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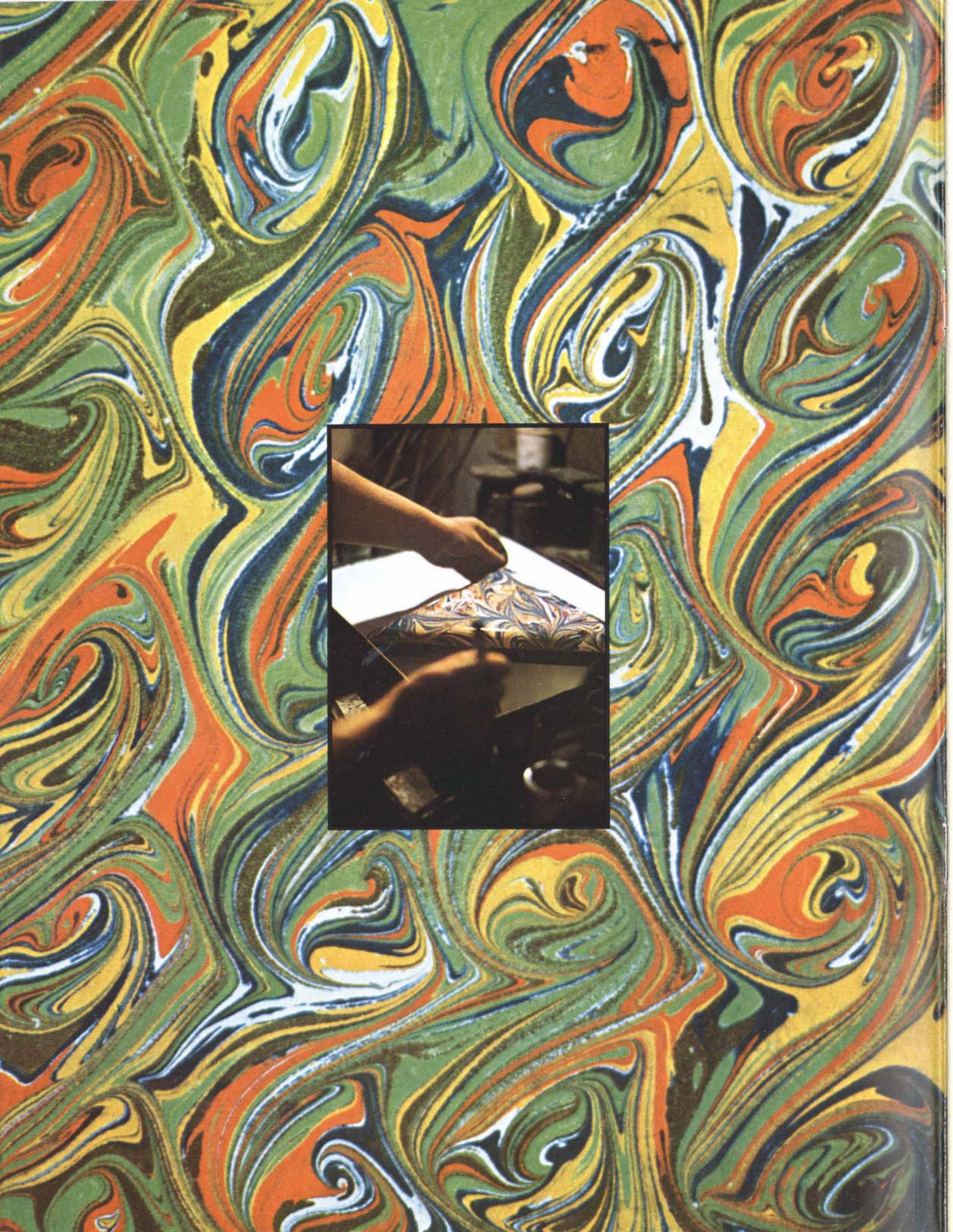
ARAMCO WORLD magazine

MAY-JUNE 1973

A RIVER CALLED REBEL



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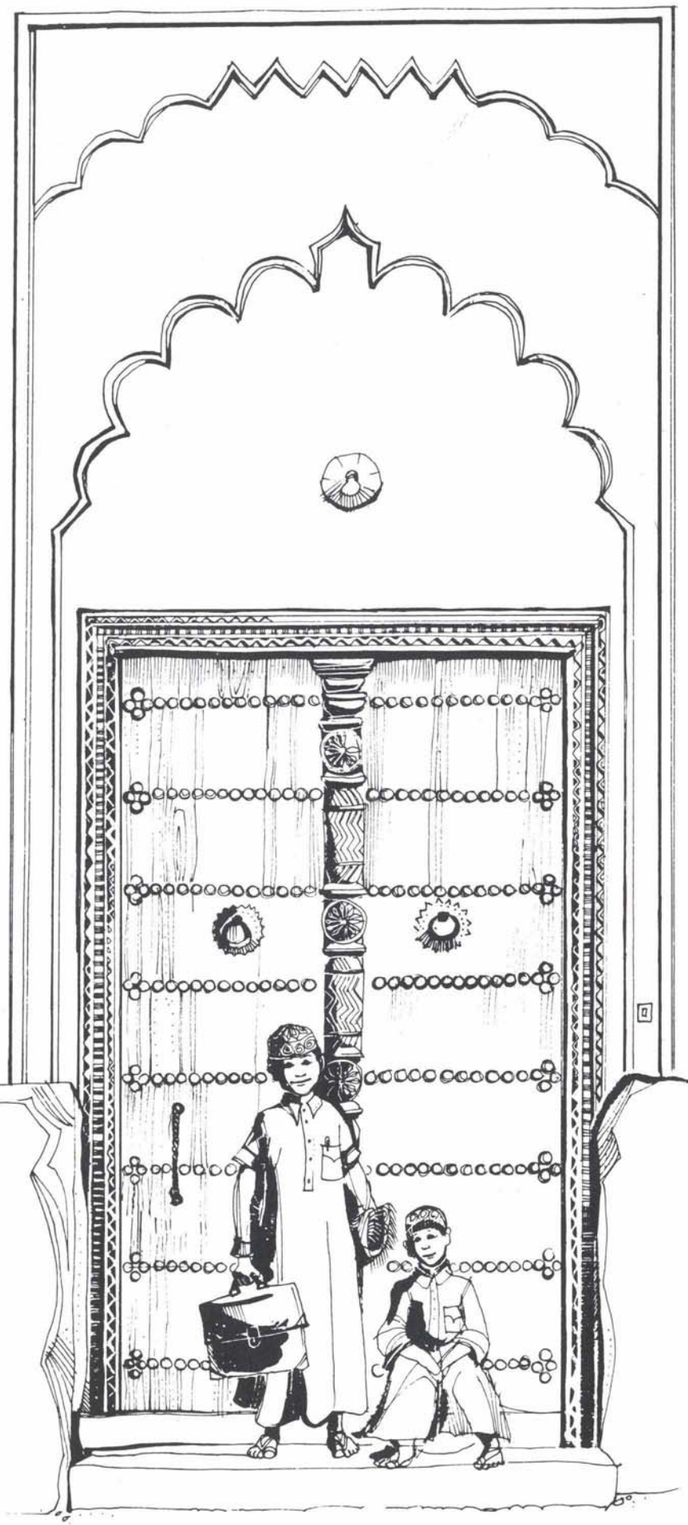
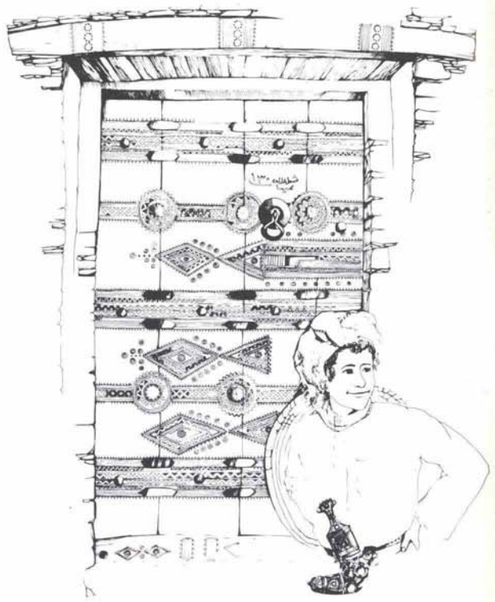
Cover: During its 300-mile trip to the sea, the Orontes passes through Hama in Syria where, for centuries, the great water wheels in this photograph by Nik Wheeler have scooped up water and delivered it to lovely gardens and valuable farmland. Story on page 12. Rear cover: Islam has left traces on the architecture of Yugoslavia.

←Remember the colorful marbled swirls which used to decorate the endpapers of fine editions? Ebru, the art of making them by hand, is today in danger of dying out.





Left to right: Wooden portals in the Eastern Province and Asir Province, a door panel in the old Russian Embassy in Jiddah, another door in Jiddah and one from the Shamsiyah palace in Riyadh.

In the older sections of villages and towns in central Arabia, houses tend to resemble small fortresses. Windows are scarce and entrances forbidding.

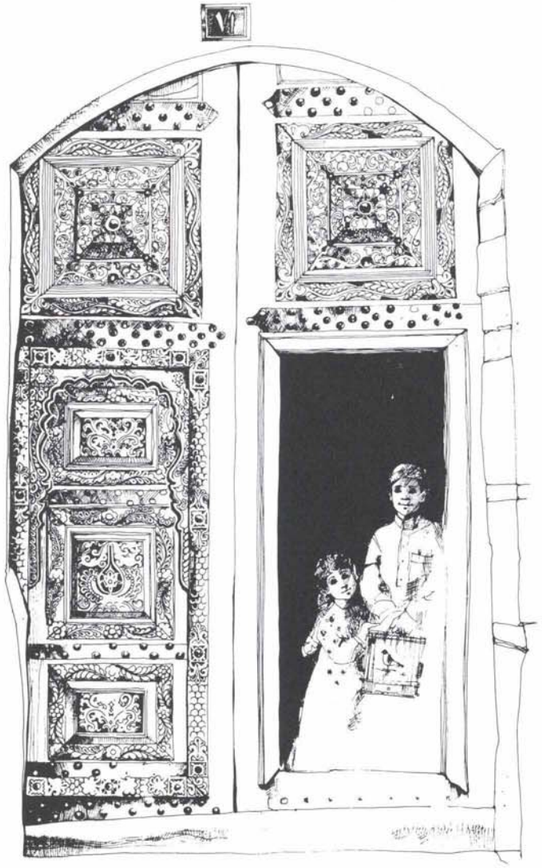
Yet these same entrances provide lovely examples of Arabia's decorative art.

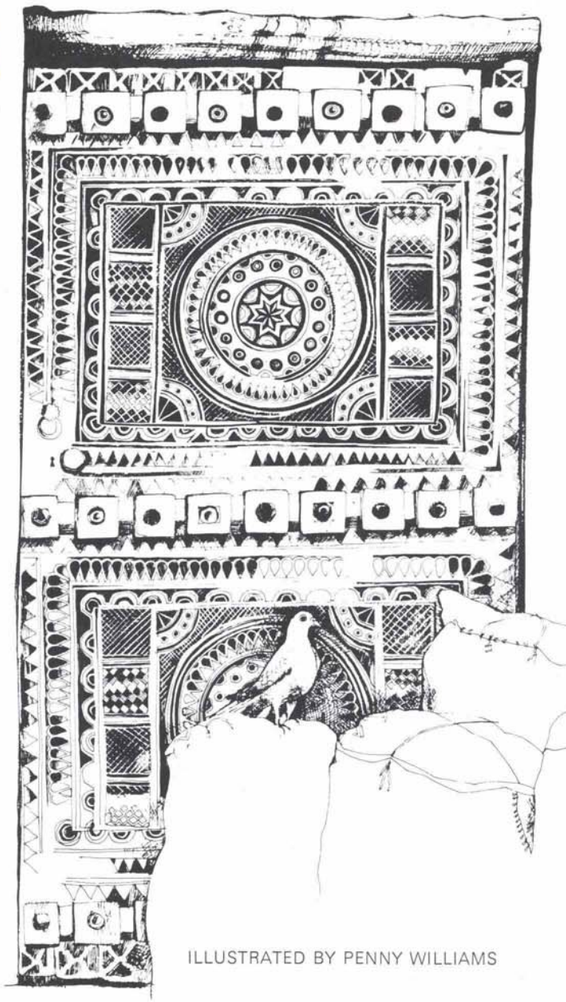
The forbidding aspect of these old portals reflects the traditionally defensive attitude of the townspeople towards the desert tribes who, until recent times, periodically swept in to attack and loot. Some of the doors, like those of the Musmak and Shamsiyah palaces of Riyadh, are massive and barred; others, like those of Jiddah and Hofuf, are tall and lofty. But all had the same basic purposes: to conceal the inner rooms from the view of a would-be raider and, if possible, keep him out.

PORTALS OF ARABIA

WRITTEN BY JAMES HORGEN

ILLUSTRATED BY PENNY WILLIAMS





But wherever possible these doors were carved with inscriptions, often a verse from the Koran—the "Ayyat al-Kursi" being one of the most popular—or a simple blessing for the owner. In some cases there was elaborate ornamentation, and bright paint was sometimes added if the original design seemed to be deteriorating.

The attention given to some carving suggests the high appreciation felt for the wood itself, which in Arabia has always been a scarce commodity. It is said that the Prophet Muhammad once had to resort to wood from a shipwreck in order to rebuild the Ka'bah of Mecca and that he employed an Abyssinian carpenter who had been on board the ship to do the work. Consequently, locally available tamarisk and palm wood and other imported woods were used sparingly and only for roof supports, doors and balconies.

The scarcity of wood provided little scope for the growth of local woodcarving skills and it is thought that much of this carving was inspired or performed by Muslim craftsmen who had come to Arabia on the pilgrimage or accompanied invading Turkish armies. But the motifs used, especially the geometric designs, interlaced vine and tendrils, are found in all Islamic art. And to the discerning eye, the beauty of the carving on the old Russian Embassy door in Jiddah and the Koranic inscription on the Qatif door compares favorably with that of the best Islamic woodcarving found on mosques in Jerusalem and Istanbul.

The style of houses and office buildings in present-day Arabia reflects the new industrial and commercial orientation of everyday life and the older combinations of limestone block, stone and wood are rapidly giving way to concrete and steel.

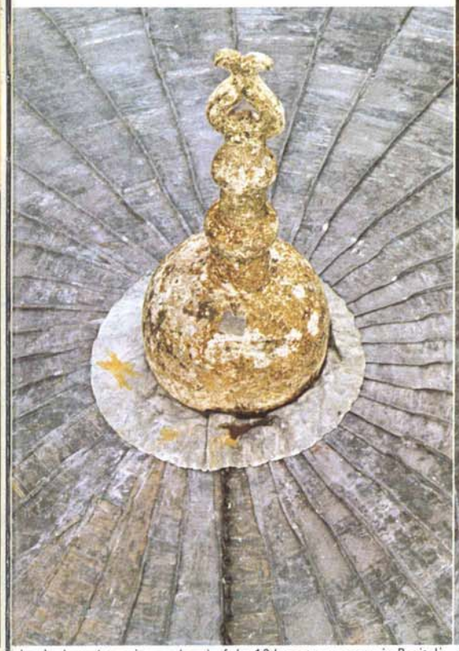
Some townsmen, recognizing the beauty of these richly carved doors and balconies, are taking steps to preserve them, but faced with the competition of new materials and the normal deterioration of wood carving after 50 years, it is now likely that the doors and the tradition that produced them will soon vanish forever.

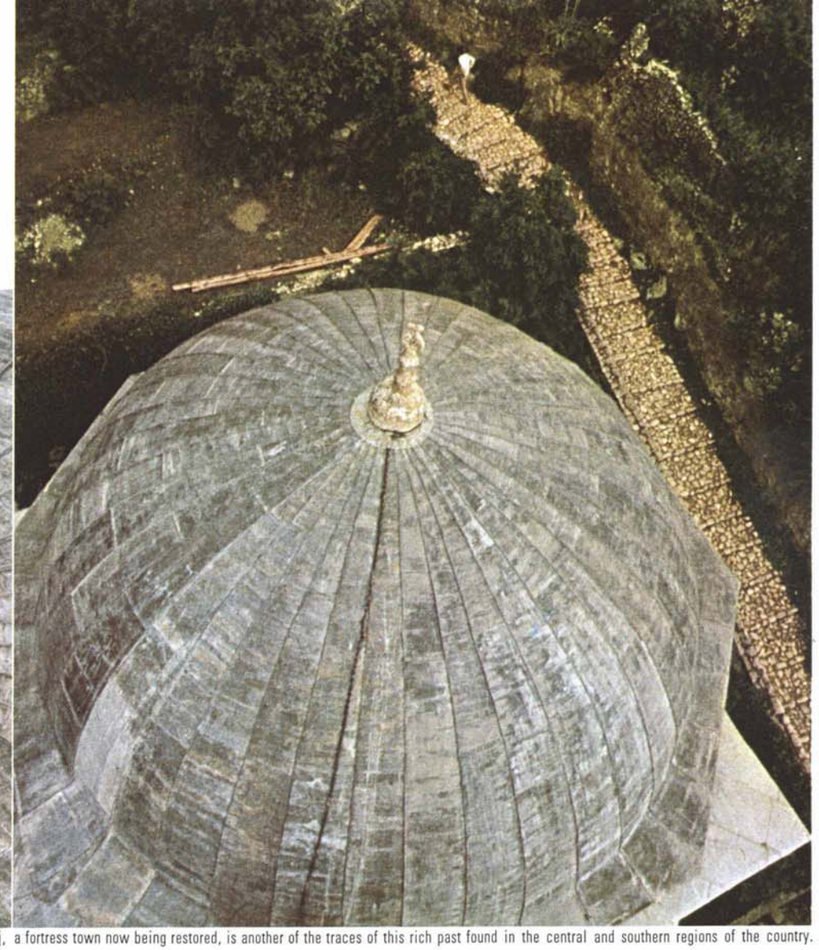
James Horgen, formerly with Aramco's Arabian Research Division, is a writer on Arab history specializing in the Gulf region.

Sunset silhouettes a minaret in Sarajevo, capital of Bosnia and Herzegovina, a city of some 80 mosques and numerous other architectural treasures bearing witness to Yugoslavia's Islamic heritage. The

ISLAM IN THE NEAREST EAST

BY PATRICIA BROOKS
PHOTOGRAPHED BY JACKIE CURTIS





lovely dome (two views, above) of the 16th-century mosque in Pocitelj, a fortress town now being restored, is another of the traces of this rich past found in the central and southern regions of the country.

Most people today can tell you where the Near East is, but 100 years ago it wasn't so easy. Then, and until World War I, the Near East was a lot nearer than it is today. It included Turkey, Greece and Bulgaria and a large part of what used to be the Balkans and is today largely Yugoslavia.

Now, to be sure, Yugoslavia is "Eastern" only in the sense that it belongs to the East European Bloc. But up to 1913 diplomatic concern about the "Eastern Question" focused on a region that flew and saluted the crescent of Islam for 450 years and has never quite erased its distinctive imprint since.

Of the six separate republics in the modern state of Yugoslavia, not all were engulfed in the 15th-century Turkish invasion of Europe. Although Bosnia, Hercegovina, Serbia and Macedonia went under, Slovenia and much of Croatia remained under the protection of the Hapsburg Empire, and Montenegro, though subdued and held briefly, later fought its way to an uneasy freedom. Nevertheless the Muslim descendants of the Turkish conquerors today form approximately 12 percent of the Yugoslav population, and in Bosnia-Hercegovina a full third of the people are Muslim Slavs.

As a result traces of Islamic culture are common: shoes that turn up at the toe, bright Eastern patterns woven into long skirts, head scarves that are not quite veils but still shield women's faces from curious observation, Arabic calligraphy on signs and buildings, oversized Turkish incised jewelry, copper water jugs and the white-washed "Arab" villages of inner Bosnia.

You can even *hear* the echoes of Islam. Such proper names as Omar and Mustafa are as common as Milan and Branko. The Serbo-Croatian language, dominant in this multi-lingual nation, is salted with Turkish words. The Serbian word *shogam* for "good-bye" is clearly a relative of *salaam*, Arabic for "peace." Bosnian love songs are called *sevdalinke*, from the Turkish word *sev* for love. *Aferim* is the local equivalent of O.K., as it is in Turkey and some Arab countries. *Mirak* is to enjoy the essence of a thing (a very Islamic concept, that) and *merhaba* is the Arabic *marhaba*, "hello."

Numerous place names suggest an Islamic heritage too. Mostar—from the Turkish *stari most* or old bridge—is one, and the town is appropriately famous for its ancient Turkish bridge. The name of the town Tekiya means "sanctuary" in Turkish. And Hisar, which means "fortification" in Arabic, is built on a hill. The most famous place name is Sarajevo, which means "palace in the fields."

Muslim influences, not always acknowledged as such, have crept into the mainstream of Slavic culture through food too: shish kebabs, skewered grilled meats, *pilaf*, *dolmas* (sometimes called *sarmas*) and variations on *baklava*, which even slipped into the Austrian repertoire disguised as strudel.

Even in Dubrovnik, that proud coastal city known as Ragusa in the Middle Ages, and famous for its successful resistance to the Turks, there are remnants of Islamic influence. Paying annual tribute to maintain their independence as a seafaring and trading power, Ragusans prided themselves on their freedom. Yet in the Gothic chapel of the Franciscan monastery, a superb triumph of medieval Christian architecture, the rug beneath the altar is unmistakably an Islamic prayer rug.

When asked about it, a resident will say, "That is an old Bosnian rug."

"But it looks so Turkish in its bright colors and geometric patterns and the type of weaving."

The local resident shrugs, "You are mistaken. Rug weaving is a very old Bosnian craft."

Neither is wrong. It *is* a Bosnian craft, but one learned from the Turks in the years following the Turkish conquest of Bosnia in the 15th century.

The medieval kingdom of Bosnia, flanked on the west by Croatia, on the east by Serbia, and the south by the mountainous terrain of Montenegro, was the first real toehold of the Turks in Europe. After half a century of thrusts into the Balkans, in 1463 the Turkish army approached Bosnia and captured it. Then the Turks swept into Hercegovina in 1482 and Montenegro in 1496. Later, when the soon-to-be-memorable Suleiman (not yet dubbed "the Magnificent") had succeeded to the throne, they took Belgrade. Eight years later, in 1529, they crossed the Danube and met their first major setback at Vienna.

During the centuries of Ottoman rule, life was certainly no worse than under the feudal Christian kings. In fact, the Turks exacted less tribute and levied fewer taxes than the kings and nobility had. Often they accepted taxes in the form of labor services, rather than in land or money.

They were considerably more generous about religious freedom too, especially toward the Eastern Orthodox Church, with whom they had earlier established a *detente*. There were, to be sure, ground rules which non-Muslims were expected to follow: no church towers, as the mosques had to be the tallest religious buildings in town; no church bells, as they might distract from the *muezzin;* no mixed congregations. But otherwise they could practice their religion unhindered. And French writer Jean Bodin observed in 1576 that "The King of the Turks ... constrains no one ... permits everyone to live according as his conscience dictates ... permits the practice of four diverse religions, that of the Jews, the Christian, according to the Roman rite and ... the Greek rite, and that of Islam."

In most of Ottoman Yugoslavia, the Turks ruled a predominantly Christian populace. But in Bosnia the Islamic Slavs soon gained ascendancy, especially in Sarajevo. So tight was their control they passed an edict that the Turkish vizier, who nominally supervised *them*, could spend no more than 48 hours within the city. *His* capital was Travnik, 50 miles away, and he

was encouraged to stay in it. He did until 1850,when Ombar Pasha, a Bosnian Muslim loyal to the Sultan, brought the independent Muslims to heel.

In 1878, after the Russian-Turkish War, Bosnia and Hercegovina were placed under the nominal control of the Austro-Hungarian Empire, but to woo the still-powerful beys the Austrians extended concessions to them which, ironically, were denied the Bosnian Christian peasantry.

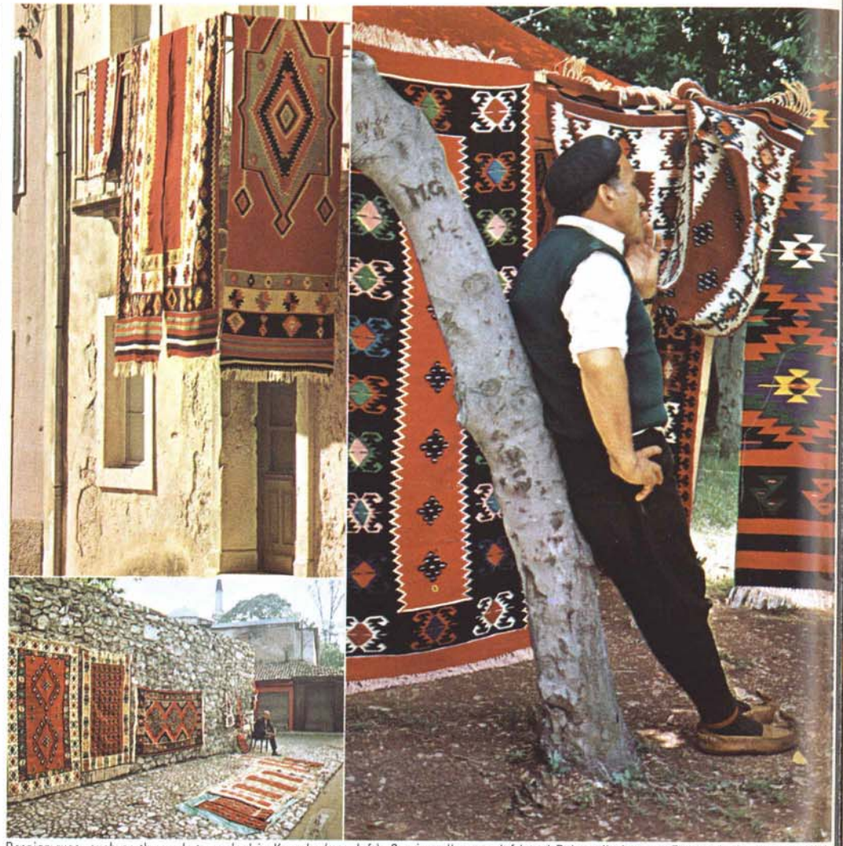
The beys' power, however, waned after 1912 when the Balkan states broke free of Ottoman rule and, in 1917, formed the state of Yugoslavia. In the face of fierce nationalism the term Muslim was belittled as a mark of feudalism and illiteracy, and some Muslims, faced with loss of jobs, poverty and ridicule, renounced Islam and called themselves simply Serbs or Croats.

Most of the Bosnian Muslims, however, insisted tenaciously that they could be Muslim and Slavs too. Today, though Muslims are but a third of the Bosnian landscape, they have stamped it in their image, have given their republic its depth, traditions, color and texture. When other Yugoslavs describe something as Bosnian, they usually mean Muslim.

Today Muslims have the same rights as other Slavs—equals among equals. They have provided cabinet ministers, assembly presidents and government leaders. Prize-winning Mesa Selimovic is a Muslim, as is the noted artist, Mersad Berber, whose richly ornamented woodcuts owe their inspiration to a golden Eastern past.

Muslim influence far exceeds its numerical percentage. Avo Humo, a Yugoslav statesman of Muslim background, has said, "The cultural heritage of the Muslim past is not simply being preserved and recorded; it still acts as a living inspiration to new generations."

Such inspiration reached its peak in Sarajevo, where Islamic art, blooming in the 16th and 17th centuries, produced a profusion of mosques, *medresas* (schools), baths and inns, and bridges like the one at Višegrad, built in 1571-77 by Kodza Mimar Sinan, the Ottoman court architect, and immortalized by Ivo Andric, Nobel Prize-winning Bosnian novelist, in his popular *Bridge on the Drina*. It stands, an 11-arched, 180-meter wonder, a tribute to Muslim imagination and engineering skills.



Bosnian rugs, such as these photographed in Korcula (top, left), Sarajevo (bottom, left) and Dubrovnik, have an Eastern look. The graceful

Another celebrated bridge is the Stari Most at Mostar, southwest of Sarajevo, designed by Sinan's most notable apprentice, Hajredin the Younger, about whom they tell the following story:

When Hajredin was commissioned to build the bridge, his first attempt collapsed into the teal-blue torrents of the Neretva River. The Sultan was furious and announced that one more failure would cost Hajredin his head. Since Hajredin was given no deadline, he worked slowly, trying to prolong his life, but finally finished the bridge in 1566. When the supports were removed, and the bridge stood firm, Hajredin's assistants could not find him to tell him. They eventually came upon him weeping as he dug his grave, fatalistically preparing himself for the inevitable. His precise craftsmanship has survived over 400 years.

Mostar itself is rich in Islamic treasures. Near the bridge is a tiny coffee house, or *kafana*, with rugs on the walls, its low, covered benches arranged, Arab style, around all the sides of the room. In one corner old men in maroon fezzes pour sweet Turkish coffee from the traditional brass *dzezve*. In the marketplace, a visitor can watch artisans hammer out copper trays and ornate incised belts that would sell well in Baghdad. Along the narrow, twisted streets he can find an open café, serving lamb wrapped in grape leaves. After a leisurely walk he can see the Karaadjoz Bey Mosque, whose slender minaret looks out over the beautiful green Neretva valley.

A few mountainous miles south, through the Prenj Mountains, near the Dalmatian coast, is Pocitelj, a 15th-century Turkish fortress, now being restored. Visitors may spend the night in renovated Muslim houses nestled into the hillside above the river valley. Above the village towers the 16th-century mosque with its elongated minaret. Still further up, at the hill's peak, the crumbled remains of the Turkish fort stand silent guard, offering a view that extends as far as the Adriatic.

arched bridge in Mostar, Arabic script on a plaque in Pocitelj and a wooden balcony in Sarajevo are other reminders of an Islamic past.

It is Sarajevo, though, where everything comes together. It is, as Rebecca West wrote in *Black Lamb and Grey Falcon*, "a fantasia on Oriental themes worked out by a Slav population."

In Sarajevo modern construction and new industries are wedged in with ancient warehouses and an old market square still alive with the freewheeling merchant system of the Arab *suq*. Even the state-controlled, fixed-price system falters here—almost as if the central government threw up its collective hands and said, "All right, do it your own way!"

On a seaside terrace at Sveti Stefan, shish kebab ready to grill.

Sarajevo's skyline, with its 80 or so mosques, also makes spirits soar, and individual buildings keep them aloft—buildings like Gazi Husef Bey's Mosque, largest in Yugoslavia, built by Sinan in 1530; the Kursumli Medresa, a boarding school; and Szrzo's house, an exquisite example of 17th-century Turkish residential architecture. This last building, which once belonged to a wealthy merchant, boasts arched windows with perfect proportions, views of a secluded garden, a courtyard, a fountain, and superb craftsmanship in the fretted wooden screens. In simple but perfect taste, it conveys the essence of the Islamic life style of that time.

In Serbia, the Muslim trail more or less follows the major trade routes from West to East. Pristina, capital of Kosovo province, was the seat of a pashalik, still has a sizable Muslim community and boasts of the Mosque of Mehmed the Conqueror (1461), one of the loveliest Islamic buildings in Yugoslavia. It was built by the reigning sultan, Mohammed II, as a memorial to his predecessor, Murat.

To the southwest is Prizren, with Gazi Mehmed Pasha's Mosque (1561) bearing at the entrance this inscription: "In the town of Prizren a beautiful mosque changed the town into a paradise." In the courtyard is a mausoleum with a collection of 2,000 volumes of Arabic and Turkish manuscripts, one of which dates back to 1321.

Several of the country's finest Islamic buildings may be seen in Skopje, the capital of Macedonia. The Daut Pasha Hammam, or public bath (1484), now turned into an art gallery, was the talk of Europe in its day, with its lavish fountains, white marble arabesques and stalactites in stucco, accommodating 100 people at a time, men on one side of a huge wall, women on the other.

The *hammams* fulfilled the Islamic ritual of frequent washings and bathing. Many were immense buildings, as the one in Skopje demonstrates. In Bosnia alone there were 50 public baths at a time when Europeans did not view bathing as a necessity.

Another building of note in Skopje is the caravansary, commissioned in 1550 by Mevlana Muslihudin, a privy counselor to Sultan Selim II. With two interior courtyards, a large, two-storied porch, a well-proportioned fountain, and many square rooms with vaulted ceilings, the building faces inward, Islamic style, and presents one of the finest examples of Ottoman public architecture in its days of glory.

But those are the tangible manifestations. Of much more importance are the intangible qualities of the Islamic spirit, now so melted into the culture that although almost indistinguishable as Muslim influences per se, they have, nevertheless, reshaped the Slavic spirit in the same way that they once reshaped the spirit of the known world and infused it with the generous grandeur that is Islam's own.

Patricia Brooks, a writer for 20 years, has been around the world three times, written three books and placed articles with McCall's, Saturday Review, Reader's Digest *and the* New York Times Magazine.

ARAMCO '72

ILLUSTRATED BY PENNY WILLIAMS

For the Arabian American Oil Company (Aramco), 1972 was a big year. How big was a key subject in the annual **Review of Operations** which came off the presses in Saudi Arabia in April and released this month.

According to the Review, an illustrated Arabic-English summary of major company activities, Aramco in 1972:

- Boosted production to an average of 5,733,395 barrels of crude oil a day (an increase of 27.5 percent over 1971) and during the year produced a total of more than 2 billion barrels.

- Increased proven reserves by a net 2.8 billion barrels for an estimated total of nearly 93 billion.

- Drilled wells at the rate of one well every 2.1 days.

- Installed nearly 21 miles of oil and water pipelines every month.

- Added 1,000,000 barrels a day of gas-oil separation capacity and 2,000,000 total barrels in storage capacity.

- Increased electric power generation capacity by 25 percent.

Impressive statistics are nothing new for Aramco. Ever since the 1940's, when World War II military demands and post-war reconstruction stimulated the first expansion of production, continuing growth has almost always been the norm. But even Aramco, which is Saudi Arabia's chief producing company, was a bit breathless as, coming into 1973, it totted up figures showing that in the production of oil only the United States with about 9.5 million barrels a day, and Russia with an estimated 7.9 million barrels a day, exceeded Saudi Arabia's daily output. The figures also showed that in exports Saudi Arabia led the world (and that Aramco alone loaded 3,734 ships with 1,877,118,701 barrels of crude oil and petroleum products, a jump over 1971 of 31 percent).

Growth of that magnitude, of course, would have been impossible without a corresponding expansion of facilities. Several years ago, therefore, Aramco began to plan a major program of construction which, by year's end, included such projects as these:

At Ras Tanura, Aramco's oil port, a fractionating plant and butane refrigeration plant were installed which, together with a new de-ethanizer column at Abqaiq, a production center, were designed to enable the company to process up to 89,000 barrels a day of liquefied petroleum gas, up from the previous capacity of 50,000 barrels per day.

At Abqaiq, one stabilizer column was completed and four were under construction. The five columns will have the capacity to process 2,170,000 barrels of crude oil a day. A gas-oil separator plant and the center's 10th steam boiler were also being built.

At Shedgum and 'Ain Dar, in the huge Ghawar Field south of Dhahran, two gas-oil separator plants were completed and an existing plant was expanded, together adding 550,000 barrels daily to production capacity. Overall, in the Ghawar Field, about 140 miles of pipelines and 90 miles of electric power lines were installed.

For the offshore Berri Field, production capacity was doubled to 600,000 barrels daily with construction of a gas-oil separator plant at Abu 'Ali, an island in the Gulf 50 miles northwest of Ras Tanura, and a gas-oil separator, stabilizer and a 1,000,000-barrel storage tank at Ras Tanura.

Much of the expansion focused on

such existing or potential shipping facilities as:

Ras Tanura, now the world's busiest oil port, where a fourth Sea Island added two tanker berths (**Aramco World,** March-April, 1973).

Zuluf, a deep-water terminal 40 miles off the coast of Saudi Arabia, where new facilities include an offshore gas-oil separator plant, designed to process 480,000 barrels daily, the **F. A. Davies,** a 1,800,000-barrel tanker moored in the Gulf to serve as a floating storage tank; and a buoy mooring a mile away, from which tankers can load oil from the **Davies** via underwater lines.

Ju'aymah, 15 miles northwest of Ras Tanura, where Aramco's new deep-water port will be built. Designs, nearly completed at year's end, call for a new tanker terminal that promises to be one of the largest single projects ever attempted by Aramco.

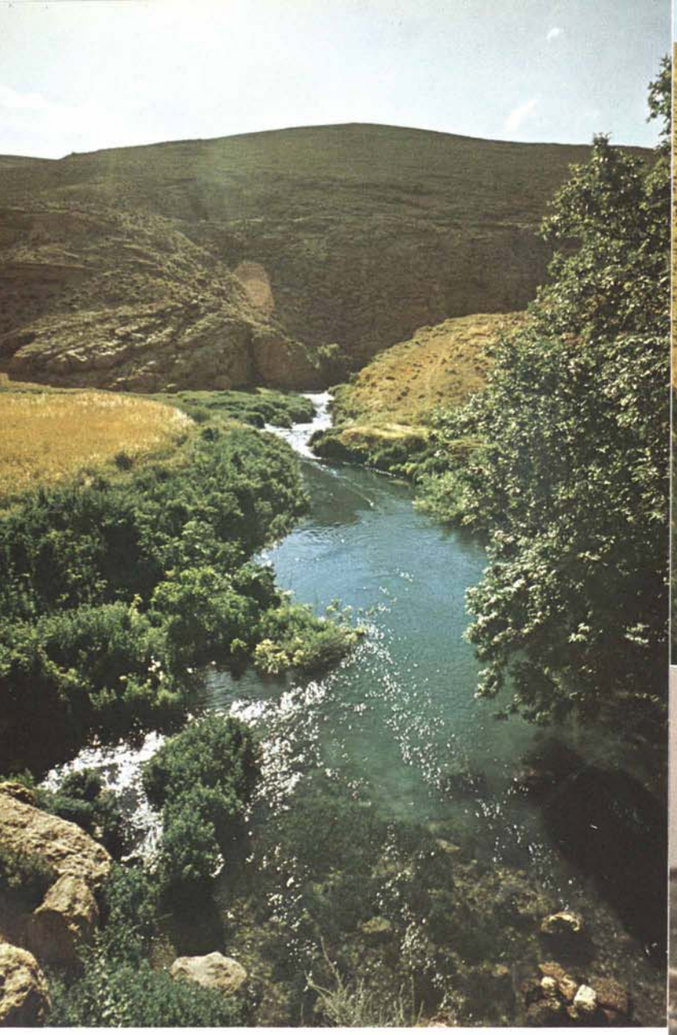
The pattern of growth was also apparent in the work force which, by the end of 1972, numbered 11,282 (9,211 Saudis, 1,031 Americans, 1,040 other nationalities). To insure that they could cope more efficiently with the natural increase in responsibilities, Aramco's Training Department provided job-related training programs for 2,200 of the employees and enrolled 920 trainees in the two-year-old apprentice program which prepares workers for employment in crafts, plants and offices. In addition, 174 employees attended one or more of 16 management training courses, and another 100 were studying in colleges, universities, technical institutes and other schools, 90 of them in the U.S.

As Aramco's needs increased so did its dependence on local industries and services. In 1972, for example, Aramco signed 7,300 contracts with Saudi Arab firms compared with 1,800 the year before, and its Local Industrial Development Department stepped up its efforts to assist Saudi entrepreneurs willing to start or expand enterprises valuable to both the public and Aramco. Under the LIDD program the company provided technical guidance or financial assistance to more than 40 local businessmen for such enterprises as valve repair, electronic maintenance, air-conditioning overhaul, water-well drilling, heavy duty equipment overhaul and drill pipe thread-cutting, a dental clinic and a school for welding. Altogether these enterprises employed 4,800 people and produced goods and services valued at $40,500,000.

In one special case Aramco also provided guarantees for loans totalling $2,125,000 to help launch a $5,600,000-hollow glass factory. To Aramco planners this factory was an excellent example of the kind of industry which can flourish in Saudi Arabia. Its products—chiefly bottles—will supply the growing soft-drink bottling industry; its raw material, mostly sand, is readily available in central Arabia, and it has a cheap source of energy—natural gas from Aramco oil fields.

Growing, in fact, affected nearly all of Aramco's programs. Aramco's agricultural advisers, for example, reported that under a continuing program of modernization of Saudi farming, some 128 specialized farmers who have received Aramco help recorded, along with their supply agencies, a $5,721,000 gross income in 1972, up 60 percent over 1971, a new record.

Even the company's donations and contributions reflected the pattern. As part of its contribution to education in Saudi Arabia—under which it constructs schools for the public school system and pays for operation and maintenance costs — Aramco completed the 45th school, and expanded another, for a cumulative total of $44,600,000. Its donations program—to educational, philanthropic and charitable causes—reached a total of $2,531,000 for the year.

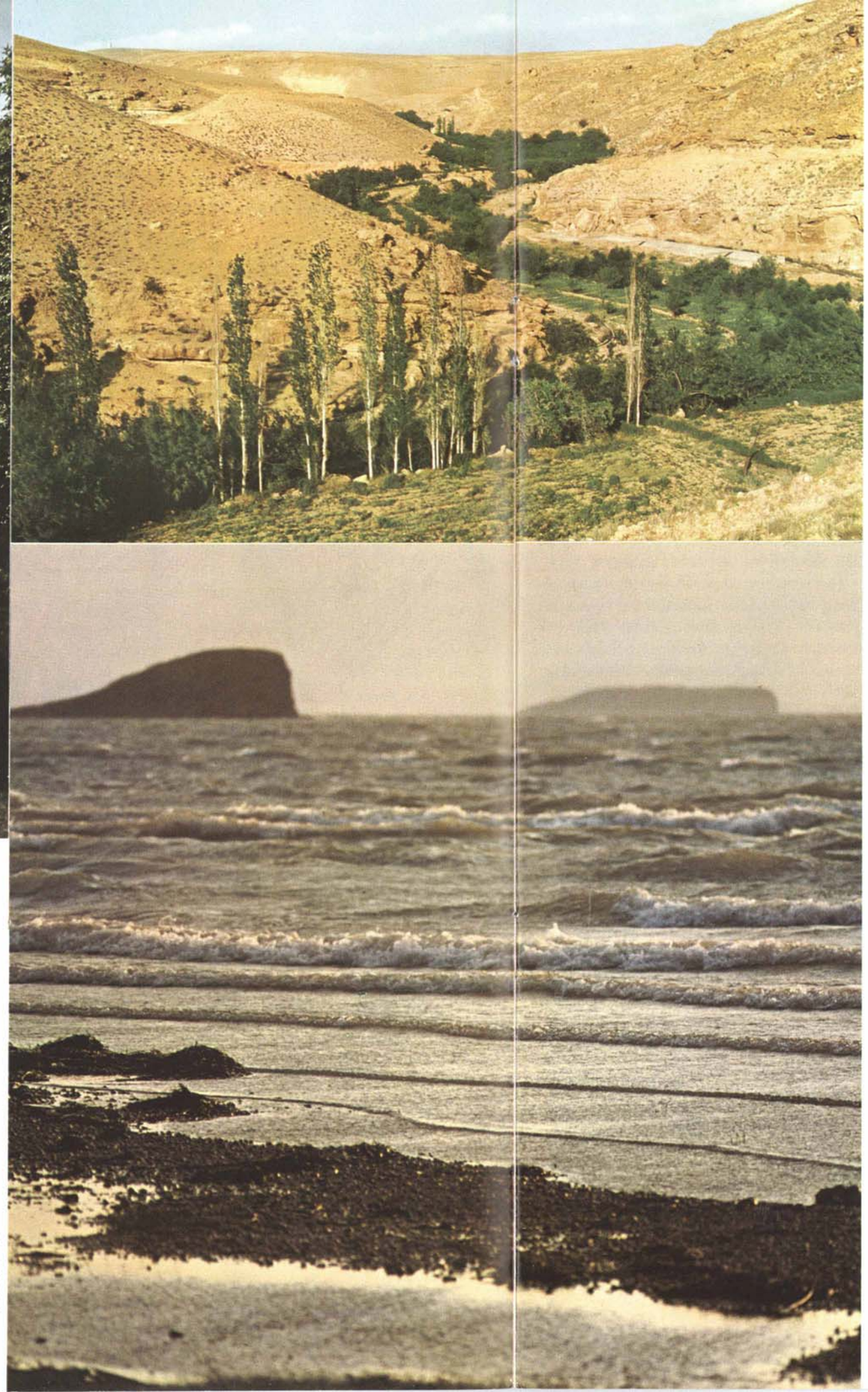


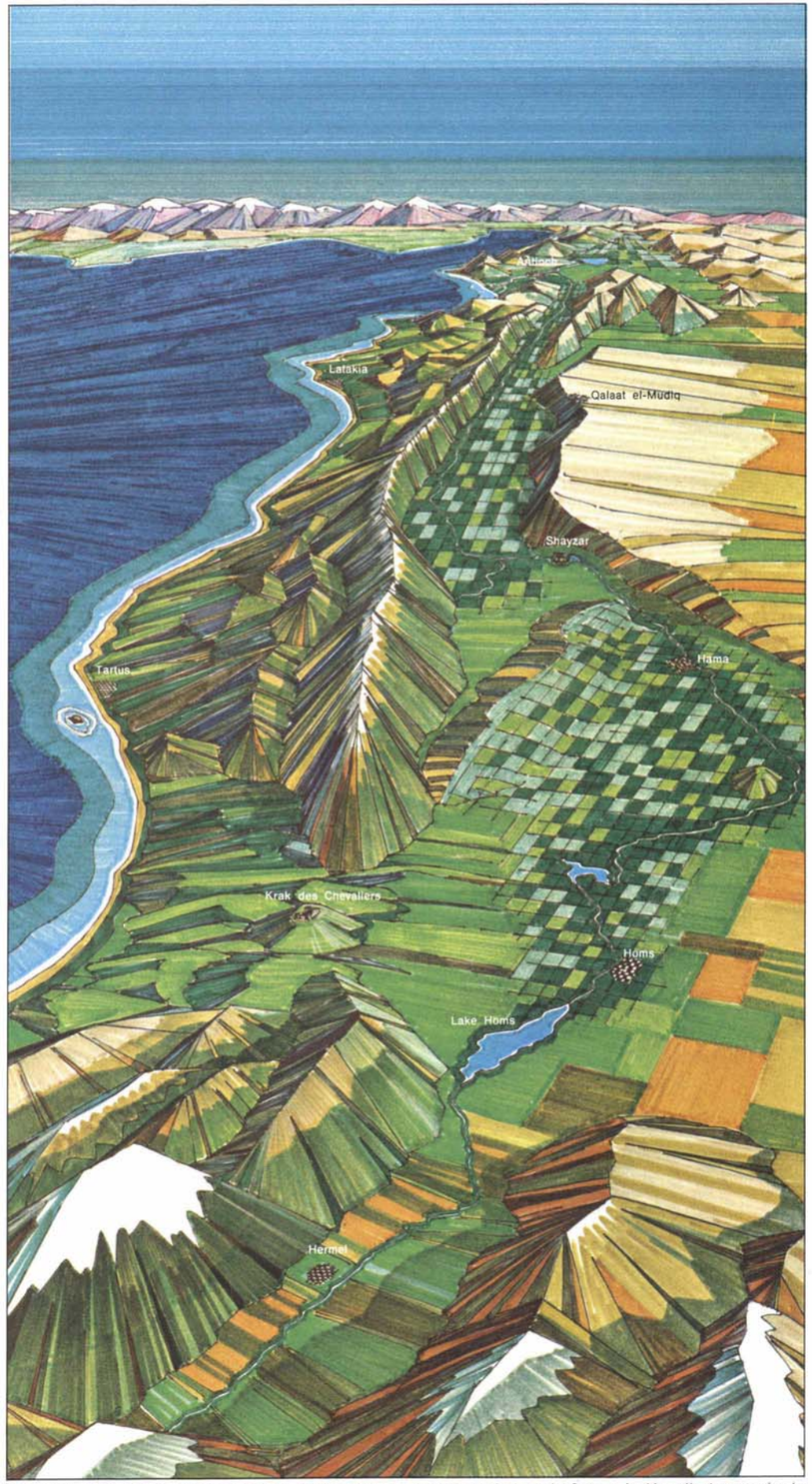
To Arabs it's al-'ASSI:

A RIVER CALLED REBEL

WRITTEN BY JOSEPH FITCHETT
AND McADAMS DEFORD
PHOTOGRAPHED BY NIK WHEELER

Spilling from a trout pool in Lebanon (above), the Orontes threads north (top, right) toward Syria's Lake Homs.





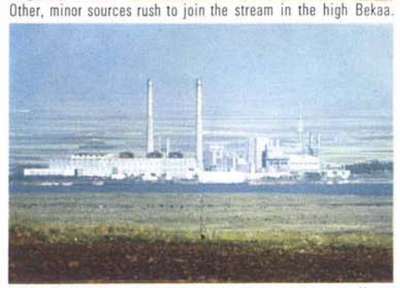
Between forested coastal mountains and high grainfields fringing the desert to the east, the Orontes, in this stylized conception by artist Don Thompson, pushes north from Lebanon's Bekaa Valley through Syrian farmland 300 miles to Turkey and the Mediterranean.

Under a table of rock in a gorge deep in the brown, corrugated flanks of Mount Lebanon, a trickle of water flows into a still blue pool where wary trout cruise in chill shadows. After a moment's hesitation the stream spills northward, its course lined with willows, tamarasks and trailing greenery. Veering out of Syria's Lake Homs, the stream carves a path to aristocratic Hama, a green pocket at the edge of the great Syrian Desert, oozes through what was recently a reed-choked marsh, then wheels west toward Turkey and there, amid desolate beaches, slips quietly into the Mediterranean. This is the Orontes, the river called "Rebel."

Rebel? This unprepossessing stream, in places scarcely more than a creek ambling quietly, sometimes invisibly through the Fertile Crescent? Yes, because in its twisting journey to the sea, it obstinately refuses to permit the high sills of mountain stone to block its passage and steadfastly husbands its waters against the thirst of swamp and desert. Yes, because it refuses to be one thing or another. It spurts into rapids, idles in ponds, races through spillways, seeps into red-brown farmland and cools shady villages clustered close to the thin green line that marks its course. Yes, because, unlike all other rivers in the Crescent, which flow south, the Orontes flows north—an oddity explained by the slope of the Great Rift. A volcanic cleft in the earth running from the Great Lakes of East Africa via the Red Sea to Lebanon, the Great Rift tips imperceptibly at just the point where the Orontes begins to move and spills the small stream northward on a course 300 miles long and crowded with geological as well as historical paradoxes.

The "Ghab" is an example. For centuries the Ghab ("Jungle"), a long trough of spongy hillocks and rank-smelling ponds, offered ironic contrasts to other streams of the area. Whereas in much of the Middle East, long denuded of vegetation, rain waters raced unchecked into desert depressions and evaporated, in the Ghab the Orontes nearly destroyed the valley with floods. In prehistoric times, volcanic action partially blocked the Orontes near Jisr ash-Shughur in northern Syria, backing it into a broad silted valley with an impenetrable basalt floor. As a result winter rains would fill the Orontes to overflowing and ground water which normally entered the river as

Other, minor sources rush to join the stream in the high Bekaa.



Lakeside electric plant powers industrial complex near Homs.

a subterranean runoff, oozed up from the surface of the valley like water poured into a flowerpot without a drain. In winter the valley became a lake extending 50 miles south to Shayzar near Hama, and in summer it was not much better.

The twofold effect of the flooding is another paradox in the story of the Orontes. The first effect was to drive people up onto the slopes of the surrounding mountains in an effort to escape the winter flooding and summer pestilence. But on the other hand, the river silt, under careful husbandry, made the Ghab valley so fertile that in Roman times the region was a granary of the empire. Writing in the first century, the Greek geographer Strabo described Apamea, a stronghold midway along the eastern side of the Ghab, as "*a city on a well-fortified hill, situated in a hollow plain and almost surrounded by the Orontes, which, passing by a large lake in the neighborhood, flows through widespread marshes and meadows of vast extent, affording pasture for cattle and horses... The Selucids kept five hundred elephants there ... and the Macedonians* (of Alexander the Great) *before them kept a royal stud of more than thirty thousand brood mares and three hundred stallions.*"

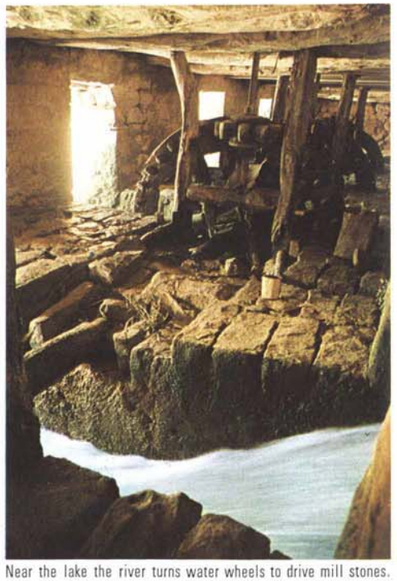
* * *

Today, the marshes have gone the way of the elephants. In a $100-million reclamation project, Syria is building dams, draining the swamps, building concrete irrigation canals, experimenting with fisheries (in Strabo's "large lake"), and setting up facilities to transport and market the grain, sugar, cotton and livestock that the swamp's newly recovered 85,000 acres of farmland will produce.

The project should serve as a model for a comprehensive approach which combines land reclamation with social development. For generations, Alawites—a Muslim sect—have been drifting away from their poor, overpopulated mountain homes; now they are being resettled in the Ghab and every inhabitant has an equitable share of the land distribution. The new villages are laid out in an ingenious spiderweb, clusters of houses strung together by roads and by power and telephone lines. The fishermen's cottages thatched with reeds from the swamp are fast disappearing—along with illiteracy and disease. The only trace of the valley's past is the "high-water mark" between the dilapidated old villages high up on the slopes and the new villages lower down.

Historical paradox is equally obvious along the Orontes. Although its economic potential was seldom realized and its swamps and gorges hindered passage and limited its strategic importance, the Orontes valley was nonetheless a battleground as early as 1500 B.C., when the Egyptians and the Hittites clashed at Kadash, an Orontes ford near Lake Homs.

Kadash was important. By controlling Kadash, armies could control movement up and down the inside edge of the Fertile Cres-



Near the lake the river turns water wheels to drive mill stones.

A fisherman in Hama, Syria, ventures onto a slippery spillway.

cent. Since the Homs Gap was then the only practical pass through the mountain chain stretching between Antioch and Palestine they could also control east and west traffic as well. (This is why the Crusaders later built their great Krak des Chevaliers fortress nearby.) Consequently when the Hittites in 1285 B.C. stopped the Egyptians at the ford and annihilated them (*Aramco World*, May-June, 1967) the strategic impact was enormous. The Egyptians never regained the momentum lost at Kadash and the peace treaty ultimately signed between Ramses and the Hittite king, renouncing all forms of war between them, was one of the earliest peace treaties in the world. Its text, carved on the temple of Thebes in Egypt, signifies the importance of the Orontes corridor.

Through the years, Assyrians, Babylonians and Persians continued to jostle for mastery of the river, but gradually exhausted their strength and opened the way for Alexander the Great, and the Seleucids—Alexander's successors—who gave the Orontes its first taste of peace and prosperity.

The Seleucids were named after Seleucus, one of the Greek generals who met on the Orontes after Alexander's death and carved up the great leader's empire. Seleucus got the Asian possessions, including Syria, which he set out to colonize by founding cities and importing Macedonians to inhabit them.

The Orontes, which linked four new "sister cities" together was the backbone of the new kingdom. Each of the two seaports was paired with an inland river city. At the river mouth Seleucia (near the modern Turkish town of Samandag) was linked with Antioch (Antakya) about 35 miles inland, as far upstream as boats could navigate. Laodicia (Latakia) further south on the coast was teamed with Apamea, inland on the hillside above the Ghab. The populations of nearby towns were transferred to the new communities (standard practice in the ancient world) and Seleucid veterans settled among them.

A strongly defended seaport, Seleucia provided defense and communications for the new capital, Antioch. Laodicia could communicate with the military capital, Apamea, through the valleys of the Orontes and a tributary. (Following much the same pattern, Syria is today constructing a railway link from Latakia inland which reaches the Orontes at Jisr ash-Shughur since Apamea's elevation is no longer needed for health or security.)

After the Seleucids came the Romans and, later, the Muslims and Crusaders whose prolonged struggle decorated the steep mountain slopes above the Orontes with a series of castles whose ruins command the river valley to this day.

Some of the castles have survived nearly intact. The double castle, Shughur-Bakas, is a fairy-tale drawing perched on moss covered rocky spurs thousands of feet above the wild backlands of north Syria. Burzey, high above the Ghab, has the fascination of all fortresses which seem the work of man in one light and the work of nature in another: as a fortified place, its history goes back to Pompey. Qalaat abu Qobeis, one of the forward positions overlooking the river, became a castle of the Ismailis, known to history as the renegade Assassins, who were entrenched in these hills. By the early 12th century, most of the lower Orontes was controlled by the Christians from Antioch. The Arab fortress of Apamea itself, Qalaat el-Mudiq, fell to Tancred, Prince of Antioch, who renamed it "Famia."

But probably the most interesting Orontes castle is picturesque Shayzar, a Muslim stronghold that held out against the Frankish invaders for more than 50 years, clinging to a long spur of mountain that drops jaggedly to the river (*Aramco World*, May-June, 1970).

Between periods of upheaval the Orontes tended to bind all its communities together in a superficial kind of unity but, in still another paradox, kept them self-centered and fragile.

Homs is typical. Homs survived as an independent principality for millennia—even when the Orontes valley was the plaything of Egyptian and Mesopotamian power. But it paid the price of its isolation. When the Persians swept into Syria via the Orontes corridor and the Romans crumbled, there were no allies to call on. Homs went under and, never part of a larger, sustaining system, was unable to recover.

Today, only half-remembered local myths of Homs' heyday remain—which reveal how unthinkable Homs' actual situation was then. In a stretch of barren valley just south of Lake Homs, a row of giant manholes marks an ancient underground conduit which local people (and the *Guide Bleu!*) say led to Palmyra, once a great Roman city about 150 miles away. In fact, the aqueduct was part of a now-abandoned local irrigation system. But the mythic instinct is right: Homs ought to have been integrated into a larger economic entity; it might then have survived. Today, Homs is again prosperous. It has an oil refinery, a sugarbeet refinery and an agricultural college.

The Orontes' tendency to isolate rather than unite also explains a lot about Hama, a community with a reputation for extremism. The large town dominates a wide,

In aristocratic Hama, high stone mansions line the riverbanks.

Hama is a city wedded to a river. Window bays overhang the quiet water and stone landing docks, the antique wooden wheels called "norias" turn creaking, dripping, to lift water into verdant gardens, to palace baths and cooling fountains.

William Tracy

Shayzar Castle dominates the Orontes where it emerges from a gorge.

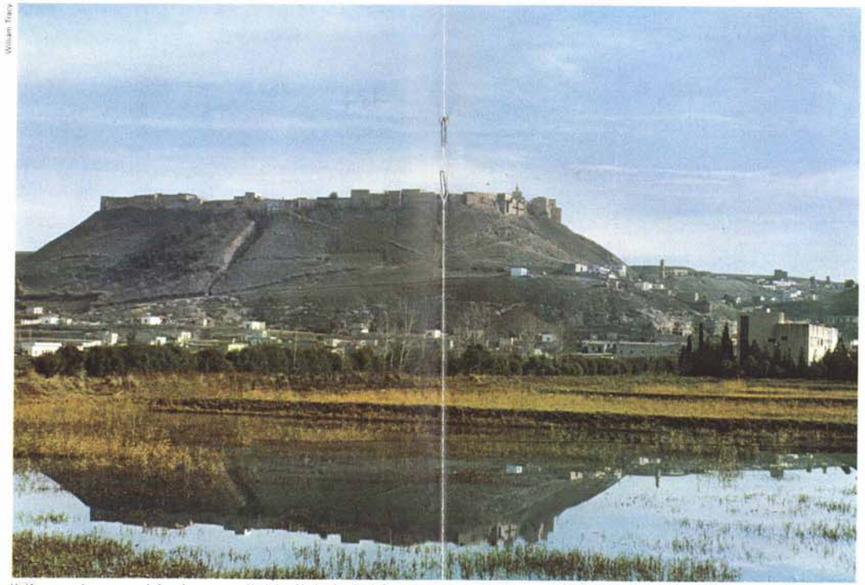
Farmers and villagers relax in an outdoor cafe beside a brook on the wooded western side of the Ghab.

unevenly watered agricultural region, where feudalism was longer-lived than anywhere else in Syria. Austere and violent, Hama first defied the Crusaders and then Tamerlane—partly because the presence of the river made it impossible to deny water to the citadel. More recently Hama spearheaded the nationalist uprising against the French mandate between the two World Wars. But feudalism also made Hama harsh and fanatical—and the scene of bloody revolutionary excesses. The only Orontes city not located at a great commercial intersection, and dependent on the none-too-robust river, Hama has always been notoriously hostile to outsiders and intent upon its closed concerns.

Yet Hama is one of Syria's loveliest cities. Built along a shallow S-curve in the river, the city erupts in azaleas, mulberry trees and fruit orchards. Away from the river, the lightly planted steppe gradually gives way to desert plains. The river gardens make Hama the rival of Damascus—a reminder that the practice of beautifying cities with gardens began in the Orient. In Hama, the city is wedded to the river. High stone mansions line the riverbanks. Wooden window bays overhang the secluded water. Beneath the harem windows, stone landing docks remain. The empty, echoing stables show how many fine racehorses, reared in the wide surrounding plains, used to be stabled in Hama grandees' town houses.

The former residence of the Ottoman pasha, Beit Azem, is a museum. But the most engrossing exhibit is the palace itself, with the still Orontes as a backdrop. Inside the palace, water, piped by waterwheel, runs down over brightly inlaid marble mosaics to cool the stifling summer air. These "air-conditioning units" are positioned to catch the sunlight angling through stained-glass panes in the central cupola: patches of changing color dance on the water. In the center of each room, fountains provide

William Tracy



Halfway up the now-reclaimed swamp called the Ghab, the Arab fortress town of Qalaat al-Mudiq overlooks the valley and its fish ponds.

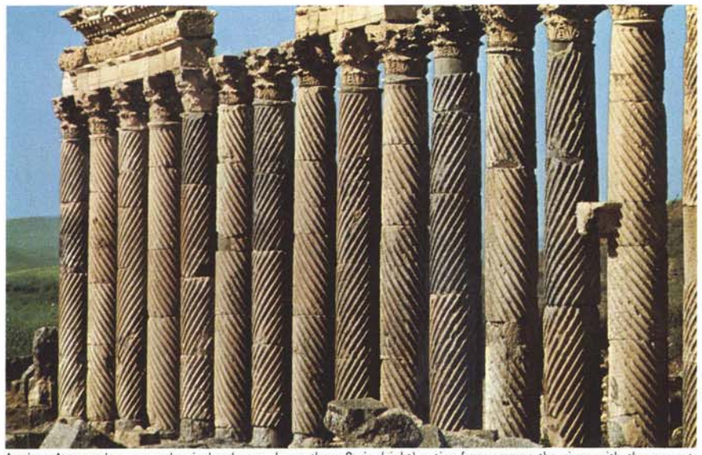
paradisiacal sounds. And of course the elaborate steam baths are linked with the river.

But the most attractive feature of Hama is the presence of the *norias*, the huge, dark, moss-green waterwheels which lift water from the river.

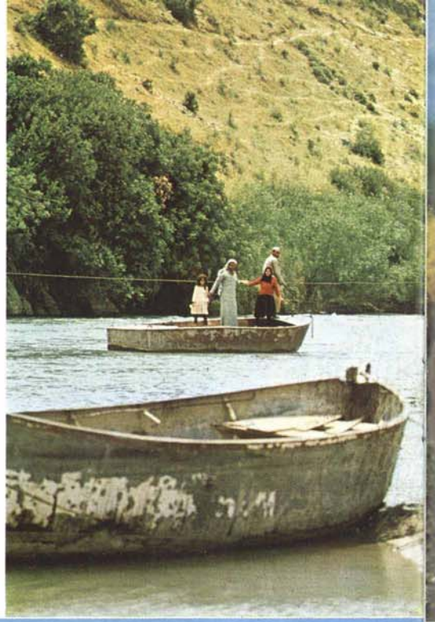
Their operation is very simple. The river is dammed, except for a small, fast-flowing channel only slightly wider than the massive wooden wheels. As water races through the channels it fills open-fronted boxes on each blade of the wheel and simultaneously turns the wheel. The wheel carries the dripping boxes to the top where the water spills out into a stone aqueduct and runs down to the fields or houses below. The system is wasteful, but cheaper and more reliable than pumps—and infinitely more charming. At night, when traffic ceases, the narrow, cobbled lanes of the town echo with the creaking music of the massive wooden wheels, and to impress the fairer sex, daring young men frequently leap off Hama's Great Noria into the river—a drop of nearly 50 feet.

Since the Orontes flows through deep gorges over much of its course, the crudely built wheels, said to be of Persian origin, used to be a characteristic sight along the whole river; the need for them is sometimes cited as another explanation of the river's "rebel" name. But nowhere else have they survived as well or become so closely identified with the riverscape as in Hama.

But of all the Orontes communities, it was in Roman Antioch that the river came into its own. In Antioch the Orontes, then 120 feet wide, parted to enclose a pear-shaped island that housed the Roman administrators and flowed on past the North Gate, a massive affair of Egyptian granite offering a dazzling glimpse of the city that awed even the Romans: a main street two miles long and lined with double porticoes. Nowhere else in the world could you walk beneath an arcade for two miles.



Ancient Apamea has unusual spiral columns. In northern Syria (right) a tiny ferry crosses the river with the current.



Small landholders scratch ditches in time-tested ways to water their plots (above, left) while (right) Syrian engineers build major irrigation canals as part of $100-million project to reclaim some 85,000 acres.

In Turkey's fertile Amuk plain (top), peasant women hoe and weed by hand while nearby (bottom), a modern sprinkler system soaks thirsty fields before the "tel" which indicates an ancient city.

Evening floods the plain as the Orontes, now only 35 miles from journey's end, catches the last light and slips peacefully through historic Antioch, in ancient times a rival of Alexandria and Rome itself.

Antioch was located 35 miles from the mouth of the river and in the center of the fertile Amuk plain. Always a formidable fortress, under the Romans it became so rich, flamboyant and worldly that in a short time it rivaled Rome and Alexandria.

The river was one of the keys to Antioch's rise and fall and the Romans knew it. At Seleucia, four miles north of the actual mouth of the river, they built a new harbor with great artificial basins and splendid buildings. To avoid a bend in the Orontes where the current was too rapid they cut a channel. To divert mountain torrents which threatened to silt up the harbor they hewed from solid rock a gigantic drainage trench a mile long and 40 feet deep.

Eventually Antioch, like all the cities of the ancient world, fell too. In the reign of Justinian, a series of extraordinary calamities struck the city over a period of 15 years—a major fire, a sack by Persians, a plague and two earthquakes, one catastrophic. It toppled the city walls into the Orontes, rendering it unnavigable — and valueless — for centuries thereafter.

One last paradox involves religion. The Orontes was at once the route by which new religions spread and the place where old, heretical minorities found a haven. It was along the Orontes that St. Paul came bringing Christianity. It was along the Orontes that the forces of Islam came too. But it was also the Orontes that gave refuge to the Alawites and the Ismailis, both offshoots of Islam. And when controversy broke over the head of St. Maroun, one of many early Syrian Christians who fired the 3rd century's imagination by extreme asceticism, he and his followers moved into the Orontes valley to get away from the cities where hostile mobs could be aroused against them.

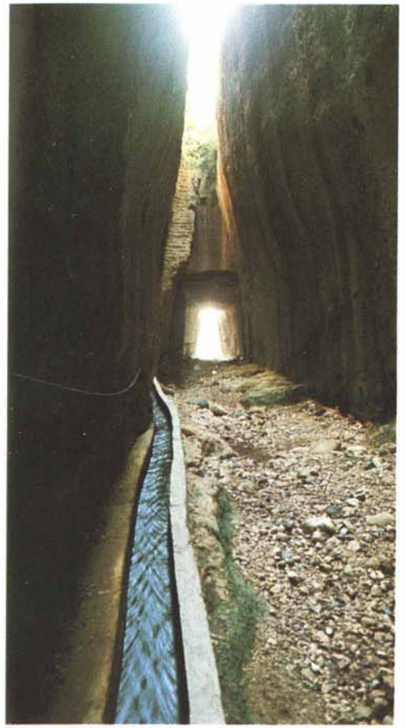
As antagonism mounted, the Maronites continued to retire up the Orontes valley. Remnants of other movements which had suffered similar persecutions joined them, and a sizable group established themselves in a rudimentary monastery, Deir Mar Maroun, a few hundred yards from the major source of the Orontes. The fortified monastery was the Maronites' last stop before they withdrew up to the mountain fastness of Lebanon in the 10th century.

The Orontes has always stamped itself on men's imaginations. As a sacred pool, Lake Homs figured in sun-worship rites up to the time of Elagabalus. Statues of the river appear on Seleucid and Roman coins. In Antioch homes of the period, the Orontes often figures in mosaics: examples are preserved in the Antakya Museum, an incomparable treasury of opulent Roman decor.

As late as Roman times, amulets bearing the name of the river were fastened to sick people. It also seems to have been a common practice to light lamps and offer sacrifices to spirits by the side of the river to obtain relief from diseases. In certain areas, people along the Orontes still bring their troubles to the river.

The lower Orontes was endowed with innumerable legends by the Greeks, who could never stand a place without a past. The rescue party seeking the ravished Io had settled on the site which became Antioch. Perseus checked a savage flood on the Orontes by conjuring up a ball of fire in the heavens through his prayers. Orestes, released from his madness on a mountain near Antioch, washed away his guilt in the Orontes.

Later civilizations responded in other ways, to cope with other tensions. On the terraced slopes above Seleucia, the Roman vineyards were surrounded by rock-cut



To protect their harbor the Romans hewed this mile-long trench.

tombs and caves, occupied by anchorites who, like St. Simeon, were repelled by the luxury and indulgent pleasure-seeking of city life and sought lives of solitary meditation and asceticism.

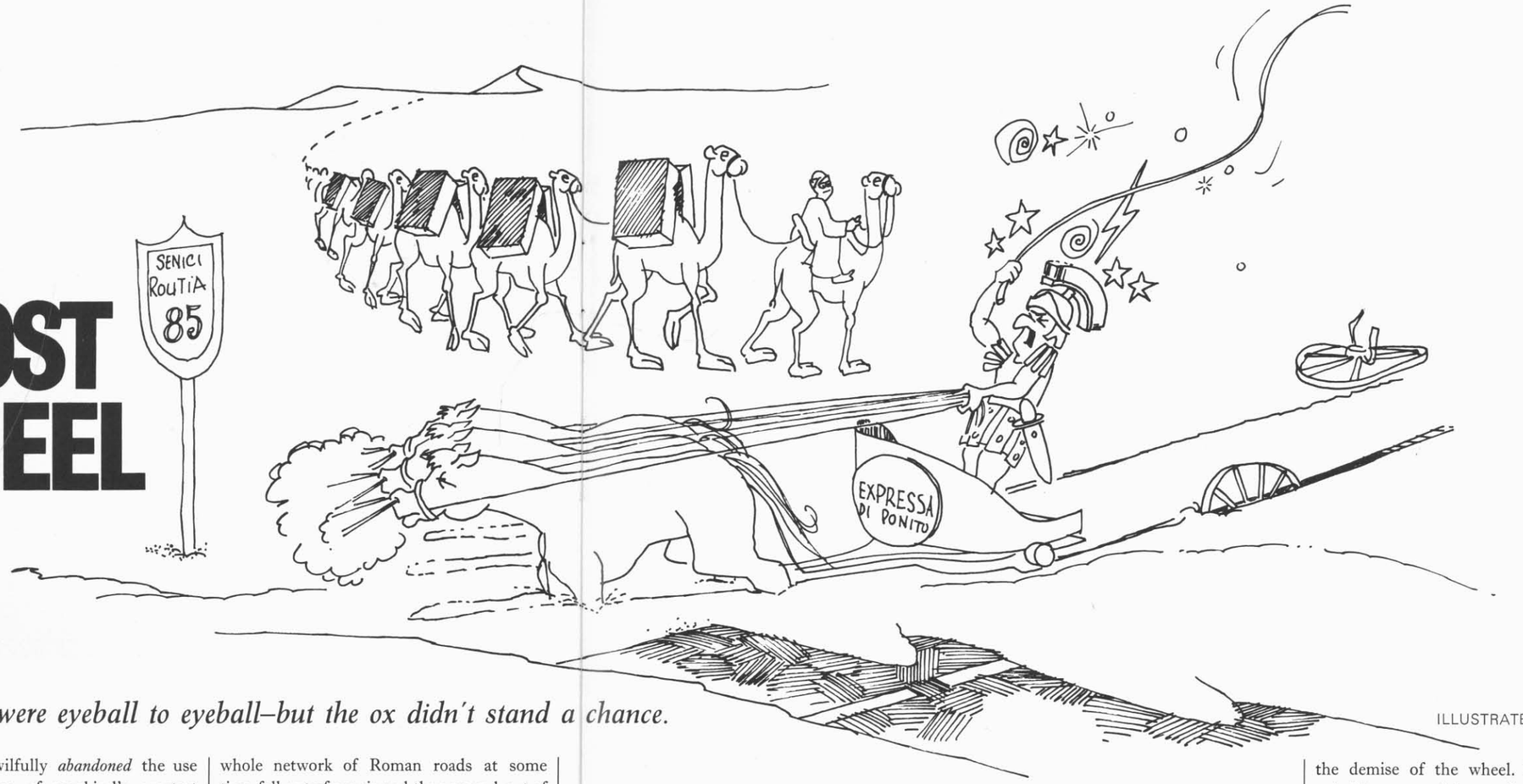
Some beliefs never change, however. Near the mouth of the Orontes, on the black sand of the Turkish coast, stands the domed, whitewashed shrine of an Islamic holy man, Sheikh Yussef, who like the Greek hero Perseus rebuked the Orontes when it threatened to flood. A few hundred yards further north is another shrine, revered alike by Sunni Muslims, Alawites and Christians as the tomb of the "Sheikh al-Bahr"—the Lord of the Sea. From all over the surrounding district, people come there to burn long orange tapers of waxen incense. Their immemorial loyalty seems to testify to the obscure power of the Orontes to fire man's imagination as a glorious, mysteriously life-enhancing rebel.

Joseph Fitchett, formerly a writer with the U.N., now covers the Middle East for the Westinghouse Broadcasting Network. McAdams Deford is with the U.S. Embassy in Jiddah.

As though hesitant to surrender at last to the sea, the river the Arabs call Rebel meanders, silt rich, toward the waiting Mediterranean.

WHY THEY LOST THE WHEEL

WRITTEN BY RICHARD W. BULLIET



For a while there, the ox and the camel were eyeball to eyeball–but the ox didn't stand a chance.

ILLUSTRATED BY ED DAVIS

When the first motor car chugged defiantly off the road and into the desert an entire epoch in world history began to pass away, the epoch of the camel. After centuries of supremacy as a transport animal, centuries that had seen it become for millions of people the romantic symbol of the entire Middle East, the stalwart camel was at last facing unbeatable competition.

Yet once before this homely drama of competition between the camel and the wheel had been played out in nearly identical fashion, only in reverse. Once, in ancient times, the Middle East teemed with carts and wagons and chariots, but they were totally driven out by the coming of the camel.

For all the discussion there has been among archeologists about why advanced societies such as those in pre-Colombian Central and South America never invented wheeled transport, there has been little notice taken of the amazing fact that Middle Eastern society wilfully *abandoned* the use of the wheel, one of mankind's greatest inventions.

It did not, of course, abandon the wheel in all of its many forms. The potter's wheel remained, and so did the huge, picturesque *norias*, or waterwheels of Syria. But gradually over the course of the first four or five centuries of the Christian era, and perhaps even earlier, all wheeled transport in the area, from the grandest chariot to the humblest farm wagon, passed out of existence.

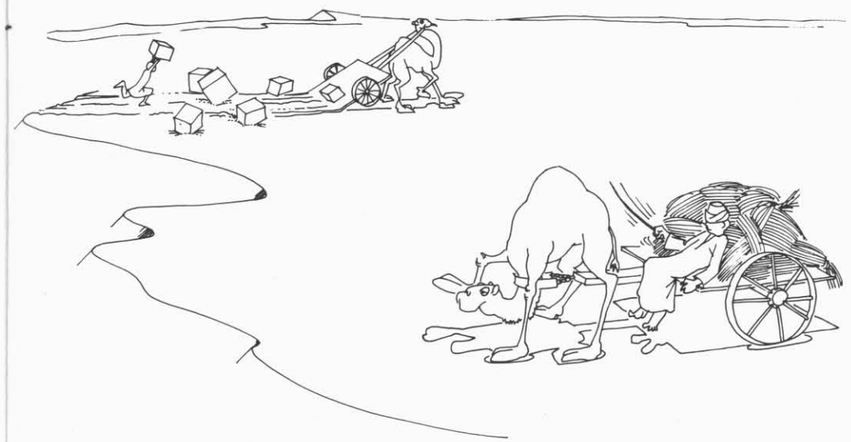
As late as the 1780's the French traveler Volney could still note, "It is remarkable that in all of Syria one does not see a single cart or wagon." Moreover, in the Arabic and Persian languages one is hard pressed to find any vocabulary proper to either the use or construction of carts and wagons.

The most common explanation of this phenomenon is lack of, or deterioration of, roads in the Middle East, and to be sure the old Royal Road of the Persians and the whole network of Roman roads at some time fell out of repair and then passed out of use. However, roads are built for wheels and not vice versa. Their decline paralleled that of the wheel; it did not cause it.

Actually, the dry Middle Eastern climate was much better suited to vehicular traffic than were the forests of pre-modern Europe, where rain could be regularly counted upon to turn even the best unpaved road into mud. Even today high speeds can easily be maintained over long stretches of desert track.

Furthermore, the Turks in early times used carts without roads on the Central Asian steppe, as did the unknown ancient inhabitants of the Sahara Desert. And in the United States the pioneers crossed the continent in wagon trains without benefit of asphalt. No, roads are not the answer to the riddle.

Instead it was the long, slow pace of the camel, two and a half miles an hour, 20 miles a day, for weeks on end, that spelled the demise of the wheel. Because of the primitive state of harnessing technology in the ancient East, where even a horse could not be harnessed effectively to pull a heavy load, the camel could not be hitched to a wagon.



There is one Roman relief showing a camel chariot race, but it is hard to believe that it was not intended as comic relief. Good harnesses for camels were designed in Central Asia and, in the 19th century, in the Australian desert, but these did not affect the Middle East.

The only way to make use of this immensely strong beast for transport was to throw the load, averaging anywhere from 300 to 500 pounds, on its back. Thus the pack camel came to compete directly with the ox cart for heavy transport.

The ox cart was equally slow, and in the competition the camel had certain positive advantages. It ate otherwise unusable desert plants, which made its upkeep inexpensive. Little wood, a valuable commodity in the

largely deforested Middle East, was required by ancient saddling technology. And its care and breeding could be left to the nomads and thus not be a burden upon the farmer or merchant.

These advantages meant that camel transport was about 20 percent cheaper than wagon transport, according to the edict on prices issued by the Roman emperor Diocletian in the third century A.D. Therefore, simple economic efficiency caused the camel to supplant the wheel, not some mysterious reversion to primitive life.

Before there can be a competition, however, there must be the competitors. The advent of the wagon in the Middle East affords no problem, since the area appears to have been the cradle of wheeled transport as it was of so many other things. It is the camel that poses the problem.

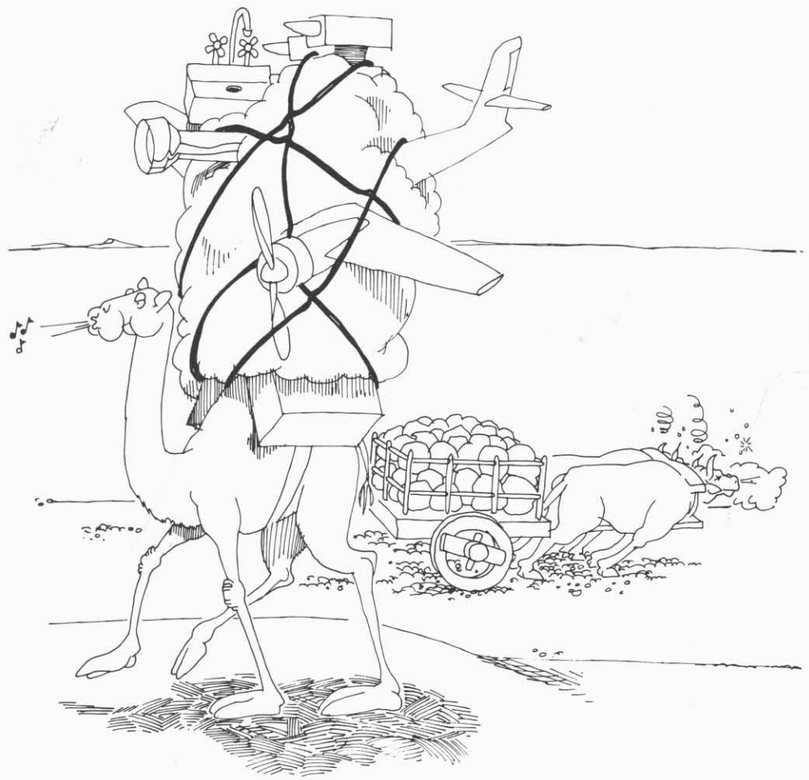
If camels had existed for centuries on the Arabian and Syrian Deserts, why had they not replaced the wagon long before the Christian era? Or if they had not been on the scene, when did they come and why?

In North Africa and the Sahara Desert it is quite certain that camels were unknown in very ancient times and were introduced from the Middle East only a century or two before Christ. However, the history of the camel in the Middle East is very poorly known and difficult to reconstruct.

The camel was probably domesticated in southern Arabia in the fourth millennium B.C., but the spread of its utility was very gradual since for a very long time it was used primarily for milk rather than for transport. Only under the Assyrians in the 7th-9th centuries B.C. did camel warriors and large tribes of camel breeders become significant in Mesopotamia and Syria.

Stone reliefs found in excavated Assyrian palaces show Assyrian cavalry fighting the camel people, and they always show the cavalry winning. While this is probably in part Assyrian propaganda, there is also likely to be some truth in it since the type of saddle used by the nomads at that time was not well designed for fighting.

It was a long time after the fall of the Assyrian Empire before the tribes of camel breeders acquired the military strength to assert themselves politically and economically. First the militarily efficient modern Arab camel saddle had to be developed, and then the bow and arrow used by the nomads in Assyrian times had to be replaced by the long lance, which capitalized upon the great height of a camel rider in comparison with a horseman.



Then and only then could the famous caravan cities of Petra, Palmyra and Mecca be born. A shift in economic power from the settled land into the desert took place as a consequence of this newfound camel-based military power.

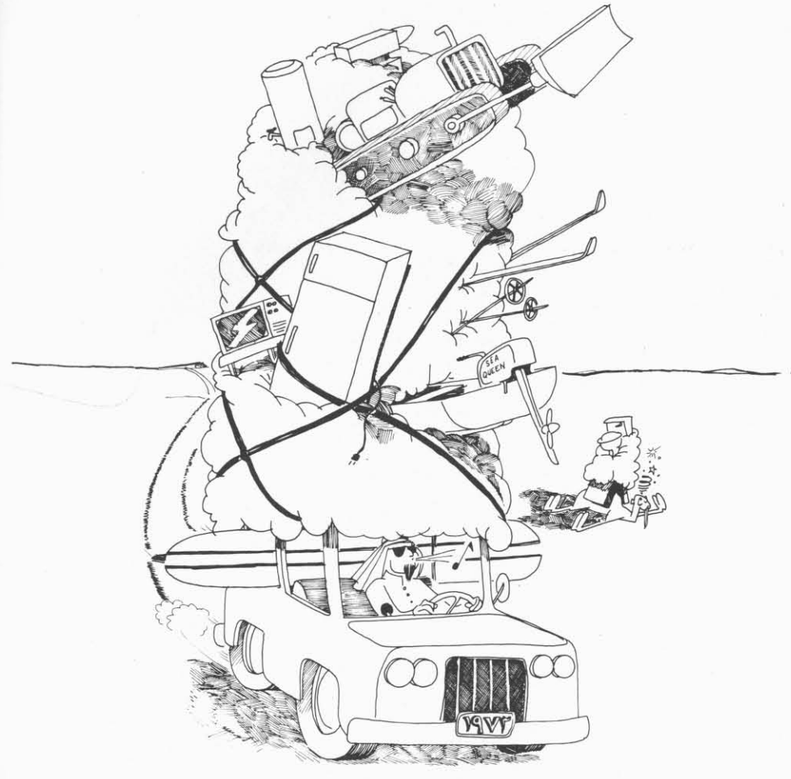
Hitherto, the empires of the settled lands had methodically shut out the nomads by fortifying their desert frontiers, and had used them for their own economic purposes. Now, although the nomads may still have been unable to face imperial cavalry in pitched battle, they were at least able to dominate the desert caravan routes and seize control of long-distance trade.

With this development of independent nomad power, direct competition between camels and wagons finally began. The pack camel had been theoretically superior to the wagon for centuries, but as long as the camel breeders were confined to the desert areas by imperial military force and as long as the caravan trade was dominated by merchants from the settled lands, the competition could not be joined.

The acquisition of significant military power by the desert dwellers enabled them to penetrate gradually into settled agricultural districts and coexist there with the settled population. Camels, for the first time, became commonplace around cities and farms. More and more farmers and other people with goods to haul gave up their expensive wagons and simply rented camels from the nearby nomads when they needed transport. Gradually the entire wagon making industry disappeared.

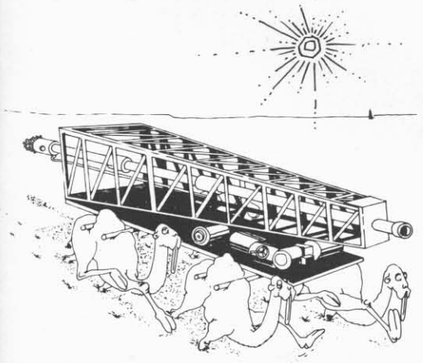
The conquests of Islam, which were partly fueled by the capital that the camel caravan trade enabled the Meccans to accumulate, spread camel breeding to new geographical areas. Already wheeled transport was gone in the central Middle East. With Islam it disappeared also in Spain, Egypt, and most of modern Turkey.

Only Central Asia, among all the lands conquered in the first wave of Islamic expansion, continued to have wagons. The Turkish tribes already had two-humped Bactrian camels, so there was no room for expansion of one-humped camel breeding into the area. But the Turks had never developed camel breeding intensively.



Camels were used, but they were not highly valued. Partly for this reason and partly because the type of wagon harness used in Central Asia was much more efficient than the Western harness, the camel was able to compete effectively only in desert areas. Elsewhere wagons continued in use.

Still, in the Middle East, the first round of the contest was over; the camel had won. In limited areas where Islam only spread later or where camels could not be bred, such as northern Turkey and the subtropical Caspian Sea coast of Iran, the ox cart remained, and remains to this day. Everywhere else in the Middle East and North Africa the wheel disappeared, and no doubt there were people then who looked at its passing with nostalgia and at the coming of the camel as a newfangled innovation just as today there are those who do the opposite.



The counterattack of the wheel began with the coming of the Turks to the Middle East in the 11th century. As already mentioned, on the Central Asian steppe the Turks had always used wagons to carry goods, and they even put their *yurts*, their round, rigid tents, on wheels. Thus they had a sympathy for wheeled vehicles and some knowledge of their use, both of which had long passed away in the Middle East.

The word *araba* or *arabiya*, which is so commonly used today in both Turkish and Arabic for any wheeled vehicle, first came into use at this time.

Still the basic economic superiority of the camel prevailed. A few wagons reappeared under the Turks. More significantly, the Ottoman Turkish expansion into the Balkans did not spell the end of wheeled transport there. However, in general the use of the camel remained all-pervasive until the advent of European influence which stimulated the building of carriages for use in cities.

Then came the automobile and the end of the contest was in sight. There were setbacks, of course. In World War II, for example, lack of tires often forced the Arabian American Oil Company (Aramco) to use camels instead of trucks. But that was temporary. Today even Bedouins keep a truck parked outside their tents. The day of the camel is past, and whoever laments its passing would do well to remember that 2,000 years ago someone else was lamenting the passing of the ox cart.

But what vestiges will remain of 2,000 years of camels as a ubiquitous fact of life? The nomads who lived by camel breeding are settling down and becoming part of the modern economy. The roads that for centuries remained unpaved because the softer dirt surface was gentler than stone on the camel's padded foot are becoming ribbons of asphalt.

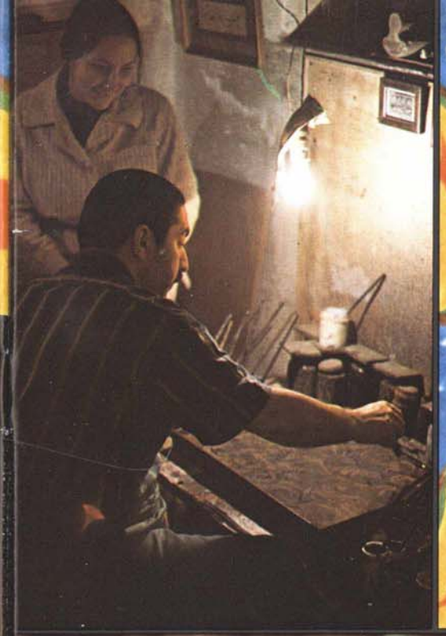
Perhaps only in the picturesque narrow, winding streets of the old quarters of Middle Eastern cities will the indirect influence of the camel remain visible. Although camels themselves were not too widely used within the walls of medieval towns, it was they who caused the tradition of wheeled transport to vanish; and it is the absence of carts and wagons that accounts in large part for the layout of medieval Middle Eastern cities.

Steps in the middle of the road, abrupt right angle turns, sudden narrowing from eight feet wide to two feet wide—streets like this could never have come into being in a society accustomed to using wheels. Streets like this are built only for pedestrians, animal and human.

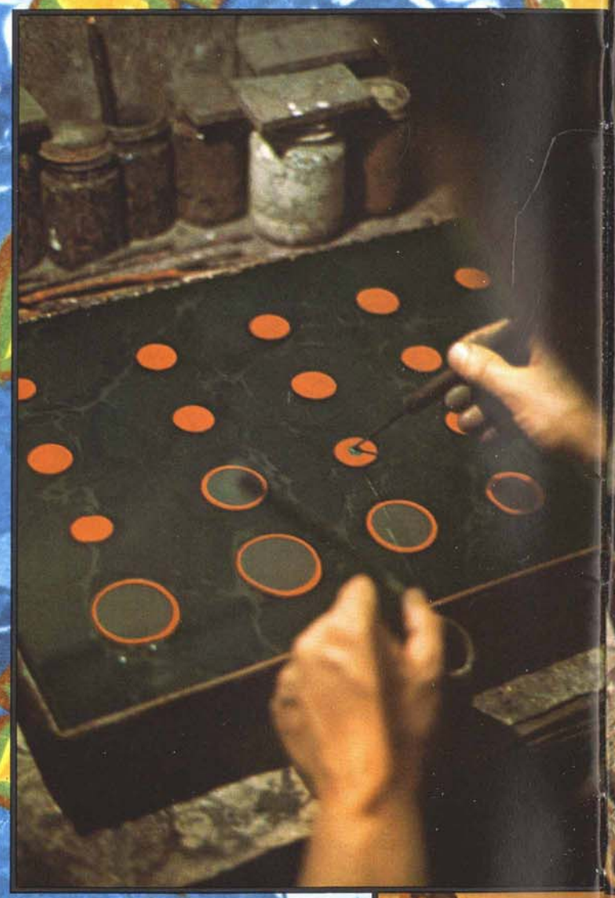
As for the future of the camel now that its monopoly on transportation has been broken, it is not bright. Perhaps as a meat animal it will remain in some areas. Perhaps in Somalia or among the Tuaregs of the Sahara it will remain sheltered from modern civilization for a while longer.

Worldwide, however, the population of camels is rapidly declining. The camel phase of history is over, and a new symbol must be found to represent the modern Middle East.

Richard W. Bulliet is an assistant professor of history at Harvard University's Center for Middle Eastern Studies.



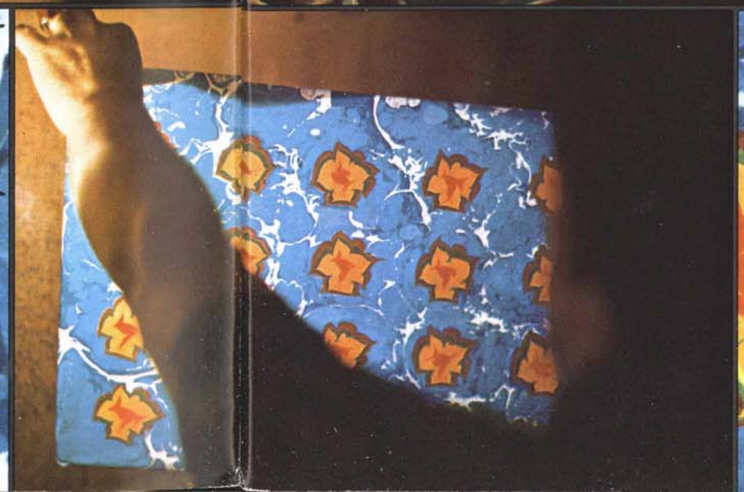
In a damp Istanbul basement the last master preserves a rare, subtly beautiful–and dying–art.

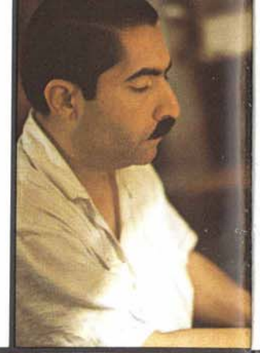


ebru

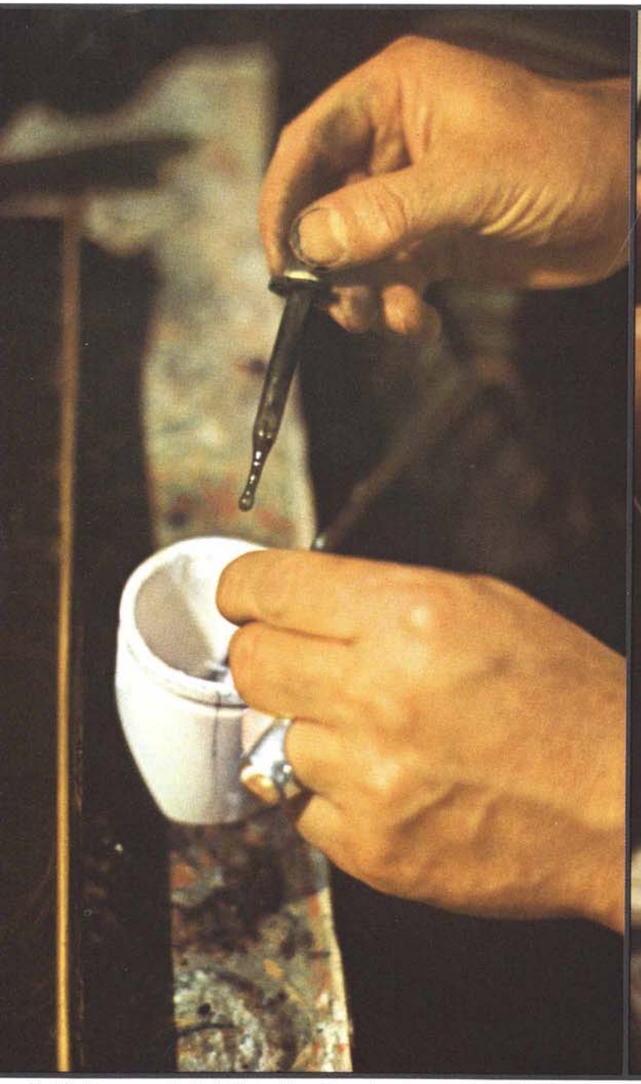
THE CLOUD-ART

WRITTEN AND PHOTOGRAPHED
BY ROBERT ARNDT

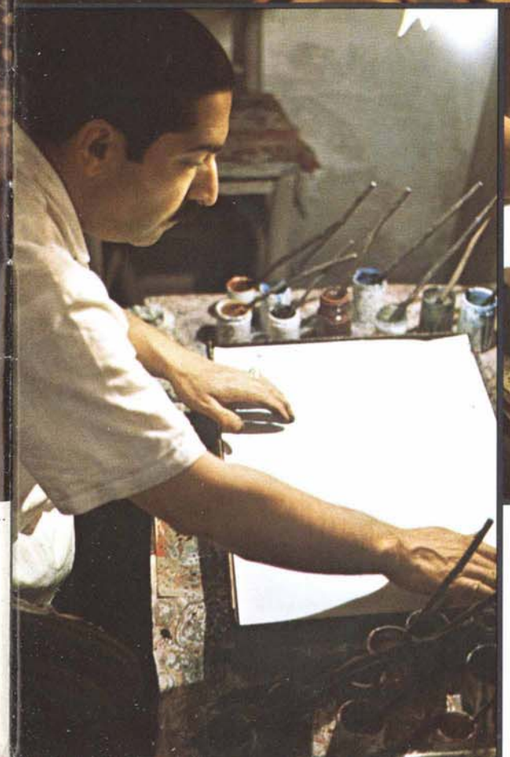


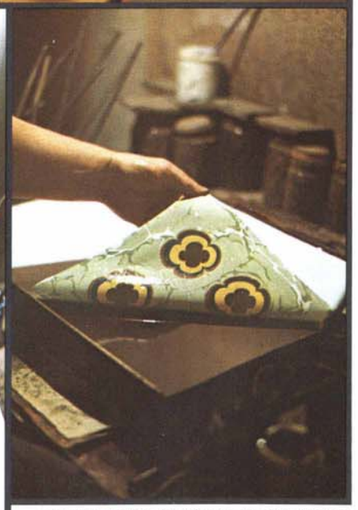


Git-gel ebrusu is made by moving a metal point through the tray in a zigzag.



Mustafa Duzgunman adds beef bile to his paints and spatters a sequence of colors onto the surface of a tray of water. These push each other aside without mixing; he teases them into patterns ...





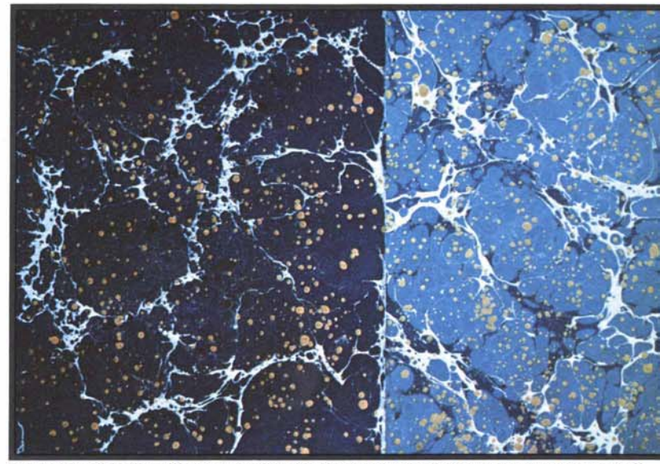
... and lastly transfers the colors onto a sheet of paper.

No one knows who invented *ebru*, the cloud-art of Central Asia. But if genius lies in synthesizing the unrelated, then it was a genius of 13th-century Turkistan who first tried to capture on paper the floating colors of oil-covered water. From that beginning, ebru grew to be an honored art all over Persia and the Seljuk and Ottoman Empires, as well as a craft without which the diplomacy and administration of the time could not have functioned.

Ebru is marbled paper, made by floating paints on water in one of several specific designs, and transferring it, unaltered, to the paper's surface. As late as the 1920's, whole streets of Beyazit, Istanbul's printing and paper quarter, were lined with *ebrucus*' workshops, and their production was used as the endpapers of books, as mats for decorative calligraphy, and as decorative panels on fine woodwork. In 19th-century Britain and America, machine-made ebru-like patterns were used to decorate page edges and endpapers of fine editions also, but the largest part of the Middle Eastern ebrucus' output was beautiful sheets of pale patterns on which were written those important government documents and official communications which must be unforgeable and unalterable. Which ebru was, as any erasure of the writing would be betrayed by the break in the color pattern of the ebru background.

Besides these many artisans, though, there were the great ebru masters, whose names are remembered even centuries after they lived. They produced the purely decorative ebru, meant for display in the homes of the rich, or as a gift from a king to a king. Those who were also master calligraphers made *yazili*-ebru, in which the graceful lines

To make the flower pattern known as Nejmeddin ebrusu (being inspected below) Mustafa Bey adds colors in careful stages. Three green drops become a stem, large Bombay-blue drops form the outer edge of the flowers and yellow centers are teased into pansy "faces."



Two examples of the "battal" pattern, the original and basic design. The Turkish word means "coarse grain."

of the Persian or Ottoman or Arabic script showed white against the rich ebru background, or *akkase*-ebru, the invention of a king of Kurasan, where the calligraphy was centered on a white field bordered with ebru color. It is to this line of masters that Mustafa Duzgunman belongs: he is the student of Nejmeddin Okyay, who was the student of the Dervish sheik and reputed magician Edhem—the line of succession can be traced back almost unbroken for centuries, and the methods Mustafa Bey uses are those handed down since the beginning.

Mustafa Duzgunman is 51, sleek-haired, smooth-faced; he has a successful paunch. His hands, a little fat, are deft. With his brother he owns a drug and spice shop on Istanbul's Asian shore. He has a wife, a house, a son, a daughter, all comfortably upholstered. At home, he relaxes in slippers and pajamas, like most middle-class Turks; he is proud of a fine collection of old Muslim prayer beads. And in his spare time, and when he feels like it, he is the last active practitioner of a 600-year-old art.

Invited to watch the making of ebru last year, we followed Mustafa Duzgunman into a small basement room, a little chilly, and more than a little smelly—the bad-meat smell of the beef bile used in making ebru. Against one unfinished concrete wall is a low workbench roughly made of weathered planks, above it a light bulb shaded by a scrap of color-clouded paper. The light falls harshly on a three-inch-deep rectangular brass tray and on a forest of twig-handled brushes standing around the tray in porcelain pots of color. Mustafa Bey sits down on a footstool and the little jolt he gives the table barely disturbs the surface of the murky, still liquid in the tray. Beside him in a rack is a ream of large sheets of thin, matte-surfaced paper.

Mustafa Bey chooses one of four pots of an identical shade of blue, and stirs the contents with the brush. He squeezes the excess paint from it, and then, tapping the brush handle against his finger, he spatters color onto the water in the tray. It floats on the surface and spreads until most of the surface is covered with billows of a muddy tint. Another color follows, applied with a slightly drier brush, so the drops are smaller. But this color—it will be a deep blue, he assures us—does not mix with the earlier, lighter shade: it migrates on the water's surface to the spaces between the lighter areas, pushing aside the other color as it goes! This we could not believe: that the colors might not mix we could accept, but that they could arrange themselves on the surface was hard to credit. "What does it?" we ask. Mustafa Bey chuckles as he chooses the next pot and bids us wait.

Now the tray's surface is covered with paint, visible only as differences in the murky tone of the thick-surfaced water. Mustafa Bey dips a wood-handled fine metal spike into a pot of green color, and touches the point with its drop of paint to the water. Immediately, a one-inch circle of green appears. He disapproves, shaking his head and explaining to us that the water is "too strong." Our puzzlement prompts further explanation: the water is mixed with *kitra* (gum tragacanth), a resin that 'resists' the paint, and tonight is the first night he has worked with this batch, made only three days ago.

"What can you do?" Again the command, "Wait. I am still learning after 30 years." He reaches for a bottle of translucent brown liquid, and with an eyedropper adds two drops of the contents to the paint. He considers a moment, and a third drop follows. He stirs, and places a new drop of color onto the water's surface. The new green circle is nearly twice the size of the first, and, pleased, Mustafa Bey makes two vertical rows of three spots of green. "*Sigir kolesterin*—beef bile," he says, and adds that he uses up to four different strengths of bile for each shade, so that the colors' interactions can be controlled, as we saw in the blue background.

Then with metal points of different sizes, he draws the drops of color around on the turgid, near-elastic surface of the water-kitra emulsion. A special tool, with a dozen points arranged in a circle, puts a dense pattern of small blobs of white above the green flower-stem that he has produced, and these in turn are teased into swirls: the multiple blossoms of a double hyacinth. When he is satisfied with the design, hard to distinguish in its pale shades, Mustafa Bey takes a sheet of paper just the size of the brass tray and lowers it onto the water's

surface, starting with one corner and rolling the rest of the sheet down, so that no bubbles are trapped under the sheet, and no random motion distorts the color pattern. There the paper lies long enough for the artist to drink three swallows of tea, and then Mustafa Bey lifts one corner of the sheet to see if all the color has been taken up.

It has, and we wince as he lifts a long edge of the paper to drag the entire sheet out of the tray over one brass lip—the pattern must have been hopelessly smeared. He holds the sheet up to the light, and we gasp: far from ruined, the pattern is perfect and whole, the colors are unbelievably bright, and the lovely white hyacinth on the two-blue ground is as vivid and charming as the real ones in the flower market.

"*Ishte!* There it is!" he says, with an unmistakable note of pride in his voice, "*Nejmeddin ebrusu.*" This is the name given to flower-pattern ebru—the name of its inventor and Mustafa Bey's teacher, Nejmeddin Okyay. There are only six or seven different patterns, Mustafa Bey tells us, though the possible variations on each are infinite. He makes them all for us, from the simplest *battal* (the pattern of large blobs that made the background for our hyacinth) through *somaki* (a finer version of battal), *git-gel* (a fine multi-colored chevron pattern), and *tarakli* (made by drawing a comb-like tool the length of the tray), to *Hatip-Bey*-ebru, named after the *hatip*, or preacher of the Hagia Sophia mosque who invented the pattern in the last half of the 18th century.

Mustafa Bey would make a fine teacher: his face grows animated as he tells us what a daring departure the hatip made in distinguishing background and foreground in an

The flower ebru is named after its originator, Nejmeddin Okyay.

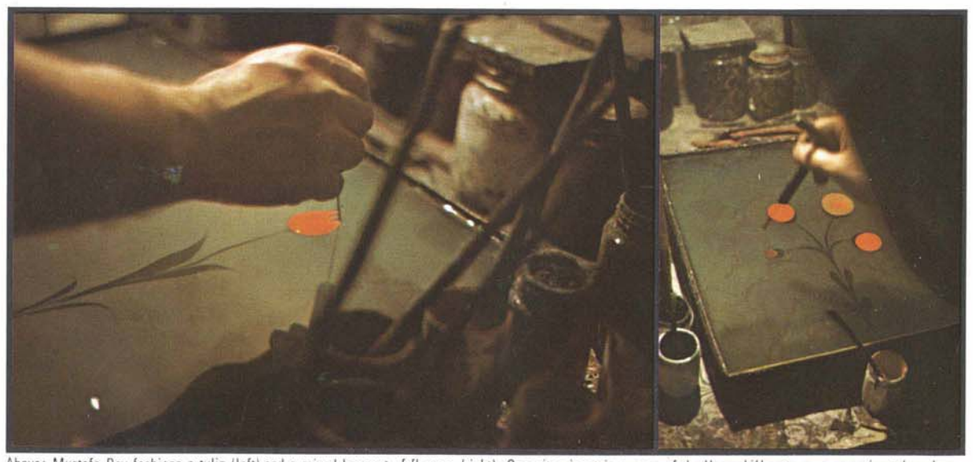
ebru: the bold, distorted concentric rings of his design are a subject on a background and not simply an all-over pattern. And Nejmeddin Okyay's contribution is more important still: his is the first representational ebru, and thus adds to the repertoire not just another pattern, but a whole field. Mustafa Bey shows us charming and life-like daisies, pansies, and rosebuds, as well as the carnations and tulips that are well-known Turkish motifs in other arts. What will be the next step is our question: Will Mustafa Bey extend the limits of the ebrucus' craft? Will there be a pattern called *Mustafa*-ebru?

"This is my hobby," he answers us. "I do it for my own pleasure when it gets too cold to sit and drink tea in the garden. My son has a theoretical interest in ebru, but he's not willing to make the effort involved: finding the right paper on the black market, arranging for importing the pigments I can't get here, digging the clay I found that sets some of the colors permanently or grinding and mixing the dry colors with the roller pestle on the marble slab. And my daughter is interested, true, but she is only ten ... Nejmeddin Bey taught at the Fine Arts Academy in Istanbul, but they don't teach ebru there any more. And his two sons don't practice their father's art; I am the only practicing master."

"But who will follow you? Who will carry on Nejmeddin's advances? A unique art like this, with a 600-year history, can't simply stop, can it?"

The drug-and-spice merchant shrugs and spreads his hands, and smiles gently. "*Ishte* ... It's just my hobby."

Robert Arndt started out to be a diplomat but after getting a master's degree in that field switched to journalism. He now free-lances from Turkey.



Above: Mustafa Bey fashions a tulip (left) and a mixed bouquet of flowers (right). Opposite: inset in a page of the "somaki" pattern, a carnation takes shape.