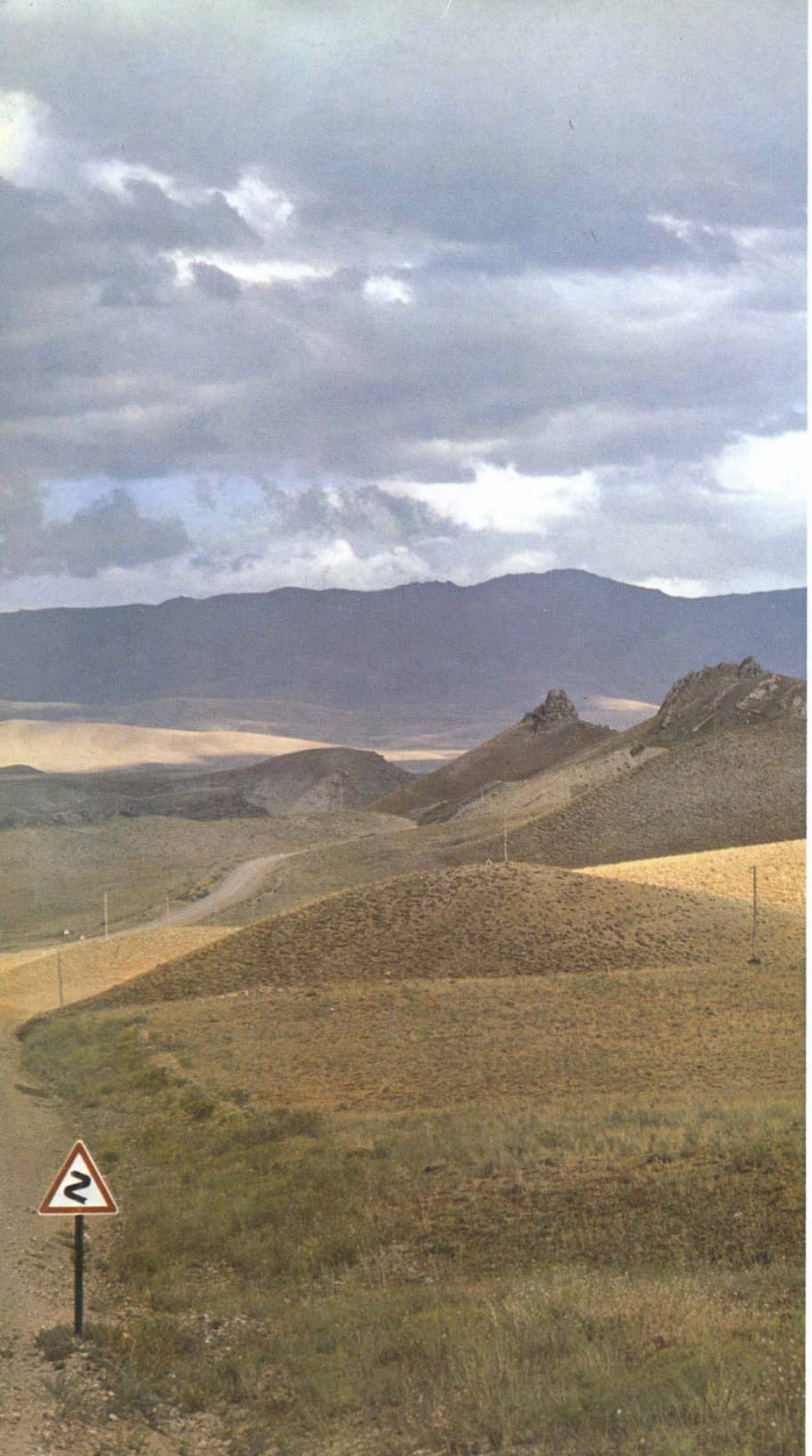

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VAN!

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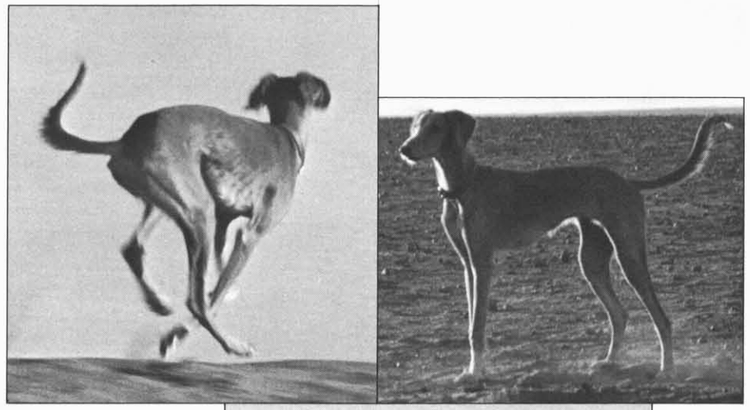
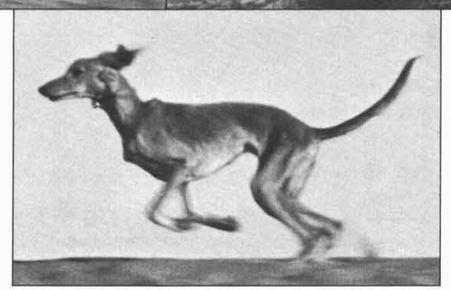
Cover: High in the harsh highlands of eastern Turkey, the bitter but beautiful waters of Lake Van cover 1,420 square miles of a plateau more than a mile above sea level and stretch off toward the distant slopes.

← In America shopping carts are common, but in the Middle East they are symbols of changes in shopping habits that are weaning shoppers from the traditional suqs.

To the Arab, a saluki is as different from an ordinary dog as silver is from tin.





AL-HURR
the noble one

BY PAUL BROCK
PHOTOGRAPHED BY WILLIAM TRACY

Above and right: Bousie! ("Kiss Me!"), gift of Saudi Arab friends to an American family in Riyadh, with his young master.

There were few traces of the Arab world in what was billed as the Arab world's first dog show, held last October at a Beirut golf club. It was fashionable, it was international and it was big—a surprising 39 breeds showed up. But with one exception, it looked a lot more like Crofts' than Arabia. The exception was the presence of two beautiful salukis, the graceful, smooth-coated, fleet-footed hunting dog which was once the royal dog of ancient Egypt and is to this day the beloved and respected pet and hunting companion of the Arabian Bedouins.

Dog fanciers and hunters alike find the saluki an incomparably beautiful creature. Whether feathered or smooth, the saluki gives an impression of grace, symmetry, strength, speed, gentleness and refinement. It has a proud, finely molded head and muzzle, an arched neck, silky drooping ears, a long curved tail and eyes that are not only expressive but keen. Like the Persian greyhound and the Afghan hound, both also known to the ancient Egyptians, the saluki relies on sight in hunting rather than scent.

This perfection, experts say, is the result of some 8,000 years of domestication and a blood line going back to the animals who, somewhere in the ancient Middle East, were found by nomads, tamed and trained.

Precisely where that happened is a wide-open question. Seleucia and Saleuzia, in Turkey, both claim the first salukis, but lexicographers say the name saluki is most probably derived from the name Saluk, a long-vanished city of southern Arabia famous for its armorers and its hounds. For evidence they cite an early Arab poem, in which the poet says: "Oh, my hound, brought by kings from Saluk."

In any case, the tradition of saluki breeding was, and is, deeply rooted in the desert regions of the Arabian Peninsula. In both tent and palace the saluki held, and still holds, an honored place. Their speed and beauty are legendary, poets have sung their praises and painters have given them immortality by decorating tombs, frescoes and royal pottery with their images. Pedigrees, ranging across the centuries, are learned by heart and sung or chanted, and handed down from generation to generation, some tribes citing pedigrees 1,000 years old.

Experts list these six accepted style points which identify the saluki:

1. Eyes. Oval-shaped and extra bright, they range in color from dark brown to hazel. With them the saluki supposedly can identify a moving antelope more than a mile away when hunting in its native Arabian deserts.

2. Head. More elongated and wilder looking than the heads of the other coursing breeds. Pointed at the muzzle and flat on top, the skull widens out in a section between the ears, allowing plenty of room for brains, which the dog puts to good use.

3. Ears. A distinctive mark, they hang close to the head and are thickly covered with loose silky feathering. Despite this thick hair and the typically long hound ears, dog experts describe the saluki's hearing as uncanny. It uses its hearing, as well as sight, to spot and follow game.

4. Coat. Of soft short hair in a large variety of colors: white, cream, golden tan, red, black or tan tricolor. The silky texture of the coat distinguishes the saluki from its distant cousins and descendants.

5. Back. Slopes away gently from well-muscled shoulders. It is straighter in appearance than the arched backs of other coursing hounds. This makes for greater endurance as well as speed. Along with the low, well-knit hips, the back helps give the saluki its clean, rakish look.

6. Legs. Straighter and slightly heavier than in other high-speed dogs. Heel, or hock, of the hind leg is set extremely low to the ground. This point was purposely bred into the saluki by the Arabs to produce more leverage for extra galloping and jumping power in rough country.

Since devout Muslims usually despise dogs as unclean creatures, there is a noticeable paradox in this centuries-old tradition. The explanation is that the saluki is not considered as merely a dog. As a hunting companion who brings food in its mouth to its masters, the saluki—*al-hurr*, the noble one—is as different from the ordinary dog (*kalb*) as silver is from tin. While a mere dog is kept outside the tent or encampment and often left to fend for itself, a saluki is admitted to the shaikh's tent. Sometimes he is even allowed to ride on the camels with children and baggage so his feet will not be hurt by burning sand.

In desert settlements the master of the hunt is expected to train the saluki to help catch the gazelle, one of the fastest of all animals. He starts by turning the pup over to his children who, for six months, train him to retrieve pieces of meat. Next, the dog is sent after jerboas, graduating slowly to hares and finally to gazelles. Usually, however, a saluki takes little training. The hereditary instincts are so strong that he often learns his duties from other dogs.

Salukis, it is said, can run down a rabbit "in a moment." But chasing the "shy gazelle" is the great desert sport, and for this the dog needs not only sharp eyesight but incredible speed. Gazelles have outdistanced trucks going 40 miles per hour and some hunters say they can hit 50 miles per hour even across difficult country. To catch them, salukis sometimes run in relays along the path likely to be taken by gazelle. At other times the dogs are not released until they're only a few hundred yards from the herd but then, in hot pursuit, race for miles over the desert, their claws tearing at terrain that would break the legs of similar dogs.

Considering the value of such dogs it is no wonder that the desert Bedouin is said to honor the saluki by refusing to sell him. He might sometimes present one as a gift to an esteemed friend, but a purchase was traditionally impossible. Nevertheless, like the equally treasured Arabian horse (*Aramco World*, September-October, 1972) the saluki soon started finding its way to the West.

The Crusaders, for example, who were fascinated by the speed and beauty of the dog, sent some back to Europe not only for hunting, but as proof that they had really been to the Holy Land. Later, Italian traders in Syria sent some to Venice where they became so popular Paul Veronese painted them and Benvenuto Cellini, one of the world's great sculptors, put one into a bas-relief in Florence.

Much later, in the 19th century, the shaikh of the Tahdwi tribe in the Saliha desert of Egypt gave a certain Colonel Jennings Bramley two salukis which he in turn presented in 1895 to Miss Florence Amherst in England as the progenitors of a now-famous line of English salukis. Twenty-seven years later the British Kennel Club agreed to register the breed and in 1924 England held its first saluki show. The breed was not recognized by the American Kennel Club until 1927, and when the American Saluki Club was formed the same year there were only eight members. Today there are more than 600, proof that the world's oldest domesticated animal is alive and well and living wherever man chooses to lead him.

Paul Brock has contributed to such publications as Dog Fancy, Science Digest, Saturday Review, American Heritage *and* The New York Times.

SEA ISLAND 4

BY JOHN SABINI / PHOTOGRAPHED BY BURNETT H. MOODY

In the ancient world, what is now Saudi Arabia's Tarut Island provided an important link in the trade of that era. The principal town of Darin was a terminus for ships from India and Ceylon bearing cargoes of musk—that precious, sweet-smelling product which played such a surprisingly vital role in the lives of our ancestors. From Darin, these products were loaded on camels and carried westward across the deserts of Arabia to the Mediterranean coast and thence into Europe.

Today, just outside the Bay of Tarut, another island plays an equally significant role in the economy of the modern world. But this new island is man-made. Called "Sea Island," it is part of the oil shipping terminal of the Arabian American Oil Company (See **Aramco World,** May-June 1966). Indeed, by last fall, when a fourth unit was added, Sea Island, with an overall length of 1.1 miles, berths for eight supertankers and a loading capacity of 439,000 barrels of crude oil an hour, had become one of the largest offshore oil loading facilities in the world.

The fourth unit—called Sea Island 4—started out as a specially designed barge built in the shipyards of Shikoku Island in Japan. The barge was loaded with miscellaneous equipment—including 10 long caisson legs on which the unit would eventually stand—and towed some 9,000 miles from Japan to Bahrain in the Arabian Gulf, a voyage that lasted 40 days.

In Bahrain the legs were hoisted to a vertical position, inserted and lowered 24 feet into the water. As they are 215 feet long, this still left most of their length protruding straight up from the top of the barge platform like so many smoke stacks. A control house was also installed—on a tower 120 feet above sea level—and piping was added. Then, looking rather like a ten-legged table floating upside down, the whole complex was towed across the shallow waters of the Gulf to its final destination off Ras Tanura on the eastern coast of Saudi Arabia.

Once they had it in position, the engineers and marine construction experts lowered the legs to the sea bottom 90 feet below, jacked up the platform 37 feet above sea level and hammered the great legs into the bottom with a pile-driver able to slam those legs downward with 120,000 foot-pounds of energy once every second.

At Ras Tanura, the rest of the complex machinery that makes Sea Island 4 practically self-sufficient was installed. Twelve hydraulically operated Chiksan loading arms were lined up, six to a berth. Eight of these arms (which link a tanker's manifold valves to the island's loading lines) are 24 inches in diameter, making them the largest marine loading arms in the world. They are highly flexible and can rise and fall as far as 90 feet—to accommodate the differences between empty tankers and fully loaded tankers at different levels of tide.

In the middle of the deck a 221-foot crane rises into the air with a jib boom 167 feet long and strong enough to lift nearly 14 tons. Control towers and floodlighting and fire-monitoring towers were erected at the corners, the crane and control towers were linked to the control house with elevated bridges and the control house to the deck with an elevator, one of the very few in the Gulf region.

The master piping, on deck and running underwater to the shore, is enormous—four feet in diameter. And because the underwater lines are encased in concrete, to keep them anchored to the bottom, they're exceptionally heavy: one foot of pipe weighs 1,000 pounds and the valves go 23 feet high and weigh 11 tons **each.**

From above, Sea Island 4 looks something like a giant water insect with a body like a needle—actually a narrow 1,750-foot walkway over the water—and short appendages protruding symmetrically from either side. These appendages are the six mooring dolphins, to which the loading tankers are tied, and the four breasting dolphins, which absorb the impact of the giant ships and hold them, as it were, at arm's length from the loading facilities of the main platform. The walkway and the mooring dolphins are designed to take up to two feet of horizontal movement. The breasting dolphins are capable of deflecting under impact up to 6 feet 6 inches.

History, they say, repeats itself—but with a difference. Although petroleum is not musk, it has placed the little island of Tarut, now largely a fishing and farming community, once more on the great trade routes of the world and made Tarut Bay a major link in the modern economy of oil.

John Sabini writes for the Public Relations Department of the Arabian American Oil Company.

SUPERSOS

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PHOTOGRAPHED BY ROBERT AZZI / SAUDI ARABIA PHOTOGRAPHS BY S. M. AMIN, SA'ID GHAMIDI

SAUDI ARABIA

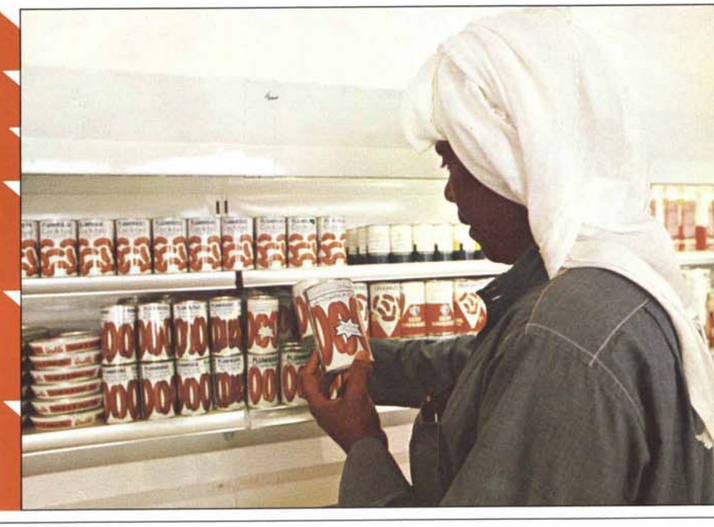
A young mother takes a box of cookies gently but firmly from her child's hand and lifts him into a shopping cart. A uniformed clerk pushes a basket of food through glass doors and follows a housewife to a waiting pickup truck. A man in a sports shirt selects a package of strawberry ice cream and carries it to a pretty girl at the checkout counter where she rings it up on the cash register.

Common enough occurrences these days in any suburban shopping center. But the three scenes described above did not take place in Dallas, Roanoke or Boston, but in Dubai, Riyadh and Beirut. The supermarket has come to the Middle East.

Ironically, at the very time United States shoppers are discovering the attractions of the covered shopping mall—which is remarkably like the traditional Eastern suq or bazaar—modern Middle Eastern housewives are beginning to enjoy the one-stop convenience of the American supermarket. Today there is at least one supermarket in every Middle East city and the concept is spreading fast.

With only a few exceptions these "supersuqs" cannot compare in size with American supermarkets of today, but the concept is the same: self-service, shopping carts and checkout counters. Some, in the Arabian Gulf countries, are little more than general stores. But others are flood-lit, air-conditioned, big-city emporiums with piped-in music,

DUBAI



pastry counters, meat departments, banks, book shops and dry-cleaning services. At some they'll even wash your car while you shop.

The supersuqs are familiar to Western shoppers in another way too. They offer familiar U.S. brand names (with generally higher price tags because of shipping distances) along with gourmet specialties from Europe (at prices that would make U.S. housewives jealous), exotic imports from India and Japan and—a recent development—shelves of canned and bottled products manufactured or processed in the Arab countries themselves.

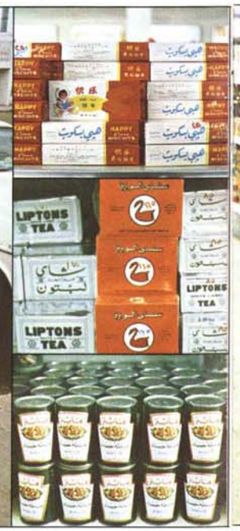
The trend to supersuqs is encouraged by many of the same factors which permitted supermarkets to edge out the neighborhood grocery store in the U.S. after World War II: a growing impatience with the traditional but time-consuming haggling over each and every item; the convenience of canned, packaged and frozen goods; the lure of bright clean packaging; widespread sales of refrigerators, and—a key factor—the increased ownership of automobiles, which permits shoppers to escape their neighborhoods and carry larger quantities home.

It will be many years before traditional suqs with their bustling crowds, pungent odors and leisurely, spirited bargaining disappear from the Middle East scene. But even though many people are already objecting to the impersonal, sterile anonymity which seems to be an inevitable side effect of the supermarket, supersuqs are on their way.

LEBANON

ABU DHABI

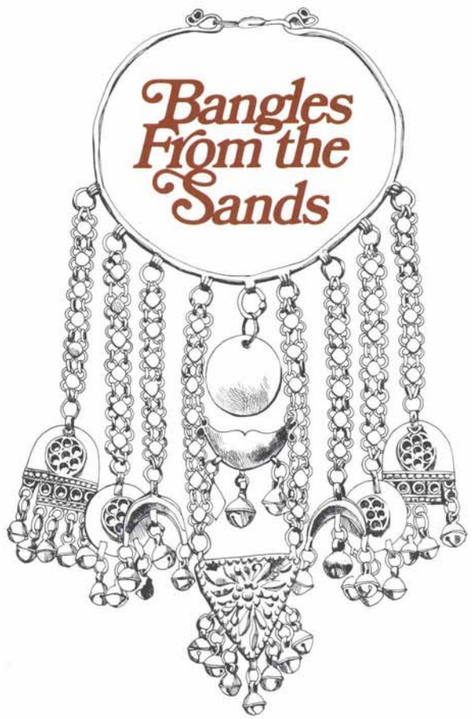
KUWAIT

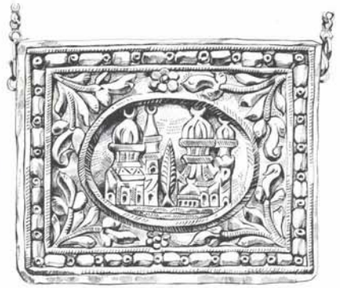


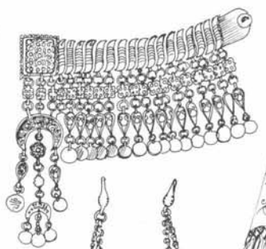
In the stillness of the desert night, the muted clink of Bedouin jewelry, hand-wrought symbols of a passing culture.

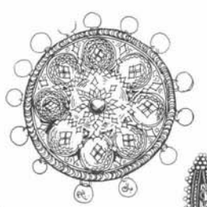
BY CLAIRE N. CLEMONS/DRAWINGS BY PENNY WILLIAMS

Bangles From the Sands









Not many years ago one of the delights of Middle East living was shopping for old jewelry—especially old Bedouin jewelry, rich in intricate silverwork and touched with the bits of coral, carnelian and pretty stones picked up from the hills and sands during the Bedouin's wanderings.

No more. The lovely, hand-wrought trinketry that once graced the persons of desert nomads is disappearing. The Bedouins themselves are exchanging it for modern jewelry. City jewelers are breaking it up and remodeling it for modern tastes. Artisans who once made the jewelry are retiring or turning to more profitable lines. And most of what remains is already in the hands of private collectors and museums.

According to experts, this trend is widespread. In Saudi Arabia silversmiths are melting down Bedouin jewelry and recasting the silver in new designs. Shops in Aleppo, Homs and Deir ez-Zor, all centers of Bedouin craftsmanship in Syria, are adapting to new design demands. In Karak, in Jordan, two Yemeni jewelers who set the styles in jewelry for several generations have retired. In Beirut a jeweler who could once verify the stamp of a particular craftsman or pick out a technique characteristic to him says bluntly that the old work doesn't pay anymore.

Why? Because, according to those who know and care about such things, life and values are changing dramatically as the Bedouins settle down. Romantic theories to the contrary, says Dr. Salah Yacoub, a rural sociologist who does know and care, the Bedouin is not at all reluctant to swap the rigors of life in the desert for the comforts, the services and the opportunities of life in villages and towns. And his wife is no less reluctant to exchange without thought, pieces engraved by hand in patterns as old as tribal tradition for costume jewelry fresh from a factory stamping machine.

It is impossible to trace such patterns back to their origins, but most Bedouin designs probably go back to ancient Ur in southern Iraq, famous in Biblical times for gold and silver mined from the Kurdistan hills and worked by the craftsmen of Ur.

Another source was Persia, whose designs, sent along the caravan routes to the Nefertitis, Cleopatras, and Zenobias of the day, undoubtedly influenced the nomads. Still another was Rome. Funeral busts in Palmyra, Syria, from the first-century A.D. show similarities to what was worn in the days of Caesars and what is worn in Bedouin tents today. As one expert said, "Customs and traditions die hard in the East."

After the Arab conquests of Persia, the Persian mastery of fine engravings, filigree and inlays influenced Arab designs even more. During Mogul and Tamurlane times, other features were copied, some of which survive today in Kabul, Afghanistan, and in the Jebal Druze area of Syria. This seems to be especially evident in the jeweled coiffures and elaborate diadem headdresses sometimes worn today in Lebanon at weddings.

What has evolved is a wide variety of jewelry: silver pendants plaited into the hair; headbands with dangling teardrops; scarves with ancient coins fixed to the edges; crowns with a disk encrusted with stones; swinging pendants; elaborate chokers; bracelets and pelvic belts. (Because so much silver is required to make them, belts are scarce. But one private collection in Beirut boasts a belt that is at least 100 years old and is composed of dangling carry cases for pins, thimble and scissors; a mascara pot; a perfume vial; and an erasable ivory tablet with a hanging pencil to jot down reminders.)

Many Bedouin designs are functional but most also have symbolic meaning. Indeed some collectors say every item of jewelry relates to some religious expression or ancient belief, and a professor of Islamic studies at the American University of Beirut (AUB) says that many signs of animism—a prehistoric belief that all objects, men, plants and stones are inhabited by souls—still survive in the Middle East jewelry. Occasionally there is a mixture of symbols on the same piece of jewelry. In one collection in Jordan there is a necklace with both the Islamic crescent and a cross.

Common to all Bedouin jewelry are bells and dangling coins from Roman, Byzantine and Ottoman times. Other distinctive features are the Islamic half moon—said by some to be Turkish in origin, but by others to be typically Kurdish. Iraqi jewelry often has turquoise or pearls from Bahrain, a trading neighbor. The filigree is supposed to be Turkish in origin, but from Beirut to Basra, it is not an uncommon feature. Stacked triangles are a feature of the jewelry from Afghanistan. Called a "du'a," the triangle contains a compartment for paper prayers. Many typical Bedouin pieces also have a "du'a" that is cylindrical. (The prayers placed in the compartment are believed by some to ward off misfortune, sickness and death. So, it is thought, does the "hand of Fatima," another common feature, which is adorned with a warning: an enlarged eye with blue-black shadows, and blue ceramic or glass beads.)

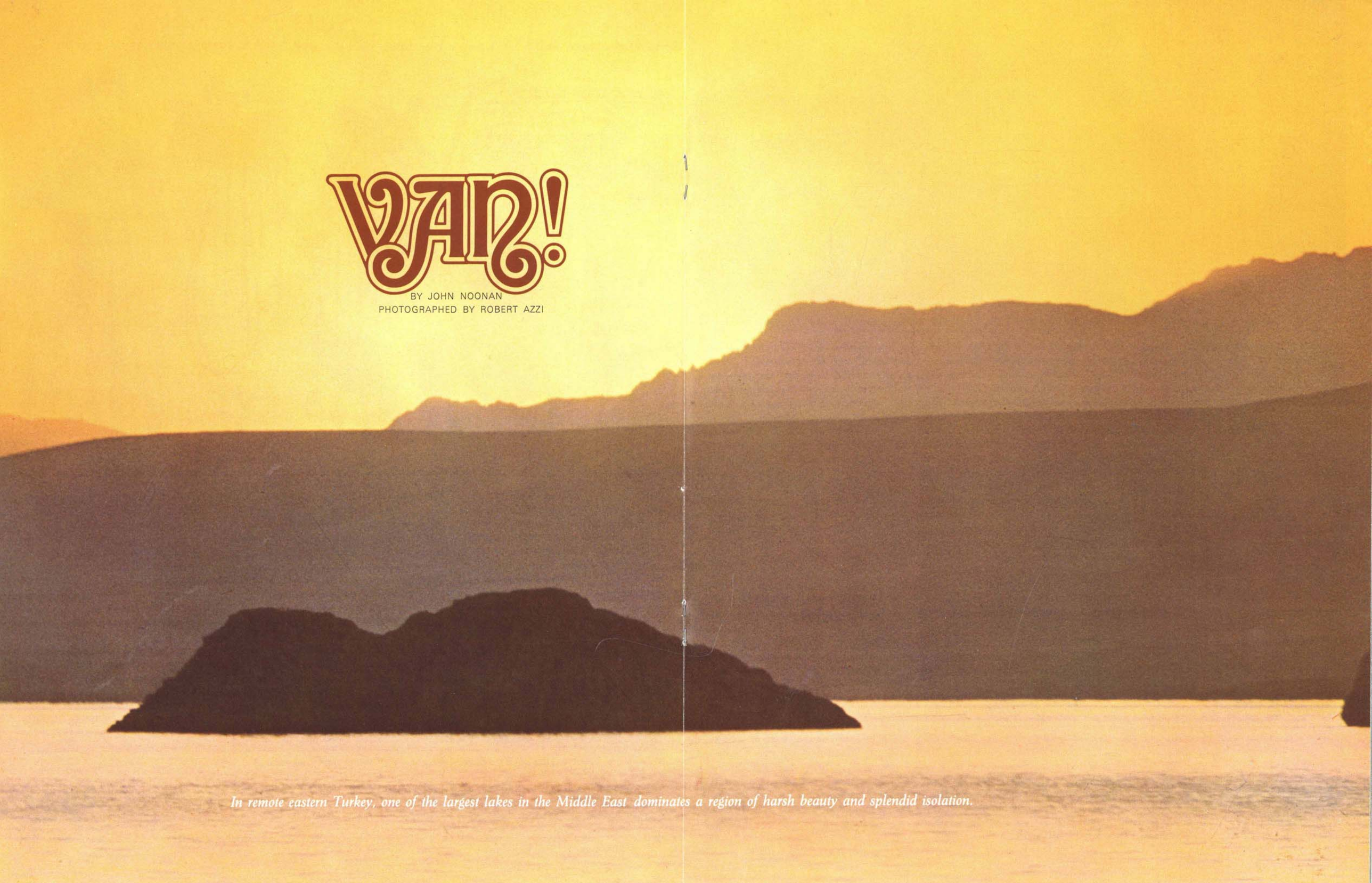
To traders, whose agents regularly tramp the refugee camps or the desert plains in the time of Bedouin seasonal migrations in search of bargains, the attraction of Bedouin jewelry is economic rather than aesthetic. To some collectors it is simply rejection of the die-stamped, mass-produced costume jewelry pouring out of Western jewelry plants. But to a few individuals it is something more. It is the echo of a dying way of life; campsites and campfires, shadowy figures crouched under the stars and soft silver sounds breaking into the stillness. To them the disappearance of this jewelry also means the disappearance of the elusive beauty of a life they once symbolized.

Claire Clemons came to the Middle East in 1961, taught English at the American University of Beirut and now teaches at Beirut College for Women.

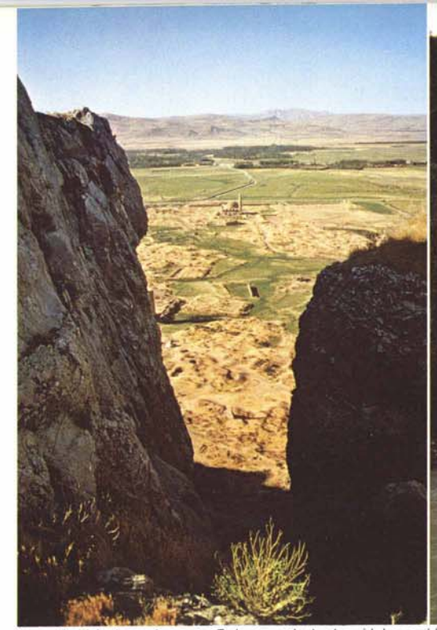
• • •

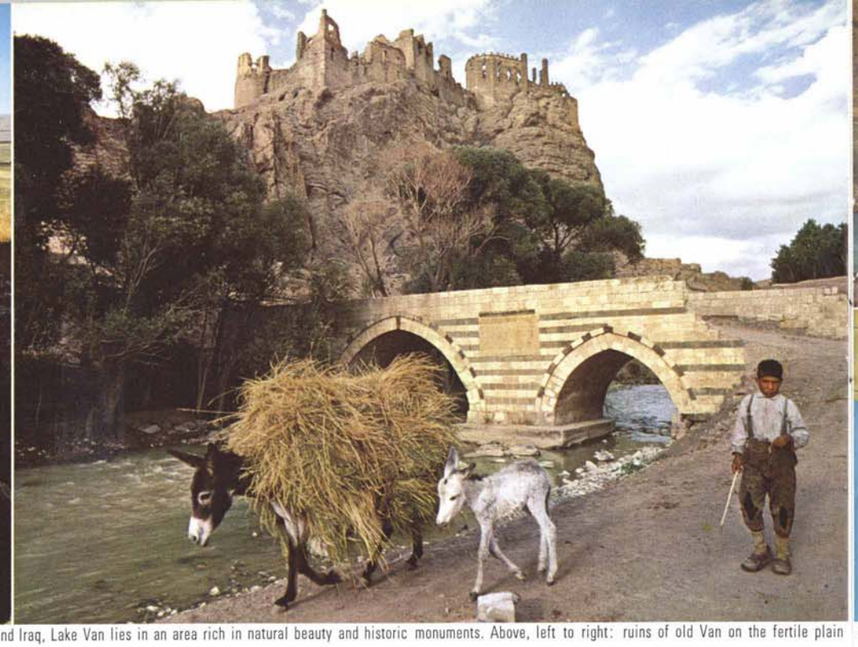
VAN!

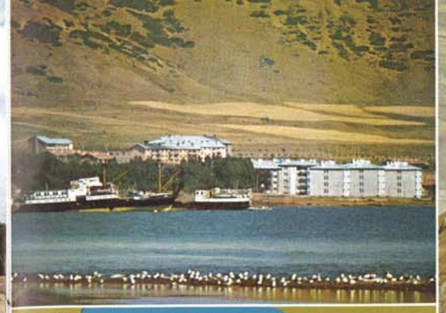
BY JOHN NOONAN
PHOTOGRAPHED BY ROBERT AZZI



In remote eastern Turkey, one of the largest lakes in the Middle East dominates a region of harsh beauty and splendid isolation.







On a mile-high plateau in eastern Turkey near the border with Iran and Iraq, Lake Van lies in an area rich in natural beauty and historic monuments. Above, left to right: ruins of old Van on the fertile plain east of the lake; Hosap Castle, which commands an ancient trade route to Mesopotamia; water birds and ferry boats at Tatvan, on the west side of the lake; Van Castle perched 360 feet above the shore.

In late 1971 the Shah of Iran and the President of Turkey celebrated the realization of a dream 100 years old: the construction of the final railroad link between Europe and Asia. To mark the occasion the two rulers entrained for one of the largest lakes in the Middle East and one of the most beautiful areas of the world still unknown to commercial tourism: lofty, 56-mile-long Lake Van, the one gap the Europe-Asia railway could not close.

Located near the high eastern border of Turkey where towering mountains reach into Iran and Iraq, Lake Van's alkaline waters cover 1,420 square miles of a plateau 5,640 feet above sea level. After Iran's Lake Urmia, Lake Van is the largest lake in the Middle East and one of the highest in the world.

It is also, despite high salinity and undrinkable bitterness, an oasis in the otherwise harsh highlands of Turkey. In startling contrast to the massive iron-rich mountains around it—especially two extinct volcanoes on the north, Mt. Nemrut and Mt. Suphan—an extensive plain east of the lake is covered by beautiful gardens and bountiful orchards springing from soil so rich that the Armenians used to say: "Van in this world, Paradise in the next."

In Van those worlds are closer than you would think. Just 60 miles to the north is what many believers accept as one of this world's links to Paradise: Mount Ararat, on whose 16,946-foot snowcapped flanks Noah and his ark, along with his cargo of birds and beasts, supposedly landed after the flood. Science has failed to verify this, but over the centuries various travelers have reported glimpses of an ancient ship high in the mountains.

That link to history is not the region's only claim to historical importance, however. Sitting astride a difficult but passable trade route between Persia and Anatolia, the region played unwilling host to most of the armies of the ancient and modern world: Hittites, Hurrians, Urartians, Assyrians, Persians, Cimmerians, Scythians, Phrygians, Medes, Armenians, Sassians, Tartars, Kurds, Arabs and Turks. The Assyrian leader Tiglath Pileser boasted that when he took those regions from a civilization called the Urartu he placed rings through the noses of Urartian chiefs and led them back to his kingdom like bulls to a market. Similarly, Sargon, after describing the difficult march to the Himalaya-like mountains, asserted his armies had overrun Urartu "like a swarm of locusts."

The first settlers, apparently, were the Hurri, dating back to 1500 B.C. Two centuries later—1300 B.C.—the unique kingdom of Urartu sprang up. Masters in metallurgy and irrigation, the Urartu, for the next 500 years, ruled all the territory from Sivas in central Turkey to Lake Urmia in Iran, defending it against such formidable opponents as the Assyrians and Babylonians. The Urartu also constructed a great capital at Toprakkale three miles east of the present city of Van. Excavations, commenced in 1850, have yielded a large quantity of bronze shields embossed and ornamented with figures of animals, cylinder seals made from precious stones, artifacts of gold and silver, and delicate pottery of distinctive Urartian design, all housed today in the Ankara Archeological Museum and attesting to the skills of Urartian artisans.

One of the most striking features at Van are cuneiform inscriptions found on smooth vertical faces of cliffs. These Vannic inscriptions are of a non-Indo-European language closely related to Hurrian. First reported by the German scholar F. E. Schulz in 1826 for the British Museum, the script was finally deciphered in 1882 by A. H. Sayce. The oldest inscription dates back to Sardur I of Urartu, who called himself "King of the Four Quarters."

As in any region that commands a strategic site, Van, over the centuries, absorbed and blended civilizations from many directions. It was to this region that the sons of Sennacherib, the King of Assyria, fled (II Kings 19:37) and here that the legendary Assyrian Queen Semiramis came to build a haven on the shores of the lake. Importing 30,000 workmen from Nineveh, she constructed a palace that was the marvel of the Assyrian world, complete with a garden of a thousand fountains, the better to escape the intolerable Mesopotamian summer heat.

Early Christians also came to these remote highlands, some to meet an unhappy death. St. Bartholomew, St. Simon and St. Jude were martyred nearby and an Armenian king put St. Thaddeus to death near the slopes of Mount Ararat.

Today's travelers receive a more sedate reception and in turn find the city of Van much less exciting. It is a quiet city that thrives on trade of tanned animal skins, wheat, fruits, vegetables and the Van cat, a valued pet with rich white or gray fur.

Around the city teem herons, gulls and pelicans which feed on a special herring able to survive in water so thick with borax that inhabitants wash clothes without soap.

Ruins abound in the region. Most noteworthy is Van Castle (Cavustepe), constructed by King Sardur II of Urartu and expanded by the Byzantines, Seljuks and Ottomans. Located atop a limestone rock 360 feet above the lake, this ancient citadel is honeycombed with tombs and caves and also with stairways carved into the stone that carried defenders and conquerors—like Tamerlane—to the crest of this strategic hill. As at Toprakkale, kings and generals had cuneiform inscriptions carved into the polished cliffs, one of which, placed there by the fifth-century Achaemenian King Xerxes, proclaims, with becoming innocence, that Xerxes is the "Great King, King of Kings, the King of the provinces with many languages, the King of this great earth far and near."

Other ruins include two multi-storied watchtowers of Hosap Castle, a fortress commanding the route used for thousands of years by traders and armies passing to and from Mesopotamia and—on an island called Ahdamar in Lake Van—the Church of the Holy Cross, a masterpiece built by the Armenian King Gagig Van Vaspuralan in 921. A strong reminder that this region was once part of Armenia, the Church of the Holy Cross is a stone building whose exterior is covered with relief sculpture. All four façades and its dome are adorned with prophets, evangelists, saints, scenes from the Old Testament, a variety of animals and floral scrolls, Adam and Eve plucking the forbidden fruit and, commanding the west façade, a frieze of King Gagig offering a model of the church to Jesus.

Another Armenian monument, overlooking the plain of Van, is the monastery of Varag, called Yedikilisse because of the seven Armenian churches there. The monastery is built atop the place where Moses is said to have prayed.

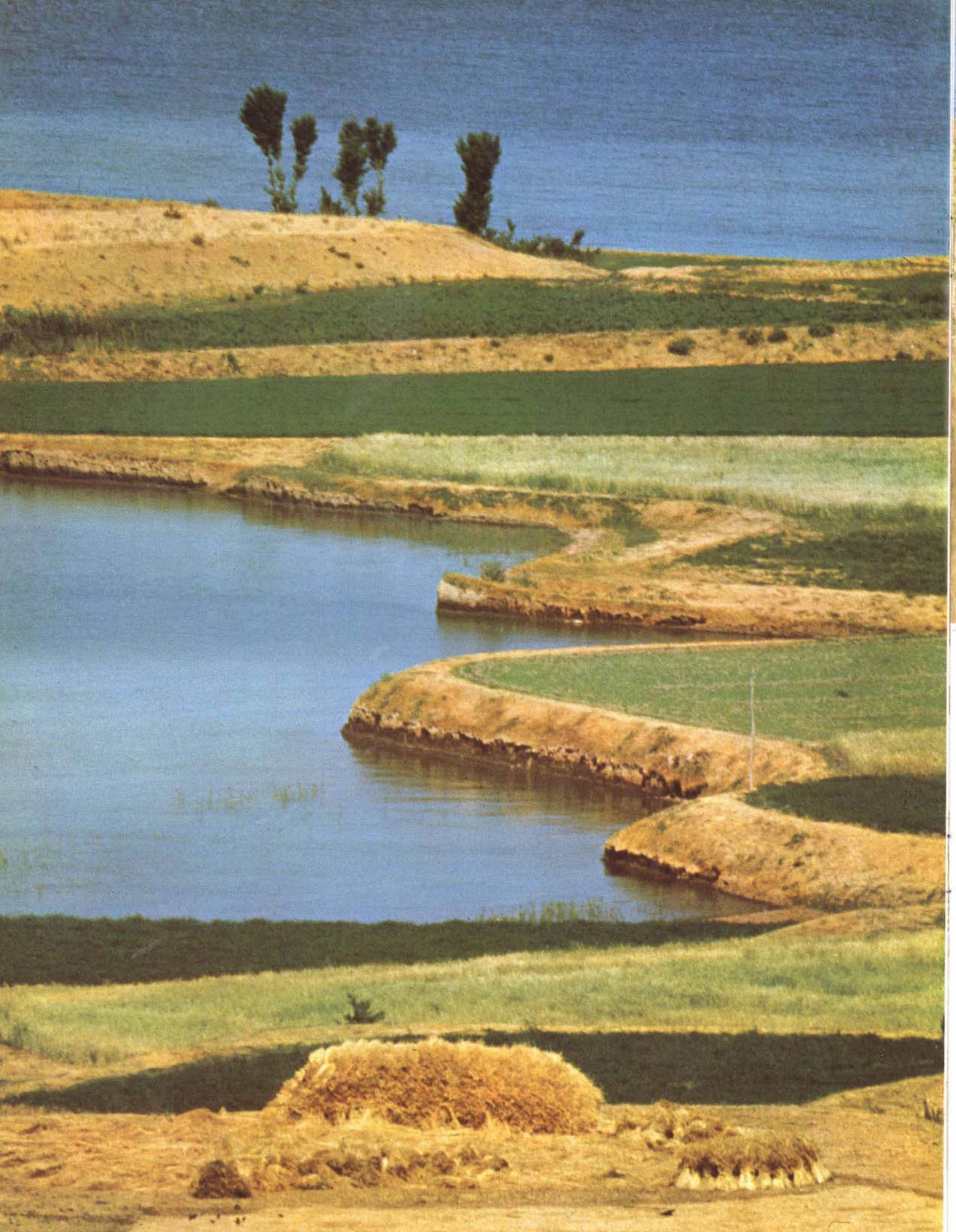
Such structures, now unhappily succumbing to the elements, are proud monuments to the Armenians who so fiercely held this harsh land so long, even beating back the Greek Xenophon during his March of the Ten Thousand about 400 B.C. The Greeks left the area as speedily as possible, despairing at the ferocity of the Armenians "with their long wicker shields and spears."

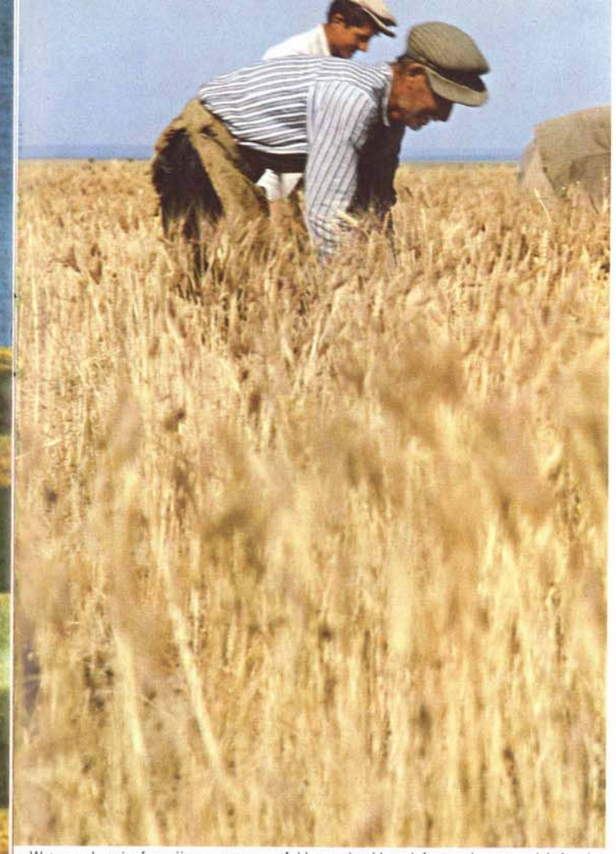
Some 300 years later Van became the center of a powerful Armenian kingdom ruled by Tigranes the Great (95-54 B.C.), and three centuries after that Armenia became the first Christian state anywhere.

Efforts to remain independent failed time and again as one wave of invaders succeeded another right up to the Ottoman Turks. Van also fell briefly into the hands of Russia in World War I. The Russians captured Van on May 20, 1915, and evacuated the area on December 18, 1917—during which time Russian archeologists, led by Mar and Orbeli, carried out excavations at the foot of the Urartian capital in Van and found an extensive temple cut into the base of the rock.

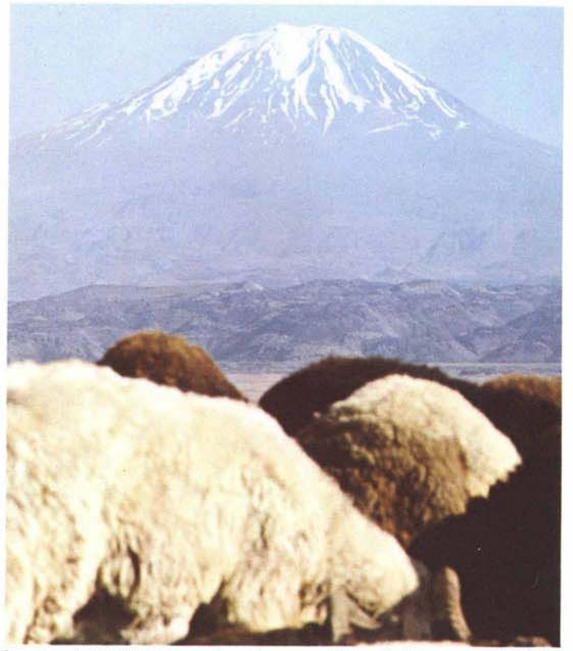
Today a serene Lake Van has left violence behind in history. Although its history precedes written records—even those in the cuneiform script so abundant on surrounding cliffs—it had passed from the mainstream of history and is only now returning to it via the new trains that are ferried from the city of Van on the eastern shore of the lake to Tatvan on the west, to span the one gap in the Europe-Asia rail connections and open up eastern Turkey once again to the outside world.

John Noonan, now a free-lance writer, spent 14 years in Turkey with the U.S. Air Force, during which time he contributed poems and articles to the International Herald Tribune *and* Stars and Stripes.





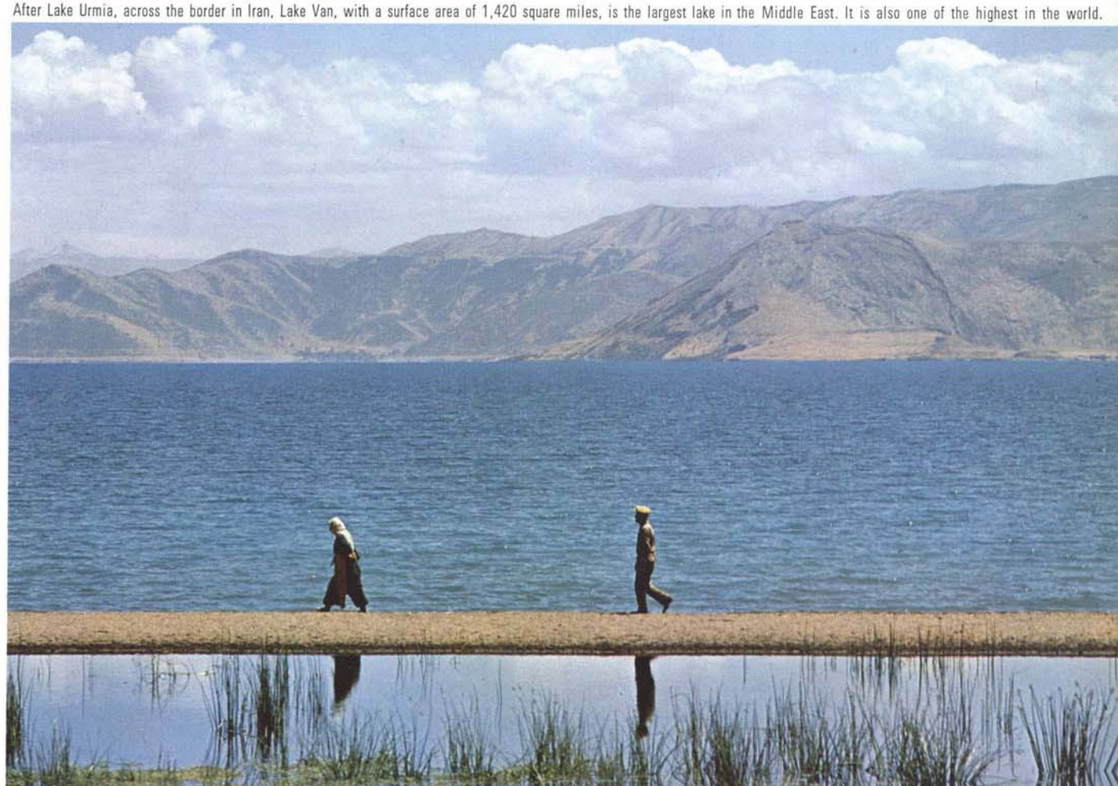
Water and grain form jigsaw patterns of blue and gold, and farmers harvest to lake's edge.



Snowcapped, 16,946-foot Mount Ararat looms over thick-wooled sheep on the high plains.

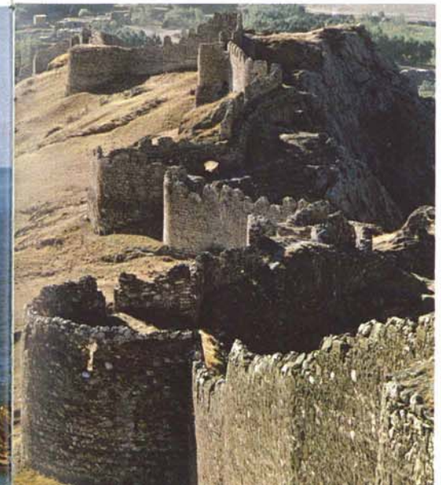
VAN!

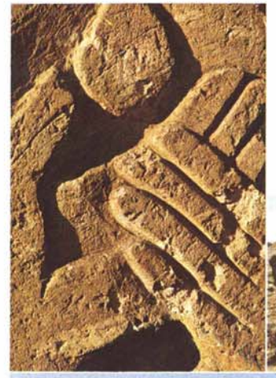
After Lake Urmia, across the border in Iran, Lake Van, with a surface area of 1,420 square miles, is the largest lake in the Middle East. It is also one of the highest in the world.

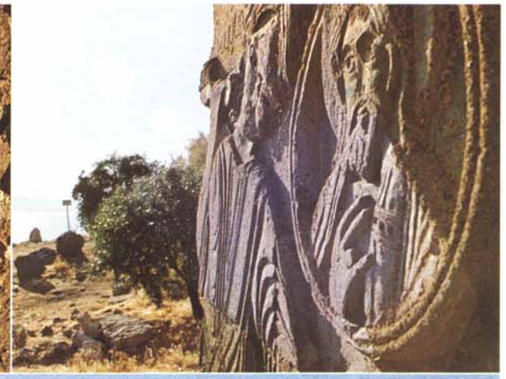


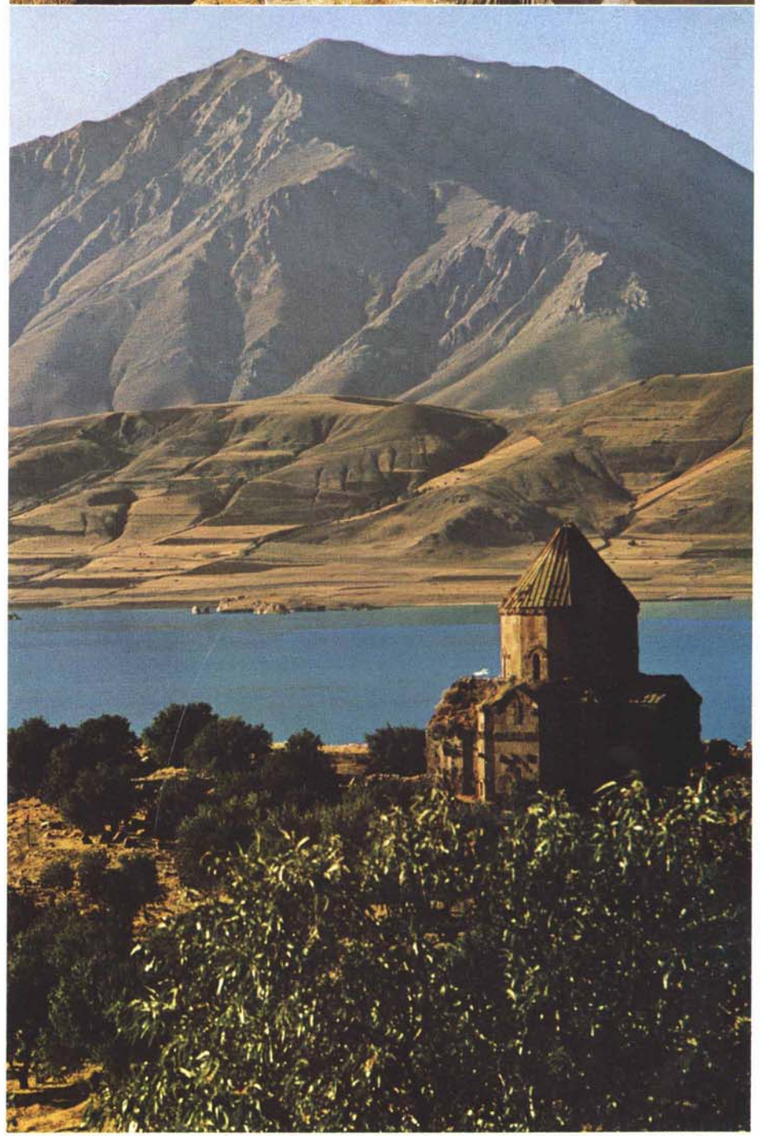
Above: Although the alkaline water of Lake Van is undrinkable, fishermen net herring which are able to survive in it. Such contrast typifies the aura of a region (below) whose compelling beauty derives from thistles and windswept hills, barren headlands and forbidding fortresses.

VAN!



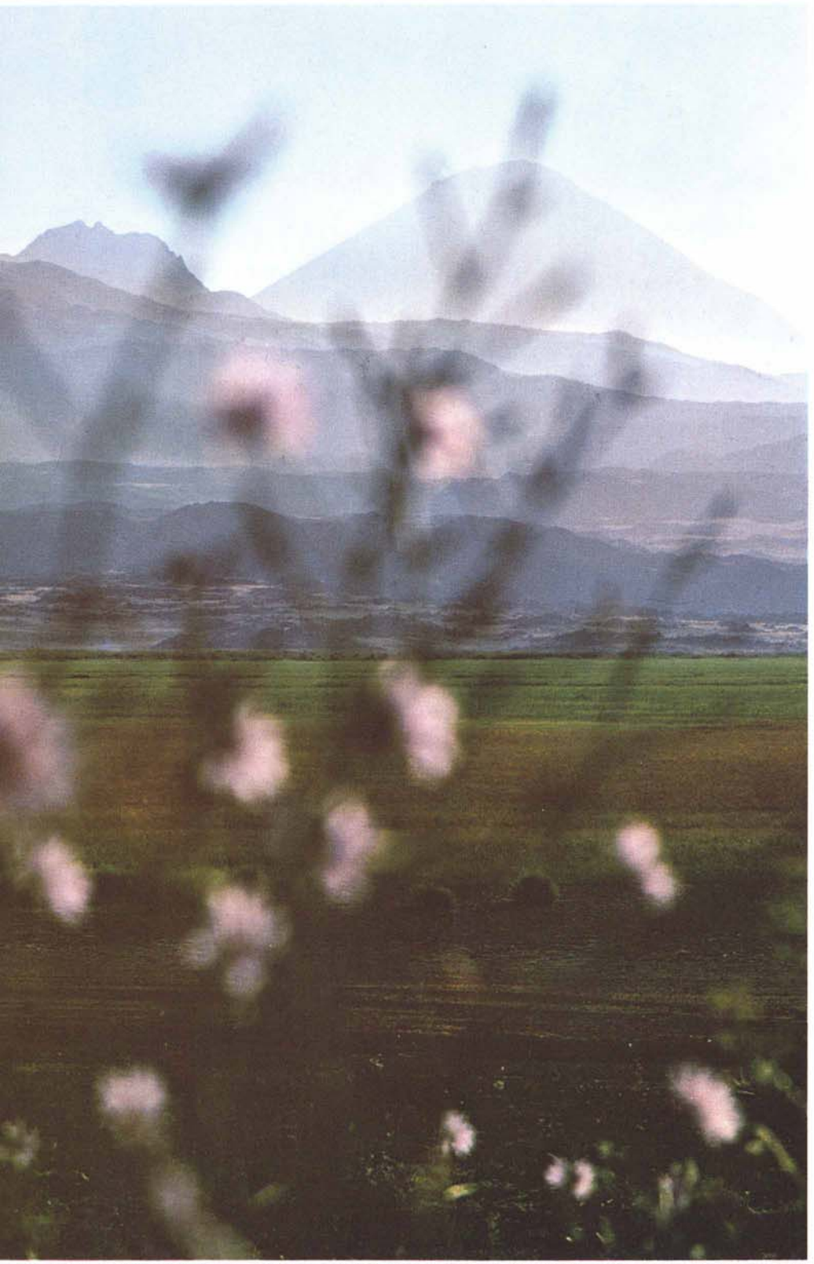




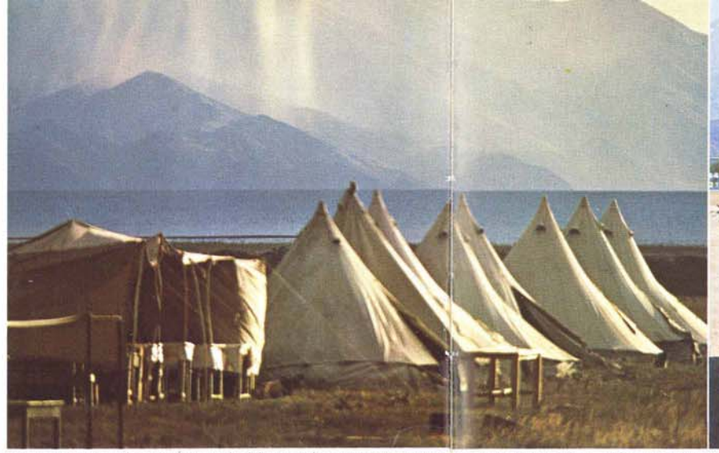


The exterior of the 10th-century Armenian church on the island of Ahdamar is covered with rich sculpture of Biblical scenes.

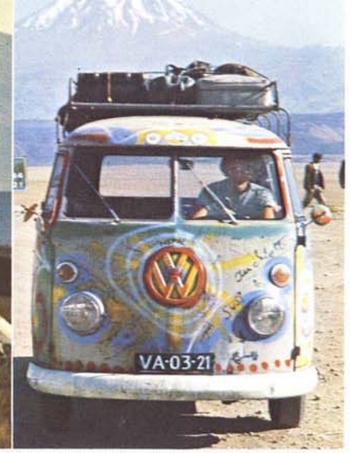
VAN!



At cool dawn (above), pink fruit trees blossom in a fertile volcanic valley while (right) fiery sunset envelopes citadel above Van.



Left: A sudden squall sweeps across the lake toward a temporary camp set



up by Turkish soldiers, while young European campers (right) stop enroute to the colorful East.

The tawny, weathered hills of the Lake Van region have changed little since the time of Noah.

BY JOHN LUTER/ILLUSTRATED BY ED DAVIS

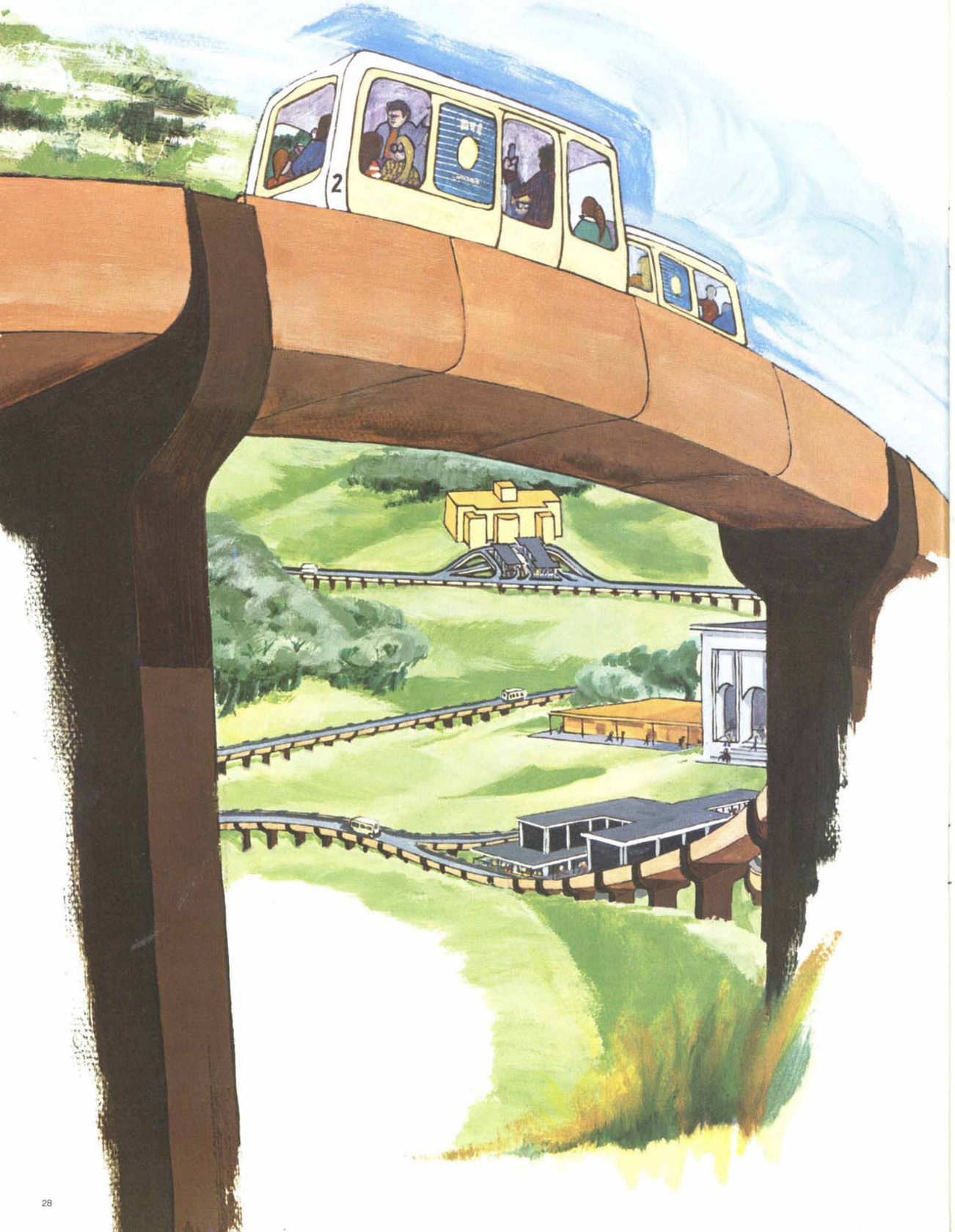
DR. ELIAS and the MORGANTOWN EL

Thanks to the vision and perseverance of an Egyptian-born industrial engineer, Morgantown, West Virginia, a small college town in the Appalachian foothills, will soon have a mass-transportation system unlike any other in the world. Known as the PRT—for Personal Rapid Transit—the system will transport local residents over 2.2 miles of double-lane, elevated track in small, electrically-operated, fully automated cars at speeds up to 30 miles an hour. Although construction is not yet complete, the first in a year-long series of exacting operational tests began last October, and by December 1973, PRT will be ready to carry passengers on a regular basis—by which time the United States Government will have invested an estimated $52 million in the project, in the belief the Morgantown experiment may help other small and middle-sized communities solve the increasingly difficult problems of moving people around.

The man responsible for this pioneering project is Dr. Samy S. G. Elias, chairman of the Department of Industrial Engineering at the Morgantown-based University of West Virginia and special assistant to the president of the university for all matters concerning the PRT. It was Dr. Elias who first recognized that Morgantown needed a rapid transit system to shuttle students between the university's three separate campuses and eliminate the traffic jams that were clogging the two roads through the town. It was Dr. Elias, also, who convinced university officials of the need, led in drawing up plans for the project, and became the prime mover in enlisting the support of local government and civic groups. And, after two years of inaction by Federal authorities on a request for government financing, it was the Cairo-born professor again who persuaded the new president of the university to make a new appeal, which resulted in Federal grants for a feasibility study and later for construction of the first three PRT stations, 2.2 miles of elevated track, a control system and some 70 to 90 of the system's specially-designed 15-passenger cars. If the project appears successful in its early stages—and results of the tests so far have been encouraging—it is believed that the U. S. Government will provide most of the money necessary to build another 1.4 miles of track, three more passenger stations and as many additional cars as the traffic requires.

A scholarly, soft-spoken 42-year-old specialist in mass-transportation problems, Dr. Elias owes his interest in engineering to his father, Elias G. Elias, an Egyptian professor who taught mechanical engineering at the University of Cairo and later became general manager of the water works in Asyut, Egypt's third largest city. Young Samy, the eldest of five children, found his father's work exciting and, after attending the English Mission College in Cairo and then the public schools in Asyut, he enrolled in the University of Cairo, where he earned a degree in aeronautical engineering.

Encouraged by his father to undertake advanced studies abroad, the new graduate wrote to universities in the United States and England and left home at the age of 25 to accept a full scholarship at Louisiana State University. On arriving at Louisiana State,



however, he found that it had too few graduate students in his specialty to offer the courses he wanted. He switched to Texas A. & M., and after completing work for his master's degree in aeronautical engineering, went to Oklahoma State University for a doctorate in industrial engineering, a relatively new and growing field in which he had taken his first course at the University of Cairo. While at O.S.U., he married an Oklahoma girl and wrote a doctoral thesis on the use of computers in the management of mass transportation.

The young engineer's concern with mass transportation might have stopped there but for an unusual twist of fate. He became an assistant professor at Kansas State University, in Manhattan, Kansas, and for more than two years gave no thought to the topic of his doctoral research. True to the traditions of the Arab world, however, Dr. Elias is *karim*—a hospitable person. In 1961, with his American wife Janice, he returned for a year to Cairo and while teaching in a management institute there, received a letter from Kansas State asking him if he would mind showing Cairo to a young lady going to Egypt.

Dr. Elias and his wife responded graciously. They invited the teen-age tourist to stay in their home and entertained her for two weeks. In return the girl's parents invited the Eliases to visit them if they ever came to Kansas City. Six months later, Dr. Elias, by then an associate professor, did, and over dinner a lasting friendship developed.

The girl's father, it turned out, was general manager of the Kansas City transit system, and when he discovered on a social evening several months later that Dr. Elias had done research on the use of computers in transit management, he appointed himself as the young professor's sponsor. As Dr. Elias puts it: "He almost took me by the hand and introduced me to transit managers in other parts of the country as a specialist who might help solve their problems."

Dr. Elias has since served as a consultant to the transit systems of a half dozen major American cities. For St. Louis, he applied computer science to the scheduling of buses and drivers. And for New York City, he made a computerized study of subway crimes, as a guide to the scheduling and placement of transit police.

No transit problem has proved more challenging to Dr. Elias, however, than the one he encountered when he moved to Morgantown in 1965 as an associate professor of industrial engineering at the University of West Virginia. Morgantown is small as American cities go. A glass-making and coal-mining center in the foothills of the Appalachian Mountains, it counts 29,000 year-round residents, and during the September to June academic year adds some 16,700 university students. The population of the immediate area has been estimated at 50,000.

To many cities of this size, building rapid-transit systems would border on the irrational, but Morgantown's problems were unusual, if not unique. Built largely on steep inclines, the town lies wedged between the Appalachian foothills on one side and the Monongahela River on the other. Two modest roads run through the valley, but many of the town's narrow cross streets have grades of 12 percent or more—much more suitable for mountain goats than for motorists. Complicating the traffic problem are the students. Since the University of West Virginia was located on a downtown campus in 1867, expansion has forced the building of two additional campuses, which for lack of room downtown have been located on suburban hilltops. To move students and faculty between the campuses, each about a mile and a half from the other, the university has operated a fleet of 17 buses. But the buses contribute to traffic congestion and move so slowly that the university must forbid students to schedule successive classes on different campuses.

"The terrain is too rugged for bicycles," Dr. Elias observes. "And when you come to Morgantown it doesn't take you long to realize that adding more cars and buses wouldn't solve the problem."

By the time Dr. Elias came to Morgantown, the growing traffic congestion in U.S. urban centers had already become a matter of national concern. The Federal Government in 1966 appropriated money for a series of seminars for top management officials of rail and bus systems, and two such meetings were held at West Virginia University in the summer of 1967. But, Dr. Elias recalls: "The most important thing we did was talk. It soon became clear that most of those present were interested in transit systems for large metropolitan areas or even on a national scale. The idea of a rapid-transit system for small cities was discussed but there wasn't much enthusiasm."

The seminars, however, prompted Dr. Elias to talk with his faculty colleagues about a mass-transit system for Morgantown. As he tells the story: "Some of us at the College of Engineering decided that a rapid-transit system was going to be built in some small city sometime in the future—and that it might as well be in Morgantown and it might as well be now. So we drafted a proposal."

For almost two years, the request for Federal financing went unanswered. But Dr. Elias refused to be discouraged. He worked patiently to line up support in the community, and in 1969 he wrote to the university's new president, Dr. James G. Harlow, urging that the appeal be renewed. President Harlow, after talking with Dr. Elias, gave the project enthusiastic support, and, with the help of a West Virginia congressman, arranged for a Morgantown delegation to meet with John A. Volpe, the Secretary for Transportation in President Nixon's cabinet. The timing was ideal, as Secretary Volpe had been saying in speeches that more attention should be given to the problems of small communities. An immediate review of the Morgantown proposal was ordered, and two months later the Department of Transportation granted the university an initial $100,000 for a feasibility study. Dr. Elias's dream was on its way to becoming a reality.

From then on, events moved rapidly. An evaluation team headed by Dr. Elias considered some 200 proposals for transit systems, many of which existed only in the imaginations of the proponents. Morgantown's rugged terrain ruled out any thought of a subway, but three widely differing elevated systems were selected for detailed study.

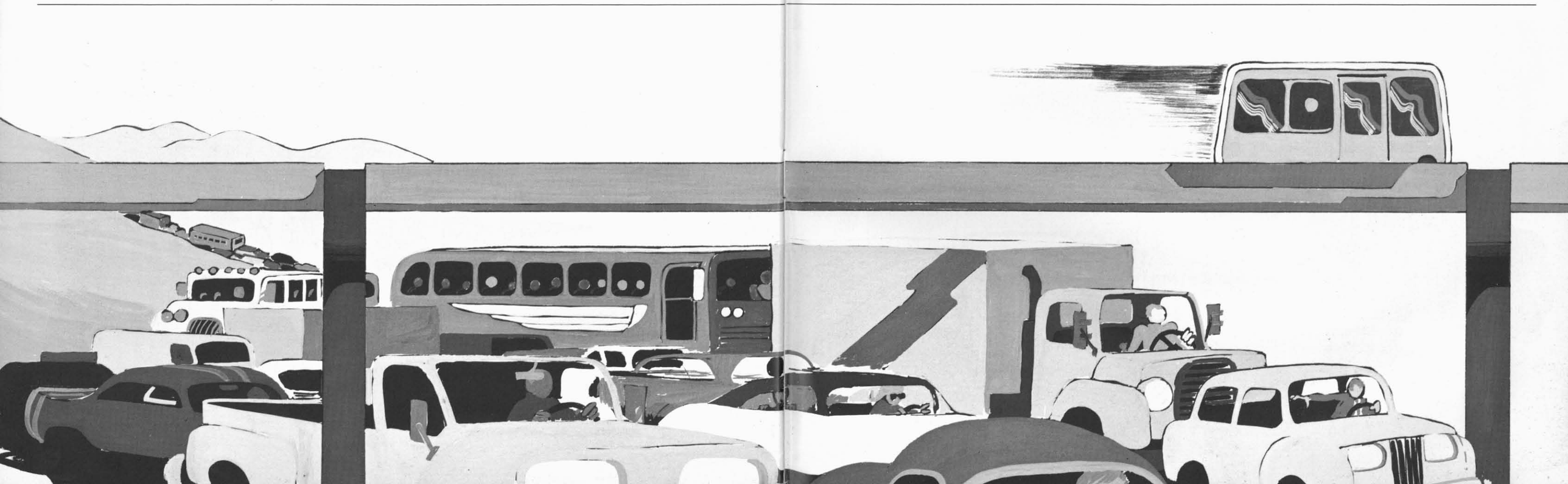
Meanwhile, Dr. Elias and his colleagues planned routes, made soil tests as a guide to placement and construction of the massive support pillars, and arranged for rights-of-way. The route has been laid out carefully, to avoid ecological damage and eliminate the need for any major relocation of homes or businesses. The university, local school board, city, county, and state all cooperated in making land available, with the result that only two properties—one home and a junkyard—had to be purchased to clear a path for the PRT.

The system finally chosen, although it bears some resemblance to a monorail, differs in one important respect: the low-slung cars, weighing 12,000 pounds and built to carry eight seated passengers plus seven standees, do not run on a rail. They travel instead on four rubber tires on narrow flat-bed guideways, flanked by side walls two feet or more in height. The side walls and the low placement of weight keep the cars securely on their path.

Controlled entirely by computers, the driverless cars will travel at an average speed of 20 miles an hour and can reach 30. When the PRT is in full operation, plans call for computers to move the cars at 15-second intervals in peak traffic periods, giving the system a top capacity of approximately 1,200 passengers every 20 minutes. During off hours, when no regular schedule is maintained, travelers will be able to summon a car by pressing a button, much as they would call an elevator. By pressing other buttons, they will select their destination. To further reduce the need for manpower and keep operating costs low, collection of fares will be automated through the use of tokens and coded passes.

Morgantown is viewed as an ideal place in which to test the system. The movement of students between the university's campuses will provide five peak demands for transportation daily, and it has been said that if the PRT works well over Morgantown's rugged terrain—in a sharply varying climate that includes ample quantities of ice, snow, rain, fog and sunshine—it can work in almost any city.

Although testing got underway last Oct. 24—with President Nixon's Tricia on hand as an observer—trial runs



are expected to continue through next September so that all possible problems can be eliminated before regular operations begin. It will take even longer for the PRT to prove itself economically. But Transportation Secretary Volpe has already hailed the Morgantown experiment as "the beginning of a great breakthrough in transportation... a project that will, in the years ahead, certainly have a profound effect on the lives of every man, woman and child living in the great congested urban areas of this nation."

To turn Dr. Elias' concept and plans into a working system, the Department of Transportation has drawn on the resources of major U. S. firms. The Boeing Company of Seattle, known around the world for its aircraft, is in overall charge of design and construction, including development of the PRT's novel vehicles; the Bendix Corporation has developed the control and communication equipment, and other contractors are handling other phases of the work.

But Dr. Elias remains deeply involved. As assistant to the university president on PRT matters, he is engaged in keeping a watchful eye on construction and testing, and in drawing up plans for extension of the system, which, if all goes well, will include a total of six stations and 3.6 miles of track by January 1975. He also is busy talking with other transportation specialists, who are streaming to Morgantown to learn more about its imaginative people-moving experiment. The visitors, he hopes, will soon include his father, now retired and living in Cairo, with whom he has corresponded regularly about the project.

A modest man, Dr. Elias says that his ideas for a mass-transit system would never have become a reality without the support he received from his university colleagues, and especially from the university president, Dr. Harlow. But by the people of Morgantown—whose Junior Chamber of Commerce selected him as the town's 1972 "Boss of the Year"—and by officials of the Department of Transportation, the Egyptian-born professor is recognized as the man responsible for PRT. When Secretary Volpe came to Morgantown this October for ceremonies officially dedicating PRT, which he described as "a revolutionary new concept in urban transportation," he singled out Dr. Elias as the person who "first saw the potential for testing such a system in Morgantown." The tribute echoed sentiments expressed at the ground-breaking ceremonies a little over a year ago by President Harlow, who described Dr. Elias as the "one man above all others who has devoted his life to this project." The university president then went on to say: "His patience, persistence, insight, and courage made all this possible. He has been a worker of miracles."

John Luter, director of the Cabot Prize Program in Inter-American Journalism at the Columbia School of Journalism, is a former foreign correspondent for Time *and the now-defunct* Life, *and was twice president of the Overseas Press Club.*