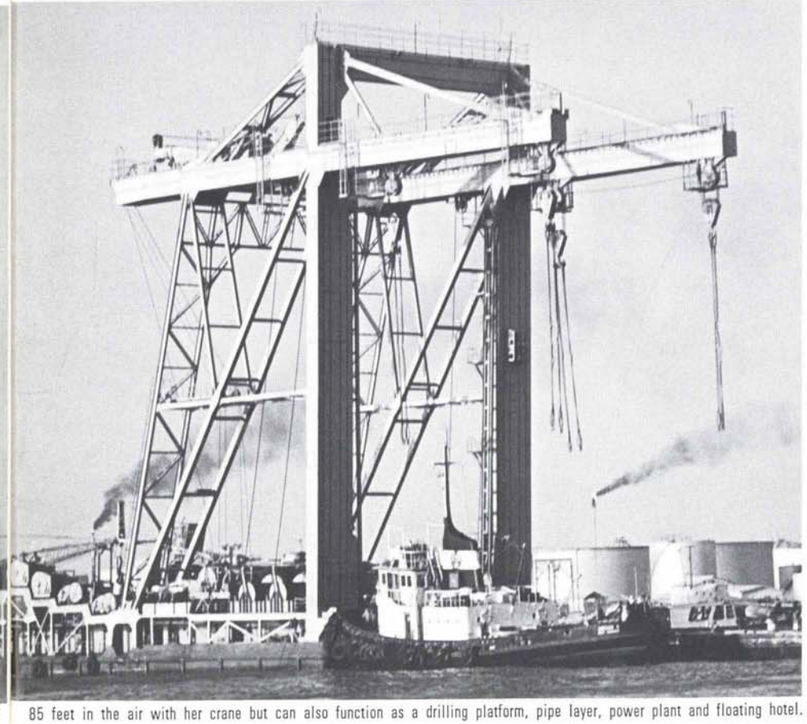
Barge 120, equipped with an A-frame lift, is useful in helping to move and moor drilling platforms in offshore areas.



Cranes at Ras Tanura's West Pier load a barge with necessary supplies for a drilling platform somewhere in the Gulf.



Barge 136, nicknamed the "Queen Mary", can lift a 250 ton load



85 feet in the air with her crane but can also function as a drilling platform, pipe layer, power plant and floating hotel.

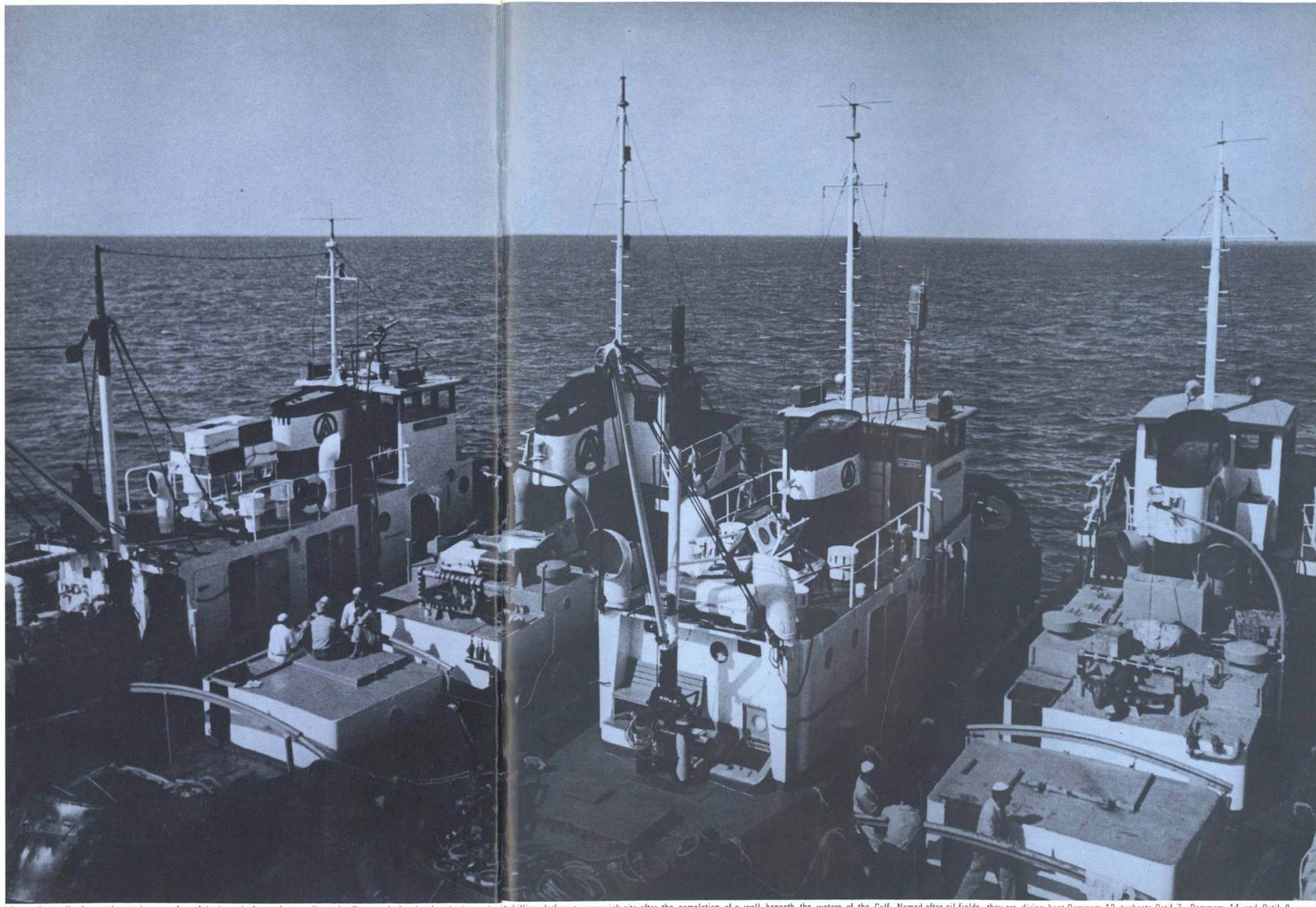
Harbor pilot Ahmad Kudaisi climbs aboard an inbound tanker.

Ras Tanura West Pier in the tug and barge maintenance area in Tarut Bay, she lifted a 66-foot tug right out of the water and set it down on the timber supports for its annual scraping and painting, thus saving a trip to dry dock.

To man the fleet and direct its operations requires a 309-man force of which 288 are Saudi Arabs—all of whom must be ready, night and day, for the emergencies which always must be anticipated around an oil port—like the call that came in a couple of years ago from a barge working off Safaniya.

The barge, which belonged to a contractor, had been drilling in 75 feet of water. Suddenly a storm swept across the Gulf. In minutes 12-foot waves began to break over her decks, threatening to swamp her. The barge radioed for help and Aramco's Captain Ahmed Bin Nasser and his crew set out aboard the *Dammam #13* and, while the contractor's own barge stood helplessly by, moved in and picked up 22 workers.

When you're moving tankers and their inflammable cargoes about on a regular basis, of course, the element of risk is never far away. Ras Tanura's 10 berths at the piers, and two at the Sea Island, service more than 2,100 tankers a year— including giants up to 150,000 deadweight tons—which must be moved to and away from the piers and islands as swiftly as possible. But whether their duties are routine or hazardous, the marine employes of the fleet are usually ready. Their ships are registered with the American Board of Shipping and meet the board's stringent maintenance and safety standards. Equipment is new and efficient. Masters, officers, harbor pilots and crewmen are well-trained, experienced men. For example, Captain Ahmad Kudaisi, harbor pilot at Ras Tanura, studied at Aramco's Industrial Training Center, spent six months aboard Mobil Oil Corporation tugs in New York's Hudson River and five months with captains of tugs operated by the Standard Oil Company of California in San Francisco and Los Angeles. He took courses in radar and seamanship and sailed on a tanker from Denmark to Iran. The results of such training are men who are familiar with all the tricks of a demanding trade and who can meet any of the challenges that this valuable and versatile fleet is so often called upon to face.



Like racehorses lined up at the starting gate, four of the boats in Aramco's versatile marine fleet await the signal to begin moving a drilling platform to a new job site after the completion of a well beneath the waters of the Gulf. Named after oil fields, they are diving boat Dammam 12, tugboats Qatif 7, Dammam 14 and Qatif 8.

from the classics#2

The men who wrote the classic accounts of life in Arabia were, by and large, unusual men and William Gifford Palgrave was no exception. A brilliant student, he completed his studies at Oxford in two and a half years, but instead of accepting the honors London was willing to award him, he went to India to serve with the Eighth Bombay Regiment. Later he became a missionary, and after that a diplomat. From 1862 to 1863, he explored central and eastern Arabia, in which time he gathered the material for "A Year's Journey Through Central and Eastern Arabia," a book that was, for its time, a scholarly, if informal, picture of life in Arabia. Today its appeal lies primarily in the dated yet still charming whimsy of such passages as this brief amusing essay on coffee.

ON COFFEE: A digression

BY WILLIAM GIFFORD PALGRAVE
PHOTOGRAPHY
BY KHALIL ABOU EL NASR

I must here beg my reader's permission for a brief episode or digression on the subject of the above-mentioned beverage (coffee). In my quality of an Oriental of many years' standing, I am annoyed at the ignorance yet prevailing on so important a matter in the enlightened West; and as a doctor (at least in Arabia), I cannot see with silent indifference the nervous systems of my fellow-men so rudely tampered with, or their mucous membranes so unseasonably drenched, as is too often the case to the west of the Bosporus.

Be it then known, by way of prelude, that coffee though one in name is manifold in fact; nor is every kind of berry entitled to the high qualifications too indiscriminately bestowed on the comprehensive genus. The best coffee, let cavillers say what they will, is that of the Yemen, commonly entitled "Mokha," from the main place of exportation. Now I should be sorry to incur a lawsuit for libel or defamation from our wholesale or retail salesmen; but were the particle NOT prefixed to the countless labels in London shop-windows that bear the name of the Red Sea haven, they would have a more truthy import than what at present they convey. Very little, so little indeed as to be quite inappreciable, of the Mokha or Yemen berry ever finds its way westward of Constantinople. Arabia itself, Syria and Egypt consume fully two-thirds, and the remainder is almost exclusively absorbed by Turkish and Armenian œsophagi. Nor do these last get for their limited share the best or the purest. Before reaching the harbours of Alexandria, Jaffa, Beyrouth, etc., for further exportation, the Mokhan bales have been, while yet on their way, sifted and resifted, grain by grain, and whatever they may have contained of the hard, rounded, half-transparent, greenish-brown berry, the only one really worth roasting and pounding, has been carefully picked out by experienced fingers; and it is the less generous residue of flattened, opaque, and whitish grains which alone, or almost alone, goes on board the shipping. So constant is this selecting process that a gradation regular as the degrees on a map may be observed in the quality of Mokha, that is Yemen, coffee even within the limits of Arabia itself, in proportion as one approaches to or recedes from Wadi Nejran and the neighbourhood of Mecca, the first stages of the radiating mart. I have myself been times out of number an eyewitness of this sifting; the operation is performed with the utmost seriousness and scrupulous exactness, reminding me of the diligence ascribed to American diamond-searchers when scrutinising the torrent sands for their minute but precious treasure.

The berry, thus qualified for foreign use, quits its native land on three main lines of export—that of the Red Sea, that of the Inner Hejaz, and that of Kaseem. The terminus of the first line is Egypt, of the second Syria, of the third Nejed and Shomer. Hence Egypt and Syria are, of all countries without the frontiers of Arabia, the best supplied with its specific produce, though under the restrictions already stated; and through Alexandria or the Syrian seaports Constantinople and the North obtain their diminished share. But this last stage of transport seldom conveys the genuine article, except by the intervention of private arrangements and personal friendship or interest. Where mere sale and traffic are concerned, substitution of an inferior quality, or an adulteration almost equivalent to substitution, frequently takes place in the different storehouses of the coast, till whatever Mokha-marked coffee leaves them for Europe and the West is often no more like the real offspring of the Yemen plant than the logwood preparations of a London fourth-rate retail wine-seller resemble the pure libations of an Oporto vineyard.

The second species of coffee, by some preferred to that of Yemen, but in my poor opinion inferior to it, is the growth of Abyssinia; its berry is larger, and of a somewhat different and a less heating flavour. It is, however, an excellent species; and whenever the rich land that bears it shall be permitted by man to enjoy the benefits of her natural fertility, it will probably become an object of extensive cultivation and commerce. With this stops, at least in European opinion and taste, the list of coffee, and begins the list of beans.

Here first and foremost stands the produce of India, with a little, similar to it in every respect, from the plantations of Oman. This class supplies almost all coffee-drinkers, from the neighbourhood of Dafar to Basrah, and thence up to Baghdad and Mosoul; Arabs, Persians, Turks, Curdes, be they who they may, have there no other beverage. To one unaccustomed to what Yemen supplies, the Indian variety may seem tolerable, or even agreeable. But without any affectation of virtuoso nicety, I must say that for one fresh arrived from Nejed and Kaseem it is hardly potable. The distorted and irregular form of the berry, its blackish stain, and above all the absence of the semi-transparent alabaster-like appearance peculiar to the good Yemanite variety, renders the difference between the two kinds appreciable to the unassisted eye, not only to the palate.

It is possible that time and care may eventually render Indian coffee almost a rival of the Yemen, or at least of the Abyssinian. Hitherto it certainly is not, though it might be hard to say to what particular causes, inherent in soil, climate, or cultivation, its inferiority is ascribable.

American coffee holds, in the judgment of all Orientals, the very last rank; and the deterioration of this product in the New World from what it is in the Old, is no less remarkable than that observed in rice, tea, etc., and is of an analogous character.

Of Batavian coffee I purposely say nothing, having never to my knowledge tasted it. I hear it sometimes praised, but by Europeans; Orientals never mentioned it before me; perhaps they confounded it with the Indian.

While we were yet in the Djowf, I described with sufficient minuteness how the berry is prepared for actual use; nor is the process any way varied in Nejed or other Arab lands. But in Nejed an additional spicing of saffron, cloves, and the like, is still more common; a fact which is easily explained by the want of what stimulus tobacco affords elsewhere. A second consequence of non-smoking among the Arabs is the increased strength of their coffee decoctions in Nejed, and the prodigious frequency of their use; to which we must add the larger "finjans," or coffee-cups, here in fashion. So sure are men, when debarred of one pleasure or excitement, to make it up by another.

Reprinted from "A Year's Journey Through Central and Eastern Arabia," Macmillan and Company, London, 1877

A Bedouin host inspects and roasts the coffee, grinds the beans in a heavy mortar, boils them with cardamom in three successive pots, and then samples the brew before offering it to his guests.

On a hill above Granada:
"the glory and the wonder
of the civilized world."

THE ALHAMBRA

The Alhambra, which means "Red Fortress," sprawls across the brow of a green wooded hill which looks down on the whitewashed walls and tiled roofs of Granada much as the Acropolis looks down on Athens.

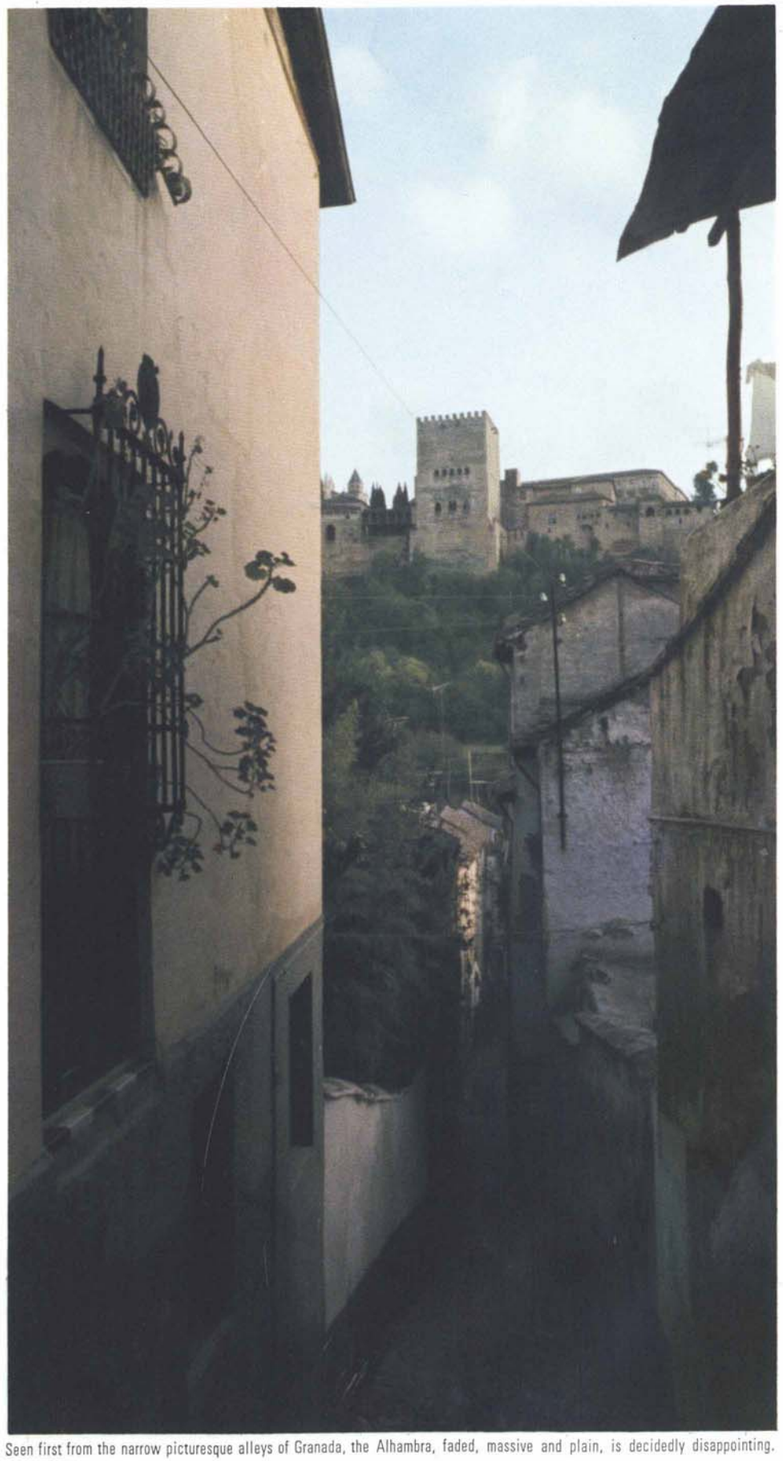
WRITTEN BY PAUL F. HOYE
PHOTOGRAPHED BY TOR EIGELAND

From the high green ridge above, or from the white city below, the Alhambra is a decided disappointment. Its walls are massive, harsh and faded. Its buildings crowd one another from view. Its tiled roofs slant off at improbable angles and clashing planes. To visitors raised on Washington Irving's memories of tinkling fountains and moonlit marble, or lured by visions of secret gardens and palaces of dazzling and delicate beauty, it is simply impossible that this—this great ugly pile of peeling stone shouldering its way out of a forest of English elms—should be the Alhambra.

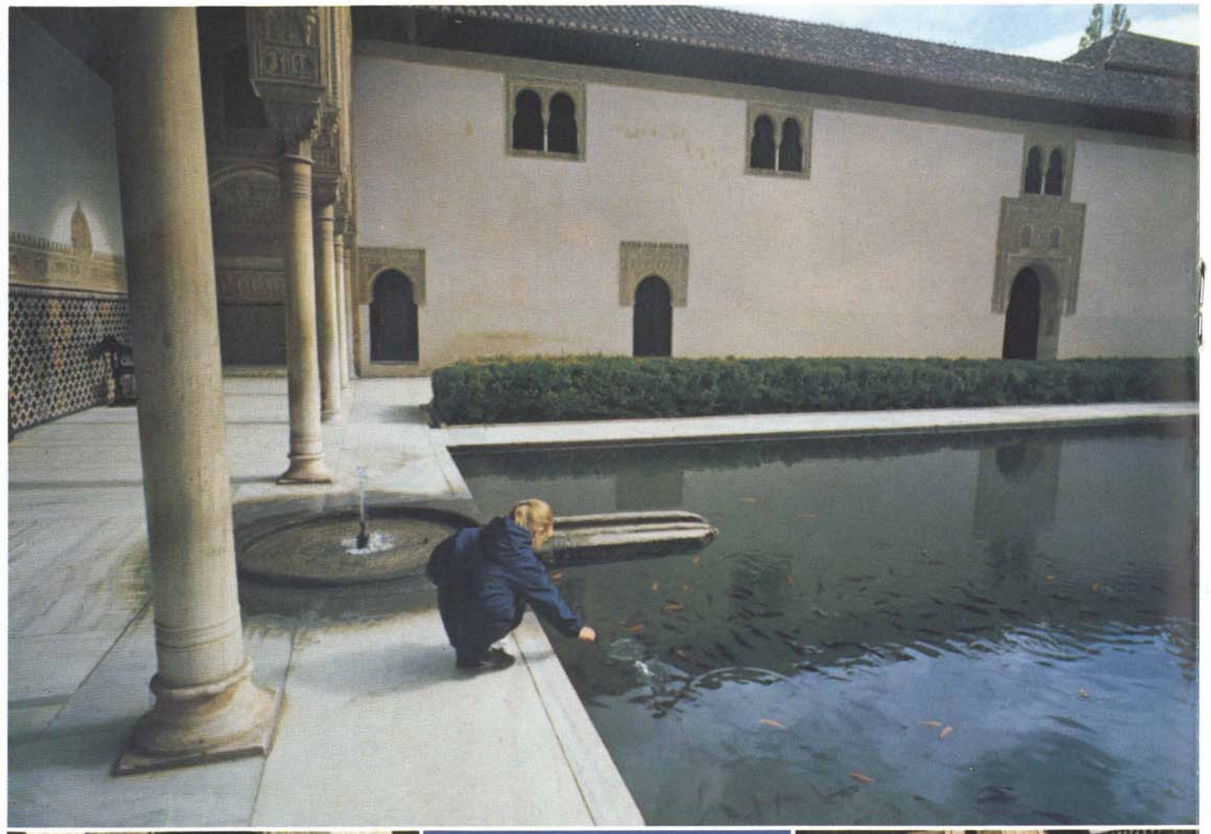
And they are quite right. What you see from above or below is not the Alhambra that has inspired travelers and poets for nearly 800 years. To find that Alhambra—the Alhambra that one entranced writer said was "indisputably, the most curious and in some ways the most marvelous building that exists in the whole world"—you must leave the high green ridge and the white city and look for a graveled path that winds through a green park to an arched stone portal called the Gate of Justice. There you must enter, climb a little to the summit of a plateau that looks off toward the white peaks of the mountains beyond, and begin to search. It won't take very long. Just listen for splashing fountains and watch for a long green pool beneath a sky of pure Spanish blue...

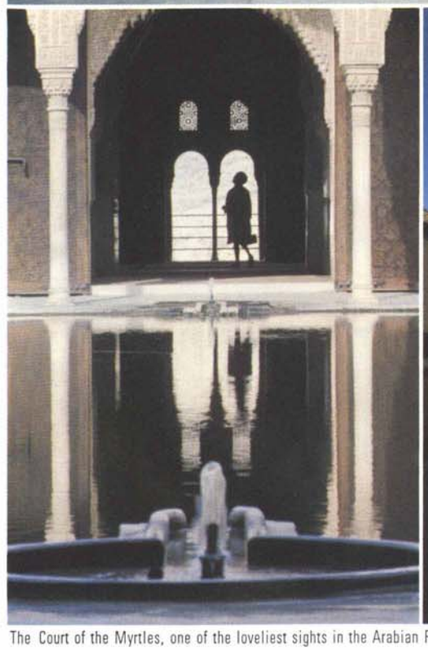
To describe the Alhambra in detail is rather like dissecting a butterfly: you may learn a lot about it, but somehow you lose the magic. And yet the magic itself is a challenge. Of what does it consist? The play of southern sunlight on pools of dark green water? Cypresses thrashing in the rain against a black and billowing sky? Shadows from a silver moon traced on white marble? A red rose reaching up from a quiet green bower?

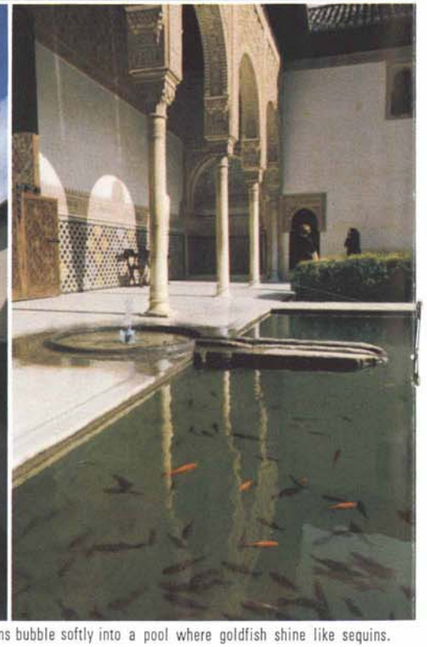
In the years since Irving mounted his horse in Seville and braved the hazards of the wild, bandit-ridden Sierra Nevadas simply to live and write in the Alhambra, hundreds of writers have dutifully sailed off to Spain to climb the citadel's graveled paths and, standing before it in stunned pleasure, try to answer that very question. Surprisingly, most have succeeded. For there is no mystery to the Alhambra. It is beautiful because the Moors, like the



Seen first from the narrow picturesque alleys of Granada, the Alhambra, faded, massive and plain, is decidedly disappointing.







The Court of the Myrtles, one of the loveliest sights in the Arabian Palace, is a simple patio of white marble in which fountains bubble softly into a pool where goldfish shine like sequins.

Greeks so long before them, learned to shape the color and texture of stone according to the disciplines of harmony, proportion and simplicity and then decorate it accordingly. "The Moors," as A.E. Calvert said, "ever regarded what architects hold to be the first principle of architecture—to decorate construction, never to construct decoration."

The Alhambra is set on a long, wooded hill rising some 500 feet above Granada like the Acropolis of Athens. Above and to the east is a high mountain ridge brushed with snow. Below is a vast and verdant plain stretching off to the Mediterranean some 40 miles away. On the north, sharp cliffs plunge down to a swift, shallow stream bubbling out of the mountains; on the south a gentle slope fades into a park of magnificent, if incongruous English elms—a gift to Spain in the 18th century from the Duke of Marlborough, hero of the War of the Spanish Succession. And immediately below, spilling out of the foothills and onto the green plain, like a river into a delta, is Granada, with its old, narrow, sometimes cobbled streets, its small white houses and the high spires of famous cathedrals.

It is from Granada that most visitors first see the Alhambra. Sometimes it is from the narrow curved road by the river at the base of a great cliff where an enormous wedge of stone has been cut out by some ancient storm. Sometimes it is from the Plaza of Saint Nicholas from which the Alhambra, the Generalife and the whole vista of the Sierra Nevadas are spread before you. Whichever it is, the first effect is the same: a sense of dismay that this cheerless, almost monastic silhouette is the famous Alhambra.

Even up close, as you pass through an arched gate into the elm forest and approach the fortress, a sense of disappointment persists. At close quarters, in fact, the Alhambra is even less attractive. The walls, red from a distance, are a faded, splotchy orange; the Gate of Justice is unimpressive; the Wine Gate is scarcely noticeable: and the first building you see, the Palace of Charles V, is a disaster; square, squat, impregnable and dour, it would serve nicely as a London bank.

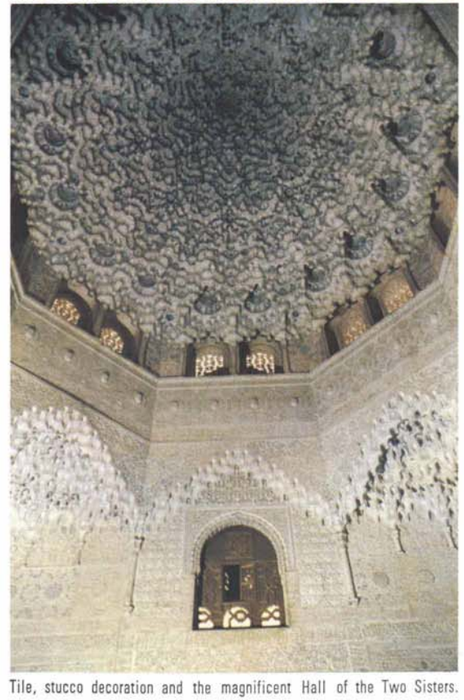
At last, however, having turned over your tickets to polite uniformed guards, you slip into a dark chapel with a handsome wood ceiling and pass through it into the Arabian Palace where, in a sudden flash of sunlight, doubts and disappointment dissolve and you see at last what has evoked more than seven centuries of lyrical praise.

The first thing you see in the Arabian Palace is the Court of the Myrtles. It is a long narrow courtyard paved in white marble with a shallow pool flanked with low green hedges. Latticed windows weathered to a deep chocolate brown peer down from beige walls and, at the north end, the square shape of a turreted tower rises against the sky. There are slender pillars and arches and two fountains bubbling over into basins. In the depths of the dark green water schools of goldfish dart with trained precision toward visitors to wait for food, their scales flashing like red-gold sequins.

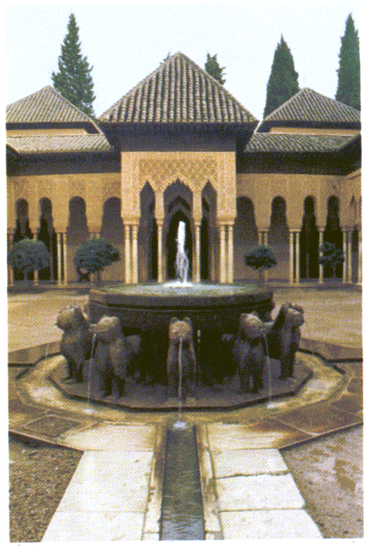
It is the essence of simplicity, this courtyard. But the impact is overpowering. In this simple blend of white marble and green water, of gentle curve and sharp line, of latticed wood and sculptured stucco, the ancient artists have set the tone for the wonderland of courts and gardens and halls that follows.

From the Court of the Myrtles, visitors can go in several directions, but most, almost irresistibly, it seems, head straight for the Hall of the Ambassadors, where, the guidebooks tell you, the enthroned kings of Granada greeted emissaries to the kingdom. This marvelous room, tucked beneath the huge Tower of the Comares, is a perfect square with a domed ceiling 60 feet high. Eight arched windows offer a panoramic view of the Vega, and the walls are crocheted into writhing patterns of Koranic verse, religious commentary, lines of poetry and, over and over, its builder's bitter acknowledgment that "there is no conqueror but God." For a moment, as you pause to absorb it, there is silence and from across the valley, you can hear laughter of boys playing in a schoolyard, the tinny echo of a church bell and the murmur of water splashing its way among the rocks in the river below.

By now, of course, the Alhambra has you in its spell. After this you wander in a sort of bemused trance from one passage to another, not really sure where you are or how you got there. You only know that one enchanting place follows another: the Queen's Patio with four slim cypress trees and the ominous iron gate



Tile, stucco decoration and the magnificent Hall of the Two Sisters.



where, say the legends, Juana the Mad was confined; the apartments in which Washington Irving composed the sketches and impressions that were to make the Alhambra so famous; a small angular garden rich with the smell of orange trees and the gurgle of a fountain in the center. And everywhere you see the miracles of carving: on walls, on capitals, on arches. It is stucco carved into lace, a magnificently simple arrangement "of the straight, the curved, the inclined," repeated over and over in patterns at once geometrically and artistically perfect.

For such a small area—the Arabian Palaces occupy no more than a fraction of the hilltop—the succession of rooms and courtyards seems endless. There are the royal baths, with tiles of gold and blue and red, and the vast baths still full of pure mountain water. There is a small open courtyard between palaces where, on one bare, insignificant wall, Arab craftsmen created a masterpiece of pure decoration: a simple mass of decorative inscriptions and vegetation entwined like a wild tangle of tropical growth. And, in haphazard succession, there are the harem, with its inevitable, if unlikely, hints of exotic passions and exciting intrigues; the Mirador of the Lindejara where the Sultana, lolling on silken cushions, looked out at Granada; and the Hall of the Two Sisters where enormous plaster stalactites drip from a high ceiling like icicles in a cavern.

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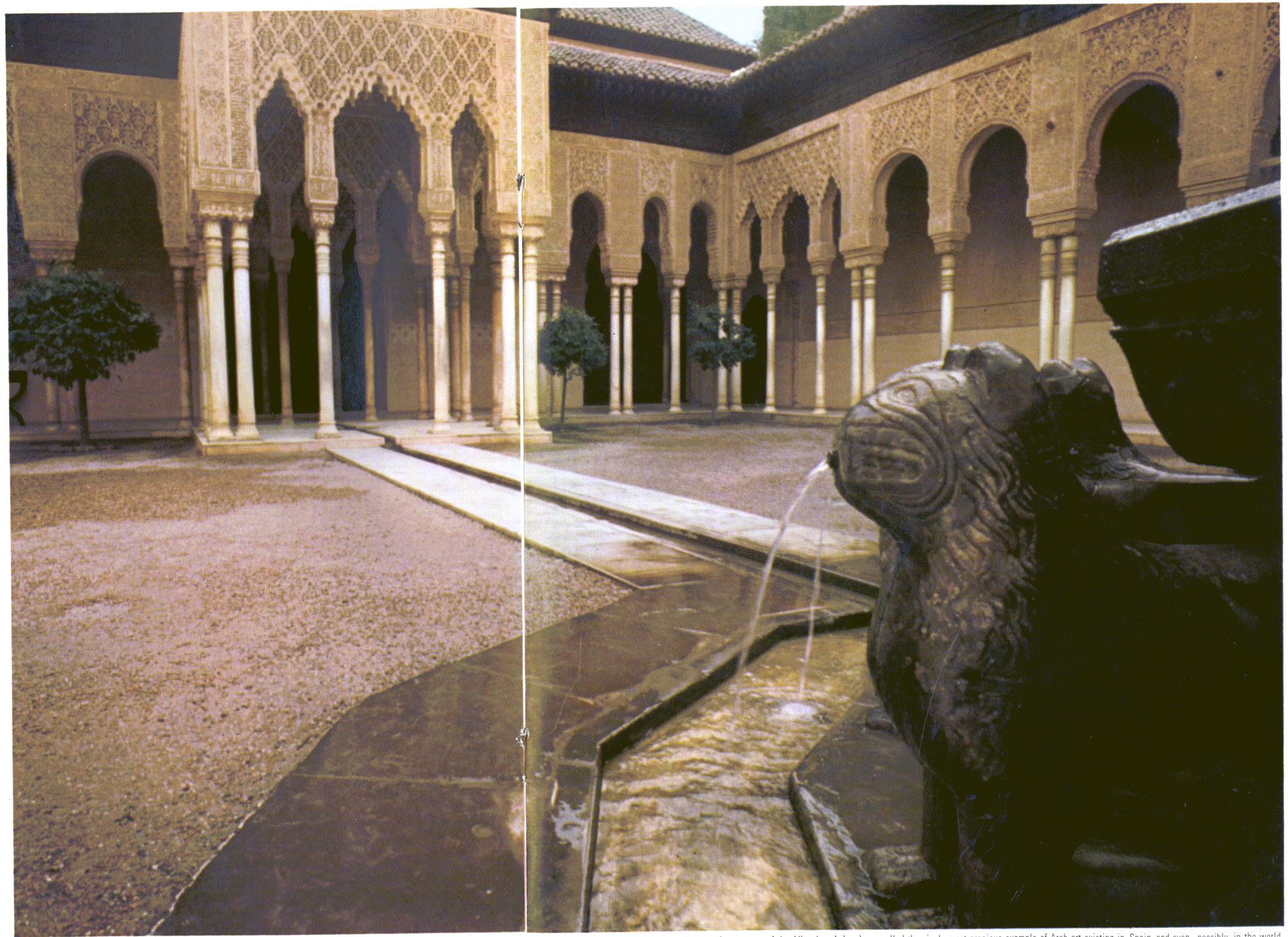


Although surprisingly small the Court of the Lions, with its gallery of 128 white marble columns and its 12 oddly shaped lions clustered around a fountain, is probably the most famous part of the Alhambra. It has been called the single most precious example of Arab art existing in Spain and even, possibly, in the world.

The story of the Arabs in Spain: A brave but homeless people...

"WHO CONQUERED, RULED AND PASSED AWAY"

On a raw winter's day in the closing years of the 15th century a weary Moorish king reined in his horse in the arid hills of Andalusia and turned to look one last time at the great red fortress on the hill above Granada. Then, with a sigh, he rode on into obscurity, leaving behind one poignant line of poetry, eight centuries of history and a magnificent monument to a "brave, intelligent and graceful people who conquered, ruled and passed away." The story of the Arabs in Spain, a story as sad as it is glorious, had come to an end.

Islam had come to Spain in a quite different mood. Under the banner of the Prophet and the leadership of a general named Tarik, armies of North African Arabs had stormed ashore at Gibraltar with all the faith and fury of their Bedouin progenitors sweeping out of Arabia and had marched north with the express intention of conquering Europe. Twenty years later they very nearly succeeded. Having routed the remnants of Roderick's decaying Visigoths, they swarmed across the Pyrenees to meet Charles Martel and his Franks in a battle to decide if the Occident or .the Orient would rule Europe thereafter. The Franks, as it turned out, prevailed and the Arabs retired to wait for another opportunity and, in the interim, create one of the world's more memorable civilizations.

Reviewing that civilization today it seems impossible that the Arabs could have ever lost Spain—or that the Spanish, Christians or not, would have wanted them to. For the Arabs were not intolerent rulers; to the contrary, they reigned with a wisdom and justice often superior to anything the Spanish had ever known. Under Muslim rule, moreover, Spain achieved levels of wealth and artistic splendor that were seldom to be reached again. Trade and agriculture flourished. Medicine, science and the arts thrived. Architecture reached new heights of beauty. To the universities of Toledo, Cordova, Seville and Granada came scholars from throughout Europe and the Orient, some to stay and add their knowledge to the rich pool already gathered in those places, others to return to their native lands and further spread the fame of this new and exciting civilization. By the 10th century, when Abd-al-Rahman III of the Omayyad Dynasty established the Caliphate of Cordova, what had been a mere outpost on the frontiers of the Muslim empire had become not only the most brilliant center of learning in Europe but also the capital of Islam itself.

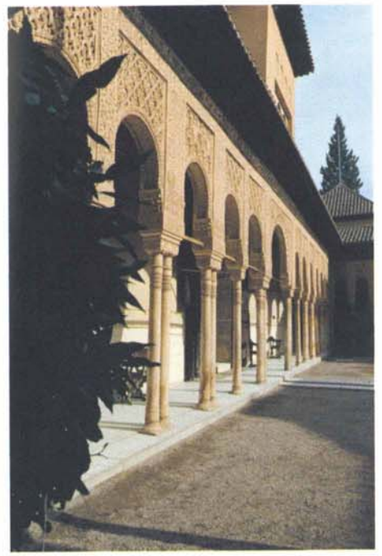
Unhappily, this period was also the beginning of the end. As one man's body rejects the skin of another no matter how carefully grafted, so Christian Spain had rejected Muslim Spain. Although Spain had never known such a golden age Islam never quite took root in Spain. Despite

nearly four centuries of occupation—longer than the Normans had ruled England—the Muslims were never able to placate the deep hatred of their Christian subjects. However willing Christian artisans may have been to lavish their art on the mosques, the palaces, the gardens of Islam, and however happy they were to share and enjoy the prosperity and tranquillity of this most refined, graceful and charming era, they never for a day forgot that these were intruders on Spanish soil—aliens who must some day be driven away. In the 11th century, with the recapture of Toledo by Alphonso VI, that began to happen.

The Arabs in Spain had never truly united. Although there were periods of harmony, they were more often engaged in pointless but savage quarrels among themselves. When, in fact, the Christian kings began to pose a serious threat, the Arabs were so weak they had to ask the Almoravides, a North African Berber dynasty, to come to their aid. The Almoravides came, crushed a major Christian uprising but promptly took over Spain themselves. In 1174 the Almoravides were in turn defeated by other Berbers, the Almohades.

Although such internal warfare was by no means unique in Muslim history, it was fatal in Spain. By wasting their strength and wealth in fruitless struggles among themselves, they permitted the Christians to negotiate strong alliances, to form powerful armies and, in the 11th century, to launch a series of campaigns to drive the Arabs out. The Arabs did not surrender easily; this was their land too. But, bit by bit, they had to retreat, first from northern Spain, then from central Spain until, in the 13th century, their once extensive domains were cut to a few scattered kingdoms deep in the barren mountains of Andalusia—where for some 200 years longer they would endure and thrive.

It is both odd and poignant that it was then, in the last 200 years or so of their rule, that the Arabs created that extravagantly lovely civilization for which they are most famous. It seems as if in their slow retreat to the south they suddenly realized that they were entirely alone. Spain was not their home and neither, now, were the African lands from which they had come. Cut off from the one by religion, and from the other by time, they had become, as Irving wrote, "a nation without a country." Yet instead of accepting this as the inevitable fate of conquerors, the Moors, in a gesture of magnificent defiance, calmly set about building an even lovelier civilization than that which they had already spread across most of the Iberian Peninsula. Then, as their story drew to a close, they crowned it with the Alhambra, that small citadel that



one writer has called the "glory and the wonder of the civilized world."

In 1238, a noble named Muhammad Abou al-Ahmar ascended the throne of Granada. Educated, compassionate, wise, Muhammad the First, as he called himself, set about strengthening and preserving his small kingdom. He established order. He reformed the courts. He erected hospitals, cared for the poor, founded schools and colleges, built public baths, improved irrigation and agriculture and encouraged commerce. Once, to buy safety for his people when King Ferdinand of Aragon at the head of superior forces laid siege to Granada, he slipped out of the city secretly, rode to Ferdinand's tent and humbly offered to become the King's vassal in return for peace. Ferdinand accepted the offer and rode away leaving Granada untouched and Muhammad more popular than ever.

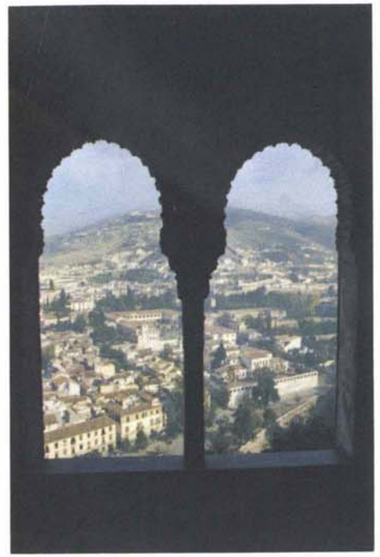
But if wise, submission was also difficult—particularly when Ferdinand called on him to implement the agreement by providing troops to help the Christians against Muslims in siege of Seville in 1248. Loyally, Muhammad complied and Seville fell to the Christians. But returning to Granada where cheering crowds hailed him as conqueror he disclosed the turmoil in his heart in that short sad reply that he was to adopt as a motto and inscribe upon the walls of the Alhambra: "There is no conqueror but God."

In the months that followed, Muhammad came to realize that that the truce he had purchased so dearly for Granada was not permanent and that lasting peace between Christian and Muslim was by then impossible. So, about 1248, he began to erect the great fortress that was to become so famous. It is doubtful that Muhammad expressly intended the Alhambra to be a monument to the Muslim era in Spain; he probably intended to build no more than a fortress from which he could protect his shrinking domains and a refuge from the trials of his kingship. But whether by design or accident, there grew up behind the great walls a remarkable series of delicately lovely buildings, quiet courtyards, limpid pools and hidden gardens, the whole immersed in a cool green forest where streams rippled down shaded paths into the valley.

Later, after Muhammad's death, and especially during the reign of his grandson, Yusuf, who completed it between 1333 and 1354, the beauty of the citadel inspired the nobles of Granada to rebuild the city in its image. They erected palaces, halls and mosques of great size and beauty and adorned them with precious woods, rich paintings and carpets and lovely frescoes. From the gushing waters of the River Darrow they piped in enough water to not only irrigate their fields and water their gardens but to fill pools and fountains in the city with the music of water day and night. "Granada in the reign of Yusuf," wrote one Arabian visitor, "was as a silver vase filled with emeralds..."

Meanwhile, outside Granada, the Christian kings waited. In relentless succession they had retaken Toledo, Cordova, and Seville. Only Granada survived.

But then, in 1482, in an absurd quarrel over a new addition to the king's harem, the



kingdom split into two hostile factions. Almost simultaneously, cathedral bells in Castile and Aragon, Spain's strongest Christian kingdoms, announced the marriage of their sovereigns Ferdinand and Isabella. After that the end came swiftly. On January 2, 1492, at the very peak of its strength, Granada suddenly, shamefully fell. Ferdinand and Isabella rode into the Alhambra to hoist the banner of Christian Spain above it, and the exiled Boabdil, the last king, turned and rode into extinction with what the poets have since called "the last sigh of the Moor." For although the Arabs lingered on for a few more years, the pressure of social ostracism and persecution quickly reduced them to a timid, impotent minority. Then came the Inquisition and after that expulsion. The annihilation was complete. Never, in fact, as one writer said, "was the annihilation of a nation more complete." Except for a few mosques, some fragments of stone and one nearly perfect edifice on a green hill above Granada, the Arabs and all their history vanished as if they had never been.

Continued from page 18

There are other wonders too: the Hall of the Abencerrajes, where, the legends say, one mad king cut off the heads of his sons; the Hall of Kings; the Hall of Queens; and a profusion of capitals, friezes, medallions, ceilings, domes, ribbon work and dadoes. Lastly there is the Court of the Lions.

According to the anonymous contributors to the *Guide Bleu*, the Court of the Lions is "the most precious example of Arab art existing in Spain." According to Marino Antequera, author of the best of the local guidebooks, it is to Granada "what the square of Saint Mark's is to Venice ... Notre Dame to Paris ... St. Peter's to Rome." The writers are correct. But Senor Antequera's statement suggests a scale and a grandeur that the court, or for that matter, the whole palace does not have. Indeed, if there is one false impression that descriptions and photographs have created, it is that the Alhambra is huge. It isn't. It is small and delicately proportioned, exquisite rather than magnificent. And nowhere is this more apparent than in the Court of the Lions.

"There is something about a genuine work of art," writes Senor Antequera, "which escapes all possible imitation and reproduction ... such is the sensation we feel before this Grenadine court."

How true. Like the first sight of the Court of the Myrtles, or the Hall of the Ambassadors, the Court of the Lions, with its perfect proportions, its arcades, its slim columns, its tracery, its arches and, in the middle, its famous fountain with those odd, supposedly leonine animals bristling like mastiffs below, is, quite simply, stunning.

Probably everyone who has seen the Alhambra has eventually come to ask: "What was it like before?" As they emerge from the wonders of the palace and confront the sprawling jumble of towers, churches, hotels, and shops that now clutter the site of the Muslim citadel, they can't help wondering what it was like before the Christians clumped up the hills and began four centuries of alteration and neglect. Was it all like the palace within? A vision of courtyards and gardens and pools? Great palaces standing in green parks? With fierce warriors riding their spirited desert-bred steeds through cobbled streets? And silk-veiled maidens peering out through latticed windows?

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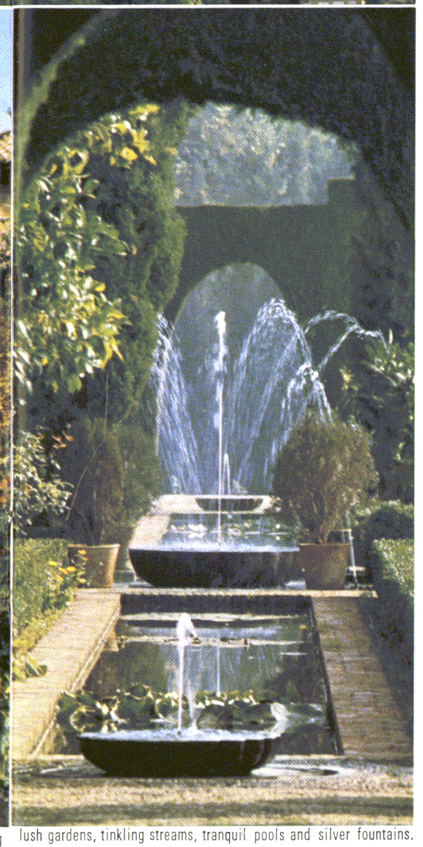


On a hill adjacent to the Alhambra unknown Arab architects built the Generalife, a simple arrangement of porticoes overlooking lush gardens, tinkling streams, tranquil pools and silver fountains.

THE HIGH GARDENS

East of the Alhambra and across a deep ravine there stands on a wind-swept hillside one of Granada's loveliest monuments. It is called the Generalife.

Not much is known about the Generalife. The name comes from a Spanish corruption of "Jennat-al-Arif," which has been loosely translated as "the high gardens," and it apparently served as a sort of summerhouse to which the rulers of the Alhambra could retreat during the noon hours of Andalusia's fierce summers. It was formerly linked to the Alhambra by a bridge, now vanished, and a path, now closed, and here and there are traces of the same decorative genius that enriched the Alhambra.

Other than that the history of the Generalife is a blank. No one knows who built it, who stayed there, or whether it had any function beyond that of a minor retreat for the kings of Granada. Furthermore no one really cares about it. The authoritative **Guide Bleu,** for example, dismisses it in 43 cool lines as having pretty gardens and little else.

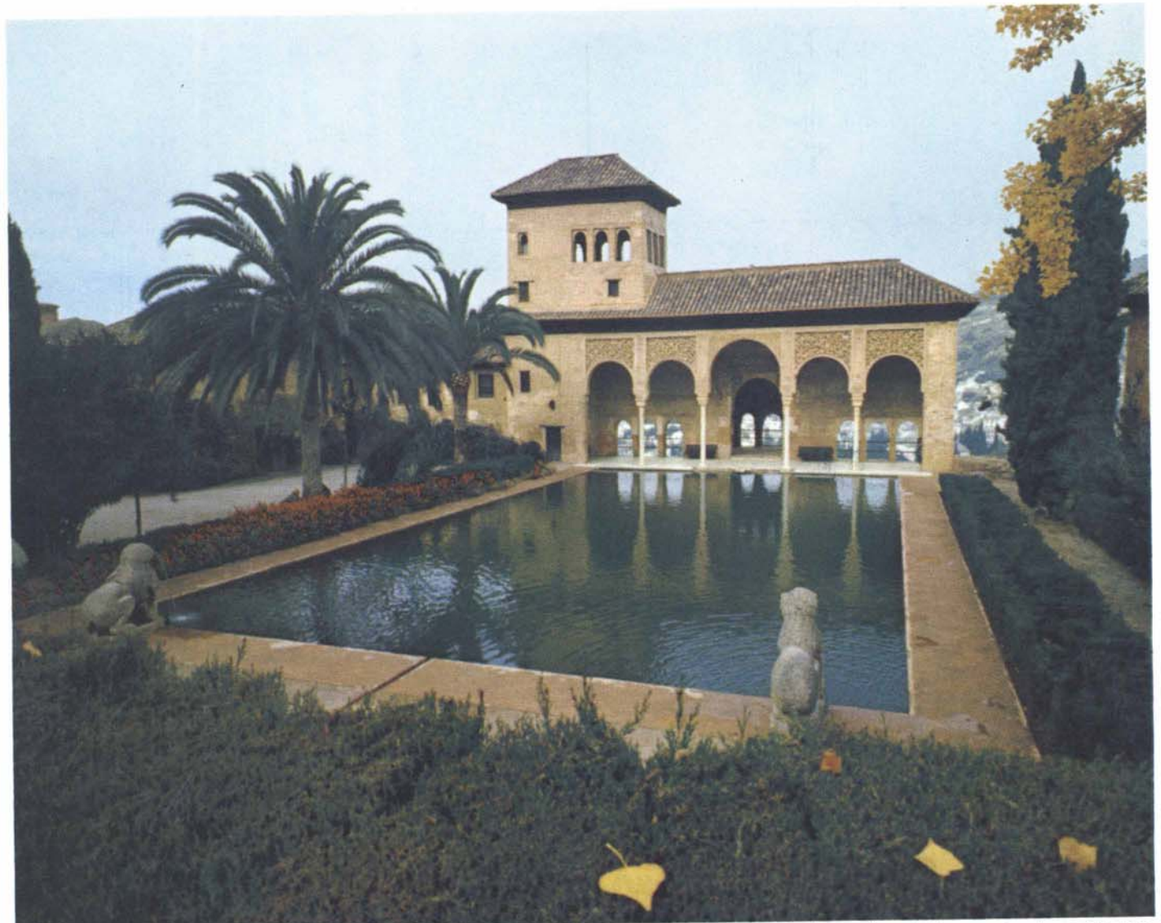
It is true that the gardens are the loveliest features of the Generalife; as its name suggests, that was the intention. But it is not true that there is no more to it than gardens. First of all, although the architecture is slight, there are decorations that one writer said are "in no respect inferior to those of the Alhambra." There are also some excellent coffered ceilings and a handsome pavilion. But the most important thing is the marvelous arrangement of simple elements into an exciting whole: grass and shrubs, sunlight and clouds, silver arches of water, tranquil pools and a few arches of fragile delicacy to frame it all against the sky.

The entrance to the Generalife is a sanded path that winds in a muffled silence through rows of towering cypress trees, enters a coral gate, ducks under a canopy of oleander bushes and ends at a shabby white building with a more than slight resemblance to an old French farmhouse. It is the first of several rickety structures that were clumsily built upon whatever remained of the graceful Arab pavilions that had apparently been here before. After that come the gardens.

Like the Alhambra, the Generalife seems to straggle off without design or order. Staircases go up and down and around; terraces overlap; fountains bubble up out of nowhere, streams flow away and vanish. Yet if there is an air of confusion it is charming confusion and not at all unplanned.

Depending on how you count, there are at least ten levels to the Generalife, each a different shape, each offering, through a profusion of vine and shrub and tree, a progressively more breathtaking view of the Alhambra, Granada, the Vega and the Sierra Nevada mountains. In addition there is a great formal garden of trimmed hedges and lush orange trees that faces the edge of the ravine at a point where the Alhambra's massive walls and deep moat are only a few hundred feet away. One of its chief delights are the ramps adjoining three short flights of steps that descend from the highest terrace. The ramps, hollowed out and lined with curved tile, create small streams that gush down the top of the wall like rapids in a river and boil up in whirlpools in basins at the landings. Above all there is the world-famous Court of the Pool.

This pool is probably as famous as the gargoyles at Notre Dame. With pavilions at each end, arched and decorated, and with the silvery jets of water forming arches over the rippling pool, it is not only the heart of the Generalife, but one of the loveliest gardens in the world. If for no other reason than to house this one spot, or to provide a shaded platform from which to enjoy it, the continued maintenance of the Generalife is justified.



Huddled close against the wall that encircles the crest of the hill is the Tower of the Ladies, a high portico with a garden and a large pool guarded by two awkwardly crouching lions.

There are those who think not. Senor Antequera, who impatiently dismisses most romantic notions about the Alhambra as nonsense, believes that what is left is really all there ever was and that the Christians actually saved it from decay, rather than destroyed it. And if aerial views suggest that he is wrong in believing that the construction of Charles' palace did not wipe out a large part of the Arab masterpiece, he still offers a convincing argument that the whole crest of the hill could not possibly have equaled the splendor of the palace. The palace, after all, was the king's and it would have been here that the full splendor of the age would have been concentrated. Furthermore, with thousands of troops quartered within the walls—some say 40,000—it would be unlikely that there would have been much room left for many other palaces.

But even if this is so, the Alhambra, with its great wall and turreted towers newly built of the red clay that gave it its name—"The Red Fortress"—must have been a striking sight. And the palace itself must have been fantastic. In those days the now mellow walls glowed with rich blue, vermillion and red. Through the stained glass that filled the windows, the sunlight poured into the chambers with the muted and mysterious radiance of a cathedral. On the marble floors lay piles of precious carpets and silken cushions. Even the very air was enriched—with the scent of orange trees in the gardens, and rare perfumes seeping up through vents in marble floors. And of course, there were the people too: servants pattering about with trays of fruit and splendid pots of a new and exotic beverage called coffee; harem girls lounging in languid splendor by low windows near cool gardens; ambassadors bringing terms from other rulers; generals telling tales of battles; nobles launching fresh intrigues; and, of course, kings—waiting and wondering when the end would come.

With the reconquest the end did come and with it the decay that would go on for centuries. First the Christians altered it, then abandoned it—to smugglers, gypsies, and bandits. Soldiers came and went. Winter winds howled through it. Summer suns baked it. The fountains went dry, the pool cracked, and weeds flourished in the gardens. So it went until, in the 19th century, Washington Irving came to write the tales that would bring the world to its rescue and launch the work that has at last begun to restore the incomparable glory of its incomparable past.

Beneath the superbly carved intricacies of the Mirador of the Lindejara, right, the Sultanas reclined on low silken cushions to enjoy what was once an even more spectacular vista.

SWEET STREET

As they say in Syria, "Fiy ma'adaty khalwah la yamluha illa al-halwah..."

STORY AND PHOTOGRAPHY
BY WILLIAM TRACY

The Syrians have a saying which goes: "*Fiy ma'adaty khalwah la yamluha illa al-halwah*." It means, "There is an empty place in my stomach which only sweets can fill," but it really isn't true. The Syrians don't stop eating sweets long enough for an empty place to develop. And who, having once sampled the flaky, sticky, nut-filled delights of a Syrian candy shop, could blame them?

Middle East sweets are special, as any Syrian will be pleased to tell you. "Our sweets need a special stomach," admits Shafiq Sama'an, the proprietor of a sweet shop on Marjeh Square in Damascus. "But if you have that stomach—Ahh Damascus!"

Ahh, indeed. Although all Middle East countries have their specialties and although it was Turkey that originated the extravagantly sweet specialties of the Middle East, Damascus is the place where the art of such baking has been raised almost to perfection. There are famous ice cream parlors. There are shops that specialize in candied fruit. And there are at least 20 oriental pastry shops, one of which is run by Mr. Sama'an.

Mr. Sama'an's shop is small, clean and tiled in white. Two walls are lined with stacks of two- and four-kilo cardboard cartons and sturdier wooden containers for foreign travelers. The radio wails oriental music above the pulsing hum of the overhead fan. Before the window is the long counter with its pan balance (sweets sell for roughly 7 U.S. cents per pound), a graceful phial of rosewater, and round brass tray warmers with hissing blue gas flames beneath. And dominating both the counter and the room are the rows of broad, shallow trays heaped with golden glazed sweets of every variety, the mounds of pastry within them arranged in abstract geometric patterns or carefully stacked into sculptured towers, pyramids and cones.

Although the varieties are innumerable, Mr. Sama'an explains, basically the sweets fall into three families: *baklawa*, made up of 12 paper-thin layers of flaky crust; *fatayir*, with only two sandwiched layers of the same flour, sugar and egg batter; and *kanafe*, which resembles shredded wheat. These three types and their numerous variations are all deep-fried until brown in a heavy sheep-fat butter called *semni*. There is also a fourth type that is baked in an oven, like a western biscuit or cookie.

Baklawa proper is no more than flaky crusted pastry filled with ground-up green pistachios and soaked in sugar syrup. Cut in smaller round pieces like tiny roses, the same sweet is called *kul washkur* or "eat and thank." Cut in

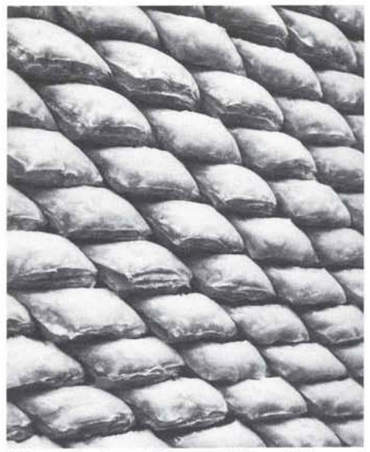
Marjeh Square shops offer tempting assortments of sweets.

triangular shapes which curl up at the points to resemble blossoms, the pastry is called *wardat* (flowers). Filled with sweet cream it becomes *nammoura* or "delicious"; in thin rolls filled with pine nuts and decorated with lightly-sprinkled pistachio it goes by the name *assabia' issit*, meaning "lady's fingers."

In a basement just around the corner from their Marjeh Square shop is the Assadieh and Sama'an bakery. All day and most of the night, amid tantalizing odors, about 15 men bustle from kitchen to oven to storeroom to shop with heavy trays of sweets and their rich ingredients in every stage of preparation. Though the cellar is cluttered, hot, and dimly lit, the working surfaces—white marble again—are as clean as surf-polished rock. A rack on the wall is hung with rolling pins of every weight, size and length. Rolling out the paper-thin crusts (called "papers" in fact) is an art which resembles sleight of hand.

Even well-fed Syrians have the proverbial empty place in their stomachs which can only be filled with Damascus sweets.

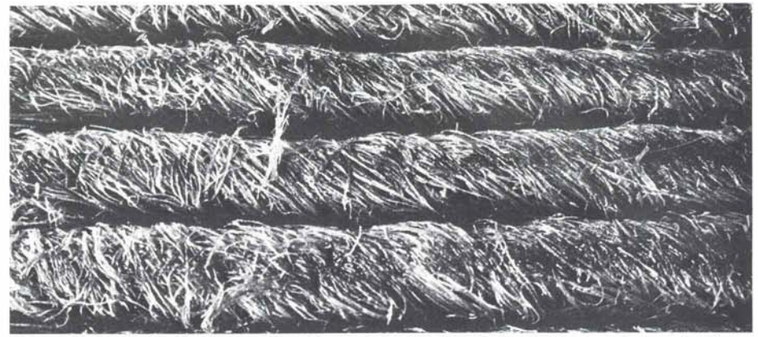
The process begins with a stack of what look like 12 ordinary pie crusts. While they are still on top of one another the circles are rolled out flat until they measure about a foot and a half across. As the cook works, the excess flour is forced out from between the layers in little puffs around the edges. He then chooses a longer rolling pin from the rack and magically picks off the top layer by rolling it around the pin. Slapping the fragile dough on the marble surface, he peels off the layers one by one and wraps them around the stick. When the circles have all been transferred onto the pin he unrolls them again, one at a time, onto a new stack. Over and over he wraps the thin sheets like a bolt of fine cloth and redeposits them on the stack until they are as broad



Baklawa is made up of 12 paper-thin layers of flaky crust.

as the top of a card table. Individually they are nearly transparent and the entire stack is now as thin as one original crust. After he has slapped them down carelessly a final time, he folds over the edges of the big circle to form a slightly smaller square, reinforcing the center with extra pastry. Then, starting at one edge, he draws a thick line of chopped nuts, folds the crusts over a few inches, and with machine gun cadence, cuts up the filled roll with a metal cookie cutter and shoots the individual pieces down the counter to be arranged in the trays. Then he puts down a new line of nuts and folds over a new row.

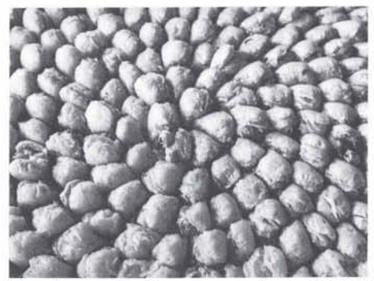
If only one or two layers of the "paper" are used, the result is fatayir. Filled with meat, sweet or sour cream, or with sweet or salted cheese, these pastries rise like fragile bubbles as they cook. They are



Mabruma bil fistuq (pistachio twist) is made with crisp long rolls of kanafe filled with nuts and simmered in butter.

served only in the morning, with sugar, syrup and powdered sugar, and it is common in Assadieh and Sama'an's to see a workman or a businessman enjoying a filling breakfast of one dairy pastry and one of meat.

Kanafe starts as a thin mixture of flour and water. This is dipped up in a brass strainer and rains out of it in a thin shower as it is swirled over an immense copper grill in a decreasing spiral. As the batter touches the hot metal it crackles and crinkles into long threads which almost immediately shrivel and squeeze themselves in toward the center as they flash dry. They are scooped up in crisp bundles which resemble loops of yarn. Later these wisps of pastry are spread out in layers to be filled like baklawa with cheese (mornings only) or cream (only in the winter). The most common form taken by kanafe, however, is a long twisted



Kul washkur, cut like tiny roses, means "eat and thank."

roll filled with nuts and simmered in butter, called pistachio twist (*mabruma bil fistuq*). The long curved twists make the most towering and spectacular displays in the shop.

Among the cookies there are *akras biajwy*, round with dates; *ajwa* or "writing," simply a cookie with cuneiform-type markings; and *ma'moul bil fistuq*, called "doing it with pistachio." *Wariyeba* is a crescent-shaped ring with one pistachio nut where the two horns meet. Though now sold throughout the year, it was traditionally eaten during Sha'ban, the month preceding the holy month of Ramadan. "It is the door of Ramadan and it lets us feel it is coming," Mr. Sama'an explains.

During Ramadan itself, the traditional cookie is *baraziq*. As recently as 15 years ago, according to Mr. Sama'an, it was eaten at no other time. Baraziq is a delicious cookie, crisp and flat and covered with oven-browned sesame seeds. At Ramadan baraziq is still sold in large quantities, while the total consumption of sweets in general doubles. Syrian Christians, too, have their traditional day for sweets: St. Barbara's Day, December 4. Formerly, Mr. Sama'an says, they ate only sweets prepared without butter on this holy day, but that custom has faded and baraziq, the sesame seed specialty of the Muslims, is now one of their favorites as well.

Mr. Sama'an is a generous man who knows his business well. When a box has been filled and weighed for a customer, he always offers an extra sweet to be eaten on the spot. When a foreign tourist enters the shop and has a hard time choosing, he offers a sample to hone the appetite. And what about him? Isn't he tempted to nibble at his wares all day?

"Not here in the shop," he replies. "I'm much too busy. But I usually take something home for my children and once I'm there ... well, I'm just like all Syrians. No matter how much good food my wife has prepared for dinner, there always seems to be that empty place in my stomach that nothing else will fill."

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ancient man goes to war

BY WILLIAM A. WARD

for every weapon, a defense; for every defense, another weapon...

In the spring of the year 1285 B.C. the royal army of Egypt marched northward into Syria to engage a powerful Hittite force in a battle that was to settle for several generations the long and bloody contest between the two empires for control of southern Syria.

The Egyptians, advancing on the city of Kadesh, some 16 miles southwest of modern Homs, had somehow permitted their four regiments to spread out so far along the line of march that when the lead regiment was making camp before the walls of Kadesh, the second regiment was still crossing the Orontes River seven miles away. The other two regiments were even further behind. Suddenly—as the Egyptians began to ford the river—the Hittites launched one of the great chariot attacks of ancient history. It demoralized the panic-stricken Egyptians and gave their enemies a swift, easy victory. For a few moments the power of mighty Egypt tottered perilously. But then the Hittites made a mistake. They paused to plunder the goods and weapons of the defeated army instead of pressing on. That gave the regiment at Kadesh time to march back to the river where, in company with some newly arrived allies, they saved the day.

In itself the Battle of Kadesh settled nothing. Neither side could claim a total victory. But the battle did result in a peace treaty that remained in effect for several generations and defined the boundaries of the Egyptian and Hittite spheres of influence in Syria and marks the establishment—probably for the first time in military history—of a balance of terror more than 3,000 years before anyone got around to coining a phrase to describe it. It also suggests an unsettling fact: that the survival of man and his empires has depended for a disturbingly long time on the efficiency of military strategy and the technology of weaponry.

In this modern age people suppose that with nuclear missiles man has achieved the ultimate in military weapons. But a careful examination of reliefs and paintings on the walls of ancient temples or of written documents of the past suggests that as early as the third millennium, men were certain that *they* had the ultimate weapon only to find that each time "the other side" was able to develop, first, a defense, and then a new weapon.

Military history actually begins with the Sumerians, a non-Semitic people who inhabited southern Iraq and who left the first detailed records of their armies. As early as the first part of the third millennium B.C. the Sumerians had forged strong city-states and could field armies of great power and versatility. As was true of most ancient armies, the backbone of the Sumerians

was the infantry. The Sumerian infantry was divided into light infantry companies, lightly clad mobile troops who fought with clubs, javelins and daggers, and heavy infantry companies, whose troops wore bulky clothing—as armor—and copper helmets and fought with a heavy short spear. But the Sumerians had developed some surprises for their enemies, too. One was a method of attack: they marched into battle behind a solid row of shields—thus anticipating Alexander's Macedonian Phalanx, by more than 2,000 years. The other surprise was a war chariot, the first known in history.

The Sumerian chariot was not the horse-drawn chariot that was to become so important later—the horse had not yet made its appearance in the Middle East—but a heavy cumbersome vehicle drawn by a team of four asses. It had two or four solid wheels made of three slabs of wood held together by cross-tenons on either side of the axle, and for "tires" had strips of leather or copper nailed in place with copper studs. Although it could not have been capable of swift maneuvers, it carried, besides the driver, a warrior who fought with spear, javelin and axe, and must have been for its day a formidable weapon.

It was fortunate that the contemporary Egyptians never met the Sumerians in battle. For although Egypt had created a brilliant civilization in the early third millennium B.C., her military forces would have been no match for the Sumerian phalanxes and chariots. The Egyptian army of this period consisted entirely of light infantry which wore no armor and fought with short-handled axes, throw-sticks and—the only weapon that might have given the Sumerians pause—bows and arrows. But the two empires never did clash and if the Egyptian military standards seemed primitive by Sumerian standards, Egyptian troops still managed to defend Egypt and to embark on limited conquests in Nubia, Libya and Palestine.

With those exceptions, however, warfare changed little in the next 1,000 years. Then, during the first half of the second millennium B.C., there occurred a revolution in warfare in which the armies of the ancient Middle East developed such advanced weapons, tactics and defences that they were not substantially altered until the introduction of firearms in the late Middle Ages. And the beginning of the revolution was the appearance of the horse-drawn chariot.

The horse-drawn chariot was as different from the Sumerian chariot as a pistol is from a muzzle-loader. It had spoked wheels and a light wooden frame construction and was drawn by two swift horses. It could charge quickly, maneuver easily and provide a mobile base of firepower which could be moved swiftly from one point on the battle-field to another—rather like the helicopters of Vietnam. Chariots were rarely used in either direct frontal attacks on advancing infantry formations or on other chariots. They galloped around the flanks and rear, disrupting these formations from a distance with javelins and arrows. They attacked directly only when the enemy troops had become disorganized or when it was time to deliver a final crushing blow to an army already in retreat.

The horse-drawn chariot came from the North. In the early centuries of the second millennium B.C., Indo-Aryan peoples speaking strange dialects akin to those of India, moved into northern Iraq and Syria, and

—with the chariot giving them an edge over the local people—established themselves as a ruling warrior-caste. The nations around them were quick to copy this marvelous new war-engine so that by the 16th century B.C. it was a component in all armies—with the result that military tactics had to be radically revised, sometimes in a most amusing way. One Egyptian general, faced with a huge mass of enemy chariots, broke it up by turning a mare loose among the stallions. Instead of charging the Egyptians the stallions went galloping off the field in pursuit of the mare and Egypt won another battle.

Other developments of this period affected siege tactics. While chariotry was invaluable in open battle, armies were more often engaged in tedious and costly siege warfare in which heavily fortified cities had to be taken by storm. Up to the first half of the second millennium B.C., tactics for breaching fortifications were straightforward and simple: under cover of concentrated archery fire, warriors raised scaling ladders against the walls, climbed them and tried to overpower the defenders at the top. Such tactics are

shown in Egyptian reliefs of the third millennium. But at the beginning of the second millennium the whole concept of siege warfare changed with the appearance of the battering ram.

This first battering ram was a long metal-tipped pole operated by three or four soldiers from inside a movable structure which offered an overhead shield from arrows and other missiles. Since walls were generally built of mud bricks, this was an effective means of poking a hole big enough to admit troops. Then, according to documents from eastern Syria, dating back to the 18th century B.C., there was still another development: siege-towers. These were movable towers from which archers, raised to the level of the city walls, could rake the defenders with arrows. In combination with scaling-ladders and battering-rams, siege-towers soon destroyed the advantage that defenders had always held over attackers.

Army engineers were not long, however, in developing answers to the siege-machines. Since the battering ram could breach the strongest walls, they developed a new type of fortification that made it virtually impossible for such machines to get near the walls in the first place. They sharpened the natural slopes of the mounds on which the fortifications stood, covered the slopes with packed earth and stone and coated them with plaster. At the bottom they dug a moat. The result was a smooth sloping surface surrounding the town, and ending in a deep ditch, sometimes filled with water. Since attacking forces first had to cross the moat, then move up a slippery plastered hill-side before they could reach the city walls, battering-rams and siege-towers were rendered almost useless.

For a time, these defenses restored the advantage of the defenders. Some commanders, in fact, did not

PAINTING AND DRAWINGS BY BRIAN SMITH

bother to attack strong cities directly any more, preferring to try and starve them into submission. One Egyptian general turned to trickery to take the powerful town of Joppa. Promising favorable peace terms, he withdrew his attacking army from the walls and sent a long train of basket-laden donkies into the town. Since the train supposedly bore gifts and supplies, it was allowed to enter the gates. In an action reminiscent of the Trojan Horse and Ali Baba, armed troops sprang from the baskets and Joppa was quickly added to the Egyptian empire.

But if the new tactics reduced the value of siege-machines for the Egyptians, they only stimulated the armies of Mesopotamia to invent even more ingenious methods. When confronted by moats, for example, the Mesopotamians simply filled them with earth and rubble. Then they constructed ramps of wood or brick right up to the walls and pushed the siege-machines up the ramps into position. By the time the Assyrian Empire had arisen in the eighth century B.C., such techniques were so perfected that the Assyrians rarely failed to take a city.

From the 16th to the 12th centuries B.C., when the Egyptians of the Nile Valley, the Hittites of central Turkey and the Mitannians of northern Syria and Iraq struggled almost continually for possession of Syria, warfare changed significantly again. Under the stress of such unremitting demands armies had to organize more efficiently—nowhere more effectively than in Egypt.

Prior to the 16th century B.C., Egypt had no permanent standing army. Much as levies of peasant-soldiers were raised in medieval Europe, the earlier Egyptian kings relied on their district governors to provide companies of part-time troops when the need arose. But after the 16th century, a whole new concept was introduced—the permanent standing army made up of professional soldiers, led by seasoned and experienced officers. Many of these professionals received specialized training and were then formed into special units: marines who fought at sea, garrison troops to man border stations or fortresses in the provinces, or shock troops who led infantry charges. There were even companies that specialized in the use of a particular weapon, such as the throwing axe.

The rise of professional soldiers resulted in an organizational structure as complex as that of many modern armies. The main tactical combat unit was the infantry company of 250 men. This was subdivided into platoons of 50 with each platoon divided into squads of 10. Companies, in turn, formed regiments —some as large as 5,000 men—and several regiments formed an army. Attached to the infantry units were squadrons of chariots, the number depending on the circumstances of the moment, and contingents of mercenaries, drawn largely from the Nubian and Libyan provinces.

To administer, supply, train and lead a professional army of this kind also required a large corps of non-combatants—to keep records, arrange and transport enormous quantities of supplies and manufacture and repair weapons.

In this same period, weaponry and equipment were steadily developing too. The Hittites, for instance, had developed a much more effective chariot. Where the Egyptians assigned just two men—driver and warrior—to their chariot, the Hittites assigned three, the third being a shield-bearer who could also fight. With three men and a large chariot they could thus use it for frontal assaults.

Other weapons developed in the second millennium, included the sword, in its many varieties, of which the most popular was the sickle-sword. With a sickle-shaped blade that gave a long curved cutting and chopping edge, and a hilt and blade that was stronger than an axe, because it was cast in one piece, the sickle-sword became a standard hand weapon in every army.

One of the most decisive new hand-weapons was the composite bow. Made from several materials glued together—wood, animal horn, tendons and sinews—this new type of bow had a range of three to four hundred yards. Its impact on warfare was equal to that of the English longbow and the crossbow of medieval times.

Another innovation was scaled body armor. Although in earlier times, helmets and heavy clothing offered some protection, the extensive use of more powerful bows and swords made more adequate covering necessary. Chariot warriors were especially vulnerable since they were more exposed and could not easily carry shields—which is why body armor of bronze scales sewn on cloth is commonly associated with charioteers. The bulk of an army went without armor; indeed it would not have been practical. Ancient armor coats were quite heavy and a foot soldier would have found it more of a drawback than a help. Charioteers rode into battle, so the excessive weight of armor added little discomfort while providing protection. The infantry-man, whose life often depended on quick reactions, was usually better off without it.

In the first millennium B.C. these centuries of development came to a head along the Tigris River with the rise of the fierce, wholly militaristic Assyrian

Empire whose soldiers, in Byron's words, "came down like the wolf on the fold," and swept through the Middle East in a swath of blood. The Assyrian armies of the eighth to the sixth centuries B.C. were probably the most efficient fighting force of ancient days. Rigorous training and yearly maneuvers, whether there was to be an actual campaign or not, kept these troops in constant fighting trim. And in the field, the Assyrians brought the integrated use of the various combat elements to a level never reached before. Cavalry units rode in support of the chariots and attacked the enemy flanks. Infantry regiments, now as liberally equipped with helmets and armor as their mounted comrades, attacked in concert: assault troops, archers (protected by shield bearers with shields taller than men) and slingers, who could hurl stones with stunning force. In addition, the Assyrians marshaled the war machines of earlier times into squadrons to demolish whole sections of a fortification at one time. The combined knowledge gained in centuries of testing and improvement were thus concentrated in one army that was for a time invincible—until Assyria's own vassal states, having learned well the methods of their mistress, turned and destroyed her.

Thus did ancient man wage war, and thus did he learn, as have all his descendants, that for every weapon there is a defense and for every defense another weapon. From the graves of countless unknown soldiers and the battered remains of ancient cities, we of the modern age can learn that there is nothing new in the basic art of warfare, only improvements.

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