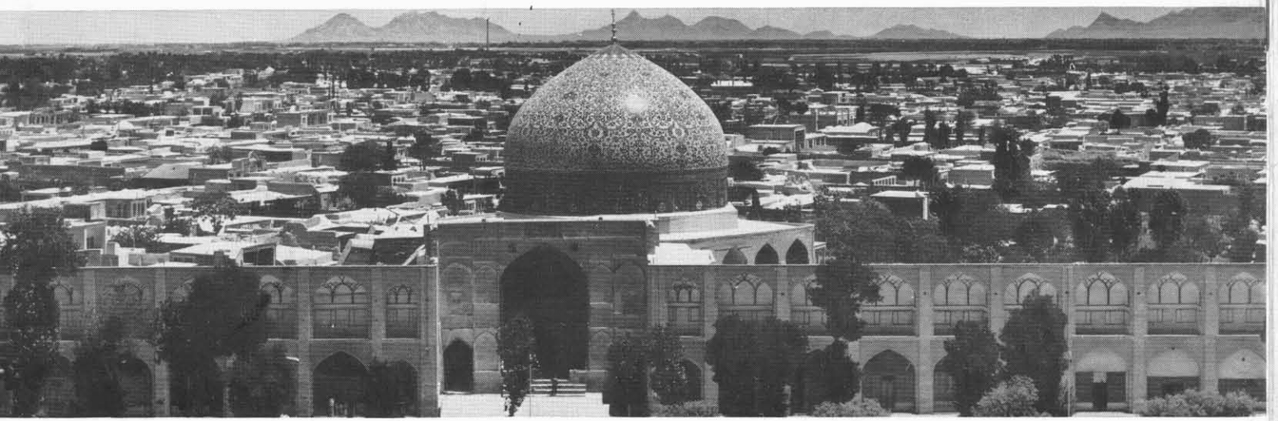
ARAMCO WORLD
505 PARK AVENUE, NEW YORK 22, N. Y.

Postmaster — Form 3547 Requested
Please Include Key Number



Isfahan's cypress gardens and tiled minarets rise to an azure sky.

ISFAHAN IS HALF THE WORLD

together, and the two Englishmen loitered and browsed.

Block printers stamped designs by hand on lengths of cotton laid out on the ground. Metal workers deftly hammered silver inlay into copper trays. In cell-like rooms, painters bent double over ivory plaques, engraving miniature polo players and horses on slates of mother-of-pearl.

Silks, wools, daggers, gems, copper work, silver filigree, wood inlay, drugs, herbs, henna, spices, melons so fragile that when they were ripe the jar of passing hoofbeats would split them open on the vine — all of these and much more were on display at colorful stalls. But perhaps most glorious of all were the muted rainbow hues and silken textures of the wonderful rugs that had made Isfahan world-famous.

The cook stalls stood in a group at the northern end of the market, and the atmosphere was spiced with the odor of hot savory food.

"Not rice!" exclaimed Herbert fervently.

His companion laughed. "Well, it is the staple here. We eat rice-with-onion, rice-with-garlic, rice-with-almonds, rice-with-mutton, rice-with-saffron, rice-with-tumeric, rice-with-raisins, and call each a different dish. But here, too, are hard-cooked eggs, salads, goats' flesh, and pheasant, if you've a taste for it. Myself, I'm for grilled camel, as I said."

"Order for both," Herbert agreed.

As they ate, the young man listened wide-eyed to the East India agent describe the experiences of his year in Isfahan. He told of his ride on a fine Persian stallion down the peaceful stretch of shady avenue that led to the fruit forest. He rhapsodized about the forest itself with its many trees: pomegranate, chestnut, peach, apricot, cherry, plum and pear, its red and white roses, its terraces and fountains and singing birds.

He described his visit to Julfa, the ancient Armenian village beyond the river, where the church was hung with treasured oil paintings and the museum boasted relics of antique artisanship. Along the way he saw the strange mosque of the "Shaking Minarets," where the custodian tilted the twin minarets until visitors shuddered with vertigo. And finally he visited the hilltop ruins of a Zoroastrian fire temple, where Magi had tended the sacred fire for many centuries. From its skeleton-like circular tower he looked out over Isfahan — its green gardens and turquoise minarets rising to an azure sky.

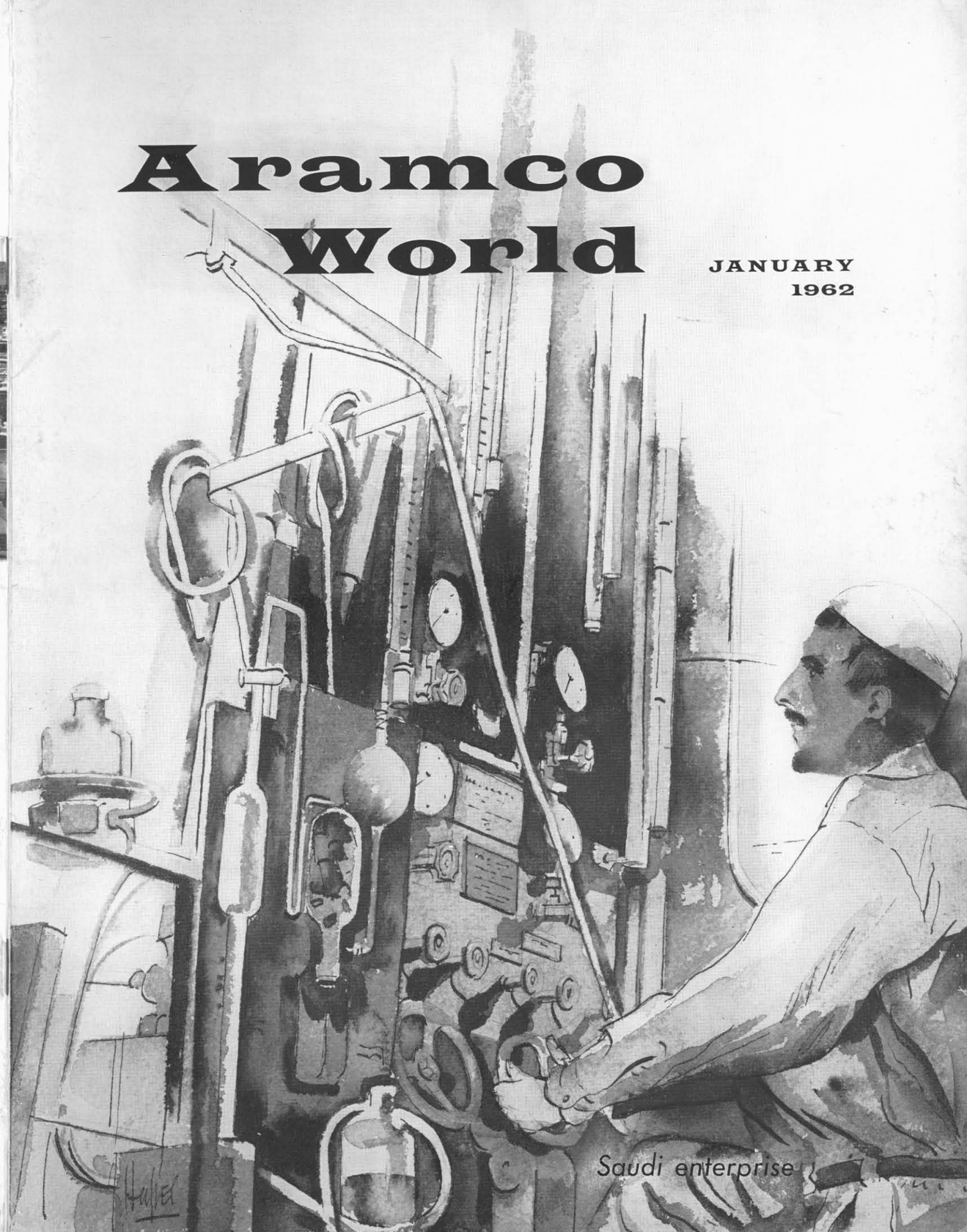
In the evenings, the agent watched at the bazaar gate as drummers and woodwind players lulled the sun to sleep. Across the Maidan, on a clock pavilion tower, wooden animals and men bestirred themselves on the hour in a mechanical parade to announce the time. At the Great Shah Mosque, its blue dome half darkening, half glinting in the sun's last rays, the *muezzin* called the evening prayers as men hurried home at the day's end.

As Thomas Herbert listened to his agent friend recount the wonders of the Persian capital, the first vague outlines of a book began to take shape in the young Englishman's mind. Perhaps his countrymen at home could see and believe this fairy tale city if he painted its grandeur in words. His book, published in 1634, became a classic and was translated into French and Dutch under several titles. It depicts Isfahan at the height of its glory under Shah Abbas I. The Shah died in 1628, the very year that Herbert came to Persia and began planning his book.

Sacked by the Afghans some hundreds of years later, Isfahan never regained its place as an important world capital. But its famous craftsmen are still turning out their exotic wares much as they did when Isfahan was indeed "half the world." ■

Aramco World

JANUARY
1962



Aramco World

JANUARY

1962

VOL. 13

NO. 1

PICTURE CREDITS: Pages 3, 4, 5, 6, 7 – Aramco photos by B. H. Moody. Page 10 – Drawing by Harold D. Hoopes. Page 11—The New York Public Library. Pages 13, 14, 15 (top), 16 (top), 17 (top left, bottom)—Aramco photos by Khalil Abou El-Nasr. Pages 15 (bottom), 16 (bottom), 17 (top right) – Aramco photos by Abd al-Latif Yousef. Page 18 – Culver Pictures, Inc. Pages 20, 21—Aramco photos by B. S. Bates. Page 22 – The Bettmann Archive. Pages 23 (left, center), 24 – Hossein Sangui. Page 23 (right) – Philip D. Gendreau.

A publication of the Arabian American Oil Company—A Corporation—505 Park Ave., New York 22, N. Y.
T. C. Barger, President; J. J. Johnston, Secretary; E. G. Voss, Treasurer
Issued by the Public Relations Department, T. O. Phillips, Manager

Abdul Rahman al-Othman (right), president of "Si Gas," and Aramco buyer Hassan Munif.

The OTHER Discovery

PROBLEM: ***Aramco wanted to go out of business (as grocer, druggist, merchant chief)***

PROBLEM: ***Saudi Arabs wanted to get into business***

SOLUTION: ***Use of a hidden resource***

ABOUT A MILE up an asphalt work road that climbs in an easy curve away from the main gate of Dhahran there stands a weathered bronze plaque. The site is cupped in a cluster of wind-riven limestone jebels that rise gaunt and bleached in the sun.

The bas-relief letters on the plaque, abraded by the flying sand of the long summer winds, spell out a legend that reads in part: "Dammam Well No. 7 . . . In Drilling This Well, The Arab Zone Was Discovered, Which Made Possible The Commercial Development Of Oil In Saudi Arabia . . . Initial Production – 1,345 BPD / barrels per day / – August 31, 1938."

That historic discovery revealed natural resources of inestimable value and placed Saudi Arabia among the great oil nations of the world. These developments have, of course, become well-known. The oil reserves of Arabia are now discussed by children in geography classes.

But there was another important discovery made by the pioneers of the Arabian American Oil Company in Saudi Arabia – the Saudi Arab. In him the oil men found rich human resources upon which a stable and progressive mod-

At al-Khobar headquarters of "Si Gas," businessman Abdul Rahman al-Othman keeps track of the company's rapidly growing operations.

ern economy could evolve in eastern Saudi Arabia. (The "economy" discussed in this article is that of the Eastern Province of Saudi Arabia. The trading firms in the Hijaz, the western part of the country where Mecca, Medina and Jiddah are located, have long dealt in world markets.)

This discovery was not altogether inevitable. It implies in the oil men certain attitudes that resulted in realistic open-mindedness and the inclination to discern the wide scope of Saudi gifts, some of which were obscured by the ways and needs of an unfamiliar culture.

The story and implications of this other Aramco discovery in eastern Saudi Arabia are known only to a few men who are experts in economics or Arab culture – not many of the oil men themselves know it.

In *Hands Across Frontiers,* a survey of technical assistance around the world, Carleton S. Coon, a distinguished anthropologist and authority on Middle Eastern life, writes of the "intelligence, energy, and capacity for hard work under adversity . . ." of the Saudi Arab. Oasis and desert have bred and sharpened these characteristics. The merchant of the suq and the desert nomad have brought special qualities to their country's human resources.

Having made their second discovery, the Americans began to improvise ways to guide Saudi initiative into channels of sound economic development. Complex problems arose. One solution, already tried by others in similar circumstances, would have been for the company to set up a few chosen Saudis as import agents for selected Aramco supplies. The company would, of course, have gone on doing the actual purchasing work. It would have been an easy way out.

But along with their technology the oil men had imported into Saudi Arabia a tough-minded way of running a business. And they intended to share with interested Saudis all they knew about the most efficient way to start a business, the most cost-conscious way to maintain it and the most market-conscious way to expand it.

Aramco had gone to Saudi Arabia to find oil. Under the terms of its Concession the company was committed to the diligent development of the country's oil fields. It was also committed to carry out its obligation in accordance with first-class oil field practice.

From the beginning of its costly venture, the company held stubbornly to a simple fact: it was an oil company. It didn't want to get involved in a lot of other businesses. However, it faced a paradox.

In order to do its job well in a distant part of the world, Aramco had to become a grocer, road-builder, druggist, chef, school teacher, corner movie house operator, dry cleaner, laundryman, industrial gas manufacturer and community planner. It got thoroughly involved in around-the-world purchasing. At one time it even operated the world's largest private air fleet.

But Aramco looked forward to the day when it could gradually go out of business as a grocer, druggist, merchant chief. And the best way out, the company believed, was to encourage the development of a rational Saudi economy.

The company policy wore different hats, as it were, as time passed. It started out with the informal after-hours efforts of a few men who had arrived in the vanguard of geologists and drillers in the middle 1930's. The ringleader of the group of business missionaries was William Eltiste, now retired.

A few years later the policy became explicit in a program that aimed to stimulate Saudi industrial, mercantile and agricultural progress. Enterprises that would fill the needs of Saudi consumers, actual and potential, as well as meet some of the company's supply requirements were emphasized. Cautious realism was the order of the day for the then new Arab Industrial Development Department. Nobody pushed – but advice was always available, as well as indirect hints.

The results are to be seen in electric power plants and machine shops, construction yards and bonded warehouses, produce vendors' markets and refrigerated storehouses, chemicals plants and drug stores. And the company has moved ahead in its withdrawal from non-oil businesses.

There are several ways of measuring the results of the progress of Aramco withdrawal and Saudi growth. The best index is the rising volume of the company's local purchases.

The company has established a special department – Local Purchasing – to handle this fast-growing activity. Two figures show the rate of growth: in 1954 Aramco bought $511,141 worth of items from Saudi suppliers; in five years the total of such local purchases had jumped more than tenfold.

The other discovery that American oil men made in eastern Saudi Arabia has no bronze plaque. The shipping manifests, warehouse receipts, invoices and inventories of Saudi businessmen are witness enough to the once obscure human resources the Aramco pioneers discerned.

If a visible witness to the discovery is needed, the tall landmark processing towers of the Saudi Industrial Gas Company at al-Khobar tell a story in themselves.

On a recent Tuesday morning the gate bar at the entrance to the large plant yard of the Saudi Industrial Gas Company swung high. A red stake truck moved slowly out the driveway. It was 8:21 a.m.

Fifty steel cylinders stood upright in the flat-bed of the truck. They were filled with oxygen, acetylene and carbon dioxide. Some were painted white, the distinguishing color of a medical oxygen "bottle." Each cylinder had a number and a history; each had been pressure-tested within the past two years. The safety profile of every bottle on the truck was in the company files.

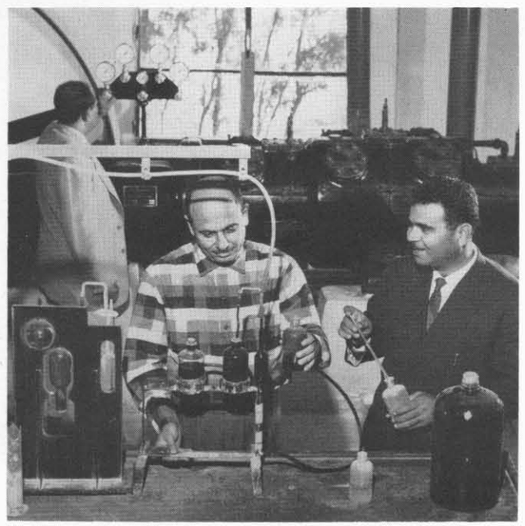
Brilliant winter sunlight glanced off the low hummocks of driftsand in the plant yard. The day shift had taken over the round-the-clock production of oxygen, the company's leading product.

Near the back of the plant site another unit turned out acetylene. The cylinders were being filled under a water bath. The floor drains in the filling room carried off the continuous flow. Outside, a group of workmen shoveled away sand and marl to prepare the ground for an addition to the acetylene building.

At the front of the plant area (the processing units are generously spaced for safety) the compressors in the carbon dioxide building pumped away. In a day or so the carbon

"Si Gas" manager Abdul Karim Alami inspects oxygen tanks being readied for shipment to Aramco Health Center in Dhahran.

William J. Hayes of Aramco's Local Purchasing office works closely with suppliers like the Saudi Industrial Gas Company.



Sharif al-Sharif (left) and Noureddeen Mansour test the purity of "Si Gas" oxygen.

dioxide bottles would be releasing bubbles into soft drinks.

The truck turning onto the highway was one of several leaving the plant on deliveries. It turned left and rolled past the airport intersection, past a long rise of quarried outcroppings and on into Dhahran.

There it made its daily round of deliveries and pick-ups; the big steel bottles are a costly investment. The truck stopped at Aramco's maintenance shops, reclamation yard, boiler house, construction yard – wherever oxygen and acetylene were being used for cutting or welding. Once in a while it dropped off a cylinder of nitrogen along the line for use in purging boilers, pipe lines or other systems.

Then it delivered the white bottles to the Aramco Health Center where the high-purity oxygen performs its vital medical mission.

About the same time, another Saudi Industrial Gas Company truck was covering a daily route in Ras Tanura and Abqaiq where it delivered its supply of industrial gases for use in Aramco's refining and producing operations.

This was just part of the morning's work for *Si* (pronounced *sigh*) *Gas*. The nickname is American shorthand, the breezy counterpart of *Pennsy*, *Chevy* and *3M*. It is based upon the first two initials of the company.

Meanwhile, a glistening new Henschel drop-side truck – cargo capacity: 140 cylinders – was proceeding north along the coastal roads and trails leading to Kuwait. There it would deliver to the Kuwait branch of the company a supply of bottles to service a huge construction program in the Neutral Zone immediately south of Kuwait along the gulf coast.

Three of the big blue German trucks were being run as a sort of supply conveyor belt to Kuwait and back. In all, 16 vehicles – autos, trucks and buses – are owned and operated by *Si Gas*. Deliveries take the trucks to Hofuf in the vast al-Hasa Oasis, to Qatar (like Kuwait an export customer), to Doha, and to the Saudi Arabian national capital, Riyadh, where the company maintains a small inventory.

Offshore export shipments to Bahrain are made in barges or coastal vessels.

Thus, the morning's work was far-flung.

In his plant headquarters at al-Khobar, Abdul Rahman al-Othman, the president of the Saudi Industrial Gas Company, made plans to fling his net even wider and also to bring in more business from his present markets.

His company sells "A Complete Gas Service." This includes welding and cutting torches. He also imports ammonia, nitric oxide, argons and hydrogen. Not long ago the TWA office at the Dhahran Airfield hinted that it might want to fly a large fixed balloon for advertising purposes. Al-Othman had the hydrogen ready just in case.

The gas plant went under construction late in 1954. By January of 1955, oxygen production had started. In the spring, acetylene was being processed, and during the summer, the carbon dioxide unit went into production.

Before 1955 was out, Aramco was able to shut down its own plant and get out of the oxygen business.

The new company had to depend on Aramco's business to get started – 95 per cent of its oxygen went to the oil company. Now it has other markets and Aramco's requirements take up only about 50 per cent of its increased oxygen output. Aramco still takes most of the acetylene, but the Saudi-owned Pepsi Cola plant in al-Khobar buys most of the carbon dioxide.

Aramco's Local Purchasing Department at Dhahran now buys 3,000 cylinders of oxygen, 4,800 cylinders of acetylene, and 450 cylinders of carbon dioxide, plus about 50 small medical oxygen bottles, a year from *Si Gas*.

The carbon dioxide business is seasonal – the CO_2 unit runs about four days a week in the summer and about one day a week in the winter, following the fluctuations in soft drink sales.

Until recently, all Aramco deliveries were made into a storehouse for redistribution by the oil company. Now the gas plant truck delivers right to the job, wherever the gas is used. A slight change, but a significant one; it reveals a concept that crops up frequently in Abdul Rahman al-Othman's discussions – *service*.

"We want to give more and more service now that the Saudi Industrial Gas Company is getting older," he says. "Service will help us grow."

As his company grows, al-Othman faces a problem that is familiar to businessmen anywhere: the lack of available qualified men to take over management responsibilities.

"A man with this special feeling for business is hard to find," he says. "Of course, this will change because the schools will train our young men to start out with this special feeling for business problems and methods. Well, we are expanding *right now*. I need experienced men today. The trouble is that other businessmen want them too. And so does the Government. Oh, the competition is very great. So I have sought Government agreement to bring in several experienced men from other Arab business centers in Egypt and Lebanon. Just for the time being, of course."

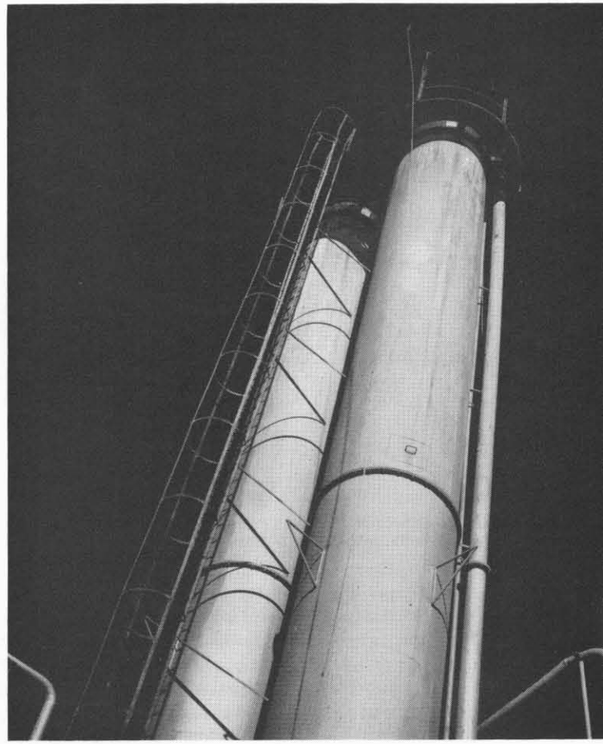
Al-Othman has 90 people on his payroll at present. Nearly all are Saudi Arabs, with one notable exception. A German chemical engineer manages the processing plant.

The Saudi Industrial Gas Company is a complex enterprise which daily supplies the requirements and meets the exacting standards of its major customer – Aramco. It makes and sells valuable industrial and medical gases and provides complete service for Saudi industrial gas users – construction jobs and soft drink plants. It has established a thriving branch in Kuwait. Day by day it broadens the base of its business so that it will be even less dependent upon Aramco as time passes.

Such an enterprise could not have evolved so quickly except for Saudi initiative in applying a cost-conscious way of doing business.

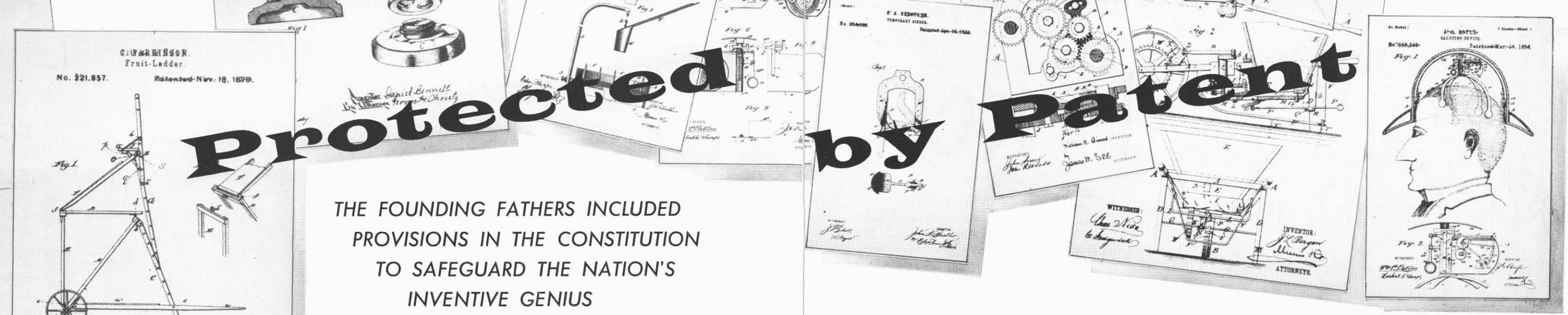
Initiative – the word crops up again and again in the discussion of men who have worked closely with ambitious Saudis. It is a subtle human quality and it is hard to evaluate. But buried away in annual operating reports and other Aramco data are figures that sketch a clear picture of the way Saudi initiative has enabled Aramco to expand its local purchasing. ■

(This is the first of two parts. The second part will appear in the February issue.)



"Si Gas" towers soar above the desert, proud markers of the economic upswing in the Eastern Province of Saudi Arabia.

Protected by Patent



Functional fruit ladder and handy self-tipping derby (far right) were patented in late nineteenth century.

THE FOUNDING FATHERS INCLUDED PROVISIONS IN THE CONSTITUTION TO SAFEGUARD THE NATION'S INVENTIVE GENIUS

ONE OF THE more important dates in human history is November 1, 1879. It was then that a United States patent was granted for a device described by its inventor as "a light-giving body of carbon wire or sheets arranged in such a manner as to offer great resistance to the passage of electric current." The carbon element was to be enclosed "in a burner of great resistance, in a nearly perfect vacuum." The patent was, of course, issued for Thomas A. Edison's incandescent bulb. By creating for the first time a practical household application for electric power, the invention wrecked old industries and called new ones into existence.

Not all patents have this great an effect. Just before the turn of this century, a young man waiting for a streetcar in Washington, D. C. picked up a lady's hairpin and passed the time by bending it into odd shapes. The world has not been drastically altered by the paper clip that resulted.

Nor, as a matter of fact, do all patented items turn out to be even remotely useful. Six years before Edison invented the light bulb, U. S. Patent No. 140,245 was issued for what its inventor called a "scrap-book that is, so to say, self-pasting." Its pages were "entirely coated with mucilage." To paste down a clipping, the user wet a portion of the page and pressed the clipping onto it.

The idea was simple, ingenious – and useless. Glues of the day were affected by humidity in the air, and the pages of the book stuck hopelessly together. A few books were produced before the flaw was noted and the book was withdrawn by its inventor, Mark Twain.

There is high irony in this incident. Without an effective copyright law during most of his lifetime, Twain's writings were pirated freely by publishers who sold his books around the world and paid him nothing. His hopeless scrapbook, however, was so well-protected by patent law that no one could make even a single copy for private use without risking a crippling lawsuit by the inventor!

Patent laws, which protect the ludicrous as well as the earthshaking, guarantee an inventor the fruits of his labor and ingenuity by granting him a monopoly for a limited number of years on the use of his invention. This guarantee of an inventor's right to profit from his invention was considered important enough to be written into the Constitution itself. Article I, Section 8, authorizes Congress to "promote the progress of science and the useful arts by securing for limited times to . . . inventors the exclusive right to their . . . inventions."

This seems surprising until it is remembered that every speck of material progress the world has ever made is the result of someone's ingenuity. The world's most basic tool, the lever, was invented. So was the wheel. So was the first primitive boat, the first cape made from an animal's skin, the first shelter, axe, knife, plow and hollow pipe.

However, it is only since the development of property rights, relatively recently in human history, that anyone ever thought of protecting an inventor's right to his invention. The United States was the first nation ever to recognize this right in its Constitution, but at least one law for the protection of human rights is as old as history. Sybaris, an ancient Greek city-state known as a center of luxury, had a statute providing that "if any . . . cook invent a peculiar or excellent dish, no other artist may make it for one year."

The idea seems to have lain dormant until the fifteenth century when Venice, in order to stimulate the development of new trade products, established a code guaranteeing inventors a monopoly on their ideas. From Venice the idea spread through Europe, and in Elizabethan England old statutes providing for "letters of patent" were revived. These became the basis for a Statute of Monopolies enacted in 1623, and this Statute in turn became the foundation of patent law as it is known today.

The first patent law in the United States was passed in 1790 when a Board of Commissioners for the Promotion of Useful Arts was established as part of the State Department. It was the duty of this board to consider patent applications, and in its first year it granted exactly three.

In 1802 the law was modified and the first Patent Commissioner, Dr. William Thornton, was appointed by President Madison. Under Dr. Thornton's regime, working models of all inventions had to accompany patent applications. Some hundreds of these models had accumulated in a frame building in Washington, D. C. when the British came to burn the city during the War of 1812. Through a combination of blind courage and wisdom, Dr. Thornton managed to save this depository of American ingenuity.

Standing on the porch of his building, he refused to give way to the troops who had come to burn it. "Stop!" he shouted and, despite his emotional stress, added: "Don't burn this; it is the emporium of the Arts and Sciences in America!"

Confused by the white-haired gamecock standing alone in a burning city to defy the might of the British Army, the officer in charge took Thornton to his colonel, who listened to Thornton's arguments and gave the order to spare the building. Unfortunately, most of the models Thornton saved that day were destroyed later by accidental fires.

Since Thornton's day the Patent Office has grown considerably. Long since transferred from the State Department, it is now a division of the Department of Commerce. Since its founding the office has granted just under 3,000,000 patents. When the newest commissioner, David Ladd, took office in April of 1961, the Patent Office issued about 1,000 patents a week and had a backlog of 200,000 applications on products marked "Patent Pending."

Working models of inventions have not been required since the fire of 1870, simply because there is no place where all the models could possible be stored with safety. Patents are issued today on the basis of a written description of the device and a technical drawing produced in compliance with rules designed to ease the processing of applications. A small fee must accompany each petition. Properly filed petitions are checked against the vast store of existing patents. This job is handled by specially trained lawyers and examiners, and it may take weeks of effort before any single patent can be cleared.

If an invention is found to be clear and, in the opinion of the commissioner, workable and useful, a patent will be granted. When it is found that two or more inventors have applied for a patent on the same invention, an "interference" is declared until the Patent Office can determine who actually invented the device first, no matter who applied first for a patent. Patent is granted to the first inventor.

Patents are issued to men and women of any age or nationality. When issued, a patent guarantees its owner a monopoly on the use of his brainchild for 17 years. Once a patent is granted, the responsibility of the Patent Office ends. An owner may produce his invention or not, as he sees fit, and it is up to him to protect his rights to the invention by suing anyone who copies or infringes it.

Outright infringements are rare. What often does happen is that inventors have no idea of the real value of their inventions and give up their rights to them for insignificant sums. A classic case is that of a 14-year-old Texas schoolboy who, in 1940, developed a Chinese tea rose that had no thorns. The boy told a local rose grower who knew that under an act of 1930 plants could be patented.

The rose grower bought some specimens of the plant for what seemed to the boy and his father the very generous price of $250. The grower patented the rosebush in his own name and sold hundreds of thousands of specimens in the next two years. In 1942 he sold his rights to the plant to an Indiana nursery firm for $10,000!

At the end of the 17-year period, a patent becomes public property and the invention may be copied or used by anyone. Though an extension of the 17-year term of a patent is possible in theory, it can be granted only by act of Congress. To protect the public against harmful trade monopolies, no extensions have been granted in the last 100 years.

Historically, the Patent Office has always interpreted broadly its power to grant patents for "any useful art, manufacture, engine, machine or device, or any improvement thereon not before known or used." The reason underlying the policy is obvious. If something is really new and original, there may be no existing standard for judging whether or not it can work, or whether or not it will be useful.

Though this policy of broad interpretation has without doubt helped move the world ahead, it has also left room for patents on many objects that seem to have been devised only to devil mankind. A prime example is a bed designed to arouse "people difficult to arouse by other methods." At a pre-set time the bed sets off a jangling bell. It jiggles and extends a mechanical arm from its headboard to tug at the sleeper's hair. Just in case these measures fail, the bed then tilts at a 45-degree angle and dumps its occupant.

There is no evidence that this infernal machine was ever produced or marketed, but the patent for it was granted 50 years ago, which means it is now in the public domain and anyone may manufacture it – if anyone cares to! ■

FIRST TOURIST IN THE MIDDLE EAST

There were no travel agencies in 440 B.C. to smooth the path for Herodotus of Halicarnassus, whose on-the-spot reporting made him father of travel journalism

ON ONE BRIGHT September day a celebrated traveler and writer from the West stood on the banks of the Nile and listened as a group of Egyptians described to him the wonders of their country. From time to time he glanced at the map in his guide book to make sure that he was following them accurately. Repeatedly he interrupted with pertinent questions about Egyptian antiquities or local customs or the latest crisis in the Middle East. Which Pharaoh built this particular pyramid? How tall was that statue? Was last season's harvest sufficient or would food have to be imported by the government?

Nothing escaped the attention of this visitor. Back in his room he industriously set down his facts and his impressions in an elaborate file of notes, for he was gathering material for a book on the places he saw and the people he met along the way.

Is this, perhaps, John Gunther, about to take his readers "inside" the Middle East? Or Sacheverell Sitwell, preparing another sensitive, urbane account of his journeyings to the far and colorful corners of the globe?

No, the reference is to the predecessor of both Gunther and Sitwell, and indeed of all those who practice the art of travel writing. The year is 440 B.C., and the individual in question is the greatest tourist known to history—Herodotus of Halicarnassus.

There may seem to be a touch of levity in calling the classical Greek historian a "tourist," for he hardly matches the popular conception of the species—the wide-eyed innocent abroad clicking a camera at everything the guide points out. But then the noted tourists of 1962 are not identical to this type either. Gunther and Sitwell fit what they see into a framework of extensive knowledge. So, too, did Herodotus.

When he explored the Middle East, he was never haphazard. He carefully planned his route in advance and just as carefully mastered the background material available to him in Athens. He checked the maps, read the written sources, consulted the natives of Egypt and Persia who happened to be in Greece, sounded out Greeks who had been in Libya and Babylonia, talked with sea captains who knew the eastern Mediterranean as well as they knew their home port of Piraeus, and examined exotic imports ranging from Phoenician dyes to Arabian spices.

To say that Herodotus carried a "guide book" on his trip to the Middle East is no exaggeration. He possessed a copy of the best travel manual of his time: *The Map of the World* by the Greek geographer Hecataeus, a portfolio of charts with explanatory text alongside—a traveler's atlas of the fifth century B.C.

All the arrangements for his journey Herodotus had to make for himself. Tourism was a do-it-yourself affair in those days: no tourist agencies, boat trains, sight-seeing buses or couriers waiting at the station. But all the necessities of tourism could be had en route as long as the traveler took along the one indispensable item—money. Instead of on a book of travelers' checks, Herodotus relied on a jingling bag of gold and silver coins.

To cross the Mediterranean, he bought passage on a Greek merchantman trading with the Middle East. Egypt was his first destination, and doubtless the captain of the vessel put him ashore at some point on the Nile delta. His tour of the Land of the Pharaohs was made on foot in the cities and on horseback or chariot in-between. At night he would bargain for a room with an Egyptian family. He stayed at "boarding houses" of this type across the Middle East from Memphis to Babylon.

No more than any modern tourist would Herodotus miss a voyage up the Nile. He gave a lively description of what it was like to be aboard the boats that plied the historic river—solidly built wooden vessels of several tons, driven by poles and oars and even equipped with sails. Over on the Euphrates he sailed in very different boats—primitive coracles of skin stretched across a half-sphere of wood: no oars or sails, just a turbulent ride downstream and a long walk back on the bank.

Herodotus may have traveled up the Mediterranean coast by sea. When, however, he struck inland toward Mesopotamia and Persia, he had the discomfort of long jolting horseback rides, although he was able to enjoy the comparative ease of a coach-and-pair on the Royal Road that ran 1,500 miles through the Persian Empire from Sardis to Susa.

His tour took him many months. He was constantly on the move, bustling around the places of greatest interest, residing in humble homes for a night or a week at a time, eating beef and barley in Memphis, shellfish in Tyre, baked camel in Persia and wild berries whenever he had to pause in mid-journey.

It was a test of will and stamina. Herodotus survived the test. About 40 years old at the time, he was a strongly built individual, taller than average, with a luxuriant beard and an expression in his eyes betokening intelligence and character. Not the kind of man to be defeated by hardships—especially when he had so many foreign lands and strange peoples to see.

Herodotus was the best kind of tourist in the sense that he was willing to see specific virtues in the foreign and the strange. This feeling comes out most obviously in his treatment of Egypt, where he was struck by the immense antiquity of the land and by the primeval wisdom of the scribes with whom he talked in Memphis and Sais. Comparing the differing methods of keeping track of the sun on the calendar, he confesses: "In my opinion the Egyptians mark the divisions of the year much more sensibly than the Greeks, who intercalate a whole month every year, while the Egyptians, dividing the period into twelve months of thirty days each, add but five extra days every year, so that the cycle of the seasons returns in a uniform sequence."

Philosophical, Herodotus is also anecdotal. For over two

At one end of the 1,500-mile-long Royal Road lay Susa, capital of Elam, where Herodotus visited the enameled palace of Persian king, Darius I.

FIRST TOURIST IN THE MIDDLE EAST

millennia countless readers have found this attribute his most beguiling charm. Everyone knows his story of Croesus and the Oracle – how the King of Lydia was informed that if he crossed the Halys River and attacked the Persians, a mighty kingdom would fall; how Croesus took this as an omen of victory, crossed the river, and met Cyrus in a decisive battle; and how Croesus found in defeat that the Oracle had really prophesied the fall of his own kingdom. Gems like this sparkle through the narrative, giving color and brilliance to the sober roll call of nations and dynasties.

Herodotus occasionally has been criticized because some of the stories he repeats appear to be incredible. In truth, he is almost a model of levelheaded incredulity, no more naïve about the mythological and the absurd than most of the eminent thinkers of Greece and much less given to improbabilities than some modern writers. Every travel writer might well subscribe to the warning of Herodotus: "I must set down what I have been told, but I am not obliged to believe all of it."

With regard to the possible but unverified, Herodotus usually makes it clear that he is giving secondhand evidence to which he has not been an eyewitness. On one notable occasion he emphasizes the skepticism of his informant. Recounting what he heard about the source of the Nile from a scribe in Sais, he states in so many words that the scribe entertained an amused doubt as to the existence of a bottomless fountain in the hills south of Egypt.

When he comes to marvels like the phoenix, which he heard about in Heliopolis, he is inclined to accept the reality of the bird but not its 500-year longevity or its pious funeral rites for its parents in the Temple of the Sun. His belief in the flying serpents of Arabia is fair enough, for there was nothing preposterous in their description. They might have existed as surely as the crocodiles that he himself saw swimming in the Nile.

Wherever Herodotus stops in the Middle East, he tries to capture in words the salient characteristic of the place, the atmosphere that makes it unique, the thing to look for when anyone visits it. He is so successful that his book has not yet become completely outmoded as a guide to the Middle East.

For him, as for modern tourists, Egypt is the timeless "gift of the Nile, the land of Sphinx and Pyramid, of bright sun beating down overhead and dusty earth underfoot."

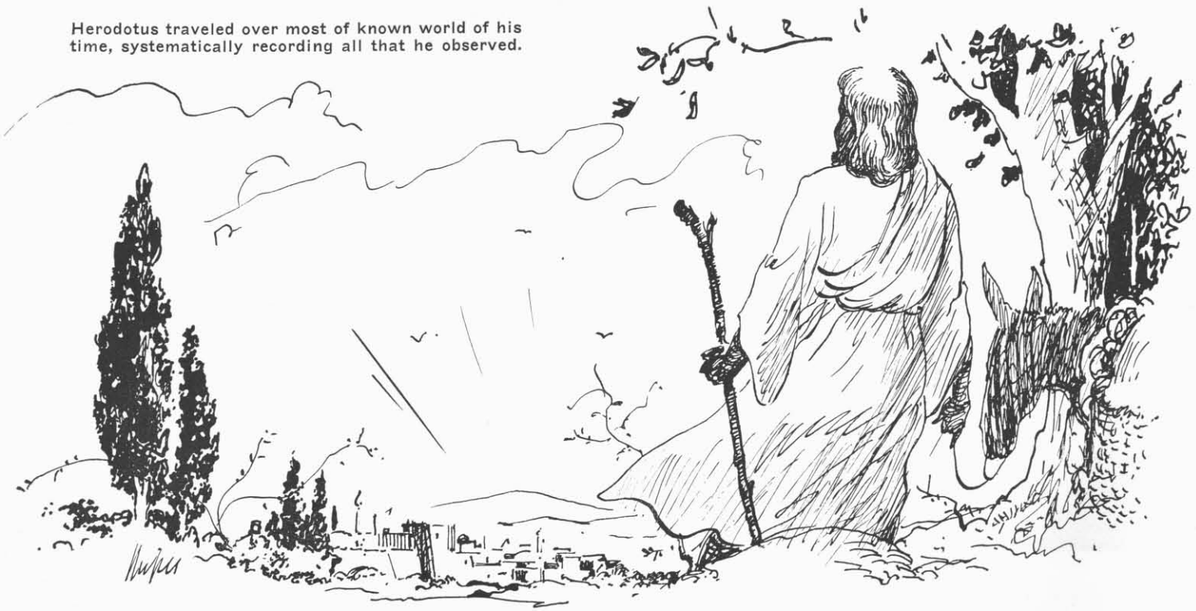
Up the Mediterranean coast, Phoenician Tyre is the home port of daring sailors and bold voyages into the unknown sea beyond the Pillars of Hercules (but Herodotus disbelieves what modern historians believe to be true, that the Phoenician mariners navigated around Africa from the Red Sea to the Atlantic).

To the east in the Land of the Two Rivers stands the stately metropolis – Babylon. Old, proud, strong, with massive walls protecting multi-storied temples and palaces, Babylon appealed to the eye of the Greek traveler, who found that "in magnificence there is no city to rival it."

Then there was the enchanted paradise far south of the Arabian desert – Arabia Felix, Arabia the Fortunate. We still picture Arabia Felix as Herodotus drew it for his readers: it lingers in human memory as the lush garden spot of the world where the very air blows with an aromatic fragrance because of the profusion of myrrh, frankincense and cinnamon.

Persia in the Herodotean travel mosaic is the grand imperial state, the enduring handiwork of the great Cyrus. Nothing impressed Herodotus more than his ride along the Royal Road from Sardis on the Mediterranean to Babylon above the Persian Gulf – a thousand miles with the evidence of settled Persian rule all around him. His verdict on the imperial "pony express" puts in a few words the awe with which he reacted to the mightiest power of his time: "Nothing mortal travels as rapidly as these Persian messengers."

When Herodotus had "done" Babylon, his tour of the Middle East was over. He was ready to write his book, which he did on his return to Athens. It made him the Father of History. It also made him the Father of all Travel Literature. ■



Herodotus traveled over most of known world of his time, systematically recording all that he observed.

Backed by the towering ridge of the al-Sarah range, Saudi Arabia's green and little-known province nestles against the Red Sea

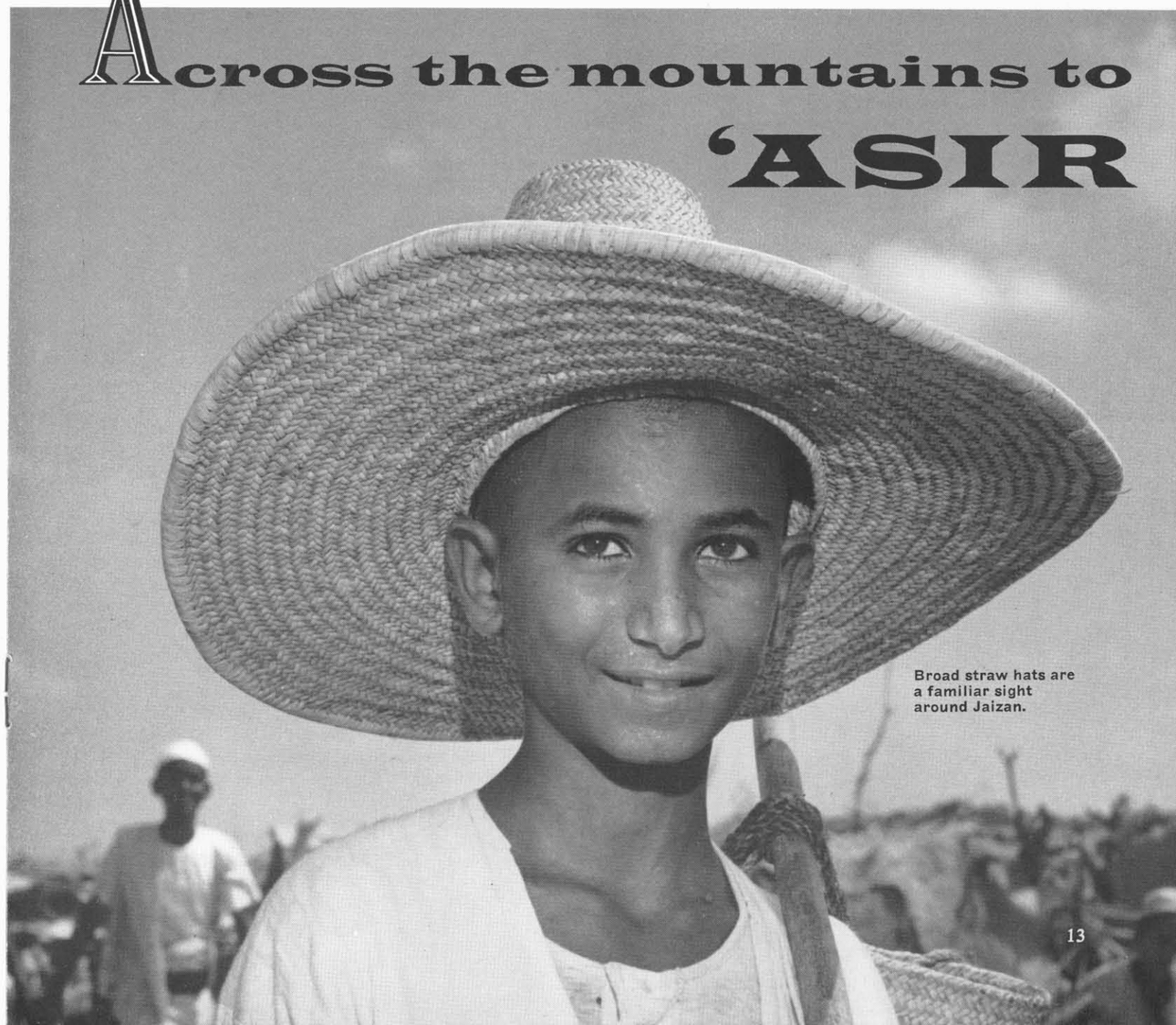
Photography by: **KHALIL ABOU EL-NASR**
ABD AL-LATIF YOUSEF

Across the mountains to 'ASIR

FROM THE TIME that the first Western explorer visited Saudi Arabia and brought back his impressions, the world outside has pictured the Kingdom in terms of vast stretches of sand dunes, broad gravel plains, occasional welcoming oases of palms, and wandering desert herdsmen. The discovery of petroleum added pipelines, complex oil installations and thriving modern communities to the predominating image of the land.

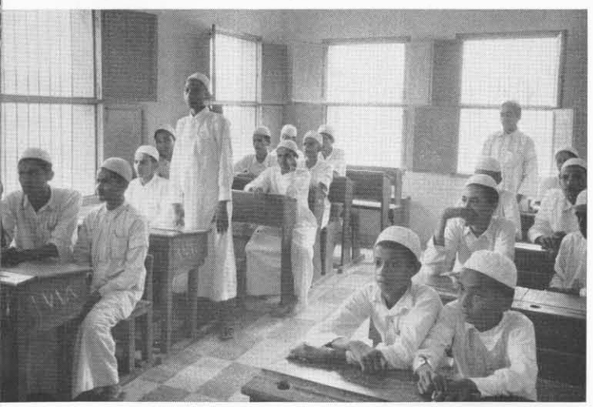
Saudi Arabia is far less known for its meadows of wild flowers shrouded in mist. Few associate the Kingdom with terraced farming, craggy mountain peaks, tall trees and luxuriant vineyards. All these can be found in the southwestern corner of the country in the green highland Province of 'Asir.

Stretching inland along 300 miles or so of the reef-lined eastern coast of the Red Sea, 'Asir begins about 150 miles south of Jiddah and ends at the northern boundary of Yemen. Its climate ranges from subtropical to temperate;

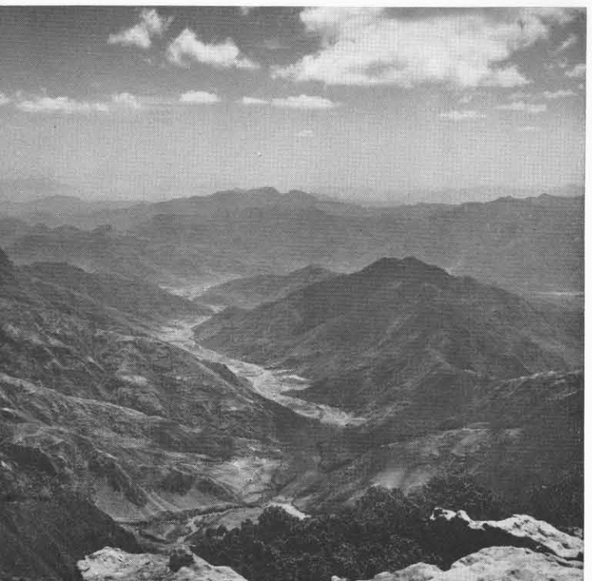


Broad straw hats are a familiar sight around Jaizan.

Saudi Arab merchants sell flour and other local grains at market in the coastal town of Abu Arish.



New farming methods engross students at the School of Agriculture in Abha, 'Asir's capital city.



The Tohama Mountains, part of the al-Sarah range, make access to little-known 'Asir Province very difficult and dangerous.

ACROSS THE MOUNTAINS TO 'ASIR

much of the area enjoys cool, even temperatures the year around, with relatively little humidity. Steep precipices rise out of narrow coastal plains all along the western edge of the province. Some mountain peaks in the area are 7,000 to 8,000 feet high. These rugged highlands, inaccessible from the sea and nearly as difficult to approach from other directions, have been almost completely cut off both from Saudi Arabia and from the rest of the world. The very name of the province means "dangerous" or "difficult" and harks back to early days when there were few passes or roads leading into the area. It is this isolation, plus what for Saudi Arabia is an abundance of rainfall, that makes 'Asir so distinctive.

The highland region supports one of the heaviest concentrations of population in the Saudi Arabian Kingdom, and the Government has built many up-to-date schools to educate the children. In spite of its isolation the area has a strong literary tradition, having produced a number of historians and poets well-known in the Arab world. Weekly plane flights connect some of the provincial towns with Jiddah, and planned roads will help further to break down the region's insularity.

No careful measurements have ever been taken of the amount of rain that falls on 'Asir, but because agriculture there requires little or no irrigation it is assumed that most parts of the highlands get at least 12 inches a year. Farms in the region are commonly laid out in broad terraces, some 200 to 300 feet wide, astride the hilly contours of the land. Cereal crops – wheat, barley and millet – dominate commercial agricultural production. Fruits – apricots, figs, apples, pears, oranges and tangerines – are plentiful. Highland farmers also grow quince, plums, cherries, walnuts, olives, pomegranates and many kinds of grapes.

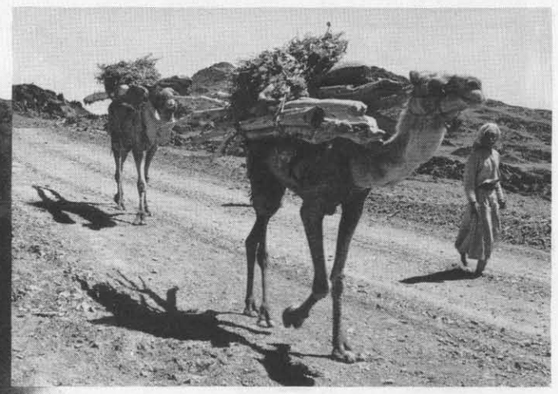
Abundant rainfall has profoundly influenced the architecture of the houses found along the coastline and in the highlands of 'Asir. Houses in Jaizan, the region's principal port on the Red Sea, are made of rush-reed thatch and cordage and are conical in shape, resembling large beehives, the better for the rain to wash over them.

In Abha, the highland capital, 7,000 feet above sea level, homes are made of a clay brick construction, but to keep the clay from washing away, builders have inserted rows of slate slabs into their sides. The foundations are masonry to keep them firmly anchored in the rain-washed soil. Windows and doors are framed with wood from the tall *'ar 'ar* tree, indigenous to the area. Inside, many of the walls around these frames, as well as interior ceilings, are decorated in multi-colored designs, traditionally by the women of the households.

'Asir is far more accessible today than in the past. The camel trails that famed Arab traveler ibn Battuta followed during his visit to 'Asir in 1330 have long since been replaced by modern roads connecting Abha and Jaizan and all of the province with the port city of Jiddah, 150 miles to the north. Soon an airport at Jaizan, projected as one of the largest in the Kingdom, will bring even more visitors to the once remote Province of 'Asir. ■

Terraced hillside farms form a picturesque backdrop for fruit and grain growing.

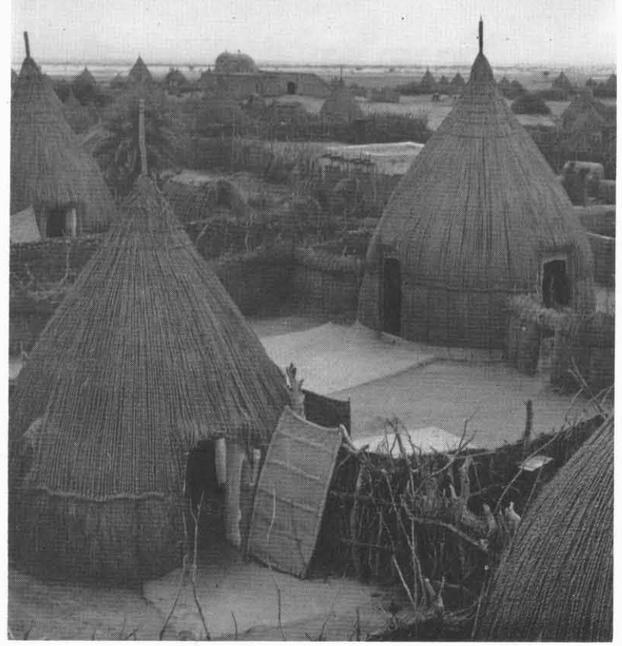
Stretched along the Red Sea, 'Asir Province is partly verdant lowlands, partly steep summits.



'Ar 'ar wood, widely used in 'Asir homes, is hauled from hills to Abha markets.

Clay brick houses in 'Asir's highlands are lined with slate to prevent rain from washing away facades.

Yearly field days at Abha schools offer students time out from studies to match muscles.



The conical "aushs" typical of the Jaizan coast are built of reed thatch and are architecturally unique in Saudi Arabia.

A young shepherd in 'Asir's livestock region begins the long climb into the mountainous al-Sarah range.

For centuries the shipwrights of Jaizan have built "dhows" for the fishermen who bring home the catch to the Red Sea port.

TEN THOUSAND YEARS OF the BOW and ARROW

THE WILD BOAR charged from the bush, running blindly. When he spotted the man, he swerved violently, his stubby legs churning the dust. Raising his bow to his shoulder, the man planted his feet firmly and waited. He would have time for no more than one shot. It had to be placed in a mortal spot. At 30 feet the hunter could see the angry eyes, red with fury, and hear the brittle clash of the beast's long tusks. As the boar snapped wide his mouth and began his rush for the man's leg, the hunter smoothly pulled back on the taut drawstring. He aimed for the flat of the head above the eyes and let go.

The drama between the hunter and the hunted in this scene might well have been played out 10,000 years ago when the bow and arrow was a relatively new way for man to kill at a distance. But it actually occurred only a few years ago. Howard Hill, one of America's most skilled bow and arrow hunters, killed the wild boar on Santa Cruz Island, off the California coast. Hill is not unique among hunters in the choice of his weapon. An estimated two million hunters in America alone still stalk their quarry with one of man's most primitive weapons.

Science does not know just how primitive the bow and arrow is or exactly where it was first used. Beautiful Paleolithic carvings in caves at Castellon, Spain indicate that the weapon is at least 10,000 years old. But like the first smelting and forging of iron, bows and arrows were used simultaneously in many different areas of the world. Wherever and whenever it did appear, its use marked a step up in civilization. With the bow, man gained greater control over his food supply and better protection against his enemies.

The bow's importance in man's life gave rise to fanciful legend. "The Arab bow," says one old manuscript, "is that which God sent down to Adam from Paradise," and the skill of Apollo and his twin sister Diana as hunters was rivaled only by the mischievous Cupid from whose arrows no lover could escape. Odysseus, home from his voyages, rescued Penelope from her unwanted suitors by a feat of extraordinary marksmanship.

Odysseus' skill remains a legend, but recorded history following Homer shows the gradual rise of the bow from a single-shot device with which man hunted his own food or protected his shores against marauding neighbors to a tactical weapon of war. Succeeding civilizations of Babylonians, Assyrians and Chinese used it as mass artillery to subdue their enemies. When Darius invaded Greece, his army contained thousands of archers from Persia, Arabia, Ethiopia, Media – each using the bow native to his own land. Here, in one army, was a rich tapestry of archers representing a large part of the known world of 500 B. C.

A thousand years later, Attila and his Huns became the first of a succession of horse archers to emerge from central Asia and conquer vast empires. Because the steppes of central Asia offered the expansive, treeless plains in which the bow and arrow were most successfully employed, it was here that the weapon reached its widest use and took on a different shape. A lack of suitable wood and the need for a shorter bow that could be used more accurately by mounted archers led to the design of a composite bow made of horn and other materials. Tamerlane, laid to rest in his ebony coffin at Samarkand in 1450, was the last of the great Asian warriors who employed nomad horse archers.

Fifteenth-century French archers.

A single arrow was a harbinger of the bow's importance in English history. When the Duke of Normandy invaded Britain in 1066 and engaged the Saxon king, Harold, at Hastings, he found himself unable to penetrate the wall of Saxon shields. Toward sunset, in a brilliant stroke of desperation, he ordered his archers to shoot high in the air and drop their arrows behind the Saxon shields. One single drop in that rain of death mortally wounded Harold in the eye, and the Norman conqueror charged through the leaderless enemy troops to victory.

The Norman invaders had used short bows drawn to the chest. Some time later the English bow lengthened, and archers began to draw to the cheek. Their greater power and accuracy, epitomized by the legendary Robin Hood, were to be seen in skillful reality in the English foot soldier-archer. The longbow won battles against tremendous odds for English commanders in the centuries following the Norman invasion, its usefulness reaching a climax in English warfare at Agincourt. In this French village in 1415, Henry V and 6,000 archers sought to win the crown of France from Marshal d'Albret and 20,000 Frenchmen.

The French were drawn up in close order in three lines. With a cry for "St. George and Merrie England," Henry's archers loosed a storm of arrows and advanced to within 300 yards of the French lines. Each archer quickly planted his pointed stake in front of him for protection against the French cavalry.

The French cavalry, goaded by the arrows, foolishly countercharged. Held tightly in formation by the woods on each side of the valley through which they charged, they made an easy target for Henry's archers. With deadly accuracy Henry's bowmen felled most of the French front line. Survivors fell back in disorder, trampling their own reserve line.

French camp followers and peasantry then broke into Henry's rear guard to pillage. Mistakenly fearing he was now being attacked on two sides, Henry gave orders to kill all French prisoners so that his men could fight the new attack unhampered. Seeing the massacre, the French third line fled the field. The army of English foot soldiers with bows had destroyed an army three times its own size and won the prize of France for Henry!

At Agincourt the bow and arrow reached its zenith as a military weapon. Elsewhere in Asia and the Mediterranean men were experimenting with a curious compound of saltpeter, charcoal and sulphur. The introduction of gunpowder in the sixteenth century revolutionized warfare and put bowmen on the retired list.

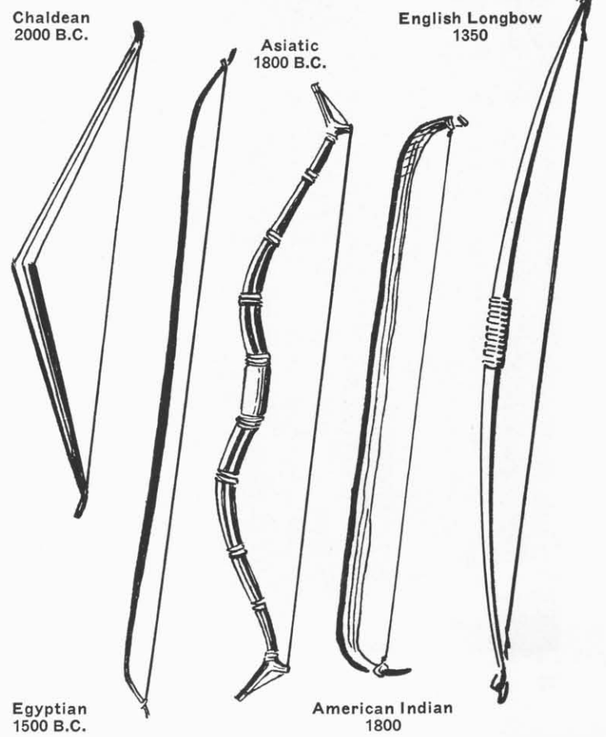
On the American continent the woodland Indian tribes of the East, the buffalo hunters of the West and the coastal tribes used the bow to battle nature for their food and shelter. Bow wood was limited to what the land could supply – shagbark hickory, ash and white oak in the East; osage orange and cottonwood in the West. Bowstrings were usually made from deer or buffalo tendons or the skin of a snapping turtle's neck.

Early settlers found out the painful way that the Indian was a skillful adversary, but not because of the quality of his bows and arrows. The Indian's skill lay in woodcraft – no modern archer can approach him in the ability to stalk his quarry and kill it. Although some Indians, like the Seminoles, had powerful bows that were almost young trees, the weapons of many tribes were short-ranged and inaccurate by modern standards.

As a basic weapon, the bow and arrow is still popular. Primitive tribes of South America use it to this day to secure food and drive off enemies. Other tribesmen of Asia and Africa hunt animals the same way their ancestors did thousands of years ago. The U. S. Army recently experimented with the bow and arrow as a simple, light and silent weapon for guerilla warfare. For the most part, however, present-day bow and arrow marksmen are either target archers or sportsmen-hunters.

Some modern bows are still made of wood – western yew, osage orange or degame – but most are constructed of various composites of wood, fiberglass, steel and plastic. Target bows require a pulling power of 20 to 60 pounds; hunting bows require 50 to 100 pounds. The old English rule was that a bow should be as tall as the man using it and his arrows half the length of the bow. Modern archers select their five to six-foot bows to match their arrows, the length of which is based on the archer's "drawing length" – the distance between the base of the neck and the tip of the fingers. The arrows must be carefully crafted so that they do not "flirt" – swerve from their true flight line. Both wood and metal shafts are used, tipped with steel or brass and feathered with tom turkey feathers or plastic.

Although new materials are used and although its appearance and power have been transformed many times over during its long, long history, the bow and arrow has stubbornly resisted obsolescence. Like the wheel or the lever and fulcrum, the basic idea of the bow and arrow was so practical – and simple – that it's highly unlikely that it will ever become nothing more than an artifact of the past relegated to dusty corners in museums. Many of man's brightest ideas become curiosity pieces once the world passes them by. With 10,000 years or more of use behind it, the bow and arrow is definitely not destined to be one of them. ■



The GREENEST of THUMBS

A QATIF NURSERYMAN HAS THAT VERY SPECIAL TOUCH THAT MAKES THE DESERT BLOOM

With skill and patience, Abdul Wahab coaxes plants out of reluctant soil.

Irrigation techniques are the topic of conversation between nurseryman Abdul Wahab and Dr. Grover F. Brown, Aramco's chief agricultural expert.

ABDUL WAHAB Mansour al-Moallam is well aware that it takes more than luck to grow a garden in Saudi Arabia. He confesses, in fact, that chance had little place in the successful cultivation of the flowers and trees that grace his plot of land near the palm-rich Qatif Oasis beside the Persian Gulf. He should know. He is the first individual to operate a blossoming nursery in the peninsula kingdom, and his venture is paying off.

Some of his scarlet poinciana may be seen as far away as Abqaiq, the oil-producing hub miles across the open desert. Jasmine from his beds finds its way up to Ras Tanura, the refinery site on the Gulf. Dhahran, the town where the Arabian American Oil Company has its headquarters and where Abdul Wahab himself got his first job with Aramco 20 years ago, is familiar with the trumpet-shaped blossoms of his bignonia and his delicately petaled hibiscus. He cultivates these and a score more flower genera. Trees, such as eucalyptus, pomegranate, banyan and pipal, he also pampers into luxuriant maturity.

With the technical assistance provided by Aramco to farmers of the Eastern Province, Abdul Wahab is helping to prove that even inhospitable soil given the right irrigation and unflagging care can be made to bloom. It can make tiny seeds and cuttings sprout into flowers and trees never before planted in it.

Now an experienced horticulturist, Abdul Wahab remembers the times not so long ago when the province of his ancestors was dominated by a single agricultural product — the date palm. In recent years diversification has expanded to embrace not only other crops but flowers and shrubs once alien to Saudi Arabia.

Abdul Wahab's business is as neatly organized as his beds of bougainvillea. He has contracts with Aramco to supply most of its trees, flowers and shrubs. He also has a following of private customers.

Early each morning, Abdul Wahab calls at the Landscaping and Gardening Office in Dhahran, his Ford truck glowing like a floral kaleidoscope. Then he drives to Abqaiq and then back to Ras Tanura to deliver the orders from those two districts.

The little farm that this former Aramco employee owns is protected from the north by a thick palm-frond windbreak. In addition to his nursery he grows paying crops in easily irrigated sections. His alfalfa is for the livestock.

Visitors are always welcome to inspect the nursery. Abdul Wahab gives directions on how to get there in the fluent English he learned during his two decades with Aramco. "Follow the Dhahran-Ras Tanura highway. Opposite the sign pointing to Saihat, my sign hangs near the gasoline station."

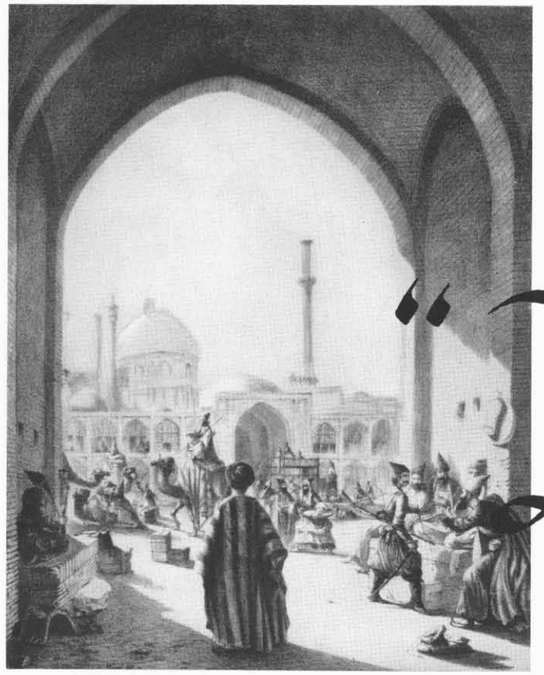
Many Aramco people *do* stop in. They like to pick out their own flowers. And they say that just being in that little oasis of green and color is a rare pleasure.

The skills Abdul Wahab mastered with Aramco are standing him in good stead. Having tended many of the gardens in the oil towns, this experience paved the way for the business he has built up today.

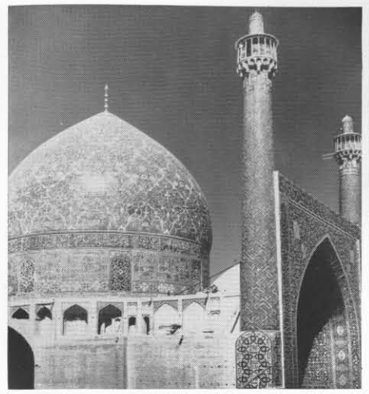
The secret of his success? The industrious nurseryman will explain himself: "One per cent green thumb against 99 per cent hard work." ■

Seventeenth-century Persians honored the splendor of their mile-high capital with the motto

"Isfahan is half the world."



By 1628, the year of Shah Abbas' death, Isfahan attracted caravan traffic from far and wide.



Blue Shah Mosque took 15 years to build.

Hall of 40 Columns was once royal pavilion.

Isfahan is still showplace of rug craft.

"IT LOOKS LIKE a fairy tale city," said young Thomas Herbert, secretary to the English ambassador to Persia. He lifted his head to breathe in the cool air, heavy with the sweetness of rose gardens and the faint scent of spices and sun-baked clay. "I have thought of writing a book about it, but nobody at home in Yorkshire would ever believe. . . ."

Herbert stood with a fellow Briton, an agent for the East India Company, at the southeast corner of the Maidan, the great central square and market place of Isfahan, capital of Persia. They faced westward across the green reaches of the Hippodrome where two squads of cavalry were spurring about at their morning exercises, quivers of arrows on their backs and lances or long hooked swords in their hands.

The Maidan measured 560 yards from end to end and 175 yards across its girth. Its surrounding two-story arcade enclosed a vast field. Sometimes the Maidan served as polo grounds where handsomely mounted players drove the ball toward marble goal posts, the bridles of their horses glittering with emeralds, rubies and gold, their saddles gleaming with precious stones. Sometimes there were contests in the square when horsemen, riding at full gallop, turned in their saddles to shoot arrows at a melon atop a high mast. There were animal fights and there were fairs, with merchants hawking their wares and jugglers, storytellers and wrestlers entertaining the gaping crowds.

Those were the days when Shah Abbas I – called Abbas the Great – ruled Persia and built Isfahan as his dream city, lavishing upon it every Oriental splendor. Not even the Shah's contemporaries – Elizabeth of England or the famed Turkish sultan, Suleiman the Magnificent – could boast a more glorious capital. Then Isfahan was 24 miles in circumference and contained a dozen gates, over 160 mosques, 48 *madrasehs* (religious colleges), 1,800 caravan terminals and more than 270 baths. Its main street was a stately avenue 66 yards wide and three-fourths-of-a-mile long, along which streams of water flowed in marble channels, forming pools around tiny pavilions. The street terminated in a garden where courtiers and nobles, soldiers and poets used to congregate to listen to music, watch dancing, hear poetry and enjoy the cool river breezes.

Beyond the Hippodrome stood the Shah's blue and gold palace, silhouetted against the mottled sycamores that towered above it from the gardens at the rear. Other palaces clustered round and close at hand the bubble-like dome of the Lutfullah Mosque soared, its walls splendid with turquoise tiles and golden panels, giant inscriptions and geometric and floral designs. A maze of streets and houses with mud walls and whitish brown roofs spread out from the Maidan, and almost every house had its rose and tulip garden and its rows of cypress or poplar trees. Everywhere the slender brick columns of the minarets lifted their sharp spires.

Wonderful as the architecture of the city seemed to Herbert, what amazed him the most were the picturesque crowds jostling toward the long row of stalls and shops at the north side of the Maidan. Wealthy Persians in their parti-colored mantles of silk and turbans wreathed with pearls and gold chatted briskly in Turkish, the language of the court. Their high-heeled, iron-shod shoes clicked on the pavement as they hastened by, eager to reach the market at opening time.

The shoppers mingled in the throng with Turkish guards who wore red quilted caps, and bearded Zoroastrians whose flame-colored scarves set them apart as followers of Persia's ancient religion. And everywhere chattered the foreign merchants, come from all quarters of the globe to buy the famous wares of Isfahan: Dutch, Portuguese, Muscovites, Poles, Indians, Arabians, Turks and Georgians, each dressed in his native garb and chanting in his home tongue.

The newly arrived Englishman put his hands to his ears. "So many nations!" he exclaimed. "It sounds like Babel."

The agent smiled and nodded. "I agree," he said. "We have a saying here, *'Isfahan Nisf-i-Jahan* – Isfahan is half the world.' Come, let's go up to the cook stalls and I will introduce you to grilled camels' flesh."

It was May Day in the year 1628, and the party of Ambassador Dodmore Cotton had arrived a few days earlier in this green oasis high on Persia's central plateau, 5,000 feet above the sea. Isfahan, previously a sleepy provincial capital, had increased swiftly in size and importance since that day more than 30 years before when Shah Abbas of the Safavid Dynasty forced it to surrender to him by diverting its water supply. Now it spread over a vast oval – a prosperous town of merchants and craftsmen, with some 70,000 dwelling houses and over a half million inhabitants. Shah Abbas was almost as unrelenting a conqueror as Tamerlane, who sacked the city in 1387, but the Shah had made wise use of his power, too. He sent representatives to the fashionable courts of Europe and brought to his own court foreign artists and technicians to blend the skills and knowledge of the West with the revival of his own country's ancient civilization.

Thomas Herbert remembered his first glimpse of the city as they approached it – gaunt purple-brown mountains to the south, dark stony desert dotted with salt lakes to the east, and all along the banks of the shallow muddy Zayandeh Rud a tiny rim of green. Isfahan lay on the north side of the river, and the camels, horses and mules of the ambassador's train had plodded across a noble bridge erected above 33 arches of hewn stone. Water from the river was channeled throughout the city, and within the piers of the bridge were spacious chambers where the citizens could rest and listen to the gentle music of the stream – except in summer when it waxed so low that a child could cross.

The people of the town had turned out graciously to meet the ambassador's party. It was the time of the month-long Festival of Roses and Daffodils, which the Persians celebrated with banquets and fireworks. Herbert had watched troops of dancers and jugglers, listened to the music of timbrels, fifes and kettle drums, enjoyed flagons of syrupy *shiraz*. His Persian hosts were generous, merry and never quarrelsome.

The two westerners turned into the long aisle of the market building. Loud bargaining in a variety of tongues pierced the air. As in London in the days of the guilds, shops dealing in the same sort of merchandise were grouped