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Cover: In this photograph by Ali Khalifa, two crewmen of the Kifah, a shrimping trawler out of Manifa on the east coast of Saudi Arabia, balance themselves precariously on the derrick boom to free a snagged net as the boat begins to drag a sandbar in the Arabian Gulf where, two years ago, an enterprising Saudi businessman discovered a rich cache of valuable shrimp and launched a now booming industry. Story on page 21.

Across the timeless trails of the Syrian desert they drove...

ON A BUS TO BAGHDAD

BY FUAD RAYESS

Back in Beirut it had seemed like a good idea: follow one of the old caravan routes from Damascus to Baghdad. Recapture the excitement of those ancient travelers who dared the long, dangerous journey between two of the known world's major capitals. See Baghdad as the minstrels and merchants once saw it, at dawn, with fresh sunlight shining on pink marble parapets and turquoise domes, on golden minarets and banners and on fountains splashing in green gardens...

That was back in Beirut. Here, at the edge of the Syrian Desert, it was quite different. It was dawn, yes, and Baghdad was just over the horizon. But I already knew that it was going to be disappointing. In the darkness of the preceding night, as we roared across the desert in a long steel bus, I had discovered that the world just isn't like that any more.

I had left Damascus with high hopes. The bus was suitably old and rugged. Albert the driver, a stout, red-faced veteran of 31 years of driving, seemed certain to be a source of fascinating stories. There was the intriguing fact that the Nairn Transport Company advertised itself as "The Overland Desert Mail Service," a phrase that fairly echoed with the sound of adventure.

The bus left precisely at 2 p.m. Albert, I learned later, made it a point to leave right on time and indeed had for 19 years, a habit his more typically Middle Eastern colleagues undoubtedly looked upon as an amusing aberration attributable to prolonged association with those odd New Zealanders who had founded and run the bus company many years ago.

At first there was little to see. Albert edged the long bus neatly into the flow of bicycles, motorcycles and taxis that dodged and darted along the Street of Seven pools and wove his way through the congestion, heading for the suburbs. From there we drove through the green plantations and groves of olive trees in the Ghuta Oasis, through the village of Harasta and through the town called Duma, a cluster of clay houses amid vast vineyards. Soon we were pushing east through the narrow belt of green fertility that reaches across an open plain in Syria for a hundred miles.

There is something about the forced intimacy of a bus that seems to produce an inordinate awkwardness among passengers. They sit in stiff, withdrawn silence as if resenting the need to sit so close to so many strangers. But on the bus to Baghdad such restraint passed quickly. At first the only movement came from Adham Elias, the steward, who was laying out lunches. But in less than an hour the passengers had begun to exchange tentative comments on the weather and the scenery and had begun to offer fragments of information concerning themselves. I, furtively, had slipped my notebook into my lap, thinking: "Now I will find the drama and color I came for; now, as the bus hurtles toward the desert, they will draw closer together and they will talk and in their conversations they will disclose the mysteries of fate that brought them together on this bus."

There were 15 passengers in all, seven Iraqis, two Syrians, two Lebanese, two Kuwaitis, one Iranian, and one Frenchman. I inspected them, discreetly, sure that in such a mixed group I would find any number of fascinating vignettes of motive and behavior. That little girl, for instance, six-year-old Nuha. She was undoubtedly a lonely, heartbroken orphan being shipped off to Baghdad to live with distant cousins, who not only wouldn't want her, but would beat her cruelly. And the man slouched in his seat across from her, the Frenchman, M. Fortier. His manner was definitely suspicious; he kept staring out the window. A spy, without a doubt. Next to him was the Iraqi with a suitcase he kept touching, anxiously, surreptitiously. Could he be anything but a smuggler?

The bus to Baghdad leaves Damascus at exactly 2 o'clock and arrives at its destination just 19 hours later.

The answer, unfortunately, was yes. He could have been—and was—a casual visitor who had bought some new clothes in Beirut and was worried about getting them through customs without paying high duties. Furthermore, M. Fortier turned out to be merely a tourist on his first trip to the Middle East and Nuha's only problems had do do with her doll's refusal to go to sleep. There were not, it seemed, any murderers, jewel thieves, heiresses or fugitives in the cast. There wasn't even a single secret agent.

It took some time to arrive at this unhappy conclusion, of course, and in the meantime the bus had reached the desert. The green fertility of orchard, grove and field had surrendered to a harsher terrain where gorse and bunch grass poked out of packed, colorless sand. That terrain had in turn given way to pebbled desert. The paved road petered out and Albert swung off the pavement and headed east on the 504-mile track to the Tigris and Euphrates rivers, a tail of beige dust boiling up behind.

In the bus the change of direction went largely unnoticed. By then most of the passengers were absorbed in their various conversations and, as the desert opened before us, the sound of Arabic in four distinctly regional accents rose above the growl of the motor. Mrs. Jamila Hanna, an elderly but quite hearty and outgoing lady, was describing to Mansour as-Safi, an Iraqi lawyer, Lebanon's summer resorts, which she had just visited. She was comparing conditions today to what they were 15 years ago—better, she said—when she had first visited Lebanon. Mr. as-Safi was nodding agreeably, but insisting that the cost of living had risen too much. The man with the suitcase of clothes was absorbing with avid interest the advice of an older, and obviously well-traveled, passenger: "You want to get through customs without paying duty on those clothes? I tell you how. First you put on as many of them as you can wear. Then you crumple up the rest before you put them in the suitcase. Next you smear a little dust on them. Not enough to spoil the clothes; just enough to make them look old. Then ..."

It was an hour and a half after the bus left the highway that Albert braked for the first stop. We had arrived at a place called Khan esh-Shamat, the Shamat Resthouse. It was a lonely place, with two structures of yellowed sandstone almost the exact color of desert sand. In one structure is a resthouse where passengers can buy coffee or tea; the other serves as a barracks for a detachment of the *Hajjana*, the camel cavalry, and as a passport inspection office. Khan esh-Shamat is a major outpost in the Syrian Desert and the soldiers, looking particularly fierce in their uniforms and headcloths, welcomed us with a curious mixture of gratitude, for breaking the solitude, and caution, because they alone were now responsible for the passengers. We got out at the resthouse, watched the assistant driver check the tires, brakes and engine and wandered around aimlessly for about 15 minutes while the passport officials cleared

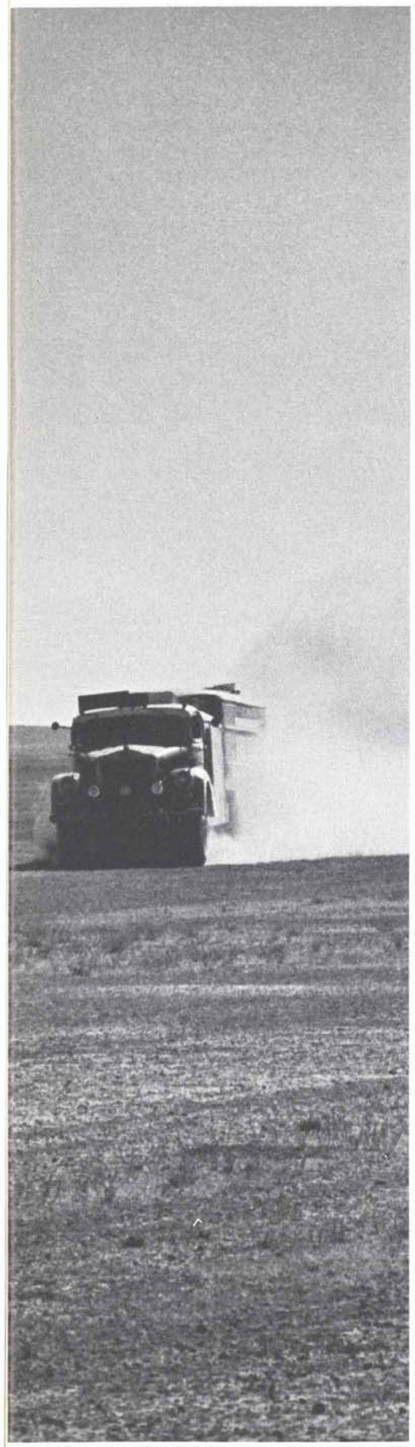
The Nairn Transport Company now owns 15 buses of various sizes and makes. On first class coaches the company provides washrooms, air conditioning, stewards and meals.

PHOTOGRAPHY BY KHALIL ABOU EL-NASR

Marcel Fortier of France, above, was the only European among the 15 passengers en route to Baghdad.

One of the seven wells at Sab' Biyar, an ancient desert water hole.

Albert, a Nairn driver, is a 60-year-old veteran who has spent 31 years of driving in the desert, 19 of them on the long haul from Damascus in Syria to Baghdad in Iraq.



In a few hours the rich green land gave way to pebbled desert.

a busload of Syrian pilgrims en route to Mecca. Then the immigration officers called us in and began checking passports. Always the optimist, I permitted my flagging hopes to rise for a minute. Perhaps here the adventure would begin. Perhaps here on the lonely desert these fierce soldiers would discover that Madame Hanna had just made off with a week's proceeds from the Casino in Lebanon. Perhaps they would unmask M. Fortier as the man who seized Ben Barka. Perhaps ...

But no. They merely lined us up, looked at the passports and asked us the usual questions: "Where are you going?" "Why are you going there?" It was quite routine and soon, with second driver Mehyo al-Jassim taking over from Albert, the bus started off again.

The desert now was flatter than before. It was like clay covered with a layer of sand. Our next stop was Sab' Biyar, "the Seven Wells," 62 miles away, and as Khan esh-Shamat faded behind us Mehyo al-Jassim began to pick his way through dozens of seemingly identical tracks that crisscrossed the sand. For a man who was once a Bedouin, I suppose, it was easy. Almost as if he had a road map in front of him instead of featureless desert, he switched from one track to another, avoiding ruts and bumps, and never, apparently, in doubt about where he was going. But then, I remembered he had made this trip before—about 600 times according to him.

Up to that point I had paid much more attention to the passengers and drivers than to the bus itself. But it finally occurred to me that this vehicle, 64 feet long and 20 years old, was a rather remarkable job of automotive construction. Every week, when possible, it had made a rugged trip across the desert through summer dust and winter mud, yet the ride it offered was still amazingly comfortable and quiet. Lounging back in their foam rubber seats, sealed off from the dust and heat, cooled by air conditioning, the passengers—18 of them when the bus is full—could just barely hear the roar of the big diesel engine and despite the terrain were able to talk or read in comfort. Even Nuha, finally convinced that her doll was going to sleep soundly, had begun to relax and look around at all the grownups. It was rather like an airplane in flight, I decided, except that there were no seatbelts.

After the halt at the resthouse, silence had fallen again. But then Khalid al-Khazraji, an Iraqi schoolteacher, decided that it would be a shame to waste all this time and offered to give an English lesson. The bored passengers readily agreed and for the next two hours he and some others, rolling along at 40 miles an hour, reviewed the basics of English grammar and pronunciation.

In just over two hours we reached Sab' Biyar, a small outpost named after the seven wells dug there a very long time ago for the benefit of those crossing the desert by camel between the two great cities of Damascus and Baghdad. The wells, we discovered, were scattered around a rather wide area and seemed to be very deep—100 yards at least.

We only stayed 10 minutes at Sab' Biyar during which time the *Hajjana*, the desert soldiers, checked the bus and waved it on to at-Tinf as-Suri, our next stop. We reached this post, the last Syrian checkpoint on our journey, some two hours later. It was quite dark by then and we could see little of the small and isolated post except the faint light coming from the windows of the resthouse, and the old building's vague outlines. After a short stay we drove on again, crossing the Iraqi frontier shortly after. In less than an hour we stopped again, this time to be checked by the Iraqi *Hajjana* at a place called at-Tinf al-Iraqi.

The night was cool and dark when we headed for ar-Rutba, the main Iraqi customs and immigration junction where all traffic from Syria and Jordan meets. The trip was uneventful. Far away in front purred the big engine. Outside it was pitch dark. Because it was still too early to sleep, most of the passengers talked. An attractive, well-dressed 15-year-old girl from Kuwait, whose name was Balquis, told us that she and her father had been to Beirut to say goodby to her brother who was going to study in the United States. "We were all quite gay, but then the ship began to move and I could not hold my tears."

A lady from Syria, who was sitting next to Balquis, spoke for the first time. "Don't we all have our sorrows, my dear?" And she began to tell us why she was going to Baghdad. One of her daughters was a very beautiful girl and many men

had asked permission to marry her. Finally a young man from Iraq who said he was a wealthy merchant and a member of a fine family, was accepted, and the marriage was performed and the girl went off to Baghdad. This man, the woman said, had promised to take his wife to her people in Damascus every month, but hadn't brought her even once; worse, the daughter had even stopped writing. So, she, the mother, terribly worried, had decided to go to Iraq and see for herself what was going on.

As she told her story, the bus fell silent. Jamila Hanna leaned forward to listen. So did Mansour as-Safi, the lawyer, and Khalid al-Khazraji and the two Lebanese and Murtada 'Abadi, a professor of chemistry at the University of Teheran. Even M. Fortier who couldn't understand a word sensed the sadness in the woman's voice.

When she had finished, everybody was full of sympathy and began to offer advice or tried to cheer her up. But of course they couldn't. Only arrival at Baghdad, still a night's drive away, could do that.

At midnight we arrived at ar-Rutba, an important center with a large government building and a new resthouse. There were numerous buses, trucks and cars parked here, most of them bearing Kuwaiti license plates. Again our passports were inspected and then we all went for refreshments to the resthouse, where at last I began to question Albert. He was wary at first but eventually told me something of his past as we sipped tea. He told me that he had driven his own truck across the Syrian desert for 12 years before starting to work for the Nairn Transport Company. That had been 19 years before and he had been on the Damascus-Baghdad route ever since, driving the same bus and making the trip at least once, sometimes twice per week.

"The trailer is my home, the desert my land and I know them both like I know myself," he said simply.

The company, Albert said, had been in business for 43 years and its safety record was perfect. Were things much different when he started working for them, 19 years ago? "The road is better here and there, so we can travel faster than we did in the old days. The section from here at ar-Rutba to Baghdad, for instance, is now paved. On the whole, the journey is also safer than it used to be since we're well protected by the governments concerned. As for our equipment, we have better engines now and their maintenance has been improved."

I waited for the stories to come—stories of bandits and breakdowns, of raids on small outposts, of, well, adventure. But—I wasn't really surprised anymore—there were none. It was just a job and Albert had done it well and that, as far as he was concerned, was all there was to say.

We stayed 2½ hours at ar-Rutba. Then Albert finally announced our departure. "We have a long ride ahead of us," he said. "I'm going to get a little sleep. I advise you to do the same."

Inside the trailer the steward distributed blankets and switched off the lights. It was cold but most of the passengers, weary from hours of driving, soon fell asleep. That was when I decided grumpily that romance had certainly gone out of the world. Here I had been traveling for half a day and part of a night through what used to be the most exciting and exotic country in the world and not a single incident had occurred to break the routine monotony of the trip. Tomorrow there would be Baghdad and I already knew from photographs that it was a far cry from the fairy tale splendors of the days when Haroun al-Rashid paved his roads with silver and tiled his walls with porcelain, when silks flowed in from China and pearls from the Arabian Gulf, when the great Haroun's palace pointed golden spires to the sky and Haroun himself walked the streets in disguise to find out what his subjects thought of him...

Not that I really expected it to be even remotely like that, but there ought to be something left of those days, some vague spirit of mystery, some whiff of ancient beauty, some trace of the vision that was once the glory of the Orient. And there wasn't at all. So, annoyed, frustrated, I fell asleep.

At dawn I awoke, still gloomy, to find the bus rolling swiftly through the Iraqi horn of the Fertile Crescent. We stopped once to change drivers, rode on and about 7 o'clock reached the agricultural town of ar-Ramadi, then crossed the Euphrates. Although it was early there were people on the road and in

THE NAIRNS OF NEW ZEALAND

When World War I came to an end, two brothers from New Zealand, Norman and Gerald Nairn, who were serving with the British forces in Palestine, decided to stay in the Middle East and go into business. Since both were skilled mechanics they thought it only logical that they work with motor vehicles, and decided to run a bus company. So, almost by accident, was founded the Nairn Transport Company, one of the most colorful transportation companies in the world.

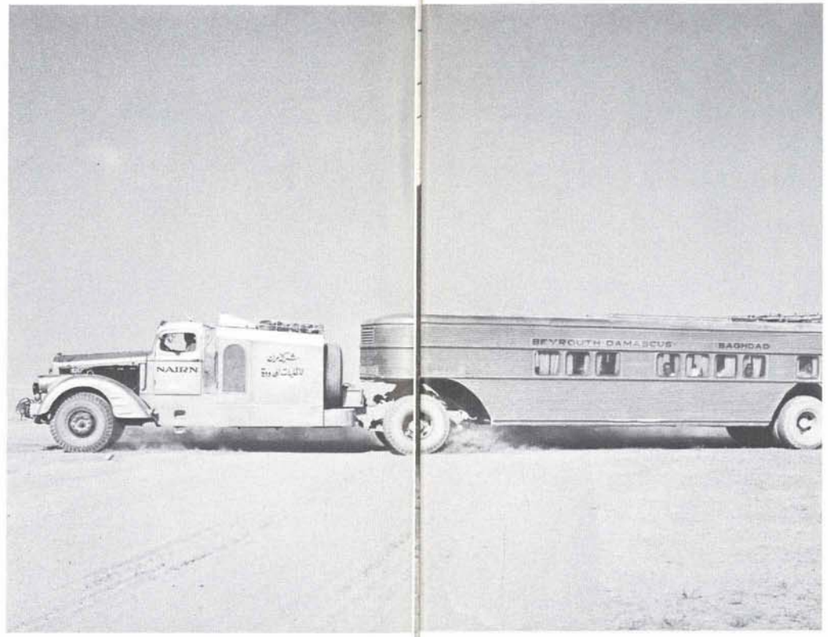
In those days in the Middle East transportation was still largely dependent on camels and other beasts of burden. Everyone knew that trucks and buses and cars were faster and could carry more, but there was one large obstacle: there were almost no roads. Furthermore, cars that tried to cross the desert had to face not only breakdowns and flat tires, but also sand storms and the possibility of Bedouin raids. Because of the raiders, most cars were equipped with racks into which were thrust Enfield rifles. Conditions were so uncertain that if clients of one famous tourist agency of the period went to Baghdad, their life insurance policies were automatically cancelled.

The Nairns, however, went ahead with their plans. Not long after going into business they assigned their chief engineer, a man named Ted Lovell, to lead a three-car expedition—a Lancia, a Buick and an Oldsmobile—to see if a desert crossing between Damascus and Baghdad was possible. When Lovell returned and said it was, the Nairns made several crossings themselves, and decided that regular trips would not only be possible, but profitable, especially since they could be linked to a run from Beirut to Haifa.

On October 18, 1923, the new service was officially opened—in specially-built, eight-cylinder, seven-seater convertible Cadillacs. They were formidable cars. In one of them, which had already logged 90,000 miles on desert routes, Norman Nairn with two others, plus ample luggage and mail, once covered the 505-mile distance from Baghdad to Damascus in a record 14½ hours. They made three stops only, each lasting five minutes: one because of a flat tire and two for gas.

The Haifa to Beirut service was linked up with the new one from Beirut via Damascus to Baghdad, a total distance of 715 miles. Its success was immediate. Many Iraqi and Syrian travelers now could take the bus for a fast trip to Beirut or Haifa, where they could board a boat to Europe or beyond or take the train to Egypt or Turkey.

In those pioneer years all the drivers and many of the other employes of N.T.C. were British, the majority of them ex-soldiers. But each convoy, each comprised of at least three cars, carried a Syrian Bedouin guide whose amazing knowledge of the desert was indispensable. Without them drivers would have often gotten hopelessly lost on the empty plains.



The trip was usually safe, but the threat of marauding Bedouins was always present. Once, not far from Damascus, Bedouins held up a car, killed one traveler, wounded two others, including a driver, and galloped off with a cargo of gold. To avoid repetition of such incidents the Nairns agreed to pay £2,000 annually to the Bedouins every year via a shaikh in Damascus who was a great traveler himself and a personal friend of the Nairns. Subsequently, realizing the growing importance of the transport service, the various governments involved guaranteed protection themselves.

During the first 12 months of operation the gallant Cadillacs carried no fewer than 1,476 passengers and 35,000 pounds of mail. Among the first passengers, the Nairns reported later, was the Shah of Persia. His Majesty and his attendants made the trip to Damascus in November, 1923, and were most satisfied. And on June 5, 1924, a Beirut newspaper wrote: "Mr. (Norman) Nairn, the pioneer of this service, has done more in the past year to unite ... Syria and Iraq than all the politicians of Europe and Arabia have been able to accomplish (or prevent, as the case may be) in a decade."

Though the Cadillacs provided excellent service and seemed indestructible, it soon became clear that much larger vehicles were needed. Norman Nairn experimented with various types and, in 1925, decided to order from the Six-Wheel Company of Philadelphia some six-wheel "Safeway Saloon Coaches" with room for two drivers and first-class accommodation for 14 passengers. These buses were equipped with six-cylinder, 110-horsepower Continental engines with 8-speed gearboxes. They weighed seven tons each, could reach a maximum speed of 55 miles, carry 1¼ tons of luggage on the roof and cost $17,500 apiece. On May 26, 1927, King Faisal of Iraq officially named Nairn's first six-wheel trans-desert saloon, "The Babylon."

Nine years later N.T.C. made news again when they ordered, from Marmon-Harrington in Indianapolis, the world's largest semitrailer-tractor combination. This giant was 68 feet long, 8 feet 8 inches wide and 11 feet high. The trailer was completely dustfree and could accommodate 32 first-class passengers. It had a buffet, a toilet, room for one ton of luggage and a 200-horsepower diesel engine that could move it across the desert at 50 miles an hour.

Another Nairn "first" was a lightweight, stainless steel trailer built by the Edward G. Budd Company of Philadelphia. In upper and lower berths like American Pullmans it slept 14 passengers and was the first vehicle of its kind to be equipped with air conditioning. The tractor was powered by a 150-horsepower Cummins diesel engine.

Nairn Transport Company continued its services, with clockwork precision, up to and through the Second World War. But in 1947 Gerald Nairn returned to New Zealand and in 1948 Norman Nairn turned the company over to his staff and retired to a villa in Lebanon where, at 71, he still lives today. The staff ran it until 1957 when the organization was liquidated. The equipment was later sold to the present owners, a business group in Damascus.

N.T.C. now owns 15 vehicles of different sizes and makes. Some of them, bought 30 years ago, are still in use and function perfectly. Twelve trailer combinations operate on the Damascus to Baghdad run. Five of these offer first-class accommodation, can seat 18 passengers each and have air conditioning, food service and toilets. For its second-class traffic the company operates two trailers also seating 18 passengers; five other trailers provide third-class transportation. Three buses of smaller size maintain the Beirut to Damascus service.

Today Nairn's trailers cross the great Syrian desert daily in each direction, transporting hundreds of passengers with their luggage and many tons of mail, including American, Italian and German diplomatic pouches. What once were daring ventures by a few magnificent men in their riding machines are now streamlined routine trips for the masses. Such, alas, is progress.

Six-year-old Nuha was worried because her doll "refused to go to sleep." She ignored other passengers until the doll finally "dozed off."

the villages. Some waved as we roared by. Beside me my companion, a photographer, had awakened too. But instead of moving he sat motionless looking around at our fellow passengers who were beginning to gather their belongings. Then he said:

"You know," he said, "I thought this trip was going to be very boring, but it has actually been, well, romantic."

I stared at him in disbelief. Had he lost his senses? Was he teasing me?

"I mean, look around," he said. "There's a little six-year-old girl who crooned to a doll in the middle of the desert so it would go to sleep. There's a teacher who thinks nothing of giving an English lesson at 40 miles an hour. There's a driver who used to be a Bedouin. One man is trying to get some valuable clothes through customs and a complete stranger is trying to show him how. And a Frenchman, off alone in Iraq without knowing a word of Arabic; an Iranian professor on his way back from Europe; a young girl mourning a brother who is somewhere at sea on the greatest adventure of his life; and a mother looking for a daughter who may be somewhere in Baghdad right now wondering if she'll ever see her again."

He shook his head. "So many interesting people on one small bus."

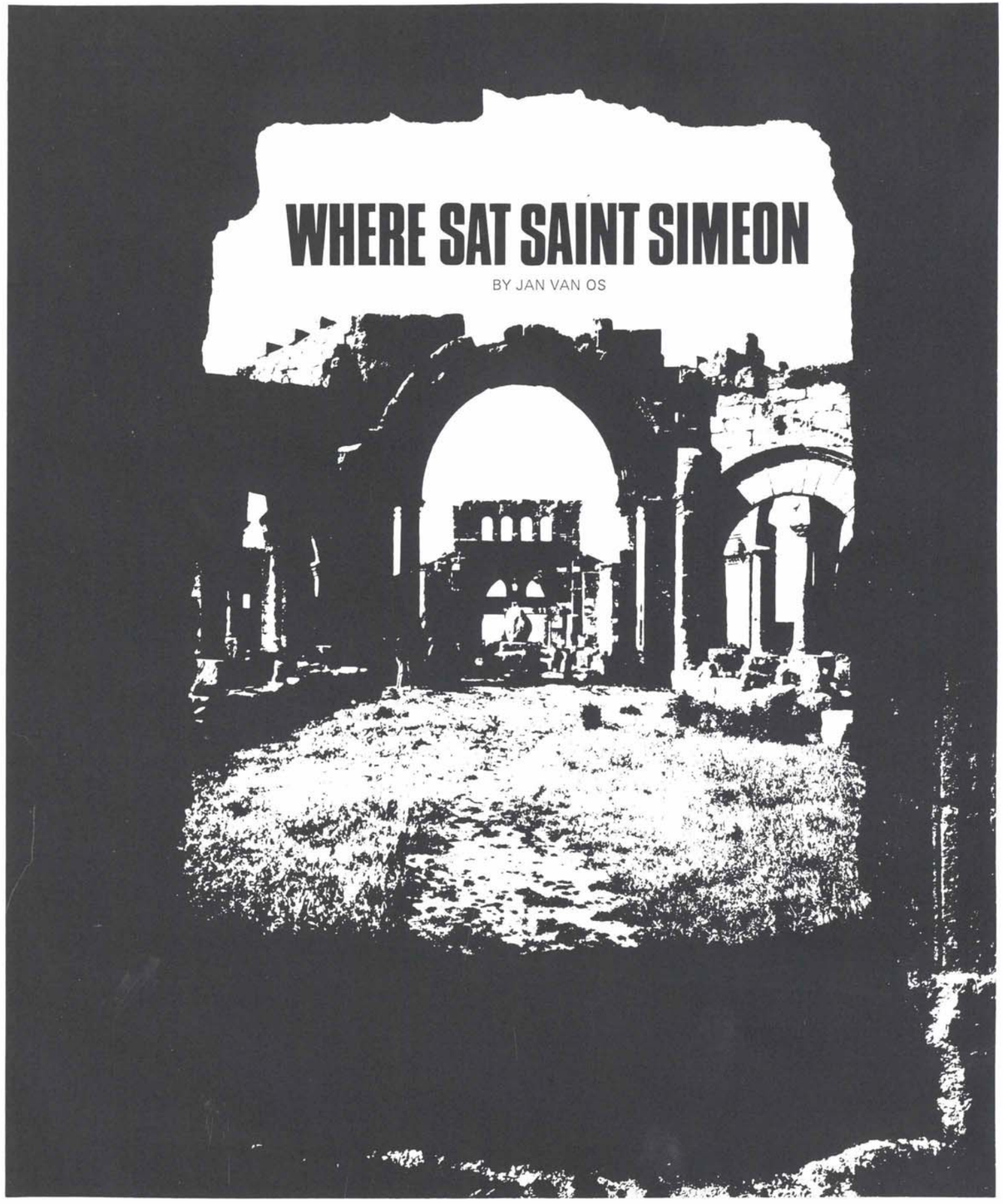
I thought for a moment and then nodded slowly in agreement. "Yes,... yes, they are, aren't they? Very interesting." And to myself, I added, "and I almost didn't notice."

I went back to looking out the window then, at the flashing panorama of farm villages and towns, of narrow canals, of small houses and occasional schools. We passed al-Falluja a famous agricultural center and at 9 o'clock, 19 hours after we left Damascus, saw, on the horizon, in a ragged blur, what was obviously a large city. The steward said, "Baghdad!" We crossed the great new bridge that spans the Tigris and leads into the city, and there it was, Baghdad, the glory of the Orient. Just as I thought, there were no golden minarets or turquoise domes, no banners flying, no pink palaces with fountains splashing in green gardens. But I couldn't have cared less. I had too many interesting people to say goodby to.

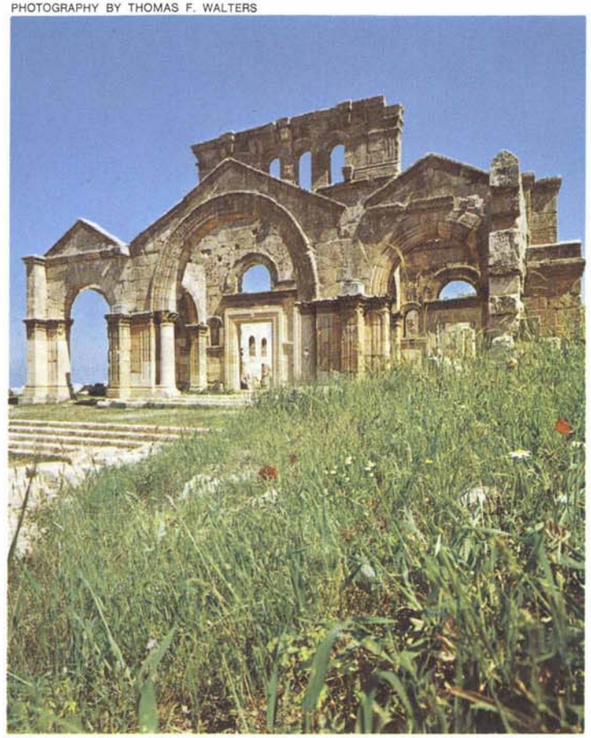
Fuad Rayess, a writer and editor, heads Aramco's Arabic Press and Publications Division in the company's Public Relations Department.

WHERE SAT SAINT SIMEON

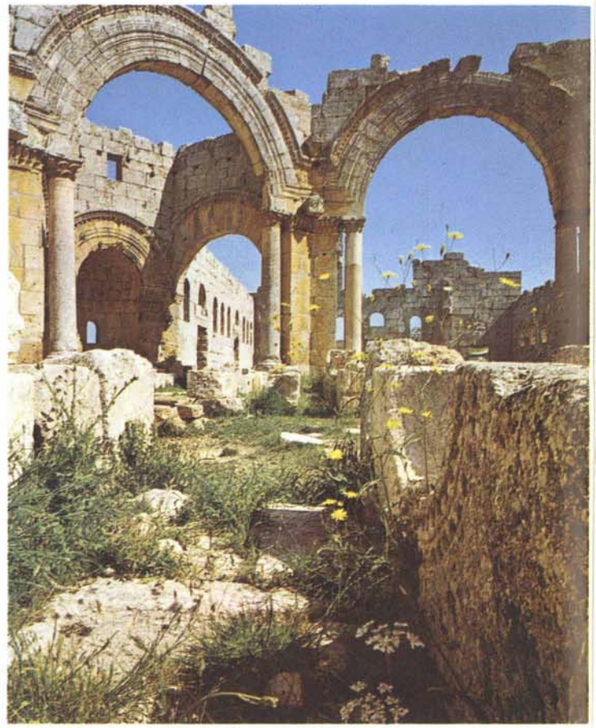
BY JAN VAN OS



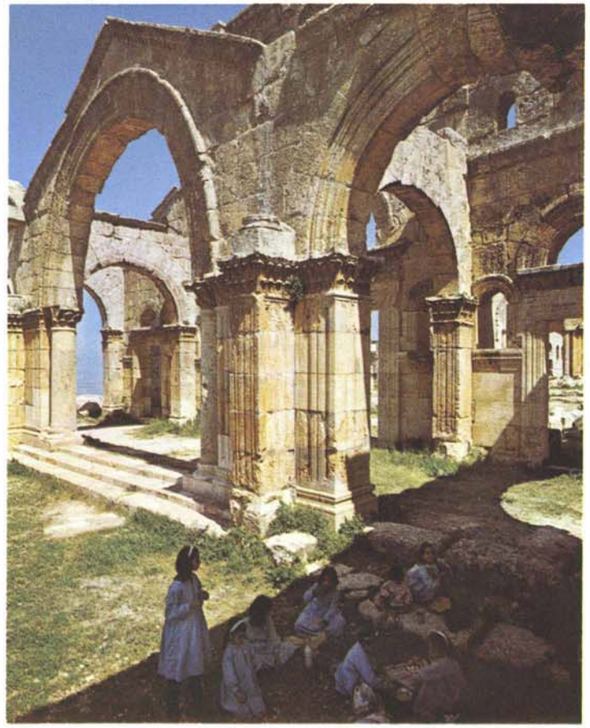
PHOTOGRAPHY BY THOMAS F. WALTERS



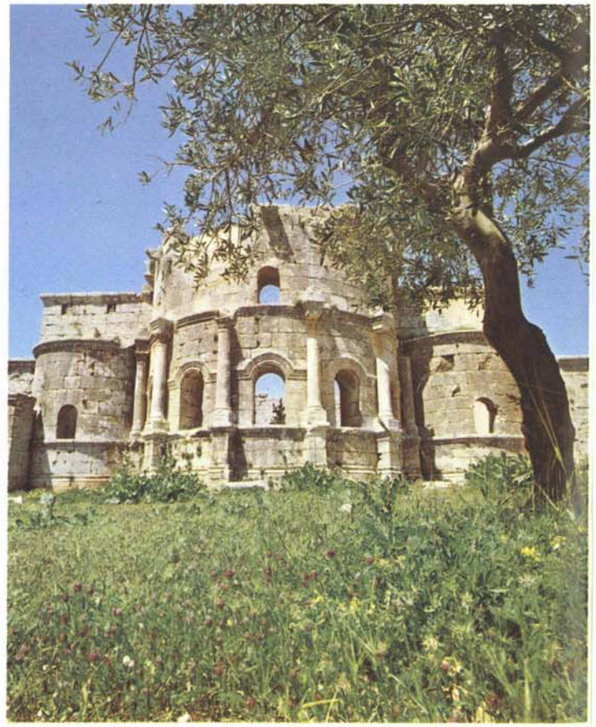
The south facade consisting of three arches which form the monumental main entrance.



Inside the octagonal heart of the church five of the eight original arches still stand.



Time has treated the ruins kindly and visitors of all ages feel that they are welcome.



Columns with Corinthian capitals adorn the exterior of the apse of the east transept.

On a pillar 60 feet high, he lived and prayed for more than 35 years.

"In my profession," the archeologist said, "you'll never be out of work in the Middle East. Just start digging almost anywhere here, and chances are pretty good that you'll find something important."

Not all antiquities, of course, have to be dug up. Some are in plain sight, but because they are far from the beaten tracks they have been simply forgotten—sometimes for centuries. Petra is one example. The Dead Cities of northern Syria are another. There, in a wide area west of Homs and Aleppo, and northeast of Aleppo, stand more than 100 of these cities, empty and deserted, but well-preserved and fully visible to anyone who can get there.

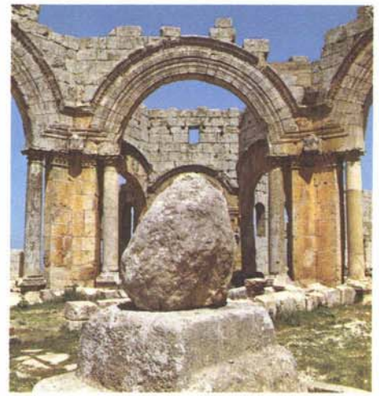
As has so often happened in the Middle East, the exact history of the Dead Cities has been forgotten. Apparently, though, these cities were built by and for Christians in the period between the fourth and the seventh century. They were prosperous and peaceful communities, with agriculture the main source of income. But at some point, probably during one of the recurring wars of the ancient world, they began to decline. Invaders cut down the forests indiscriminately; the ingenious irrigation systems fell into decay; earthquakes drove the terrified inhabitants away. Their cities, deserted, slowly died and the roads leading to them fell into disrepair. Months passed and then years. Soon the very existence of the cities was forgotten.

In 1860 and 1861, the Marquis de Vogüé, a French historian and traveler, visited the area and excitedly reported what he saw, thus drawing to Syria several American expeditions, around the turn of the century, and many historians, archeologists and writers from Europe.

The Marquis' proudest "discovery" in the rugged hills, some 40 miles northwest of Aleppo, was Qal'at Sem'an, the splendid church and monastery built in commemoration of a fantastic man known as St. Simeon Stylites.

Simeon—Sem'an in Arabic—was the son of a poor farmer. He was born in the vicinity of Qal'at Sem'an some time between the years 386 and 390. He first worked as a shepherd but then, being a highly religious young man, entered a local monastery at the age of 16. He stayed there 10 years and was then asked by his superiors to leave. He had developed into such an eccentric that the monks felt the church would be better served if he "went it alone"—which he did.

Simeon became a hermit who later, finding a single, 10-feet-high pillar that was ideal for meditation, went to live on top of it. Unfortunately, the local people soon decided that this strange young ascetic was a "holy man," and began to visit his pillar. Simeon, who prefered to be alone, moved to another, even higher pillar and set up housekeeping again. But still the people came, anxious to hear him preach. Simeon finally chose an



Saint Simeon's famous pillar... or what is left of it.

enormous pillar 50 or maybe 60 feet high, settled down and stayed there until his death more than 35 years later. On top of the pillar was a small platform where Simeon could sit, stand or kneel—but not lie down. A chain prevented him from falling. Food was brought to him several times per week by monks from a nearby monastery.

Despite his efforts to find solitude, his fame grew from year to year. Finally, he decided he must preach to those who came to the pillar and soon pilgrims were coming from countries as far away as Spain, Britain and Persia to hear him. His influence was enormous.

The Stylite died, it is generally believed, on July 24, 459. His body was brought down, first buried in the church of Constantine in Antioch, and later moved to Constantinople.

One of Simeon's spiritual heirs, St. Daniel Stylites, suggested to Leo, Byzantine Emperor, that a church be built in memory of Simeon and, in 476, the work began. Nobody knows today exactly how many years it took to complete it, but the result was a magnificent structure, undoubtedly the finest and biggest example of Christian contemporary architecture. Unorthodox in design, it was built around the pillar of St. Simeon still about as high as it had been when Simeon laid claim to it, and standing upright in a large octagonal space.

From the octagon, which was the heart of the church, four wings were built, one extending in each direction. Three were 75 feet long and almost as wide but the fourth, being the church proper, was 20 feet longer, and contained the altar.

Northeast of the church was built a mortuary chamber, a wall surrounding the entire complex, and some hastily erected defensive towers. The wall and the towers account for the church's name—Qal'at Sem'an means "Fortress of Simeon"—and they were necessary because the church had to be physically defended against Persian and Arab invaders. This the brave monks succeeded in doing for many years and it was not until July, 986, that Simeon's fortress was finally overwhelmed.

Simeon's church was a great example of early-Byzantine art: strong, noble and beautifully decorated. Today its ruins still reflect its former glory, but unfortunately little is left of Simeon's column. Though the monks tried hard to protect it after Simeon died, countless pilgrims chipped away at it until there's now not much more left than a large piece of stone, roughly the shape of an egg.

Over the centuries, Simeon's Fortress has fallen into ruins, but they are ruins which time has treated with reverence. There is nothing forbidding or depressive about Qal'at Sem'an, but rather an air of friendliness which gives the visitor the distinct feeling that he is welcome. Unlike many other sites in the Middle East, which seem to be there for the tourists only, Qal'at Sem'an is visited frequently by the local populace for whom the ruins are a source of pride and whose games and music bring life and laughter to this empty outpost of the Dead Cities.

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THE SCHOLAR FROM ALGERIA

BY JOHN ANTHONY

History, he said, is more than facts...

Man has always been fascinated by his past, and history is one of the oldest of the arts. At first it may have been confused with legend and the sagas of heroes; often it had a religious cast and purported to show the operation of the supernatural in human affairs. The Greeks were the first to secularize history, to make it a chronicle of factual events as far as these could be determined. Herodotus, who wrote in the 5th century before Christ, was called by the Greeks "the father of history."

It is only in comparatively recent times, however, that men have taken a long look at history and have tried to find out what is behind the rise and fall of dynasties, the spread and decay of civilizations. Vico, born in 17th-century Italy, is sometimes called the founder of this science. Oswald Spengler and Arnold Toynbee are modern seekers for the pattern or design in historic events. But much earlier, in the turbulent North Africa of the 1300's, an Arab scholar and statesman named Ibn Khaldoun sat down in his study in an Algerian village to compose the *Muqaddimah*, an Introduction to World History. If Herodotus

is the father of history, Ibn Khaldoun is the father of the philosophy of history.

The 14th century in the Maghreb —the Arab West—was an age of political turmoil and intrigue, and Ibn Khaldoun was a true child of his age. Born in Tunis in 1332 of a family originally from South Arabia, Abd al-Rahman ibn Muhammad ibn Khaldoun al-Hadrami, to give him his full name, was a patrician by birth, a member of the ruling class. The University of Zeitounia, or the Olive Tree, which still exists in Tunis, was already well into its fifth century when the young Ibn Khaldoun studied there. At the age of 20 he was appointed to a minor post at the court of the Hafsid ruler of Tunis, but during hostilities between Tunis and the neighboring city of Constantine, Ibn Khaldoun absconded and fled westward. In Morocco he joined the court of the ruler of Fez, a Merinid, traditional enemy of the

Hafsids. The court at Fez was a gathering place of scholars and poets, and Ibn Khaldoun continued his education there.

But he was drawn into politics and because of his Hafsid connections incurred the suspicion of the ruler of Fez, who was mounting an attack on Tunis. During the campaign, Ibn Khaldoun was put into prison, where he remained for nearly two years. Released on the death of this ruler, he threw himself enthusiastically into the political intrigues of the successors. When the candidate he supported died, Ibn Khaldoun fled to Spain.

Throughout the 14th century the Muslims were gradually being forced out of the Spanish Peninsula by the Christians. The family of Ibn Khaldoun had lived for several generations in Sevilla before settling in Tunis, and they may, like many Tunisian families today, have kept the key to their Spanish house to remind them of their lost domain. Granada, however, was still in Arab hands, and Ibn Khaldoun was welcomed there both for his family name and for his reputation as a scholar. The ruler in fact entrusted him with a diplomatic mission to the Christian King of Castille, Pedro the Cruel, who is said to have offered this Arab emissary a post at his own court and the restoration of his family property in Sevilla. Ibn Khaldoun declined the offer and returned to Granada. Another intrigue, however, soon forced him back to Africa.

For the next nine years, Ibn Khaldoun continued to play an ambiguous role in the dangerous game of North African politics. He frequently changed sides, traveled from court to court, was taken prisoner twice, agitated among the tribes for various masters, and was alternately prime minister, fugitive, tax collector, and retiring scholar. Disgusted with politics at last, he settled in the village of Qal'at al-Salamah in the province of Oran and there began to write the book that was to make him famous.

Enough has been said to show that Ibn Khaldoun had firsthand knowledge of the history of his own time and place. Perhaps it was his lack of attachment to any one country or ruler that explains the impartiality with which he was able to view human events. His extended travels —later in life he went to Egypt, Syria, and Arabia—and the high development of medieval Arab learning may explain his wide range of knowledge and interests. For his book is a geography as well as a history of the known world; it describes the principal races and religions with which he was familiar, the crafts, arts, and sciences, medicine, poetry, and the law of Islam; its interests range from the homely detail of how many times a teacher may strike a pupil (three) to the abstractions of economics and city planning.

But experience and learning alone cannot account for Ibn Khaldoun's extraordinary gift for deducing a few essential principles from the vast panorama of human activities and historic events. This gift can only be ascribed to genius, a term that explains nothing but merely names a phenomenon that may appear inexplicably in a village in North Africa as it does in New York, Peking or Timbuktu.

For the ideas of Ibn Khaldoun were far ahead of those current in the Islamic world of his time, and at least three centuries ahead of those in Europe. Unlike his contemporaries on both sides of the Mediterranean, he refused to accept history as either the reflection of God's will or the caprice of princes. Every society, he decided, is the product of forces that operated in the past, and to understand a society it is necessary to find out what those forces were. He discovered three laws: the law of causality, which operates in the affairs of men as it does in nature; the law of resemblance, for "human nature is uniform because of the common origin of mankind. There are certain constants in humanity which are met with everywhere and always, which means that the present is a criterion for judging the past"; and the law of differentiation, by which climate, geography, even diet may influence the economic and political life, the beliefs and morality of a society. Ibn Khaldoun also held a cyclical theory of history. He saw that states, like men, have their periods of youth, maturity and old age, and thought that the

cycle lasted about 120 years in each case.

Many of Ibn Khaldoun's ideas are almost universally accepted today and may even seem obvious and commonplace, but this is often the fate of once revolutionary ideas. Others of his theories have been superseded or rejected, and many of his assumptions have been proved false. But the importance of Ibn Khaldoun is that he found a new way of looking at human events and discovered patterns that no one had seen before. In his book we can find the seeds of several sciences yet to be born—economics, anthropology, political science, and of course the science or philosophy of history. Parts of his book have been compared to the work of such later geniuses as Machiavelli, Montesquieu, Gibbon and Hegel. Of course these thinkers and those sciences developed independently of Ibn Khaldoun, who was practically unknown in Europe until the 19th century. But when he was discovered, European scholars were surprised to find how much that they considered to be modern discoveries of the West had been foreshadowed in the work of the medieval Arab.

Ibn Khaldoun's life did not end with the completion of the *Muqaddimah*. At the age of 50 he went to Egypt, never to return to the Maghreb. Cairo was enjoying a period of prosperity and cultural brilliance under Mameluke rule. Ibn Khaldoun quickly gained the confidence of the ruler and was successively appointed university professor, college president, judge and diplomat. His taste for intrigue and a knack for making enemies frequently caused his dismissal from these positions of honor, but his intelligence, talents —and intrigue again—always brought him back.

While he was in Egypt a personal tragedy occurred. His wife and children, who had followed him through all the vicissitudes of his wandering life in North Africa and Spain, had been left behind in Tunis when he first went to the Land of the Nile. A few years later he sent for them, but the ship they sailed in, which also happened to be carrying a gift of purebred Arab horses from the ruler of Tunis to the ruler of Cairo, was sunk outside Alexandria with all lives lost. Ibn Khaldoun went into retirement from grief, but his energetic and—it must be admitted—somewhat combative nature brought him back into public life.

Toward the end of his career he accompanied the Mameluke Sultan of Egypt, Faraj, on an expedition to Damascus to oppose the Tartars, who were besieging the city. The leader of the Tartars, Tamerlane, or Timur the Lame, had won over most of Asia, from China to Syria, and had dreams of world conquest. As part of a Damascus delegation sent to make peace, Ibn Khaldoun was let down in a basket from the walls of the beleaguered city to go and meet the Tartar chief. The two men, the scholar and the conqueror, were much impressed by each other. Ibn Khaldoun spent two months in the Tartar camp, and at his host's request wrote a description of the Arab West. After being permitted by Tamerlane to return to Cairo, Ibn Khaldoun wrote a penetrating analysis of his old antagonist's character, describing him as being at once cruel and extremely intelligent and shrewd.

DRAWINGS BY DONALD THOMPSON

Ibn Khaldoun died in office, as the Malekite judge of Cairo, at the age of 74. In his life and work he managed to combine the two sides of man in society: contemplation and activity, participation and understanding, thinking and doing. And in the *Muqaddimah* he viewed man's past and present for the first time in a scientific way, examining the causes of history rather than merely the ends.

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WRITING FROM A TO Z

BY DANIEL DA CRUZ

Because he has an alphabet, man has a history and because of history, civilization...

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Egyptian Hieroglyph

Among the great pivotal inventions of mankind, the alphabet stands alone. Unlike the axe, the lever, the wheel, the screw and the arch, which sprang into being relatively whole and full-blown, the alphabet is the product of thousands of years of painstaking development by thousands of men, an evolution destined to continue as long as man uses it. The alphabet stands apart in another, more important way: it was the fruit of a conscious and deliberate attempt by man to lend a touch of immortality to his transient life. To the extent that he succeeded, man alone of the animal kingdom has a history, and because of history, civilization.

How deep in the shadowy past lived the man who first scratched a crude picture in the sand is anybody's guess, but by the late Stone Age, at least 20,000 years ago, cave dwellers were incising on the walls of their shelters pictures of marvelous fidelity—bisons, antelopes, mammoths, tigers and leaping human hunters bearing down on their quarry with upraised spears.

Through the centuries that followed the function of pictures gradually widened. Static scenes gave way to stories-in-pictures, along the lines of today's comic strips. When the need arose, as it ultimately did, to record elements of a story for which there is no easy or obvious graphic equivalent, such as *water* or *heat*, arbitrary conventional symbols, or ideograms, were devised: wavy lines for "water," a disc for "sun," and thus, by association, "heat," "light," "day," and even "sun-god." There were limitations, of course, to picture writing. There was no way to represent shades of meaning or express such abstractions as "loyalty," "fast," "through" and "anyway," or to distinguish between, say, a disc meaning "sun" and a disc meaning "day."


Egyptian Hieratic

On the other hand, picture writing, for all its faults, could preserve information and open further avenues for development. The first notable improvement, the expansion of the transition from pictography to ideography, took place sometime during the long period between 20,000 B.C. and about 5000 B.C., and the second—the introduction of a link between spoken words and written words—at the dawn of history (which was the dawn of history, of course, precisely because of the survival of intelligible records from that time on.)


Phoenician

Until that point the pictograms and ideograms had no relation whatever to the language of the people who drew them; they were equally intelligible—or unintelligible—to all men. In this respect picture writing resembled the sign language of the American Indians who, speaking many languages, invented a system of hand and arm signals which all could understand. The introduction of a link with the spoken language of the writers was of inestimable value in making writing a more precise reflection of men's thoughts. Previously, the meaning of a given symbol was determined largely by guesswork. How was the reader to know which of the various meanings of the disc-like symbol was intended by the person who transcribed it? In any given text, how could the reader decide whether the scribe meant "sun-god" or "day" or "heat" or "light" or "wheel" or just plain "circle"?


Egyptian Apis

The ancient Egyptians approached the problem with traditional conservatism and caution. They used straightforward pictograms: a picture of a river barge represented a river barge. They also used ideograms so that, for example, the representation of the human hand became endowed with the additional meaning of "work," and ultimately "power" as well. But to these familiar components of writing the Egyptians added phonology—the use of written symbols to represent syllables and single sounds.

We cannot but marvel at the inspiration of the unknown genius who first saw that speech can be preserved in visual form. It required an analytical mind of the first magnitude to realize that the flow of human language is a phenomenon different in essence from other sounds in nature. Even today the average man would be hard put to explain why the sounds of human speech can be easily recorded in writing, whereas the roll of thunder, the hoot of a train whistle, or the patter of a summer shower defy a similar transcription. The answer, of course, is that the *contrasting* sounds in a given language are limited; that every speaker of that language makes those contrasts regardless of the individual peculiarities of his voice, and that each such contrasting sound can be assigned an arbitrary symbol the speakers of the language accept.


Phoenician Aleph

In the formative stage of Egyptian writing, when graphic symbols were beginning to be used for speech sounds, it was customary to write homonyms—different words having the same pronunciation—with a single symbol. Egyptian was a language singularly rich in homonyms. It was also like Arabic, a language in which many derivatives could be extracted from a single consonantal root. These two features led to the use of a single phonogram for words which shared the same consonants in the same order, rather as if the English writing system used to express the "cr" sound in such words as *car*, *care*, *cure*, *cur*, *acre*, *Cairo*, *euchre*, *ichor*, *ochre* and *core* and left the reader to guess the missing vowel sounds. As the writing system was honed through use, certain phonograms, or phonetic symbols, began to predominate in writing certain combinations of sounds in *any* word in which they were found, as though the symbol were used in *cr*ash, *cr*yptographer, *ca*refully, and an*chor*, when *occurr*ing in the presence of other symbols. Finally, a single symbol came to represent each such sequence of consonants, so that scribes used 75 biconsonantal phonograms, of which only 50 were commonly employed, plus 30 uniconsonantal phonograms, of which six were alternative forms. Together, the syllabary covered the entire range of consonantal sounds in Egyptian speech and constituted an epochal achievement which would not be rivaled by man for another 3,000 years.


Greek Alpha

Unfortunately, the Egyptians didn't realize what they had wrought or, if they did, were careful not to advertise the fact. For rather than discard the unwieldy and inexact ideograms in favor of the streamlined syllabary, the scribes merely tacked the new system onto the old, multiplying their labors and piling on the confusion. It was as though the priest-scribes had been presented a Rolls-Royce with a full tank of gas, then used it to haul melons to market behind a span of arthritic camels. It has been said, in extenuation of the Egyptians, that the confusion would have been compounded had a syllabary been the sole means of writing, due to the many homonyms: *ab*, for instance, meant 20 different things, *ha* 40. This is possible, but not likely.

FAMILY TREE OF ALPHABETIC SCRIPTS

CHART BY DANIEL DA CRUZ

Egyptian Hieroglyphics
Egyptian Hieratic
Sinaitic
North Semitic
Ugaritic
Proto-Hebrew
("Canaanite")
Proto-Phoenician
Aramaic
(Semitic)
"Square" Hebrew
Palmyrene
Mandaean
Nabataean Sinaitic
Manichaean
Syriac Nestorian
(Non-Semitic)
Brahmi
Moabite
Edomite
Ammonite
Samaritan
("Colonial" Phoenician)
Punic (or Carthaginian)
Cypro-Phoenician
Sardinian
Phoenician
Yiddish
Judeo-Spanish (Judezmo)
Kharoshthi (Aryan)
Pahlavi
South Semitic
Lybian (or Numidian (?)
Iberian (?)
Neo-Punic
Arabic
Armenian (?)
Georgian
Kök Turki Runes
Sogdian
Himyaritic
Sabaean
Minaean
Qatabanic
Hadhramautic
Tamachek (Tuareg)
Greek
Slavonic
Persian
Pashtu
Spanish
Urdu
Turkish
Szekler (Early Hungarian)
Ethiopic
Hindustani
Malay
Swahili
Berber
Malagasy
Hausa
Uighur
Phrygian
Glagolitic
Albanian
Pamphylian
Cyrillic
Lydian
Carian
Amharic
Tigré
Tigriña
Russian
Ukrainian
Bulgarian
Serbian
Old Roumanian
Mongolian
Old Church Slavonic
Bulgarian Glagolitsa
Croatian Glagolitsa
Church Dalmatian
Church Montenegrin
(South Indian)
Kalmuck
Manchu
Buriat
Etruscan
Gothic (of Wulfila)
Messapian
Coptic
Lycian
(North Indian)
Picenian
Faliscan
Siculan
Umbrian
Alpine
Venetic
Oscan
Runic (?)
Latin
Gupta
German
English
Turkish
Bantu
Navajo
Aztec
Spanish
Finnish
Hungarian
Esperanto
Guaraní
Polish
Takri (?)
Kuchean
Landa (?)
Agnean
Sarada (Kashmiri)
Siddhamatrka
Chinese
Central Asian Slanting Gupta
Tibetan
Khotanese
Kanarese Telugu
Grantha
Sinhalese
Brahmanic
Jain
Kavi (Old Javanese)
Tamil
Champa
Khmer
Mon
Gurmukhi
Sindhi
Multani
Nagari
Kaithi (?)
Dives Akuru
Chakma
Siamese
Chinese
Lepcha
Passepa
Korean (?)
Batak
Lampong
Redjang
Miao
Deva-Nagari (Hindustani)
Proto-Bengali
Buginese
Lao
Burmese
Assamese
Bihari
Oriya
Gujarati
Nepali
Bengali
Shan
Karen
Mangyan (?)
Tagalog (?)
Tagbanua (?)
Khamti (?)
Kashtawari
Jaunsari
Sirmauri
Chameali
Dogri
Kului
Kochi
Mandeali

In English, *go* has upwards of 40 meanings, *run* more than 100, and neither occasions any particular difficulty. A more reasonable explanation for the duplication of systems and the grim adherence to ideograms is that the knowledge of reading and writing was the main prop, and therefore most jealously guarded secret, of the priests. A simple writing system, easily learned by the man-in-the-street, would have spelled the end of the privileged priestly class, and this the priests were determined to prevent. The Greeks gave us the name for Egyptian writing, *hieroglyphics* (literally "sacred, carved letters"), but the priests called it *m-d-w n-t-r* ("speech of the gods") and were so successful in maintaining both their monopoly of writing and the fiction of its celestial origin, that it endured fundamentally unchanged from about 2900 B.C. to the end of the 4th century of the Christian era.

Hieroglyphics, as the name implies, were used mainly for monumental works—carving on steles, tombs, obelisks and the like. But parallel to the hieroglyphics grew another form of writing better adapted to the more expendable medium of papyrus, a writing material made from Egyptian marsh reeds, and the ancestor in name and in fact of paper itself. This writing, called *hieratic* ("priestly"), was written with a reed quill on papyrus in slavish imitation of hieroglyphic characters. The characters were originally transcribed in vertical columns, later becoming horizontal lines written from right to left. Because of its speed as compared to chiseling letters in basalt or granite, hieratic eventually replaced hieroglyphics in all governmental, sacred and commercial writings except those designed to endure through the ages. A natural consequence of the speed at which hieratic was written was the subtle transformation of the rigid hieroglyphics, which it never ceased to represent, into a smoothly flowing, almost cursive script.

Hieroglyphics and hieratic script were already ancient when, around the 20th century B.C., the center of gravity in the development of writing shifted from the banks of the Nile to the Sinai Peninsula. The turquoise mines of that arid land were bountiful but the labor supply to work them was not, and the Egyptians had to hire shepherds to supplement the criminals and prisoners of war who were normally assigned to the back-breaking task of extracting the semiprecious stone from the earth. The shepherds' own tribal shaikhs acted as foremen for this pastoral labor force, presenting supply requisitions, making payrolls, drawing up production reports for absentee masters. But few of the shaikhs had the patience to master the skull-cracking complexities of hieratic script, and they cast about for alternatives.

The shaikhs soon realized that the Egyptian syllabary, which provided a running guide to the pronunciation of the hieroglyphic ideograms with which it was invariably associated, was in its own right a perfectly adequate script. They had neither the inflexible traditions of the Egyptian scribes which inhibited the use of the syllabary separately, nor religious scruples, nor the fear of losing an exalted station. Selecting 40 characters which seemed to fit their Semitic language best, the shaikhs—doubtless with a deep sigh of relief—abandoned the redundant ideograms and thereby vastly simplified writing for the first time since hieratic evolved from hieroglyphics several thousand years earlier. It was still far from an ideal writing system, but for the rough-and-ready record keeping of the labor-gang bosses in the Sinai mines it served admirably, especially when compared to the hieratic script it replaced.

The next step came, apparently, when the Canaanites, the great traders of the eastern Mediterranean seaboard, observed the use of the syllabary, saw its utility, and determined to adapt it to their own needs. But being foreigners, and not knowing the phonetic values which the 40 syllabic symbols represented, they gave names to each which probably seemed most appropriate.

One of the 40 symbols, for example, was the hieratic sign derived from the original hieroglyphic symbol for *eagle*. The hieroglyphic *eagle*, being drawn with careful detail, was plainly a picture of a bent-beaked bird, and the Egyptian word for it was *t-y-w* (the vowels in both Egyptian and Canaanite were not written and can now only be surmised). But hieratic scribes through the centuries had streamlined the symbol for *eagle*, and by the time the Canaanite traders arrived on the scene the sign suggested to them not an eagle, but an oxhead, slightly tilted. They forthwith dubbed this sign with the Canaanite word for oxhead—*alif*.

Another Egyptian syllabic sign was a box-like affair which, to the Canaanites, could signify nothing but "house," and house (*bayt* in Canaanite) it duly became. Down the list they went, blithely assigning to each of the 40 symbols their own imaginative equivalents, usually quite far removed from the original Egyptian sounds and values.

Not that it mattered. For the Canaanites were on the threshold of an invention far more significant than the syllabary which the shaikhs of Sinai had patched together from the phonetic symbols of hieratic script. Finding their new syllabary ill-suited to the demands of their tongue, the Canaanites suppressed all but the initial sound of each character's name, so that when it came to recording speech, the "a" of *alif*, the "b" of *bayt*, and so on were the sole elements retained. They thus reduced the one-sign-representing-two-sounds system which made the syllabary so bulky, to a one-sign-represents-one-sound system, which we call the alphabet. The process by which the Canaanites arrived at the alphabet is *acrophony*, and the end product, the *acronym*, is an extremely useful linguistic mechanism without which

governments, for one notable example, would move at an even more glacial pace than they do.

Acronyms have been around a long time. One every Latin student remembers is SPQR—Senatus Populusque Romanus (Senate and People of Rome), but others crowd us in from every side. Some are SMART (Supersonic Military Air Research Track), or SLIM (Submarine-Launched Inertial Missile), or simply FATUous (Fleet Air Tactical Unit), like TJPOI (Twisted Jute Packing and Oakum Institute) and USACMLCSCH (U.S. Army Chemical Corps School). A good many are so much a part of everyday speech that we fail to recognize them as the initial sounds of words strung together to form other words: hifi, anzac, jaycees, sonar, radar, NATO, loran, WAC, WAVE, TAPLINE and snafu. Others make pronounceable jawbreaking combinations in foreign languages: *Stuka* (Sturzkampfflugzeug), *Gestapo* (Geheime Staatspolizei), and that all-time favorite, the Soviet news agency *Tass* (Telegrafnoe Agenstvo Soyusa Sovetskih Socialisticheskih Republik).

The principle of acrophony, applied to the syllabary of Sinai, gave the alphabet (the name itself is derived from the Greek forms—*alpha* and *beta*—of the Semitic initial letters *alif* and *bayt*) to the science of writing. But it was left to the Phoenicians, the inheritors of the Canaanites who occupied what is now roughly the coastal area of Lebanon, to give the alphabet to the world. It was a task for which they were uniquely equipped. The Phoenicians, hemmed in by the snow-capped Lebanon Mountains, turned toward the sea with a zeal to trade unmatched in history. They established the metropolises of Carthage, Utica, Cadiz, colonized Crete, Cyprus, Sicily and Sardinia, sailed beyond the Pillars of Hercules out into the dark Atlantic as far as the British Isles, and, anticipating the Portuguese by more than 2,000 years, circumnavigated the continent of Africa, perhaps the most splendid achievement in the annals of seafaring.

Wherever the Phoenicians went, they left examples of their priceless invention behind, in the form of orders, invoices, bills of lading, inventories and receipts. No trade goods carried in the holds of their deep-bellied ships were more avidly received and imitated, and best of all, it was free. Ironically, the Phoenician alphabet which fathered the alphabets that have come down to the present day promptly expired itself, leaving virtually no traces in its own homeland of Phoenicia. Concentrating on commerce rather than the hereafter, the Phoenicians did most of their writing on papyrus, which was cheap and portable, instead of on stone, like the eternity-possessed Egyptians. As a consequence, the papyrus rotted, burned, blew away, and with it all the records, history and literature of the Phoenicians. Furthermore, at the very moment the Phoenician alphabet was being eagerly received in the Mediterranean world, the language of Phoenicia was being shouldered aside in its own motherland.

The successor was Aramaic, a robust Semitic tongue which by the end of the 7th century B.C. had become the *lingua franca* of the entire Middle East and which for more than one thousand years dominated the Biblical lands (it was the language of Christ and many books of scripture), and was even known in Greece, Egypt, Afghanistan and India. Its writing system proved more influential in the East than even the Aramaic language itself, however, for from the Aramaic alphabet descended nearly every alphabet since used in Asia—Arabic, Hebrew, the many Indian scripts, Burmese, Thai, Malayan, Tibetan, Manchu, Korean, and scores of others.

Thus long before the Christian era, the world had cleaved into two great alphabetic divisions: the Aramaic and the Phoenician, each of which, like the families of man, went their own separate paths, subdividing in the other alphabets, some giving rise to many descendants, others to none. Adding and dropping, squeezing and stretching characters to suit the convenience and aesthetic judgment of the writers, the cultures which borrowed the alphabets changed them beyond recognition. For who today would identify Arabic and English as being cousins however distant? Yet consanguinity is there, because the genetic relationship between all alphabets can be—*has* been in every case—traced back to the turquoise mines of the Sinai Peninsula.

In the West, meanwhile, the victory of the Phoenician alphabet over all other writing systems had been short-lived. Its disregard of vowels was endurable, if inconvenient, for writing Semitic languages, which could still be read and understood in the context of its consonantal combinations. But for the Indo-European languages of the West, which relied more heavily on vowels, the Phoenician alphabet as it stood was decidedly awkward. It lft mch t mch t th mgntn f th rdr. The vigorous new Greek culture made up that deficiency by assigning certain of the borrowed Phoenician letters to vowel sounds, and inventing or adapting others to accommodate the sounds of the Greek language for which there was no Phoenician equivalent. As it was written in the 6th century B.C., Greek retained 19 of the original 24 Phoenician symbols.

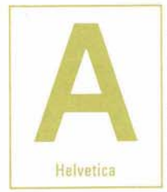
Early Greek was something of a headache to read. Sometimes it was written from right to left, sometimes from left to right, and sometimes *both* ways in a single text. This latter style, called *boustrophedon*, the Greek word for "ox-turning," followed the pattern of furrows

described by an ox, plowing first in one direction, then turning back for the next furrow. If this seemed too straightforward for his readers, the Greek scribe could also write his horizontal lines of text from the bottom to the top of the page instead of in the usual top-to-bottom manner, and in any case he made the reader's life miserable by failing to put spaces between words, so that lines were one continuous mass of letters. These Spartan practices were discarded little by little, so that by 403 B.C., when the Greek alphabet was officially adopted by Athens, the language was written with 24 characters, from left to right and from top to bottom of the page, in capital letters (lower-case letters were still a thousand years away) and without word spacings or punctuation of any kind. After Aristophanes of Byzantium in the following century introduced the grave, acute and circumflex accents to aid students in pronunciation, the Greek alphabet was frozen for the next 2,000 years in a form practically identical with that used in Periclean Athens.

Long before the Greek alphabet had been polished to its final brilliance, it had been borrowed by its sometime friends (but more often enemies) the Etruscans, occupying that part of Italy now called Tuscany. The highly-civilized Etruscans expanded their version of the early Greek alphabet to 26 letters, and used it for inscriptions in a language that has obdurately defied decipherment, even though their letters are easily recognizable. The Latin kingdom of Rome, unashamed borrowers of all that was useful, took over 21 of the 26 Etruscan letters even as they were resolutely extinguishing the last remains of the Etruscan kingdom itself. After the conquest of Greece by Rome in the 1st century B.C., the Greek symbols *Y* and *Z* were added to the Latin alphabet to facilitate transliteration of Greek words into Latin, for Greek at that moment in history had the same great prestige that Latin was to enjoy in the Middle Ages. The annexation of these two letters to the alphabet gave the West virtually the same alphabet that it has today, for the medieval additions of *U*, *W* and *J* were actually only variations of the existing letters *V* and *I*, respectively.

The evolution of the alphabet, however, is never quite complete and so, with the slow dissolution of the Roman Empire and the increasing isolation of the fragmented kingdoms and duchies of Europe, a number of so-called national scripts emerged from the monasteries where learning had sought refuge. There the repetitious copying of religious works led to the development of cursive scripts, flowing letters connected one to another, the precursors of what today is called "handwriting." Between the 6th and 9th centuries, Merovingian appeared in France, Visigothic in Spain, and Italian, Germanic and Anglo-Irish in their respective areas of Europe, each a new departure from the angular, beautifully-proportioned Roman. The heavy administrative loads of Charlemagne's court led to the development of the Carolingian hand, a blending of upper- and lower-case letters which could be written with speed and facility by overworked scribes. An offshoot of the Carolingian, the Gothic or Black Letter, at one time was popular throughout northern Europe, including Britain, and was the favored script of Germany until recent years. Venetian scribes designed a minuscule hand now called *italics*, traditionally thought to be an imitation of the handwriting of the poet Petrarch. After movable type was invented in the West (possibly but not certainly by Johann Gutenberg) in the 1440's, the Venetians perfected the type face called *roman* from which, with italics, have descended all the ordinary type styles used in the West today.

Actually, the development of alphabets will not be complete until man has forgotten how to speak. Every year new alphabets are being devised for primitive peoples for whom no writing systems exist, and in this class belong the peoples who speak more than half of the world's 3,500-odd languages. The introduction of a Latin alphabet for Chinese has long preoccupied, yet eluded, the masters of that country, who seek better means of accelerating education and bringing the people under a central authority. Japan, whose literary language is based on ancient Chinese, is also a candidate for Latin alphabet: the prevalence of eyeglasses among this very literate population testifies, not to a hereditary ocular weakness, but to the years of labor involved in learning thousands of intricate characters of the Chinese-derived *kanji* script, plus the 48 characters each of the *hiragana* and *katakana* syllabaries which accompany *kanji* writing.



The world's luckiest readers and writers are those who, like the Finns, Spaniards, Norwegians, Turks and Koreans, have an alphabet whose every symbol stands for a single sound, and whose every sound is represented by one symbol only—or very nearly so. Offhand, a speaker of English might consider his alphabet a perfect instrument, until reminded that, for example, the sound "o" may be variously represented as *o* (so), *ough* (thorough), *ow* (below), *ew* (sew), *eau* (bureau) *oe* (oboe), *oa* (boat), *ou* (pour), and *oh* (Oh!). It may be some consolation to reflect that all languages share this disability. Languages are constantly on the move (linguists estimate that 19 per cent of *any* language's basic vocabulary changes every 1,000 years), and as the written record is more permanent than oral speech, the rate of change of a given language's writing system is slower. But change there is, and the written representation of a language must keep pace—as it did in Egypt, in the Sinai Desert, in Phoenicia, Greece and Rome and as it will inevitably, wherever man is moved to record for the future his thoughts, his deeds and his achievements.

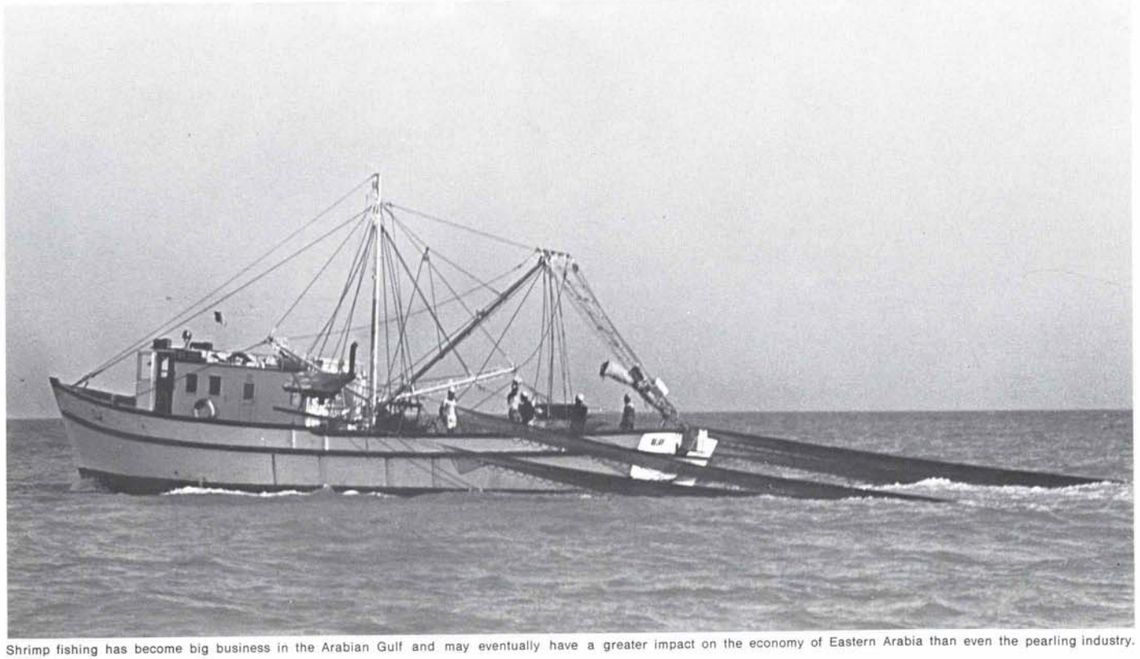
Lettering based on the drawings of Oscar Ogg in his book,"The 26 Letters," Thomas Y. Crowell Company, New York.

BY WILLIAM TRACY

PINK GOLD

For the Arabian Gulf's new shrimping industry the future is as rosy as the shrimp themselves.

"It seems that the more you take, the more will come," shipowner al-Gosaibi says. "We're working a fertile sea bottom that hasn't been touched since God created this earth."



Shrimp fishing has become big business in the Arabian Gulf and may eventually have a greater impact on the economy of Eastern Arabia than even the pearling industry.

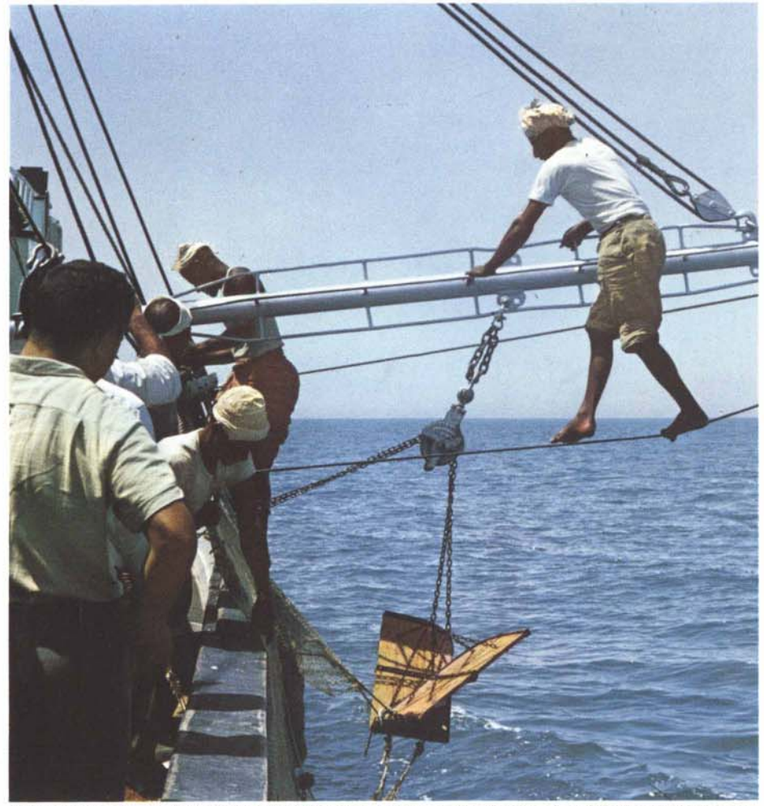
PHOTOGRAPHY BY ALI KHALIFA

Shrimp, according to one encyclopedia, have 10 legs and swim backward. That is, of course, when they swim at all, which isn't very often. Usually they prefer to burrow into a bank in shallow water and hope that people like Captain Jum'a will keep away. Captain Jum'a—Captain Friday in translation—is the skipper of a 67-foot shrimping trawler called the *Kifah* and his job is catching shrimp. Every day during the season, which runs from October to April, he backs the trawler away from a dock in a small port called Manifa on the northeast coast of Saudi Arabia and heads for the sandbars not far from Manifa. Over the sandbars his crew lets down the nets and begins to scour the bottom for the small, curled-up, pink crustacean whose world-wide popularity is the basis of one of the fastest growing industries in Saudi Arabia, and whose price is beginning to pump impressive sums of riyals into the economy of the country's Eastern Province.

The *Kifah* is usually away from the dock at first light and her crew is normally at work as soon as the first heavy note of the big diesel throbs into the stillness of dawn. There are nine men in the crew, each tanned by sun and salt water to the color of the teak deck, each wiry and strong, with thick-muscled arms and shoulders, each with his job to do. The first job is to check the two main nets. As the trawler heads for open water and the sun, first pink, then orange in the mist, rises over the Gulf, six men immediately begin to inspect the airy piles of netting on deck, going over them inch by careful inch and mending frayed spots with blue nylon thread. When the trawler reaches the sandbar the nets will be dropped into the water and dragged along the bottom, expanding, as the water forces two wooden doors open, into huge balloons 52 feet across. The pressure is enormous, and frayed cord cannot withstand it.

Two other men, meanwhile, have dropped down into the dim, insulated hold and have begun to chop great blocks of ice into mounds of thin shavings in which the shrimp will be packed as soon as they are sorted. And the ninth man has gone to the galley to prepare the first of numerous Thermos bottles of steaming cardamom-flavored coffee that the crew will consume during the day.

On deck Captain Jum'a has checked the depth of the water and has ordered



Fishermen free snagged "doors," wooden panels attached to net; under pressure, doors spread apart, opening net.

Khalifa al-Gosaibi, shrimp magnate.

Only the choicest fish are saved for the crew; the rest go back.

a gradual decrease in the boat's speed. The *Kifah* is approaching the fishing grounds. The boat barely seems to move, but actually is moving at the speed of a man walking briskly. At the sound of a bell from the pilothouse the crewmen take their position, silently and efficiently and at precisely the right moment drop the nets, each suspended from steel riggings, into the sea, one on the port side, the other on the starboard. On the starboard side they drop a smaller yellow trial net into the water close to the boat. They then sweep the deck, hose and scrub it and settle back to await results.

The big nets stay down about one hour and a half, but the trial net is raised every 10 minutes. If it emerges with a basket load—60 to 70 pounds—the boat will circle that area repeatedly; if the net is empty or brings up mostly fish, the captain will steer along the bank in a straight line.

At the end of the hour and a half, if the catch is good, the captain will feel the drag of the big nets. He rings the bell twice. The winches start to turn, winding in the steel cables and dragging the long nets closer to the boat. In a surge of foam, the dripping nets, bulging to the bursting point, break the surface and are hoisted aboard. One sailor reaches under the bag and tugs at a heavy rope. The slip knot gives and spills the contents out in an almost liquid torrent—hundreds of quivering pounds of shrimp and fish, sliding and flopping across the deck until they cover it in a mound two feet high. The nets are quickly dropped back into the water, a canvas sunshade is stretched overhead and the men, squatting on low stools, start the tiresome job of sorting the catch. They use little wooden trowels to avoid puncturing a finger on the spine of one of the poisonous fish which may be lurking in the pile.

It takes more than an hour to separate the shrimp and to pick out choice fish to be put aside for future consumption. When the sorting is finished, the shrimp must be washed with sea water, shoveled into baskets and stored in the insulated compartments in the hold, a layer of shrimp alternating with a layer of crushed ice. Then the deck is hosed and scrubbed again, usually just before the bells signal that it is time to haul in the big nets again. It is a tough, backbreaking cycle and by noon the men are more than ready for a break and a meal. They are served unlimited helpings of fish and shrimp with heaps of fluffy white rice smothered in spicy tomato sauce with onion and lemon slices, followed by oranges or apples and steaming pots of tea and milk.

After lunch and a short rest in the shade they return to work, to the rhythm of lowering the nets, hauling up the trial net, reeling in the big nets, sorting the shrimp and storing the catch in ice. By mid-afternoon, as hot humid air presses down on the Gulf, the bins below deck are usually full. But sometimes, if the day is slow, nets are not hauled aboard for the last time until the sun is low to the horizon. Then the men sort the last catch in the twilight as the *Kifah* heads back to Manifa, reenters the bay and moves between the buoys toward the dim lights on the pier, the search over for another day.

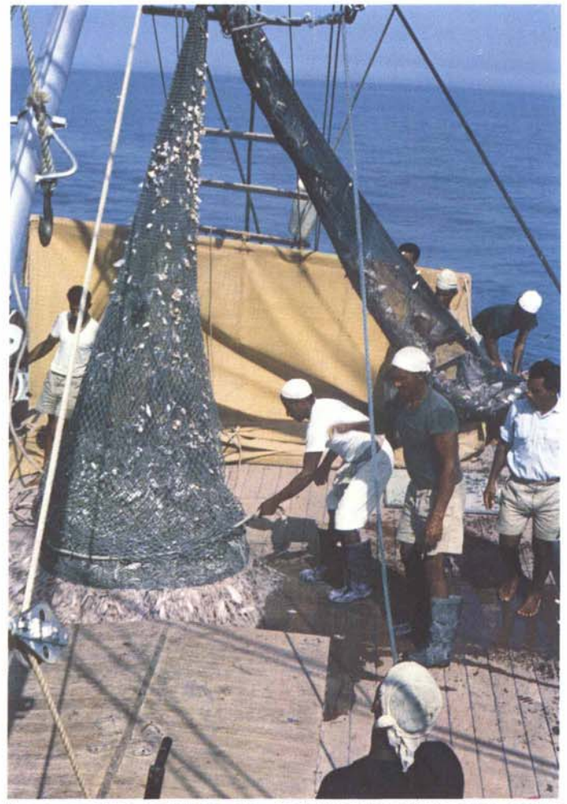
In the Arabian Gulf the search for shellfish is not new. From Bahrain, many years ago, some 70,000 men, diving from 3,000 ships, used to scour the bottom of the Gulf in search of oysters. The oysters, of course, were not intended for consumption, on or off the half shell; they were sought for the pearls they, hopefully, contained. Shrimping is more mundane of course, but it is also more profitable, according to an industrious businessman named Khalifa al-Gosaibi, the mainspring of the new expansion of the shellfishing industry and a man whose father remembers the great days of pearling.

Mr. al-Gosaibi is a good-natured smiling man with a crisp moustache and goatee, and considerable experience in business; his family operates plants and cold-storage warehouses in Saudi Arabia. He is also an optimistic man. If all goes well, he predicts, the 20th-century fishing fleet he is painstakingly assembling, and the spanking-new processing plant he has built, will eventually have a greater impact on the economy of Eastern Arabia than the more glamorous pearl industry ever had.

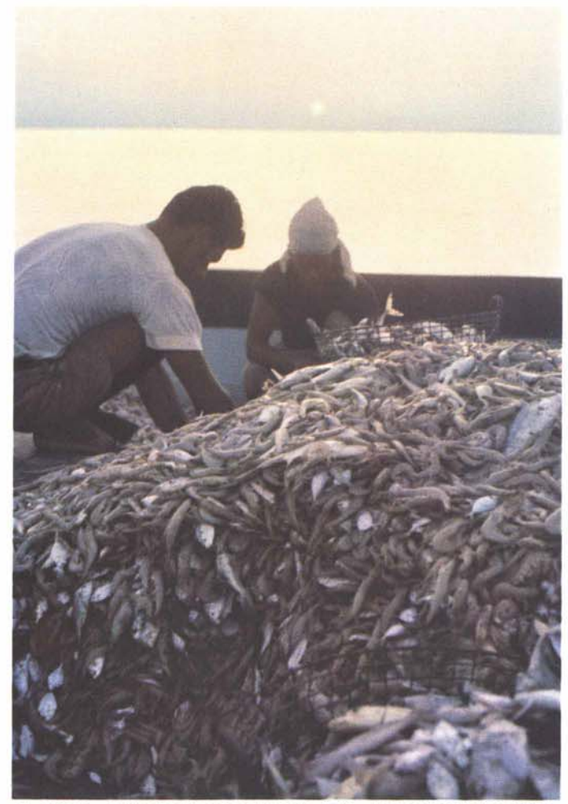
At the moment, Khalifa al-Gosaibi and his brother 'Adil boss a fleet consisting of three local wooden dhows and four diesel trawlers whose names succinctly sum up the story of Mr. al-Gosaibi's venture: the *Kifah* (Struggle), *Filah* (Expectation), *Najah* (Success) and the *Rabah* (Profit). They also own three insulated trucks which pick up the iced shrimp at the Manifa pier and speed them to the freezing plant in Dammam, and two huge trailers in which refrigeration equipment is being installed. They also have on tap plans to build a new pier so they will no longer have to use the jetty built by the Arabian American Oil Company (Aramco) to service its offshore drilling barges, and, later, a new packing plant and a salt-water ice factory similar to one now operating on the coast of Libya. Dammam, the capital of the Eastern Province, has a deep-water railroad terminal and the Gosaibi cold storage plant has, on the mainland, a rail siding which enables the brothers to unload imported frozen meats and vegetables from Europe and America at their doorstep, and refill the freight cars with freshly frozen fish and shrimp for export overseas.

The history of the modern frozen-fish industry in the Arabian Gulf goes back to the late 1940's when Aramco began to purchase fish and shrimp from local fishermen and process them for sale to its employes. Since the cold-storage facilities available then had not been specifically designed for such a role, the company, in the early 1950's, built a small freezing plant at its Ras Tanura Marine Terminal. Unfortunately, the local fishermen weren't able to supply the volume necessary to operate at full capacity and the plant had to close—but not before C.E. Dawson, an American expert on aquatic hard-shelled animals, completed a study commissioned by Aramco to determine if the Gulf *could* support a profitable fishing industry. His conclusion was yes, it certainly could—but only if modern trawling equipment and methods were introduced.

In 1961 Mr. al-Gosaibi approached Aramco's Arab Industrial Development Department and requested technical and financial assistance to revive the fishing project. Aramco was quick to encourage the move and Mr. al-Gosaibi arranged to purchase some equipment from the Ras Tanura plant. Aramco also guaranteed a 1.1 million-riyal loan from a local bank to match his own initial investment. Then, in July, 1962, the Saudi Arabian Govern-



"In a surge of foam, the dripping nets ... break the surface and are hoisted aboard."



"... shrimp ... sliding and flopping across the deck ... in a mound two feet high."

First estimates forecast a daily catch of 6,000 pounds of shrimp but the Gulf turned out to be much more generous: one day the boats brought in 17,000 pounds by noon.

Laden with shrimp from the rich beds in the sand below, the nets are dragged to the surface and hauled aboard.

Man at winch guides the dripping nets onto the deck.

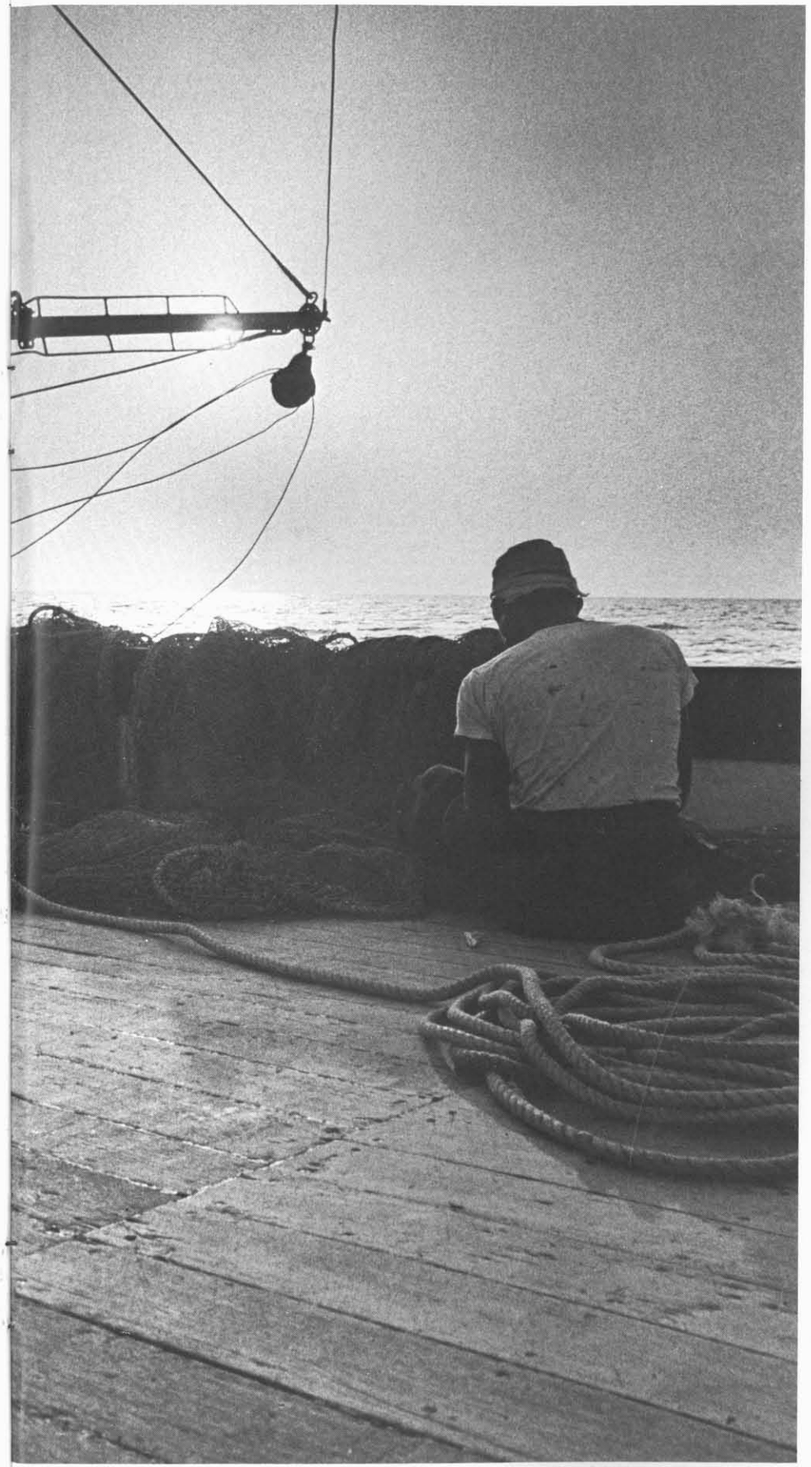
ment granted his firm a 15-year fishing and shrimping concession in the waters of the Eastern Province, extending from the Kuwait Neutral Zone to Qatar. A year later, the al-Gosaibi brothers opened for business and with the help of experts brought in from Europe and the United States began to explore the potential of the Gulf waters. For two seasons two dhows and two modern trawlers worked their way up the coast with an echo sounder and small trial nets. The results were discouraging at first, but at last they struck gold—pink gold—on a sandbar off Manifa. It measured 20 miles wide by 25 miles long and was crawling —literally—with shrimp.

Since then the al-Gosaibi's and their captains have learned a lot about shrimping. They have found, for example, that the best fishing grounds lie at a depth of 6-10 fathoms (36-60 feet) and that a soft, smooth bottom is essential if trawling is to be practicable. To stray over a rocky area or a reef—or over one of Aramco's underwater pipelines from the company's offshore fields—means the certain loss of a net, each of which costs $1,000. Mr. al-Gosaibi has even developed a highly original theory about shrimp. "Dragging the bottom is like plowing a field," he says. "The shrimp come in to feed where the sand has been stirred up. It seems that the more you take, the more will come. We're working a fertile sea bottom that hasn't been touched since God created this earth."

As an employer, Mr. al-Gosaibi conducts his business on the promise that if he takes care of his men they will return the favor. In 1965 there were about 120 employes at Manifa, about half on the boats, and 300 in the Dammam plant. The company provides medical care, work clothing and meals, and is building a new canteen. "Make your people comfortable and they will want to work for you," is his firm belief.

The company sells few frozen shrimp in the Middle East market other than those which are flown to Jiddah on the west coast of the Kingdom or to Beirut, distribution center for the cities of Lebanon and Jordan. Mr. al-Gosaibi doesn't want to depress the prices unfairly by competing with the local small fishermen whose primitive reed traps on the mud flats bordering the Gulf are no match for the modern trawler. Occasionally, when the plant is working at full capacity, the surplus shrimp are boiled and sun-dried for shipment to the villagers in the desert interior who still prefer the traditional product, but usually the plant concentrates on its frozen, jumbo-size shrimp which are marketed under the label "Ocean Reef" in the United States to de luxe hotels and restaurants. Mr. al-Gosaibi is also looking into the possibilities of setting up a cold-storage distribution center in Genoa, Italy, to serve the European market.

Original estimates forecast a catch of 6,000 pounds daily and the plant was built to process and freeze that quantity. The Gulf, however, turned out to be much more generous—one day last fall the seven boats brought in 17,000 pounds by noon—and already the al-Gosaibi brothers have begun expanding. They have built a second-story ice machine which shoots flake ice by gravity to wherever it is needed in the plant. A new cooling tower has gone up and new compressors have been installed. Two 20,000-pound freezers have arrived and a blast freezer, designed to handle five tons of whole fish per day, is on order. In the near future Mr. al-Gosaibi also hopes to add a fish meal plant which will process the now-discarded shrimp heads, as well as the several thousand pounds of inedible fish which are presently shoveled back into the sea each day. Such "trash fish," as they are called in the United States, can be converted into poultry feed which in turn will boost another booming local industry: poultry raising.

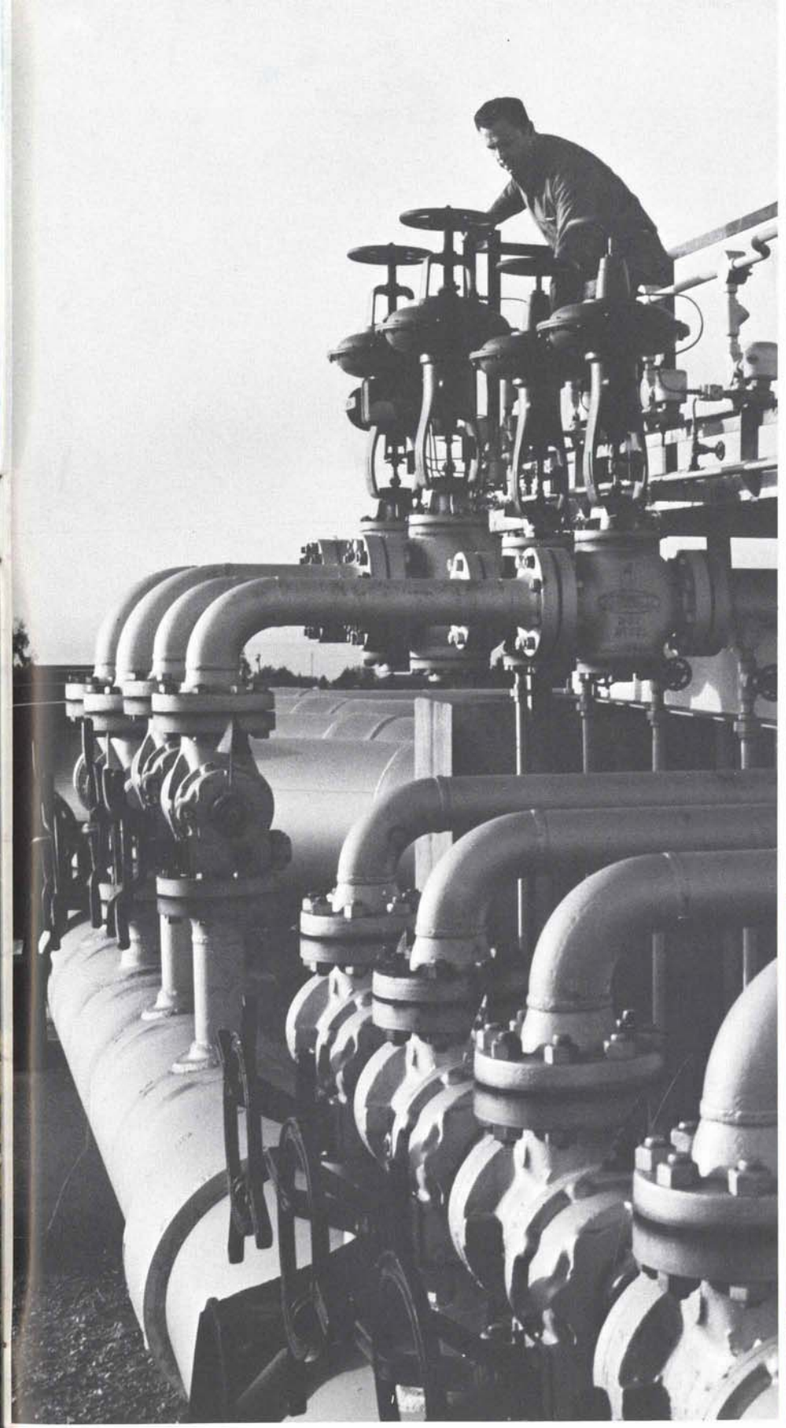


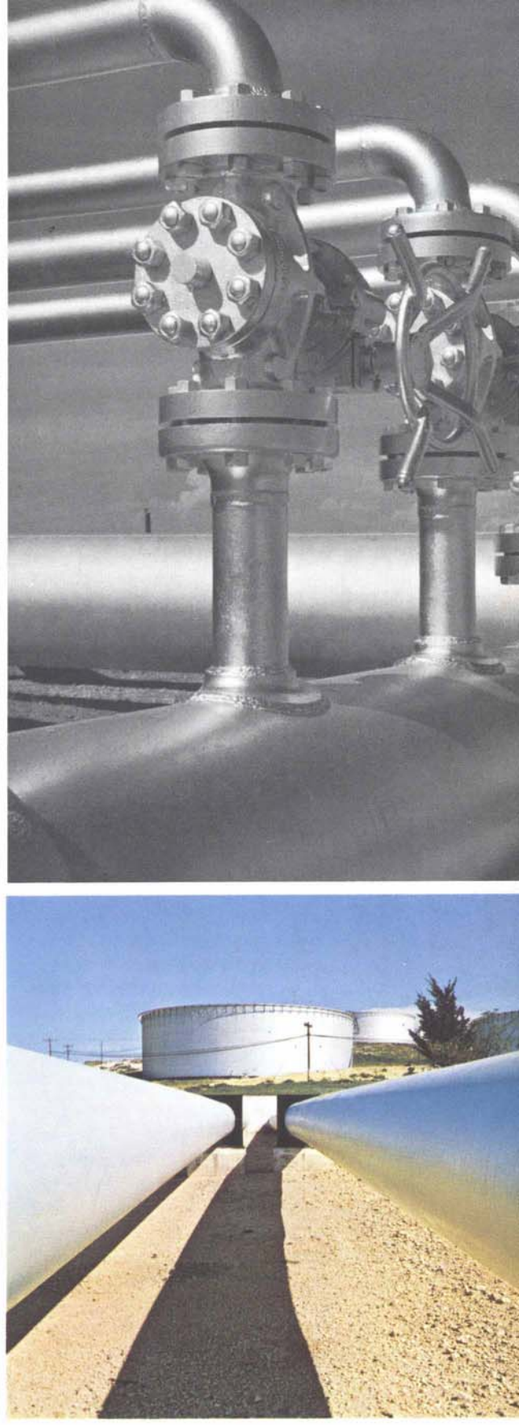
Even when the ship's homeward bound the fisherman is never idle; his nets must be repaired constantly and carefully.

Last year Mr. al-Gosaibi had two new trawlers built in Pakistan. The construction took more than a year and Peter Larsen, a Danish net expert who has been with the firm three years, had to fly to Karachi to supervise the rigging and sail the boats back to the Gulf with their Pakistani engineer. Now the company has ordered four additional craft from the United States. "They're more expensive," Mr. al-Gosaibi explains, "but all four boats can be finished in as many months. When you're trying to get moving you have to save time. That means money!"

By late last year Mr. al-Gosaibi's plant staff was nearing 700 and he had added five boats to his fleet—under agreements with British, Italian and Greek fishing firms. The agreements allow these firms to trawl in the concession area, operate their own boats and assign their own specialists and technicians, providing that they employ local crewmen and that each captain agrees to train two Saudi Arabs. Each firm will also send out a "mother ship," a vessel of 500-800 tons with complete cleaning, packing, freezing and storage facilities, which will stay at sea for days at a time, hovering near its chicks like a hen. This year there were to have been some 30 boats and three mother ships working in the Gulf either flying the al-Gosaibi flag or working by agreement with him. It is still a long, long way from the 3,000 ships of the pearling industry, but the future looks almost as rosy as the jumbo Gulf shrimp themselves.

William Tracy, who writes regularly for Aramco World, *is a free lance writer formerly stationed in Beirut and now making a lecture tour through Australia and the United States.*





At the far end of the pipeline, high above the Mediterranean, stand the silver tanks of Tapline's...

TERMINAL

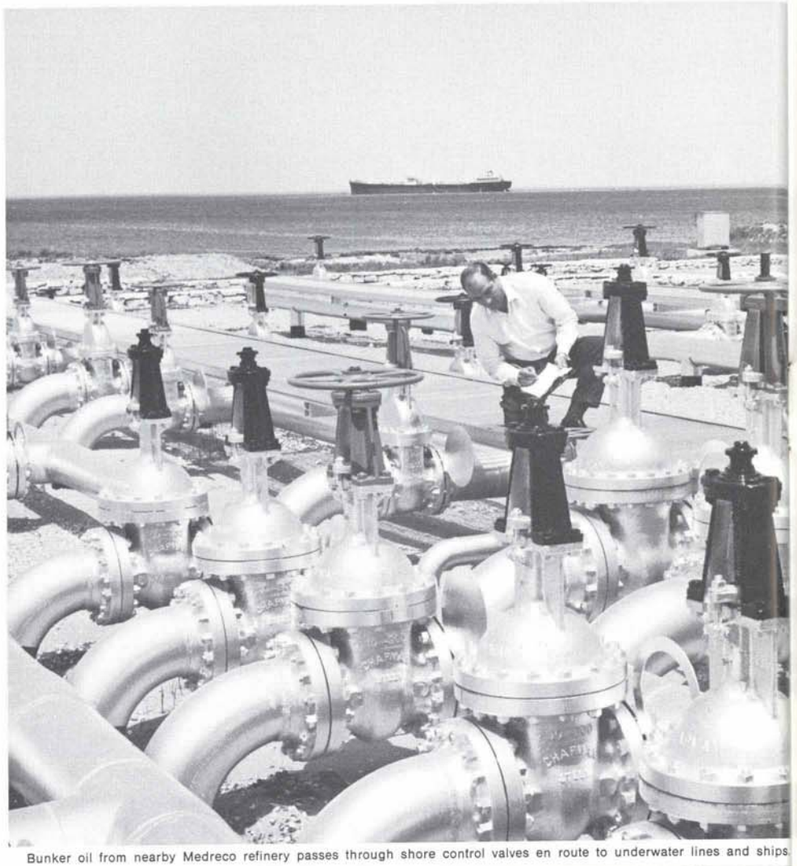
By definition a terminal is usually the end of something, not the beginning. But the Trans-Arabian Pipe Line Terminal at Sidon is both an end *and* a beginning. It is the end of the long steel pipeline that links the oil fields of Saudi Arabia with the Mediterranean and it is the beginning of the Mediterranean tanker routes over which much of the oil from Saudi Arabia moves to the markets of Europe and beyond.

Prior to the construction of the Trans-Arabian pipeline, the only way to transport crude oil from the fields of the Arabian American Oil Company (Aramco) to Europe or anywhere else was by tanker. It was a costly trip—since tankers had to either pay expensive Suez Canal tolls or make the long haul around Africa. It was also a long way. Via the canal a round trip measured 6,250 miles. An overland shortcut, obviously, made a lot of economic sense but the only shortcut possible would be a pipeline reaching from the Arabian Gulf to the Mediterranean and the obstacles were staggering. It would be the longest pipeline in the world—752 miles, plus some 300 miles of line owned by Aramco—and probably the most expensive.

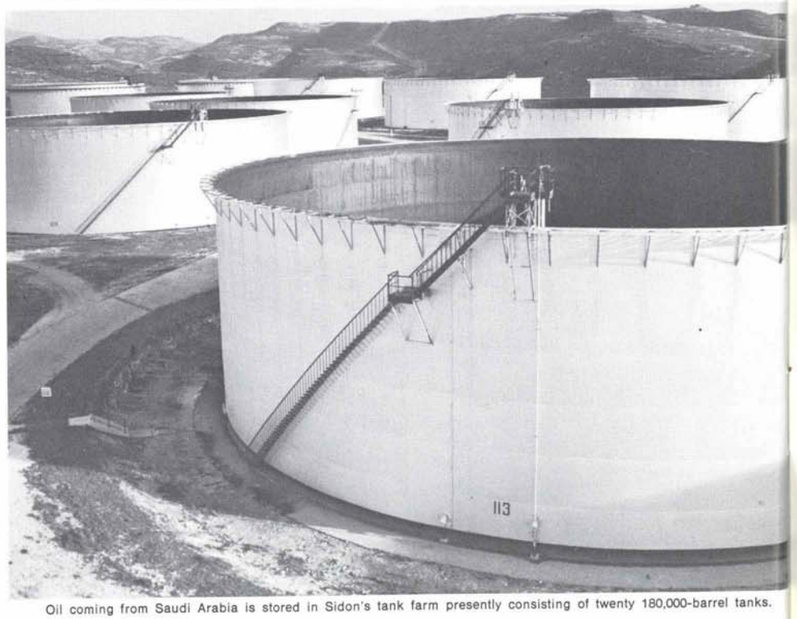
The companies that own Aramco, however, decided that Saudi Arabia's proven reserves and the certainty of a soaring demand for oil in postwar Europe outweighed the obstacles. They formed the Trans-Arabian Pipe Line Company—Tapline—and ordered their engineers into action. Five years later the engineers finished the pipeline and the first oil trickled into the line and across Saudi Arabia to the hills of Lebanon. It reached Sidon on November 10, 1950 and from that day on has never stopped. Today, 465,000 barrels a day—nearly 20,000,000 U.S. gallons—travel steadily across Saudi Arabia, Jordan, Syria and Lebanon and into the complex of tanks, valves, underwater lines and tanker berths that comprise the Sidon Terminal.

The operation of Sidon Terminal seems basically simple: route the oil into the tanks, store it there until the tankers arrive, hook up the underwater lines and hoses to the tanker and open the valves until the tanker is loaded.

As in most of the petroleum industry's operations, however, the reality is vastly more complicated than the appearance. In today's highly competitive oil industry,

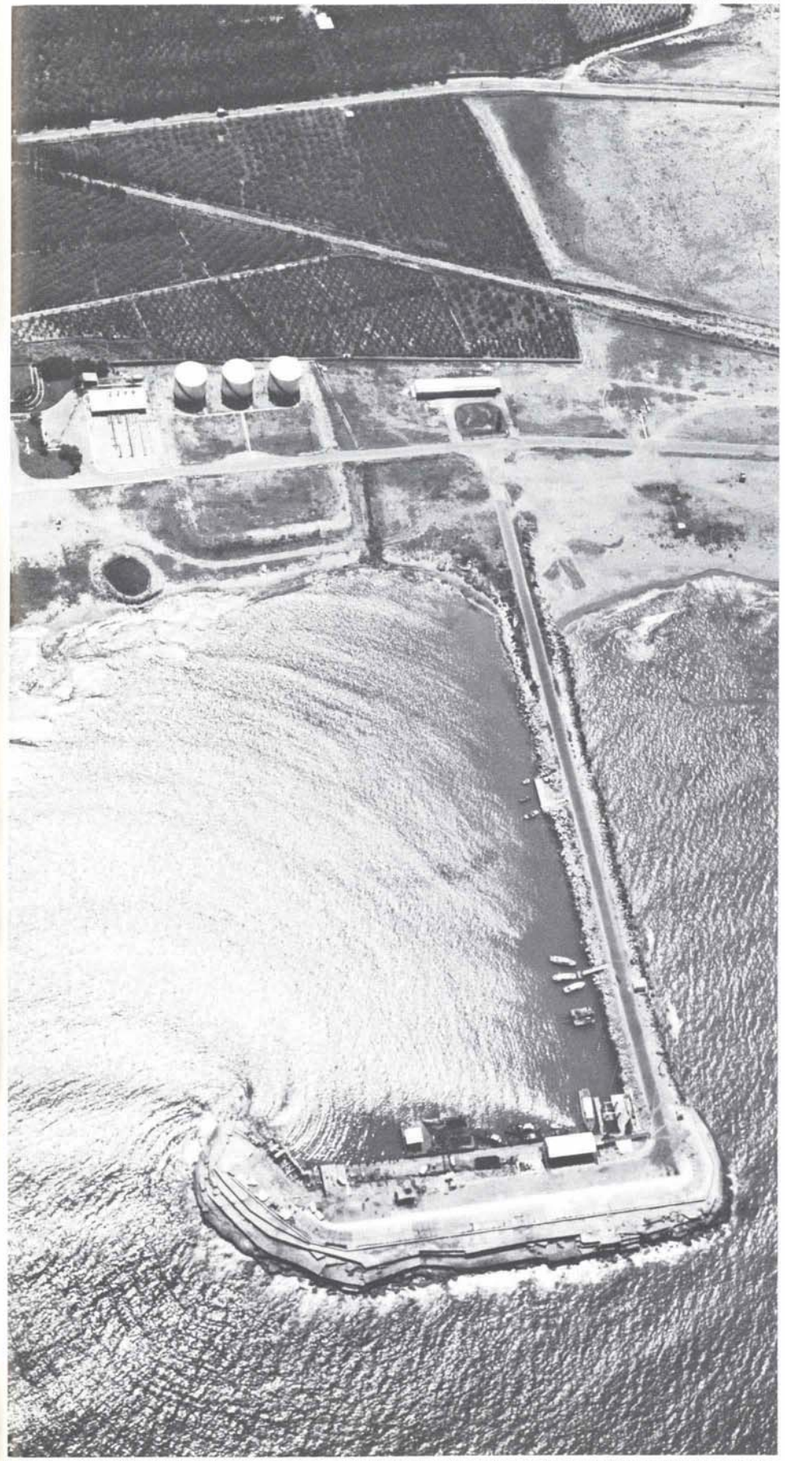


Bunker oil from nearby Medreco refinery passes through shore control valves en route to underwater lines and ships.



Oil coming from Saudi Arabia is stored in Sidon's tank farm presently consisting of twenty 180,000-barrel tanks.

PHOTOGRAPHY BY KHALIL ABOU EL-NASR



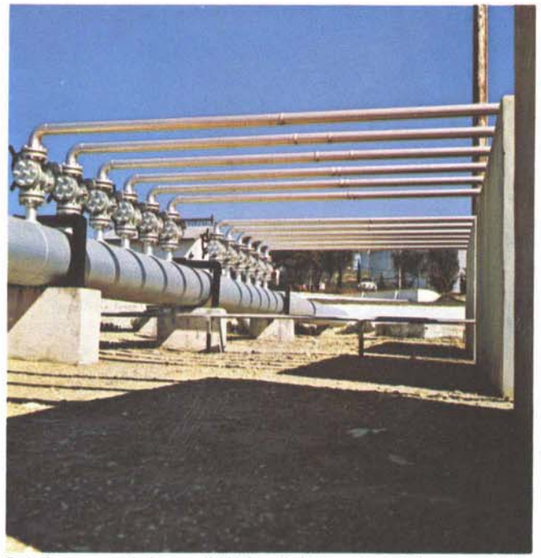
Onshore southwesterly winds sweep the sea into unusual swirling patterns when waves are obstructed by terminal pier.

a terminal must strive unflaggingly to load tankers faster and more safely. Furthermore, to control such enormous amounts of oil requires foresight, planning and coordination of the highest order. With 465,000 barrels a day now pouring into the terminal, the 20 storage tanks, each with a capacity of 180,000 barrels, could be filled in just over a week. Thus the number and capacity of the tankers calling at the terminal and the time it takes to load them must be carefully calculated to insure that the discharge of oil is roughly equivalent to the throughput of the pipeline. This in turn must be coordinated in New York with the output of other oil fields, the fluctuations of demand and the movements of tanker fleets.

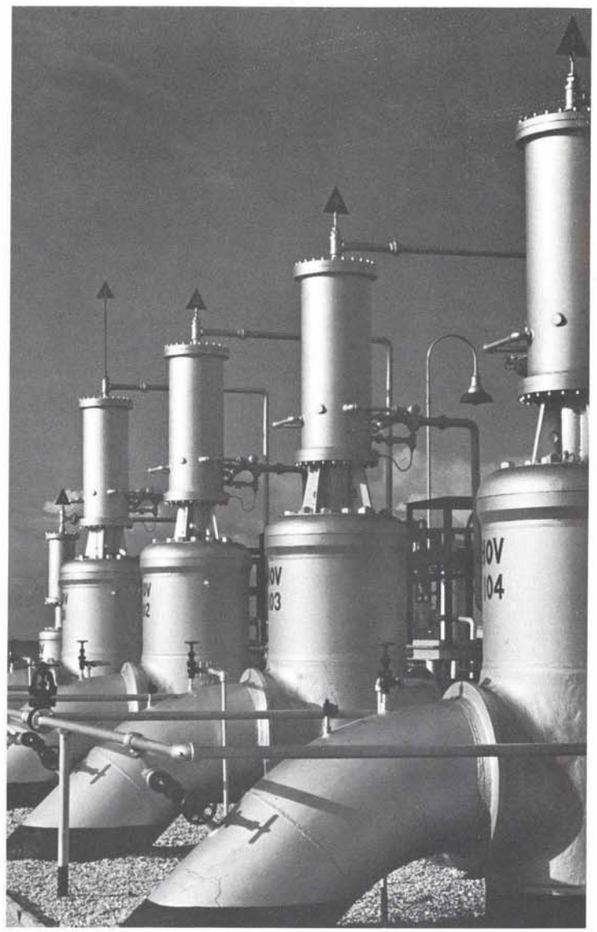
The most careful planning, however, cannot anticipate all emergencies. Problems—expensive problems—often develop when storms close the port for prolonged periods. With tankers unable to draw their scheduled rations, the storage tanks quickly reach capacity and the throughput in the pipeline must be reduced. Then, after the port is reopened, the backed-up tankers drain off the available supplies, forcing subsequent customers to wait until additional oil can come through the line. To insure that this will not occur too often, Tapline is now completing two more storage tanks, each with a capacity of 500,000 barrels. They will be among the largest storage tanks in the Middle East and will increase the terminal's capacity to a level sufficient, in most instances, to absorb the pipeline throughput without reducing the flow.

A large part of Sidon's success stems from efficient preparation. Under the system in operation now, tanker owners must notify Tapline far in advance via Aramco and Tapline offices in New York and Beirut what ship will be dispatched, who her owner is, how much oil she will want, and when her captain expects to call at Sidon. The ship's captain continues to keep Tapline's dispatcher in Beirut informed of his progress until he can give an exact time of arrival. Since this is usually three days in advance the terminal has time to insure that an adequate supply of petroleum will be available as soon as the tanker drops anchor at one of the four deep-water loading berths and the heavy-duty rubber loading hoses are coupled to her manifold.

Shore control station operator regulates the flow of oil from tank farm to ships.



Part of pressure-reducing manifold ("harp") which regulates oil flow to tank farm.



Arrow-shaped indicator, at left, signals that control valve no. 1 is open and in use.

When this is done the valves on the storage tanks are opened and—via gravity feed—the oil begins to flow swiftly into as many as four ships at a time. Rates vary but last May the terminal notched a new record by loading 730,950 barrels at an average rate of 58,953 barrels per hour. Generally the larger the ship, the faster it can be loaded. It takes about 5½ hours, for example, to load ships up to 20,000 deadweight tons but only about 10 hours for an 80,000-DWT supertanker.

The Sidon Terminal loaded its first tanker on December 2, 1950, and from that day until the end of 1965, 11,212 tankers have called at Sidon. Though the number of ships has dropped sharply the total amount loaded has been steadily increasing. In 1954, for instance, 898 ships called at Sidon each taking aboard an average of 130,000 barrels, whereas in 1965 only 605 ships called, but loaded more than twice as much oil.

Some of the tankers calling at Sidon are "regulars," commuting, as it were, between a certain refinery and Sidon. But more than half of the ships only make the trip once. "Unannounced" customers practically never show up—a mere half dozen since operations started, 16 years ago.

There have been many developments in the oil industry since Tapline was planned and built. The size of tankers, for example, has increased at an astonishing pace—from a World War II standard of 16,000 deadweight tons to the gigantic 300,000 ton tankers now on order in Japan. To compete effectively, Tapline —which was designed originally to compete with the 16,000-ton T-2's of World War II—has had to improve its efficiency constantly. Sidon, for example, pioneered full centralized control of loading facilities and seven point moorings for larger tankers. The terminal also introduced 12-inch, and, later, 16-inch underwater hoses.

By such innovations, Tapline has achieved one of the fastest, yet safest, turnaround-time records in the Mediterranean. Even in an age when tankers are carrying crude oil at two-thirds what it cost in tankers of the 1940's, Tapline has held its own and intends to continue doing so in the challenging years ahead.

By force of gravity four mighty pipes feed the underwater lines at the end of which rubber hoses are coupled to the tanker's manifold; an 80,000-DWT supertanker can be loaded in about 10 hours.