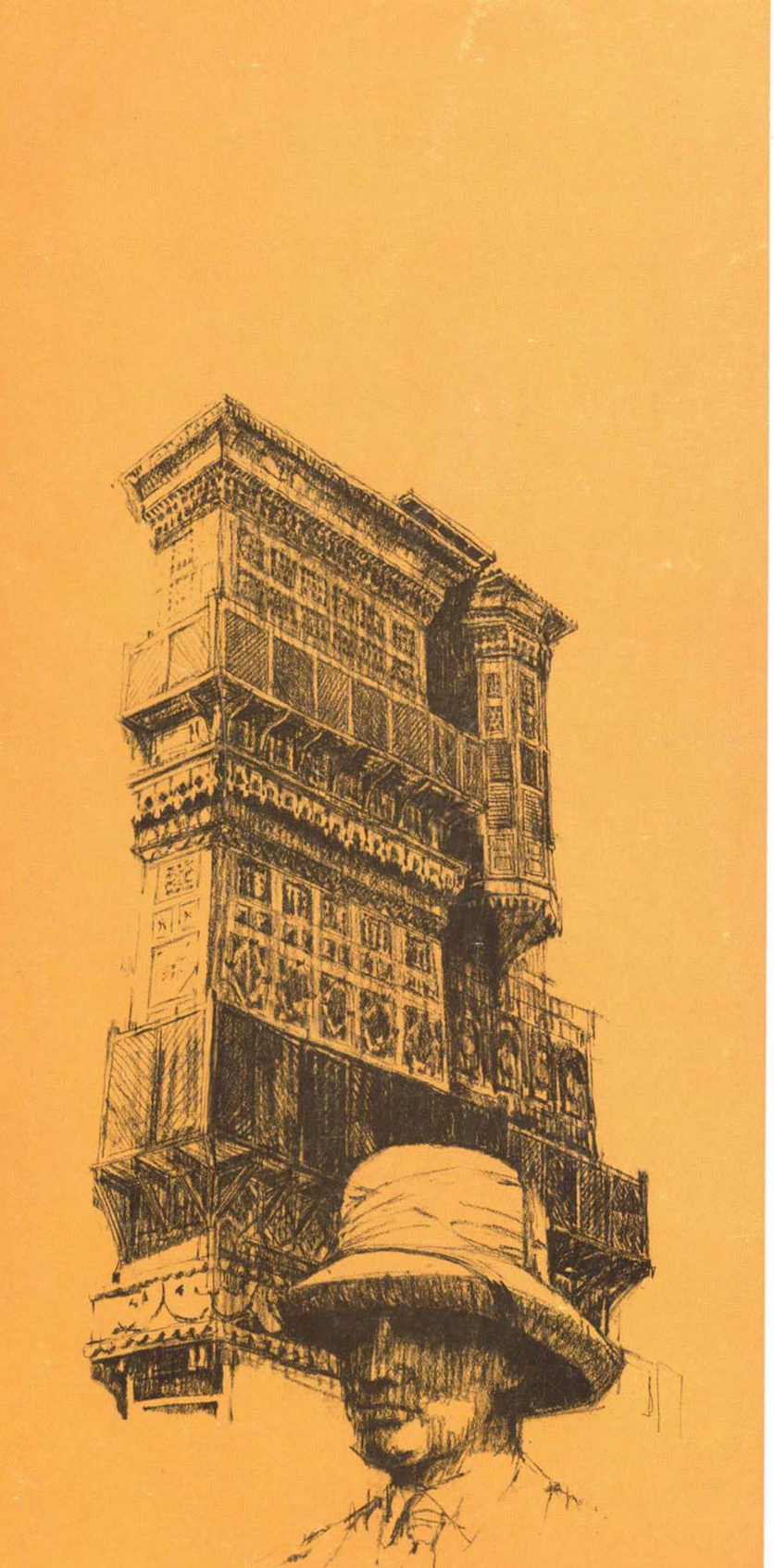

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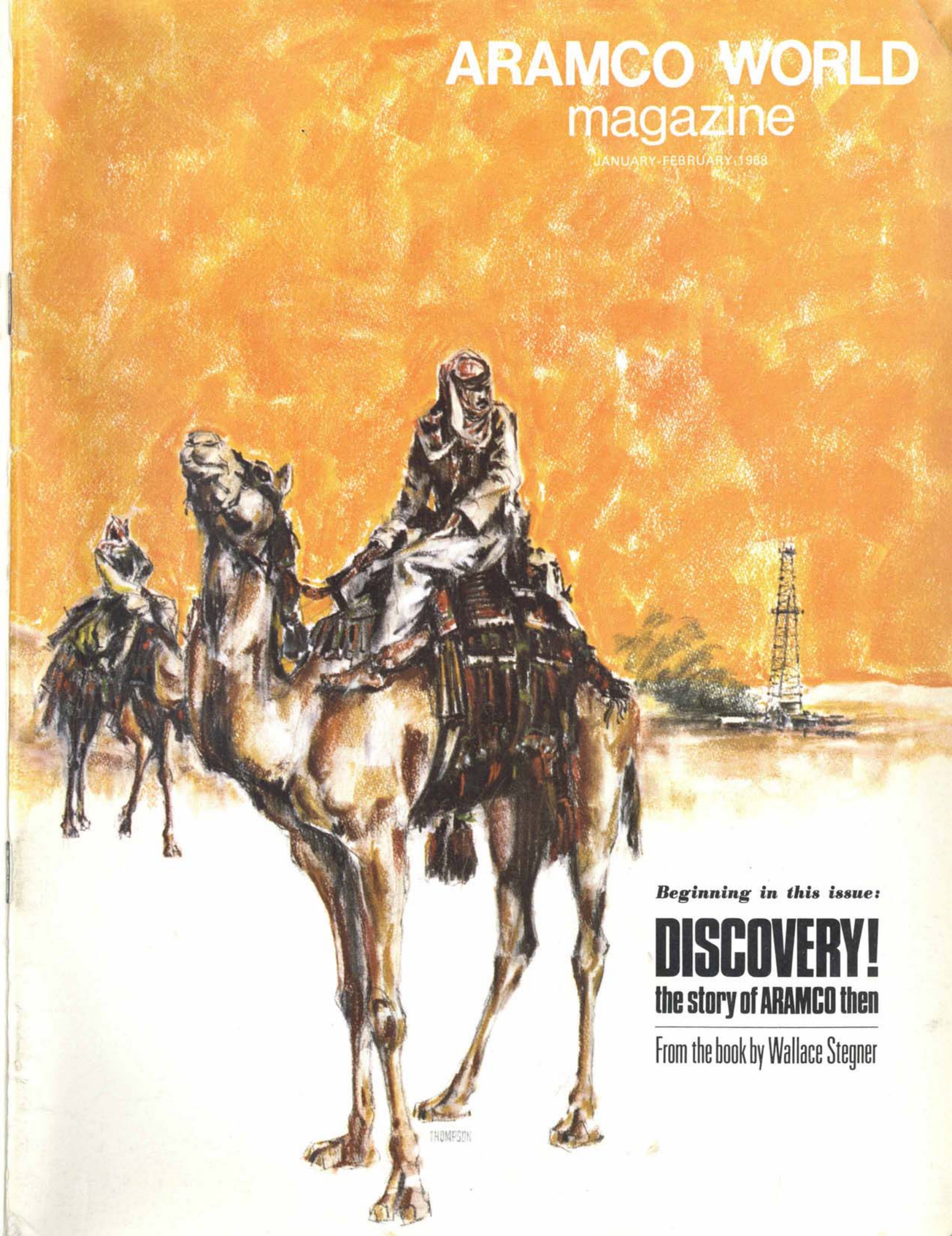

Beginning in this issue:

DISCOVERY!
the story of ARAMCO then

From the book by Wallace Stegner

ARAMCO WORLD
magazine

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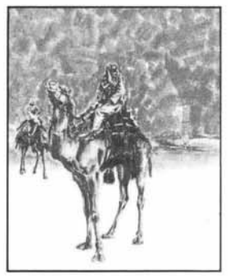
Cover: In drilling Saudi Arabia's first oil well, Dammam # 1, seen in the background of this pastel by artist Donald Thompson, the Arabian American Oil Company opened another chapter in the exciting story of 20th century pioneers on a desert frontier. This story, told by novelist Wallace Stegner in his book 'Discovery' begins on page 11 in a special section of this issue and will be continued during the coming months.



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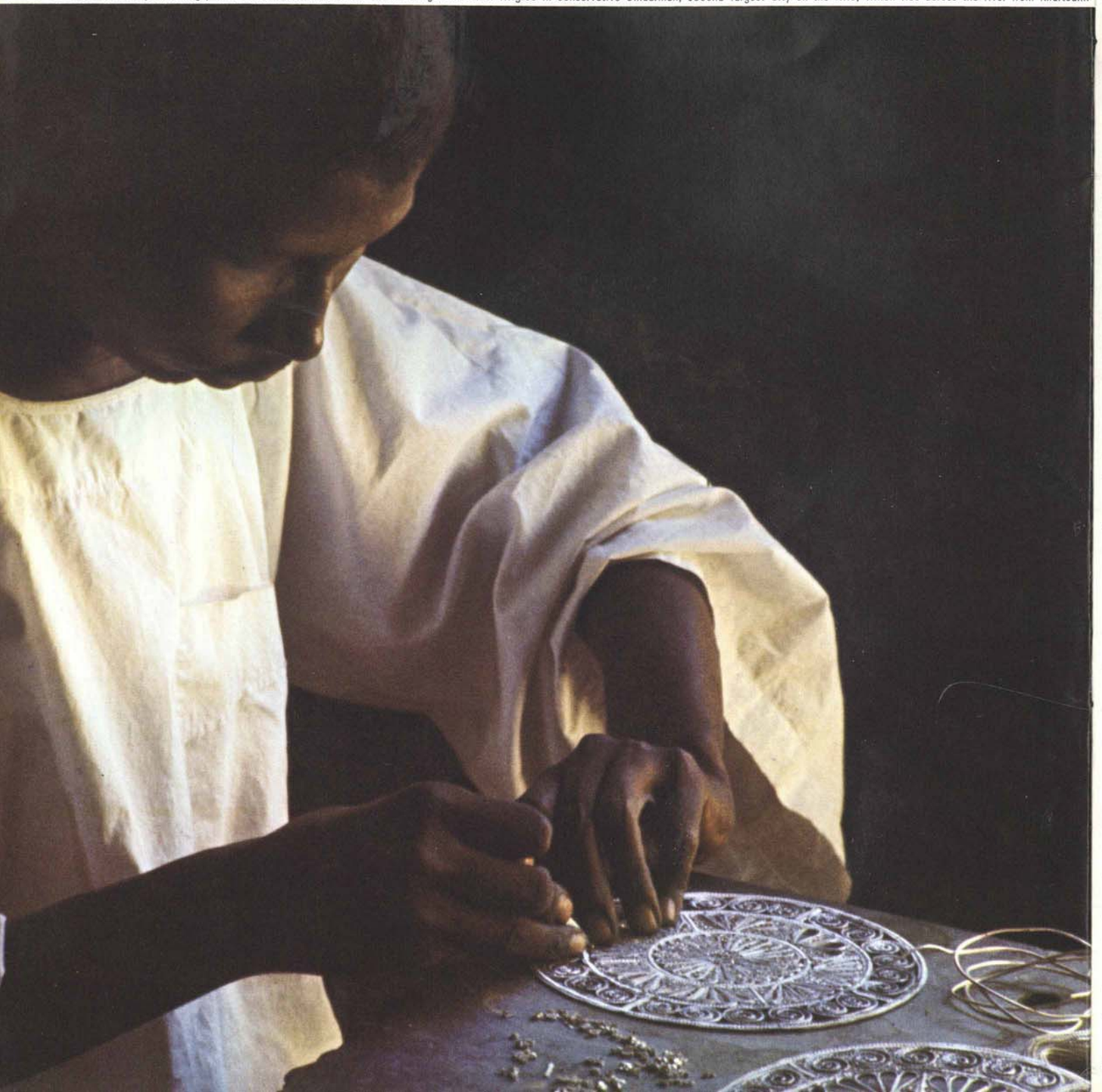
Along the banks of a fabled river...

FACES BY THE NILE

WRITTEN AND PHOTOGRAPHED BY TOR EIGELAND

Skilled Sudanese artisans painstakingly turn out handicrafts such as woodcarvings and silver filigree in conservative Omdurman, second largest city on the Nile, which lies across the river from Khartoum.



Like a fine needle pushing through a rough canvas, the river pulls a thin rich thread of green across the harsh cloth of the Nubian and Libyan deserts, binding together and sustaining the lives of some 38 million people.

The fabled Nile: it flows with majestic variety through nine countries, through mountain gorges, jungles, lakes, game parks, swamps, deserts, fertile farmland and thriving cities, almost 4,200 miles northward to its delta outlets on the Mediterranean Sea. Yet, for fully three quarters of its course, the mighty river flows through just two countries, the Republic of Sudan and the United Arab Republic (Egypt).

The Nile has two major branches, their histories and romance masterfully described in Alan Moorehead's companion volumes, *The White Nile* and *The Blue Nile*. The White Nile, longer of the two, tumbles down out of the central African highlands from great natural storage reservoirs or *nyanzas*—the lakes, Victoria, Albert and Edward—and, as the Albert Nile, enters the plains and marshes of southern Sudan near the town of Juba.

The river there is called *Bahr al-Jabal* by the Arabs, River of the Mountain, after its source. From Juba to Khartoum it is navigable by paddle-wheeled steamers, though for the first part of the trip—through a great bog called the Sudd—just barely.

The Nile is joined by several minor tributaries in the vicinity of Malakal, yet by the time it has wormed its way through nearly 400 miles of narrow shifting channels in this almost hopelessly clogged swamp it carries only 14 per cent of the water which eventually reaches Egypt. Still, this is the branch which provides the basic flow of the Lower Nile and prevents it from drying up between the annual floods.

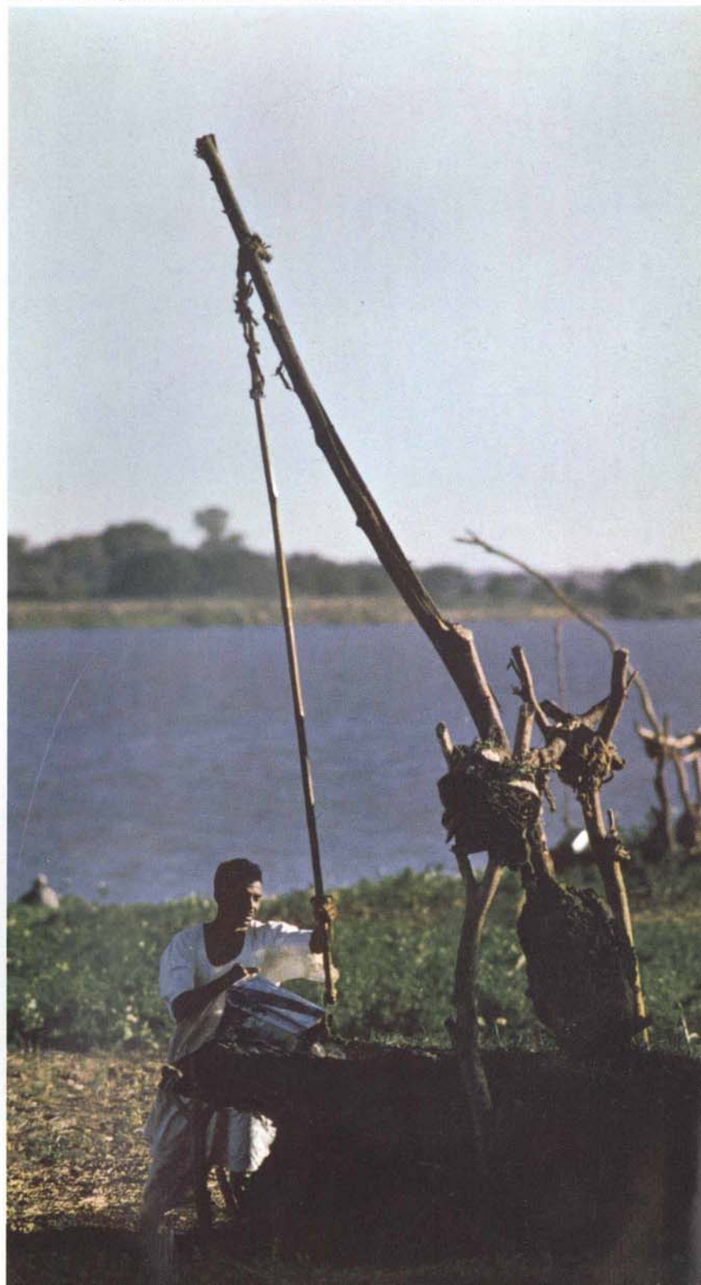
As the swamp ends, the land along the banks becomes drier, savanna and cattle herding country, a first hint of the vast deserts waiting further downstream. At the same time the racial mix of the inhabitants begins to change; the Nilotic and Negroid faces of the Christian or pagan inhabitants of the southern Nile blend with the Nubian and Semitic faces of the predominantly Muslim, Arab north. And now this branch of the Nile takes its familiar name, the White *(al-Bahr al-Abyad)*, and flows faster again, north to Khartoum.

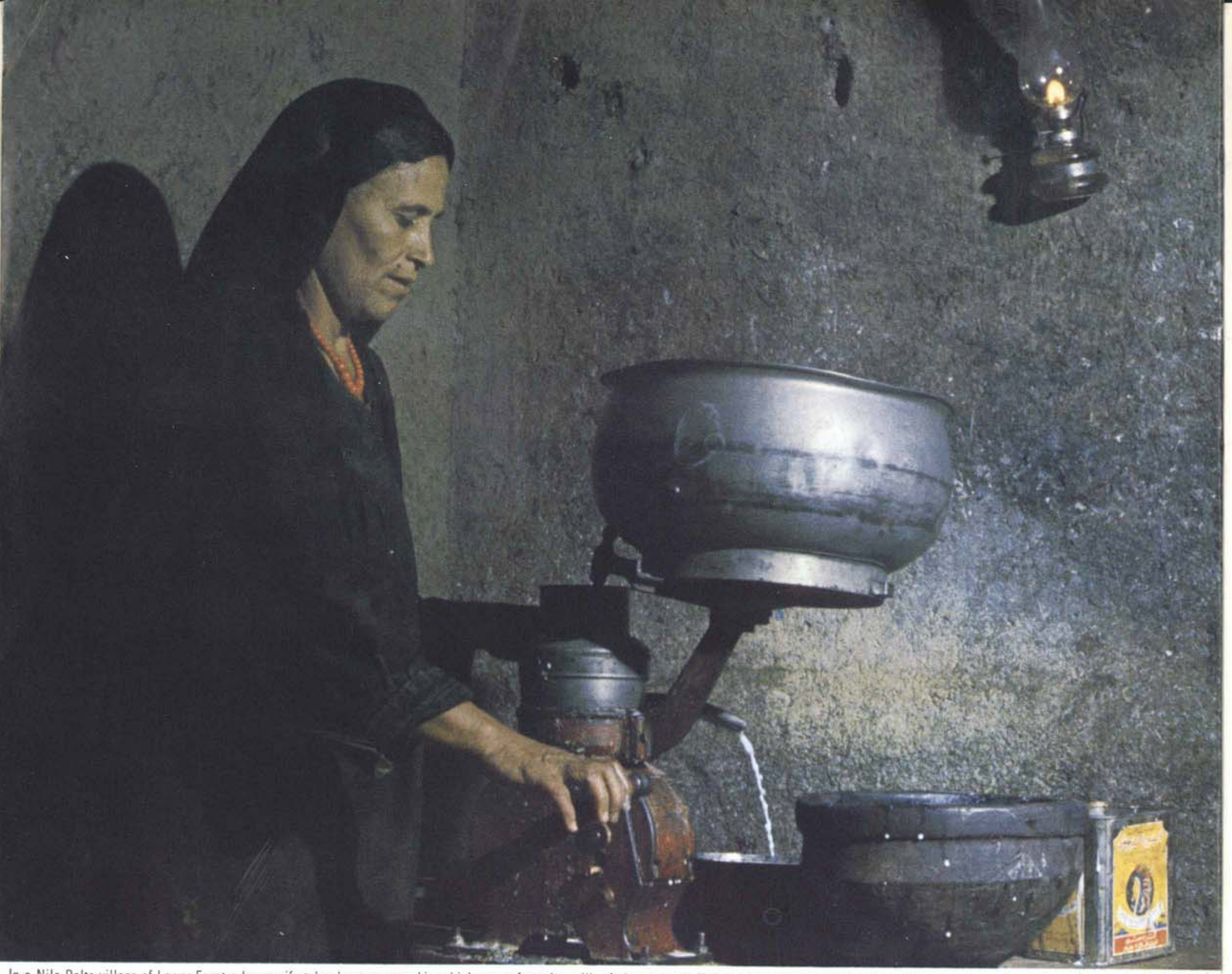
Having already traveled about 2,300 miles, 1,300 within Sudan alone, the White Nile is joined at Khartoum by the second major branch of the river, *al-Bahr al-Azraq*. Though a latecomer, the Blue Nile nevertheless provides as much as 58 per cent of the water reaching Egypt during the entire year, mostly, however, during the few months following the summer monsoons in the Ethiopian highlands.

Khartoum, a cosmopolitan capital, counts Greek, Lebanese and Armenian merchants and professional men among its residents. Opposite Khartoum lies more traditional Omdurman, which, with about 170,000 residents, is the second largest city on the entire river. Behind Khartoum to the south is the Gazira, an elongated triangle of rich cotton fields flanked by the two Niles which together irrigate almost two million acres. There, during harvest time, one sees the faces of migrant pickers from further south, Eastern Hamitic peoples from the Red Sea coast, or West Africans working their way towards Mecca on a holy pilgrimage.

The "white" and "blue" branches—the names are, in fact, almost meaningless—merge somewhat reluctantly. The

With a counterweighted shadoof, a farmer lifts water from the joint Niles below the confluence at Khartoum.





In a Nile Delta village of Lower Egypt a housewife takes her turn at making thick cream from the milk of the water buffalo, a job which must be done every morning and evening after milking is finished.

silt-laden waters from Ethiopia keep their identity for many miles on the east side of the common channel. Still, from Khartoum there is only one Nile, and it is swelled by only one major tributary in its nearly 1,900-mile journey to the sea. The tributary is the Atbara, also fed by the Ethiopian rains, but little more than a series of stagnant puddles most of the year. In late summer, almost overnight, it roars down its rocky bed in floods 1,000 feet wide and pours out the final 28 per cent of the water reaching the Delta. The Blue Nile and the Atbara between them thus provide, in what could only seem the gift of bounteous gods to the ancient Egyptians—86 per cent of the Nile's yearly flow, all in a brief life-giving flood of water and fertile silt just when it is needed most, at the end of the desiccating desert summer.

Generations of school children have been mystified by the fact that the *Upper* Nile lies below (or south of) the *Lower* Nile on the maps in their geography books. And they are also confused because the cataracts are numbered from one to six beginning with Aswan in the north and moving south in the order that they were encountered by early travelers, rather than—as one would expect—from the junction in Khartoum moving north with the current as the river drops a total of 950 feet through Nubia on its journey to Egypt.

Because of the falls, of course, most of this section is not navigable, though there is steamship service from the area of Wadi Halfa on the Sudanese-Egyptian frontier the rest of the way to the Mediterranean coast. Today Wadi Halfa's former docks are submerged by the waters of mammoth 310-mile-long Lake Nasser—as are, indeed, the entire original town, numbers of Nubian villages, the Second Cataract, and the original cliff-face site of the twin temples at Abu Simbel.

The Aswan High Dam (the most colossal of some 20 completed or projected Nile dams which will some day control the entire nine-country, one-million-square-mile drainage basin) will provide water to irrigate about two million acres of barren lands never before farmed and at the same time—by making the water available throughout the year instead of only during floods—enable farmers to grow two or even three crops in the year-round sun on much of the previously cultivated land.

From Aswan the Nile flows on between high cliffs through its fertile valley, rarely more than 12 miles wide, sometimes a mere few hundred yards. One writer has called the Nile Valley in Egypt "... a fragile green stem supporting its blossom, the Delta." The Faiyum, a fertile depression west of the river, is a bud, and along the river, like drops of dew clinging to the stem, are precious jewels of antiquity—Thebes, Tell al-'Amarna, Memphis, Gizeh.

The Delta begins near Cairo, the largest city on the Nile and in all Africa, and spreads like a fan 100 miles to the sea and 180 miles wide along the coast (Alexandria, with 1½ million people, is in the Delta but not on the Nile). In sophisticated Cairo, where concrete skyscrapers have not yet succeeded in blocking the timeless shapes of the pyramids from the southwestern horizon, live 3½ million people, descendants of the men who built these pyramids, their servants, their conquerors, and waves of invading peoples and ideas from three continents, waves almost as numerous as the floods of the Nile. North of the city the fellahin of the Delta grow market vegetables, dates, rice, wheat and more cotton, all irrigated by the blessed river. The Nile splits into two main channels, the Rosetta and Domietta, then countless smaller man-made channels. In the end, the world's longest river nearly loses itself in a patchwork quilt of gardens and salt marshes fringing the sea.

In this valley, in this delta, on less than 3 per cent of Egypt's land, live 95 per cent of her people. As in Sudan, the needle of the Nile pulls the tenuous thread that sews their garments of green, and all around lies only the desert, dressed in sackcloth.

Tor Eigeland was born in Norway, studied in Canada and Mexico and has traveled around the world on photographic assignments for such magazines as Time, National Geographic, *and* Fortune.

Some faces by the river: a Delta schoolgirl folk dancing, a Sudanese girl picking cotton in the Gezira, a Delta fellah in his fields, spectators at a Cairo soccer match and a university co-ed on a Cairo campus.

DEATH AT A DESERT POOL

BY ISAAK DIQS

From the childhood memories of a Bedouin boy—a moving and memorable story of murder, justice and mercy.

As a boy, Isaak Diqs was a Bedouin. With his family and his tribe he lived and roamed and grew up in the deserts and pasturelands that have nurtured the Bedouins for centuries. And although he later earned a degree in English, became an expert on agriculture and went to work in a ministry in Saudi Arabia, the impressions, the ideas, the incidents of those happy days stayed fresh and bright in his mind, until one day he decided to write them down. Because he hoped they might be read in the West he did so in English rather than Arabic, and in so doing achieved a refreshing simplicity. Soon his jottings grew into sketches and the sketches into a book. It is called *A Bedouin Boyhood* and included in it is this touching episode of death and judgment...

Everything went as usual that morning, except certain preparations in the *Shik*. It was late in summer. The sun became hot as soon as it rose and it was better to sit in the shade at the back of the tents.

The *Shik* was well swept, sprayed with water to settle the dust that might blow and to lessen the heat. Some new carpets were brought out, and many wool-stuffed leaning-bags were heaped in one corner of the big tent. The hearth was removed to a far corner. Tea and coffee pots were more than usual ...

I noticed that most of the men, especially the old ones, did not go to their daily work as usual, but stayed in the tribe. Even the small schoolboys, who were on holiday, came earlier than

usual from the vineyards, driving their donkeys laden with baskets full of ripe grapes and figs ...

It was clear that some people —strangers and important—would come that day. Why were they coming?

These questions seduced me, and diverted me from enjoying the holiday by going to Wadi Al-Hisi and joining my schoolmates swimming in the natural pools. I stayed like the old, important people to see what was going to take place.

'It's a judging case,' my mother told me when I asked her. My grandfather, Haj Ibrahim, was one of the three recognized tribal judges in the Jubarat tribes, and I had seen him solving many intricate, dangerous problems. But I had never seen such preparations made before. The case must be very important, otherwise there was no necessity for these preparations ...I wanted to know something about the case, but, as boys, we were not to interfere in things which were for men only ...

'Shehdi is signalling to us! They are coming.'

Haj Ibrahim began to allot the orders. 'Taleb, go and meet the men! Nassralla, you must go to your tent and see that everything is all right. You must stay there, because the other people will be coming very soon.'

Few minutes had passed after Nassralla and some other people had left, when many horses' heads appeared over the top of the hill where Shehdi was standing. There were about twelve horsemen coming towards the *Shik* in a group ... Twenty yards before reaching the *Shik* they were met by our people... I stood with other children behind the women's part of the tent, holding to the long guy-ropes.

Haj Ibrahim was among the people who went outside, followed by his son Taleb. Each man of our people went to a horseman and caught his rein, but not one of them dismounted until the old white-bearded man, met by Haj Ibrahim

himself, dismounted. He shook hands with Haj Ibrahim, while his horse was taken by Taleb to be tied.

The other horses were tethered, too. The guests entered the tents, welcomed by Haj Ibrahim and some other old men, while the young people were still outside and were on the point of quarrelling over the horses' nosebags. Everyone was trying to take more nosebags than the others. My father took one and called me to fill it with barley from our tent ... In a few minutes, and before the men drank their coffee, the bags full of barley were hanging at the heads of all of their horses.

The old man with the white beard sat in the middle, near the partition between the men's and women's parts of the tent. His men sat on each side of him... The coffee was drunk and there was some talk, but nothing was said about the thing they had come for.

Half an hour later, another group of horsemen came from the east. Some of our men went to meet them as they followed Shehdi to Nassralla's tent. They were about the same number as the group in the main *Shik*...

Tired by now of the old guests, I ran with the other children to see the latest comers. This time some of us, the older ones, took part in the welcoming procedure. I in my turn took one of the nosebags, not from a horseman, but from my cousin, who had taken two. My mother was very pleased when she learnt that I had dealt with the bag myself.

Feeling that the most important things would be taking place in the main *Shik*, we all left for there, except for a few boys who were kept behind to serve as messengers. There in the main *Shik* I swiftly converted the *mihbash* into a small wooden stool by overturning it, so as to be able to sit on it and see what was taking place. Some of the children sat near me, a few sat close-up to their fathers, pressing and peering, while the others stood in a group at the back of the tent. We were not sent away, because the *Shik* with men meeting was considered a practical school for the young boys as well as old men.

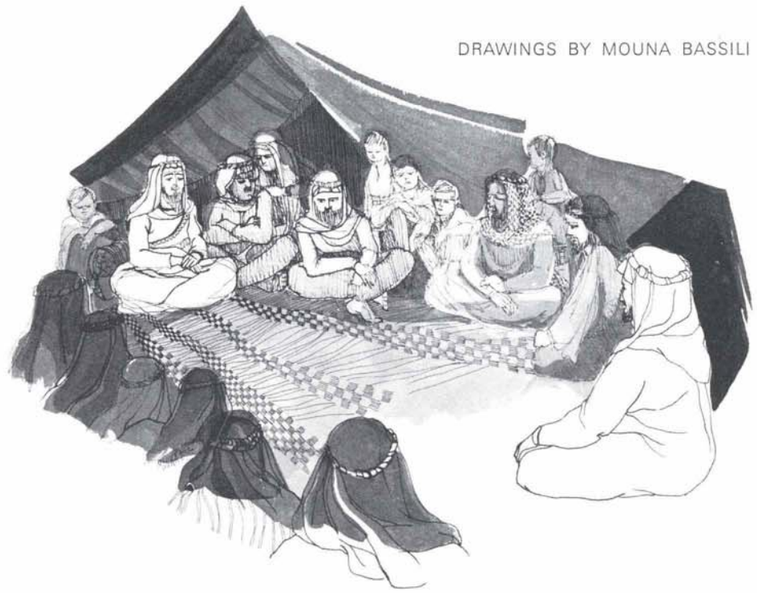
Nassralla, with some of the men who had come early in the morning, began to walk between the two tents, carrying the ideas of the one party to the other. They were trying to find the basis upon which the two parties could meet in one tent. It was about a murder, and so it was necessary to be sure of what would happen when the two sides met.

At last the negotiations succeeded and the two parties sat together in the original *Shik*. Bin Rashid's group, who had come first, sat in the southern part of the tent, while the Thwahta group sat on the northern side. The men of our tribe and the other guests sat in two lines, to the east and the west. Haj Ibrahim sat in the middle of the eastern line.

For a while there was complete silence. All the eyes were fixed on Haj Ibrahim. He said, 'Good evening, our guests. You know the customs.' Then, turning his face towards the left, he continued, 'Who is your guarantor, Bin Rashid?'

The old man with the white beard looked at the men on both sides as if he were looking for the man to guarantee him. 'Bin Rafie is the man,' he said.

DRAWINGS BY MOUNA BASSILI



All the people looked towards Bin Rafie, who was sitting opposite to Haj Ibrahim ...'I am ready to stand for Bin Rashid, whatever may be the result,' Bin Rafie said.

Haj Ibrahim turned to the Thwahta group and said, 'Have you any objection, Thwahta?'

A middle-aged man of the Thwahta glanced quickly at his group before he answered, 'No, I haven't. He's trustworthy.'

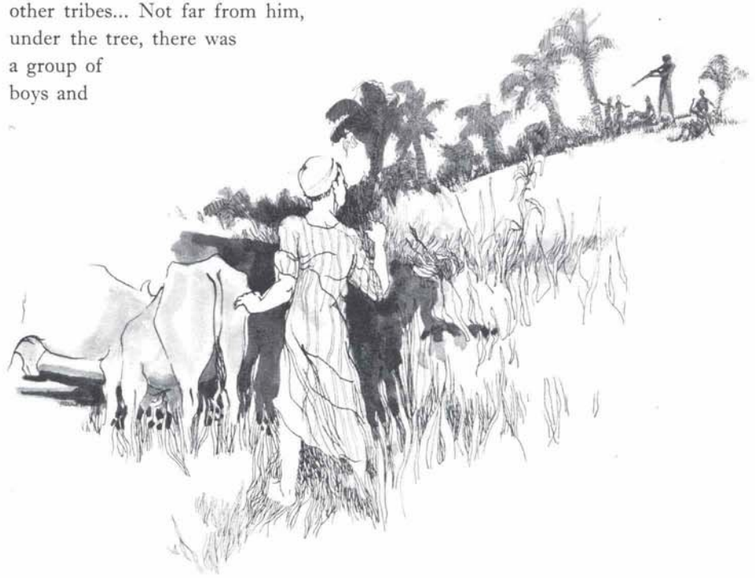
Then the middle-aged man named his own guarantor, who, too, was accepted without any objection from the other side. Then the pledge was offered. The Thwahta offered one hundred pounds, so Bin Rashid was obliged to pay the same amount. The pledges were put on the carpet in front of Haj Ibrahim. It was well understood that the loser would lose his pledge and it would be taken by the judge as fee, while the pledge of the winner would be returned to him.

'Now,' Haj Ibrahim said, 'let us hear your case, Bin Rashid, since it was you who came first.'

All the faces turned to Bin Rashid's side, as he began to state his case in a low voice which could hardly be heard by the men at the end of the tent. He spoke the same introductory phrases, which were no more than greetings to the judge. Then he began to tell the details of his case.

'My nephew, the son of this man,' (and he pointed to the third man on his left), 'went one day as usual to look after his cows. He was young, twenty years old. He left the tribe as happy as any one of these young men near the fire. All this summer we have been preparing for his marriage...'

'At noon he went to water his cows on the lower part of Wadi Al-Hisi. There were many boys and girls doing the same. They were not of our tribe only, but also of the Thwahta and some other tribes... Not far from him, under the tree, there was a group of boys and



girls. He had been sitting with them before he left to get water for his animals. Then he was called by Khaleel, one of the Thwahta tribe.'

The boy's father was thinking deeply, with downcast head, as if he were reading something in the intricate, winding lines of the carpet in front of him. All the people there were completely silent, following the words spoken by the white-bearded old man and reading the expressions on the face of the boy's father.

'He had hardly turned his face towards the tree, when the sound of a shot was heard and Fahad fell into the well. The boys sped to the place and they found Fahad motionless in the red water. They got him out, but he had already died.'

The voice paused, on the brink of a moment, it seemed.

'Khaleel was turned to stone,' Bin Rashid went on, 'and stayed under the tree. An old man of the Thwahta tribe announced that the boy was in Abu Jaber's face, and so no harm was done to him.'

Before he said this I had expected that something would happen to Khaleel as a kind of prompt revenge, but after I heard it I realized that nothing would happen. Now that it had been said he was 'in a sheikh's face,' no one of course would harm him: any harm done would strike at the sheikh himself. As children in our games we had done this more than once, and used to respect the rules...

'Then in the night,' said Bin Rashid, 'and as we finished the burial service, two men came and asked a truce for two weeks. We could not refuse, because we are not of those who break the tribal laws. Before the two peaceful weeks passed, the same men came and asked us to nominate three judges to consider our case. So we did. It was the Thwahta turn to reject one of these three possible judges. Then we, too, had to reject one. The one left was you.' All the eyes turned to Haj Ibrahim.

'We are quite sure that you are the best to look into the case. I hope that, since we have come to your tent, we will have our rights in full, as it should be.'

Haj Ibrahim was silent all this time. He, as was his habit, was marking the sand with the stem of his long pipe. He stopped marking the sand, and turned to the middle-aged man and said, 'What have you to say, Bin Thabet?'

The middle-aged man began speaking fluently, as if he had learnt the words by heart. 'I don't want to add anything to what Bin Rashid has said, except about what took place under the tree before the accident happened. The gun was not Khaleel's gun: it was another's. It was the gun of Mohammad, one of our tribe. Khaleel, before shooting, asked him whether the gun was loaded, and Mohammad, who was occupied in a game with other fellows, said, "No." Thinking that it was empty, he wanted to have fun with Fahad, who was his close friend, but it was in God's hands and suddenly the misfortune happened. It was done by mistake and not intended at all.'

He turned towards Haj Ibrahim and added, 'You perhaps asked some of your boys who were there, and they must have told you that what I say is true and that Fahad and Khaleel were friends. We have come here ready to accept your sentence.'

The eyes of all the people again moved to Haj Ibrahim, whose turn then it was to speak. He began to retell Bin Rashid's account, adding some remarks, enquiries and explanations. He repeated nearly all that Bin Rashid had said, even the same words sometimes. That was the custom: the judge had to repeat the two parties' speeches, perhaps to make clear the vague points or to show that he had a complete conception of all the circumstances. Then he did the same for the Thwahta case. When he finished his speech about the case, he said, 'Now it is your turn, to make your negotiations'.

Men began to go outside the tent, to sit a few yards away and discuss the matter. The neutral men now held a

small meeting with the Thwahta, then with Bin Rashid. Step by step Haj Ibrahim was informed of the results of their efforts.

At this interval some of us were called to bring water. I was asked, too. I took the opportunity to pass slowly by the men who were discussing near the tent. I tried to catch some of their words... When I returned, I passed by the women's part of the *Shik* and found that it was full of women who were sitting silent, following all stages of the trial... When I had brought the water, I sat with the other children, waiting for the last word to be said by the judge.

It was the time for dinner, and this was ready. But it had to be delayed till the sentence was heard. Haj Ibrahim again was ready to speak when all the men sat in their places.

'Now,' Haj Ibrahim said, 'it is clearly the case that the two parties are ready for reconciliation. Bin Rashid insists that he must hear the sentence, and then, if the judgement has been in his favor, he is free whether to forgive or not. It is said—and said truly—that right does not satisfy the two parties. I have no choice but to say what I know.

'In a case like yours it is very difficult to pronounce. Your boys were friends, but one of them killed the other. In our tribal law three things are not to be borrowed or given to others—women, horses and arms. We know, too, that arms are not to be played with. You see how difficult it is to judge. But I have to say the sentence.

'Out of my knowledge, which is built on our inherited traditions, I declare that the killing was done without any previous determination — nevertheless, the lives of people are not to be left for irresponsible men to play with. Bin Rashid has the right to ask what he likes, within our law, for the life of his son. He has the right to ask, and Bin Mishrif must pay.'

Bin Mishrif showed his readiness to fulfil his obligations, and the Thwahta too. 'Let Bin Rashid ask his right,' the middle-aged man said. 'We are ready to pay him his due. Here is Khaleel ready for punishment.'

He had barely ended these words, when a young boy came from Nassralla's tent, led by another man's hand and brought in the middle of a group. I did not then know who that young man was, but I learnt afterwards that he had, throughout the hearing, stayed with another man in Nassralla's tent. I followed the young man with my eyes, and saw him walk steadily up through the people to kneel in front of the father of Fahad. He did not then move.

The old man seemed puzzled at first, perhaps taken aback. I could not help standing up, as did the other children, to see what the father might do to the person who had killed his son. I noticed the curtain between the men's and women's parts moving, and I guessed that the women inside were trying to witness this critical moment. All the men in the tent were silent, too, looking from the young man to the old.

The old man continued to look at the young boy kneeling in front of him. Then he said, 'Neither money nor punishment can return Fahad to life—to marry and get children. Now he is in need of God's mercy. You killed Fahad, and for the sake of Fahad I set you free. Get up, my boy, and go. You are free.'

He said these words and took the boy by the hand. The boy was weeping when he got up.

All the Thwahta group went to the old man. They kissed his head, and shook hands with the other men.

The dinner was brought and all the men sat around the large plates full of rice and meat. Before the eating began,

Haj Ibrahim said, 'In the name of our tribe I thank Bin Rashid for his generosity. I in my turn will return both the pledges, because your reconciliation in my tent is better than all money.'

I remember about thirty horsemen disappearing beyond the hill, those twenty-odd years ago. A horseman with a piece of white cloth in his hand was the first one to disappear over that sun-baked brow.

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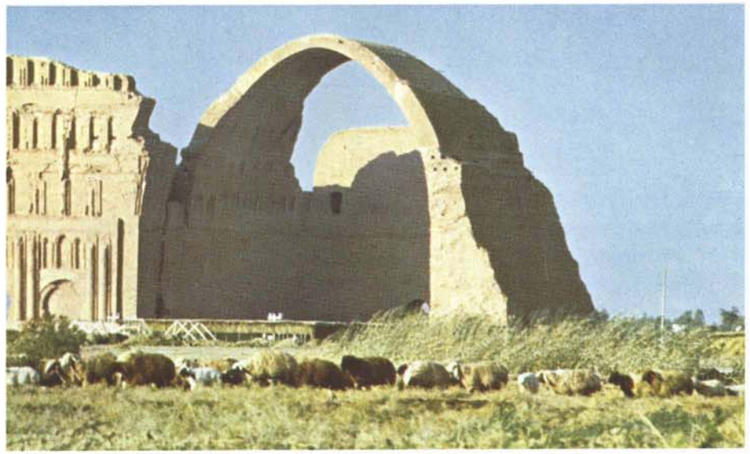
On the plains of Iraq, the great arch of Ctesiphon...



THE DUSTY SHELL

BY WILLIAM TRACY

PHOTOGRAPHY BY TOR EIGELAND

Since antiquity the two mighty rivers of the Mesopotamian valley have given, and they have taken away. One year's flood deposited precious topsoil; the second swept it away. Kings built great towers and cities of baked bricks; time, conquerors and the Tigris and Euphrates littered the plains with their sun-bleached ruins.

One such city was Ctesiphon: once a sumptuous capital near the shifting banks of the meandering Tigris River about 20 miles south of modern Baghdad, now no more than the dusty shell of a palace with, miraculously, one great vault still arching across the dull monotony of the arid plain.

In 144 B.C., as part of an Asiatic reaction against Hellenism, a race of people called the Parthians swept out of the region east of the Caspian, invaded Babylonia and established a camp on the east bank of the Tigris opposite the Greek city of Seleucia. The camp was called Ctesiphon and grew to be, first, the winter residence of the Parthian kings, a "royal suburb," and then a great city in itself—a city that, according to one historian, "first rivalled and then eclipsed" Seleucia as the capital of the Empire. An interesting difference in the cities is that Ctesiphon's plan—typically Parthian—was circular, in contrast to the rectangular Greek layout of its sister across the river. Some coins of fhe first century show the goddesses of the twin cities joining hands across an altar.

But during the next few centuries the cities were often a battle ground as Roman legions under Trajan, Avidius Cassius and Septimius Severus in turn, struggled to capture and hold them.

Finally, about A.D. 224, the Sassanians, rebuilding the Persian Empire after five centuries of subjugation—first to Alexander and the Seleucids, then to the Parthians—made Ctesiphon their capital. It flourished from the wealth flowing in from a lucrative silk trade with China and became a center of Nestorian Christianity and learning.

It was during the rule of the Sassanians that the great palace called by the Arabs Taq-e Kisra was built at Ctesiphon. Some archeologists believe it dates back as early as the fourth century but local Arab tradition holds that it was constructed during the time of King Khusrau I who reigned from 590 until 628 when the city was devastated by the Byzantine emperor Heraclius. Tradition also says that the facade of the mud palace was covered with gold and silver and that beneath the great vault lay a vast carpet woven to resemble a garden, with silver paths, streams of pearls, and flowers of emeralds. Some splendid murals, at least, are known to have remained intact as late as the 9th century.

The empty vault of mud brick that stands today is a far cry from the splendor envisioned in the legends but what remains of Ctesiphon is enough to stir the imagination still. One eminent world traveler and writer has called it "... one of the most impressive architectural constructions that I know." Of the great elliptical barrel vault he adds, "... its curve hangs over empty nothingness in an uncanny way."

The arches of the vault were constructed, in fact, over empty space without the use of temporary wooden centering—a technique not uncommon in Mesopotamia, but amazing on such a scale. The lower portion of the vault was built according to the corbel principle. Thin mud bricks were stepped inward in successive horizontal courses, each projecting a bit further over the hall. In Khusrau's palace the bricks had a slight backward slant against the end walls, although the corbel arch, unlike the true arch, exerts no outward thrust, but is held up by the sheer weight of these massive walls on each side. At approximately half height the construction changed to the normal arch principle. The successive brick arches which form the vault had staggered joints to provide sufficient bond which, together with the steep parabolic shape of the arch, allowed its construction without complete centering from the ground. The Sassanians were masters of the art and constructed other huge vaults such as the one—now collapsed—at Firuzabad in Iran. The span of the vault at Ctesiphon is 82 feet and at the crown it is 120 feet above the ground.

The vault is open to the east, to make a kind of open porch or iwan common in later Muslim architecture, and the Sassanid builders may have inspired the vaulted entrances of later Persian mosques.

Attached to the vault at Ctesiphon, one wall of the south wing of the palace also remains. On the interior side of this wall can be seen the toothings of smaller vaults for the original two upper floors which have collapsed.

The neo-Persian Empire ended with the fall of the Sassanid dynasty in the 7th century. One of the final blows came in 637 A.D. when Arabs occupied Ctesiphon and Seleucia which they called al-Madain, the "capitals". They used the decaying buildings as quarries for building materials but the great palace still stood and was used for a while as an improvised mosque.

When the Abbasids decided in the 8th century to build their capital at Madinet as-Salam, "the city of peace" (present-day Baghdad), they abandoned what was left of the two cities. Caliph al-Mansur even wanted to destroy the palace of Khusrau but happily, his Persian adviser was able to dissuade him by arguing that demolition costs would be too high.

The river was not subject to such reason, however, and over the centuries it continued to lick at the mud bricks of the palace and add their silt to its delta.

An aerial survey has shown, in fact, that the course of the Tigris has shifted markedly in modern times, no longer flowing between the ancient twin cities but now cutting through the site of Sassanid Ctesiphon. As recently as 1909 a flood swept away the north wing of the palace.

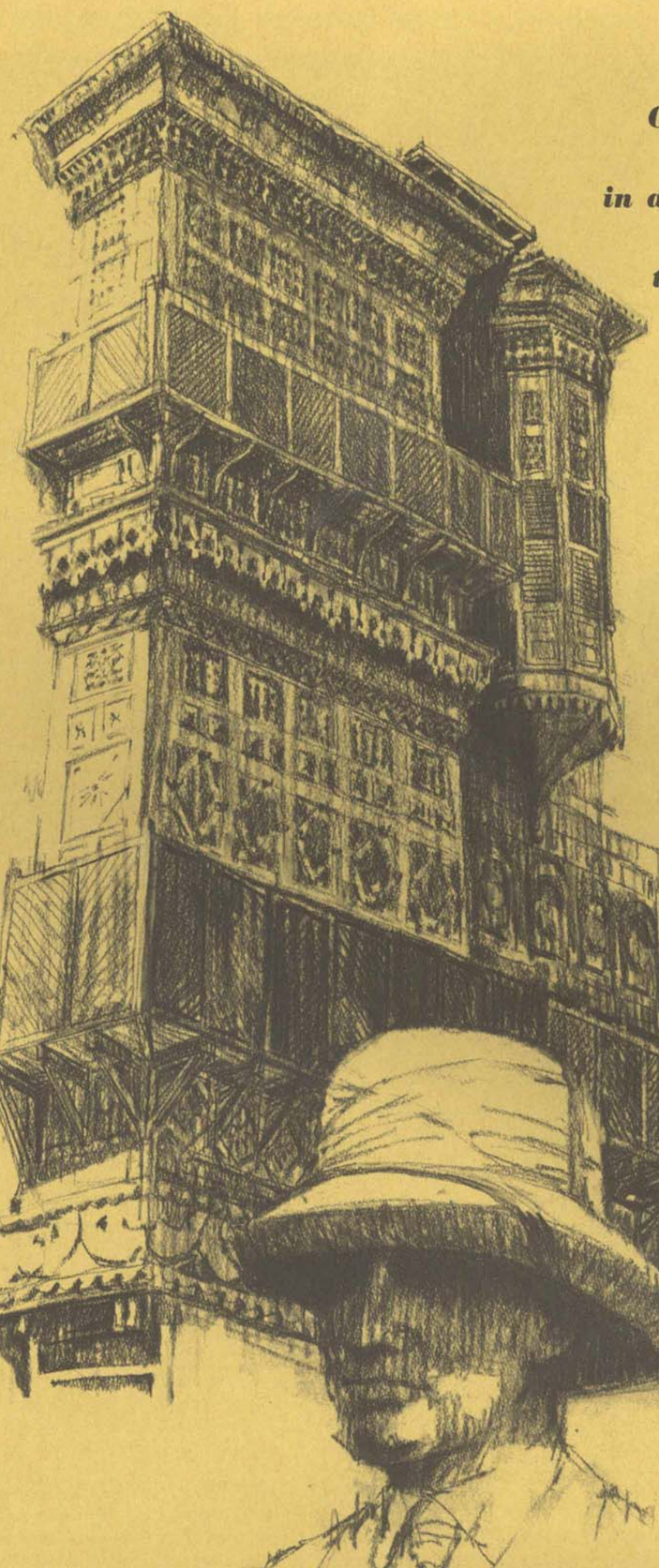
Today, as Iraq strives to protect this relic of the past, great flocks of wintering storks nest safely out of reach on the thin egg-shell vault high above the heads of village children playing in the shade of the cavernous interior, and camera-laden tourists drive out from Baghdad before breakfast to catch the morning sun on the eastern facade. But the Tigris, like a great full-bellied cat, flows on nearby—waiting.

William Tracy is Assistant Editor of Aramco World Magazine.

DISCOVERY!

the story of ARAMCO then

CHAPTER 1: CONTACT



Onto the docks of Jiddah
stepped Change—
in a suit of wrinkled whites
and a sun helmet—
to bring to Saudi Arabia
the nervous needs
of another world...

FROM THE BOOK BY WALLACE STEGNER

ILLUSTRATED BY DONALD THOMPSON

Some years ago novelist Wallace Stegner wrote a book which he called *Arabian Discovery*. It was the story of the events that gave birth to and then shaped the company that would one day become Aramco — the Arabian American Oil Company — now one of the world's more important producers of petroleum.

For Mr. Stegner, author of last fall's best selling novel, *All The Little Live Things*, the Aramco story was an exciting challenge. Although he has published articles in *Harper's*, the *New Yorker*, *Atlantic*, the *Saturday Review*, most of his stories and novels — of which *The Big Rock Candy Mountain* is perhaps the most popular — were set in the American West, a long way from Saudi Arabia. But believing that "the best history of any action is the experience of the men who lived it," Mr. Stegner set out to record, not the manifest complexities of the petroleum industry in the Middle East, but rather "the story of the pioneers of one company in one country for a limited number of years." To put it another way, he decided to tell the story of men — the men who came to Saudi Arabia bringing the skills and strengths of another world and the proud men of the desert awaiting with grave concern the impact that petroleum would have on their honored ways.

It was, Mr. Stegner found, a remarkable story. And that was the way he wrote it: as a story of many men from many places engaged in an historic enterprise that was rich in drama, conflict, and humor and that had, moreover, an unusually happy ending.

—The Editors

The Jiddah that T. E. Lawrence knew, "a dead city, so clean underfoot, and so quiet," its narrow streets overhung by houses "like crazy Elizabethan half-timber work... gone gimcrack to an incredible degree," has been transformed in the past 35 years into a modern city of many times its pre-World-War I size, so changed from the old that a returning pilgrim would hardly recognize it as the same place. But in 1933 Jiddah still presented to the sea its ancient, unreal facade. Tightly concentrated, surprisingly tall, it sprang up on the barren shore, squared by the wall that Steve Bechtel's bulldozers would one day push down. Its four- or five-story buildings with their cutout arches of windows and their ranks of ornate balconies might have been made of sticks and pasteboard; or it might have been a child's city of blocks knocked out of plumb. It looked, said one traveler, like a city that had slept on its feet for ages but had been prevented from lying down to sleep properly.

In the old town, in those days, the walls leaned together over alleys barely wide enough for two donkeys to pass; the warped, carved, weathered balconies all but touched. Minarets tilted dizzily and the whole town sagged and slouched on foundations gradually sinking into the unconsolidated coral sand. In its crooked enduring way it looked as ancient as Genesis, and some thought it was.

Around Jiddah the shore could only be Arabia—pale, seared, discharged of color, treeless, spotted with sparse shrubs. The land flows down from the distorted rim of mountains to the mirage-like margins of the Red Sea, where beaches grade imperceptibly into coral bottoms and barely covered reefs and the

gradually deepening waters mottled in scallops and bays of tan, near-white, emerald, finally blue. Jiddah has been the official harbor of Mecca since the year 648, and this vision of a tall wobbly city on a naked shore before papier-mâché hills has been the first sight of the Holy Land for millions of the devout making the *hajj* to the birthplace of the Prophet 40 miles to the east.

It looked no different to the pilgrims who approached its shallow and difficult harbor in the Khedivial steamer *Talodi* on February 15, 1933. But these were pilgrims of an unprecedented kind. None of the faithful in all the thirteen hundred years of the pilgrimage, and no invader in the city's total history, had brought such a potential for change. Not even Aelius Gallus, during his invasion of Yemen in 24 B. C., had touched it, really. Rome reeled back from the inhospitable Arabian Peninsula and left Jiddah on its timeless shore. The Portuguese who attacked the city in 1541, and the British who shelled it in 1858, had knocked down a few buildings, but changed nothing.

And even 'Abd al-'Aziz ibn 'Abd al-Rahman Al Faisal Al Sa'ud, commonly known to the West as Ibn Sa'ud, completing his conquest of the Hijaz in December, 1925, had intended to make few changes except in the ruling family. He was concerned to establish order, reassure the leaders of Muslim countries worried about the safety of the pilgrimage, and win recognition from foreign powers. Jiddah's tiny foreign colony was allowed to go on in its old way, the only enclave of non-Muslims in all the lands that Ibn Sa'ud now controlled and that in 1932 would be named Saudi Arabia. It had adjusted itself to Arabian ways and to the prohibitions of the Wahhabi government; and where it could not comfortably adjust, it somehow managed to achieve certain Western pleasures, keeping its cameras out of sight, playing its hidden radios and phonographs softly and in secret, smoking only in the legations, getting a drink as it could. The Committee for the Commendation of Virtue and the Condemnation of Vice, though zealous to clean up corruption, granted in Jiddah a sort of diplomatic immunity: the need for foreign recognition was more potent than the patriotism of Ibn Sa'ud's Ikhwan armies. In return for the consideration shown it, the foreign colony was discreet; no one of the group there, which was dominated by the British and the Dutch, wanted to overturn any applecarts. Foreign-colony Jiddah seemed as little interested in innovations as Arabia itself.

But now change entered in a suit of wrinkled whites and a sun helmet—change in the person of a smooth-faced American businessman of forty named Lloyd N. Hamilton.

Accompanied by his wife and by another American couple acting as his advisers and assistants, Mr. Hamilton was to bring the nervous needs of the 20th century into contact with the undeveloped possibilities of a land older than Abraham. Into a country whose energy had been supplied for millenia by donkeys and camels he came to discuss the more explosive energy of oil.

Lloyd Hamilton was a lawyer and land-lease expert of the Standard Oil Company of California, known in cablese and abbreviated business talk as "Socal". His wife Airy was along for the ride. The other couple were Karl and Nona Twitchell, two of the very few Americans who in 1933 knew anything whatever about the Arabian Peninsula. Standing on the *Talodi's* pitching deck, all a little queasy from the stiff *shamal* they had bucked on the way across from Port Sudan, and sick of the steamer after 16 rough hours, they watched the city spring up before them as the harbor opened. They passed the half-sunken hulk of the ship *Asia* tilted on her reef, they began to be surrounded by the slant sails of dhows. Ahead of them the dark keyhole arches of the quarantine dock emptied robed figures onto the quay. Launches started out toward them.

The four went below to get their bags ready. They were, without knowing it, social and economic revolution arriving innocently and by invitation, but with implications more potent than if their suitcases had been loaded with bombs.

No event in history is without antecedents—antecedents that reach back indefinitely into the past. In all recorded history there is no such thing as a true beginning. If we wished to trace the development of Middle Eastern oil, we could find the fact of oil's existence and the human knowledge of its uses far back in the twilight where history and legend blur. Bitumen from oil seeps waterproofed the ware of potters in Ur of the Chaldees; Noah smeared his ark, within and without, with the same pitch.

But this story does not pretend to deal with the development of Middle Eastern oil. It pretends only to be a part of the human record of some of the men who lived some of the actions—the story of the pioneers of one company in one country for a limited number of years. And so it is necessary to go back of Lloyd Hamilton only far enough to understand the circumstances that sent him to Jiddah, and to touch for a moment on the difficult and awkward situation into which he stepped.

The difficulties were religious and political as well as commercial, for Hamilton was not merely Industrial Civilization meeting an ancient culture of patriarchal shepherds and oasis townsmen. He was also the Outsider aspiring to do business with the most fundamentalist sect of Islam. Further, he was American Business trying to get a solid foothold in a country which the United States had officially recognized only two years before, and in an area into which American enterprise had thus far never penetrated.

As time would show, he was more—he was the spokesman of a kind of foreign development prepared to operate strictly as a business, and that in itself was revolutionary. Political domination, restrictive treaties, government partnerships, "designated instruments" were not hiding behind him. Absent, also, was the imperial conviction that commerce was possible in undeveloped countries only when tied to colonial administration. The United States Government was so far from being involved in Hamilton's business that it didn't even have a representative in Saudi Arabia. American missionaries had been so little concerned—and so little able—to make converts to Christianity that their efforts had been confined to the periphery of the peninsula—Kuwait, Aden and Muscat. According to a traditional formula, the flag followed the missionaries and trade followed the flag. Here, trade came first, and came alone.

For generations the British Empire had maintained political and commercial primacy in both the Red Sea and the Persian Gulf. All around the Arabian Peninsula's southern and eastern shores, along the seaboard from which once the dhows of pirates had burst forth to raid ships plowing the lanes of empire, the British Navy had established dominance and British political agents had enforced treaties. There had been no other way of maintaining order and keeping the trade routes open. The treaties left the little shaikhdoms around the coast (none of which was ever consolidated into Ibn Sa'ud's kingdom) technically independent in domestic matters, but delegated management of their international relations to Great Britain. The shaikhs of Kuwait, Bahrain and Qatar, and the lesser shaikhs and chiefs of the Trucial Coast refrained from piracy as requested, drew their annual bounty money, and did pretty much what the British political agents told them to do.

The paper signed by Zaid ibn Khalifa, chief of Abu Dhabi, in 1892, was a representative treaty: he bound himself, his heirs and his successors never to enter into any agreement or correspondence with any foreign power other than Britain; never to permit, without specific British consent, the residence in his territory of any foreign representative or agent other than British; and never to sell, cede, mortgage, or otherwise grant rights to any of his territory without the British blessing. That pretty effectively shut the door in the faces of foreigners snooping for commercial advantages in the British-protected domain of Abu Dhabi.

Ibn Sa'ud, however, proved too big for British policy to control. After his Ikhwan armies chased Sharif Hussain of the Hijaz clear off the peninsula and into exile on Cyprus, he held a position of unassailable strength, and gained full British recognition of his sovereignty by the Treaty of Jiddah in 1927. With respect to oil and Mr. Hamilton's mission, this was to be an important exception.

Long before Ibn Sa'ud solidified his control over Arabia, British power sat solidly in what were then the two important oil nations of the Middle East: Iran and Iraq. The Anglo-Persian Oil Company at Abadan was not merely under contract to supply fuel to the Royal Navy; it was more than half owned by His Majesty's Government, and had been ever since 1914. There was thus more than the usual cooperation between British business and British foreign policy: the two were virtually identical, and Anglo-Persian operated not simply as a "designated instrument" but as an owned and operated, overt instrument of British policy.

A collection of companies owned the Iraq Petroleum Company in 1933. The Near East Development Corporation, originally owned by five American companies, three of which sold out in the early 30's, held 23.75 per cent of the IPC stock. British-Dutch and British interests, including Anglo-Persian, held twice as much. British influence was enhanced by the fact that the company operated under the eye and protection and with the active cooperation of the High Commissioner and his representatives in Baghdad, Mosul and Basra. The owner companies of IPC, in 1928, had bound themselves, by the so-called "Red Line Agreement", not to explore or develop independently any region which lay inside the boundaries of the old Ottoman Empire. Outside competitors un-

welcome to the IPC and Anglo-Persian group were excluded by England's treaties with the shaikhs, and by her political domination throughout much of the area. Only Saudi Arabia, in fact, lay outside the sphere of effective British control.

There was a third oil area, not merely potential but already producing, where American enterprise *had* won a concession from the British. This was the island of Bahrain, 12 miles off the Arabian mainland in the Persian Gulf. Though the Shaikh of Bahrain, like the coastal shaikhs, was tied by treaties with Britain, a combination of circumstances and the energy of a few men had allowed him to make commercial agreements with an American company. The story of the opening of Bahrain is so necessary a preliminary to the negotiations for which Hamilton came to Jiddah that we must go back 11 years before Hamilton's arrival, to the year 1922. We can confine our attention to a ruddy, genial, hearty, energetic, undiscourageable New Zealand adventurer named Major Frank Holmes.

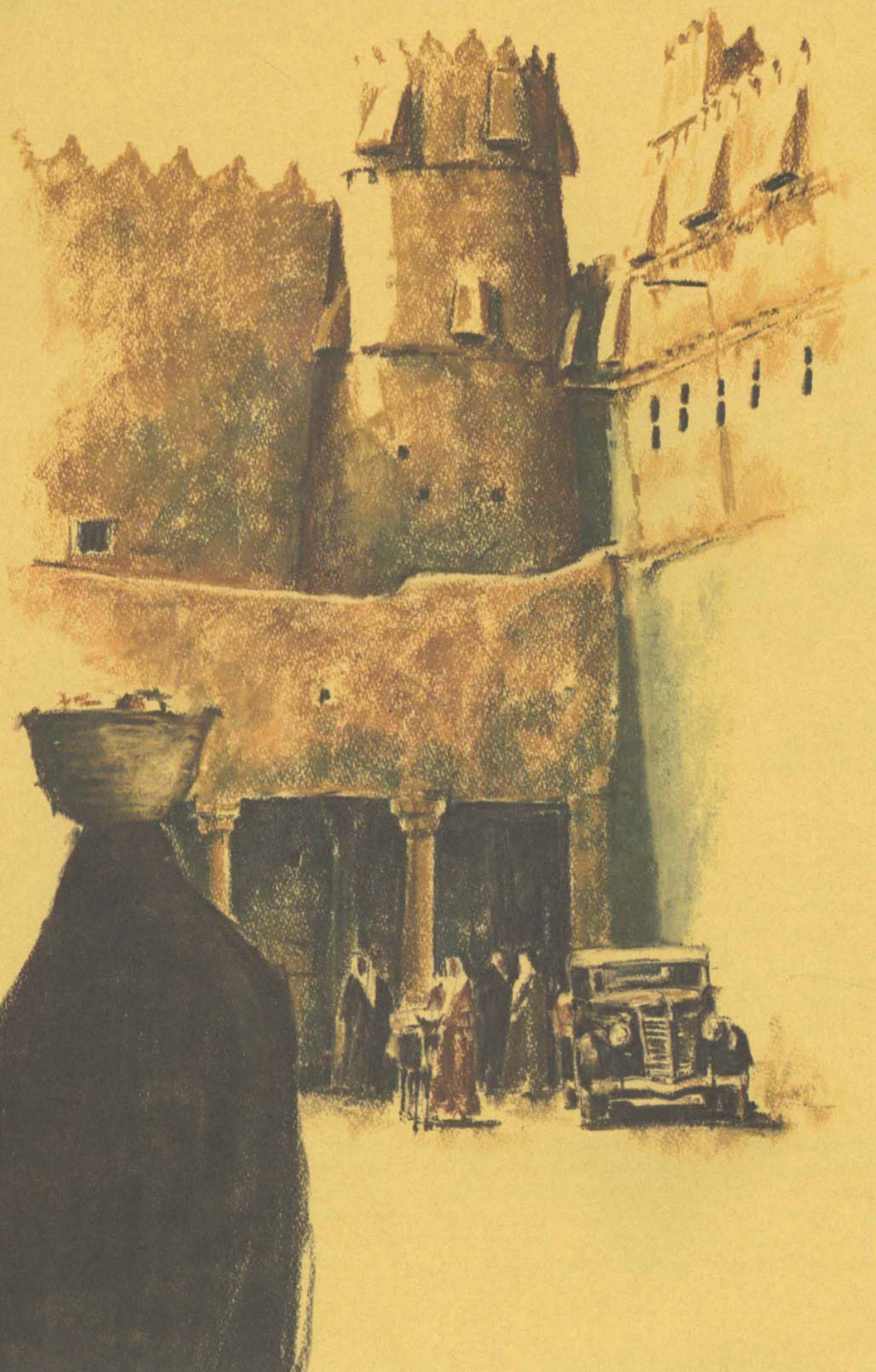
Holmes was one of those who, as Bernard de Voto once said, awake alertly in the night, hear history's clock strike at a critical time—but count the strokes wrong. He was on the trail of a big idea very early, but as it happened, arrived just a little too early and in not quite the right way.

During World War I, after active service which included the Gallipoli campaign, Major Holmes had worked for a time in the Admiralty, where access to petroleum maps left him thoughtful. At the beginning of the 1920's he showed up in Bahrain to work on the water system, and he was such an agreeable fellow, so uniformly good-natured and so full of bustle and steam, that he made many friends among both British and Arabs. When a group of London financiers formed the Eastern and General Syndicate to promote profitable enterprises in the Persian Gulf area, Holmes was their natural choice as Bahrain agent.

The Eastern and General Syndicate was interested in oil, but it was not an oil company. It proposed either to act as negotiator for oil companies which wanted concessions but lacked contacts for making them, or to obtain the concessions first and then sell them to companies which would explore and develop them.

Obviously the Anglo-Persian and Iraq Petroleum people were going to keep their eye on Holmes' activities. Obviously, too, the best chance for Eastern and General would lie at some place outside British political influence—Saudi Arabia, for instance. A land almost cut off from modern history, nearly untraveled by Europeans, it had been in times past a by-word for the fabulous. As a nation, it was bounded on the east by Bahrain's pearls, on the west by King Solomon's mines, on the south by frankincense and myrrh. Oil under it? Why not?

Holmes almost made the dream come true. In the boiling heart of the Arabian summer of 1922 he rode across deserts only a handful of Europeans had ever seen, and talked with Ibn Sa'ud in his fortress capital of Riyadh. Again in November he intercepted the King (then called the Sultan of Najd and Its Dependencies) at Hofuf, in the al-Hasa oasis. He followed him to al-'Uqair, where the King was holding a conference with Sir Percy Cox, the British High Commissioner in Iraq. Sir Percy, with the interests of Anglo-Persian in mind, turned an understandably cool eye upon Holmes' efforts and advised the King that concessions for the exploration of al-Hasa were premature at that time. Premature or not, Holmes pursued the King back to Hofuf and in the teeth of



Sir Percy's plainly-indicated objections obtained a concession to explore for oil over 60,000 square miles of al-Hasa, Arabia's eastern province.

But then, disappointment. The task of trying to find and develop oil fields in a country which lacked most of the elements necessary to support such an industry —good roads and communications, skilled labor, transport, supply centers—and which few foreigners entered except during the pilgrimage season, did not appeal to any of the oil companies, European and American, to which the Syndicate offered its concession. After several years, during which some Belgian geologists tried without success to discover what was under al-Hasa's dunes and gravel plains, the Syndicate defaulted on its annual rental payment and let the concession lapse. It thereby gave up one of the greatest oil reserves in the entire world—it had heard the clock strike, but counted the strokes wrong. But there was after all no way for the concessionaires to know what they were relinquishing. Moreover, by the time they let al-Hasa go, they had a more promising prospect going on Bahrain.

The Bahrain concession was granted to Holmes by the Shaikh of Bahrain, with British approval, in 1925, and was renewed in 1927, the year in which the Iraq Petroleum Company brought in the big Kirkuk field. At the end of November, 1927, the Syndicate sold an option on the Bahrain concession to Eastern Gulf Oil, and Gulf sent out a geologist, Ralph Rhoades, to explore and map the island.

Rhoades found on Bahrain a perfect structure, a textbook dome, but he had no way of knowing, without drilling, whether there was oil in it. And Eastern Gulf, having bought something it liked the look of, now found itself unable to go ahead. It was reminded that it was a subsidiary of Gulf Oil, and that Gulf was a part of the Near East Development Corporation which was in turn a part owner of the Iraq Petroleum Company and a signatory to the recent Red Line Agreement. Eastern Gulf then offered its Bahrain option to the IPC, which decided against it because its geologists reported the Oligocene-Miocene formations, oil-producing in Iran and Iraq, to be missing from Bahrain. So Eastern Gulf sold its option to Standard of California, a complete newcomer in the Middle East.

Socal too had its difficulties, this time with the British Colonial Office and the political agent on Bahrain. Nearly two years of negotiations and compromises were needed to produce an agreement. It stipulated that the company developing Bahrain must be a British company, registered in Canada, and must establish an office in Great Britain, in the charge of a British subject, for maintaining communications with His Majesty's Government; one director must be a British subject, *persona grata* to the British Government; as many of the company's employees as was consistent with efficient operation must be British or Bahrainis; and the company must maintain on Bahrain Island a "Chief Local Representative" whose appointment must be approved by the British Government and who must, in all his dealings with the Shaikh of Bahrain, work through the British political agent.

Thus, with one hand tied behind it in political restrictions and red tape, the first wholly-American-owned oil company came into the Middle East. The Eastern and General Syndicate signed a final agreement with the Shaikh of Bahrain on June 12, 1930, and on August 1 it formally assigned the concession to Socal's new Canadian subsidiary, Bahrain Petroleum Company, or Bapco, whose first Chief Local Representative was Major Frank Holmes.

The home office of Socal at 225 Bush Street, San Francisco, was separated from Bahrain Island by half the globe, and in 1930 by an almost complete lack of dependable information, as well as by a certain reluctance on the part of more conservative members of the Board of Directors. The search for new foreign reserves, necessarily both speculative and expensive, was no new experience for Socal. It had spent millions of dollars, without success, on exploration and drilling in Mexico, Venezuela, Colombia, Ecuador, Argentina, the Philippines and Alaska. But by the time the Bahrain agreement was concluded, the world was deep in the Great Depression. Oil was in over-supply, and the price had dropped to a dime a barrel in Texas. As a result, only a few men in the company were advocating the Middle East venture. These were mostly from the Producing Department: producing men always have felt that the time to look for oil is when there is already plenty of it. That is when concessions and leases are easiest and least expensive to get, and that is when you must find oil if you want to have your share for the future.

One of the most persistent, enthusiastic, and effective of the directors was Maurice Lombardi. He was supported by William H. Berg, another director, who later became president of the company; by Reginald Stoner, manager of the Producing Department, and by the two chief geologists, Clark Gester and "Doc"

Nomland. And Lombardi had an able and industrious aide in Francis B. Loomis, once Under-Secretary of State for Theodore Roosevelt and now a consultant on foreign affairs for Socal.

These men were all enthusiastic about Rhoades' Bahrain report; they had all recommended the purchase of Gulf's option. But Lombardi was not content to wait while long-drawn-out negotiations were carried through. He had Loomis do some cabling for permission, and on May 14, Fred A. Davies, a geologist, and William F. Taylor, general superintendent of the foreign division, stepped ashore on Bahrain from a British-Indian boat and were welcomed by Major Holmes.

It took them no long time to determine that Bahrain should be drilled, though Davies warned that it could not be considered a first-class wildcat prospect. Davies "spotted" the well, choosing a site that the drillers later swore was the one place on the whole island that never had a breeze, and then he and Taylor turned their eyes across the gumdrop-green water to the pale shore of Arabia, where the light at sunrise and sunset picked out a cluster of hills. It was Davies' conclusion that anyone who developed Bahrain ought to try to get a look at al-Hasa as well, thus corroborating hunches that Lombardi, Loomis, and Nomland had had without ever seeing the country at all.

But Holmes, it turned out, could not or would not get them over there or arrange an audience with Ibn Sa'ud. He had many excuses, he stalled, he warned them about being seen talking to Anglo-Persian people, for fear Ibn Sa'ud should get suspicious of political motives and refuse to deal for concessions. Cables went back and forth, to and from London and San Francisco, and Davies waited, and waited some more, on through the time of *shamals* and into the time of the soaking hot winds from the southeast. The little lost island adrift in the steamy Gulf began to be a prison; across the channel the tantalizing Arabian shore swam in and out of haze and fog and heat waves.

By the end of June, Taylor had gone home, and Davies, never quite sure that he wouldn't be called back to inspect Arabia, left Bahrain and went on up to Baghdad. Still no word from Holmes, who was supposed to be busy arranging permissions. Davies poked on into northern Iraq, telling no one where he was going or what he was doing, which was inspecting geological sections in order to have a better notion of what might lie under the crust of Bahrain and Arabia. An amiable and distinguished-looking tourist, he took a look at a good part of Iraq before a horse persuaded him to go home. The horse was skittish, the stirrups were short, and Davies had very long legs. He was humped up in the saddle like a folded katydid, and every time he bounced, the prospector's pick in his belt pecked the horse on the haunch. Eventually the horse bolted, piling Davies onto some rocks. Davies broke a blood vessel above his right hip. His car and driver got him back to Mosul, where he lay in the hospital for a month. Still no word from Holmes. Davies hired another car and took an inspection trip into Iran and returned. Still no word. On September 17, after four strenuous months in the area, Davies sailed for home without ever having had that look at Arabia which had been one of his principal reasons for coming. But the little he had seen, and the inferences he had been able to draw, had made it certain that if and when opportunity presented itself, Socal would be at least as interested in Arabia as in Bahrain. Also, Davies need not have lamented his lost chances in al-Hasa. As it turned out, he would spend a good part of his life there.

On August 7, 1930, a week after the Bahrain concession was formally assigned to Socal by the Eastern and General Syndicate, a quite different but likewise important event took place on the other side of Arabia: Harry St. John B. Philby embraced Islam.

Philby, late of the British Colonial Office, once of the Indian Civil Service, once a colleague of Sir Percy Cox in India and Mesopotamia, one of the great explorers of the Arabian Peninsula and a great Arabist, was now selling Ford cars in Jiddah. He had been a friend and on occasion an advisor of Ibn Sa'ud since they first met in Riyadh in 1917, when Philby crossed over from al-'Uqair to persuade Ibn Sa'ud to keep the peace with Sharif Hussain, Britain's ally, and harry the Rashidis, allies of the Turks and Ibn Sa'ud's mortal enemies.

Philby had broken with the Colonial Office and had been allowed to resign for his outspokenness in criticizing certain British policies. He had lived in Jiddah since 1925. Since 1929, when the first Model A Fords gave his business a smart fillip, his home had been the Bait Baghdadi, a huge, century-old pile built on land reclaimed from the sea and once the residence of the Turkish Wali of the Hijaz. In it, though by no means wealthy, Philby lived the life of an influential shaikh, intimate with the great of the kingdom.

When he finally made the decision to accept Islam he telephoned some of his friends and then drove to Hadda, where he was met by the Deputy Foreign Minister, Fuad Hamza, and by the Minister of Finance, Shaikh Abdullah Sulaiman. They helped him perform the proper ablutions and purifications and drove him to Mecca, where he went through the rituals of the Lesser Pilgrimage under the tutelage of Shaikh Abdullah's secretary. The next day they all drove to Taif, in the hills, to receive King Ibn Sa'ud's congratulations.

Philby's embracing of Islam would seem important only to himself. But the conversion was important to others as well, and to the development of Middle Eastern oil. It brought Philby even closer to Ibn Sa'ud than he had been, and confirmed him as a confidential and trusted adviser on matters of international relations and international trade. And Philby was not only strongly sympathetic to Arabs and their country and their way of life; he was also outspokenly critical of British colonial policy.

It was sometime after Philby's conversion, during one of their intimate talks, that the King expressed his concern about the poverty of his Kingdom, then almost entirely dependent for cash on the fees charged pilgrims. Philby told him Arabia was like a man sleeping on top of buried treasure: why didn't he take steps to develop the country's mineral resources? The King retorted that for a million pounds he would give mineral or oil concessions to anyone—had already, with disappointing results, given a concession to Holmes.

If the King had only known it, Fred Davies had recently gone back to the States after a frustrating four months of trying to make contact and talk about precisely these same mineral possibilities. But out of Philby's talk with Ibn Sa'ud came at least one definite result: Philby reminded the King that Charles R. Crane, a member of the American plumbing-manufacturing family and a philanthropist extraordinary, had landed briefly at Jiddah a few years before. Ibn Sa'ud had not given him an audience. Yet somebody like Crane, philanthropical and American rather than political and British, might hold the key to Arabia's future.

The King agreed, Philby communicated, and in 1931 came Charles Crane, eager to help in any way he could. An ardent friend of the entire Middle East ever since, in 1919, he had helped write for Woodrow Wilson an ill-fated and disregarded report recommending the self-determination of people in the area, Crane had already, in 1926, loaned the services of Karl

Twitchell, a mining engineer, to the Imam of Yemen. He would be happy to make the same loan to Ibn Sa'ud, to have Twitchell prospect for water, oil, and minerals, and make a report that could be used as a basis for later development.

Thus came Twitchell, a Vermont Yankee with an Irish-born wife, and he prospected up into the northern Hijaz, and into the mountains northeastward which some thought the Land of Midian and the place of King Solomon's mines. He also went clear across the mountains, across the Tuwaiq escarpment and the Dahana sands, and on to the *sabkhahs* and dunes of the Persian Gulf coast, so that he was the first American engineer to visit the shore which Fred Davies had eyed wistfully from across the channel in the summer of 1930.

It was not the fault of Socal officials, especially Loomis and Lombardi, that Twitchell was the first to examine al-Hasa. Communication (or the failure to establish it) was such that Socal for some time had no notion of Twitchell's activity, and they had no real assurance that Holmes had told Ibn Sa'ud of their own eagerness to set up talks. While they groped blindly for contacts in the forbidden kingdom, Karl Twitchell went up and down Arabia sniffing for oil seeps and quartz outcrops, and a wildcat crew spudded in the first well, Jabel Dukhan # 1, on Bahrain on October 16, 1931.

Twitchell's reports in 1932, after he had visited the well being drilled on Bahrain, so encouraged Ibn Sa'ud about oil and gold prospects that he commissioned Twitchell to communicate to oil or mining companies in the United States, Arabia's willingness to discuss concessions.

In March, 1932, Lombardi wrote Holmes reminding him that it was a long time, and he hadn't yet made his promised visit to the King. On April 2, Ed Skinner, manager of Bapco on Bahrain, wired Taylor that Holmes expected to see the King in Jiddah at the end of that month, and that a new element had came in by reason of Gulf Oil's interest in an Arabian concession. Apprehensive about being frozen out, Socal immediately sent Loomis and Lloyd Hamilton to London to see what could be done from there, and arranged for a geologist, Robert P. Miller, to go on to Bahrain to watch the first well, and to select a second well location.

For a year and a half they had jockeyed and corresponded and guessed in the dark. Then on June 1, 1932, Jabel Dukhan No. 1 came in with a heavy flow of oil from the Cretaceous, thus confounding the geologists of Anglo-Persian, who did not think oil would be found in formations older than the Asmari limestone. Holmes, who had made excuses for not going to Jiddah in April, said in June that he was prevented by the King's grief over the death of his favorite wife. Tied to the Syndicate by the Bahrain deal, but growing more and more restless with the delays, Socal explored other possibilities. Philby told Loomis about Twitchell and Twitchell's reports, and for the first time Socal learned that the King himself had been trying to make contacts.

By August 26, the delays had begun to seem so meaningless and fantastic that Loomis gave the Syndicate an ultimatum: if nothing were done by November 1, Socal would consider itself free to try independent negotiations with Ibn Sa'ud. The next week, Loomis cabled Philby, who had returned to Jiddah, to see if he would be available as a contact man. It seemed that the only way to make sure some competitor did not slip into Arabia ahead of them was to give Ibn Sa'ud a direct word about Socal's interest.

Loomis would be cabling Philby for a long time, for Philby and his wife were driving to Jiddah by way of Belgium, Holland, Germany, Austria, Hungary, the Balkans, and Istanbul, and thence going by ship to Alexandria and by land to Suez to catch the khedivial mail boat home. They were many weeks on the road, while uncertainty mounted in London and elsewhere.

By the time Philby got back to Jiddah and cabled his willingness to serve and Ibn Sa'ud's willingness to negotiate, Loomis had met Twitchell in Washington and signed him too as a contact man. So in the end, Socal wound up with both Twitchell and Philby as advisers, though the agreement with Philby was not completed until after Hamilton reached Jiddah. With the way finally cleared for discussion, the Hamiltons and Twitchells left London for Marseilles and a January 28 sailing on the Henderson Line ship *Burmah*. Shortly afterward, Lombardi also left London, on his way via Istanbul and Basra to Bahrain. He not only wanted to look into the new oil field there, where the second well was now being drilled, but he wanted to be reasonably close to back up Hamilton in the negotiations.

Thus it was—after years of guessing, negotiation, and just plain luck—that Lloyd Hamilton sailed into Jiddah harbor that February day in 1933 to begin the long months of negotiations that would one day send Arabian oil out to the Western world and bring the Western world to Saudi Arabia.

(TO BE CONTINUED)

Even in the desert, plants are the first, lovely link in the chain of life...

FLOWERS IN THE SAND

ARTICLE AND PHOTOGRAPHS BY JAMES P. MANDAVILLE, JR.

A specimen of 'Echium rauwolfii' 10 inches high.

A Bedouin asking a fellow tribesman about grazing conditions in other parts of the country says simply "*Fih hayah?*", literally, "Is there life?".

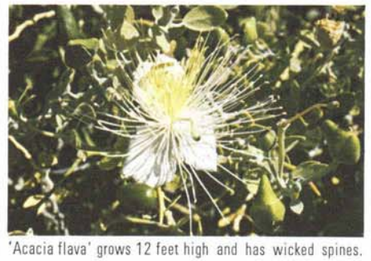
The desert Arab's livelihood—indeed *his* life—depends on an intimate know-

'Anagallis arvensis', the scarlet pimpernel, grows in oases.

ledge of sparse desert vegetation. He cannot be a mere herder of grazing animals; it is vital that he be a skillful hunter of pastures. A map of his yearly migrations is really a map of the ever-changing patterns of desert plant life. For in the desert, as in other regions, plants are the ultimate living source of energy for all higher organisms.

Saudi Arabia's Eastern Province, scene of the country's petroleum industry development for more than 30 years, is a desert by almost any definition. Taken to include the northeastern fringes of the Rub' al-Khali, it is an area of about 90,000 square miles with an annual rainfall of less than four inches and summer temperatures of 120 degrees Fahrenheit or more. To the plant geographer, it is part of the great Saharo-Sindian Desert floristic region, the uninterrupted desert belt that extends from the Atlantic coast of North Africa eastward to Pakistan. Plants in this zone face many environmental problems: low rainfall, high temperatures, desiccating winds and salty soil. The number of plant species is small; relatively few plants, apparently, were able to adapt to the climatic extremes as the desert developed in geologic history. The native species in the Eastern Province, typical of the Saharo-Sindian area, total only about 360, including weeds on cultivated land. An area of the same size in Jordan, Lebanon, and Syria, with their more varied climate and topography, supports more than ten times as many.

But however limited they may be, plants *are* found in the desert. And behind the first impression of drabness and sterility, of rock and sand and grays and browns, there are glimpses of unexpected beauty. Hollows in the northern plains, after especially good showers, will be knee-deep in purple iris; an orchid was once found in the reed forests of al-Hasa Oasis. The scarlet fruits of the '*abal* bush brighten the sands



'Acacia flava' grows 12 feet high and has wicked spines.

every spring. Other plants, though sometimes less lovely, are more valuable.

The Bedouins have learned to find the plants—in all their variety—and use them. More surprising to a city dweller of the world's more fortunate temperate zones is that the nomads have been able not only to survive in this environment, but also to build an almost self-sufficient economy based on the thin mantle of vegetation covering their domains. Spiny shrubs or tender flowered herbs—the desert men have uses for nearly all: forage for camels and sheep, fuel for campfires, medicines for themselves and their animals, cosmetics, salad greens, dyestuffs, tannins, living guideposts for the traveler.

Of course, plants are most valuable

'Capparis cartilaginea' is a wild caper from upland Najd.

to the Bedouins as forage for livestock and as fuel, but many are edible and others have highly specialized uses. Among the important grazing plants are the '*arfaj* shrub, which grows in dense stands over hundreds of square miles in northeastern Saudi Arabia, the *rimth* saltbush and *thumam*, a shrubby grass common in the coastal plain. The foaming bowl of camel's milk offered to tent visitors sometimes carries a trace of the local grazing plants, the slightly salty flavor of *rimth*, or the fragrance of *khuzama*. *Ghada* and other saltbushes such as *rimth* and '*abal* or *arta* are used for firewood.

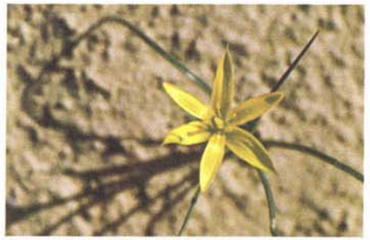
The carrot-like roots of *hambizan* and nutty tubers of *rubahla* are edible, and *samh*, a wild seed, is collected in northern Arabia to make coarse bread. The immature fruits of *kurraysh* can be eaten (though it is a member of the milkweed family) and have the flavor of sweet cabbage. But there are also toxic plants to be avoided: '*ushar* of the milkweed family was used in India in preparing arrow poison. Arab tribesmen once burned its wood to obtain a fine-texture charcoal valuable as an ingredient of homemade gunpowder. *Harmal*, a wild shrub related to the common oleander, grows on gritty flats or shallow sands; grazing livestock avoid its poisonous leaves.

Bedouins have medicinal uses for many wild plants, some of scientifically proven value, others which probably provide only psychological aid. These

'Anthemis deserti', an annual, is only four inches high.

were almost the only medicines available to the desert Arabs before the Saudi Arabian Government began providing medical services for its citizens. The gourd-like fruits of the *shary* are still used as a purgative. *Ja'dah*, used in the treatment of fevers, is another desert remedy that has been recognized by Western pharmacists. Ash from one variety of tamarisk was once used as a treatment for camel mange. But the use of some other plant drugs was based on fancy. A tea made from *ramram* was employed in the treatment of snake bites and scorpion stings because, according to legend, the desert monitor lizard gained immunity from venomous creatures by rolling in its leaves.

An unusual folk tale has grown up around *kaftah*, a small annual herb. At the end of the moist growing season the branches of this plant roll tightly inwards into a woody ball that protects



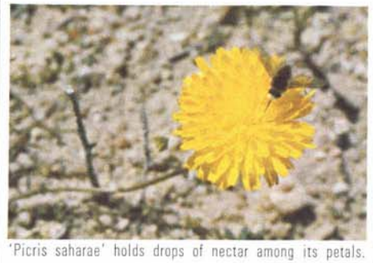
'Gagea reticulata' is a dwarf member of the lily family.

the seeds until the next rain. According to Arab tradition, the Virgin Mary clutched this herb in her hand while suffering in childbirth, and the plant is also known as *kaff Maryam* or "Mary's palm."

Many a Bedouin girl has rouged her cheeks with the crimson roots of *kahil* or the bright red fruits of the '*abal* bush. The fibrous roots of the *rak* tree provide "toothbrushes" with a lightly astringent natural dentifrice.

In some parts of Arabia, vegetation provides the only geographical reference points available to the traveler. In the Dibdibah gravel plains, for example, where only the slightest rise breaks the horizon, the Bedouins give directions to camping sites and pasture areas in terms of the relatively stable boundaries of desert shrub communities. "So-and-so is camped on the eastern edge of the '*arfaj*, where the *hamd* begins," they explain. This fact gives the traveler one "line of position," as a navigator would say—or the street name of an address, as the city dweller would understand it.

The Bedouins' complex and near-scientific classification of vegetation be-



'Picris saharae' holds drops of nectar among its petals.

gins with the categories '*ushb*, or annual herbs, and *shajar*, woody perennials. They reflect the two main desert routes taken by natural selection, nature's process of magnifying and perpetuating chance changes in living things to the advantage of the species. Both of these plant adaptations are somewhat comparable to the hibernation of animals in cold climates.

In the first category are many small desert herbs which lead an active life only in the favorable cool, rainy months, spending the summer in the form of drought and heat-resistant seeds. Nature has provided them with several kinds of built-in clocks. One is a "germination inhibitor" in the coats of some seeds which can sprout only after a measured amount of rain has soaked away a chemical safety device. Many of these plants are able to complete their life cycle, from the first stirring of the embryo to the dropping of new seed, in a matter of weeks; thus many of the more colorful flowering species are rarely seen. One must be in the right place at just the right time.

'Salsola subaphylla', a desert saltbush, has papery wings.

The other broad class of desert plants, the perennials that brave their harsh environment year-round, accounts for most of the low, shrubby vegetation of the landscape. Many of these shrubs drop their leaves and slow their growth during the summer. Others remain green and suffer little loss of water because of protective structures, such as dense coverings of hair.

The Arabs' acquaintance with botany has not been limited to herdsmen's lore. During the eighth and ninth centuries, Islamic scholars were busy translating the Greek natural history and medical texts of Aristotle and Dioscorides. This work not only laid the foundations of Islamic natural science, but preserved much of classical science lost to the West during this period. When Arabic-speaking naturalists began to produce their own works, many of their botanical catalogs emphasized the uses of plants in medicine, a science in which the scholars of Baghdad excelled. Some naturalists, however, became pure scientists, study-

'Iris sisyrinchium, a wild iris, grows in pools of rain.

ing and describing plants as a field of knowledge for its own sake.

Abu Hanifah ad-Dinawari, who died about A.D. 895, was the first to record his own field observations of plant life. His descriptions of Arabian plants, many of them referring to names still used, remain valuable as a field manual to this day. Rashid ad-Din as-Suri (1177-1241), another innovator, produced the first Arabic book on plants with color illustrations taken from nature.

Today, Arab scholars are building on this heritage, enriched by recent developments in Western science, in studies that will make possible more efficient use of the natural resources of the desert. Scientifically controlled grazing, combined with irrigation projects utilizing untapped underground water reservoirs, may thus provide the hoped-for answer to the age-old question of the Bedouins, "*Fih hayah?*".

"*Fih.*" There is.

James P. Mandaville, Jr., an authority on desert natural history, grew up in Saudi Arabia and now works in Aramco's Government Relations Department.

GLOSSARY OF ARABIC PLANT NAMES

'abal	*Calligonom comosum*
'arfaj	*Rhanterium epapposum*
ghada	*Haloxylon ammodendron*
hambizan	*Emex spinosa*
hamd	several species of saltbushes of the family *Chenopodiaceae*
harmal	*Rhazya stricta*
ja'dah	*Teucrium polium*
kaftah	*Anastatica hierochuntica*
kahil	*Arnebia decumbens*
khuzama	*Horwoodia dicksoniae*
kurraysh	*Glossonema edule*
rak	*Salvadora persica*
ramram	*Heliotropium ramosissimum*
rimth	*Haloxylon salicornicum*
rubahla	*Scorzonera papposa*
samh	*Mesembryanthemum forskahlei*
shary	*Citrullus colocynthis*
thumam	*Panicum turgidum*
'ushar	*Calotropis procera*

This engraving by Evans, "The Sheykh relating the Story," illustrates Lane's "Notes to Chapter Twenty-Fourth" in which a traveller to Damascus meets "an excellent sheykh who every day seateth himself upon a stool ... and relateth pleasant tales and histories ... the like of which no one hath heard ..."

THE WHITE LINES AND THE BLACK

BY JOHN BRINTON

Woodcuts reprinted by courtesy of Charles Knight & Co. Ltd.

When Sir Richard Burton was preparing his famous translation of The Arabian Nights' *he inserted a short but devastating footnote that undercut rival orientalist William Lane and at the same time conferred a new measure of fame on a talented artist named William Harvey. The success of Mr. Lane's 1861 version of* The Arabian Nights', *wrote Sir Richard, "was greatly indebted to the many wonderful engravings on wood from original designs by William Harvey; with a host of quaint and curious arabesques, Cufic inscriptions, vignettes, head pieces. These were excellent and showed for the first time the realistic East and not the absurdities drawn from the depths of artistic ignorance and self consciousness."*

Whatever the merits of his attack on the hapless Mr. Lane, Sir Richard's praise of Harvey's work was certainly justified. As the accompanying samples suggest, Harvey was a master of one of the perenially popular but extremely difficult art forms of all time: woodcutting.

Woodcutting is a very ancient art. It goes back at least as far as the Egyptians who cut hieroglyphic characters on bricks and clay by pressing the blocks into the clay. The Chinese used woodcuts to print textile patterns and centuries later the Romans used them to print numerals and symbols. In the 15th century Western Europe also took up the art as a way of printing patterns on textiles.

In the early stages, artisans drew their lines with the grain on the surface of soft wood and then cut away the excess wood so that the lines would print black. Since this type of block could be inked and used on a press it was the perfect method for illustrating books when movable type was introduced and opened the way for the mass printing of books. It became popular and such men as Albert Dürer in the early 16th century raised it to a high art form—although by then the artist and the craftsman who actually carved the blocks were rarely the same person.

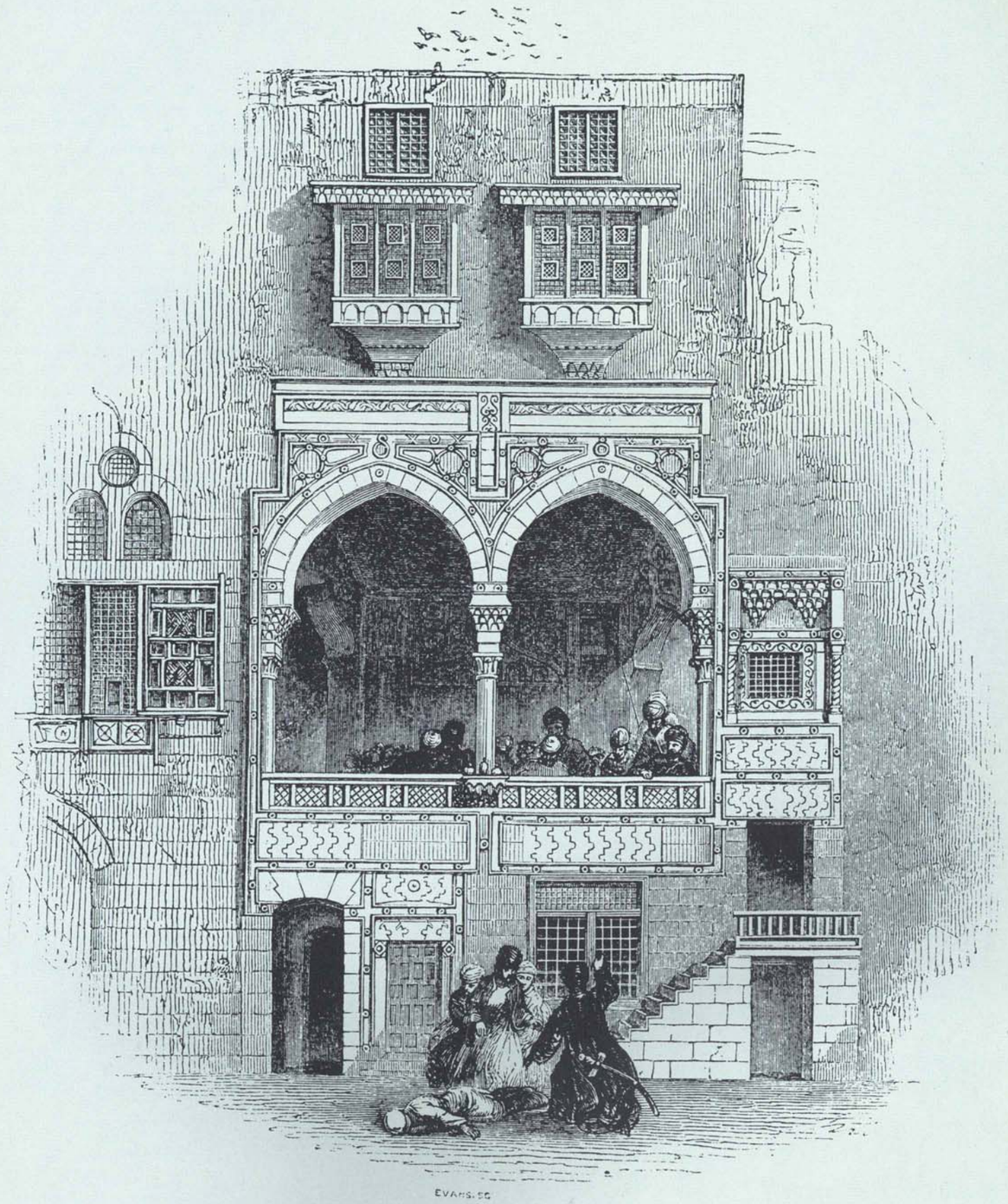
During the 16th and 17th centuries, however, metal engraving developed into an even more suitable, if more expensive method, and the popularity of woodcuts declined sharply. By the 18th century it was almost an obsolescent art form. But by experimenting with hard end-grained wood and sharper tools, craftsmen developed a new technique that was the reverse of the older method. It was called the "white line method." Instead of cutting away the wood so that the lines printed black, they cut V-shaped trenches into the wood. These V-shaped trenches printed white—like a chalk line on a blackboard. The technique is known now as wood engraving and although it could not match the fine crisp lines of copper plates immediately, constant improvement in execution plus the cost of copper engraving—copper plates had to be printed separately—enabled the art to survive. With the advent of Thomas Bewick wood engraving even began to surpass the metal engravings. Thomas Bewick, (1753 to 1828) was a talented Scots artist who is called the father of modern wood engraving. Not only did he turn out such masterpieces as the illustrations he designed and cut for British Birds *and* The Fables of Aesop, *—unmatched to this day—but he also taught his art to a long list of notable pupils. One of them was William Harvey.*

A skilled engraver himself as well as an excellent artist, William Harvey was "a master of florid and luxurious decoration"—a skill that fitted him uniquely for the task of providing illustrations for The Arabian Nights' *when Mr. Lane turned in his translation to his publishers. Working under the critical eye of Lane himself, Harvey drew each design with painstaking attention to detail and then turned it over to the engravers to cut into the blocks. There were so many illustrations—he illustrated three volumes—that he employed no less than 25 different wood engravers. It was to be his finest work and provides to this day some of the best examples of woodcuts ever to appear between the covers of a book.*

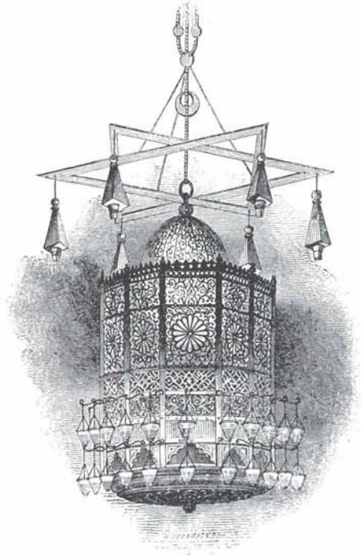
John Brinton specializes in material on the Middle East found in his personal collection of old books about the region.

NOTE TO READERS: Sets of six of these woodcuts, suitable for framing, may be obtained from the Middle East Export Press Inc. Box 1272, Beirut, Lebanon. The price for one set is $1.00. Please send checks only. Allow a minimum of six weeks for delivery.

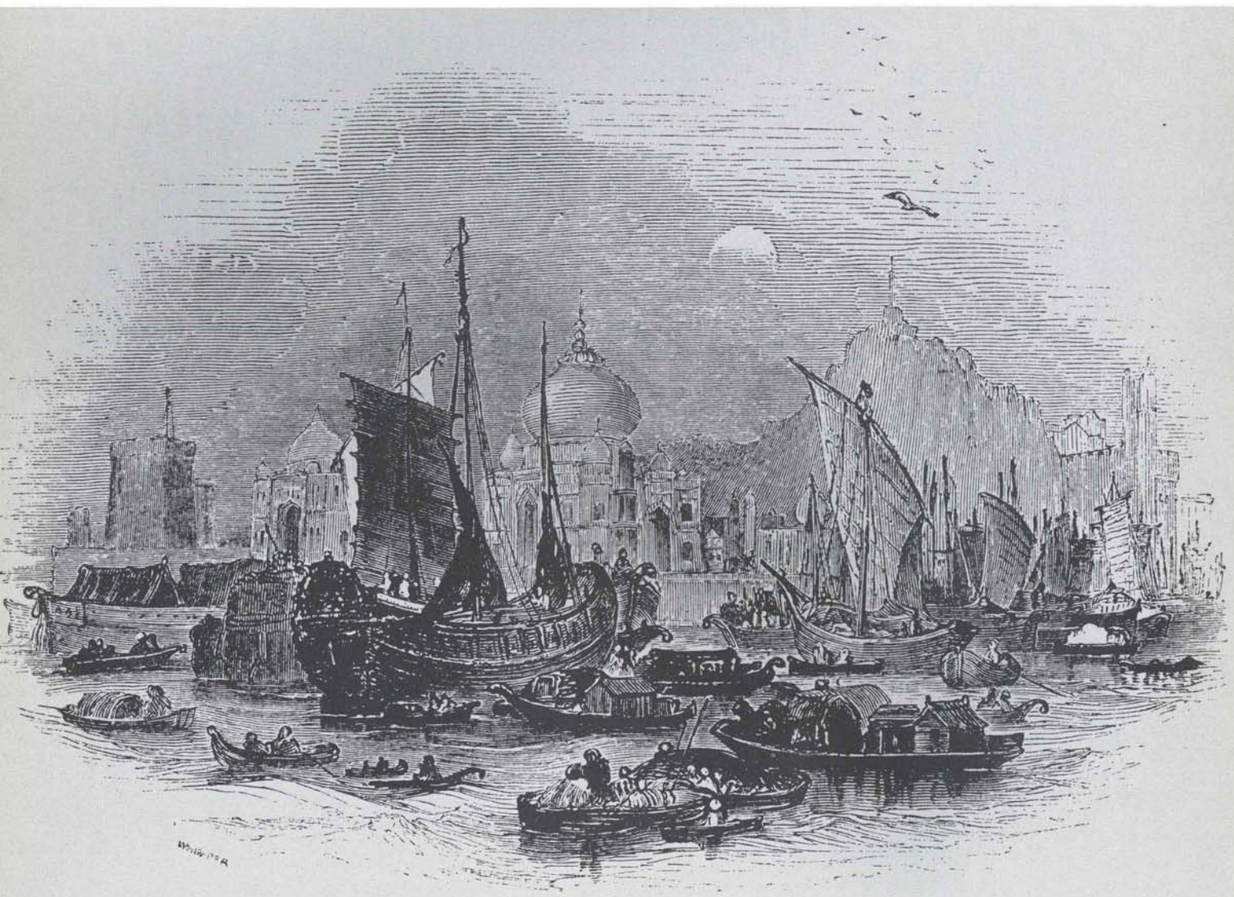
One of the fascinations of "The Thousand and One Nights" is the complex structure of story-within-a-story, designed, of course, to save Shahrazad's life. Within the story of "The Porter and the Ladies of Baghdad ... &c.", the Second Royal Mendicant tells of how he earned his living as a woodcutter. Engraving by Thomas Williams.



Evans executed this scene from "The Story of Jadoor" in which King Jadoor's two brothers, Salim and Seleem, plot to poison him and share his throne "on account of the love of the world and of dominion." The evil deed accomplished, Salim also kills Seleem, but no sooner is the villain enthroned, then he in turn is poisoned by the loyal wife of King Jadoor.



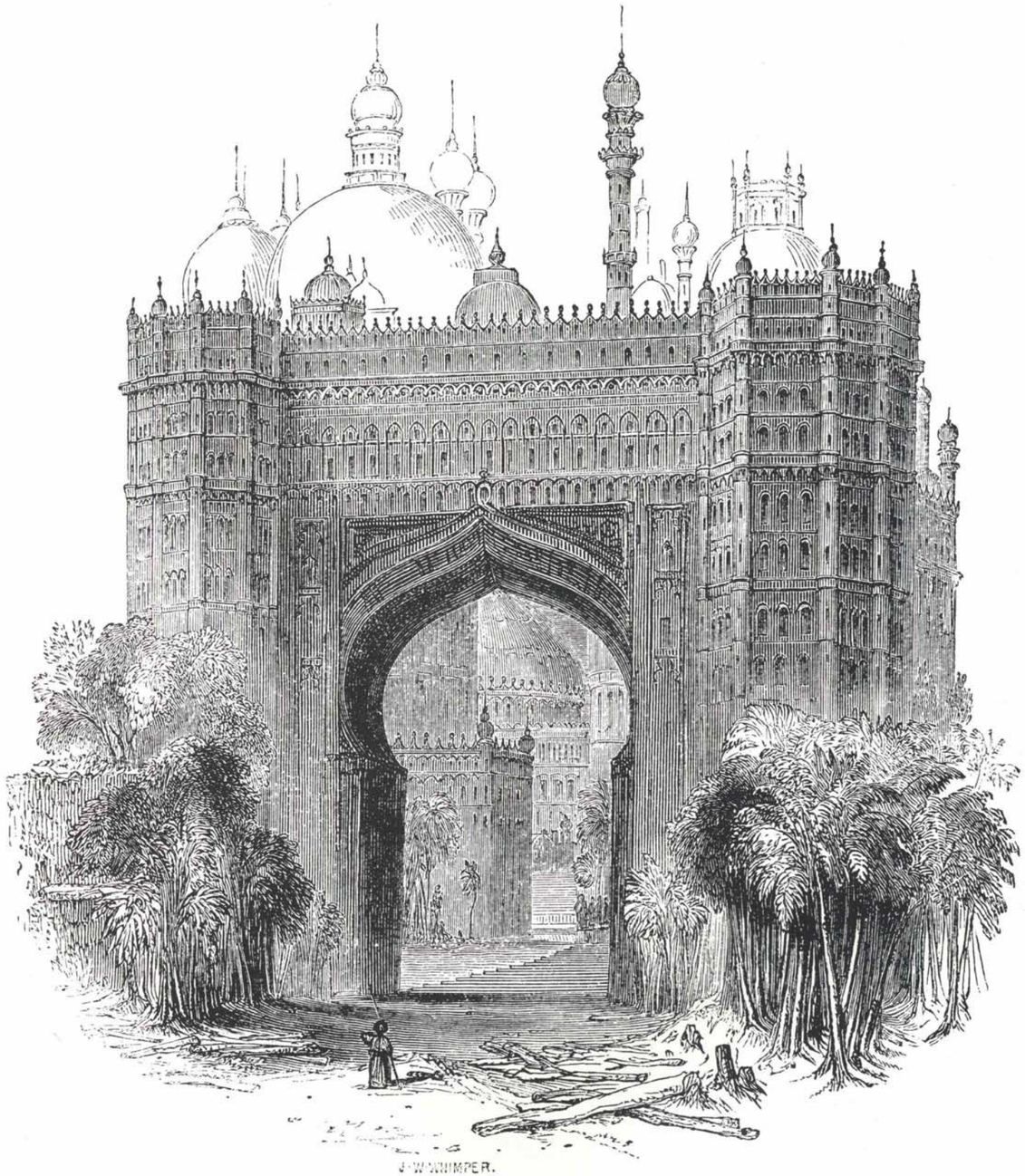
Aside from scenes and characters taken from the stories themselves, the three volumes of Lane's Arabian Nights' Entertainments contain many handsome oriental designs and decorations which introduce the tables, end the chapters ("Tail-pieces"), or fall within the note sections. One example is "Lantern" by Williamson, reproduced here in the original size in which it was carved. All other engravings on these pages have been photographically enlarged twofold. Some 25 engravers worked on the edition and an individual's work can often be recognized by the peculiarities of his style and technique of execution as easily as by his signature on the woodcuts. All of the "many hundreds of engravings on wood," however, are from original designs by just one man, William Harvey.



"The lives of former generations are a lesson to posterity," the introduction to the three volumes begins, "that a man ... may consider the history of people of preceding ages, and of all that hath befallen them, and be restrained." In "The Story of Hasan of El-Basrah", the hero sails to the Islands of Wak-Wak where he meets an army of women. J. W. Whimper carved this romantic engraving of the El-Basrah harbor from which Arab traders set out for every corner of the Indian Ocean.

"The Old Man of the Sea on Es-Sindibad's Shoulders", by Thomas Williams. Shipwrecked on his fifth voyage, Es-Sindibad helps an old man across a stream. "He had twisted his legs round my neck ... so I was frightened at him, and desired to throw him down from my shoulders; but he ... squeezed my throat, so that the world became black before my face..."

Vasey carved Harvey's design for the "Portrait of the Barber." "I am the sheykh Es-Samit (the Silent); I possess, of science, a large stock; and as to the gravity of my understanding, and the quickness of my apprehension, and the paucity of my speech, they are unbounded: my trade is that of a barber."



In "The Discovery of Irem Zat el-'Emad," by J. W. Whimper, 'Abd Allah the camel driver, looking for a lost camel in Yemen, discovers the legendary Terrestrial Paradise. The lost city had been built by an ancient king who had read of heaven and vowed to build it here on earth. All his immense wealth went into the building of a city in which the gravel in the streets was jewels, and even dust was priceless musk.