

NATIONAL GEOGRAPHIC



JULY 1972

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IN THE LEXICON of our daily newspapers, the terms "Middle East" and "crisis" seem linked in a natural association. Israeli strong-points look out on a ring of hostile neighbor nations. On Cyprus, Greek and Turk try desperately to find a way to survive together. From the mountains of northern Iraq, Kurdish warriors press for greater autonomy. In the Persian Gulf, huge tankers fill with the lifeblood of European and Japanese economies, while anxious diplomats and businessmen bargain to keep the oil flowing. The scenes represent not only national interests and divisions, but often international commitments involving nuclear powers. The world's stake in the Middle East is nothing less than peace itself.

By their nature, headlines tend to obscure the human realities behind them. Familiarity with the ethnic backgrounds and historical roots of Arab, Jew, Persian, Turk, and Kurd will give us all a better understanding of the news. With this issue, National Geographic includes another in its unique series of cultural supplements, a double-sided map that surveys the whole range of Middle Eastern lands and peoples.

This immense region, homeland to 194 million, might be thought of not as Middle East, but simply as Middle—the vast, arid

meeting ground of three continents. Its mounds

entomb man's first cities. Along its precious

rivers the first urban men discovered

astronomy, invented mathematics,

and, above all, simplified written

communication by inventing an

alphabet. From its tribes, prophets arose

who preached of one God; they bequeathed

to the world three of its major religions.

Today much of the region bears the cultural

stamp of Arabic-speaking peoples and the religious

stamp of Islam. In the article that follows, staff writer

and photographer Thomas J. Abercrombie, who has traveled to

the remotest corners of the Moslem world, tells of the birth of Islam and

of the dazzling empire its converts created centuries ago.

The accompanying National Geographic map supplement, which depicts

the entire Middle East as a cultural unit, has already been acclaimed

by scholars who aided in its preparation. Encompassing subjects as

varied as languages and politics, land use and physical geography, it will

broaden understanding of this crucial part of our world, as men pray for

the day when headlines speak of cooperation, not of crisis.



WRAPPED in humble pilgrim's cloth, I stepped through the Gate of Peace and into the immense courtyard of Islam's holiest shrine, the Great Mosque of Mecca.

Lofty stood its seven minarets; its marble and granite galleries gleamed in the white-hot desert sun. Around me the pious from all the Moslem world paid homage to God in the birthplace of their faith. A circle of schoolboys cradling Korans chanted their catechism; joyous pilgrims splashed themselves with water from the sacred Well of Zamzam; the very old, with eyes on the next life, washed winding cloths and laid them in the courtyard to dry. A trace of incense wafted on the reverent murmur of a thousand prayers.

In the center of the courtyard the stark cube-shaped Kaaba, draped in black silk, loomed fifty feet above the worshipers. At God's command, it is told, Abraham built the first shrine on this spot. From the edge of the courtyard I bowed through two prayers, then followed my *mutawwif*, or pilgrim guide, into the churning multitude.

Seven times we circled the shrine, repeating the ritual devotions in Arabic: "Lord God, from such a distant land I have come unto Thee . . . grant me shelter under Thy throne." Caught up in the whirling scene, lifted by the poetry of the prayers, we orbited God's house in accord with the atoms, in harmony with the planets.

Thus, with a pilgrimage to its fountain-head, I set out to trace the once mighty, and still awesomely vast, empire of Islam.

For many years a traveler in Arab lands, I have now fulfilled a dream of traversing that

Eyes fierce as a desert hawk's, a Saudi Arabian mirrors the fervor that spurred Mohammed's first converts. Shouting the name of Allah, Arab armies within 100 years seized a realm that stretched from Spain to Central Asia. The author, a Moslem since 1966, probed the far corners of this Islamic empire in a year-long, 22-country adventure.

ABOVE RIGHT: THE ARCHANGEL GABRIEL APPEARS TO MUHAMMAD IN A 15TH-CENTURY TURKISH MINIATURE IN THE TOPKAPI MUSEUM, ISTANBUL; 14TH-CENTURY SWORD IN THE MILITARY MUSEUM, DAMASCUS.



The Sword and the Sermon

Thirteen centuries ago, Arab warriors forged an empire greater than Rome's

ARTICLE AND
PHOTOGRAPHS BY
THOMAS J. ABERCROMBIE
FOREIGN EDITORIAL STAFF

empire—more far-flung at its zenith than ancient Rome's—from Spain to Soviet Central Asia, from Sicily to the southern Sahara. And wherever Arab armies fought, and Arab scholars taught, I found a remarkable modern legacy of their power and learning. For the blood of desert-born conquerors still flows in the veins not only of sheiks and sultans, but of matadors and nuns and Bolsheviks as well.

After completing the seven circuits of the sanctuary—part of the *wakra* ritual required of all visitors to Mecca—I jostled through the crowd to kiss the Black Stone, perfumed and set in silver into the eastern corner of the Kaaba (page 8).

A story is told of this ancient relic, revered even in pagan times before Islam, when Meccans worshiped such diverse deities as Uzza, goddess of the morning star, and Awf, the great bird.

When the elders of Mecca renovated the shrine—sometime in the late sixth century of our era—they fell into argument: Who would have the honor of resetting the sacred stone into the masonry?

It was agreed that the next man to enter the sacred precincts would judge the dispute. First to appear was a young Meccan merchant whose wisdom and honesty had already won him the nickname of "Al-Amin—the trustworthy." He was a lean man, strong of bone and muscle. His thick beard framed an oval face set with dark, serious eyes. His laugh was rarely more than a smile.

He called for a cloak to be spread on the ground and had the Black Stone placed upon it. With a noble from each of Mecca's leading tribes pulling a corner of the robe, the sacred stone was raised. Then, with his own two hands, the young man set the stone into its niche, where it remains to this day. The man's name was Mohammed.

Born in Mecca into the prominent Quraysh tribe about A.D. 570, Mohammed was orphaned at 6 and reared by a grandfather and then by an uncle. In his youth he worked as a shepherd, and later rode with the camel caravans that carried frankincense and silk through Mecca north to Syria. Although unlettered, he gradually gained respect as a businessman. At 25, he married Khadija, a wealthy widow many years his senior.

Of his next few years little is known except that he devoted much time to contemplation. Often he climbed to a small cave among the rocks of Mount Hira, just north of Mecca, to

spend days in fasting and meditation. There, in the year 610, a revelation overwhelmed him: a blinding vision that frightened him to his knees.

"Recite: In the name of thy Lord who createth," the vision commanded, "Createth man from a clot. . . Who . . . teacheth man that which he knew not."

Troubled, Mohammed returned home to Khadija. God had spoken to him, had appointed him His messenger . . . or was he losing his senses? His wife consoled him, believing in his call, and soon became his first convert. The revelations continued, and would later form the Koran, the Moslem holy book. His circle of believers grew, but his preachings angered the Meccans.



IT IS HE [ALLAH] WHO HAS SENT . . . AN APOSTLE FROM AMONG THEMSELVES . . .

In a modern suburb of Mecca I spoke to Sheik Ameen Abdullah al-Shaibi, the official Keeper of the Kaaba.

"In the 'Days of Ignorance' before Islam, the Kaaba housed 360 stone images," he said. "Regularly, tribesmen came from all over Arabia to pay homage to the pantheon.

"But our Prophet condemned idolatry, teaching us Allah is one, without partner—omnipotent, omnipresent. To seek Him through mere images is mockery."

Sheik Al-Shaibi showed me the symbol of his office, a heavy shank of turned steel, damascened in gold. "The key to the Kaaba—the House of God," he said. "It was entrusted to the Al-Shaibi family by the Prophet himself nearly fourteen centuries ago."

Mohammed's preaching began to undermine Mecca's position as the center for an annual pilgrimage held in conjunction with a profitable trade fair. By condemning their deities, he offended not only the consciences of the Meccan leaders, but also their pocket-books. More and more he was openly scorned, even threatened, on the streets.

Finally the Prophet and several trusted friends slipped away from Mecca under the veil of a moonless night. Mounting camels, they embarked for the oasis of Yathrib, more

than 200 miles north across the desert. It was the year 622.

Islam's calendar dates from this hegira, or emigration, of Mohammed. Who could have guessed the event would signal a momentous era? Within a hundred years the banners of Islam would span three continents, from the rim of China to the Pyrenees.

LONG before history began, the Arabian desert was home to the cultural ancestor of these conquerors—the Bedouin, whose flocks of sheep and camels earned him a meager living from the unforgiving wastes.

Often he rode out on *ghazwas*—raids—to settle feuds or to rustle camels from rival tribes. In this crust of a land a man's name was often his only wealth, and he guarded it carefully. Says an early Arabic poem:

*With the sword I will wash my shame away,
Let God's doom bring on me what it may!*

Yet a Bedouin's love of freedom was bridled by loyalty to clan and tribe; both were tempered by an unblinking submission to his destiny. This stern code left an indelible mark on Mohammed's new religion.

I have often wandered the harsh world of the Bedouin. Modern Arab governments have outlawed raiding and even encouraged the nomads to settle. Oil revenues have built new roads where pickup trucks speed past the camel; the magical transistor radio pipes in music and politics from faraway cities.

But for all that, most Bedouin still avoid the beaten path. I found Sheik Bushir ibn Doghmi's tent, one of ten spread among the dunes of Saudi Arabia's Nafud desert, some forty miles from the nearest water (pages 14-15). I apologized for arriving unannounced.

"No matter. Few visitors grace our tents," said Sheik Bushir, a young man whose beard was still as black as his penetrating eyes. He wore a dark robe and white headcloth and carried a shepherd's staff. "As you know, providing hospitality is an honor for us—and a sacred duty. Even if my enemy appears at this tent, I am bound to feast him and protect him with my life."

The sheik's brother, Shwayhat, roasted a handful of green coffee, then pounded the beans in a heavy brass mortar. Hearing the clanging, a dozen men from nearby tents came to fill our circle around the fire. From beyond the partition that screened the women's quarters, I heard the last bleating of an

unlucky sheep. Shwayhat poured the coffee, spiced with cardamom, into thimble-size cups. Next came tea, then more coffee.

Before dinner we lined up outside the tent, and Sheik Bushir led the evening prayers. Water is precious here—the goatskins were nearly empty. So, before praying, we cleansed our hands and foreheads symbolically with a handful of sand.

"*Taqabbil Allah*," whispered the sheik as we took our places around the steaming tray. "May God accept your prayer."

Hardly a word is spoken during a Bedouin banquet. We ate busily, thrusting our right hands into the pilaf, squeezing the rice into bite-size lumps and popping them into our mouths. The choicer tidbits—lungs, kidneys, and brain—the sheik tore out and laid before his guests. A young boy brought a dish of dates and bowls of fresh camel's milk.

"An animal needs both pasture and water," Sheik Bushir said over the final rounds of coffee-tea-coffee. "Here in the Nafud you rarely find both in the same place. If we drove the stock to the wells at Qarah, two days each way, they would be bones by autumn. But now the water comes to us."

Next morning before dawn I awoke to the shouts of herdsmen and the braying of seventy-odd camels—most of them the sleek white *mughathirs*, Arabia's finest. They fussed nervously at some distant sound I could not hear. Finally, at sunrise, plowing a wide track across the sand, a big Mercedes diesel tank truck pulled up to the pandemonium.

"When I began driving eight years ago, the camels were terrified," the driver said. "Most had never seen a truck before. Now they flock around like it's their mother."

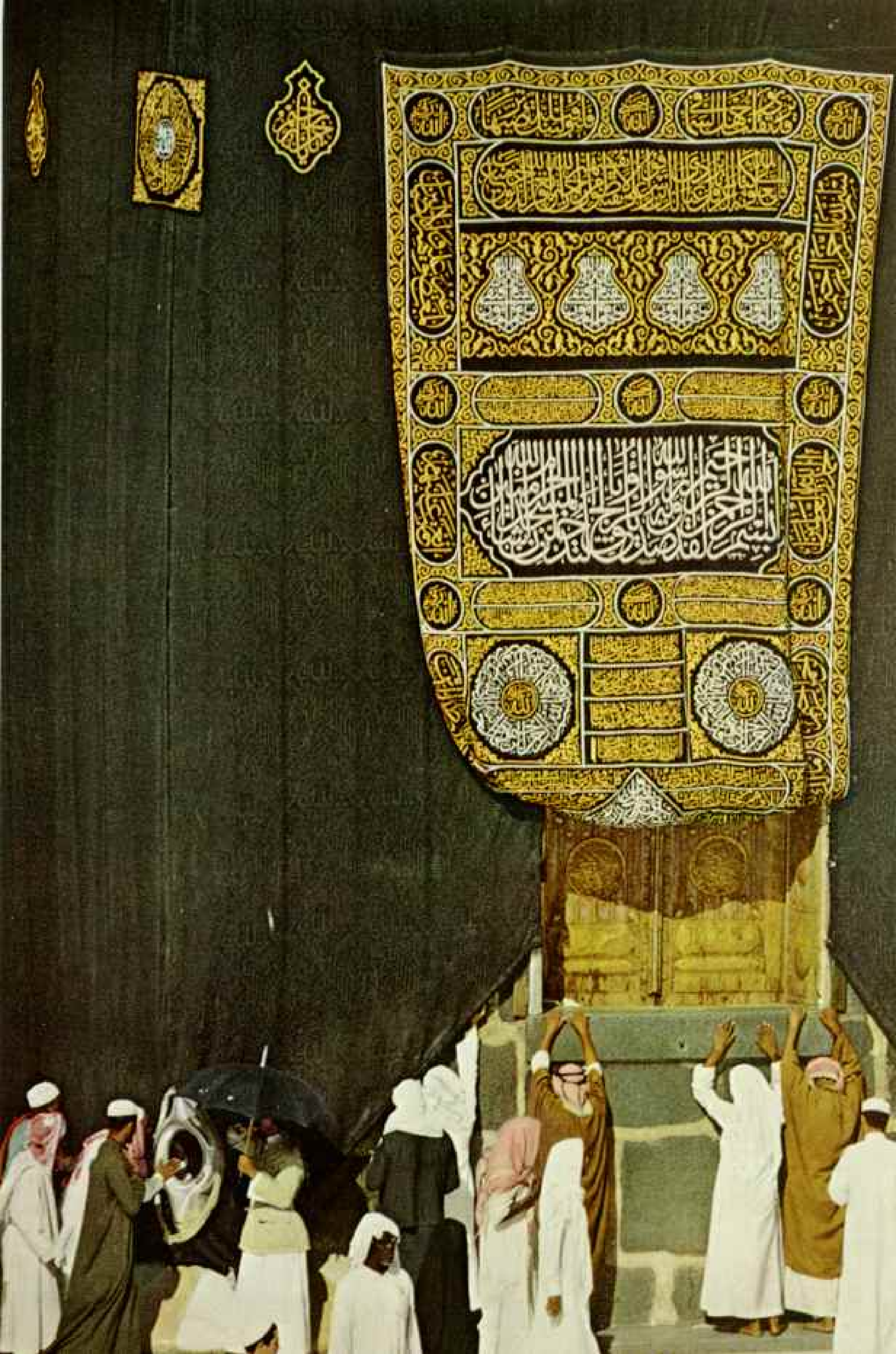
The herders led the thirsty camels to guzzle, neck to neck, at a makeshift trough of oil drums. They drank as fast as our hoses filled the trough, each quaffing half a barrel. In winter this would hold them for two weeks. Now, in these first hot winds of May, Sheik Bushir hired the tanker every four days.

That afternoon I could see a low line of black clouds in the distance. From the *harim* came the clank and giggle of the women packing. Tomorrow the small band would set out toward the late spring shower that, like magic, greens the dunes with scant grass. Despite the rattling of the machine age, Sheik Bushir would move with his clan in the ancient rhythms of a desert little changed since the time of the Prophet.





LODESTONE OF THE ISLAMIC WORLD, Mecca and its black-robed Kaaba command the hearts of half a billion Moslems. Wherever they are, the faithful turn toward the shrine five times each day in prayer.



Decorative calligraphic element in the upper left corner of the Kaaba's facade.

Decorative calligraphic element in the upper left corner of the Kaaba's facade.

Main decorative panel of the Kaaba's facade, featuring intricate gold and black calligraphic patterns, including the Basmala and other religious inscriptions.



IT TOOK MOHAMMED and his companions about ten days to reach the safety of Yathrib after their flight from Mecca. They had traveled fast and rested little, avoiding the main tracks and caravan wells. Alerted to his coming, the small band of Moslem converts living at the oasis had waited days at the southernmost fringe of palms.

"He has come! He has come!" they shouted, tears staining their cheeks. Many offered him their homes, but Mohammed said Allah would guide his camel to a chosen spot; the beast stopped and knelt near a small barn used for storing dates.

Here, with his own hands, Mohammed helped his followers build the world's first mosque. The oasis would become known to the world as Madinat al-Nabi—City of the Prophet, or simply Medina.

Around the extraordinary personality of Mohammed, the small Moslem community began to crystalize into a political force. The Prophet's revelations continued. Set down later in the Koran, they detailed how a Moslem should conduct his prayers, his business, his marriage, his wars—the whole spectrum of his life. They became the kernel of Islamic law that today governs much of the world.

Allah had commanded Mohammed to

make war against nonbelievers. The first target was the annual caravan marching south from Damascus, a thousand camels laden with goods of his enemies, the Meccan merchants. Forewarned of the Moslems' plans, the Meccans rushed reinforcements to rescue the caravan. At the wells of Badr, near the Red Sea coast, they surprised Mohammed's army of 300.

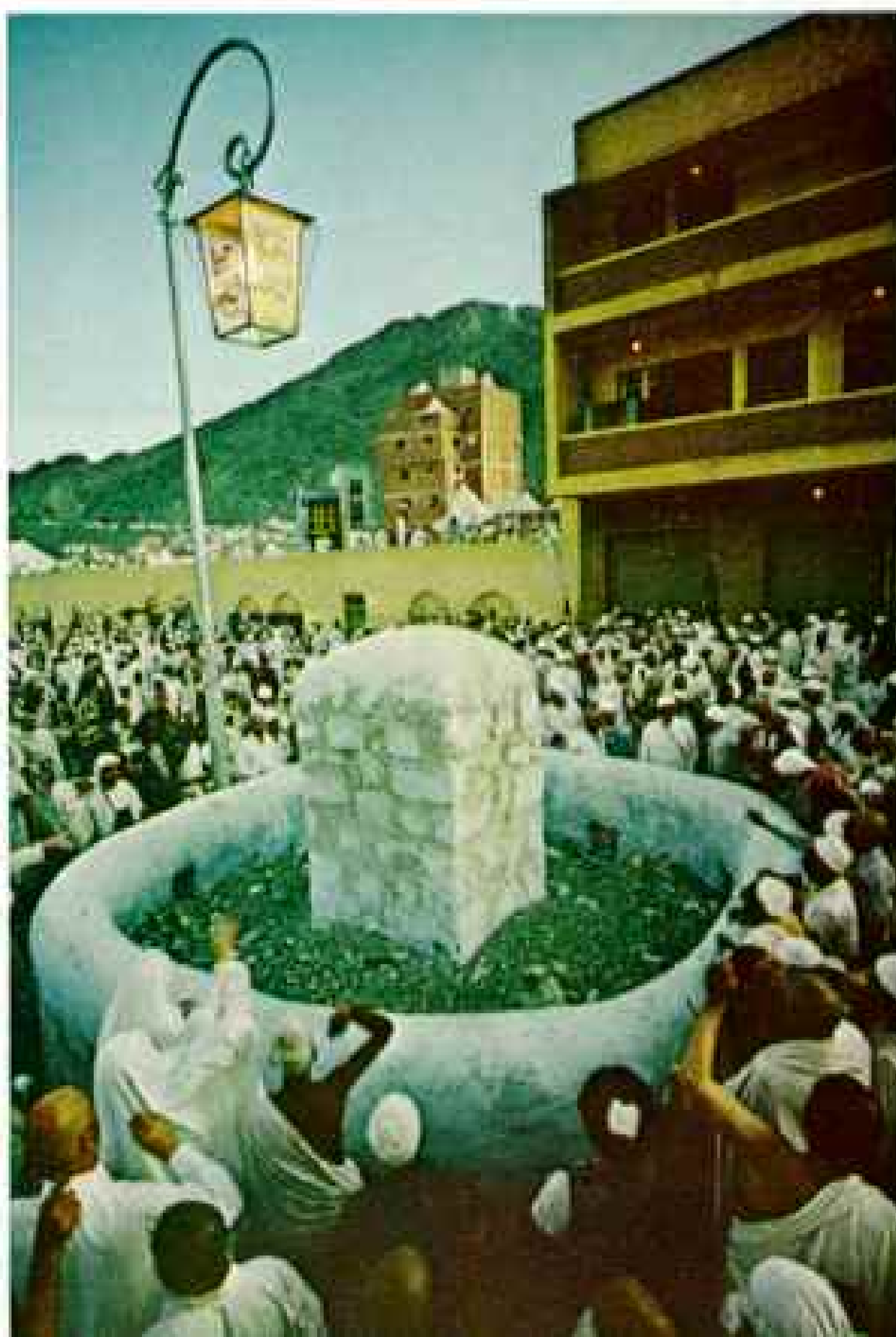
"All who die today will enter paradise!" the Prophet shouted over the slashing of swords and the whistle of arrows. Outnumbered three to one, the Moslems fought savagely and routed the Meccans. "It was not ye who slew them," Allah revealed to Mohammed. "It was God."

A year later, at Mount Uhud near Medina, the Meccans retaliated, nearly killing Mohammed himself. He was wounded in the face by a stone, then a sword glanced off his helmet and he fell, bleeding. Companions carried him to safety.

Slowly, by treaty and by skirmish, Mohammed converted the Bedouin tribes of the surrounding desert, mustering their swords and swift camels to his cause. Not until the year 630, two decades after his vision, did Mohammed the conqueror reenter his native city, now leading an army of 10,000. Mecca

Hands lifted to Allah, rapt Moslems pray at the door of the Kaaba beneath a curtain emblazoned with verses from the Koran. Others, at left, caress the silver-framed Black Stone, put in place by Islam's founder. Guided by divine revelation, Mohammed cleansed the ancient building of its pagan images, declared that the Prophet Abraham had erected it, and made it the focal point of a pilgrimage required of all the faithful. Mr. Abercrombie has twice journeyed to Mecca—a city forbidden to nonbelievers.

Stoning the devil, pilgrims proclaim the greatness of God at one of three pillars representing temptation at Mina, a pilgrimage stop near Mecca.







1986 INSTITUTE OF SCIENCE

World turned upside down reveals an incredibly detailed, if somewhat distorted, 12th-century view of Europe, Asia, and Africa. Arab scholar Al-Idrisi designed the original of this chart with south at the top. A modern version is here printed inverted, making recognizable the land shapes from Iberia to the islands of Indonesia.

Commissioned by Roger II, Norman ruler of Sicily, Al-Idrisi sent emissaries throughout the known world. The agents

traveled freely, particularly through the Arab sphere—little shrunk from its full expanse of A.D. 750 (shaded on the key at left). From their reports and from older maps, Al-Idrisi located such distant places as the Chinese city of Canton, the Volga River in Russia, and lakes at the head of the Nile.

Probably for his patron, Al-Idrisi marked the site of the Battle of Hastings, where Roger's kinsman William of Normandy defeated the English in 1066.

surrendered without a fight. The Prophet walked to the Kaaba, touched the Black Stone, and made the prescribed seven circuits. He ordered the idols smashed, then declared a general amnesty. Meccans filed past to swear allegiance to the Prophet of God. Within two years much of Arabia was united under the banner of Islam.

But the Prophet's personal mission was nearing its end. Back in Medina he fell ill of fever. Weakening with each passing day, he had to delegate Abu Bakr—later to become his successor, the first caliph—to lead the public prayers. On June 8, 632, in the arms of his favorite wife, Aisha, Mohammed whispered his last devotions, then peacefully surrendered to Allah's will.

THE CENTURIES have enlarged the sanctuary Mohammed built in Medina of palm logs and sun-dried brick. The galleries of today's Prophet's Mosque are lined with marble and graced with stately minarets and a high green dome that marks Mohammed's tomb (pages 18-19). Facing the brass grillwork of the sepulcher, I paid my respects to Islam's founder. Praying to Mohammed is strictly forbidden, but visitors pray that Allah grant the Prophet eternal peace.

Outward from the mosque fans the modern city of Medina. Television sets blare from coffeehouses; fashionable shops and air-conditioned hotels line wide avenues. But five times each day, on the call from the minaret, the hectic rumble of traffic falls silent. Shops close and streets empty as townspeople converge on the Prophet's Mosque.

"There is no better place to savor the full measure of Moslem faith than here in Medina," said my friend Daoud Abdullah, a student at Medina's Islamic University. "The footsteps of the Prophet of God still echo in these narrow streets."

I had to agree as we strolled in early evening through the labyrinth beyond the bazaar. Overhanging balconies almost met above our heads. Veiled women passed, lugging home baskets of onions and turnips, and schoolboys carried books wrapped in their prayer rugs. A donkey squeezed a bulging load of alfalfa past a young lamplighter carrying glowing lanterns. Such scenes had changed little since the Prophet's time.

"*As-salaam alaykum!*" we greeted the lamplighter. "Peace be upon you."

"*Wa alaykum as-salaam wa rahmat Allah*

wa barakatul!" he replied. "On you peace; and the mercy of Allah and His blessings."

This was the language Mohammed spoke, the incomparable Arabic preserved forever by the Holy Koran. It still serves as the lingua franca of the people I met in Medina's international community—pilgrims from Morocco and Indonesia, black Sudanese street vendors, the refugee carpenter from Soviet Turkistan, a Syrian scholar passing a quiet afternoon in the library behind the Prophet's Mosque.

"A Turkish sultan built this library 125 years ago," said the director, Sheik Mahmud Akinli. "The Ottoman Turks ruled Medina and Mecca for 400 years, until World War I."

Leaving my sandals at the door, I walked across thick carpets to browse through the priceless collection of manuscripts in tall mahogany bookcases (page 16). Sheik Mahmud showed me a tattered volume of gazelle-skin parchment. "This Koran was copied only a few years after the Prophet's death," he said, reverently turning the worn pages. "It is one of the earliest copies known."

He showed me other volumes—early Arab studies of mathematics, botany, and medicine. I lingered over one treatise titled *Observations of Distances and Maps of Climes*, based on the work of one Abu Zayd al-Balkhi in A.D. 921. Stylized four-color maps showed far-flung precincts of the Arab Empire near its peak—North Africa, the Nile, Baghdad, Damascus, the Persian Gulf, Córdoba . . .

FIGHT THOSE WHO BELIEVE NOT
IN GOD NOR THE LAST DAY

The first Arab thrusts from Medina were little more than Bedouin raids. But Moslems were forbidden to attack brother Moslems. Instead they united against the infidels to the north: Byzantium and Persia—both weakened by years of mutual warfare.

In Palestine and Syria the desert warriors of Islam's most famous general, Khalid ibn al-Walid, clashed with armies of Byzantine Emperor Heraclius. Against the better disciplined and more numerous Byzantine soldiers,

the Arabs pitted their greater mobility and unbridled zeal. In 636, at the battle of Yarmuk near the present border between Jordan and Syria, the Arab army, outnumbered two to one, faced 50,000 Byzantine troops in one of the decisive battles of history.

The Byzantine infantrymen took oaths to "stand or die" and chained themselves together, 10 on a shackle, 30 ranks deep. On the other side, the women accompanying the Moslem soldiers stood ready behind the lines with tent poles and stones to punish any cowards who turned from battle. They goaded their men:

*We are the daughters of the night . . .
If you advance we will embrace you;
If you retreat we will forsake you.*

Amid shouts of "Allah akbar!—God is most great!"—the emperor's troops fell like ripe wheat under the flashing Arab blades. His army annihilated, Heraclius retreated to his capital on the Bosphorus; the Byzantine Empire had lost the Holy Land and Syria.

The city of Damascus, then Christian, had surrendered after an earlier six-month siege. And Khalid had issued terms that served as a model for future Arab conquests:

"In the name of Allah, the Compassionate, the Merciful. This is given by Khalid ibn al-Walid to the people of Damascus . . . safety for themselves, their property, their churches, and the walls of their city . . . as long as they pay the *jizya*."

Those who converted to Islam were exempted from the *jizya*, a yearly head tax—one dinar and a measure of wheat.

Today people of both faiths live side by side in Damascus, though now the Moslems form the majority. I mixed with both as I pressed through busy Al-Hamidiya, the covered bazaar in the center of the Old City. Crowded shops overflowed with famous Damascus wares—copper, inlaid tables, silver filigree, and fine silk brocades.

Outside, I adjusted to the grim reality of present-day Damascus. Chill winter rains grayed the capital. It was Ramadan, the Moslem month of fasting, when gaiety is always constrained. Streets full of soldiers underlined the state of military alert. Despite a fragile truce, Syria remained technically at war with its neighbor Israel. Not far from the big mosque I ducked into the warmth of the coffeehouse Nafura.

Here, each evening, blades flash and heroes

bleed when Abu Ali mounts his podium (pages 20-21). Abu Ali is a *rawi*, or storyteller—among the last of his breed. For centuries *rawis* have mesmerized Arabs with heroic tales of Antar, the sixth-century Lancelot of the Bedouin. Such epics of bravery and romance, carried back by Crusaders, sparked the age of chivalry in medieval Europe.

I squeezed into a seat between two old men in long robes and headcloths. The waiter brought Turkish coffee and a tall water pipe, sterilizing the mouthpiece for me in a dish of scalding water. We hushed as Abu Ali donned his horn-rimmed glasses, pushed back his red fez, and began booming out the latest chapter:

*To prove his love for the fair damsel Abla,
Antar would fight the lion . . .*

"Oooah!" We held our breath.

*But to prevent Antar from escaping, his
feet were bound by the villain, Munzar . . .*

"May Allah sever his head!"

*The lion sprang, looming large as a camel,
but Antar met him in midair with his sword
and cleaved him in two.*

"Ya Allah! Ya Allah!" the crowd chorused: "Oh God! Oh God!"

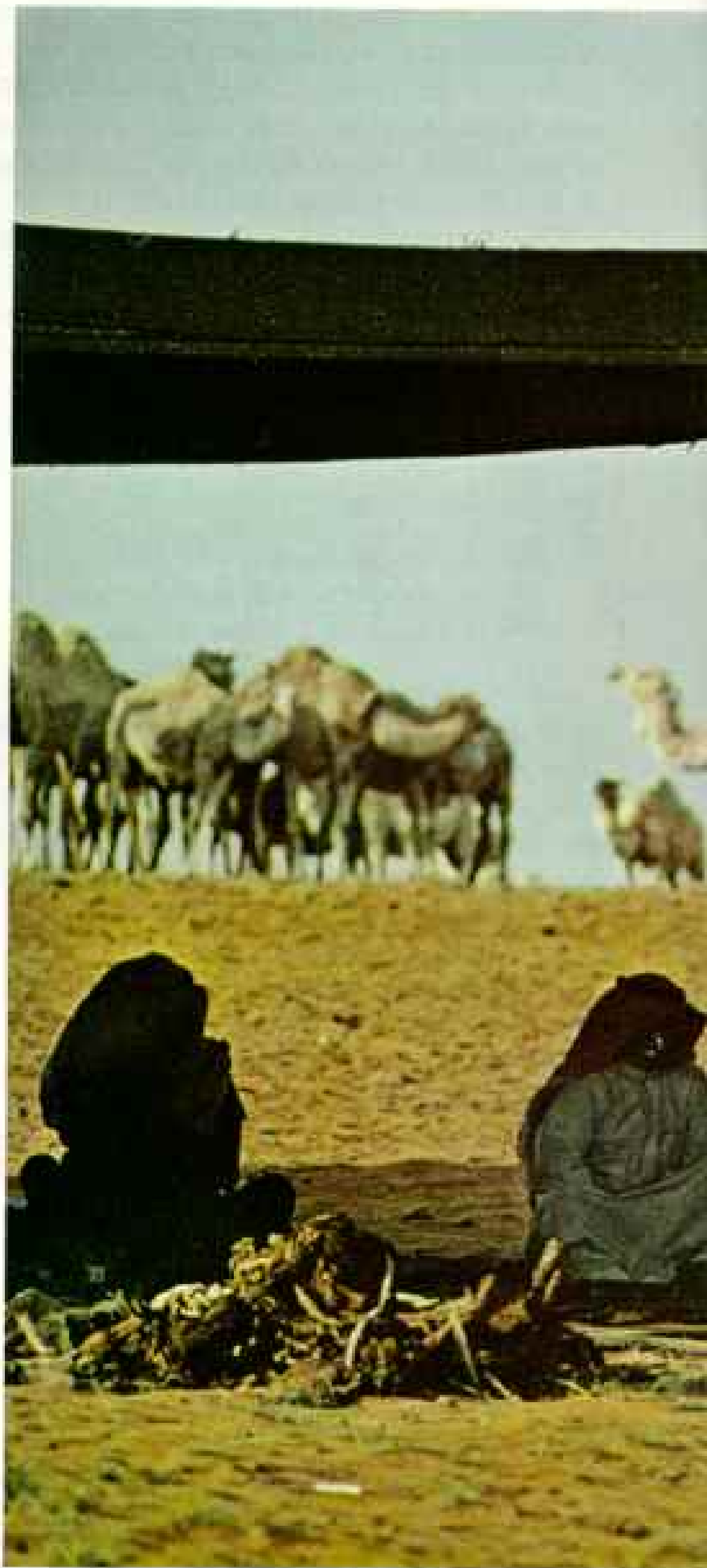
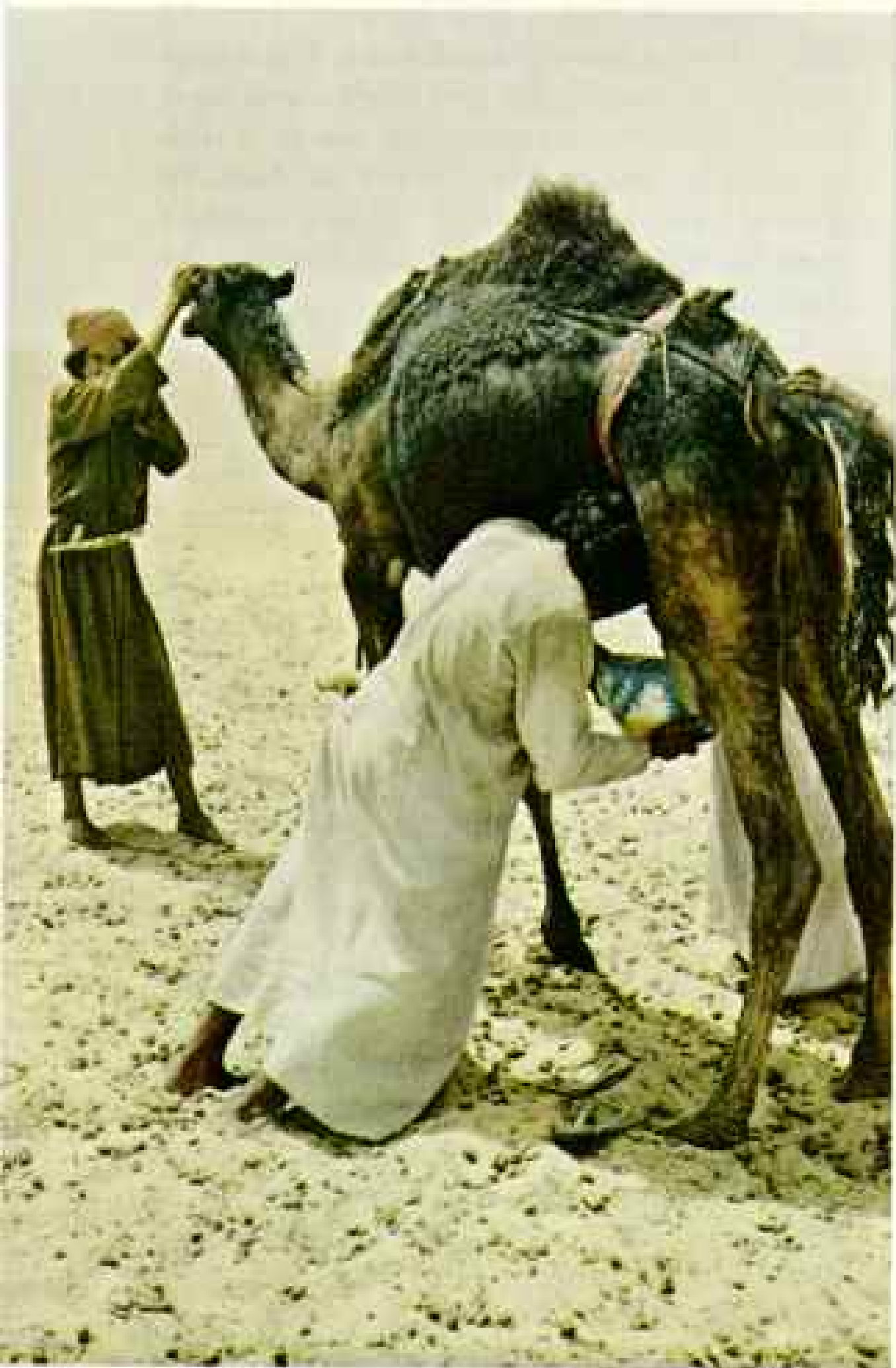
His courage won him freedom, and Antar set out once more to win his true love, this time facing single-handed an army of 40,000 . . . but that story tomorrow night.

HEROIC IN BATTLE, the Arabs could be noble in victory. Their magnanimity at Damascus was not lost on Sophronius, the Byzantine patriarch of beleaguered Jerusalem. He sued for peace.

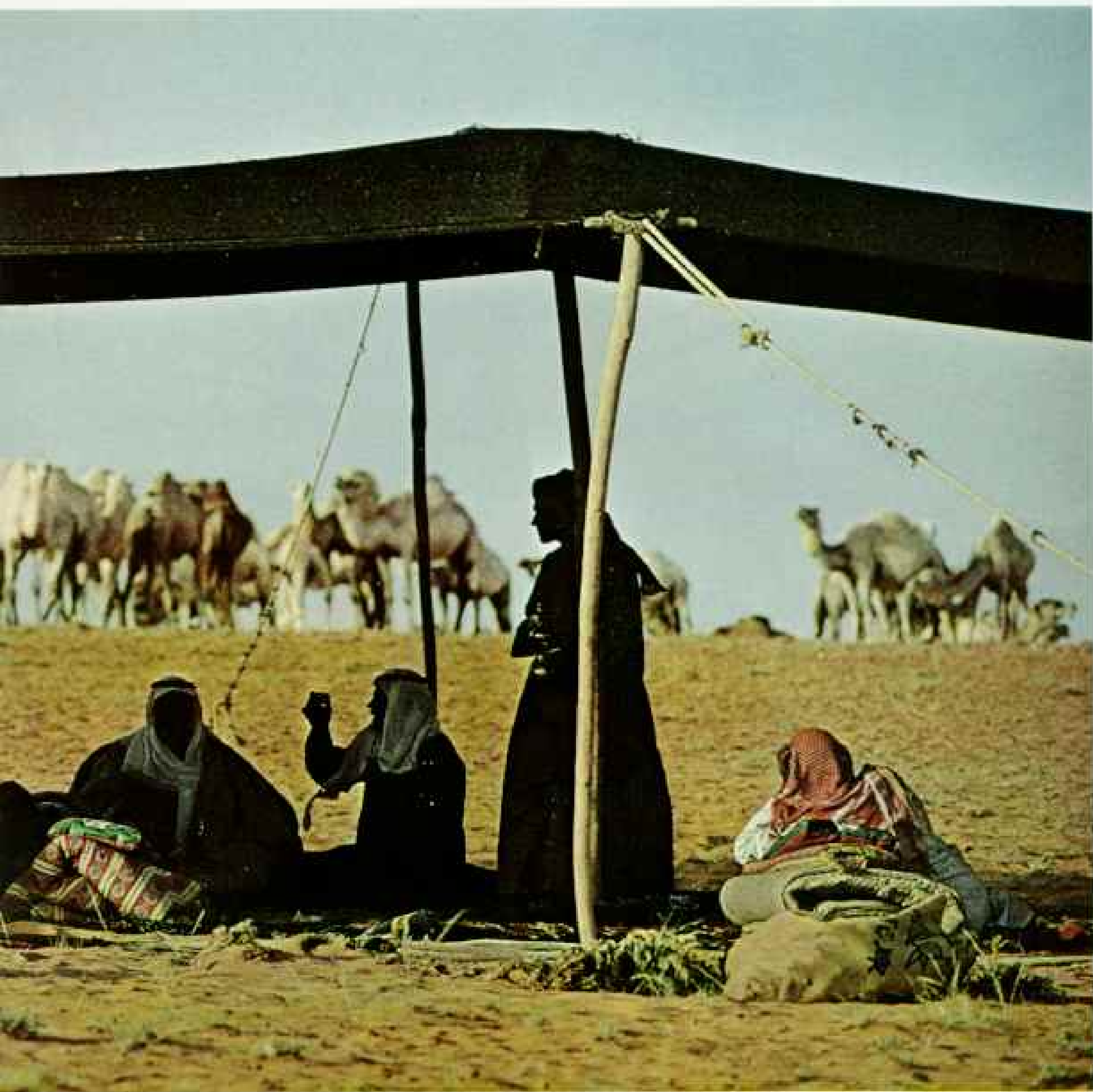
Caliph Omar, the second successor to the Prophet, came personally to accept the surrender and to promise Jerusalem security for its people and its churches. Jerusalem was a holy city for the Moslems, too; they included Jesus Christ among their many prophets. Mohammed himself first prayed toward Jerusalem, but after the Jews in Medina turned against him, he changed the direction of prayer to Mecca.

The patriarch took Caliph Omar to the Holy Sepulcher. They arrived at the time of prayer, and a soldier started to spread Omar's prayer mat on the floor of the church. But the wise caliph declined, stepping outside for his devotions. He knew that if the Prince of the Faithful prayed here, later Moslems might be moved to convert the sacred site into a

(Continued on page 18)



Islam's raw material, the far-riding Bedouin of Arabia were among the first to rally to Mohammed's cause, eagerly obeying Allah's command to attack and subjugate all nonbelievers. Fired by the promise of heavenly reward should they die in God's service, the veteran raiders toppled tribes and cities like dominoes; the conquered could either convert to Islam or pay annual taxes to support its cause. The



Arabs' reputation as savage fighters but reasonable masters prompted many a city to succumb without bloodshed. After Islam gained sway over all Arabia, the eager warrior-missionaries swarmed into Syria, Egypt, and beyond, winning fabulous wealth, gaining new customs, and absorbing the cultural heritage of Persia and Greece.

But not even past glory alters daily life in the world of sun and sand. In

Saudi Arabia's Empty Quarter, nomads still lean on she-camels for sustenance (upper left). A hot coffee pot (left) signals welcome at the tent of a sheik (above) in the Nafud desert. To the Bedouin, hospitality even to an enemy is a sacred duty.





Center of learning for the devout, a library in Medina, Saudi Arabia (left), caters to those who would study the Koran and the commentary that grew out of it. The library cherishes one of the oldest copies of Islam's holy book, written on gazelle-skin parchment in the generation after Mohammed's death.

The author acquired a later, elaborately illuminated, hand-lettered Koran (right) in Kabul, Afghanistan. Many Moslems consider the book too sacred to buy or sell, so he haggled over a price based on its binding, finally paying \$80.

A wooden tablet inscribed with verses from the Koran fascinates a youngster in the African nation of Niger (right); his father studies in the courtyard school of a mosque. Whatever their mother tongue, most Moslems learn their scripture in Arabic and commit it to memory. In each passage, they believe, God speaks.



mosque. Today a small mosque does mark the spot where Omar prayed. Daily the minaret moves its shadow across the holiest shrine in Christendom.

I remember vividly my last visit to Jerusalem, a city still divided on the eve of the 1967 six-day war. From the terrace of my hotel in Jordan I could look over into the Israeli sector, a scant mile away. With Said, a Palestinian friend, I watched the fireworks of Israel's Independence Day bursting high above a military parade.

I pondered the bitter dispute between Arabs and Israel, and put it to my friend: Couldn't the Arabs at least allow the Jews to visit the Wailing Wall? After all, to them it is one of the most sacred spots on earth.

"Tell me this," Said cut in sharply, "what place on earth is more sacred than a man's own home? Mine was in Jaffa."

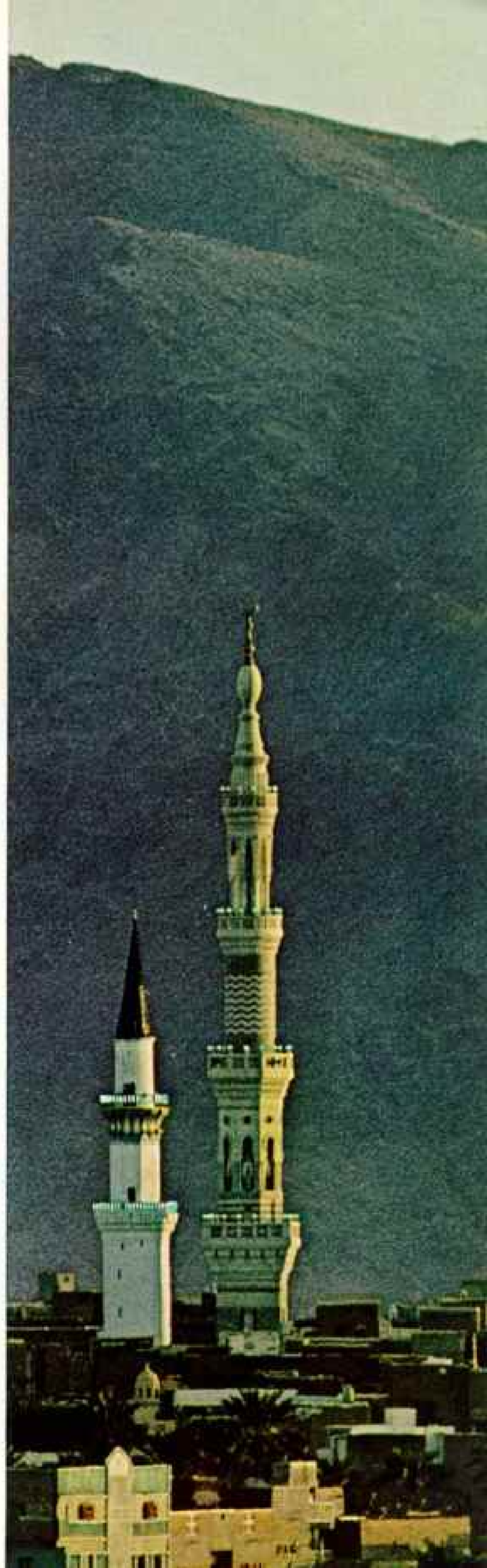
A few days after I left the Holy Land, the Israelis invaded Jordan and quickly took all Jerusalem. After twenty years Jews were once more free to visit their holy sites. But now it was Moslems who were restricted in visiting this troubled city, holy to half of humanity—Christians, Moslems, and Jews alike.

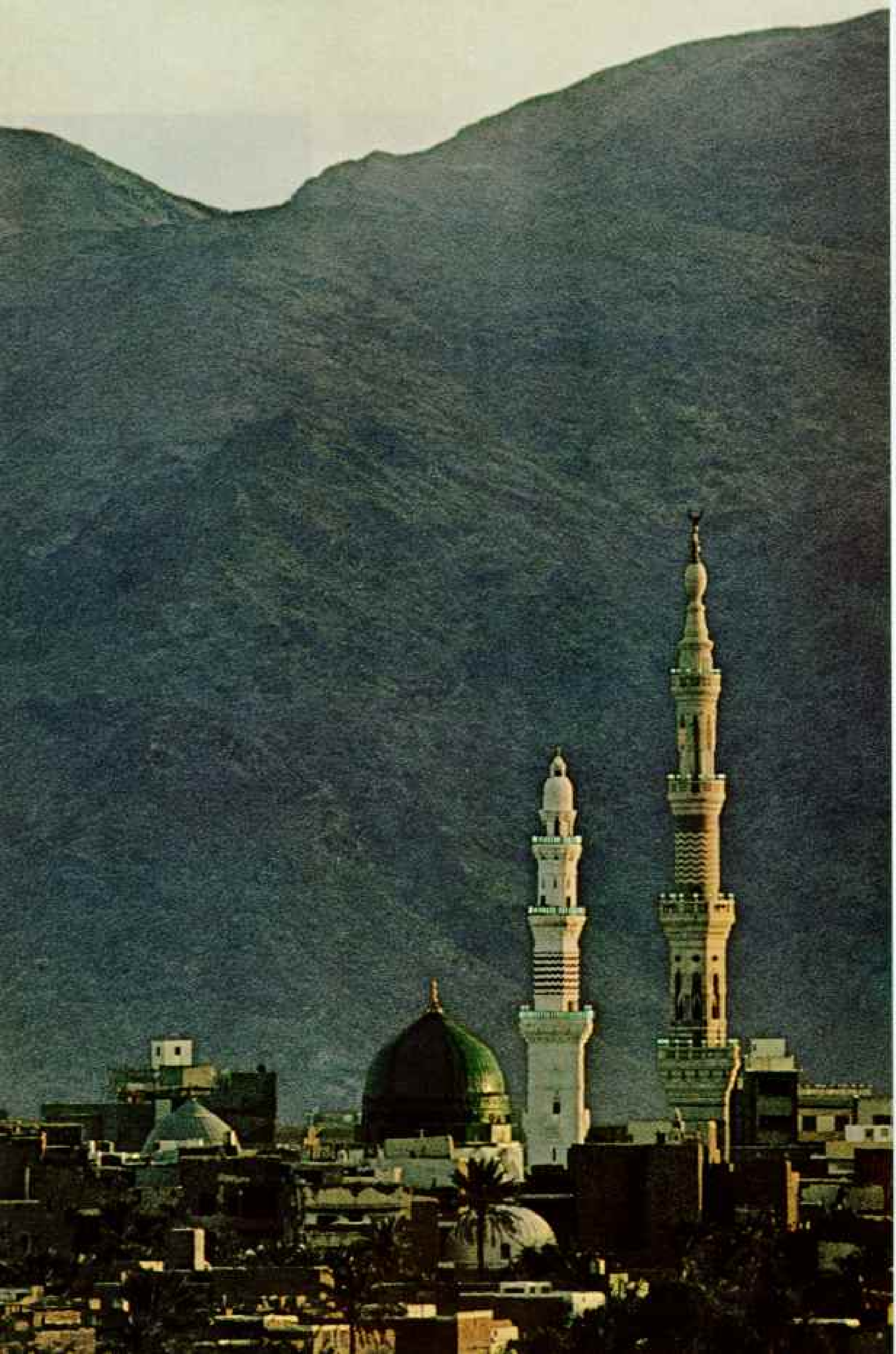
DURING THE RULE of Caliph Omar, the Arab conquest gained its greatest momentum. In ten years most of the Middle East fell to his armies, fanning out simultaneously into Persia and North Africa.

Along the Nile a fortress called Babylon—where Cairo stands today—surrendered in 641 after a bloody seven-month siege. Within 18 months its conqueror, Amr ibn al-As, had taken Alexandria, Byzantium's main naval base, a metropolis second only to Constantinople itself. His spoils included "4,000 villas with 4,000 baths, and 40,000 taxpaying Jews and 400 places of entertainment for the royalty."

More than three centuries passed before the Fatimids, a later Arab dynasty, founded Cairo—now Africa's largest city and a focus of

Springboard to empire, Medina now crowds around the Mosque of the Prophet, where minarets rise above the green dome that marks Mohammed's tomb. Fleeing persecution in Mecca, Mohammed founded the first Islamic community at this date-palm oasis in A.D. 622. Like Mecca, Medina is closed to nonbelievers.







Rousing age of Bedouin chivalry comes alive for a brief hour, as storyteller Abu Ali recounts the romance of Antar to an enthralled coffeehouse audience in Damascus. Son of a desert sheik and an African slave, Antar (upper left) bought his freedom with bravery. Heartless to enemies, he protected the underdog; an honored poet,



he championed his tribe in verse. But the warrior bowed to the power of love, admitting that "the eyelashes of the songstress from the corner of the veil are more cutting than the edges of the cleaving scimitars."

Antar's exploits inspired folktales recited from Fez to Baghdad; one compilation, published in Cairo, fills 32

volumes. The ideals that Antar championed helped inspire the flowering of chivalry in medieval Europe.

On his faithful black horse, Antar sped to desert battles. Today, these men of Sana, capital of Yemen (left), fight traffic on motorcycle taxis. Proverb on the fender avows that "every oppressor has an end."

Arab thought. Today its books and newspapers, its universities, music, movies—and politics—leave their stamp on the entire Middle East. As a friend in distant Morocco once remarked, "When a storm brews in Cairo, every Arab feels the breeze."

These days, with the Israeli Army dug in just across the Suez Canal, Cairo chafes under austerity programs; sandbags bank downtown buildings, windows are taped and painted, the neon signs are dark. But the Cairene endures behind a carefree smile.*

It rarely waxes broader than during the annual festival of Sham el Nessim, literally "sniffing the breeze." The day after the Coptic Christian Easter, the Sham el Nessim is the signal for Cairenes to pour out into the city's parks to greet the coming of spring.

Walking along the corniche, I passed vendors hawking sherbet, tinfoil hats, flags, pottery, and *termus*—boiled beans—sold in long paper cones. I stopped to buy a cool glass of lemonade from a jaunty young man dressed in a long galabia and white turban and carrying on his back a gurgling apparatus of chrome and glass and plastic tubing. A transistor radio, mounted on a frame above his head, served up Arab popular music as I drank my fill for a piaster (about two pennies) a glass. Lateen-rigged feluccas packed with noisy sightseers tacked back and forth across the broad Nile.

I joined a friend, Abdel Hamid Yahya, his wife, Elzaker, and two small daughters at their home in Cairo's El Duqqi quarter. Elzaker served us Nile fish, dried and salted, and spring onions.

"This food is special to the Sham el Nessim," Abdel Hamid said. "Both date from the pharaohs' time. Cairo is an Arab city and has been for more than a millennium, but we haven't forgotten our first 5,000 years."

THE SAME dash and fervor that stripped Byzantium of its fairest provinces doomed the Persian Empire. In Iraq, Saad ibn Abi Waqqas withered the forces of Yazdegird III like a searing desert wind and took the fertile island between the Tigris and Euphrates. The King of Kings fled northward to Merv, in what is today the Soviet Union, and Persia ceased to be.

The wealth and luxury of Persia dazzled

* "Cairo, Troubled Capital of the Arab World," was described by William S. Ellis, in the May 1972 NATIONAL GEOGRAPHIC.

its rustic conquerors. Many of the Arabs innocently exchanged "yellow" money for "white"; silver they had always used, but gold was new. One of Saad's soldiers was said to have captured a nobleman's daughter, then sold her back for 1,000 dirhams. When told he could easily have demanded many times the ransom, he replied he had never heard of a number more than ten hundred.

طَلِبِ الْعِلْمِ وَوَيْرِ الصَّيْرِ
SEEK KNOWLEDGE, EVEN IN CHORE

If the Arabs had worlds to learn from the 1,500-year-old civilization of Persia, so, too, had they much to teach. Under stable Arab power and inspired by Islam, Persian art and science continued to thrive, and over the centuries the cultures fused. By the tenth century a new Persian language, alloyed with a wealth of Arabic words and penned in the Arabic script, had emerged with a literature of its own. The Persian provinces bred some of Islam's greatest poets and scholars, men such as Hafiz, Saadi, and Omar Khayyam.

"Khayyam is famous in the West for his Rubaiyat, or quatrains, but he was foremost a mathematician and astronomer," said Dr. Seyyed Hossain Nasr at his office on the modern campus of Tehran University. Dr. Nasr wrote his doctorate at Harvard on the history of Islamic science.

"It is no coincidence that Persia's traditional scholars were what you in the West call 'Renaissance men,'" Dr. Nasr continued. "As you know, the torch of Islamic learning, especially in Spain and Sicily, lit the lamps of Europe's medieval scholars."

The opening of the 17th century in Persia saw a golden age of Islamic art and architecture—especially in Isfahan. The serene blue domes and minarets of the city, immaculately preserved by the Iranian Government, still rival the sky, a tribute to the prolific builder, Shah Abbas the Great. The words of Saeb, his court poet, might easily apply to Isfahan today: "Each of its bricks is as valuable as a treasure, its jasmine gardens dawning in the heart of night."

It is still a delight to stroll down the avenue of Chahar Bagh, literally the "four gardens."

Here, and in the nearby covered bazaars, hundreds of shopkeepers display Persia's finest—ceramic tiles, carpets, miniature paintings, jewelry, block-printed textiles, and brassware. In one dusty antique shop I browsed through stacks of illuminated manuscripts, then bargained for a 12th-century brass astrolabe, a Greek astronomical device perfected by the Arabs.

Just off Hafiz Street I visited Ben Rafi Mayeri, a craftsman renowned for his engraved copperware—and a mainstay in Isfahan's dwindling Jewish community. Tapping hammers echoed in the busy courtyard; I watched one metalworker embellishing a hefty copper tray with peacocks and gazelles in a jungle of arabesques. He was, he explained, about halfway through his two months' work on the piece. Around him others finished lamps, flagons, and goblets.

"From the time of Arab conquest, Jews have lived in relative peace with their overlords," Ben Rafi told me. "Theoretically we have had only to pay a special tax, but in fact we have been made to feel in many ways like second-class citizens. Often we have been restricted to certain quarters of a city, or limited to certain trades or kinds of dress. Here in Isfahan, for instance, we are still not allowed in the public baths.

"Since Israel was born in 1948, most Jews have left Moslem countries," he went on, offering me tea and *gaz*, a Persian sweet. "Iran is sympathetic to us; the shah has personally guaranteed our safety. Still, Jews from this country, too, continue to emigrate."

While the early Arab conquerors came to terms with the Christians and Jews—even with the followers of the Persian prophet Zoroaster—the first crack soon appeared in their own faith. It rends Islam to this day.

The rift began in 656 after the murder of the third caliph, Othman. Ali, son-in-law of the Prophet, succeeded him. Duly elected in Medina, Ali soon moved his capital to Kufa, in Iraq, in order to rally his eastern forces against Muawiya, the powerful governor of Syria, who was challenging the succession. Moslems turned their swords against Moslems in a conflict that shattered the empire. In 661 Ali died under an assassin's blade, and Muawiya emerged as caliph.

As descendants of the Prophet, Ali's heirs still command the allegiance of the Shias, some 10 percent of the Moslem world. Muawiya's dynasty ruled from Damascus for

nearly a century, and the Sunnis, his adherents, today are the overwhelming majority of Moslems.

ACCORDING TO ONE TALE, it was an act of piracy that prompted the Arabs' first move into India. Pilgrims traveling to Mecca from Ceylon were dragged off their ship while in the harbor of Daybul, in the delta of the Indus. They were imprisoned there by the local raja.

Outraged, the Arab viceroy in Iraq sent an army under Mohammed ibn Qasim. This remarkable general led his men on a 1,500-mile march across the deserts of Baluchistan and Sind. The Arab force stormed Daybul and killed the raja, then marched up the Indus Valley. General Ibn Qasim was 17.

Though the Arabs had thus sown Islam in India, it was left to later dynasties to reap the harvest. Sweeping out of Afghanistan three centuries later, the Ghaznavids—named for their ancient Afghan city, Ghazna—built a lasting Moslem presence on the subcontinent.

In Lahore, religious and cultural capital of Pakistan, Moslem shrines have replaced the ancient temples, but many of the Hindu rites survive. Late one hot, humid afternoon, I mingled with the thousands of supplicants who gather every Thursday near Bhati Gate to visit the domed tomb of Hazrat Data Ganj Baksh Sahib, a revered mystic.

Near the entrance musicians played drums; harmoniums and finger cymbals accompanied the *qawwals*, or chanters, who intoned melodic prayers to the saint. A young dervish had been thrashing since noon to the monotonous rhythm and was lost in a trance.

"I usually stop at the tomb each morning on my way to work" said Ali Azmat, a Lahore accountant. Ali had introduced himself in fluent English and kindly offered to escort me through the chaos. "It is known that one's prayers are stronger today, the eve of our Friday Sabbath."

We followed the scent of roses and jasmine to the line of stalls selling offerings for the tomb—bright garlands of marigolds and batches of sugar candies. At the bier we recited together a *Fatiha*, the opening chapter of the Koran, and left our flowers.

These "pagan" rites that color Islam in Pakistan would appall the Moslems of, say, Saudi Arabia, where gathering at tombs—except that of the Prophet himself—is strictly forbidden. Even King Abdul Aziz al-Saud,



Stars that guided Arabs across a sea of sand also led them over the waves to trade pearls from the Persian Gulf for the ostrich plumes of Ethiopia, the condiments of India for the silks of China. For 800 years Arab ships ruled the Indian Ocean, and they have changed little in design today. Shipwrights at Dubayy on the Persian Gulf (left) still align keel and ribs of a dhow with the ancient plumb line (lower right). Here they bore nail holes with a bow drill; their ancestors tied plank to plank with coconut fiber.

Arabs of old measured the latitudes of ports and headlands with the astrolabe (below), a Greek invention they perfected. Moslem scientists surpassed the ancients in astronomy, building great observatories at Baghdad and Samarkand.



BIBLIOTHÈQUE NATIONALE, PARIS



They knew of the moon's relation to the tides, calculated the earth's circumference, and systematically studied the heavens. Samarkand's artists imparted their own style to the signs of the zodiac, such as Sagittarius and Leo (above right).



the founder of the country that bears his name, lies in an unmarked grave.

Near the Kashmiri Bazaar I hailed a tri-cycle taxi that Pakistanis call a ricksha, a motor scooter with enclosed back seat for two. The roller coaster has yet to be built that can equal the bald terror of a ricksha ride through rush-hour traffic in Lahore.

Throwing handlebars hard over and squeezing the throttle, my driver plunged into the melee of horse-drawn wagons, bicycles, barking dogs, and trucks. Oxcarts jostled double-deck buses. I heaved a sigh of relief when the traffic—and my driver—slowed to a crawl. Ahead, a small naked boy hurled dung at his water buffaloes, blithely driving them through an intersection.

AS ISLAM was raising its first banners along the Indus, a thousand miles across the Hindu Kush to the north the caliph's governor of Persia, Qutayba ibn Muslim, crossed the Oxus River and the deserts of Turkistan. His fierce cavalymen quickly captured the oases of Bukhara, Samarkand, and Tashkent before marching on, some accounts say, into China itself.

Samarkand had long prospered as a trading center on the silk route from China. In Samarkand the Arabs captured Chinese artisans and from them learned the art of papermaking. From Samarkand and Baghdad papermaking traveled, via Arab Spain and Sicily, into Christian Europe.

Aboard an Aeroflot propjet from Kabul, I crossed the winding Oxus, now called the Amu Darya. The silver serpentine below divided vastly different worlds: one of kings, the other of commissars. Abruptly the crazy-quilt plots of green—tiny Afghan farms—changed to great orderly rectangles of Soviet kolkhozy, or collective farms.

We landed at Tashkent, capital of the Uzbek S.S.R. and the largest city in Soviet Central Asia. The low pulse rate of traffic along its tree-lined boulevards belied the city's role as an industrial metropolis of a million and a half people. Its factories and mills turn out everything from textiles, steel, and fertilizers to tractors, telephones, and movie projectors. As a center of learning, Tashkent claims 16 colleges and universities and 73 research institutes.

At Lenin University I met Professor Akram Khadja, of the Faculty of Oriental Literature.

(Continued on page 32)

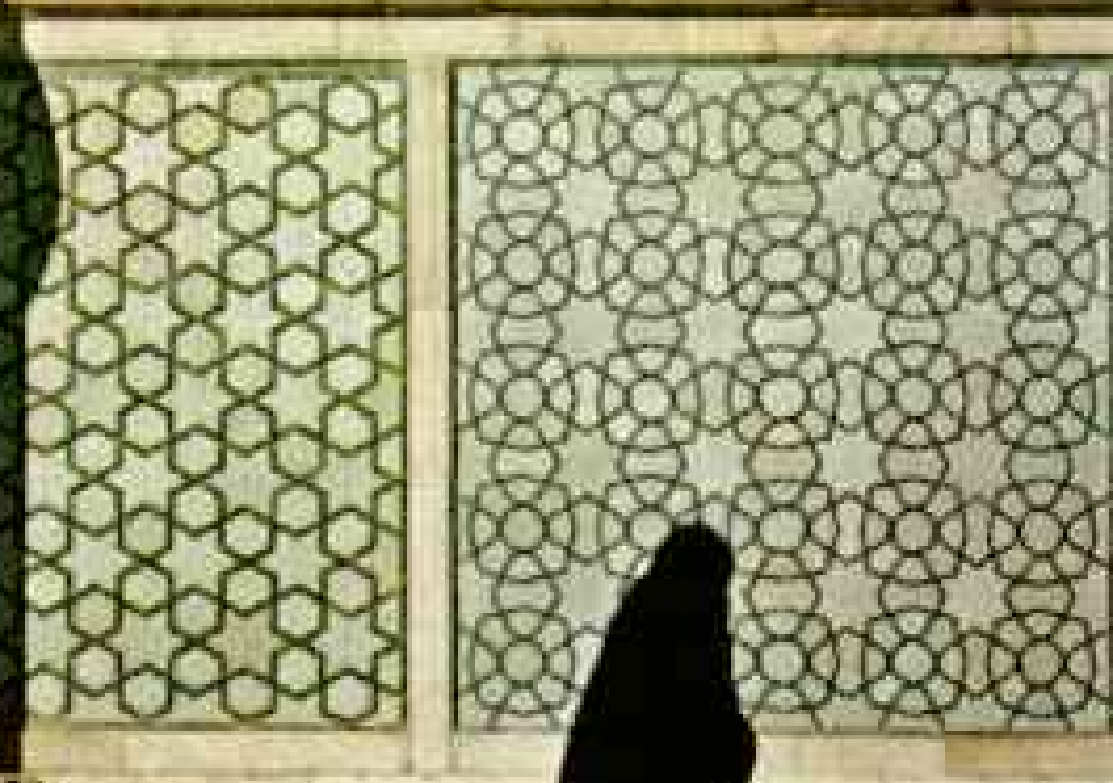
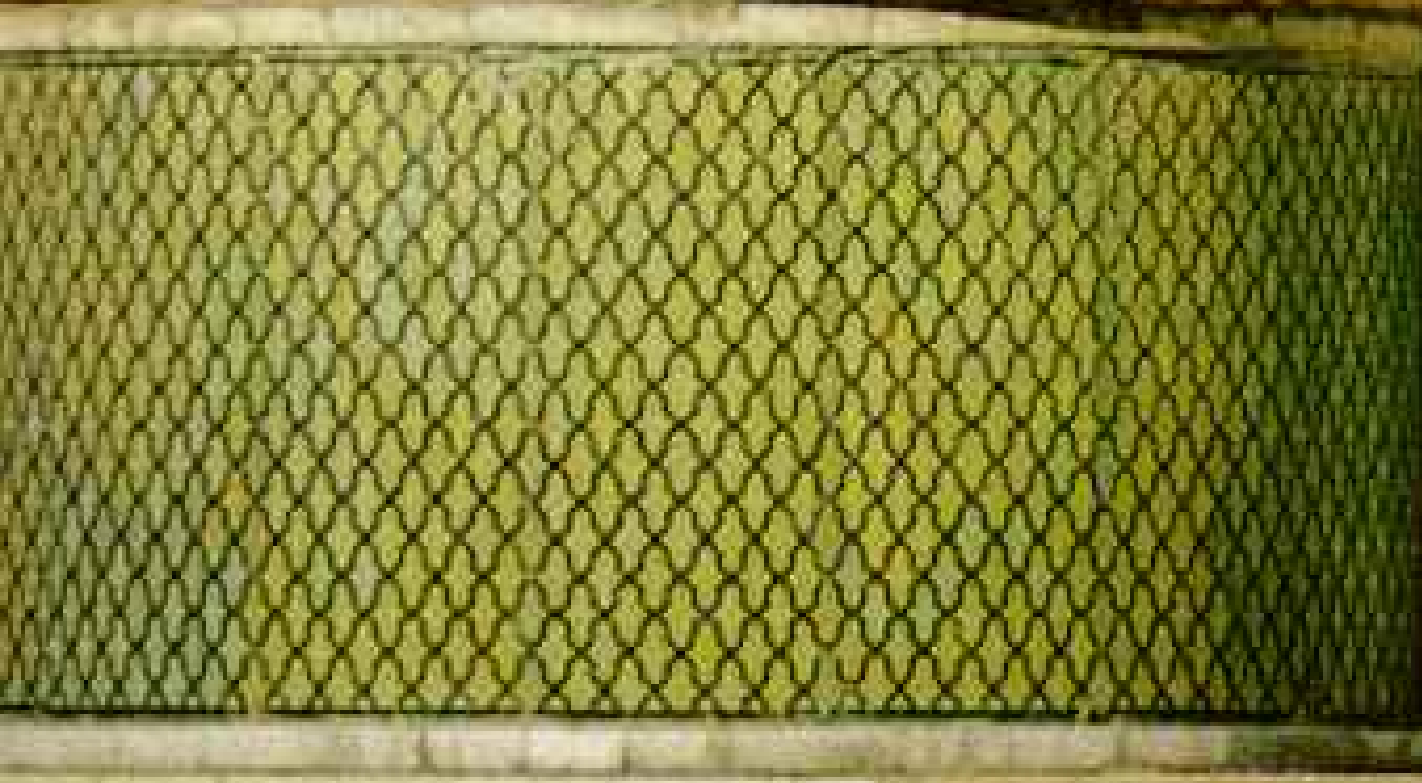
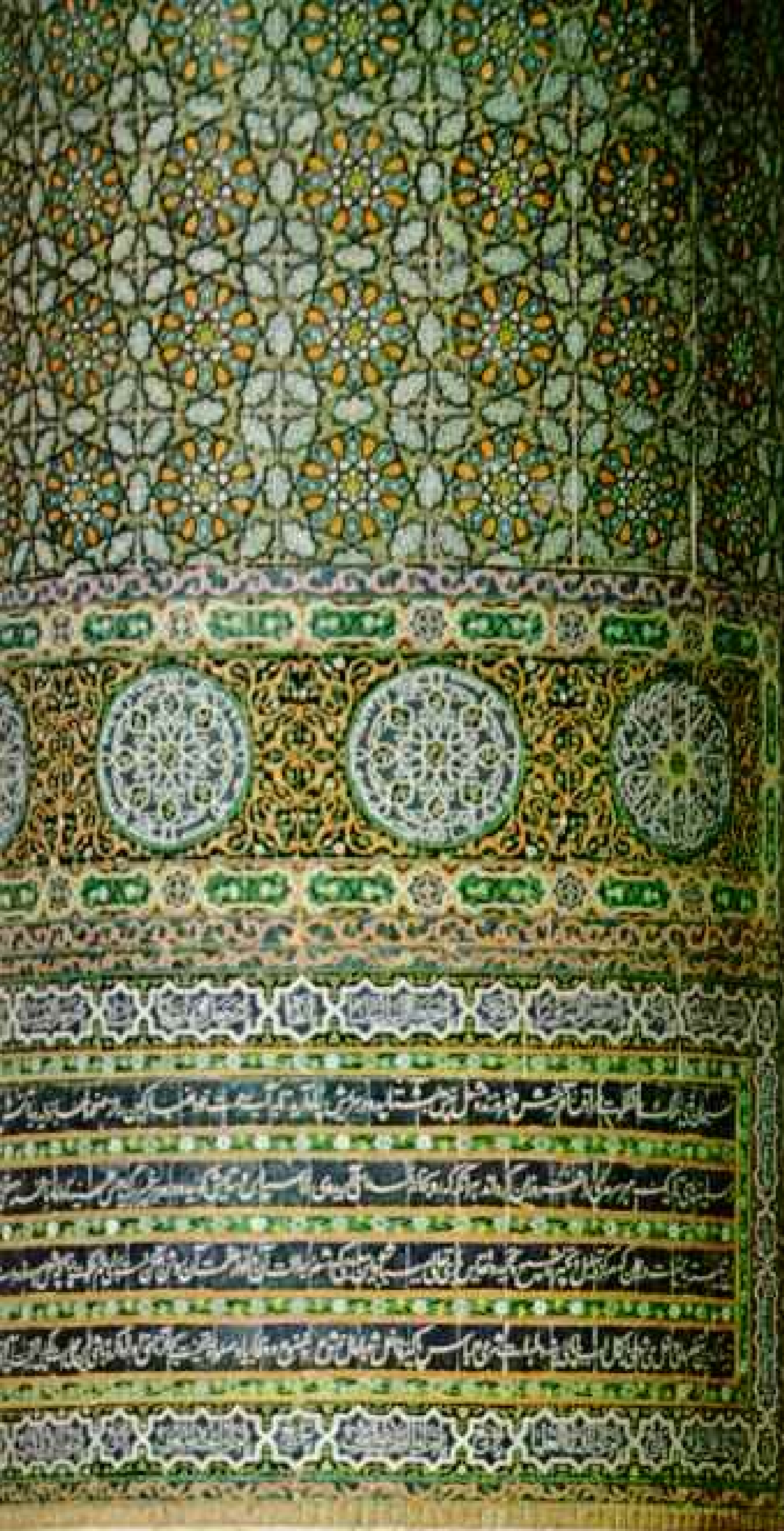
Portraits of infinity, abstract patterns that can be multiplied forever pervade Islamic art. Fearful of idolatry, early Moslems rejected the painting of figures and instead applied the principles of geometry to myriad surfaces.

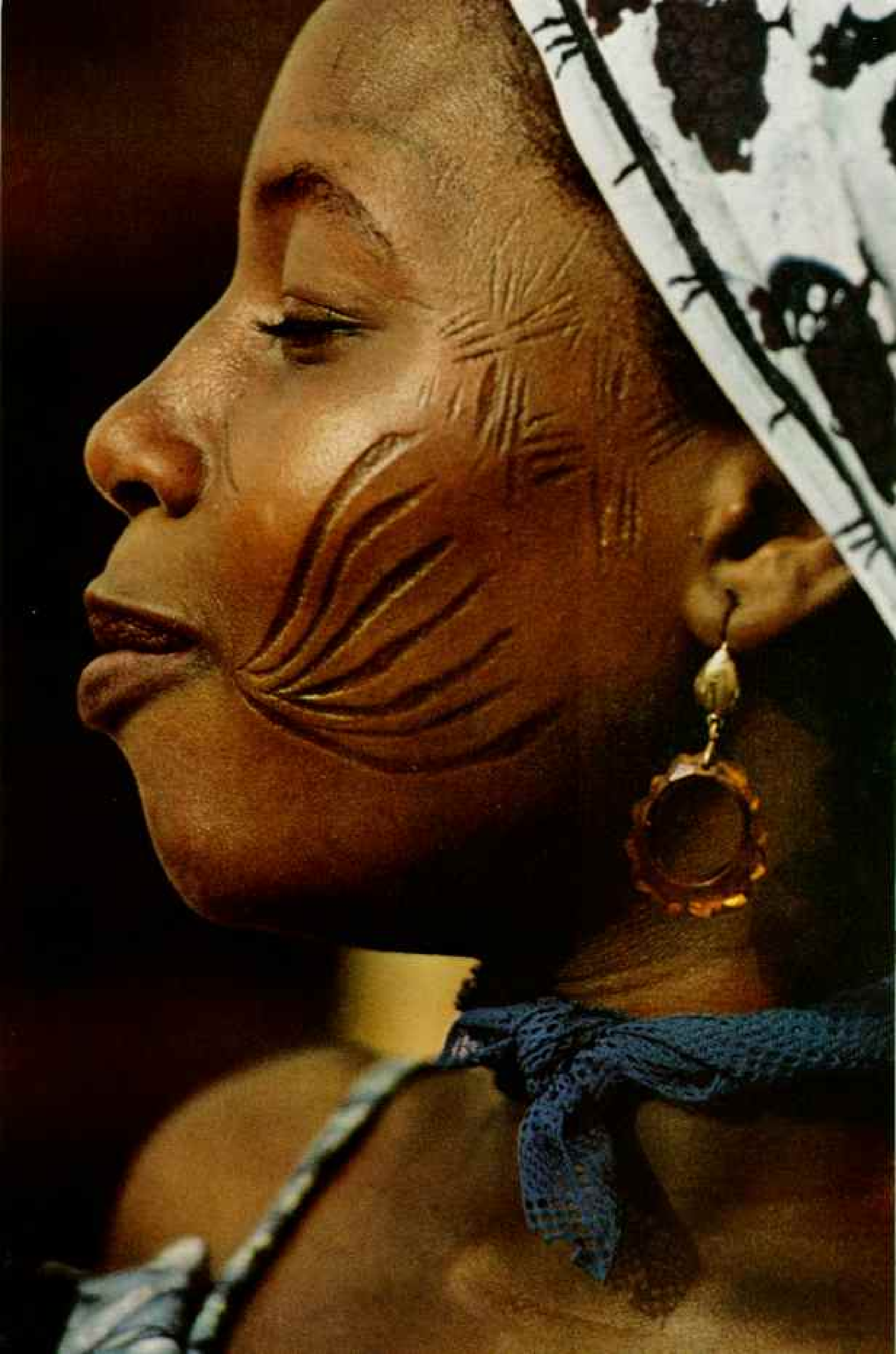
Designs in glazed tile (right) transform the Friday Mosque in Herat, Afghanistan, into a shimmering paradise. Calligraphy on its columns records



poetry and prose of Persian masters; a message from the Koran glistens at upper right.

Arabesques without end decorate tin-plated copper trays and a huge candle holder (above) in Isfahan, Iran, a center for Persian arts.







NATIONAL GEOGRAPHIC PHOTOGRAPHER WINTYLD PARKS



JOHN LEHRMANN, BLACK STAR



The sisterhood of Islam

SPECTACULAR BEAUTY MARKS, flaring scars (left) proclaim a woman's membership in the Gobir tribe, a Moslem Hausa people in Niger. Islam increasingly wins converts on the African Continent.

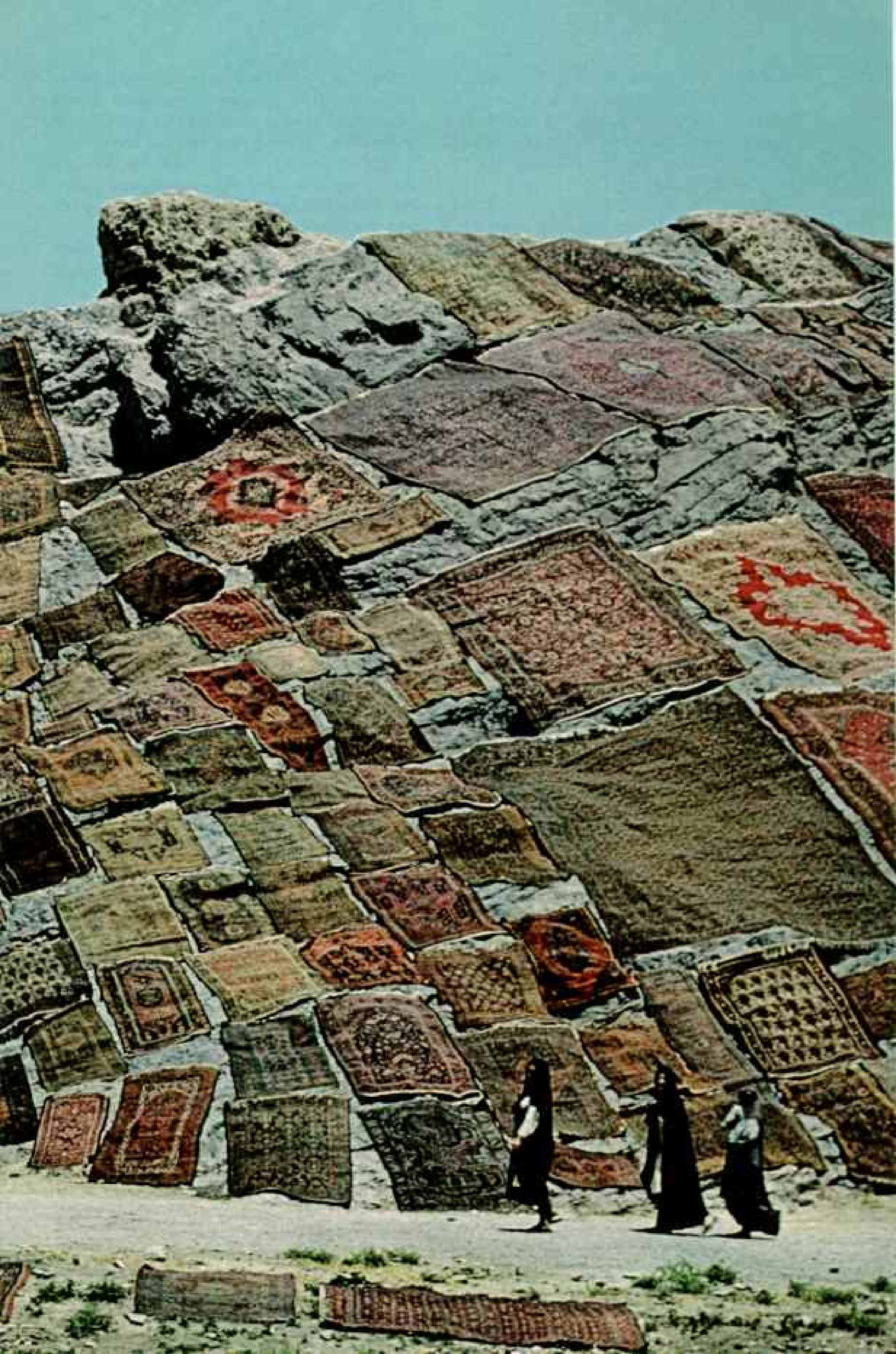
A stiff cloth mask, fashionable along the Persian Gulf, guards the privacy of an Arab woman (right) hawking vegetables in Dubayy. Islam preaches feminine modesty and obedience to God; the wealthy often added veiling and seclusion, customs that became status symbols but now are waning. Moslem law has always granted women rights to property, inheritance, and divorce.

Egyptian co-ed (above) listens to a university lecture in Cairo, where unveiled women participate fully in public life. Moslem bride Atiqa Habib (upper right) of Lahore, Pakistan, marries a university classmate, the Crown Prince of Hunza, a princely state in northern Pakistan.

*"RICH CARPETS OF BEAUTY"
await the faithful in paradise,
promises the Koran. Like a
foretaste of that reward, just-
washed Persian rugs dry
near Tehran, Iran. The vibrant
colors and complex designs
add luxury to farmers' homes
and nomads' tents. With the
smaller rugs, Moslems claim a
private place for prayer.*

30





He wore a dark business suit and the embroidered black skullcap that marks a Moslem in Tashkent. Professor Khadja, I found, had somehow straddled the difficult gap between atheistic Communism and belief in Allah as the supreme being.

"Here we have built a new order," he told me with pride. "In the fifty-odd years since the Revolution, Uzbekistan has grown from a backward, exploited province of landless peasants to an industrial republic within the greater Soviet nation.

"Uzbekistan produces more cotton than any country in the world except the U. S. A. Now our people are counting benefits beyond those of our capitalist neighbors. Take medical care. Here in Uzbekistan we have now some 11,000 doctors—that's more than in the entire country of Iran!"

Only 160 miles southwest, across the desert from Tashkent, historic Samarkand is still bejeweled with monuments of its Islamic past. Most date from the time of Tamerlane, a Mongol conqueror who ruled the Moslem East from here more than six centuries after the first Arab conquests. Tamerlane's grandson, the learned Ulugh Beg, built an observatory on a hill outside the city. Half of a huge stone sextant has been preserved by diligent Soviet archeologists. A museum documents the work of scores of Islamic mathematicians and astronomers.

Tamerlane and Ulugh Beg sleep beneath the azure dome of Gur-i-Emir in Samarkand. Nearby, the enormous mosque dedicated to Tamerlane's favorite wife, Bibi Khanum, stands in ruins. From the peeling tiles on one minaret I deciphered a fragment of Arabic



Clattering out of the past, a Turkoman farmer leaves the bazaar in Khiva, Soviet Central Asia. Ancestors of such Turco-Mongol peoples felt the power and accepted the promise of Islam during the Arabs' first century of conquests. They paid tribute to the new Arab capital—Baghdad—in caravan after caravan loaded with rubies, lapis lazuli, fabrics, and slaves.

script. The ruins seemed to proclaim with their last breath, "...ask Allah His forgiveness before you die."

I FLEW ON to Bukhara. There the 150-foot Kalyan Minaret, which once served as a lighthouse for the sultan's caravans, still towers above the last *madrasa*, or Moslem college, in the Soviet Union.

"Each year," my Intourist guide, Shaher, told me, "it graduates about thirty students. They learn religion, Islamic law, and the Arabic language, and then return to their provinces to preach in local mosques."

"I remember my mother and father speaking Arabic at home," Shaher continued. "But my comrades of this generation find no need for Allah and His Prophet. Visit a mosque nowadays, and you will see mostly the white-haired. Still, there are some 400 active mosques in the Soviet Union."

He didn't allude to pre-Revolution figures; before 1917 there were 34,000 mosques in Russia. I had visited one of the mosques that is still active to attend Friday services during my stay in Alma Ata, capital of the Kazakh S.S.R. One of the most beautiful young cities of the Soviet Union, it lies at the foot of the majestic Tien Shan, a range rising like an icy wall athwart the border between the Soviet Union and China. The muezzin climbed the small wooden minaret, crowned with a tin crescent, to call noon prayer (right). Shaher was correct. The faces I saw were from another era—all except for the sheik, a young graduate of the Bukhara seminary.

After the services the sheik told the congregation that I was a Moslem and had made the pilgrimage to Mecca—a devotion denied by Soviet policy to all but a token few.

"*Al-hamdu lillah!*" they murmured: "Allah be praised!" Many pressed forward to kiss my hand; one bearded patriarch in a long quilted *chapan* and high black boots stroked my coat, then his face, for what blessings might rub off. I left, choking back tears.

In my tour of Soviet Central Asia, it was at Khiva, in one of the green oases straddling the Oxus River, that the Arab in me felt most at home. From the modern Soviet Union I stepped through a high mud-brick gate and found myself in the ancient Middle East.

Khiva, known to history as Khwarizm, was long a center of Arab learning. Its most famous son, Abu Mohammed ibn Musa al-Khwarizmi, who died about 850, wrote early

treatises on mathematics. The word *al-jabr* was his invention: "algebra." His very name, corrupted, survives as "algorism"—the Arabic system of numerals, one through nine plus zero, that the world uses today.

Few Arab cities can proffer such a superb panorama of Islamic art and architecture—arched ramparts, carved columns, dazzling mosaic tile work. "The city has now been declared a national monument," a Russian archeologist told me in Khiva. "We are even buying the houses so that we can restore it completely. But many of the people refuse to leave, even though we offer them modern apartments outside the walls."

I could hardly blame the Khivans. I followed narrow unpaved streets past simple whitewashed houses, each facade anonymous except for a splendid wooden door carved in



Muezzin calls a handful of believers to prayer in Alma Ata, capital of Kazakhstan. To win the sympathy of Moslem nations, the Soviets now tolerate Islam.

distinctive arabesques. Beside one house an old woman baked disks of unleavened bread in a beehive earthen oven, a scent that reminded me of distant Yemen and Morocco.

"*As-salaam alaykum, ya ummi!*" I greeted her. The Arabic salutation survives in the local Uzbek tongue: "Peace, my mother."

"*Wa alaykum as-salaam!*" she responded, adding a bundle of sticks to her crackling fire.

My footsteps echoed under the domes of an abandoned caravanserai that led into the bazaar. It was Sunday morning, the once-a-week market, when the workers from the outlying cotton communes play small capitalist for a day. Melons, grapes, and red peppers from their private plots are sold or bartered for cradles, embroidery, hand-forged sickles, or the local glazed pottery.

At a small restaurant I had a plateful of rice and spits of shish kebab for 25 kopecks—less than 30 cents. Seated on a worn carpet, I watched a Turkoman farmer heft two fat-tailed sheep into his donkey cart. The creaking of its enormous wheels parted the crowd as he rumbled slowly toward the western gate and the 20th century beyond.

WEIGHTED by its Asian provinces, the center of gravity of the Arab Empire gradually shifted eastward. By 762 the Abbasids, a dynasty descended from Abbas, an uncle of the Prophet, had massacred the ruling family in Damascus and founded a new capital on the Tigris in Iraq: Baghdad.

Caliph Mansur laid the cornerstone, and a hundred thousand architects, craftsmen, and laborers swarmed to the task, raising a circular city nearly two miles in diameter, ringed by three concentric walls. At the very center rose the green dome of the caliph's palace. From four gates highways radiated like spokes to the distant rim of the empire.

Only 50 years later the Baghdad of Caliph Harun al-Rashid—immortalized in *The Thousand and One Nights*—reflected the prosperity of Arab civilization at its peak. Moslem historians describe a reception for envoys from Byzantium in which 700 chamberlains, 7,000 eunuchs, 160,000 cavalymen and footmen, and a parade of 100 lions took part. The palace was hung with gilded curtains and 22,000 rugs, while in an artificial tree fashioned of gold and silver, mechanical birds chirped metallic songs.

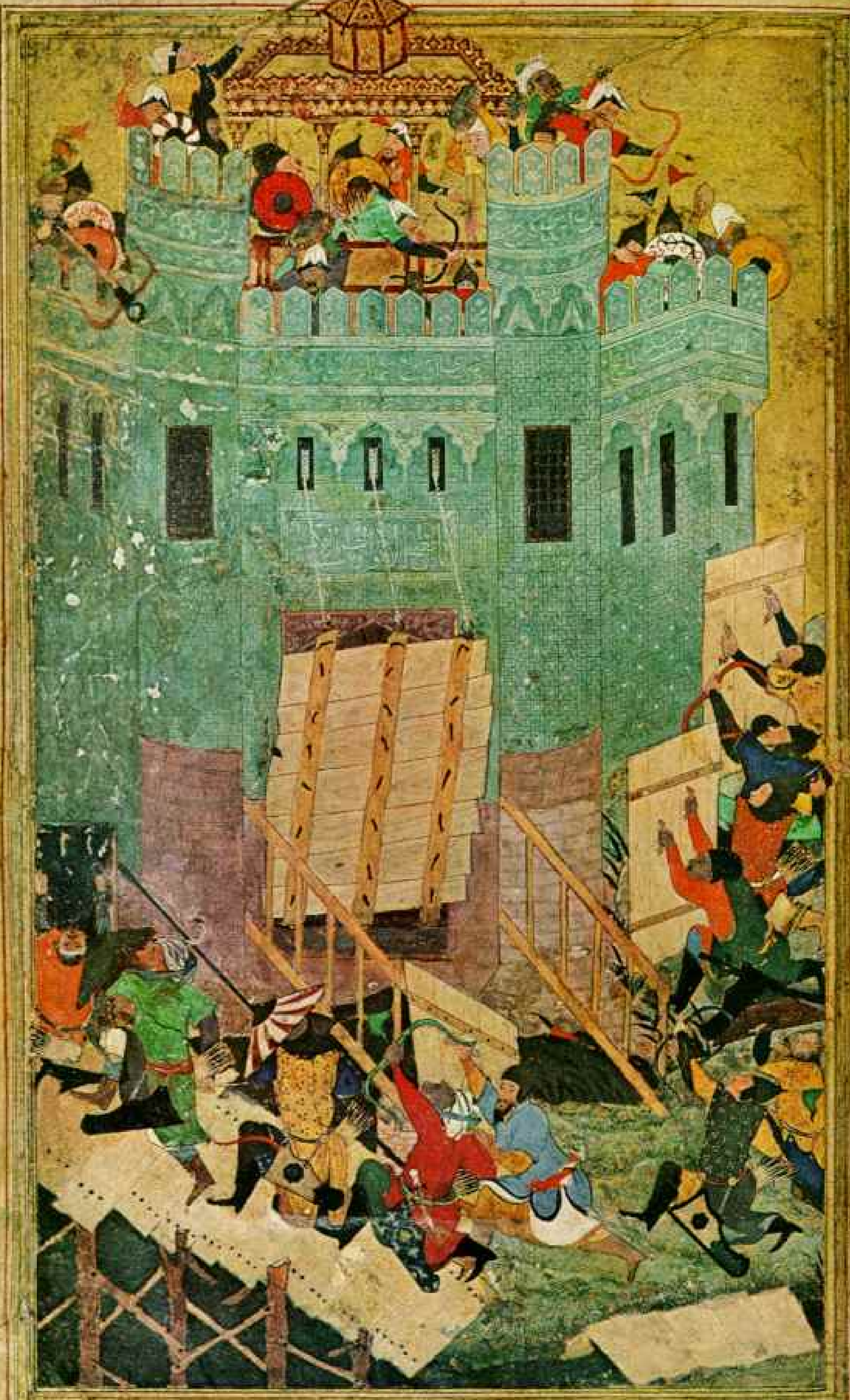
Such wealth and splendor drew skilled

Leaving shoes and cares behind, a latecomer to Friday services enters the mosque in Mazar-e Sharif, Afghanistan. The lame discard canes and walking sticks in the hope that their afflictions will be cured in this shrine to Ali, son-in-law and heir of Mohammed; Afghans believe he lies buried here.



Tuned to different rhythms, a curious child and thoughtful patriarch leave the Mazar-e Sharif mosque. The author found that some who cannot afford the long journey to Mecca consider a pilgrimage to a local shrine the best substitute.





poets and musicians to the city of the Abbasids. The humble life followed by the first caliphs was forgotten. In the lines of Abu Nuwas, a poet companion of Caliph Harun:

*How can you but enjoy yourself
When the world is in blossom,
And wine is at hand?*

Still, under the Abbasids, Arab learning flowered too, drawing inspiration from Greece and India, as a lust for conquest gave way to a thirst for knowledge. "The ink of scholars is more precious than the blood of martyrs," goes an old Arab saying.

Philosopher-physician Abu Ali al-Husayn ibn Sina (known in the West as Avicenna) wrote his *Qanun*, an encyclopedia of Greek and Arabic medical lore that, translated into Latin, would remain Europe's standard medical text for four centuries. At Baghdad, Hunayn ibn Ishaq translated Plato and Aristotle. Galen's priceless *Anatomy*, much of it now lost in the original Greek, survived only through Ishaq's Arabic rendition.

Hindu scholars brought to Baghdad the numerals we still refer to as "Arabic." Baghdad's scientists bequeathed to our language such Arab words as "cipher," "azimuth," "zenith," "alkali," "amalgam," and "alcohol." Arab astronomers updated Ptolemy, plotted the orbits of planets, and accurately measured the size of the earth.

Caliph Harun sent envoys to his contemporary, Charlemagne, at whose court—as one historian put it—"they were dabbling in the art of writing their names."

"Today nothing remains of Mansur's famous round city," said a Baghdad friend, Mohammed Jamil Shalesh. A former professor, he now directs Iraq's Information Ministry. "Soon after that 'golden century' the power of the caliphs withered; finally, in 1258, the Mongol hordes leveled the city."

Mohammed Jamil's office above Tahrir Square overlooks a sweeping panorama of Baghdad today. In contrast to the low brick houses and palm gardens of the suburbs

across the Tigris, high-rise architecture along Harun al-Rashid Street symbolizes modern Iraq. Mohammed Jamil talked eagerly about his country's land reform, mechanization of agriculture, and growing industries.

"During all those centuries after the decline of the empire, Iraq was a feudal state, first under the Turks, and more recently under the puppet kings Britain installed. We have inherited too many bad things from past regimes, but we have many plans for change and progress," Mohammed Jamil said.

"The prime force behind Iraq's modernization is our Baath Arab Socialist Party. But this does not mean that we are a satellite of any other socialist country," he continued. "In some ways we may be more socialistic than Russia. But ours is an Arab socialism; atheist politics we could never abide."

RELIGIOUS FERVOR remains a dominant force in Arab life today. Yet it is pale compared to the zeal that drove Arab conquerors across North Africa to the gates of Christian Europe.

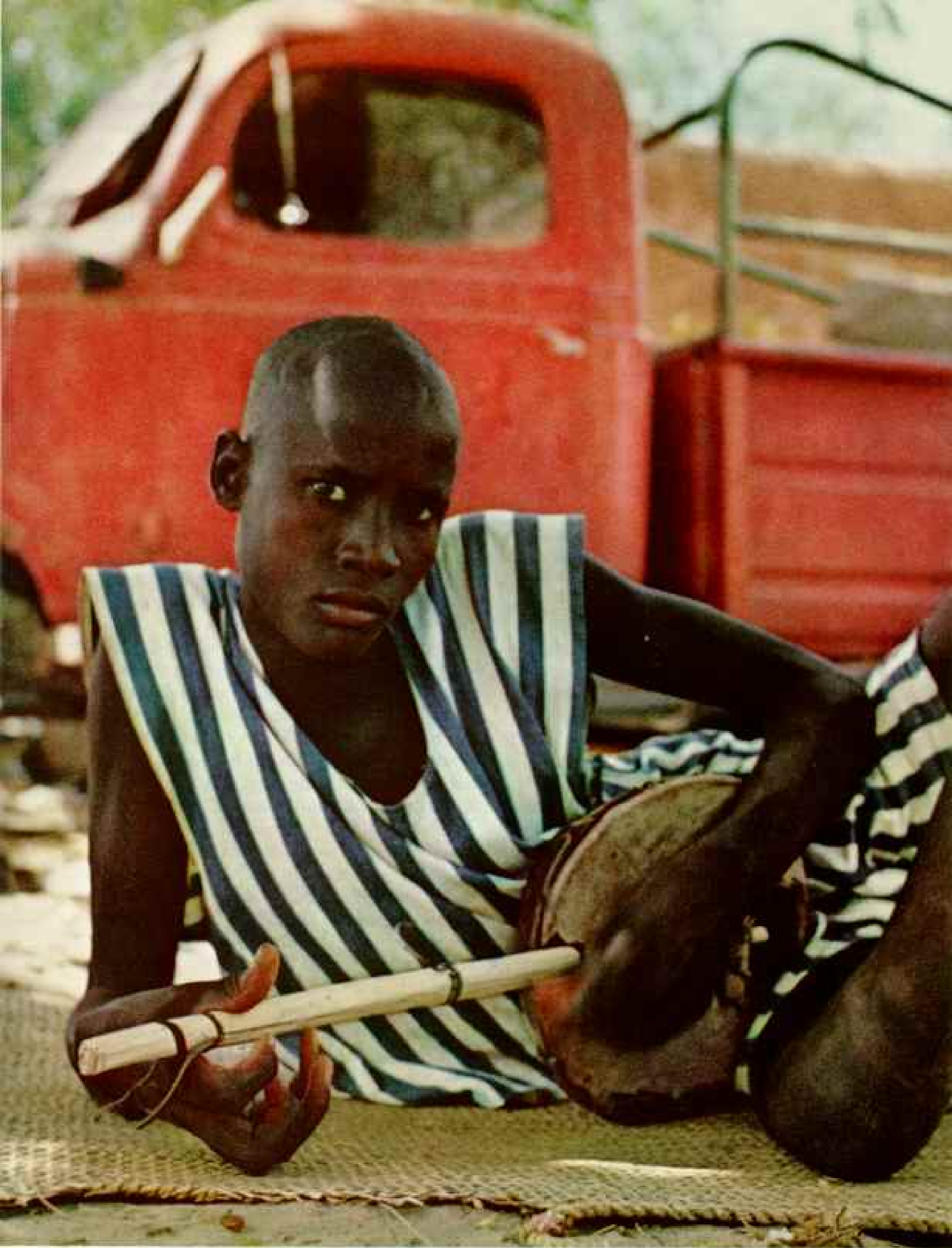
From the Nile the Arabs pushed their frontiers west. In 682 a bold general named Uqba ibn Nafi led his cavalry on a whirlwind sweep across North Africa through Tunisia, Algeria, and Morocco. On a sandy beach near Agadir the flamboyant Uqba, nearly 3,000 miles from the Arab capital in Damascus, finally galloped into the surf of the Atlantic.

"Lord God, bear witness," he shouted over the breakers, "were I not stopped by this sea I would conquer more lands for Thy sake!"

Uqba's successors established an Arab presence in North Africa that endures to this day. One by one the last Byzantine coastal strongholds—Tripoli, Carthage, Tangier—crumbled; Arab fleets soon made the Mediterranean a Moslem sea.

It was caravans, not cavalry, that carried the message of Mohammed south across the vast Sahara. Long lines of camels, driven by Tuareg nomads, took cloth, brassware, sugar, salt, and fine leatherwork to Kumbi

Storming a Crusader castle, warriors of the Mongol conqueror Tamerlane capture the Aegean port of Smyrna in 1402 and massacre its defenders. A Persian miniaturist painted Oriental features on the Christians and embellished their castle with Arabic script. The Crusaders, trying to win Jerusalem, merely annoyed the Arab world, already overrun and threatened with annihilation by wave after wave of Turks and Mongols. These invaders from Central Asia displaced Arab rule but, as Moslems, maintained Islam's sway. 2004 WOOD GARDEN LIBRARY, JOHN HOPKINS UNIVERSITY



Solace comes with a song for a prisoner in Chad. Tracking Arab influence in the heart of Africa, the author met this young Moslem in a government compound. Such internees were once doomed to slavery. Those purchased by Moslems became servants and concubines, assured



of fair treatment by the Koran. Children of a concubine and her master were born free; many rose to high government posts.

and Gao and Timbuktu, returning with ivory, gold, and slaves. So, over the centuries, the seeds of Islam sprouted; today, Moslems outnumber Christians in Africa two to one.

Crossing the Sahara recently, I found that diesel trucks, jeeps, and cargo planes had replaced the Tuareg caravans, and most of the storied Saharan cities now languish as lonely military posts or shabby local market centers. But I did find one splendid exception, a string of pale-blue-and-brown villages spiked with minarets and set amid stately palms some 300 miles south of Algiers: the oases of Wadi Mزاب (next page). In this parched valley a Berber group of Ibadites, a fundamentalist Moslem sect, settled nearly a thousand years ago. For centuries this lonely retreat has kept a firm grip on its identity.

Even today, few marry outside the valley; villages still lock their gates each night. Studious, strict, honest in their dealings, their only law is the Koran. Most of the hard-working Mozabites are businessmen, and their way with the dinar is legend.

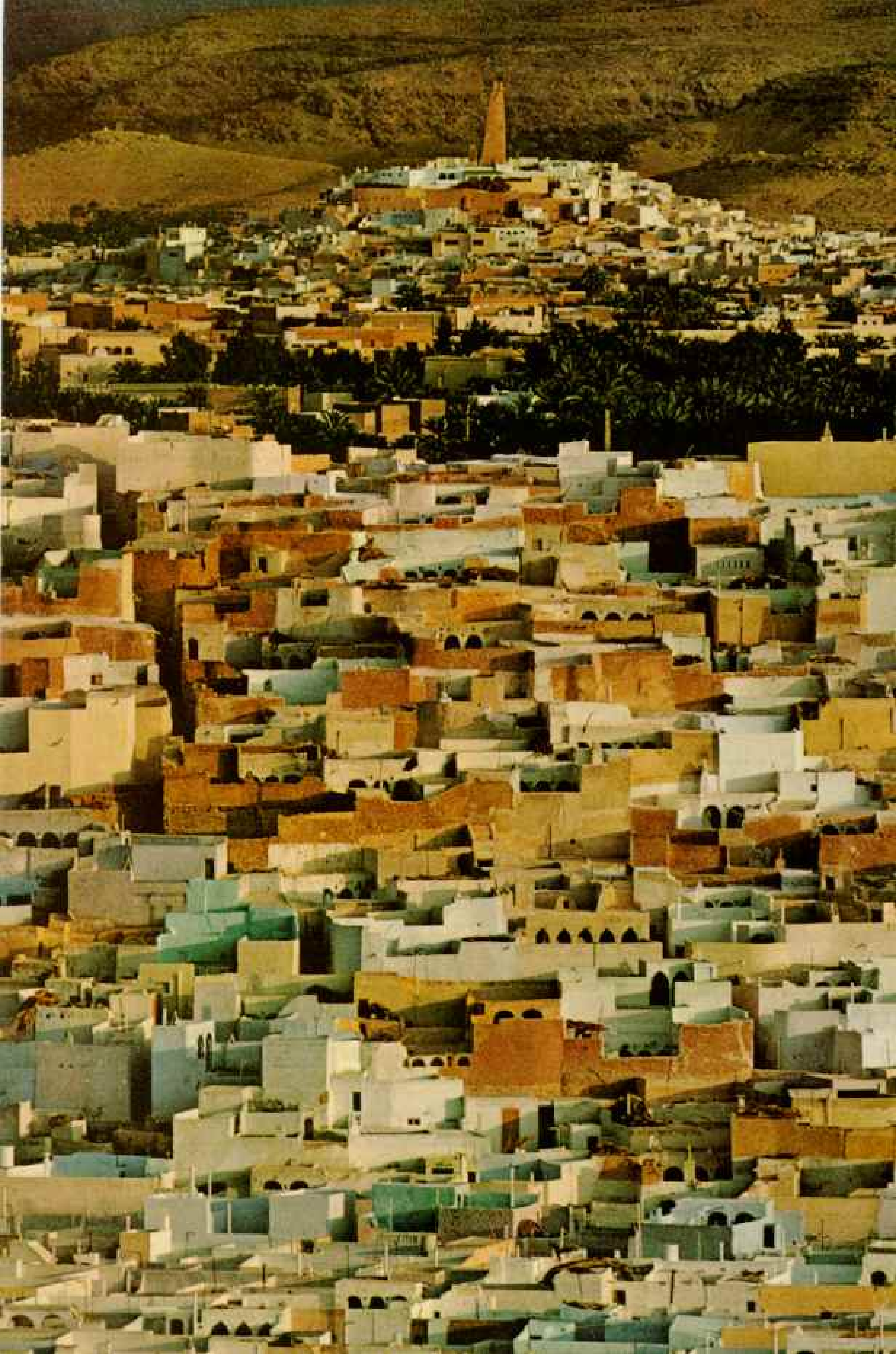
Business was brisk as I walked along the narrow streets of Ghardaia, the valley's capital. Tradesmen were getting ready for their annual Festival of the Carpets. One fine rug caught my eye and drew me into the small shop of Musa Najjar. He wore a spotless white turban and flowing *gandura*; his thick glasses and pale complexion bespoke a lifetime at the abacus.

"From the beginning, the soil of Wadi Mزاب was too poor to feed us," Musa explained in impeccable French as he unfolded, one after another, his fine wares. "And so we depended on commerce. But our city lay far from the caravan routes, and our merchants had to venture out—and we do so to this day." He refilled my teacup.

"But enough history. You would like the rug behind you, I know. You feigned interest in all but that one. You have splendid taste, for a foreigner. It's the best piece in my shop; more expensive, but worth it."

Stubbornly I stuck to my offers, but finally—disarmed by Musa's sweet talk, ravished by his logic—I paid more than a good haggler should. Walking away with my treasure, I recalled the Arab proverb, "A soft tongue can take milk from a lioness."

The Atlantic stopped Uqba ibn Nafi's drive across Africa, but Europe lay only nine miles across a strait. In 711 Tariq ibn Ziyad landed an army of 12,000 near the

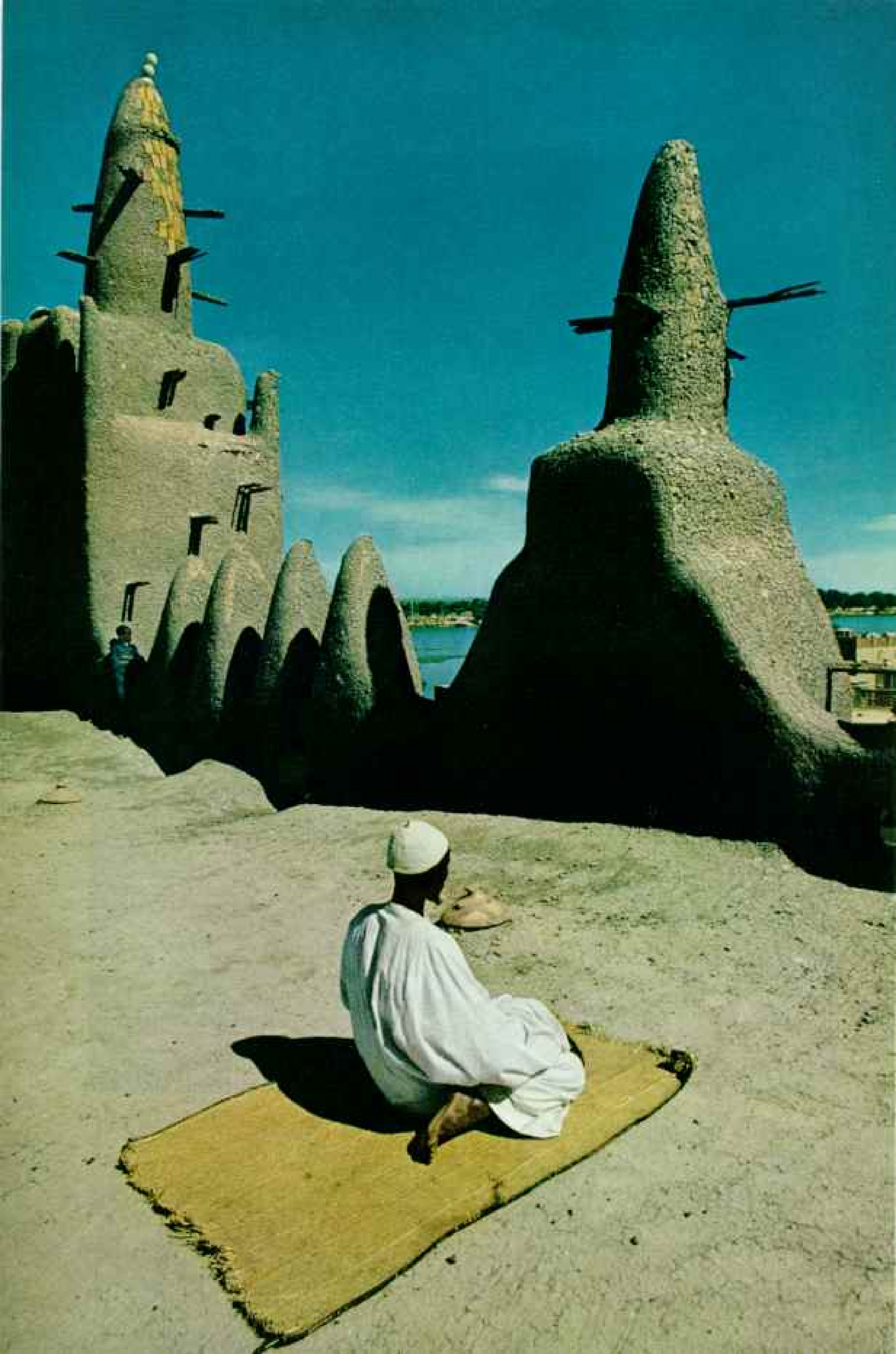




Lighthouse for the faithful, the minaret at Ghardaia (left) rises above a cluster of five Algerian towns where Islam survives little changed in a thousand years. Moslem conservatives known as Ibadites settled in the Sahara in the 11th century. While women attended to home, children, and local

government, the men established a reputation as shrewd merchants.

A graybeard (above) prepares to fire his vintage weapon to welcome buyers to Ghardaia's annual carpet festival.



rock that still bears his name, Jabal Tariq (Mountain of Tariq): Gibraltar.

In a savage battle near Cádiz, the Moslems overwhelmed the Visigoths and their king, Roderick. The Christians relinquished their tenuous hold on the peninsula, city by city, until within six years Spain was Arab.

In 732—exactly a century after the Prophet's death—the great Arab wave crested; a raiding party reached Poitiers, deep in France, there to be repulsed by Charles Martel.

Arab-controlled Iberia was later invaded by bands of dark-skinned Moslem Berbers from the Mauretanian Sahara. The mixture of these "Moors" with Goths and Arabs flavors the culture of Spain to this day.

Driving through the country, one is struck by the Arab names that pepper highway maps: Calatayud (Ayub's Fort), Algeciras (The Island), Guadalquivir (The Big Valley).

"You will find more than 4,000 Arabic words still common in Spanish," Professor José Pita-Andrade of the University of Granada told me. "But then, Arab civilization flourished here for nearly 800 years."

Spain guards some of the best Islamic architecture anywhere. In size the enormous mosque of Córdoba (page 45), begun in 785, ranks second only to the Great Mosque in Mecca. Today its walls enclose a cathedral, still called by its congregation La Mezquita—The Mosque.

In cities like Ronda, Seville, and Calatayud, minarets, now hung with bells, call Christians to prayer. Older homes in the cities of Andalusia turn their backs, Arab style, to the narrow streets. Thick doors hung with heavy iron knockers in the shape of a hand—the hand of Fatima, the Prophet's daughter—

lead into secluded, sun-splashed patios with the same tiled fountains and flowering vines one sees in Fez and Algiers. An Arab friend in Damascus once told me, "When I toured Spain, I felt I could knock on any door."

But the Arabs' legacy to Spain is hardly confined to mere bricks and stone. Throughout the peninsula I found vignettes from the Moslem East to fill my notebooks:

- Flamenco singing at a *feria* in Fernán-Núñez. Hand-wringing laments of love, stark sunshine, and death, haunting songs that

reminded me of the high-pitched solo of a muezzin on a Moroccan minaret.

- The art of Damascus steel, transplanted to Toledo. In the Atomic Age, Vicente Bermejo's sword factory still flourishes: "For bullfighters," he explains, "not to mention tourists—and, last year, an order of 1,600 for the U.S. Coast Guard Academy."

- Blood and sand at the Plaza de Toros in Seville. Spanish drama, Arab scenario: the savage bull fights bravely, briefly—then dies on a glinting sword. "*Ole! Ole!*" roar the *aficionados*, a cry that was once "Allah!"

Though more candid about it in recent years, the Spaniard avoids allusions to his Arab heritage.

"Not me!" insisted one delightful exception, German Perez, a young guitar maker I met along the Cuesta de Gómez in Granada.

"Should I be ashamed of this Arab blood in my veins?" he asked, tapping his wrist. Then with a wink, "It's no secret we Andalusians are more *macho*—more manly. Ask any girl from Madrid!"

High above the city of Granada rise the crenellated ramparts of the Alhambra (Arabic for The Red One), the palace of Boabdil



Corkscrew minaret in the ruins of ninth-century Samarra, Iraq, resembles a Babylonian ziggurat.

Far from his spiritual home, an African Moslem faces Mecca during prayer in Mopti, Mali, a trade center on the southern rim of the Sahara. His rooftop outpost on the sun-baked mud mosque overlooks a branch of the Niger River, broad avenue for the spread of Islam. The people of Mali traded and battled with Berbers and Arabs for centuries before adopting their faith in the 11th century. —SILVANO BERTOLI, NATIONAL GEOGRAPHIC STAFF

(Abu Abdullah), Spain's last Moorish king. Crowding their way through its manicured gardens and labyrinthine halls, even noisy hordes of tourists hush in awe. In sumptuous calligraphy, woven through the carved plaster arabesques, the very walls speak—"There is no conqueror but God."

For 250 years the shrinking Moslem enclave around the city held off the growing Christian power to the north. But with the marriage of Ferdinand and Isabella uniting powerful Aragon and Castile, the days of the Moors were numbered. Finally Boabdil surrendered the keys of Granada to their Catholic Majesties; the Cross and the banner of St. James were raised above the Alhambra. This same year, 1492, that Columbus bravely set out to claim new horizons for Spain, a weeping Boabdil sailed away from the Costa del Sol to Africa.

HAVING PASSED the torch that helped to light Europe's Dark Ages, the Arabs slipped into a long and fitful sleep, from which only now they are rubbing their eyes. Since World War II, freed at last from centuries of alien rule, blessed with new oil revenues, and borrowing back from Western technology, the long-divided Arab peoples again grope for unity.

Nahda, the Arabs call it—renaissance. So far it is merely a feeling, a beginning, a spirit one senses throughout the Arab world. I discussed it one evening with a Meccan friend.

"The days of the empires are over," he told me. "But surely we Arabs will, Allah permitting, flourish once more under our common religion, culture, and language."

And he recounted the story about the skeptic who taunted Mohammed about Islam's promise of resurrection: "What possible power could raise a man to life again from mere dust and bones?"

"That power which, from clay, created him in the first place," the Prophet had answered calmly. □

Like a sage among students, Moslem Spain in the Middle Ages passed the advanced knowledge and learning of the East to a benighted Europe. The influence of 800 years of Moslem rule still survives in the passionate flamenco music of today's Spanish Gypsies (below)



and in the dazzling architecture of Córdoba's Great Mosque (right), now a cathedral. Other vestiges can be found in modern Europe's languages and literature, science and technology.

But the Arab Empire's greatest gift to the West was to spur the curiosity that opened the golden age of the Renaissance.







Twelve acres of plenty, a sea-lapped dot off Maine's coast challenges a team of volunteer castaways to prove that nature's bounty can be a gourmet's delight. Tides set their granite table with ocean morsels—eaten raw or cooked into dishes such as steamed sea-urchin roe (left). Greens from sea and shore mingled in salads. Berries from the woods winked in dessert bowls. Says the author: "We feasted our way to survival!"

Stalking Wild Foods on a Desert Isle

By EUELL GIBBONS

Photographs by DAVID HISER

WE LANDED on our desert island at low tide, near noon on a foggy Monday in August, with rain threatening. We ate our last civilized meal atop the rocks, then sent the leftovers away with the boatmen. We were on our own.

For the next two weeks, as sole inhabitants of a 12-acre islet (above), ten miles off Rockland, Maine, we would live on the wild foods that we gathered for ourselves. And, I promised, we would live high. I intended to prove that a food-gathering tribe—adults and youngsters together—stranded on an island rock, could not only survive, but even live like gourmets on the free food nature offers.

I have been stalking wild foods for half a century, and have written of them in my books, *Stalking the Wild Asparagus*, *Stalking the Blue-Eyed Scallop*, and others. I do it for fun, and also, I think, out of some instinct to live creatively and nondestructively with nature. Whenever I can, I share my addiction to wild foods with others.

During recent summers I have given the boys and girls of the

Outward Bound School on nearby Hurricane Island solo-survival training, as part of a rugged 26-day course in self-sufficiency. After instruction, each student is marooned on a little uninhabited island with limited equipment and no food whatever, to live in utter dependence on nature for four days. The program has made some proud young Robinson Crusoes.

Now I wanted to change scripts, from Crusoe to the Swiss Family Robinson, and I would be the patriarch. My wife, Freda, and I long ago saw our own boys grown and gone, but we have excellent child credit with many parents, so we merely borrowed a family. We were lucky to get Mark Fulford, 18, and his younger brother, Jonathan, 11, for both these boys have been on expeditions with us and are skilled wild-food gatherers. The GEOGRAPHIC furnished us a grown-up foster son in the person of photographer David Hiser. At the last minute, urgently feeling the need for more feminine representation, we managed, through the good offices of a friend, to acquire two daughters, pretty 11-year-olds with priceless Down East accents and charming personalities.

Spirits dampened by fog, the author and a borrowed family (**right**) gulp the remnants of their last store-bought meal. Moments later they scatter: some to set up camp before dark; others—like 11-year-old Jonny Fulford (**below**)—to race the evening tide to a mother lode of steamer clams.

AS THE BOAT melted away into the fog, I felt that challenging but perversely pleasant apprehension I always feel when I know that I must adapt to nature, and do it now, or I will go hungry at the very next meal. In our situation time—and especially tide—wait for no man's dinner.

I could see beds of blue mussels (*Mytilus edulis*) on the rocks at waterline. The incoming tide would make them inaccessible in an hour, and the next low tide would not come till midnight. I ran across

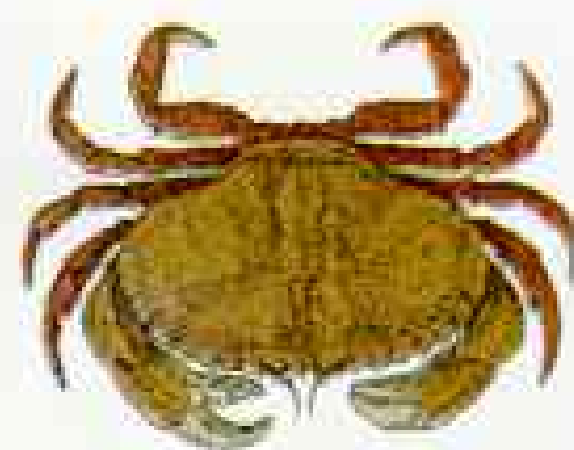


a narrow neck of the island and was filled with exultation. The clam beds that the island's owner, Dr. Jim Gaston, had shown me when he agreed to lend it to me, were still thriving—a bountiful population of delicious steamers (*Mya arenaria*). I put the two boys to digging clams and gathering mussels, while the rest of us carried our camping gear over the jumble of seaside granite and pitched our four tents on one of our islet's few level places.

With the two girls, I set off to find some plant foods to go with our clams and mussels. The girls were not impressed with the scenery of Rockystone Island. (That is not its real name, which I withhold for its own future protection.) Rockystone is nothing but a ring of sea-washed granite surrounding a low crown of dark spruce trees. Its highest point is about 50 feet above sea level. When the mighty tide of Maine runs out, the size of the island almost doubles, to reveal more rocks pocketed with mud flats and tide pools. But Rockystone's austere appearance belies its fruitfulness.

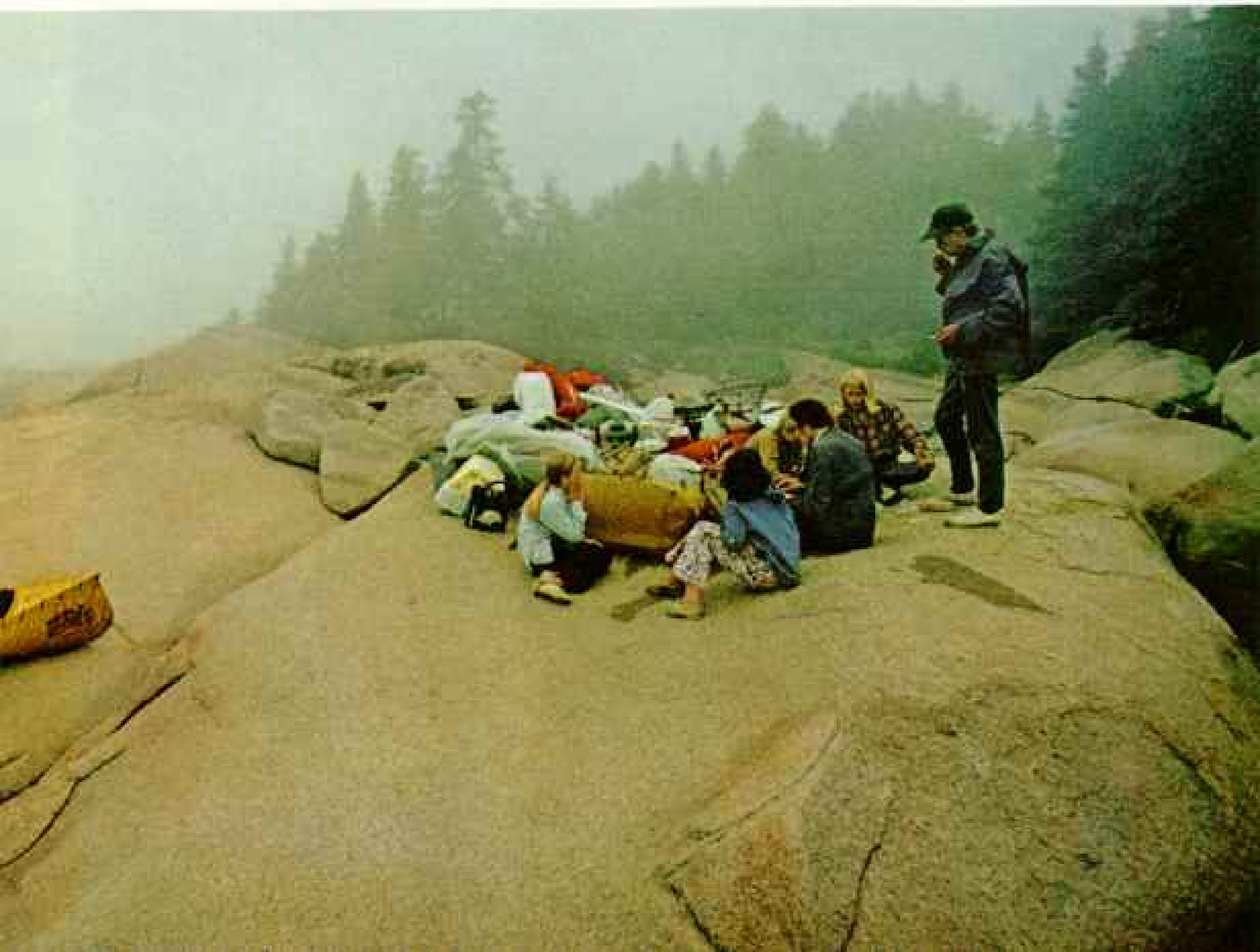
Bayberry grew all about our campsite. Its fresh leaves are a fine herb to steam with seafood, and they make a fragrant, delicious tea that can perk up a meal no end. A few hundred yards around the shore we came upon a wild garden. Orach and sea blite grew so low on the beach that they would be lapped by the highest tides. Both plants are relatives of spinach and chard. Orach can be eaten raw in salads or cooked as greens; sea blite is best when rinsed of its saltiness and cooked.

Just above these, in the wrack tossed up by storms, grew a patch of beach peas. The ripe peas, their crowded pods borne on thrust-up stalks, seemed to ask us to gather them. They look and taste like



YACHTER BOWALD, FOUR INCHES WIDE
DRAWING BY CLAY ABOUT
1918 (BRANDS)

Jonah crab, a gift of the sea, can readily be netted at low tide. After boiling for ten minutes, suggests author Gibbons, serve on a bed of piping-hot wild greens.







SALICORNIA EUROPEA

“Know what you eat!” counsels the author, warning neophytes that to sample nature’s larder blindly is to court a bellyache—or worse. Three island edibles safely enjoyed: sea-salted glasswort (**top left**), whose tender stem tips can glorify a salad or dish of cooked greens; beach peas (**middle left**), delicious smaller cousins of garden peas; and plum-size rose hips (**bottom left**), the fruit of the wild rose, which may be stuffed with raspberries or cooked with gooseberries.

Appetite heightened by hours of foraging, young Jonny (**below**) enjoys a hearty stew of diced clams, starchy cattail hearts, greens, and bayberry leaf. “And he loved every bite!” boasts chef Gibbons.

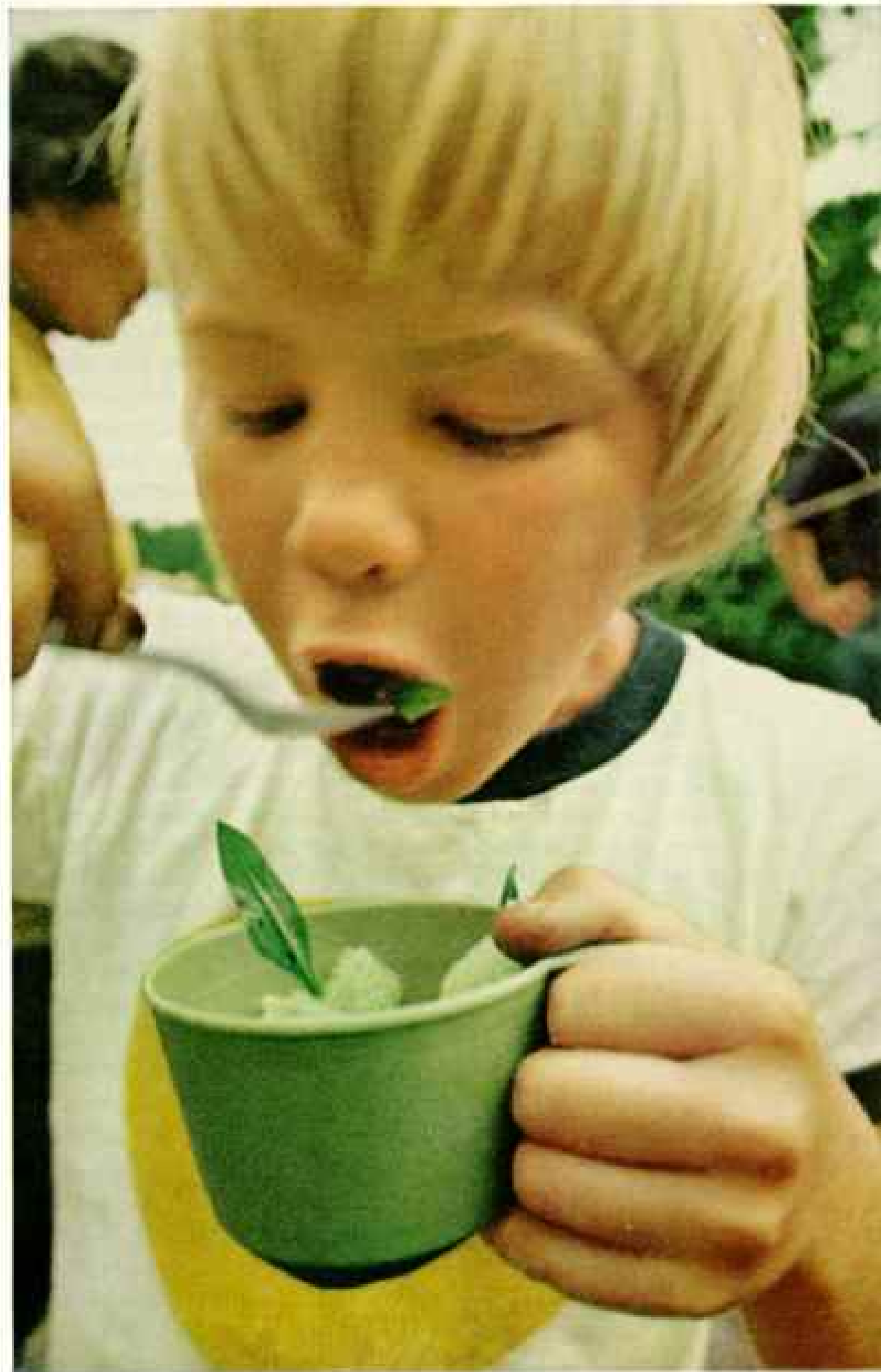


LATHYRUS JAPETOCUS VAR. *BLABER*



RUBUS HISSIDUS

Bucketful of gold: Mark Fulford (**left**) gathers spikes of strand wheat, whose dried grains may be boiled like wild rice. *ICHTHUS ASTRAGALUS*



undersize garden peas, though, being tiny, they are tedious to shell. But time we had.

Among the peas grew still another food plant, sea rocket, a member of the mustard family that has a mild flavor of horseradish and is delicious in salads or as a garnish. Nearby we found a wild "orchard" flourishing—a patch of wild rose that offered apple-flavored hips as large as plums. Filling the whole clearing, red-raspberry canes (*Rubus strigosus*) bore masses of berries just coming into prime ripeness.

MY ELATION was tempered by the reaction of the girls. I offered them a taste of each food we found. First Borrowed Daughter wrinkled her pretty nose at an orach leaf. "Oh, no," she instructed me, "that's a weed!"

Neither girl would taste anything, not even those delicious red raspberries. They were willing enough to help me gather, but they made no attempt to learn to recognize anything. Each time Second Borrowed Daughter reached for a leaf or fruit, she asked, "Is this the right plant?"

Though her unwillingness to learn troubled me, I could not quarrel with her caution. My rule is: *Never use any wild plant or creature for food until you have identified it and know it to be edible.* By strictly adhering to this, I have never poisoned myself or anyone else. I have heard many rules of thumb for separating edible wild things from poisonous ones. They are all as untrustworthy as the dangerous folk notion that any wild mushroom boiled with a silver coin is safe to eat if the coin does not blacken.

How did I first determine that certain wild foods were edible? I didn't. Primitive man discovered what was edible in his environment, and this knowledge has not been lost, though, until recently, it has remained well hidden. I have merely been rediscovering it.

You don't have to be a graduate biologist to gather wild food. The average person can learn to recognize with certainty any one edible wild plant or creature in five minutes. Then he can safely eat *that one food*. A few dozen such lessons, and on every walk or drive in the country he will see more wild food than he can eat.

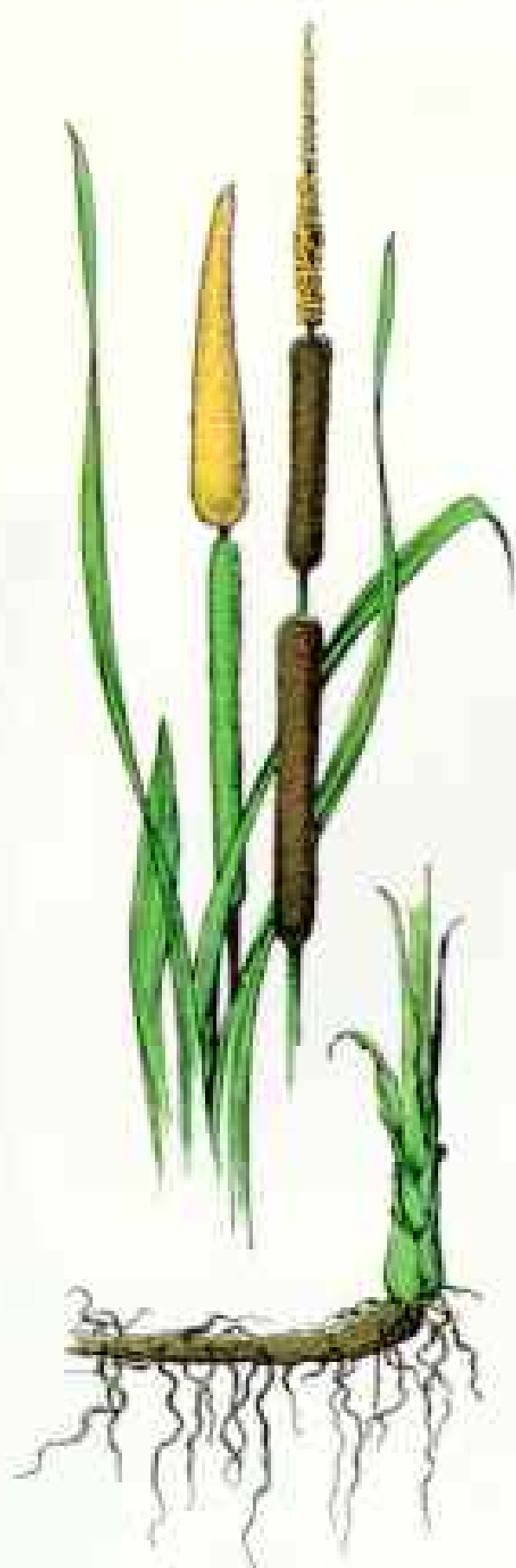
But my lessons were obviously not getting across to the girls. I saw trouble looming. Wild foods are not for everybody, and I began to fear my friend had not fully explained the situation to the girls. As I later learned, they had expressed reservations about wild foods before signing on. But their parents were eager for them to have the experience and had promised new bicycles if they completed the trip.

Our dinner was totally from the wild: steamed mussels, bayberry tea, boiled peas, a sea-rocket-and-orach salad, and fresh raspberries. David, Jonny, Freda, and I found it very satisfying.

"I've dined on a lot worse in some pretty fancy restaurants," David pronounced.

Mark, who has trouble with steamed mussels, tried to make a meal on the vegetables and fruit, and found it less than an epicure's experience. The girls would eat nothing except one spoonful of the familiar-looking peas. They had an acute attack of homesickness, retired to their tent, and had a good cry. I turned gloomy, and the weather turned gloomier. What with the fog and drizzle, the best we could do was to crawl into our sleeping bags.

We arose to more fog and rain. The girls were red-eyed from crying themselves to sleep. Mark had found his vegetarian dinner inadequate. "Gosh, I lay awake for hours thinking of steak dinners," he



TYPHA LATIFOLIA

Common cattail rates as the "supermarket of the swamps," says the author. Its bloom spikes make a tasty cooked vegetable; its pollen, pancake flour; its rootstock, a starchy potato substitute; its peeled stalk, a treat "not unlike cucumber."

told us. Jonny had caught a depression from the girls and said he felt sick during the night. Freda, David, and I were thriving. We had steamed clams, bayberry tea, and hot clam nectar for breakfast. The girls passed again, but the rest of us filled up on hot food and felt better.

We fished the high tide from a steep foreshore, using rock snails for bait, and Jonny caught the only fish, a gruesome sea raven (*Hemirhamphus americanus*). This creature looks poisonous but isn't. When we cleaned it, however, we found the flesh almost solid with parasites—crawling worms, eggs, encysted things.

"How about a nice parasite stew?" Jonny asked.

Even I gulped. We threw the riddled carcass away. More clams, mussels, vegetables, and fruit for lunch.

An island, I have long maintained, is a body of land surrounded by the need for a boat. I had brought along a canoe, and now, with our spirits so low, I decided it was time to use it to seek some change of fare. Mark, David, and I paddled to a nearby islet, and things immediately began to look up. The sky cleared, the sea calmed, and the new island proved bountiful.

We found treasures we had not seen on Rockystone. In a seabird nesting area, where guano had made the soil very fertile, we came on luxuriant sheep sorrel, a sharply acid plant with a lemon flavor. It is the essential ingredient of a gourmet's soup, and is great raw in salads or eaten plain with seafoods.

For lunch we just munched our way around the island. Whole gardens of ripe wild gooseberries proliferated. On a salt flat we discovered glasswort, whose stems can be chopped into bite-size pieces and mixed into salads. In an abandoned 19th-century quarry we found a marsh with a great plenty of cattails. The base of the cattail plant, peeled down to a tender white heart, is a sweet, nutritious, starchy vegetable when cooked. When eaten raw, it has a delicate cucumber flavor.

The few patches of soil around the marsh were red-flecked with mountain cranberries. This northern fruit, whose berries are so acid they are hardly edible raw, can be cooked with sugar to make a tart cranberry sauce fit for any Thanksgiving table.

WHEN WE RETURNED to camp with our imported viands, I decided the time had also come to break out some supplementary ingredients to tempt our two starving little daughters to eat. Since we were not attempting a strict survival experiment, I had brought along, besides fresh water, a few basic fixings to lend epicurean zest to our cuisine: cooking oil, sugar, powdered milk, flour to be used only for batters or crusts.

Freda and I went to work preparing a dinner of fried battered clams, a totally different gustatory experience from steamed clams. With them we had boiled cattail hearts, boiled peas, and a tasty salad of salty glasswort and sour sheep sorrel, perfectly dressed with a little oil. We had two desserts—fresh raspberries, and ripe rose hips boiled with sugar, gooseberries, and cranberries.

This gastronomic triumph was wasted on the girls. They still refused to taste anything.

"But we could be poisoned!" one cried. Her friend apologized, "I just never have liked vegetables."

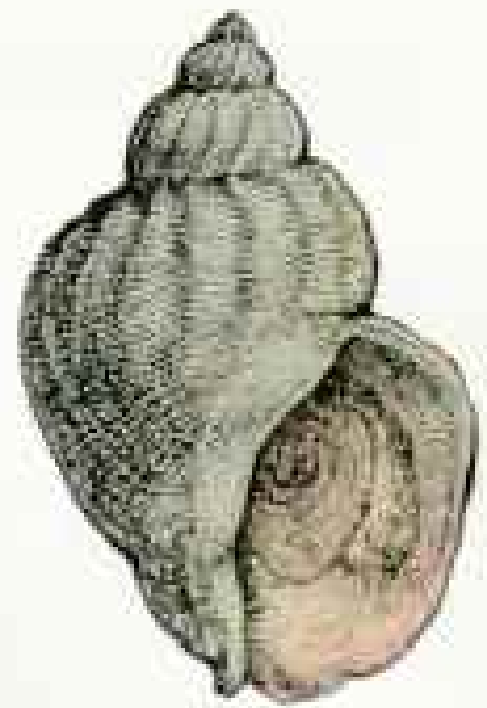
They retreated to their tent for another cry, and the sky, as if in sympathy, began dripping rain. The rest of us were enjoying the

(Continued on page 58)



To whittle a snack, cut off a six-inch section of cattail stalk (top), then peel to reveal its core, or heart (middle). Mark samples a bite raw; it may also be boiled or roasted.





BUCCINUM URSATUM, THREE INCHES HIGH

High tide's signature, written across the rocks, sets an upper limit to the sea's bequest. Stepping cautiously, foragers probe pools for a snack, perhaps a snail such as the common northern whelk (above).



CHLOROMETUM PACIFICUM

Morsel of dulse dries on a bed of acorn barnacles. When fresh, the seaweed tastes like a "salted rubber band." Dried, it can be chewed for a rich, sweet flavor.



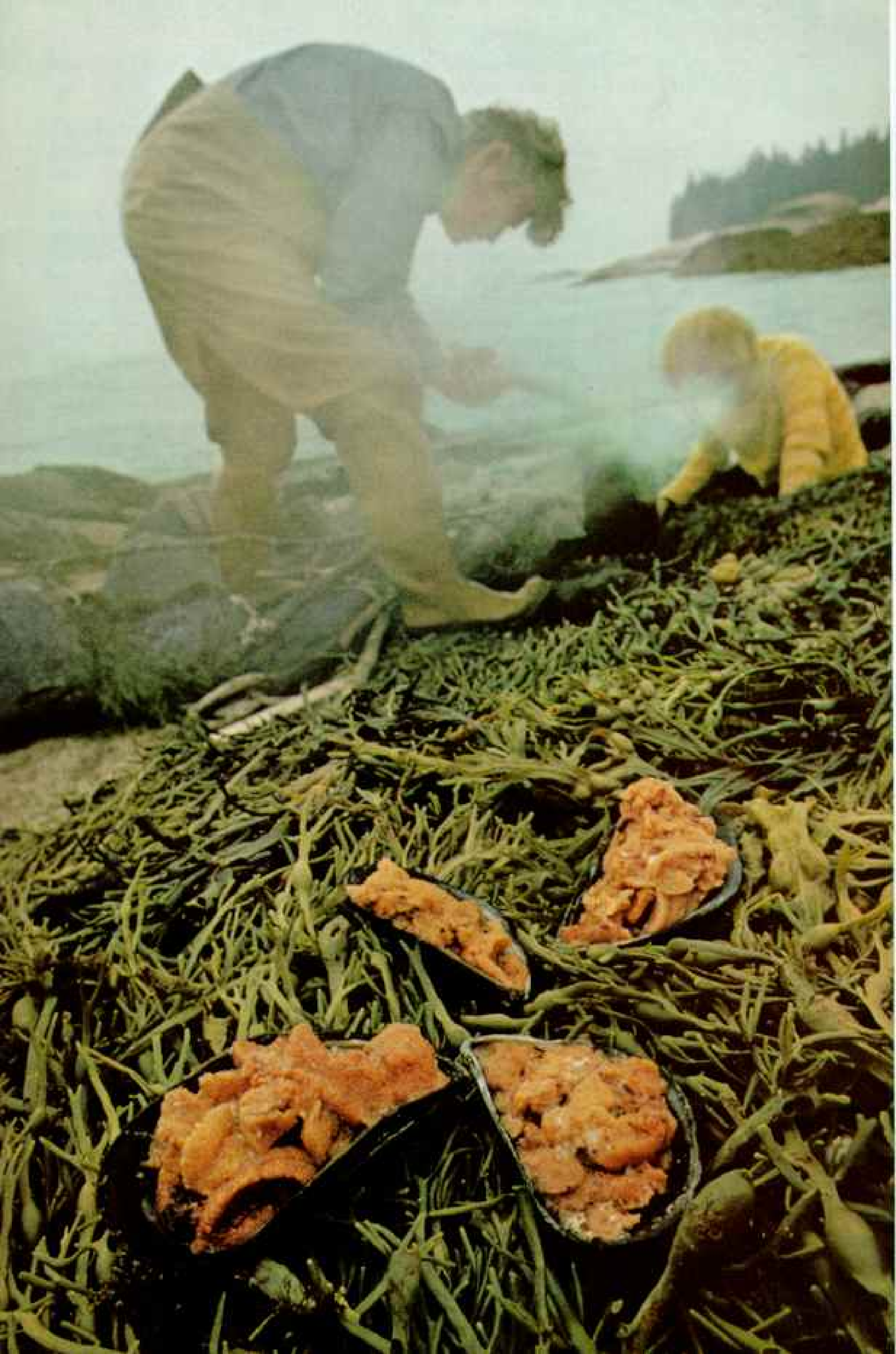
Gathering eggs from the sea, author Gibbons removes a green sea urchin from a rock, grasping it lightly so its short spines do not prick his hand. Jonny cracks it open with a knife handle. The exposed roe, shaped like a five-pointed star, may be scooped out and eaten raw or steamed on a bed



STEVEN/LOCUST/FRUTUS DINGBACH/REX

of rockweed and served on mussel shells (right). When cooked, the roe tastes "rather like scrambled eggs."

Cherished as a delicacy in Mediterranean and South American countries, sea-urchin roe provides a plentiful supply of fat—a hunger-slaking ingredient often lacking in foragers' diets.



food, but the girls' unhappiness depressed us. As we ate, we could hear them sobbing about home and mother, and we decided they must be returned to maternal bosoms as soon as possible.

The next morning my friend Bill MacFee of Vinalhaven Island came by in his boat, while hauling his lobster pots. He agreed to take the girls home, and they clambered into his craft as if escaping a fate worse than death.

I went along, and Bill ran me over to Hurricane Island's Outward Bound School, where I recruited two new members for the expedition, one adult and one youngster. Sara Bay, who has had Outward Bound training, and Charlie Willauer, the 13-year-old son of the school's director, leaped at the chance. Charlie, a wild-food enthusiast, brought along his fishing gear and a little outboard motorboat, promising to relieve the fish famine.

That evening on Rockstone we built a campfire out on the rocks, with the sea around us, and laid plans for wild-food banquets to come. When one lives on manna from heaven, it should always come in many varieties, and we were getting a bit tired of mussels and clams. So that night Charlie, Mark, and I putt-putted out to deeper water for a try after fish. Almost immediately Mark caught a three-foot shark, the kind called spiny dogfish (*Squalus acanthias*), that turned into a whipping, snapping cur when in the boat. Not many people know that dogfish is really good eating. We cut Mark's catch into a great pile of steaks, ready for breakfast.

A low tide was due at 3:24 a.m., and we clambered out on the rocky reef to do some "marketing," carrying flashlights and lanterns, as well as pails to contain our catch. A nighttime low tide uncovers many fascinating life-forms. Predatory sea gulls don't feed after dark, so many sea creatures remain on the rocks instead of hiding in cracks or retreating into deeper water as they normally do during a daytime low tide. We collected them by the pailful, especially common northern whelks and Jonah crabs. From shallow water we gingerly plucked green sea urchins.

WE CRAWLED into sleeping bags and slept till the sun was high. For breakfast we fried the shark steaks—as delicious to me as swordfish. For lunch I opened the sea urchins and found them the best I had ever seen, each shell half filled with the beautiful orange roe that rivals the finest caviar. We conducted an urchin-tasting session and decided that raw sea-urchin roe had four flavors; you taste them one after another.

"The first taste is salty," I decreed, and the group concurred.

"The second is definitely sweet," David decided.

"The third is like lobsters," Mark said.

"No, crab," Charlie objected.

Freda arbitrated. "Well, definitely shellfish."

The fourth flavor, the aftertaste, is the most unexpected of all. Sara had the answer on the tip of her tongue. "Why, it's just like a fine ripe cantaloupe!"

When cooked, sea-urchin roe loses all these surprising flavors and tastes much like scrambled eggs, but that is also good. So we made sea-urchin fritters, fried sea urchin, and with the assistance of powdered milk, sea-urchin stew.

That afternoon Sara and Freda gathered a pail of raspberries. I made sorrel soup, and the younger boys went fishing and boated another shark. Dinner was well in hand. We cut the white meat of the dogfish into slivers, battered, and fried them. In addition to my



CAKILE EDENTULA

Sea rocket, akin to the common mustard plant, adds a sprightly tang reminiscent of mild horseradish to salads, sandwiches, and main dishes.



ATRIPLEX PATULA

Orach, ready-salted relative of spinach, adds its crisp leaves to salads and cooked vegetables and makes a handy snack to nibble raw.

sorrel soup, the trimmings included a salad, cooked cattail hearts, and stewed fruit—raspberries, gooseberries, and rose hips.

The nighttime low tide had so fascinated our group that we rose to meet it again next morning. Since it would arrive 42 minutes later than it had the previous night, we could tarry in our sleeping bags until nearly 4 a.m. Watching my young crew, I was touched to see their reverence toward living in nature's way. Though urchins, mussels, and whelks covered the bottom by the thousands, the youngsters were careful to take only what we could use and to disturb the beds as little as possible. When they turned over a rock, looking for crabs, they replaced it so that the teeming life colony that exists under every littoral rock could go on undisturbed. Walking along the upper shore, they were careful to step on none of the spray-area plants that had been feeding us so well.

NEXT MORNING David said, a bit longingly, "You haven't forgotten, Euell, that Cheri will be joining us day after tomorrow?" Cheri is David's wife. I hadn't forgotten, and I had plans. We would welcome her with a wild party—a feast of all the better wild foods we had tried. With eight connoisseurs to feed, this meant starting at once to collect ingredients.

Since both low tides now occurred in daylight, Charlie, David, Freda, and I chugged to another little island in search of edible seaweeds and found dulse and edible kelp (*Alaria esculenta*) available by the ton. Carefully removing the gritty holdfasts that anchored the seaweeds to the rocks, we acquired a bushel of each.

I was glad then that we had allowed ourselves two days to prepare our feast, because trying to eat dulse or kelp fresh from the water is like chewing on a salted rubber band. When sun-dried for four hours to two days, depending on the heat of the sun, they become tender and delicious.

On the day of the wild feast, I arose alone at dawn to collect the sea creatures we would need. My most urgent and surprising order from the crew was for clams. Despite the quantities of this shellfish we had been eating, everybody still clamored for clams and more clams. I dug a surfeit of them, then went on to gather mussels, whelks, and sea urchins.

Our guest arrived in the early afternoon by lobster boat. Cheri showed the right spirit from the start. The lobsterman, Ivan Olson, had found more large Jonah crabs than lobsters in his pots. When he started to throw the crabs back, Cheri had asked for them as her contribution to the wild-food supply.

The great feast took shape. Charlie and Mark returned from fishing with a good catch of fat Atlantic mackerel (*Scomber scombrus*), in my opinion the tastiest fish of these or almost any other waters. Sara and Freda contrived two pies from wild gooseberries and mountain cranberries, decorated with ripe raspberries. All afternoon we dreamed up new dishes and then created them. Finally we carried the whole feast out onto the rocks.

We ate, and ate, and ate, until darkness closed in. For hors d'oeuvres we had raw urchin roe and whelks boiled in seawater. Then came a varied seafood platter starring mackerel so fat that I panbroiled the slices without adding any oil whatever. We put away the stacks of mackerel joyously, with steamed clams, steamed mussels, and crabs boiled with bayberry leaves. As accompaniment Freda had concocted a grand salad of orach leaves, glasswort, pungent sea-rocket leaves, sour sheep sorrel, cucumber-flavored leaves



VACCINIUM VITIS-IDAEA

Mountain cranberries, too acid to nibble raw, make a taste-tempting sauce when cooked with sugar.



MYrica PERSEA VARIEA

Bayberry leaves go into the steamer to enhance seafood's flavor, or into the kettle for fragrant tea.





"Oh, Wilderness were Paradise enow!"

TURNING A BEACH INTO a banquet board, the castaways celebrate a guest's arrival with a wild smorgasbord.

"I take my greatest delight not in finding wild foods, but in preparing them," says Mr. Gibbons, who invented his first wild recipe—a hackberry and hickory-nut candy bar—when he was a 5-year-old lad in east Texas.

Wife and co-chef Freda, at far left, serves her "family" a plateful of delicacies.

THE MENU:

APPETIZERS

Raw sea-urchin roe on crackers*
Whelks boiled in seawater

ENTREES

Steamed clams
Crabs boiled
 with bayberry leaves
Panbroiled mackerel
Steamed sea-urchin roe
 on the half shell

VEGETABLES

Boiled beach peas
Hot orach greens
Fresh salad of sheep sorrel,
 sea-rocket leaf, bluebeard-lily leaf,
 orach, glasswort, and cattail hearts

DESSERTS

Rose hips stuffed
 with fresh ripe raspberries
Gooseberry-cranberry pie,
 garnished with raspberries
 and mint leaves

BEVERAGE

Bayberry-leaf tea

*Crackers, oil for salads and cooking, flour for crusts and coatings, and sugar for sweetening were among the few nonwild items brought as luxuries. For eating utensils, the diners used hand-whittled chopsticks, here wrapped ceremoniously with cattail leaves.



SUAEDA MARITIMA

Sea blite, another seaside relative of spinach, makes a succulent addition to cooked greens. The author first soaks and drains it to reduce excess saltiness.



RUMEX ACETOSELLA

Sheep sorrel lends a lemony flavor to soups, seafoods, salads, or boiled greens.

of the bluebead lily (*Clintonia borealis*), and thin slices of snow-white cattail heart. We dressed this with a little oil, but no vinegar, since the sorrel makes vinegar unnecessary. For dessert we had fruit salad—rose hips sliced in half, seeds removed, cavities stuffed with ripe raspberries—followed by the two glorious pies.

One morning, the whole crew went after more of those sweet mackerel, leaving Freda and me alone on the island. When they pushed off in the little outboard boat, a brisk breeze was blowing, though the sun was shining through a haze. About 45 minutes later the wind suddenly increased to gale force, and Freda and I began to be alarmed for our family. That small boat would never live in these seas.

We were in an agony of anxiety for hours. I walked around the island, worriedly noting how high on shore the waves were breaking. Suddenly, in early afternoon, the wind fell. The seas still roared ashore, but the air went dead calm. Then a black cloud raced down on us. I ran for camp, and before I reached it darkness rolled in. Freda was frantically getting all gear under shelter. We went into the tent, lighted a gasoline lantern—and the rain poured down. We just sat there, praying, for the better part of an hour.

“Am I hearing things, or are those voices outside?” Freda asked.

I nearly tore the zipper off the tent door getting out. There stood all our crew, soaking wet but well and happy.

“You’ve got some real seamen here,” David said, throwing his arms over Charlie’s and Mark’s shoulders.

“Why, they just took us through that whole wild storm as if they actually knew where they were going,” Cheri teased.

“Of course we knew,” said Jonny. “We were looking for little protected coves we remembered. We could keep on fishing in a cove, even through a hurricane.”

“All of us fished. I caught plenty, too, didn’t I?” Sara asked with sparkling eyes.

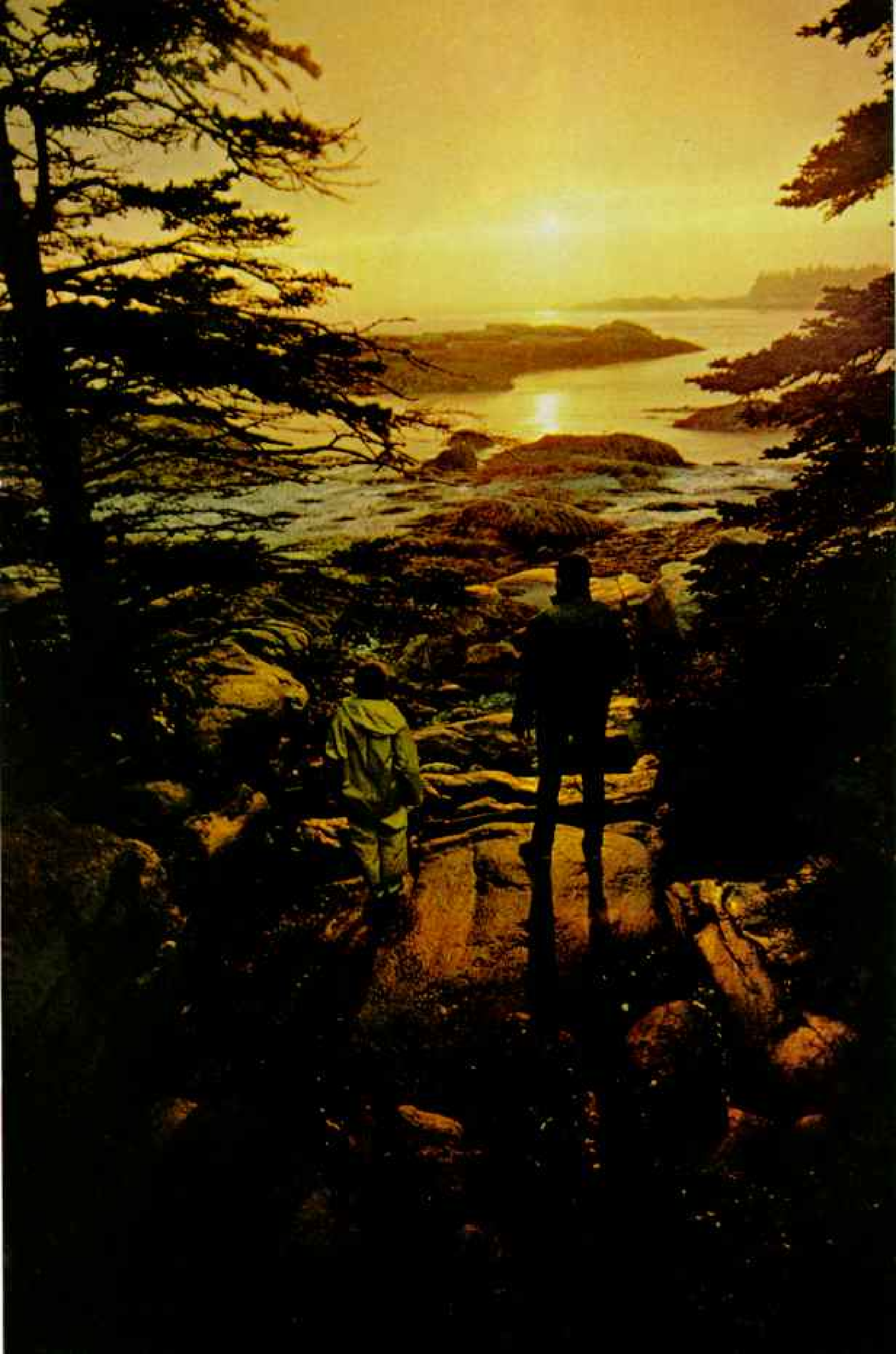
“No one goes hungry tonight,” David said. He delivered into our hands—and frying pans—a tubful of silvery, toothsome mackerel.

As the weather cleared, appetites returned. I grilled the fish for dinner, and we sat down to a feast of deliverance, all of us happy, hilarious, even a bit silly in our relief.

OUR ADVENTURE WAS OVER. We boated back to Vinalhaven and found motel rooms. We reveled for an hour or two in hot water, enjoyed shampoos, razors, and clean clothes, and then went to a restaurant for dinner. No one, it appeared, had developed cravings for any renounced foods; several in our party ordered fried clams.

We arose at 6 a.m. to catch the ferry to Rockland. Finding no place to serve us breakfast at that hour, we faced the prospect of an hour-and-a-half ferry ride without so much as a cup of bayberry tea. Then, just across the road from the ferry slip, I spotted a great hedge of wild rose hips and ripe, red wild raspberries. Our crew simply walked over and breakfasted off the land—while the other ferry passengers gawked. □

Attuned to the rhythm of the tides, the author and a companion gaze out on the domain they shared with nature for two weeks. “We neither harmed nor changed the island in any way,” he affirms, “but lived off its freely given surplus. It’s our hope that others who follow will never know we were there.”



The More

By HOWELL WALKER
ASSISTANT EDITOR



Young lovers reaffirm the reputation of Paris as the capital of romance. Skyscrapers and freeways may change the face of the city, but intimate street markets and affectionate couples help keep it the same at heart.

MY FEET WERE NUMB from walking along the Seine in a raw wind, so I went into a bistro not far from the river. At the table next to mine, a large man was groaning into his soup spoon.

"You do not care for the soup?" the waitress asked.

"It is not the soup," said the man. "This cold stiffens my back."

"More than the cold," remarked an elderly woman from the bar. "It is your years."

"Paris also feels its years," she went on. "It is not what it used to be, with these skyscrapers and this traffic. The old market is all but gone, no? And—Maurice Chevalier is dead."

"But how can you change Paris?" demanded the waitress. "How can anyone change it? *Impossible!* The park where I played as a child is still exactly as it was, with the same pathways, the same puppets. What do you think, monsieur?"

I had to agree. For me, Paris has a magic quality of eternal youth, of perennial pleasure and beauty, that has remained constant during our long relationship.

A short middle-aged man, who proved to be a printer, joined our discussion. He too agreed and stated with Gallic finality, "Paris does not change."

But the woman wouldn't let it go at that. "How could you know, with your head always stuck in an inkpot?"

A victim of what the French call *l'esprit de l'escalier*—retarded wit—I thought all too late of prompting the beleaguered printer to sing a ditty that goes something like this:

*Paris, tu n'as pas changé, mon vieux.
Paris, tu n'as pas changé—tant mieux!
Tu n'as pas maigri;
Tu n'as pas grossi.
Tu es toujours le même Paris.*

Paris Changes ...

Photographs by GORDON W. GAHAN

Which, in effect, says that Paris has not changed, has not grown thin, has not grown fat, and always remains the same.

I suppose that most places are a little like Paris in some particular—an especially handsome boulevard, an exceptionally lovely piece of parkland, a noted vista marked at the end with a bronze rider, a splash of flowers at a sidewalk café. Paris has set the style for so many things that are fine in life that she touches most people in the world. If not her clothes, then her cuisine. If not that, her philosophy. Her music. Her urban design. Being so beautiful, she is much loved, and being much loved, she is vain and a little spoiled, but never dull.

Breakfast Spiced With Apple Brandy

My regular beat was along the paths of sentiment, through a city that is at heart a number of small towns reflecting all of France. Sitting at a café in Montmartre, I was pleased by the thought that this onetime farming hamlet, swallowed by the expanding city a century ago, still retains the intimate atmosphere of a village.

At Gare St. Lazare, the railway station serving Normandy, the men still drink their morning coffee with a small glass of Norman calvados, or apple brandy. And is it not true that around Gare Montparnasse the Breton shops specializing in crêpes fill one with memories of Brittany?

In winter Paris seems more intimate, more personal. Besides, they will light up the Eiffel Tower just for you.

Truly, they will. It costs \$68 an hour, the price of the electricity and labor plus 10 percent. You apply at the City Hall, tell them what night and when, and *voilà!* There are several monuments to choose from, including the Cathedral of Notre Dame. Imagine dining with your wife at La Tour d'Argent, checking

your watch, waving to Notre Dame, watching it suddenly blaze into life, and remarking casually, "For you, my dear."

It's one more thing that, to me, makes Paris the most personal of cities.

"You are going to write about my Paris?" said an old friend. "It's been done, but they never get it right."

"Yes, you must tell about the cafés," said another. "But there are at least 8,000! You had better stick to mine."

"Clothes by all means. Come, and I will introduce you to my designer, the only one, really, in the city."

"That restaurant? No, no, my friend. You must dine at Le Grand Véfour."

"Napoleon's Tomb. The Champs Élysées. Balzac's house."

Balzac's house?

Yes, it is charming, a small cottage wedged between high apartment buildings, with the main entrance on one street, and a rear entrance on an entirely different street. Much to Balzac's advantage, for he was usually in debt; when his creditors came one way, he went the other.

The smaller of the two streets, Rue Berton, seems a piece of a provincial village with its old-fashioned lampposts and cobbled surface shaped to drain water down the center. There is, in fact, a plaque there, marking what was the boundary between two villages now incorporated in the city of Paris.

I later remarked to a friend how much the little lane had pleased me.

"Did you notice a plaque?" he asked.

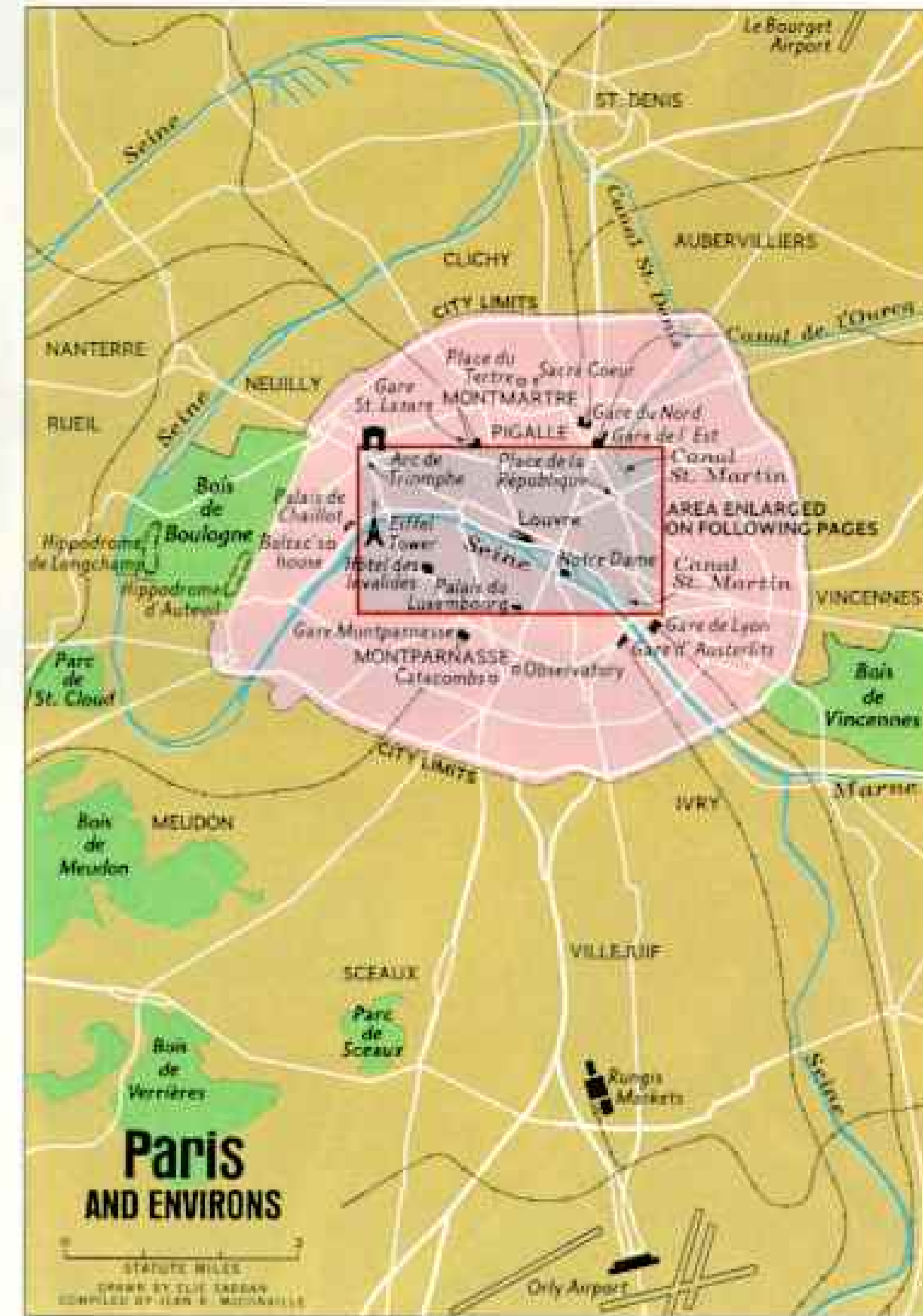
"The boundary marker?"

"Yes. That plaque is of special historic importance. To me. That is where I first kissed a girl!"

Balzac would have liked that. He wrote some nice things about the city.

(Continued on page 72)





“Paris has my heart.” Thus the essayist Montaigne expressed in the 16th century what many a writer, artist, and bewitched visitor feels today for this most beautiful of cities (left)—ever changing yet always retaining the affection of the world. The Arc de Triomphe, almost as much a symbol of Paris as the Eiffel Tower, forms a majestic hub for 12 radiating avenues.

Treasure-house of monuments and distinguished architecture, midtown Paris (following pages) also teems with simpler charms: sidewalk cafés, lush parks, open-air produce stands, twittery cagelings at the bird market on the Seine’s Right—or north—Bank, and bookstalls on its storied Left.

PRINTING OVERLEAF BY ROSALIE C. BODLES



PLACE CHARLES DE GAULLE
PLAC DE L'ÉTOILE

ARC DE TRIOMPHE

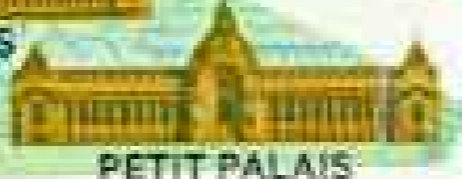
FAUBOURG ST. HONORE



L'OPÉRA



GRAND PALAIS



PETIT PALAIS



OBÉLISQUE DE LOUQSOR



COLONNE VENDÔME



EIFFEL TOWER



ÉCOLE MILITAIRE



INSTITUT DE FRANCE (ACADÉMIE FRANÇAISE)



ST. GERMAIN DES PRÉS

LE FLORE • LES DEUX MAGOTS



THÉÂTRE DE L'ODÉON



PALAIS DU LUXEMBOURG



CHURCH OF THE SORBONNE

STATUTE MILE



PORTE
ST. DENIS



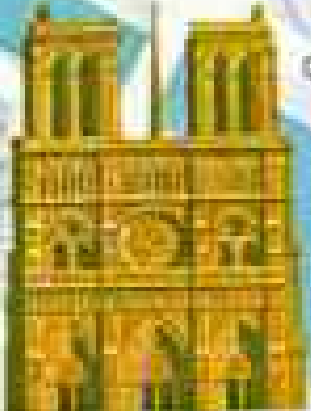
PORTE
ST. MARTIN



MONUMENT
DE LA
RÉPUBLIQUE



HÔTEL
DE VILLE



NOTRE DAME



COLONNE
DE JUILLET

LE MARAIS

PLACE
DES
VOSGES

PLACE
DE LA
BASTILLE

• GARDE
RÉPUBLICAINE

SEINE

"Paris is in truth an ocean," he said, "that no line can plumb. You may survey its surface and describe it; but no matter what pains you take with your investigations... there will always be lonely and unexplored regions in its depths..."

It's still true. One sunny afternoon I bought a small candle and descended 91 cold stone steps to the Catacombs, a labyrinth of caverns filled to ghoulish excess with the skulls and assorted bones of six million corpses gathered two centuries ago from no-longer-used graveyards (right). It was like walking inside a Baudelaire poem.

The Paris depths are famous, of course, for in the long and turbulent history of the city there have been compelling reasons for people to hide in them. Victor Hugo's hero of *Les Misérables*, Jean Valjean, took refuge in the sewers. The Catacombs themselves were a base of operations for the French Resistance during the Nazi occupation. Today a network of pneumatic tubes threaded under the city whizzes urgent letters from sender to receiver in a couple of hours. But of all the subterranean places, surely the Canal St. Martin belongs in my version of Paris.

This old barge way takes an eerie course,



disappearing altogether as it flows under an eastern sector of the city. It is a small piece of the vast network of European canals along which grain, sugar, coal, cement, and general merchandise move to the Netherlands, Germany, Switzerland, and throughout France.

The barge *Ondine*, which I boarded, was on a local run to carry sand from a depot to a large construction site. Maurice Le Moine welcomed me aboard and introduced me to the only other crew member, his gentle wife.

Ondine nosed out of a deep lock and, like Jonah being swallowed up by the whale, was devoured by the big black mouth of a tunnel.

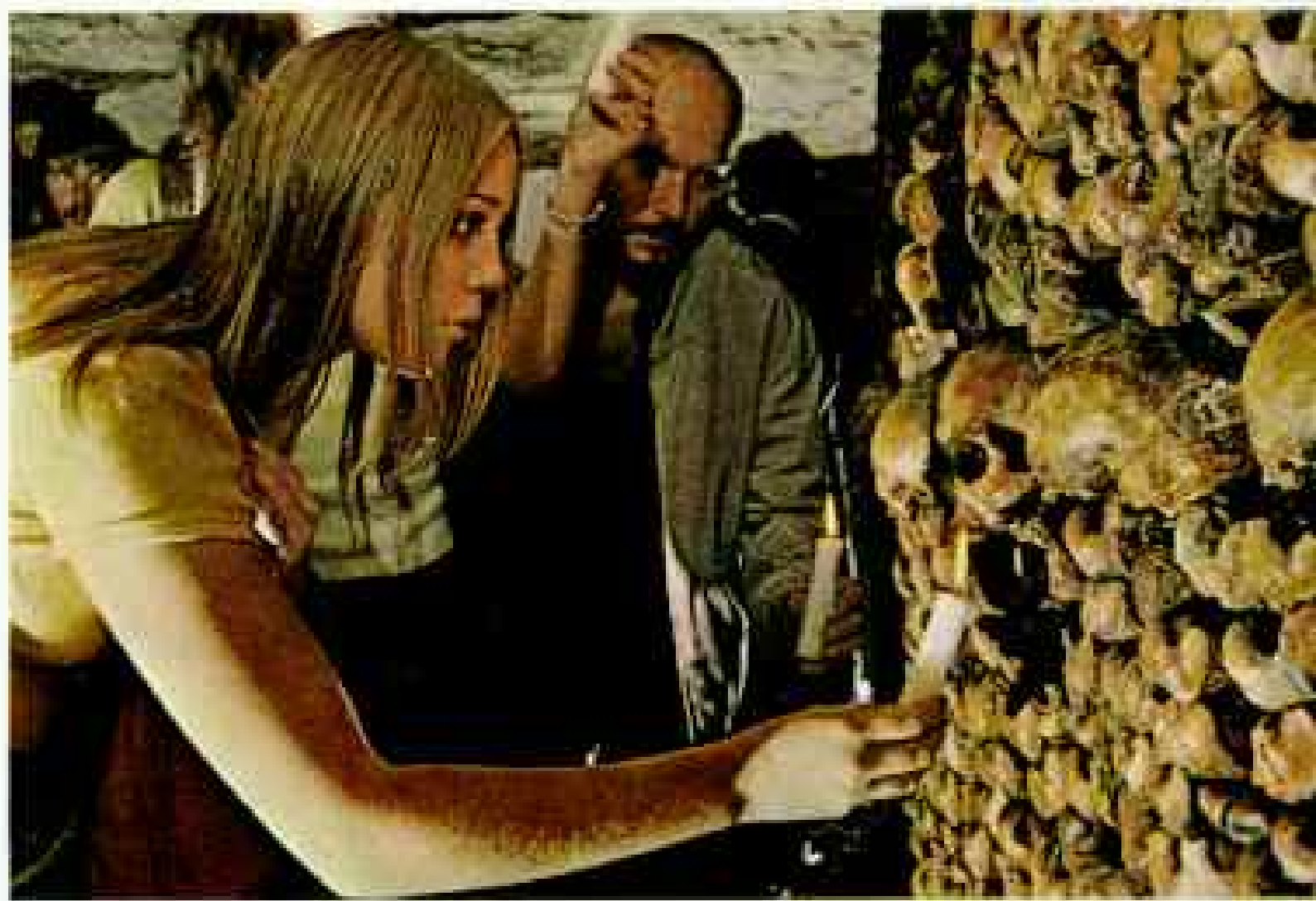
From circular vents overhead, dazzling columns of sunlight, thick and round as the pillars of Notre Dame, penetrated the dank passage (left). Captain Le Moine hushed the engine for a few seconds, and we drifted to the faint echo of water dripping somewhere off in the Stygian gloom.

Our southward course took us under the Place de la Bastille, then we emerged into the daylight world shortly before the canal joined the Seine. A breeze off the open water brought the smell of dead fish, and I saw a few of them floating, bloated bellies up.

"Badly polluted, the Seine," said Captain



Pillars of sunlight from the street above brighten a mile-long tunnel on Canal St. Martin, part of a waterway system that makes it possible to travel by barge from Paris to Berlin and even to Warsaw. Into the dripping quiet churns a vessel of the freight-hauling flotilla that has plied the canal since 1825. Trucks have reduced inland water commerce; nevertheless, river traffic keeps Paris, 230 miles up the Seine, the third busiest port of France after seaside Marseille and Le Havre.



Past stacks of bones, visitors wander by candlelight through the Paris Catacombs. Onetime limestone quarries hold remains of some six million people, removed from city cemeteries.

Mounting the Opéra's elegant staircase, French Minister of Cultural Affairs Jacques Duhamel leads his party past the stiff-backed Republican Guard for an opening night of ballet (following pages).







Baggage-burdened Frenchman makes his way through Gare Montparnasse. The sleek railway and subway station is part of a program to update and expand Paris's mass-transit system. The subway opened in 1900. Today 16 lines form a 145-mile network. An express route now under construction will link western and eastern suburbs.

Le Moine, and I recalled that someone had told me, not without a measure of exaggeration, that the river was only 50 percent water. "Certainly the canal's polluted too, but the Seine's worse. These fish, they came from farther up the canal, and when they swam into the water of the river—*fini!*"

Another canal serves as a highway through the city's northeastern outskirts: Scrap-iron dumps, junk heaps, foundries, glass factories, and oil tanks crowd the banks.

I had a close look at these industrial suburbs one day on Michel Bonnetain's barge.

"Not for me," he said, as we passed factories and more factories. "The people working there can have their dinner only when a whistle blows or a bell rings. No, not for me.

"I like the barge life," he continued. "It's a *métier spécialisé*; I learned it from my father, and he learned it from his father. I own this boat. I own my life."

High Rents Trigger Migration

I think that most Parisians have a sense of owning their lives, in a city that has always seemed impervious to change—but many believe that evil days are upon them. One feels a centrifugal force trying to pull the old Paris apart.

With the aroma of coffee and Gauloise cigarettes lacing the air along a street near the Louvre,* I stopped one morning to chat with a street sweeper. He used a twig broom right out of the Middle Ages.

"Where do you get the twigs?" I asked him.

"From the trees in the Tuileries Gardens," he said. "One batch lasts for three days. Longer than some things last in Paris. I came from Tunisia. My family is still there. There is no place for them here because it is more and more difficult for the small man to live."

I went, then, to the Rue du Cardinal LeMoine in the Latin Quarter to see Daniel Junqua, an assistant editor of a Paris newspaper.

"Yes, it's true," he said. "Paris is losing its little people—the butcher, baker, and grocer. There used to be four grocery stores right around here. Now there's only one. Same thing's happening to the other little places where we get meat, bread, wine—anything.

"They're all disappearing," he went on, "because the people who've always lived in this neighborhood cannot afford the rising rents, rents that have just about doubled

*The June 1971 *GEOGRAPHIC* featured "The Louvre, France's Palace of the Arts." See also "Île de la Cité, Birthplace of Paris," May 1968.

in the past dozen years, and so they are moving out to the suburbs. And the small shops, lacking customers, are closing and selling out; they'll be torn down and replaced by cinemas and restaurants and cafés for an entirely different clientele—for those who work in the big office buildings nearby but don't live in this neighborhood. *C'est triste, triste*—it is sad, sad."

If city rents that consume nearly half a man's monthly wages are driving Parisians to the suburbs, the consummate style enjoyed by the more fortunate continues to give the city a gilt edge.

And there is nothing quite so stylish as the Place Vendôme, with some of the most expensive shops on earth, and that famous hotel so elegant it has given a word to the English language—the Ritz.

I stopped by one day and asked to see M. Charles Ritz, whose father, César, founded the hotel in 1898. Monsieur Charles was on the other, or Rue Cambon, side of the hotel, which is a complex of three buildings brought together more or less around a delightful garden. After an 80-yard stroll along a richly carpeted corridor, I emerged in the Cambon lobby and spoke to the head porter.

"Monsieur Ritz is sitting just there," he said, nodding toward a corner of the lobby. It turned out that Monsieur Ritz has no office here—or anywhere else. He roams the hotel. Short, lean, with close-cropped gray hair and a smart mustache, and recently married, he seems much younger than 80.

"We are certainly not the largest hotel in the world," he told me. "Nor the most expensive. But we do believe in service; a regular staff of 480 for a maximum of 250 guests. We want our guests to feel at home." I wondered whose home he was thinking of.

Learning's Fine, But Instinct Helps

Since its founding three-quarters of a century ago, the Ritz has had only two *chefs des caves*. The chief of the wine cellars today is Maurice Guyot, 70, who came to work here in 1929. A remarkably spry man with a wide smile, he led me through his awesome domain of 70,000 bottles.

"In this métier," said Maurice, "one can always learn, and indeed one is obliged to learn. But," he flashed that wide smile, "it helps to be born with the right instinct for good wine."

This he proved with a wine he poured for me at lunch; it was an exceptionally fine

Bordeaux, Montrose 1929—a memorable year for Maurice, Montrose, and my palate.

Even though Paris shows traditional reverence for things venerable, it is at the same time an enthusiastic advocate of avant-gardism. The garde may not be as avant these days as it was in the brave era of artists like Picasso and Matisse and Braque, but . . .

Ballet Ends on a Deafening Note

There was a daring event last fall at the Opéra. Shortly after it opened its doors—closed for 14 months because of labor disputes—it staged the world premiere of an ultramodern ballet, *Aor*, with a score distributed between the orchestra and two tape recorders. Photographer Gordon Gahan went to take pictures, and he gave me a vivid account of the proceedings:

"It began with dancers in skintight zebra-striped costumes dancing to machine-gun fire, or what sounded like it. Then silence. Then chimes, horns, and bells. Then a long metallic rumble as the drummer hit a large sheet of aluminum and the dancers hopped and skipped.

"It went on for about twenty minutes, with two big loudspeakers emitting pops, burps, squeals, and the amplified beating of a human heart. Then what sounded like two steel forks ping-panging off a glass bowl, and the piece ended.

"Everyone seemed stunned. They stared up at that new ceiling painted by Marc Chagall. The composer came to the stage in a blue velvet suit. Someone yelled 'Bravo!' Suddenly everyone else was shouting, 'Boo! No! No!' The sound was deafening. A man threw down his program, shouting, '*Horrible!*'

"There was a gray-haired gentleman behind me. 'You see,' he called to me over the din, 'how traditional we Parisians are. I am booing, too. Not the music. I can't stand that ceiling. *Too nouveau!*'"

After the opera, tourists may go to the Café de la Paix, but Parisians seldom do. They take the Métro to Boulevard St. Germain, where the pleasures of the passing scene reach a certain height after 10 p.m.

If an Englishman's home is his castle, then a Parisian's café is his country. He becomes a citizen of the place, a partisan of its virtues, a participant in the lives of other habitués.

Some cafés have shared in the fame of their more illustrious citizens. Le Flore boasted author Albert Camus and existentialist

(Continued on page 83)



"Quelle robe! – What a gown!" A taster approves the color of *un vin excellent* by sighting toward a candle flame in a cellar of the Nicolas vintners, a major supplier of wines for Parisian tables.



Savoring good conversation, businessmen hold forth with Gallic eloquence at a bistro specializing in superior young wines, notably Beaujolais. Between



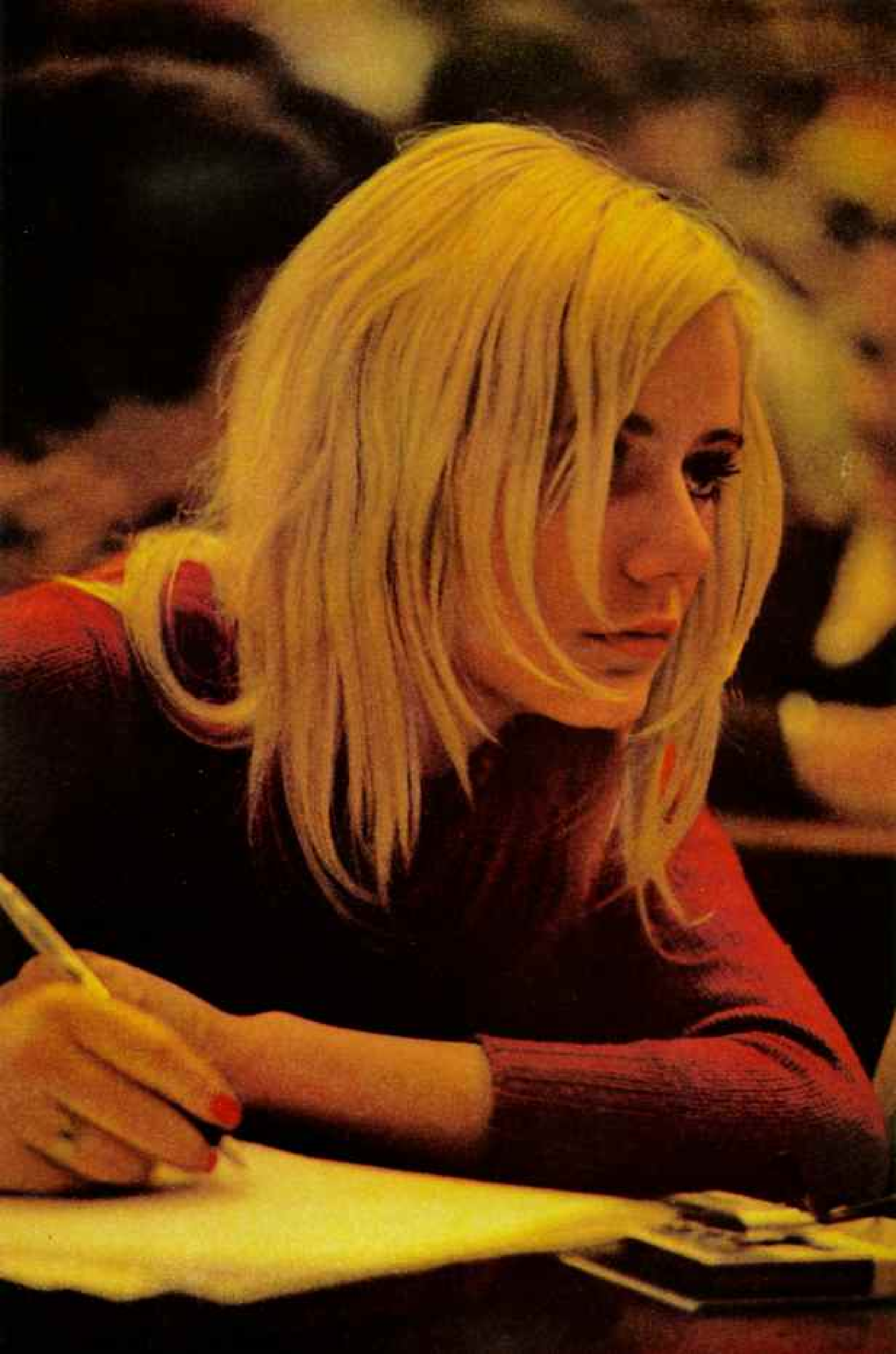
sips, tasters nibble at such complementary fare as bread, cheese, pâté, or sausage. Ironically, the term "bistro" derived from a word that meant "a bad alcohol" or "a bad drink" and was once applied to cheap places dispensing beverages of poor quality.

*"A BRILLIANT QUEEN OVER OTHER CITIES,"
Frankish King Clovis called Paris in A.D. 500.
Today some 13 million visitors a year pay homage
to the urban empress. Across the Seine from
the chalice-shaped Palais de Chaillot museum,
the Eiffel Tower soars like a mighty scepter.*

80







Comely candidate seeks a degree at the University of Law, Economy, and Social Sciences. The former University of Paris—also known as the Sorbonne—was an illustrious center of learning from medieval times. Now it has been divided into 13 institutions dispersed throughout the metropolis. Seven of them are in the Latin Quarter.



Mass-produced education: A professor of law lectures rows of collegians via microphone and overhead projector. A third of the university population of France resides in Greater Paris, where 190,000 students are enrolled. Their 1968 riots triggered such reforms as a lower ratio of students to professors, but university classes exceeding a hundred still exist, as this picture shows.

philosophers Jean-Paul Sartre and Simone de Beauvoir, who gathered there every day during the oppressive years of World War II. Their gloomy philosophy, in fact, was formulated in lively café conversations.

Next door to Le Flore on St. Germain is Les Deux Magots, named for two Chinese statues adorning this onetime rendezvous of the intellectual elite. A wicker chair at a corner table here is still the equivalent of front row center. An endless parade of strollers, beautiful and bestial, entertains you with their dress—hot pants, sizzling pants, suede gaucho pants, fur hats, bright scarves, beards, beads, boots, sandals. Two girls with silver sequins pasted to their eyebrows stand long-limbed near the curb. Traffic slows around them. The girls ignore a Renault in favor of a slowly cruising Porsche.

Good Feelings Offered in Trade for Food

Ernest Hemingway put places as different as the Ritz and Harry's Bar on the agenda. But not even he ran the entire gamut. Going at the pace of two a day, he might have visited all the city's cafés—had he taken a decade for the job. Yet by the time he finished, come to think of it, a lot of new ones would have opened.

The real Hemingway country, however, was in the Left Bank district of Montparnasse. He and his book *A Moveable Feast* immortalized La Closerie des Lilas, a café that had earlier been the favorite retreat of Lenin and Trotsky in their Paris days.

At nearby La Coupole, a little past midnight, a man hustles through with a canvas bag full of *Herald Tribunes* slung over his shoulder. For a franc you have a copy of the daily required reading for many Americans in France. The personal ad section outbids the news every time. An unidentified French musician always seems to be requesting affluent patrons of the arts to provide him with food money—care of *Tribune Box* #392. He cautions that they should not expect anything but good feelings in return.

The air of Montparnasse cafés is filled with the anxiety and gaiety of student life.

"In America things are different," a young girl says. "For example, here the examination is very important for your life. I know, for I didn't pass it last year. And now I have had to take the whole course again."

"You should have been here for Bastille Day," a young man says. "At midnight this Dixieland band showed up and led everybody



in a procession around the square singing 'Auld Lang Syne.' We ended up on the Île St. Louis pushing the trombone player through the streets in a grocery cart at two o'clock in the morning."

Paris has been used to student antics, some zany, some frightening, since Notre Dame and the University of Paris—the Sorbonne—grew up together in the Middle Ages. There is little left that is reminiscent of the antique university except the name Latin Quarter, surviving from the time when courses were taught in that ancient tongue. The Quarter, though, remains the symbolic heart of Paris's reputation as a seat of learning.

Student Unrest Leads to Deeper Troubles

I met two law students, Franck Reinhard and Jacques Portal, while walking there one day. They invited me to Franck's apartment, on the ground floor of an old building in the Rue des Boulangers.

"Young people today are pretty much the same everywhere," Franck said. "The same tastes, the same ideas. A little impatient, perhaps, that the world is not as good as we would like it. You see what is happening to Paris. Still, I never want to live anywhere else. Paris has everything. I hope to practice law here after I finish my studies."

It was not at all the figure of a radical who sat opposite me, and it was difficult for me to conceive of those days, only four short years ago, when many thousands of students took to the streets in violent demonstrations that shook the entire nation. The trouble had been coming for a long time. Dissatisfaction stemmed from the fact that higher education in France was a huge state system, hardly changed since Napoleon's time, with antiquated curricula and oppressive examinations. Also, the schools were terribly overcrowded and lacked adequate facilities.

In early 1968 a young radical, Daniel Cohn-Bendit, headed a leftist coalition of students that seized Nanterre, a suburban branch of the Sorbonne. On May 3, the police were ordered to break up a student meeting in the Latin Quarter, and the Sorbonne shut down for the first time in its 700 years. Riots resulted, and, as the unrest spread, the university system in France ceased to function.

Throughout May there were ugly scenes in Paris—barricades, tear gas, rocks and clubs, with more than 1,000 casualties. Then the trouble deepened further as the working classes joined the demonstrations, citing their



Pleasure outweighs catch as a fisherman on the Île St. Louis unhooks a *gardon*, a type of carp. Health officials rate the Seine in Paris as almost dead from the effects of urban wastes, but anglers still pluck small fish from the murky river. By the sunny quays (left), Parisians once bathed, laundered, and shopped at merchants' boats tied to iron rings in the wall. The Cathedral of Notre Dame looms on neighboring Île de la Cité, where Paris was born 20 centuries ago.

own grievances. At the end of the month, President Charles de Gaulle pledged educational and industrial reform.

The University of Paris disappeared as an entity, decentralized into 13 separate universities spread all around Greater Paris. Each would become autonomous, and the students would have much more say in administrative matters.

The Grenelle Agreement, promising improvements in wages and hours, brought peace to industry. But the earlier chaos had lasting effects upon all France. It led to an austerity program and devaluation of the franc.

The Ministry of National Education recently introduced another change, which will perhaps encourage the French to read more. Starting last April, the Ministry is presenting

to every newly married couple, free of charge, six volumes of French classics, handsomely boxed and bound in red.

Les Misérables on your honeymoon?

The city's young lovers, and there seem to be more of them in Paris than anywhere else, are never miserable. A motorbike screeches to a stop at a red light. The helmeted driver tilts backward, the girl riding behind him bends over his face, they kiss. The light turns green. The motorbike races on to the next intersection, the next osculation.

Many of these inseparable pairs, however, prefer to walk in the Luxembourg Gardens on a Sunday afternoon, hand in hand in the sunshine. You'll find children there too, riding donkeys, sailing toy boats in the pool, hurrying excitedly to watch a puppet show.



A rascal is sneaking up behind Father Christmas to make off with his bag of toys.

"Attention, Père Noël!" the children cry.

"Attention!" I cry.

The hero turns and flails his assailant. Pow! Pow! Pow! Cheers ring out.

Artists and Stargazers Fight for Stables

Another scrap, this one on a somewhat higher political if not artistic plane, is going on just beyond the end of the gardens, where an artists' colony is struggling against bureaucracy to survive. A five-acre estate of lawns and trees and stables spreads there, adjoining the Observatory that Louis XIV began in 1668. The Observatory wants more room for stargazing, and the artists want to stay in their stables.

Tall, slender André Tondou invited me into his studio, one of 16 converted from the former stables. In 1926 Tondou's "Bathers" joined the Chester Dale Collection. He still paints people to look like people.

"What will you do if the Observatory expansion forces you out?" I asked. He hunched his thin shoulders and turned his palms up in the French way of saying "Who knows?"

"We have every intention of fighting to stay," he said. "We opened our doors so that the public might see what a tragedy it would be to sacrifice this green oasis."

They had hoped to collect 10,000 signatures in their book of grievances to lay before the Minister of Cultural Affairs. Actually, they got nearly 13,000, including mine.

The artists of the Observatory stand in the



Acquiring equine poise, a young mount at the Republican Guard riding school (above) learns four-footed ballet under the control of his trainer's lunge line. Restraining rein attached to the animal's girth teaches posture befitting the ceremonial pomp of the mounted police.

Horseflesh and high fashion run side by side. At the Grand Prix de Paris (left), gala event of the racing season, socialites exchange greetings. They gather at Longchamp, one of two race courses in the 2,200-acre park called Bois de Boulogne. Owners from around the world bring their Thoroughbreds to Paris, attracted by rich French purses.



WRAPPED IN BLUE MYSTERY, *the City of Light* bows to evening. A glowing bateau-mouche cruises with tourists near Pont de l'Alma, one of Paris's 36 bridges across the Seine. The Basilica of Sacré Coeur sits atop the hill of Montmartre.



unmatched tradition of Parisian art, but, alas, only the ghosts of the old masters are left wandering the crooked alleys of Montmartre, where Renoir, Toulouse-Lautrec, Utrillo, and Picasso once lived and worked. They frequented the cafés along the narrow, winding streets and the Place du Tertre, which, with its trees, would still look like a quiet village square if you could keep out all the tourists and aspiring artists and the forest of easels that crowd the little place.

For devout pilgrims the biggest attraction of Montmartre is Sacré Coeur, the bulbous white basilica crowning the highest hill in Paris and visible from almost anywhere in the city (preceding pages). From the basilica's sacred site you can look down into the profane pitfalls of Pigalle, hotbed of some of the gayest and gaudiest night life in town.

Where "Evening" Begins After Midnight

The French penchant for social invention and style has contributed yet another institution to modern Western culture—the discotheque. An early one—Whiskey à Gogo—began in 1950 as a private club for people who couldn't afford more expensive places. Reasonable drinks, music by jukebox, and self-entertainment were the basis of the genre. So entertaining were some of the selves that other people soon came to watch and also to get into the act.

One of the most exclusive "in" places in Paris today, Le New Jimmy's, still maintains the aura of a private club. It hides behind a speakeasy door. A small hinged wooden trap lets the guardian scrutinize you. If in doubt, she calls Régine. Entrance is a sure thing for her personal friends only.

Régine herself will welcome you. "You are here too early," she will say. "We have only just opened. It's barely half past *minuit*."

The music is loud enough to make you feel trapped inside a giant speaker. The closeness of the shiny black walls and ceiling illustrates the French word for nightclub: *boîte*, box.

Sometime after two there is a stir and the

Whisper of satin and cloud of veil mark the traditional bridal-gown finale of a fashion preview at the house of Nina Ricci. Owner Robert Ricci, seated at center, applauds the work of head designer Gérard Pipart, on his right. With the decline of custom-made creations, Parisian designers now turn to ready-to-wear clothing.





beautiful people, the *beau monde*, arrive. That's the French singer Johnny Hallyday! That's Elsa Martinelli, the Italian actress! Régine welcomes them all with kisses. Do they never sleep?

Keeping up with the *beau monde* means getting to bed around six and not stirring out until nine—in the evening. Of course, all that changes when you have to earn a living from nine—in the morning—to six.

Like the people—nearly 600 of them—who work at Hermès. This establishment began as a saddlery in 1837 and later branched out to include clothing. It specializes in a silk scarf that has become its trademark.

But it still majors in leather goods: saddles, bridles, belts, suitcases, attaché cases, gloves, slippers; and toilet-article cases, women's handbags, men's wallets; and of course the

agendas—pocket-size appointment books for which Hermès is renowned.

The leather goods are all produced in Hermès's own workshops, which occupy the upper floors of three adjoining buildings, each six stories high, on the fashionable Rue du Faubourg St. Honoré.

"Everything is done by hand—and often to order," said 40-year-old Oxford-educated Patrick Guerrand-Hermès, one of the directors. "That's why it is expensive.

"We want to serve the people who like well-made, beautiful things," he continued. "And those people are coming from all over the world to shop here."

Just after World War II, Marlene Dietrich tried on a suede dress at Hermès. Looking at herself in a mirror, she seemed undecided until Patrick's grandfather said to her, "You'd



Feasts for the eye and palate enchant diners at La Tour d'Argent as dusk colors the Seine and Notre Dame. Inns or restaurants have occupied this magnificent Left Bank site for four centuries. In a nation of gastronomic excellence, La Tour is one of only 12 establishments to rate three stars in the prestigious Michelin guide to public dining.

do well to get that dress. It's one you could wear twice."

In many of the city's famed houses of haute couture changes are taking place.

"Today a custom-made dress costs \$1,200," said Robert Ricci. The lean and graying president of Nina Ricci, the Paris fashion house founded by his mother, wore a suit that looked every bit of that price.

"Women are turning more and more to the boutiques for ready-to-wear clothes," he went on. "So, to stay in business, we have had to create and sell perfume—some costs only \$12 a bottle here."

The twelves add up to far more than the twelve hundreds. The scent is sold in almost every country; in the United States, it is a leading seller. The perfume side of the business employs about 1,000 people, the couture side about 400.

Small Kitchens Can't Keep Secrets

Still, the couture side finishes ahead in my book, for it has Mlle France Vadrot, a mannequin as languid and lovely as she is wispy and graceful. Hair long and as black as her eyes. Exquisite white skin, a fine nose, generous red lips. Can a scent top that?

What is the secret of her beauty?

"I like to dance," she said, "and go to Normandy for long walks in the country. And I love to eat!"

When Parisians go out to dine at a good restaurant, they make the most of it—never mind the cost. More likely than not they will choose a bistro like Allard—justly famed for André Allard's Beaujolais and his wife Fernande's *beurre blanc* sauce. It may be two weeks before André can find a place for you in his black notebook, but when you do arrive, pushing past the steel warming counter and jostling waiters, you will find Fernande in animated conversation with a French housewife insisting upon getting a recipe. And Fernande gives it to her!

"Small kitchens are no good for keeping secrets," she says.

If André has just returned from his annual trip to the wine country, he may describe the art of buying his special wines—but that is only half his art.

"Never, never, never," he says, "will I let a guest here for the first time order a stupidity. Yesterday, I had to explain what the oil and vinegar in a salad dressing would do if served with a turbot *au beurre blanc*. Never would I permit a guest to order such a thing!"

Just as the humble wineshop gave rise over the years to the café, so the bistro has evolved in exceptional cases to what can only be called the temple of cuisine, a precinct hallowed in the gourmet world. One such place is La Tour d'Argent, at the top of a six-story building on the Left Bank.

I'll always remember the first time I dined there—one spring evening on an earlier visit to Paris. From my table I gazed out on the Cathedral of Notre Dame sailing downriver through the silver haze of a June dusk (facing page), just as the lights of Paris were blinking on like myriad fireflies.

When I suggested smoked salmon, the head waiter hesitated.

"You are dining in La Tour d'Argent," he finally said in a firm but kindly tone. What, then? Why, *quenelles de brochet*, of course.

Cookbooks will tell you that *quenelles de brochet* involves milk, butter, bread crumbs, eggs, salt, and finely ground fresh pike—all mixed, poached, and served with a cream sauce. But just what magic La Tour d'Argent works to turn these simple ingredients into a masterpiece is not in any book.

Next came the specialty of the house, pressed duck, befriended by a bountiful Burgundy decanted by candlelight. And, in due course, I finished the dinner with wild strawberries and a suffusion of euphoria.

Doomed Market Clings to Life

One secret of French cuisine has always been the freshness and quality of the ingredients. During the past century, Parisians have found those at Les Halles, the huge glass-and-iron pavilions of the central food markets that Émile Zola called "the belly of Paris." Here again, change has come. In 1969 all but the butchers had to move from Les Halles to suburban Rungis.

One morning I visited what was left of Les Halles. Five of the 12 market pavilions had disappeared. But the meat center was bustling, handlers burly as football linebackers hustling massive burdens of beef on their shoulders. Woe to him who got in their way.

Around Les Halles I found an animated neighborhood of good smells and bad, streets with names like La Grande Truanderie (the Great Delinquency), lanes lined with tilted, medieval-looking houses, and all kinds of cafés. The "dames" of the district lurked in dark doorways of crummy hotels or stood brazenly on street corners, garish in the sunlight. Beefy men in bloody aprons crowded



In the command center of a war against snarled traffic, television consoles at police headquarters flash views of Paris's heavily traveled streets. As



the gleaming zinc bars for a glass of red, their long morning's work done.

"How much longer will the market stay here?" I asked a meat seller.

"It'll be another year," he said, "before our buildings at Rungis are ready."

"Will you be sorry to move?" I asked.

"Well, it is sad to leave," he admitted, "but it is too crowded and old-fashioned here."

Once Les Halles are all gone, what will take their place? The city has plans for a park above a giant underground complex to include two subway stations and a shopping

center. Next to the park will stand a museum of contemporary arts and a public library.

Which may or may not relieve the congested streets of Paris.

Problem No. 1: Traffic

"Every day 940,000 vehicles enter and leave Paris," said Jacques Lenoir, the Prefect of Police (page 100). "And just about a third of the cars that park in the city do so illegally—even though the parking facilities have doubled in recent years. But, then, so has the number of cars."

congestion develops, coordinators speed traffic police to trouble spots. Some two million cars are registered in Greater Paris, yet the city's streets are deemed capable of handling only 200,000 moving vehicles at a time. The result: massive traffic jams. Despite new freeways and express subways, movement on the broad Place de la Concorde (left) slows to a crawl.



Monsieur Lenoir sat at a desk flanked by banks of switches and buttons. Television monitors showed us how traffic was doing at any of 28 different locations. At Place de l'Opéra, Place de la Concorde, Place de l'Étoile—recently renamed Place Charles de Gaulle—and approaches to bridges over the Seine, the TV reflected familiar views of Paris's problem No. 1.

"A very important thing to do," said the prefect, "is to provide adequate parking areas at key points on the city's perimeter. That way commuters can leave their cars on the

fringe of Paris and take the Métro or bus into the center."

The move to the suburbs is only the latest in a long series of interurban shake-ups dating back hundreds of years.

Take the district of Le Marais, "the marsh," so called because it used to get swamped each time the Seine rose above normal. Eventually drained and protected against further flooding, Le Marais became in the 16th century the best address in Paris. But then, in the mid-18th century, high society moved west to the *faubourgs*, or suburbs, of St. Honoré and St.

Germain. Artisans swarmed into Le Marais and honeycombed the graceful buildings with dingy little workshops and hovels.

Now, however, there is a program to restore and preserve the traditional architectural aspect of Le Marais and to create better living conditions for its residents. The success of this project depends largely on the Association for the Protection and Improvement of Historic Paris.

At the Association's headquarters in a house in Le Marais with a cryptlike cellar that dates from 1240, I was welcomed by Miss Paris—Mlle Marie-Thérèse Paris, that is, the administrative secretary.

"This building was a large and substantial home," she said, "but about 250 years ago it was divided into three tenements. By our own century, the house was a ruin. It would have come down had not the Municipal Council given it to the Association. Now we have many others in Le Marais, old houses we are converting to living quarters again. We will save, we hope, a little bit of old Paris."

City's Heart Reshaped by a Bold Prefect

Certainly the oldest and one of the truest things said about Paris is that the more it changes, the more it is the same. Yet the look we know, that of the grand boulevard and the sweeping vista, dates from only a century ago, when Baron Georges Haussmann, Prefect of the Seine, got fed up with quaintly jumbled districts and little streets. He obliterated entire neighborhoods to lay out his avenues and execute his heroic plan (map, pages 69-71). He also had an ulterior motive—to open broad lines of fire for his troops, and roads to transport them quickly. He wanted no more revolutions like that of 1848.

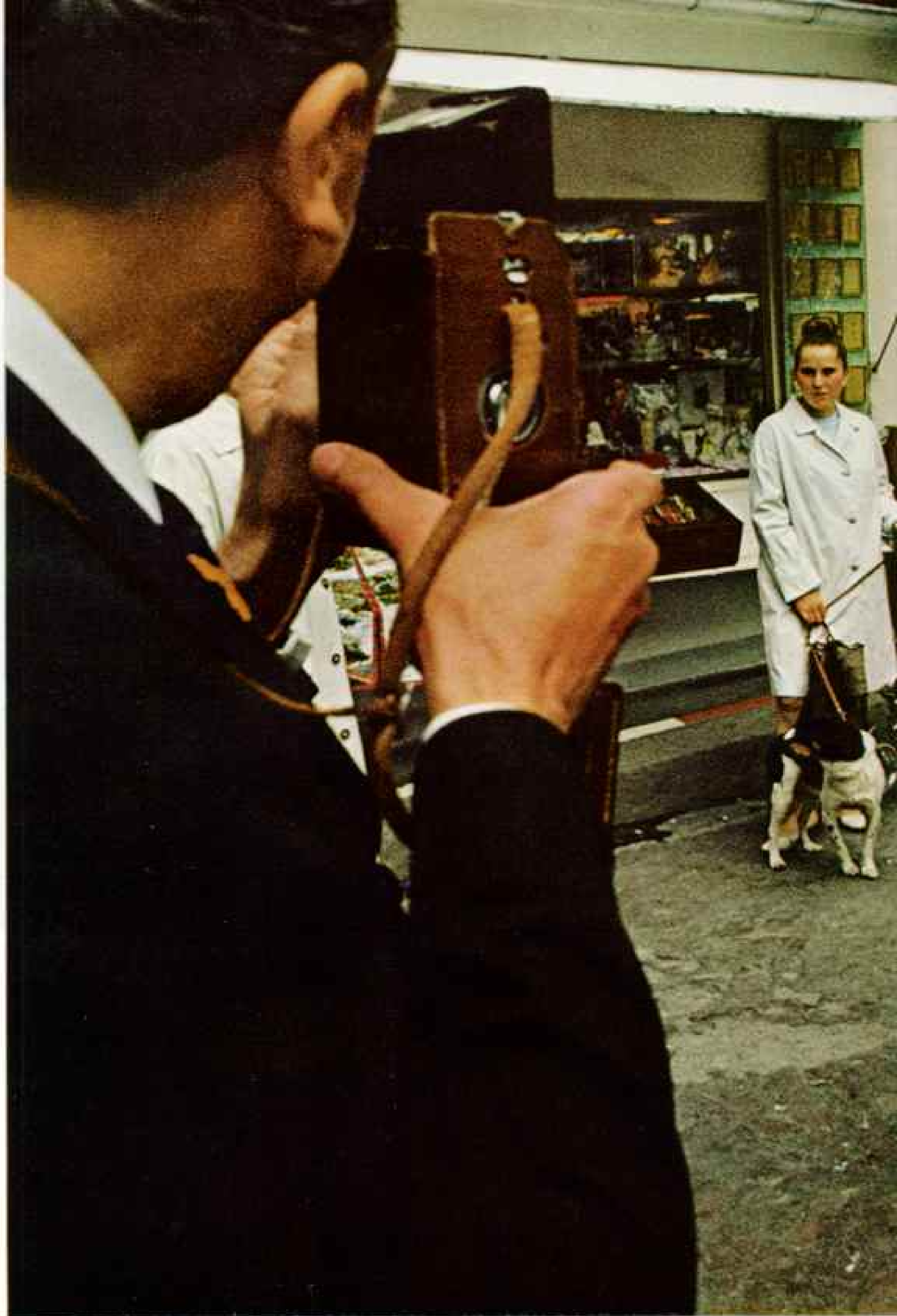
On guard against a different kind of revolution stands the Académie Française, that awesome literary society created in 1635 by Cardinal Richelieu to work toward the purity of the language, to establish a sure usage of words. Its mission remains much

(Continued on page 102)

A life of triumph, a tomb of splendor: Napoleon Bonaparte lies in a red porphyry sarcophagus before 12 statues representing his major victories. Visitors line the balcony ringing the emperor's crypt at the Hôtel des Invalides, once home to some 7,000 retired soldiers. Sound-and-light show in the Invalides courtyard (right) recounts the nation's military heritage.







Street becomes a stage when an important moment arrives for a French family—a



boy's Solemn Communion. Proud father directs the cameraman outside the church.



ADAM WOOLFEIT

Four men guide Paris through the seas of modernity. Like many a 20th-century metropolis, the world's third most populous city has spilled far beyond its original boundaries, a result of industrialization that began in the mid-1800's. In 1964 the government reorganized to better administer the unwieldy sprawl of Greater Paris, home to eight million.

Paris proper remains divided into 20 *arrondissements*, each with a mayor who deals with such matters as births, deaths, and marriages. City services—streets, utilities, and education—fall under the Prefect of Paris,



Jean Verdier (above, left), appointed by the national government. Responsible for law enforcement, Prefect of Police Jacques Lenoir (above) heads a 24,000-man force stationed throughout the metropolis. Telephone console before him connects with the city's many precincts.

Services involving both Paris and its burgeoning suburbs, such as hospitals, transportation, and construction, are handled by the Prefect of the Paris Region, Maurice Doublet (upper right).

The 90-member Municipal Council, elected by popular vote, approves the city budget. The council annually elects its own president, in this case Jean Chérioux (lower right).





Bastille Day traffic floods the Champs Élysées as Paris remembers July 14, 1789,

the same today: "To defend the integrity of the language threatened by negligence, ignorance, ephemeral neologisms, imported words, deviations of meaning."

The Academy has a membership limited to 40 "immortals"—distinguished men of letters elected for life. To belong to the Academy is one of the greatest honors a Frenchman can attain. No women. The members are principally concerned with editing the dictionary of the French language.

"They are now at work on the ninth edition of the dictionary," M. Daniel Oster, the administrative secretary, told me. "The first came out in 1694."

"How far along is the ninth?" I asked.

"At letter 'C'," he said.

"When will you be finished?"

"Some time in the 21st century."

An immortal has stated that one of the most important functions of the academicians is to die, for an academy like this has a languid life when too many members indiscreetly outlive the candidates.

Among those who have lived, and died, for the Academy's cause are Corneille, La Fontaine, Voltaire, Alexandre Dumas fils, Victor Hugo, Anatole France, Paul Valéry, André Maurois, and François Mauriac.

From the Académie Française, I crossed to the Right Bank and walked up the Quai de la Mégisserie. Three tree-shaded blocks long, this stretch of the embankment becomes a sidewalk zoo when the many pet shops set out their wares. I walked past cages crowded with turtles and cages of big bats hanging upside down; there were puppies, Bantam roosters, pouter pigeons, and one peacock;



birth date of the French Revolution.

pheasants, budgerigars, ducks, and partridges; canaries and a Virginia cardinal; also salamanders, snails, snakes, tadpoles, exotic fish, lizards, and even silkworms feeding on what I took to be mulberry leaves.

And so I came to the Hôtel de Ville, which in France means "city hall."

Elsewhere in France every *hôtel de ville* has its mayor. Not so here at the nation's most important city hall of all. Paris is divided into 20 *arrondissements*, or administrative wards, each of which has a mayor. But the city has no overall mayor, or lord mayor; instead, the responsibilities rest with four men: the Prefect of the Paris Region, the Prefect of Paris (the city proper), the Prefect of Police, and the President of the Municipal Council (pages 100-101). And of these, the Prefect of Paris and the Prefect of Police are most

responsible for the administration of the city.

Amid elegance appropriate to the office of the Prefect of Paris, Jean Verdier received me in his vast, high-ceilinged chambers at the Hôtel de Ville. A man in his mid-fifties without a trace of gray in his black hair, the prefect spoke softly and dressed conservatively. On the left lapel of his dark blue suit he wore the crimson ribbon of *Commandeur de la Légion d'Honneur*.

"Paris mustn't be a city driven immoderately toward modernism and industrial efficiency," he said. "Nor must it be purely a museum city, oriented only to the past. There must be a balance to avoid population movement. I want the *petit peuple*—the small shopkeepers and laborers—to stay in Paris, for it's all kinds of people that give the city a soul. I don't want Paris to become a city of office employees or a city only for the rich.

Music Breaks the Barriers

"Just last Sunday I went to an organ recital in Notre Dame," the prefect continued, "and I was impressed by the mixture of people of all ages and classes. Many young people, many parents with children. It was reassuring to see such a diversified audience finding the same joy in the same place."

I, too, had attended the same recital and could never forget how the *Chorale No. 1 in E Major* of César Franck filled the vaulted immensity of the cathedral with joyous thunder. It was organ music at its most palpable; it pressed against my breast like a mighty wind. It had force enough, I imagined, to make the massive pillars tremble.

"What did you think of César Franck's *Chorale*?" I asked the prefect.

His face lighted with a smile far more eloquent than any words. We looked at each other like old friends.

"Monsieur Walker," he leaned toward me, "I'll tell you a secret. When I heard the music of César Franck, my eyes filled with tears."

Well, Monsieur le Préfet, so did mine. At that most human of conditions—response to transcendental beauty. I suppose it is a civilized trait, learned in places like Paris over long periods of time by men trying to put the brute behind them, to find an art even in the mere existing on this planet.

And if Paris changes beyond our dreams, she will still, I think, teach men that. Especially when spring is coming, and your step has a bit of a jaunt in it, and your friends at the café are waiting for you. □

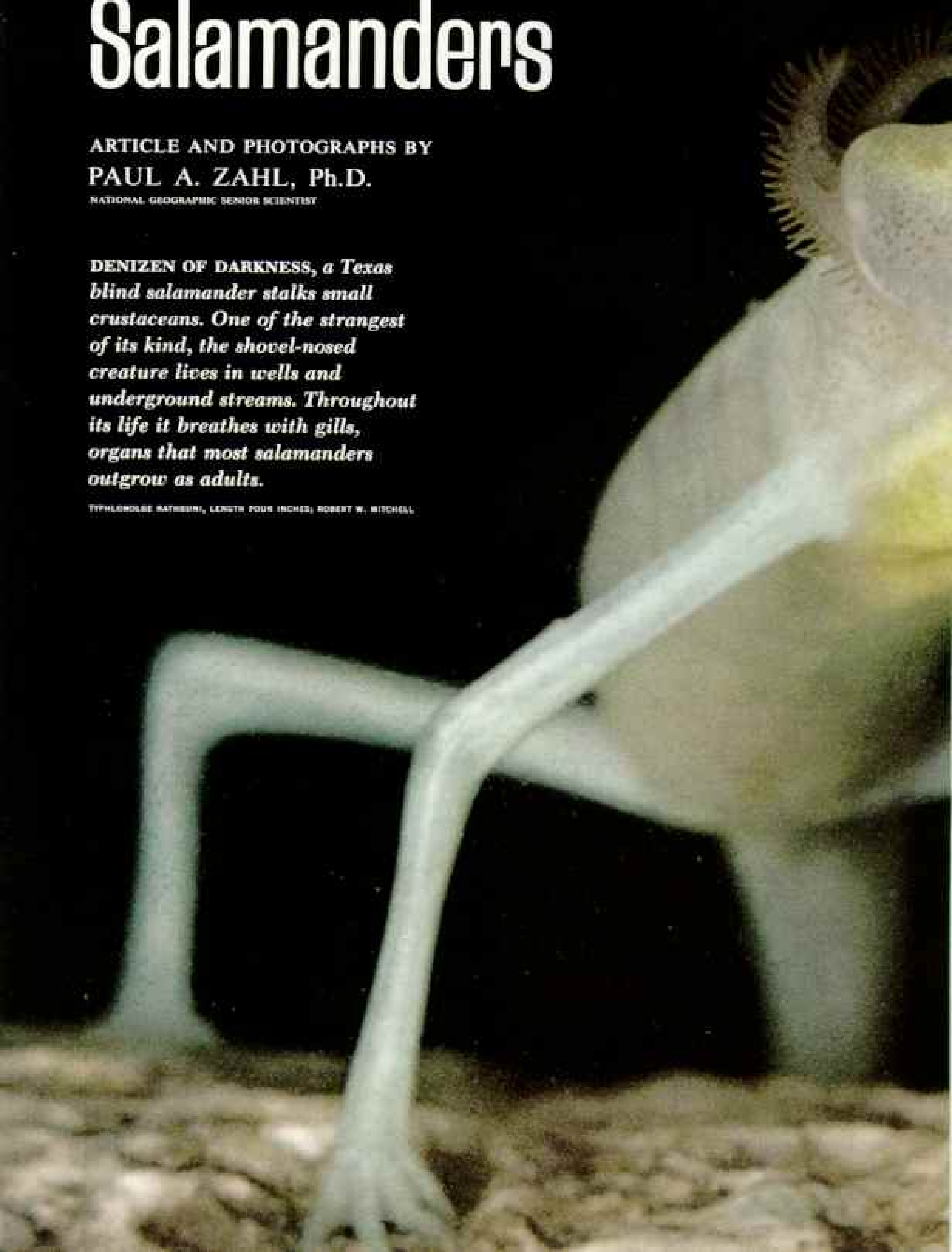
The Shadowy World of Salamanders

ARTICLE AND PHOTOGRAPHS BY
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DENIZEN OF DARKNESS, a Texas blind salamander stalks small crustaceans. One of the strangest of its kind, the shovel-nosed creature lives in wells and underground streams. Throughout its life it breathes with gills, organs that most salamanders outgrow as adults.

TYPHLOMOUS BATHURSI, LENGTH FOUR INCHES, ROBERT W. MITCHELL





FIRST MET the ugliest salamander in North America late one night in Arkansas. Appropriately, it's called a hellbender. It was slimy, about a foot and a half long, and blotchy brown. Its flattened head, set with cold, beady eyes, merged necklessly with a body sheathed in grossly crinkled skin, from which protruded a ponderous tail. Legs were short and stubby-toed. In all, it suggested a cross between a fish, a lizard, and some weird crawler from a prehistoric swamp—or a horror movie (below).

Earlier that night I had joined a hellbender hunt below the spillway of a dam. Carrying flashlights, buckets, and dip nets and wearing waist-high rubber boots, we moved carefully over the mossy rocks, balancing against the strong current. Almost immediately I saw

one of my companions reach down and come up with something that looked like a shred of an old motorcycle tire.

In less than 20 minutes the waders were back on shore with a dozen hellbenders for my cameras—specimens of *Cryptobranchus*, largest salamander in the Western Hemisphere. Only one relative is bigger. A native of China and Japan, where its meat is considered a delicacy, it may weigh as much as 50 pounds and reach a length of five feet.

The hellbender, found sparsely from New York State south to northern Georgia and as far west as Arkansas and Missouri, lives in rocky clear-water streams. At night it prowls for crayfish. Occasionally it goes for a fisherman's bait. Faced with so repulsive a catch, the fisherman more often than not cuts the



line instead of dislodging the hook. But the appearance deceives: *Cryptobranchius*, while capable of a pinching bite, is harmless.

The hellbender is anything but beautiful, but its relatives among the group of tailed amphibians known as salamanders and newts include some of the handsomest of creatures: delicately formed, gracefully agile, elegantly colored. And, hellbender included, I find salamanders among the most fascinating forms of life; dividing their existence between water and land, they represent a crucial step in the evolutionary process.

It is not much of a mental leap from the hellbender back to the long-extinct vertebrates that made the momentous transition from water to land. As reconstructed by paleontologists from fossil remains, many of

those creatures bore a striking external resemblance to the hellbender and other living salamanders. This is not to imply a direct-line descent—only that certain ancient features seem to have persisted.

The transition began more than 350 million years ago, during the Devonian period, when fishes were the only animals with backbones. Among the many kinds of fishes then struggling for survival, some had internal lung sacs into which they gulped air—though they still breathed by means of gills as well. Equally important, they had sturdy paired fins that enabled them to creep over pool and river bottoms in search of food.

During droughts, the lung sacs and those crude appendages were blessings. If a pool
(Continued on page 112)



CRYPTOBANCHIUS ALLEGANIENSIS (LEFT); *AMPHIUMA* (RIGHT)

Wrinkled horror, a hellbender (left)—largest of Western Hemisphere salamanders—stalks a crayfish dinner. Appearance deters most people from touching the slimy beast, though the 18-inch-long river dweller holds no danger for man.

Vicious jaws of its kin the *Amphiuma*, nicknamed "congo eel" (above), require the handler to wear gloves. Neither African nor an eel, this tiny-legged species thrives in swampy bogs of the southeastern United States.

Cloaked in confusing guises, the red-spotted newt takes various roads to maturity. Feathery gills distinguish the larva, hatched from an aquatic egg. In dry regions the newt may never leave the water, keeping its gills even as an adult (lower animal, below). Sometimes the gills atrophy before the salamander breeds (middle, below). Usually they disappear completely as lungs develop and the newt metamorphoses into the terrestrial red-elf stage (right). In one to three years this eye-catching adolescent changes color again and returns to water as a normal air-breathing adult (salamander at rear, below).



NOTOPHYMELAS BIRIDESCENTIS RED-ELF STAGE (above), AVERAGE LENGTH 2 1/2 INCHES, ADULT (below), 3 1/2 INCHES





EMMYTER LONGICAUDA LONGICAUDA, 5 1/4 INCHES; ROBERT S. SIMMONS GARDEN AND BOB BELONY



AMBYSTOMA TIGRINUM BARBATUM, 3 INCHES



SPINOSA ENCHOCHELE PLAFENSIS, 2 1/4 INCHES

Surprising colors mark creatures that live most of their lives in darkness. Long-tailed salamanders (top) seek worms and insects under rotting logs, in caves, and in seepage areas. The barred tiger salamander (middle) survives even the dryness of the Great Plains, living in damp burrows and returning to water only to breed. Breakaway tail of the Sierra Nevada salamander (lower) narrows at the base; when a predator grabs it, the appendage snaps off, allowing the salamander to escape.



floating in transparent jelly, northwest salamander embryos (left) live on yolk stored within their bodies. Algae tint each egg case green.



EGGS OF *AMBLYSTOMA GRACILE*, 1/8 INCH; *AMBLYSTOMA MACULATUM*, 1/4 INCHES; ROBERT E. SIMMONS (ABOVE)

New life flows from the body of a spotted salamander (above), balancing on a branch that will become an underwater hatchery. Spring rains can bring swarms of these woodland creatures to breeding ponds, where they court in a nose-rubbing aquatic ballet. Pairs then separate, and the male deposits sperm packets on the pond floor. His mate draws them into her body and lays about 200 eggs. The eggs develop on their own—or become a meal for predators.

shrank or its water stagnated, losing oxygen, the animals needed only to surface for a gulp of air. As the pool dried up, the leg paddles could carry the creatures laboriously overland to deeper and cleaner water. The paradox, as pointed out by paleontologist Alfred S. Romer, is that "land limbs were developed to reach the water, not to leave it."

As ages passed into eons, evolutionary processes brought about improved leg paddles and lung sacs. Certain squat and bulky species—the first amphibians—chose the best of both worlds, a combination land-and-water existence. (The word amphibious, appropriately, means "leading a double life.")

Some amphibians became wholly land adapted, others returned to the water, most fell by the wayside, as the fossil record shows. Of the survivors, some gave rise to other salamanderlike types as well as to the forebears of frogs and toads. In the flow of time, reptiles appeared. One line produced the most amazing creations of all, the mammals.

Maturity Can Take Many Forms

No matter how divergent their shapes, sizes, colors, or habits, salamanders and most other living amphibians are cold-blooded, have moist skins, and limbs or limb vestiges instead of paired fins, lay jelly-coated eggs, and require a highly humid environment.

Salamanders usually hunt at night, preying upon insects, and spend the daylight hours beneath rocks, logs, and forest litter, or in niches in stream beds and ponds.

Sometimes members of the same species appear to be totally unrelated, differing markedly in color and behavior according to their phase of development. Take, for example, *Notophthalmus viridescens*. In the spring this newt—as some of the more aquatic salamanders are called—deposits eggs in a still pond, gluing them to underwater plants. In three to five weeks the eggs hatch into tadpolelike swimmers, each about a quarter of an inch long, with external gills. Legs develop as the young red-spotted newts grow to nearly adult size. By summer's end they have functioning lungs, gills have deteriorated, and their bodies have turned a rich orange (pages 108-109).

Handsome now, the newts—called red efts at this stage—crawl out of the pond to begin a one- to three-year period on land. As they approach sexual maturity, their brilliant

coloration changes to drab greenish brown, and they slip back into the pond to resume aquatic ways. The life pattern of salamanders can vary considerably, however, even within a species, and sometimes this terrestrial stage is bypassed entirely.

Last summer I visited Southern Illinois University, where Dr. Ronald A. Brandon, a zoologist, maintains a colony of salamanders, including axolotls; the word means "servant of water" in the language of the Aztecs. Dr. Brandon's specimens of *Ambystoma mexicanum* are about eight inches long and sport bushy brown gills like Indian headdresses.

"I bought these in a market in central Mexico," Ron said. "People there eat them."

Each was isolated in a half-gallon glass bowl, scores of which lined the laboratory shelves. "We're interested not only in the classification and ecology of Mexican species of *Ambystoma*," he continued, "but also in what is called neoteny. This is the axolotl's capacity to mate and reproduce though it spends its entire life in the larval aquatic stage, keeping gills and a body fin." Ron showed me some newly hatched axolotls whose parents, just a few bowls away, were exact look alike, only much larger.

Scientists have discovered that they can make the axolotl advance to a stage it does not achieve in nature. The change comes about when the animal is injected with thyroxine, one of the hormones that affect growth and development in humans. The axolotl's gills gradually disappear and its body loses its larval characteristics.

Mud Puppies Never "Grow Up"

This curious condition of neoteny is not exclusive to Mexican axolotls. The common mud puppy of the eastern and middle United States—so named because superstition falsely holds that it can bark—also remains larval all its life. However, thyroxine will not budge a mud puppy from its larval state; a number of other neotenic salamanders are similarly resistant. Why some respond to thyroxine while others do not intrigues researchers. The explanation may well shed further light on how hormones work in the human body.

When the male axolotl is ready to mate, he deposits underwater, on pebbles, leaves, or twigs, tiny gelatinous blobs called spermatophores topped with swarms of microscopic spermatozoa. In ritual sequence the female

lowers herself over the spermatophores, drawing the sperm into her body to fertilize the eggs she is about to lay.

The axolotl is one of a score of highly diversified species of the widespread genus *Ambystoma*. Another, the marbled salamander, displays unusual breeding and nesting behavior. I learned of it in the company of Dr. Charles Stine, a Baltimore dentist who is doing research on salamanders for a doctorate in ecology and behavior.

Autumn Rains Trigger Hatching

On the outskirts of Baltimore one afternoon last autumn, Dr. Stine showed me a dozen or so numbered wooden stakes, like popsicle sticks, driven into a shallow depression in the ground. Each marked the location of a nest found during the previous season.

"The marbled salamander lays its eggs in fall instead of spring," Dr. Stine noted, "and on land instead of in water. The spot selected for the nest is always low enough so that it floods during autumn rains. The eggs hatch when the water reaches them, and the young salamanders remain there for the aquatic phase of their cycle."

He knelt by a marker and brushed away humus and fallen leaves. In a small hollow a beautifully mottled black-and-white finger-long salamander curled around her clutch of about a hundred pinhead-size eggs. In some, perfect embryos showed through. I was reminded of the motherly devotion of salamanders of the Plethodontidae family (next page).

"Year after year," Dr. Stine continued, "some females return to the same nest site. One of my marked females has come back to the same spot for three years. How she finds her way after months of feeding far off in the forest and after spring and summer rains have flooded the area is uncanny."

But then, many facts and certainly all fiction about salamanders might be termed bizarre, including the once-popular belief that fire could not harm these animals. In centuries past they were held in special awe for this reason. The myth was born, no doubt, when logs harboring salamanders were tossed into fires. The heat moved the creatures to get away, and watchers thought they saw them creep through the flames unharmed.

My search for salamander lore of a more solid sort took me to Forsyth, Missouri, to meet Tom Aley, a hydrologist with the U. S.

Forest Service. "All my life I'd wanted to own a cave," Tom told me, "so when I had enough money for a down payment, I bought one nearly two miles long, together with the 126 acres of land on top of it." There Tom has set up his Ozark Underground Laboratory—a center for studying subterranean waters, and cave geology and biology. He invited me to search his cave for salamanders.

It was like other large limestone caves of the Ozark region, with a cool stream, occasional cascades and quiet pools, stalactites and stalagmites, bats and salamanders. In the beams of our flashlights, we saw them: pinkish gray grotto salamanders, three to four inches long, some clinging to cave walls, others slithering in shallow mud-bottomed pools.



Desmognathus fuscescens BARDESI, 8 1/4 INCHES

Like twin gunsights, tawny, black-edged streaks may help the mountain spring salamander gauge when insects and other prey come into striking range. If extended, the eye-to-snout markings would converge at a point just within reach of the creature's sticky tongue. This lungless species absorbs oxygen through the skin. It thrives in moist Appalachian forests.

Their eyes, though normal in the larval stage, become functionless in the adult.

A truly sightless species is the Texas blind salamander, found in wells and underground streams. White and about four inches long, it has spindly legs, tufted gills, and a lifelong aquatic habit (pages 104-105). The eyes are degenerate, the result of an evolutionary process during which these organs, unneeded in darkness, lost their normal function.

Mail-order Package Has a Bite

A large express parcel arrived one day at my home in Washington, D. C.—an order I had placed with a biological supply company. Inside was a water-filled metal container in which swam a weird snakelike creature about 18 inches long. It was a salamander, but nothing like the more typical terrestrial members of the order (page 107). This one could bite.

I got a pair of heavy gloves, went out to the garden, and emptied the can, creature and all, onto the grass. The salamander had lungs and could breathe with ease. Carefully I picked up the writhing, snapping animal and

examined its two pairs of tiny legs. They were so small as to be virtually useless—evolutionary vestiges. This salamander belonged to the Amphiumidae family, which comprises only three species.

The most populous of all salamander groups is the Plethodontidae family, with some 200 species. Generally of small size, they are lungless, breathing through capillaries under the skin and in the mouth lining. Some are aquatic; others live and reproduce exclusively on land. Many are so similar that only an expert such as Dr. Richard Highton, who teaches zoology at the University of Maryland, can tell them apart.

I accompanied Dick on a field trip one day last spring. "More species of plethodons are found in the Appalachian Mountains than anywhere else," he told me as we headed for the mountains of West Virginia.

Following us was a jeepload of students. We finally stopped in a forest abloom with dogwood. The students piled out, put on boots, pocketed quantities of small plastic bags, shouldered rakes, and filed into the



Encircling her hatching brood, this red-backed salamander has remained with her eggs throughout a two-month incubation, perhaps to keep them moist. Two babies have already emerged in their nest of forest humus. A rare albino red-back (right) turned up in Maryland, one of more than 25 states where the species occurs. Unlike its lunged ancestors, the red-backed salamander breathes through mouth membranes and skin—yet another instance of salamander adaptability.

PLETHODON CINEREUS, 2 INCHES



woods. Turning over every rotting log, every moveable stone they encountered, they were soon out of sight.

After a while Dick went around conducting a sort of roll call to see what had been collected. "Two duskies here," one student reported. "One red-backed salamander," said another. And so the hunt continued. We moved on to other sites, higher and lower than the first. Dick noted their precise location and elevation.

"This red-backed salamander is one of my favorites," Dick remarked during one of our stops, holding up a wriggling little salamander that bore a single rust-colored stripe. "I'd like to show you its curious egg clusters, but I'm afraid it's too early in the season."

Buried Jars Simulate Natural Habitat

Toward the end of August, however, Dick got his wish to show me red-backed salamander eggs. He took me to one of his collecting sites deep in moist woods off the Skyline Drive in Virginia's famous Blue Ridge mountains.

"I was here late last May, setting up my hatchery," he told me. "I've been doing this for several years. In the spring I collect females that are just about ready to lay eggs, and place them in separate quart jars filled with humus. I perforate the caps for ventilation, then bury the jars under a log."

Dick explained that egg-bearing females, no matter how carefully nested and provided for, seldom lay normally in the lab, and even if they do, they are apt to eat the eggs or hatchlings. "So I let them do the whole bit right here, where the humidity and temperature, despite the jars, are close to normal. Now, let's have a look."

Dick went directly to a log, turning it over to reveal about fifty jars in which clusters of eggs hung like bunches of grapes. The eggs were the size of BB's. In many bottles they had already hatched, and there in the humus or on the inner glass surface, along with the adult females, crawled creatures no longer than carpet tacks.

Back at the university, the size, color pattern, number of vertebrae, collection date, location, and other information on both mothers and young would be recorded and tabulated for computer analysis.

"This sort of information," Dick explained, "can contribute to our understanding of how ecological and geographic variation, isolation, and hybridization can affect the evolution of species."

Late that evening Dick dropped me off at my door in Washington and waved from the somewhat battered station wagon perennially loaded with collecting gear, bags, jars, camping equipment, maps, and other paraphernalia of his calling.

My own quest over the previous months had been considerably less-specialized, but it had reacquainted me with these wonderful, even beautiful, animals. I had caught some glimpses of the untold millions of salamanders living in the forests and streams and bogs and ponds across the land, and my mind was the richer for it. □

Forever young in appearance, this laboratory-reared *Ambystoma* hybrid bears the brushlike gills and other characteristics of the larval stage. It will retain its juvenile look, a condition known as neoteny, all its life. The 10-inch-long albino inherited this trait from its ancestors, mostly Mexican salamanders called axolotls, which in nature also have permanent gills. Since neoteny can result from hormonal deficiencies, scientists have experimentally injected such salamanders with thyroxine, an iodine-rich hormone that affects growth. Lacy gills soon wither, lungs develop, and the animals become normal adults.





Mountain Voices, Mountain Days

By BRYAN HODGSON

NATIONAL GEOGRAPHIC STAFF

Photographs by LINDA BARTLETT

THE OLD FARMHOUSE stands bleached and weary in empty fields. Once, not long ago, there were cattle and crops, but now the corncrib sags and the fences are broken, and only cricket song edges the stillness on the West Virginia hilltop. Your clattering summons on the screen door seems a harsh intrusion on a long, slow dream of the past.

Oda Belle Blankenship lives here. She is 82, bent with arthritis, spare and weathered as a fence rail. She makes quilts that are works of art—bold, random shapes of bright cloth, linked with intricate stitches and wreathed with blossoms of gay yarn.

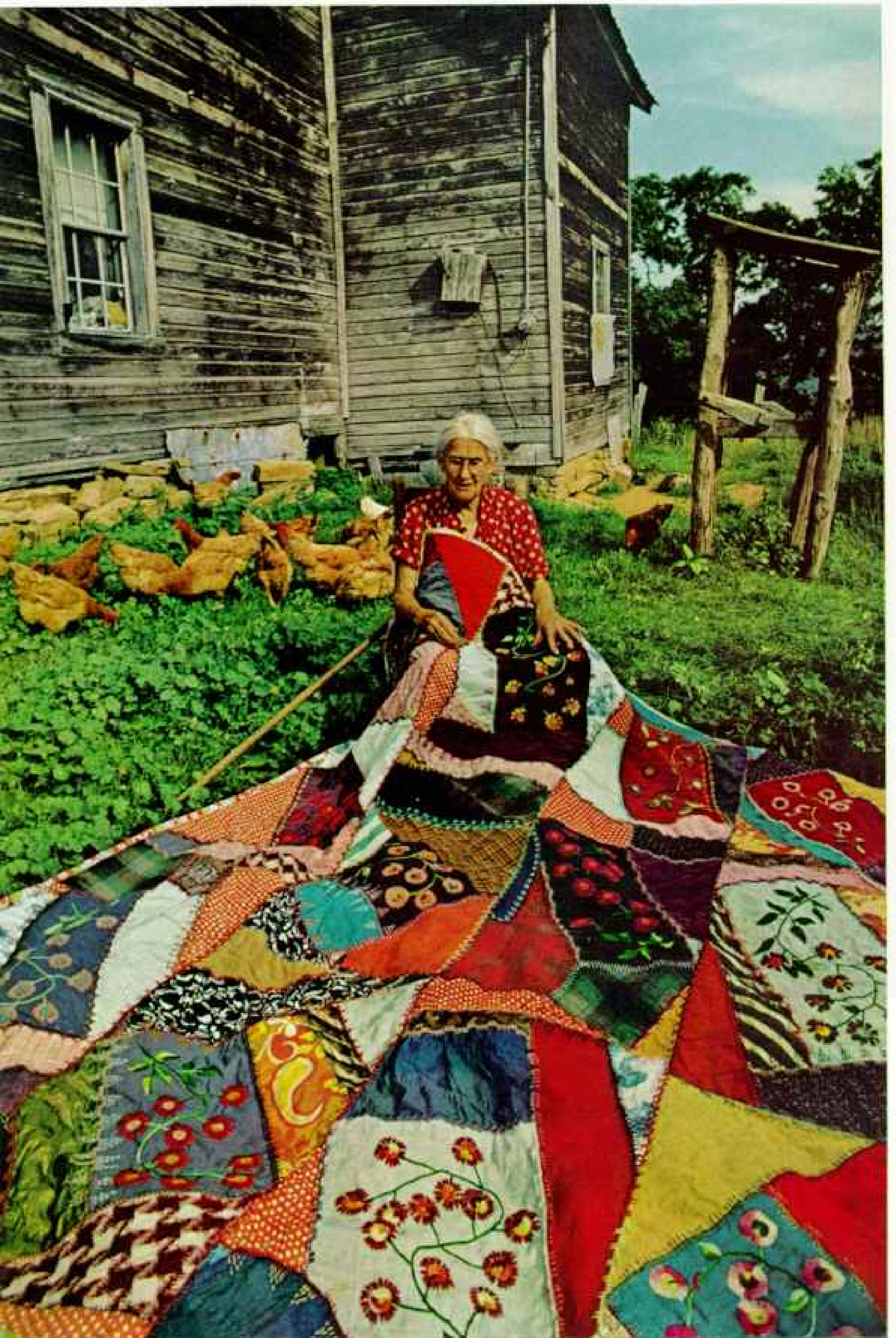
"Flower gardens, I call 'em. Always seemed like you could sleep better under a pretty quilt. The first of these stitches I ever seen, I was 8 years old. Took it up watchin' my mother. Pieced me a quilt for my dolls, too, ol' rag dolls. Never had but two store-bought dolls in my whole life."

The worn, strong face is young for a moment. The past is alive in the small room with the old brass bed and the faded wedding portrait on the wall.

"I was married at 18. My husband, he saw the prettiest little ol' doll in the store, and he took his last dollar and bought it for me. I was still like a young 'un. We had ten children. Four of 'em is dead. We come here from Narrows, over in Virginia. Brought three milk cows and a horse and a mule. We raised purebred cattle. My son George, he did most of the tradin' and traffickin' after my husband died. But he took sick. The other boys had married off, 'cept one, and he didn't want to farm no more. The old farm's really run down since we took the cattle off it.

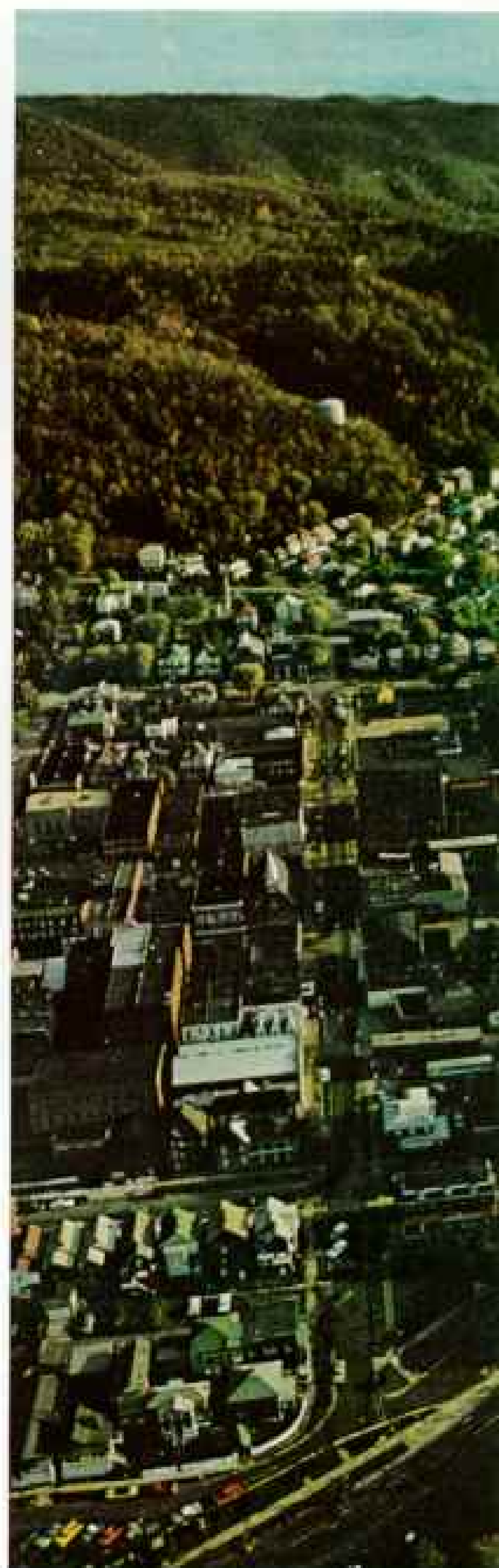
"I liked it better when we first come, the medders all in bloom.

Patterns of the past spill from the lap of Oda Belle Blankenship, whose life in southern West Virginia's hill country revolves around traditions as deeply rooted as an oak. "Once was a lot prettier than 'tis now," Mrs. Blankenship confesses of the lonely homestead whose menfolk—as in so much of Appalachia—have died or gone elsewhere. On close terms with despair, yet never despairing, she and her mountain kin face the future with undiminished faith in the virtue of self-sufficiency.

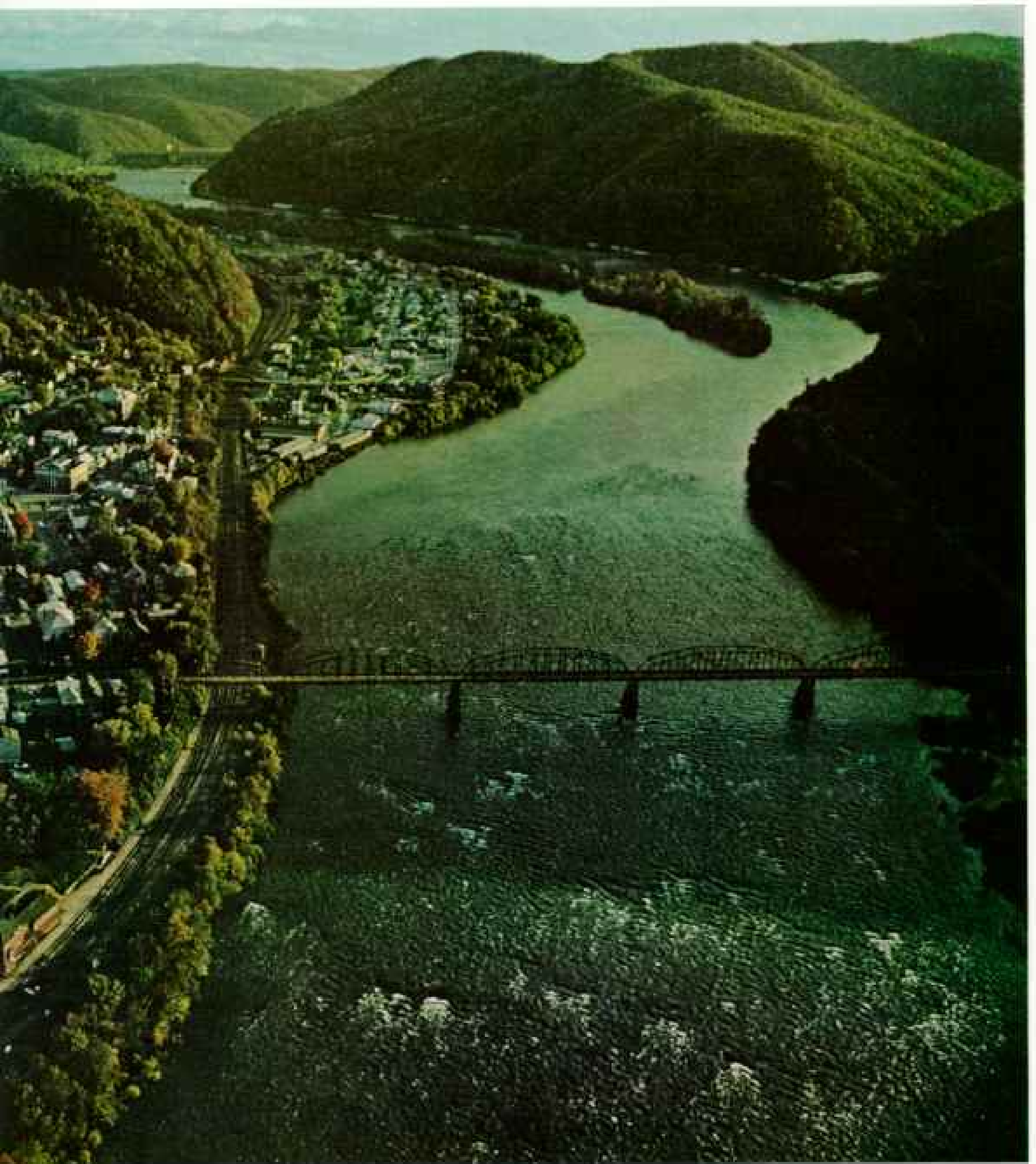




Emblems of patriotism brighten a shop front in Alderson, where a citizen savors a moment of quiet after a Fourth of July parade. During the days of the Underground Railroad, freedom-bound slaves passed through the mountains of southern Appalachia, aided by sympathizers who in 1863 helped make West Virginia a separate state.



The way in . . . and out: Just below its confluence with the Greenbrier, the New River (above) sweeps by Hinton. In the 1700's, Scotch-Irish "billies," or compatriots, followed these river valleys in search of a livelihood. In recent decades the same routes have seen a quarter of the population flow outward again, many of them victims of soul-grinding poverty.



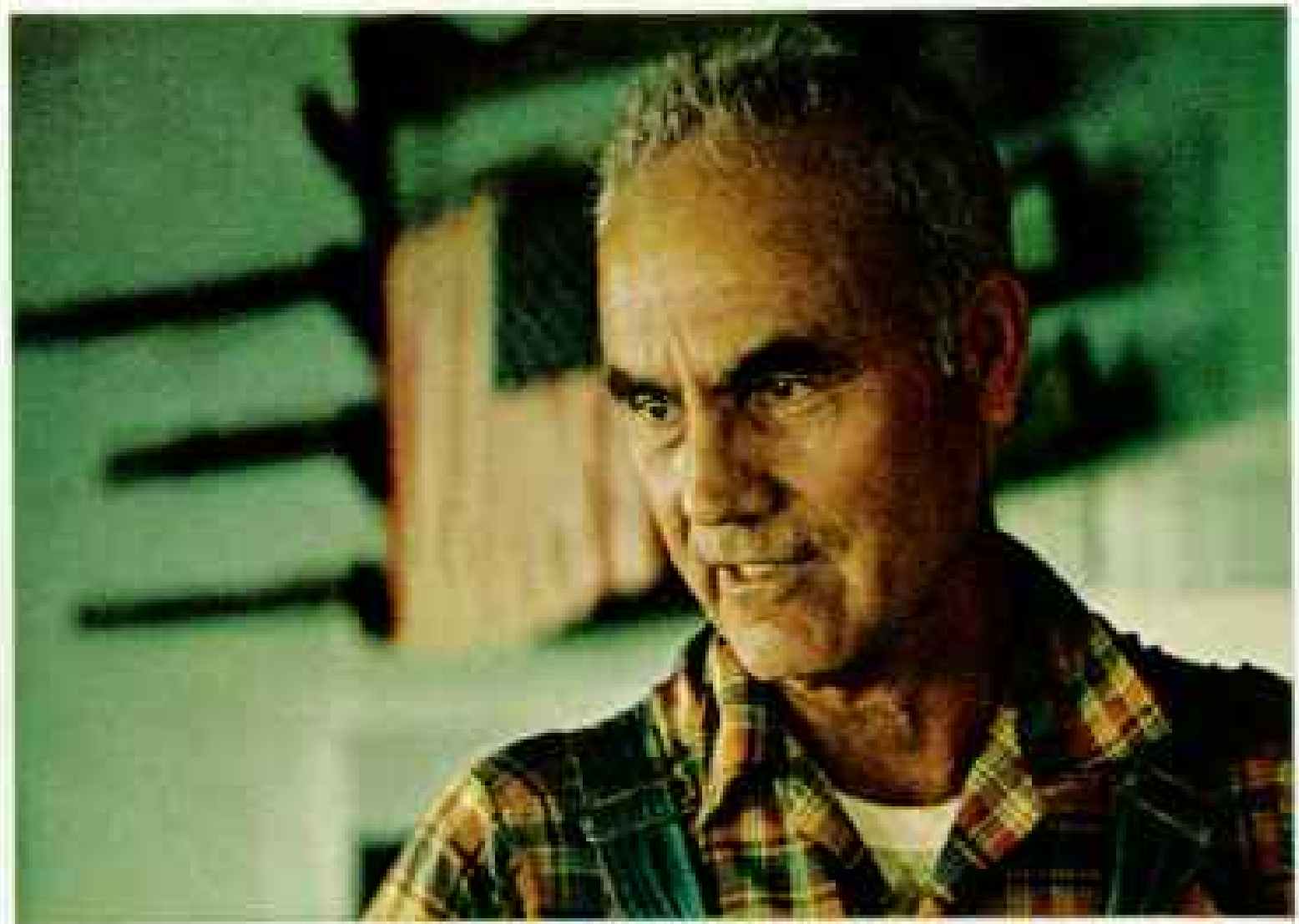
Hills and "hollers," stripped of their timber and mutilated for their coal, mantle Appalachia like a threadbare shawl. Mining disasters still strike with tragic frequency in southern West Virginia's highlands, where Hatfields once feuded with McCoy's and "steel-drivin'" John Henry hammered his way into legend.



Pride is his product. Preacher, lecturer, and poet Don West teaches mountain children the value of their cultural heritage at the Appalachian South Folklife Center in Pipestem. "Here," he says, "kids learn what schools often neglect to teach them—pride in being a mountaineer instead of shame at being a hillbilly."

Front-porch heirloom, carved from walnut by a mountain craftsman, cradles a youngster at the Folklife Center.

"Our best young people are leaving the mountains and going to the cities for the jobs they can't find here," laments Mr. West. "We struggle to raise them, to educate them, and then they're gone. We lose the human resources as well as the material ones."



George is dead two years this fall. There's never been one like him, and it never will be."

Later, in the city, the package arrives and the quilt tumbles out, its flowers a bright cash crop from a worn-out West Virginia farm. You are touched again by a life and a place that seem etched by light from another century.

Perhaps you are hungry for the past in a present that flickers uneasily like electronic pictures on a screen.

Of course you go back.

THE MEMORIES of an earlier time are rich in southern West Virginia. Farms dot the gentle hills overlooking the valleys where the first settlers skirmished with Indians before the Revolution. Westward lie the coalfields, where the legacy of murderous family feuds turned the labor movement into violent civil war.

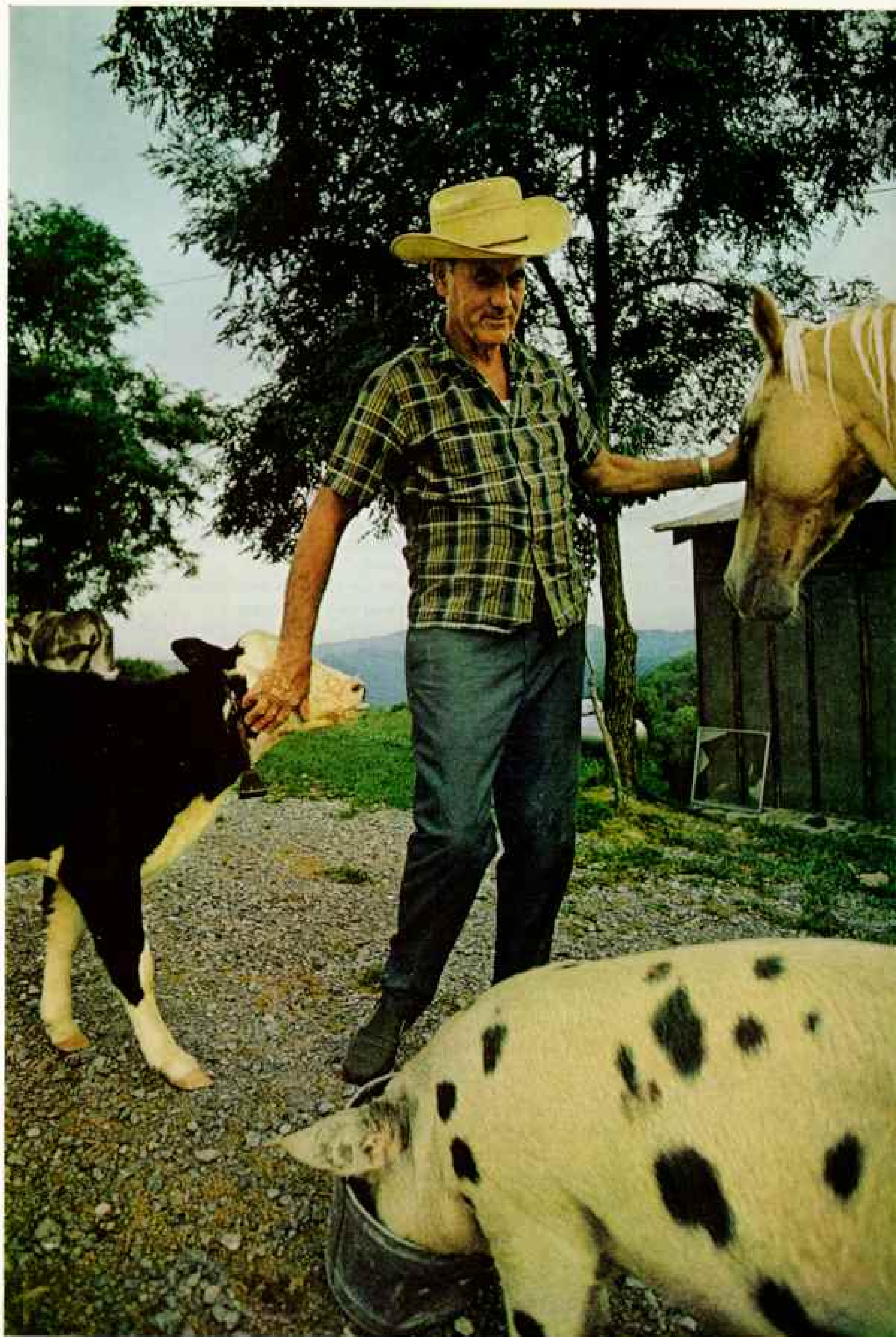
It is a land where age-old frontier ethics struggle with 19th-century economics in 20th-century confusion. There is beauty here, and painful poverty; gentleness, and the new beginnings of an old anger.

Don West is angry.

"They call us 'hillbillies,' and we're supposed to be ashamed of that. They don't remember that tens of thousands of southern Appalachian men volunteered for the Union in the Civil War. How many people know that one reason why West Virginia became a state was that the hillbillies rejected the idea of slavery? Why, the Underground Railroad ran right through our mountains."

West is an ex-professor in bib overalls, retired after a career that ranged from preaching in the coalfields to teaching English and economics in several Southern universities. Now he teaches mountain history and traditions to young summer campers at the Appalachian South Folklife Center, which he founded in 1967 on a 400-acre farm near Hinton.

He keeps the lesson brief: The early settlers were the Ulstermen, gritty Scotch-Irish Presbyterians. King James I established them in northern Ireland around 1610 as a buffer against the rebellious Irish. After a century of hardship there, rewarded only with economic and religious oppression, more than 200,000 of



them fled to the New World. They sought isolation in the highlands, and for generations cherished stern independence and patterns of speech and song that were old before Shakespeare. West Virginians keep alive a tradition that George Washington in 1781 praised the bravery of the highlanders, who had given him a critical victory over the British at Kings Mountain, South Carolina: "Leave me but a banner to plant upon the mountains . . . and I will rally around me the men who will lift our bleeding country from the dust, and set her free."

THE LESSON ENDS, and the children troop noisily off for morning chores. West watches them with affection. "Yes, we do some work. You see the chapel, the library? Well, our kids have built them. They learn to cook, bake bread, feed the pigs, milk the cow, take care of the horses. A lot of these youngsters grow up never knowing anything but run-down land—never know pride in working it. That's one of the things we teach here.

"All you hear about Appalachia these days is poverty and ignorance. We've been Dogpatched and Beverly Hillbilled to death. A lot of us have become ashamed of our traditions. Well, there are reasons for our poverty. Most of our major natural resources are owned by out-of-state interests, and have been ever since the Civil War. There's been great wealth taken out of these hills, in coal and timber, but little of it stayed here.

"We need new leadership in the mountains to solve our problems—young people with a sense of their history and identity."

The young descend on West's Folklife Center in late summer for the annual music festival. Long-haired youths and long-skirted girls mingle with plain-clad mountain folk to hear the new songs of protest blend with old ballads (pages 144-5).

One song draws cheers for its ironic comment on the "new mountaineers" from the East. These are the people who vacation in the mountains and buy up farms abandoned by men who have been forced to seek jobs in the cities. The whiplash lines go:

*You call it Paradise Mountain—
We call it Poverty Hill.*

The most admired performer is Oscar Wright, 77, a retired railroad man (below) whose fingers are supple as bird wings on banjo and fiddle. He plays the old songs—"Cumberland Gap," "Shady Grove," "Stony Point"—with a joyful clarity that breaks



Bedrock tradition underpins activities at the Folklife Center. Veteran of many a barnyard chore, Director Don West (facing page) helps mountain youths learn the basics of self-supporting agriculture on the center's 400-acre farm.

A counselor and a summer camper (above) share the miracle of making a loaf of bread.

Melodies clear and lively as a mountain brook flow from the bow of septuagenarian Oscar Wright (left).





Sign at Big Creek (above) stresses self-help—a practical creed that has sustained generations of mountaineers. Nimble-fingered ladies in several highland communities have formed sewing cooperatives. Checkered Adam and Eve dolls (top) bring in extra money to members of the co-op in Sandstone. Quilted and appliquéd gowns such as this (facing page), product of 100 woman-hours of work at Big Creek, may bring as much as \$600 in an urban boutique.

suddenly into harsh ridges of minor note—the “lonesome voice” that makes music seem to come from times and places lost.

“These old fingers, in all these years, thank the Lord, they’ve never got ‘til I couldn’t pick. Made my first fiddle out of an old gourd—cut a hole in the top and strung it with twine and horse-hair. You can’t learn the old music readin’ notes. You listen to this one and t’other fiddlin’, and if you want to learn, you’ll learn.”

A SONG IS THE ONLY EPITAPH for John Henry. This legendary black man “died with a hammer in his hand” while outworking a steam drill during construction of the Chesapeake & Ohio’s Big Bend Tunnel near Talcott in the early 1870’s. His grave is unmarked, and many believe he was buried in the tunnel—along with more than a hundred former slaves who died less illustriously in deadly rockfalls.

Bill Forrin knew the tunnel well. For 15 years he was a track-maintenance man before a near-fatal lung ailment forced him to take his pension in 1957. He lives in Big Creek, above the Greenbrier River near Hinton (page 146).

“They had steam engines then. That coal smoke could bend a feller over coughin’ pretty good. Afraid I ain’t much good for workin’ any more.”

His breath comes hard as he shows you his garden, planted in corn, flourishing rows of beans, onions, potatoes, yams, and tomatoes, and the tiny tobacco patch which is his pride and only luxury. There is a pig to visit, and two cows to milk. The spring-house is filled with home-canned vegetables and fruit.

Bill’s wife, Helen, is the energetic manager of the Big Creek Sewing Cooperative, one of 14 organized in West Virginia by Mountain Artisans, Inc. This nonprofit corporation started in 1969 with an Office of Economic Opportunity grant. The co-op workers sew traditional quilts and pillows and also elegant quilted evening gowns and patchwork dresses, which command high-fashion prices in big-city boutiques. Helen has strong ideas about the dignity of labor.

“To me, hard work’s the only way an honest living comes. If you keep on goin’, you’ll come out somewhere, win on the end of it. We’ve might’ near lived out of our garden lots of times, but we’ve never taken a penny of public money. We need work in West Virginia, not welfare. And one thing we need worse’n anything is education, to learn what we have and what it’s worth.

“There’s been so much that’s been sold for such a little bit, the coal and all, yet somebody’s made a great profit off it. Just like our handwork, we’ve made quilts all our lives for eight and ten dollars, and now we’re gettin’ a greater price out of ‘em. The trouble with a lot of people is they’re lookin’ for a bigger world, and they won’t make the effort to stretch the one they’ve got.”

The world seems narrow indeed at Sandstone, ten miles north of the Forrins’ farm. Here the hills brood darkly above New River as the school bus carries you up a twisting road through morning mist and groans over a final ridge into a small valley.

At first the scattered homes are neat on plots of level ground, and the children clamber solemnly aboard in warm coats and new shoes. Farther on, the road becomes a muddy track. Corn grows precariously on eroded slopes, and the homes reflect the land’s thin nourishment. Here the children wear faded cotton,





Hard-won bounty of highland fields, bouquets of onions



dry on a shed in Big Creek.



Well-thumbed hymnbook has been passed down through four generations of the Davidson family of Cashers Hill. It was bound in leather before the Civil War by Harm Davidson, a shoemaker who bought his freedom from slavery.

Upholding the family tradition of independence, the shoemaker's great-great-granddaughter Azalea (below) plans a career as a social worker.

The sustaining faith of generations lives on at the Cashers Hill Church of God (facing page), where visiting minister Sister Florence Brown preaches a fundamentalist sermon. Here she clasps hands in intense emotion after exhorting the church's black and white parishioners: "Oh, brothers and sisters, rejoice! For the Bible says God made the day for us to rejoice in!"

and many are barefoot. They are silent, watchful as squirrels, and you feel doubly a stranger, knowing that your presence has caused their stillness.

Thirty minutes later, in the echoing gymnasium of Sandstone Elementary and Junior High School, Mildred Gwinn greets the members of her Head Start class. She is a classic schoolmarm—tall, angular, with a face whose practiced sternness is apt to change abruptly from mock severity into outright warmth.

Mrs. Gwinn has taught mountain children for 24 years, 10 of them in remote one-room schools. She earned her bachelor's degree at night and in summer classes while raising four children, and now is more than halfway to her master's.

"Head Start is one of the best things that's happened for our kids. A lot of them live back up in the heads of the hollers—they never get any attention, never go anywhere, just play in their own little yards with brother and sister. They just aren't ready for school. Maybe a fourth of them have to repeat first grade. I've seen so many of them squashed down before they get started.

"I believe hope begins with your 6-year-olds. Now we have a chance to get them ready, visit them in their homes, find out what they need.

"We need so many things, and not just for the youngest—vocational training for our high schoolers, and part-time jobs to help them stay in school. Only about 8 percent of our graduates go on to college. That's scary low, and we lose them to better jobs out of state. Those are the ones we need to keep, to be the new leadership here."

NOT ALL THE YOUNG who leave are lost forever. The mountain ties are strong. On Homecoming Day, the battered old church at Cashers Hill fills with the old ones who have stayed and the young ones who have come back from the cities for a day or a week to touch the places of their beginning. Even as a stranger, you share the slow, warm handclasps and benedictions, from black men and white. Voices grope uncertainly for the heart of the old hymns, and come suddenly alive as they sing "We shall meet on that beautiful shore." Then Sister Florence Brown, of nearby Princeton, comes to the old pine lectern. She is dressed in white, with a white hat that seems a jaunty badge of long campaigns (right).







Coal wrote the epitaph of John Owens, killed by a slate fall in the Flat Top region's first coal mine, opened at Pocahontas, Virginia, in 1883. Mine operators soon followed the seams of fuel across the state border, launching the brawling era of coal in the tumbled mountains of southern West Virginia.

"Brothers and sisters, praise the Lord! If you love Him this afternoon, give praise to Him! You know, if we sit still, don't give God that praise—then when we go home the Devil will give us a good whippin', and so he should! Surely this is a day to rejoice. . . ."

There is testimony then, voice after voice giving thanks, and at the end a laying on of hands for those whose need brings them to the altar.

Afterward, food is served under the trees, and you talk to men like Kelly Davidson, whose great-grandfather made shoes to buy himself freedom from slavery, and whose daughter Azalea (page 130) studies sociology at Bluefield State College. And there is Theodore Johnson, a black man who has given up city life to reclaim his family's farm at Ballard.

"Went up to Toledo to shake the money tree, but there wasn't as much on it as I thought. Twelve years I was there, had a lot of jobs and did pretty well. But the city's like a vacuum cleaner—it sucks you dry. So I came back to work it out here. The government taught me to drive a bulldozer, and I've been working steady for six years.

"Now my dad and my uncle, my brothers and me and my four boys, in our spare time, we've brought back about ninety acres into pasture, corn, buckwheat, oats, and hay. We got government loans to buy farm equipment, mostly used, and we're raisin' Angus and Herefords and hogs.

"These government programs are good; they'll set you up and all you have to do is work. There's no room on a farm for a lazy man—if you let the good days get by you, you're in trouble."

TURN WESTWARD from the farmlands and you cross a geological frontier that separates the worlds of corn and coal. Twelve miles outside Princeton, Pinnacle Rock marks the border of the old Flat Top Coalfield.

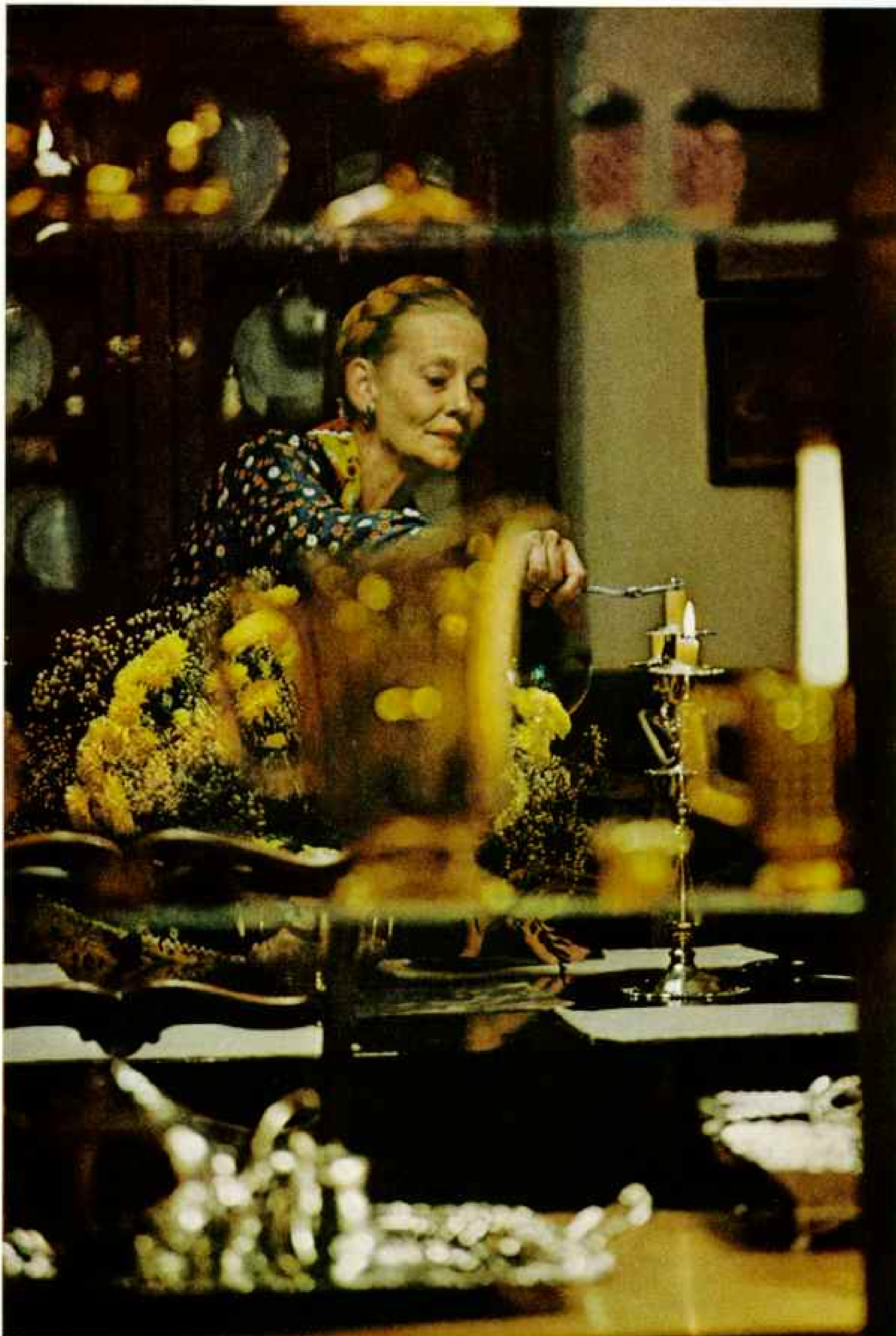
Here long gray towns live in narrow valleys, shuddering day and night with the passage of coal trains. Dark mine mouths and





*Decay strikes both sides
of the tracks in many
southern West Virginia towns
where bust outlives boom.
A slump in coal prices
following World War II*

*helped bring on the
deterioration of this once
bustling but now mostly
abandoned business
district in one particularly
hard-hit coal town.*



Amid the elegance of a bygone day, Mrs. William Henry Bowen snuffs candles after dinner in her restored Victorian home in Bramwell. Her husband is a fourth-generation mining man in this town coal barons built in the late 1800's. At the turn of the century, Bramwell's population of a thousand included 21 reputed millionaires. Tiffany-glass window (below) hints at the lavish spending of better years.

The unsettled coal market eventually forced most local mine owners to sell out and move away. One mansion (above right), saved from decay by new owners, has a full-size ballroom on the third floor.



BOYAN HUGHES/ARND BRONKHORST



loading tipples are scattered up the creeks, and slag heaps and strip mines scar the forest slopes. Along twisted roads, mining camps wear names like Jenkinjones and Anawalt, Stonecoal and Crumpler, Tralee, Caretta, and War.

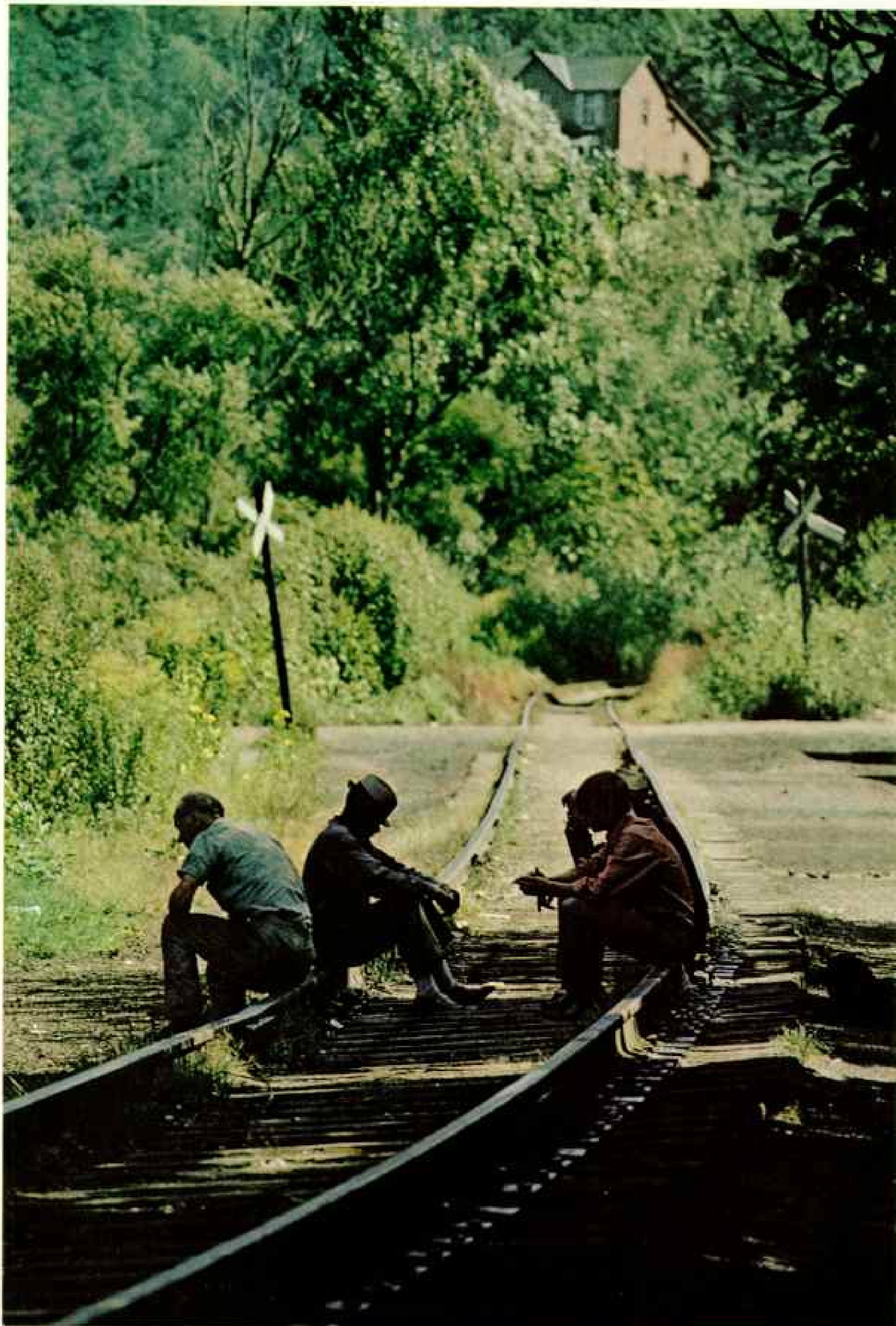
For 75 cents you can see where it all began. The Baby Mine was opened in 1883 at Pocahontas, Virginia, a mile southwest of the West Virginia line. It yielded 44 million tons of coal in 72 years. Today, tourists stroll through the 14-foot galleries where a mighty explosion killed 114 men in 1884.

In the graveyard nearby a tombstone tells the story with the terrible precision of grief: BRAXTON BRAGG MOORE... KILLED MARCH 13, 1884, AT ONE O'CLOCK AND 30 MINUTES IN THE MORNING AGED 16 Y'S & 3 M'S & 7 DAYS.

Other epitaphs in Hungarian, German, and Italian recall the immigrants who risked death in the new mine for a dollar a day.

THE PENNSYLVANIANS, bankers and railroad men who knew the enormous value of the rich coal seams, were the first to develop Flat Top. They bought the land for 25 cents an acre and leased it to mine operators for 10-cents-a-ton royalty. By the turn of the century, five million tons of coal poured annually from 40 collieries, and 3,000 beehive coke ovens belched smoke and flame over the new company towns.

They remember the glory days in Bramwell. The mansions still stand here, graceful in stone, fine woodwork, and Tiffany glass, monuments to the 21 coal millionaires who once lived in this



The digging goes on for Appalachia's black pay dirt in Gary (right), at the United States Steel Corporation's Number 14 Mine. Today's sophisticated mining methods produce greater yields of coal per man-hour, boosting owners' profits and miners' paychecks, but also decreasing the number of jobs and demanding more skill to handle the jobs available.



Sidetracked by idleness, retired coal miners and an out-of-work youth in Giatto share the plight of tens of thousands of their mountain kin. When mines in the area shut down, many local families were forced to pack up and leave—some for other mine towns, some for the concrete wilderness of the cities. Older men, unable to find new work and unwilling to move, were forced into retirement and now draw welfare or modest union pensions averaging \$150 a month.

small West Virginia town, about two miles from the Baby Mine.

John Cooper's fortune built the big copper-roofed house on Main Street. He was an Englishman who became a miner at the age of 6, emigrated to the Pennsylvania coalfields, and in 1884 shipped the first coal from his new mine on Mill Creek.

His grandson's wife, Mrs. Edward Cooper, lives there still.

"The day I first came it was pourin' down rain. At night, with all the coke ovens goin', it did look hellish. I thought, 'Oh no, I'm not goin' to stay here long!' And lo and behold, this boy drives up for me in a red Stutz Bearcat. I nearly fainted!

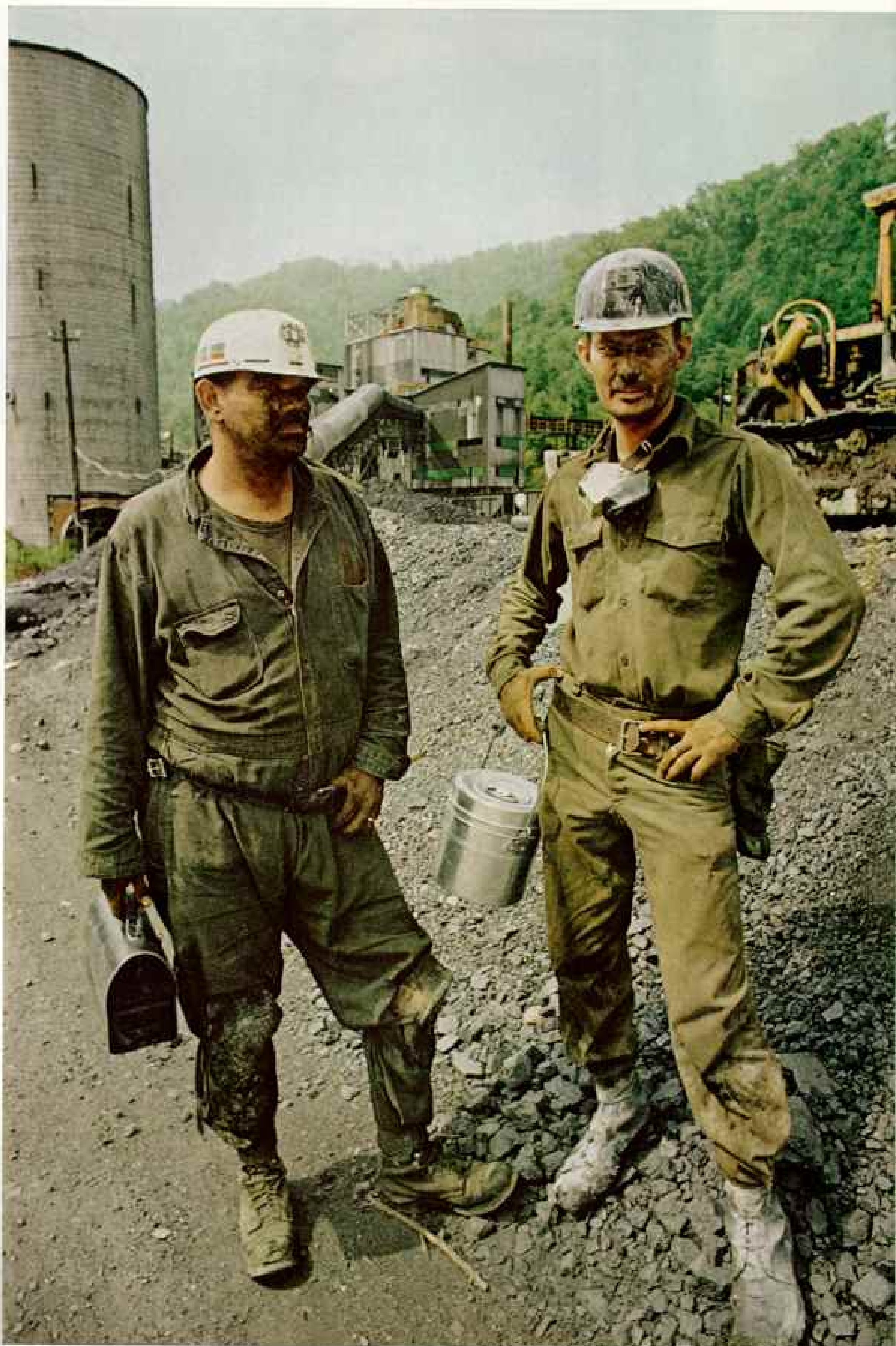
"They were all fantastically rich. They made it all in coal, and they did just as they pleased. The Bank of Bramwell was considered one of the richest for its size in the country. This old man, Henry, would take the money from the bank to the train in a wheelbarrow, right past this porch."

Across the street, the empty old movie house is boarded up with plywood. The bank was liquidated in 1935.

ONE OF THE LAST of Bramwell's coal men, William Henry Bowen, learned mining at the end of a pick and shovel. He worked ten years in the coalfields as a section boss, foreman, and production supervisor until a circulatory ailment cost him a leg in 1958. Now he produces limestone rock dust to cover highly explosive coal dust in underground mines.

"I've had a touch of all of it—loading coal, laying track, setting timbers, running the cutting machines. I had a degree in mine engineering, but there's no easy way to learn mining. I needed to know the work if I was going to boss the men. My great-grandfather, Jonathan Bowen, started out picking slate as a boy in Pennsylvania—culling it out of newly mined coal. He staked everything he owned to open his mine here in 1884. My grandfather, Harry, worked alongside his miners, knew them and respected them, and none of them ever wanted for anything if they got hurt or sick.

"But there's no question that some of the operators were pretty rough customers. The old story goes, if you got caught abusing a mine mule, you caught hell over it. But if you abused a man, it



wasn't anything wrong. You could hire another man, but you had to buy another mule."

Bill has seen the small mine companies vanish, until mergers have left a handful of corporations in control of the field. He witnessed the coal-market slump of the 1950's and the widespread introduction of machines that tripled a miner's productivity—twin forces that eliminated 80,000 mine jobs in West Virginia between 1948 and 1970.

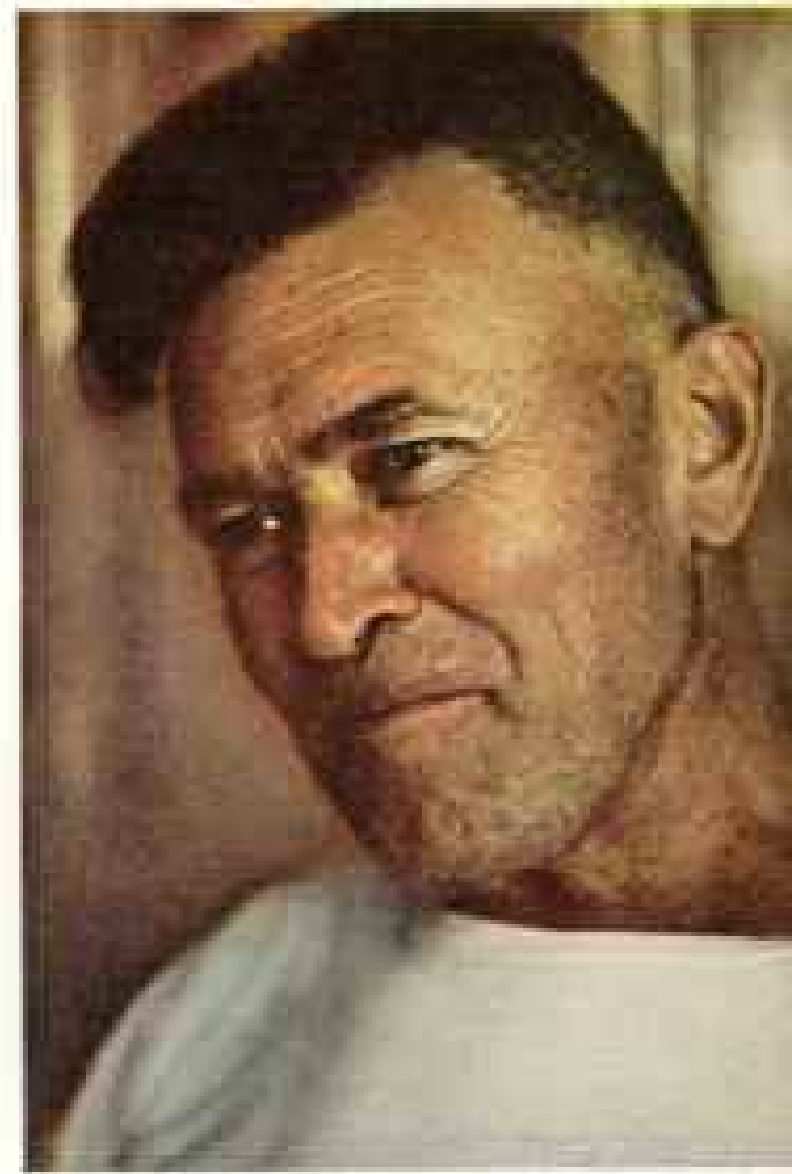
"There's a big market today for utility coal, the poorer grade stuff they burn in electric-power plants. But it's a young man's business; they'll hardly hire a man 35 or older to run the new equipment. The profit goes out of West Virginia now, and that's taken the life out of the towns. When the mines shut down, the old miners shut down too—a lot of these run-down coal camps you see are full of retired miners.

"There's still a lot of strength left here. This country was founded on it. But I see it changing fast."

STRENGTH and pride that goes with it have long been the essential ingredients of the mountaineer character. Sometimes the mixture was explosive. When a man's pride was injured, vengeance became another name for justice. The Hatfield-McCoy feud began in 1882, when Devil Anse Hatfield and his clan avenged the murder of Ellison Hatfield by executing three McCoy brothers.

Earl Stafford, who lives in Blackberry City in bloody Mingo County, knows the story well. His mother was a Hatfield, and she saw the beginning of the feud, which lasted 40 years and cost at least twenty lives. Earl can point across Tug Fork of the Big Sandy River to Blackberry Creek on the Kentucky side, where the executions took place. It is not far from Matewan, site of another Hatfield incident. Earl can tell you about the day in 1920 when his cousin, Police Chief Sid Hatfield, led angry townspeople in the Matewan Massacre, which left seven Baldwin-Felts Agency detectives and three citizens dead. The detectives, acting as mine guards, had just evicted the families of striking miners at gunpoint from company houses at the Stone Mountain Mine.

"The first men to work the mines here were mountain people. They were right smart about that kind of work. But the operators wanted to be slavin' 'em and drivin' 'em, and the men wouldn't



"Didn't see daylight but one day a week," recalls Charley Robertson (above) of his first job in the pits at age 12. "We worked long shifts, six days, went in before light and came out after dark." Top wages were about two dollars a day in that era.

The grime's the same for miners of today (facing page), but their wages have multiplied to about \$42 a shift. These men work at the Red Jacket Mine near Matewan.

"There's a lot died," remembers Mrs. Maude Steele (lower) of the Matewan Massacre of 1920, when striking miners and company-hired detectives clashed in a battle that left town streets strewn with 10 bodies. "Oh, it was cruel, real cruel . . . and the strike was broken, too."



Stricken by black lung after 34 years in dust-laden coal mines, John Pawlus of Scarbro (facing page) hopes to obtain compensation under new federal laws. Embedded coal particles outline air passages in the thin section of lung tissue (below). A miner (bottom) undergoes tests in a black-lung research program at Beckley.



stand for it. My dad worked 12 and 18 hours a day, got paid by the ton. But they'd dock him a ton out of a five-ton car if they found a pound of slate in it. And if you didn't trade at the company store, you didn't work.

"It was a corn-bread livin'. If it hadn't been for wild greens, we'd gone hungry lots of times.

"Dad was mashed up in a slate fall in 1905, got his back broke, and his pelvis, both arms, and a lot of ribs. They rolled him up in a sheet and brought him home, and the company hired a woman to help out for two weeks. He never got to see a doctor. Well, he cured himself after two years, and he went back to work. And when the union came along, he was ready to join."

THE LABOR MOVEMENT became a blood feud in the coalfields of southern West Virginia. Mine operators formed a solid front, and summarily fired any miner who "took the obligation" to the United Mine Workers. They refused the miners' demands to appoint their own "check-weighman" to guarantee an honest measure of each worker's production.

Police Chief Hatfield's stand was in vain. The courts upheld the evictions of families from rented company homes on the grounds that miners were servants, not tenants. The owners denounced union organizers as foreign radicals and recruited Europeans and Southern sharecroppers to take strikers' places.

For three days in June 1920 a thousand rifles barked across Tug Fork from the Kentucky hills, as strikers terrorized nonunion workers. A year later more than 2,000 armed miners, wearing red kerchiefs as insignia, staged a pitched battle with state police and sheriff's deputies. The lawmen used machine guns and dropped crude bombs on the "red-necks" from airplanes. Gunfire rattled around tent cities that housed 12,000 evicted strikers and their families. Dynamite blasts destroyed mine buildings.

Regular Army troops were called in and broke the strike. Men straggled back to the mines, bitterly signing the yellow-dog







Coal-country commuter: Richard Foley, Jr., (above) drives fifty slow, sinuous mountain miles from his home in Pipestem to his job loading coal cars in Gary. At home (facing page), his daughter Peggy dips a line in the family pond—one of the quiet pleasures her father knows would disappear if he moved his family to a city or coal town.

contracts that barred them from further union activities. But sporadic violence flared in the coalfields until the New Deal legislation of Franklin D. Roosevelt gave the union the right to hold elections.

No casualty list was ever compiled, but estimates of the death toll range as high as 300. As for Chief Hatfield, nobody was surprised when he and 22 other Matewan residents were acquitted of murder charges by a partisan jury in Mingo County. On August 1, 1921, he was assassinated on the steps of the McDowell County Courthouse in Welch—and nobody was surprised when three Baldwin-Felts detectives were acquitted of the murder.

Vengeance, if not justice, had been served.

TODAY another battle rages in the coalfields, and Earl Stafford is deeply involved, but not in the violent manner of his cousin Sid Hatfield. After 30 years as a miner, Earl was disabled in 1966 by silicosis, caused by inhaling dust from sand used for traction on mine haulage tracks. Later tests showed he had pneumoconiosis, or "black lung"—the gradual atrophy of lung tissue from exposure to microscopic coal particles. For years the disease was known only as "miner's asthma," which implied weakness of the lungs rather than sickness.

"You'll still find doctors who swear there's no such thing as black lung. The companies would say it was just something that any man could get—it had nothing to do with mining. It took me a year to win a disability claim, and they fought me every step of the way.

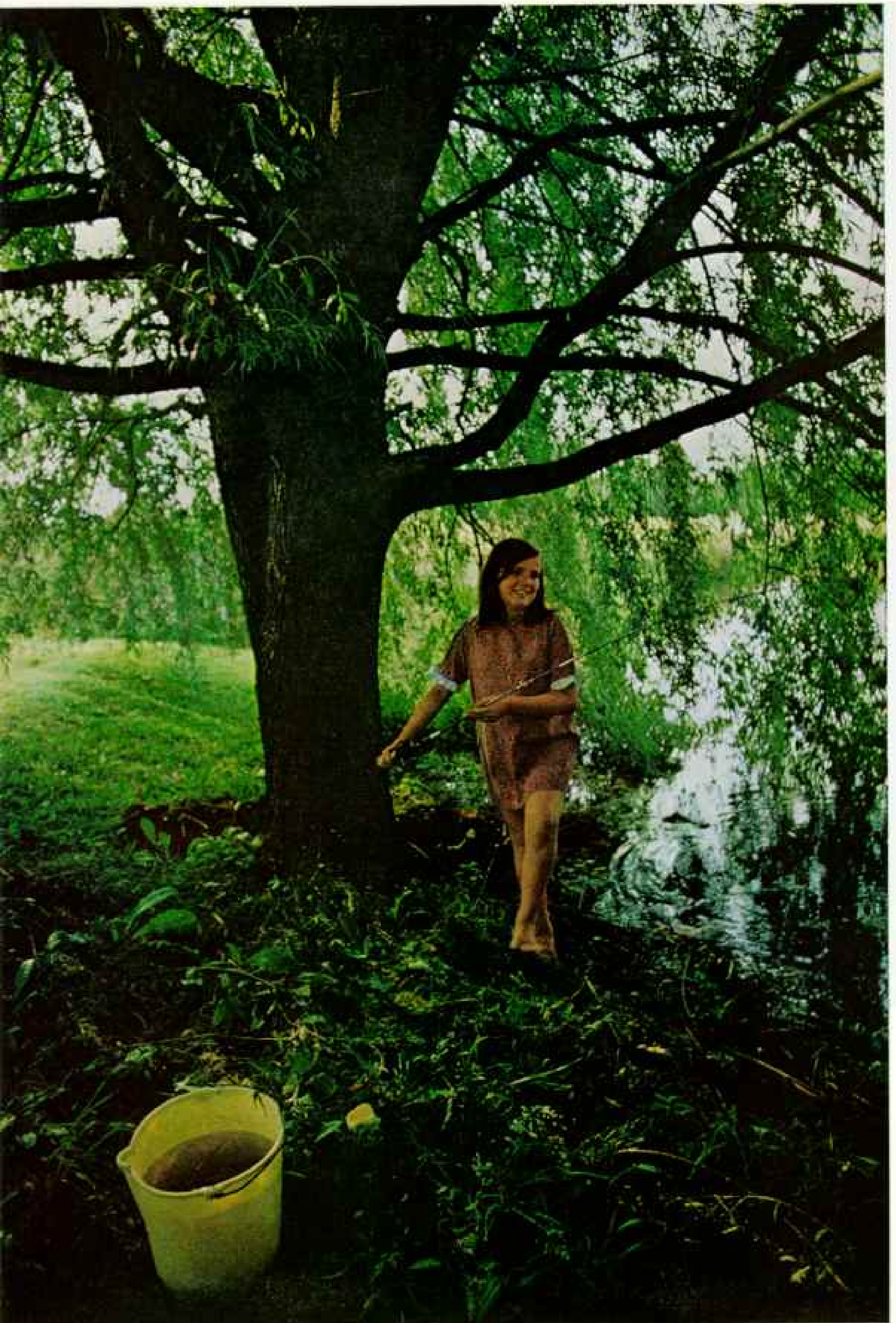
"Well, that got me mad. So we organized a Black Lung Association. We called a strike, and set up picket lines of disabled miners and widows. The companies fought us. Even the union fought us, said the strike was illegal. But we proved it was legal to strike on safety. We got a black-lung compensation law passed by the state legislature, and then we lobbied in Washington and got a federal law, too. Now there's more than 28,000 miners and miners' widows drawing compensation for black lung.

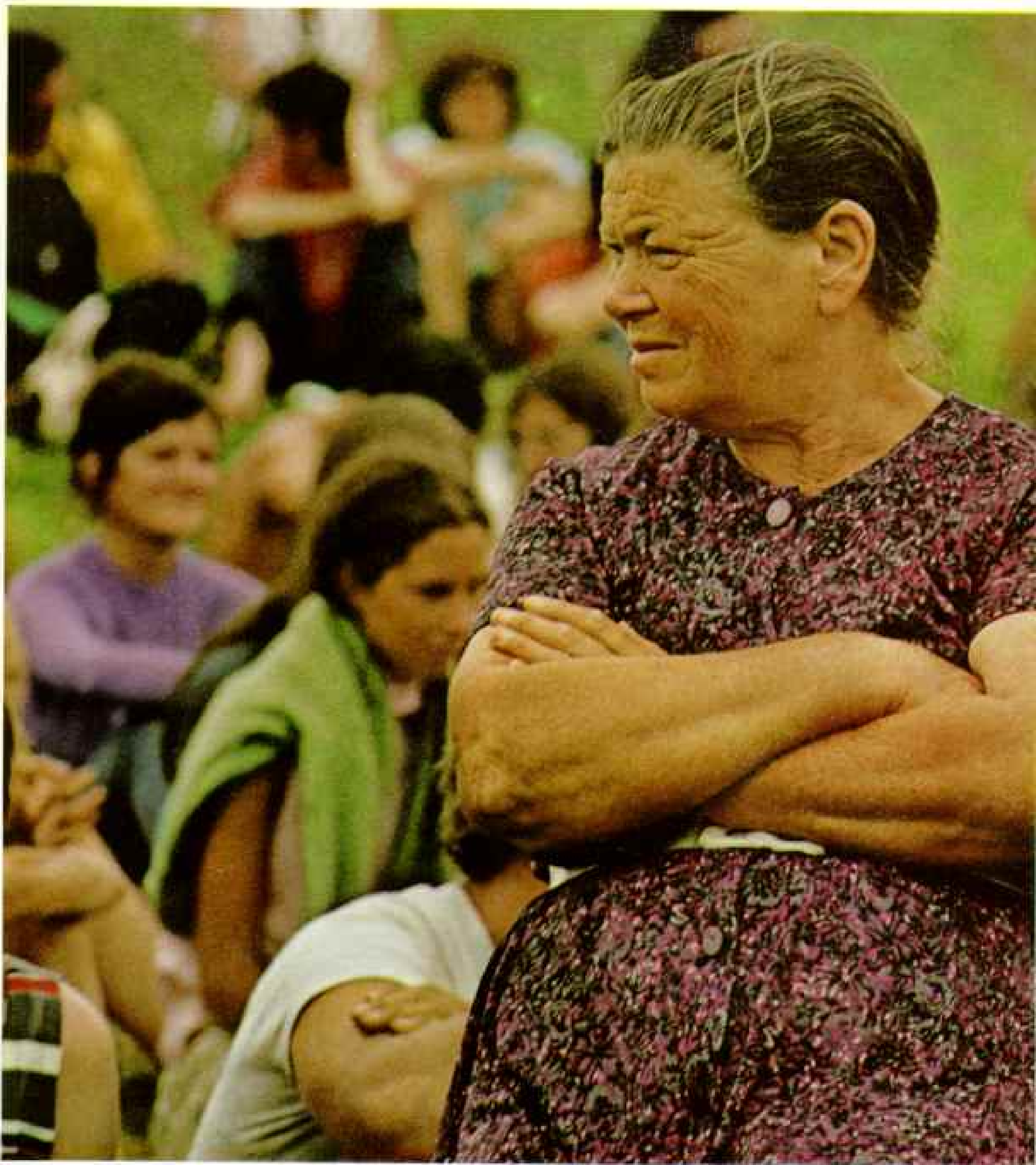
"The miners have been too soft. Whatever we've been given, that's what we've took, and said nothin' about it. The majority of us enjoy the work; we're proud of it. I know I'd rather be workin' than sittin' here.

"But if a man gets mashed up or disabled before he's 55, retirement age, he'll lose his hospital card after four years—that means he and his family got to go to public welfare if he can't work. And he won't get his pension at all if he hasn't put 20 years in.

"More and more younger men are gettin' disabled today. The machines dig so fast they don't give the mountain a chance to settle. A lot of men are being mashed by roof falls at the face. And the machines kick up a lot more dust than hand mining, so the younger ones are more exposed to dust disease. Those are some of the things that don't get counted in the price of a ton of coal."

Coal mining is the Nation's most hazardous industry. Last year, 180 men died and more than 11,000 were injured—an average of 45.14 lost-time injuries per million man-hours. But the human price of coal need not be so high. In the United States Steel Corporation mine at Gary, West Virginia, a long-term safety program has reduced the injury rate to 2.73—equal to that of the country's safest industries.

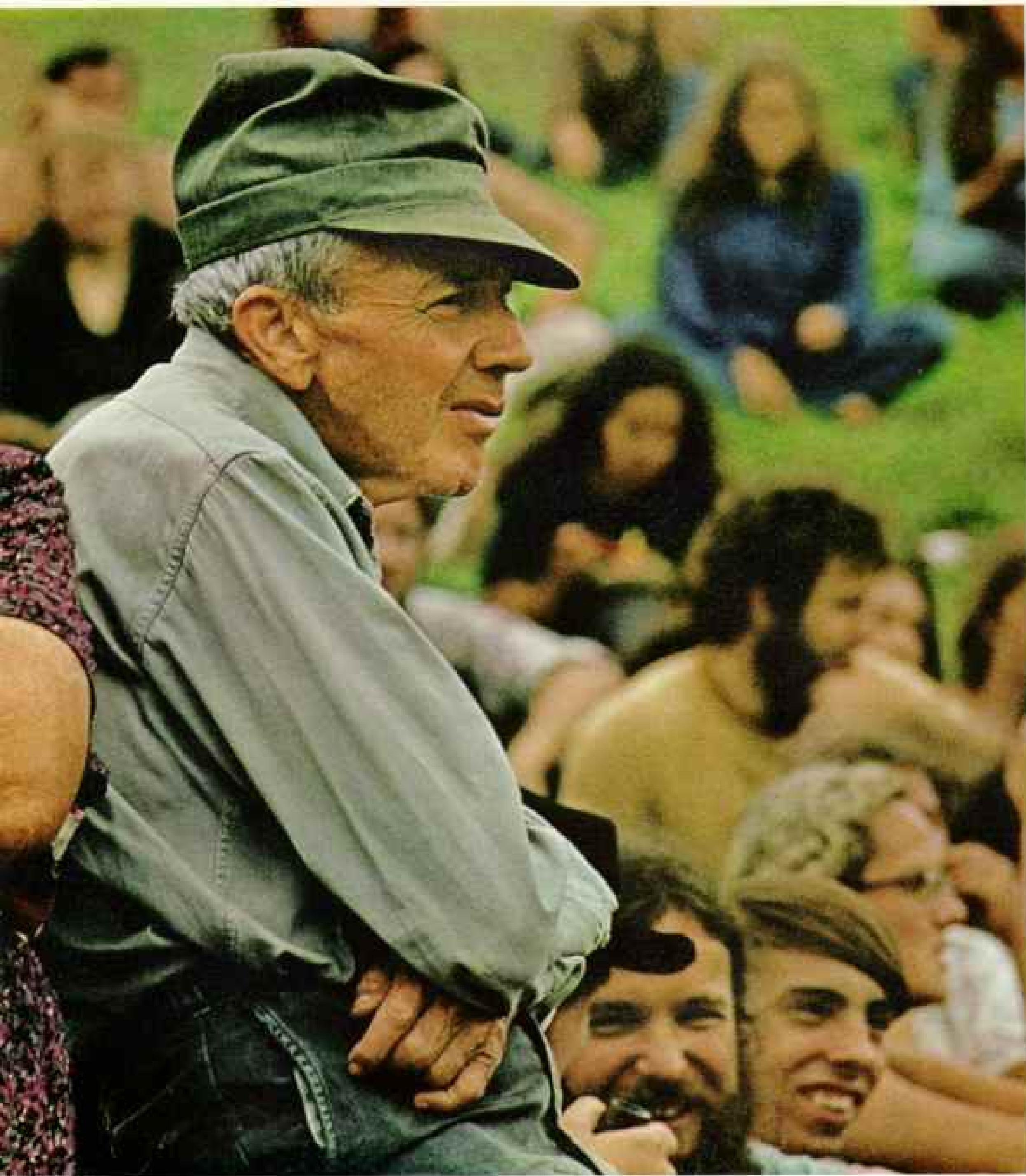




Mountain ears attuned to a banjo breakdown, Rebecca Meadows and her brother Benjamin, of Jumping Branch, share the music of their heritage with throngs of "old-timey" buffs at the Pipestem folk festival.

But there is little comfort in that knowledge as you walk hunch-backed in a ghostly tunnel 60 inches high, three miles inside the belly of a mountain. Your eyes cling to the thin beam of your helmet lamp, and you flinch from the bolts and timbers that support the roof, irrationally fearful that touching them would somehow disturb the unimaginable weight of stone above. The cool, dry air has the faintly acrid bite of coal, and it mingles in your throat with the dryness of your swallowed apprehension.

A clattering electric rail car has brought you to the end of the



main-entry tunnel of Number 14 Mine. Now you are in the working area, where a series of intersecting passageways divides the seam into 80-square-foot blocks, or pillars. You hurry forward in the darkness to reach the flickering lights of the men and machines.

Somewhere ahead, the roof collapses. There is little noise—only the sharp slap of concussion against your feet, and a rumble that is drowned by your heart's sudden thunder.

The miners pay no attention. They are “robbing pillars”—the last step before pulling back to a new area—and the roof fall in



Their own handwork sustains self-reliant mountaineers Helen and Bill Forrin of Big Creek. Mrs. Forrin, who helps make ends meet working for a sewing co-op, stands behind a figure of Jesus she sketched on the glass pane of her front door. Her husband, a retired railroad man, whittles salad spoons and forks from chestnut fence rails.

the worked-out area is the result of good mine engineering, eliminating the chance of future accidental cave-ins.

The seven-man section crew works in silence. Their leader sits like a Grand Prix driver at the controls of the Lee Norse continuous miner, a squat machine that slashes at the glittering coal face with whirling bits on a movable boom. Its conveyor-belt mouth sucks the cascading coal over its own back and spews it into a "shuttle buggy," which carries six-ton loads to the central conveyor. Smaller machines can work in seams only 30 inches high. After driving 16 feet into the seam, the \$200,000 machines lumber away to another area. A three-man crew swiftly installs jacks to support the roof while they attack it with yammering drills and drive four- to six-foot steel expansion bolts to anchor the exposed slate to more solid layers above.

The face is the point of greatest danger. Newly bared roof can collapse without warning, and a careless movement of the cutter bits can strike sparks from the rock to ignite deadly methane gas present in the coal seam. Huge fans on the mountainside suck a million cubic feet of air a minute through the mine, diluting and drawing out more than two million cubic feet of methane each day.

Coal dust is the deadliest enemy of all. Fine particles in the air can be ignited by a spark. The resulting explosion will propagate itself wherever there is more dust, destroying everything in its path, like a mighty powder train. To prevent this, every square inch of the mine is coated regularly with noninflammable limestone dust. Wherever coal is mined or transferred to conveyors, water sprays further reduce the hazard.

AS YOU BOARD the "man trip" for the long journey back to daylight, you remember the stories of the old men, 50-year veterans, who blasted the seams with gunpowder and shoveled 16 tons a day by hand into mule-drawn cars. You have felt their pride, oddly tinged with bitterness that seems half regret for danger and injustice shared in fellowship.

And you remember the "Black Book"—a large ring binder in the black-lung research clinic at the Appalachian Regional Hospital in Beckley. The pages are cellophane envelopes containing thin sections of lung tissue taken in autopsies of hundreds of miners. In each of them the delicate tracery of air passages is starkly etched by embedded coal dust.

Now you have seen the blind, ravenous machines gobbling at the mountain's wealth, operated by men who earn \$42 a day. Your search for the past has led you inexorably to the present.

The car rattles on. Suddenly it passes a small room cut into the tunnel's side. Nine men sit there, their head lamps creating a pool of warmth in the gray gloom. They are eating lunch, talking quietly. Their heads swing toward you briefly, blackened faces watchful and impersonal, and then turn inward again. What they are saying, you will never know, and you feel once again a stranger.

You have seen poverty, but found among the people of the mountains a strength and endurance that makes sympathy seem almost condescending. You have admired what isolation has preserved—and been appalled at what it has cost. And you remember the parting words of Don West:

"They call us 'yesterday's people.' Well, maybe we're tomorrow's people, too." □

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COVER: A Saudi Arabian's steely gaze seems to reflect his warrior heritage (page 2). THOMAS J. ASHCROFT

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and blacktop...up steep grades and down ditches," according to Mary.

It gets cold and it gets deep. "The winter before we had six feet of snow up in Packwood and I made it all but one or two days!"

"And that was because of the blizzards, not because of the Toyota!"

So far Mary's Toyota has managed to survive more

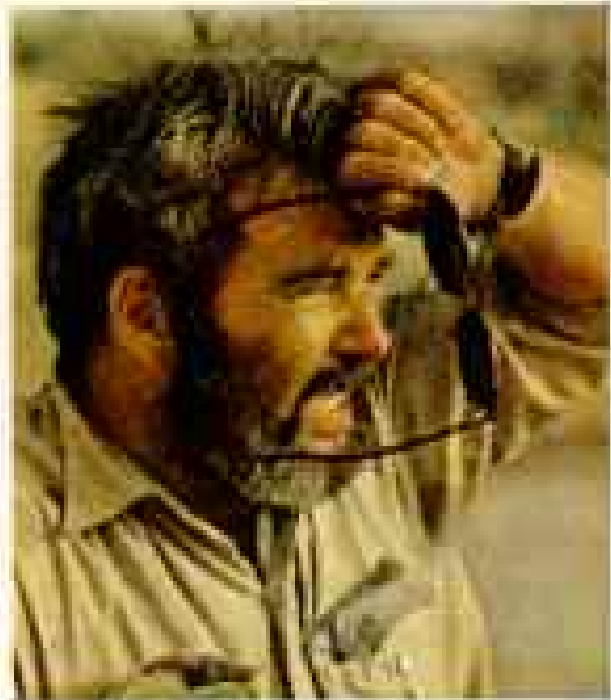
than 130,000 miles in spite of cold, snow, dirt roads, gravel roads, steep grades, and ditches.

Even though Mary no longer delivers The Daily Chronicle, from time to time she still uses the Toyota Corona on her new job.

Delivering the mail.

TOYOTA

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Blue-eyed Moslem From Minnesota



TOM ABERCROMBIE'S assignments have taken him from the South Pole to the slopes of Mount Everest. But the veteran Geographic writer-photographer feels most at home in the world of Islam. He is a Moslem himself, and his sympathetic approach to Moslem ways and his mastery of languages win him acceptance by tent dweller and city dweller alike. Above, over coffee and bowls of camel's milk, he discusses the problems of crossing Saudi Arabia's trackless Empty Quarter; takes a bearing somewhere

in mid-Sahara (left); and, with movie camera and microphone, looks down on the courtyard of Mecca's Great Mosque (pages 6-7).

Tom's most recent assignment presented a formidable challenge: Explore the vast Arab empire of 1,300 years ago. Seek out its past and tell of its present. His report, beginning on page 3, opens new doors of understanding on one of history's most exciting dramas.

Your friends can share such high adventure. Nominate them for membership below.

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Cross-pollination helps grow ideas.

We make thousands of products, and a lot of them wouldn't exist if not for our other products.

One thing people like about 3M is the wide range of innovative products we offer. Have you ever wondered where those ideas come from?

Let's consider "Scotch-Brite" scouring pads and "Scotch" hair set tape.

Now, it would make a great story if we could say that two of our inventors locked themselves in ivory towers until one magical day when they walked out with the finished product. But that isn't the way it happened.

What happened was that 3M had been exploring non-woven fiber technology. One product that resulted was "Sasheen" brand decorative ribbon. And then a 3M scientist who had worked on that product got



to wondering what would happen if a tough abrasive were somehow incorporated in a non-woven material. After many experiments, and many failures, a team produced "Scotch-Brite" brand scouring pads.

Later, someone else at 3M who was familiar with the non-woven fiber technology that was being explored got the idea

that this could offer a route to a naturally breathable surgical tape. After many experiments, this idea resulted in "Micropore" brand breathable surgical tape. A little more interchange led to "Scotch" brand hair set tape.

This may not seem like a logical way of developing products. But that's what makes cross-pollination so special; the fact that it cannot be programmed.

It's not as simple as saying, "Hey, gang, let's cross-pollinate!" You don't get cross-pollination when everyone is hemmed in by organization charts and little boxes. Because a box can be just a rectangle that goes around someone's name. But it can also be a fence.

You get a free interchange of information when people know they are respected as individuals, and nobody is trying to keep them in one area or out of another.

At 3M, we'd rather grow new ideas than fences any day.

People still count here.

The phone company wants more installers like Alana MacFarlane.

Alana MacFarlane is a 20-year-old from San Rafael, California. She's one of our first women telephone installers. She won't be the last.

We also have several hundred male telephone operators. And a policy that there are no all-male or all-female jobs at the phone company.

We want the men and women of the telephone company to do what they want to do, and do best.

For example, Alana likes working outdoors. "I don't go for office routine," she said. "But as an installer, I get plenty of variety and a chance to move around."

Some people like to work with their hands, or, like Alana, get a kick out of working 20 feet up in the air.

Others like to drive trucks. Some we're helping to develop into good managers.

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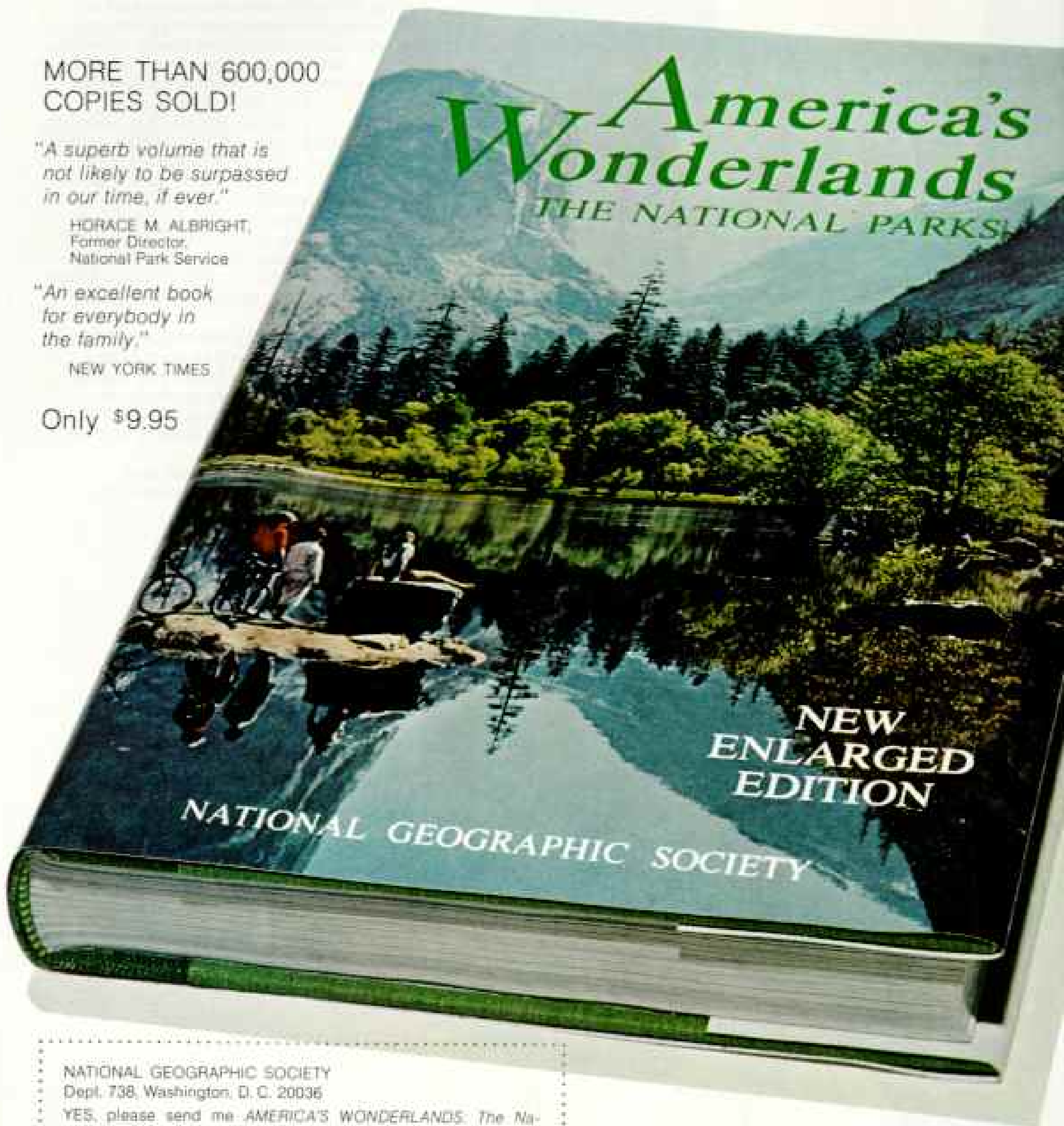
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Bumpers are better but still can't take a 5 mph bump with no damage to car.

Popular 1972 sedans and compacts were crashed into a barrier at 5 mph—walking speed. In both front- and rear-end crashes results were the same: bumpers still don't protect cars from damage.

Average damage? Over \$235.

That's about \$100 less than in last year's tests but still pretty expensive.

To encourage even better bumpers, bumpers that really protect your car in low speed collisions, Allstate continues to make this offer:

"We'll cut collision insurance rates 20% for any car the manufacturer certifies, through independent tests, can take a 5 mph crash into a barrier, front and rear, without damage."



Front end-5 mph, average damage \$239



Rear end-5 mph, average damage \$232

Allstate wants bumpers that protect. We think you do, too. So let's not stop at 'better' bumpers.

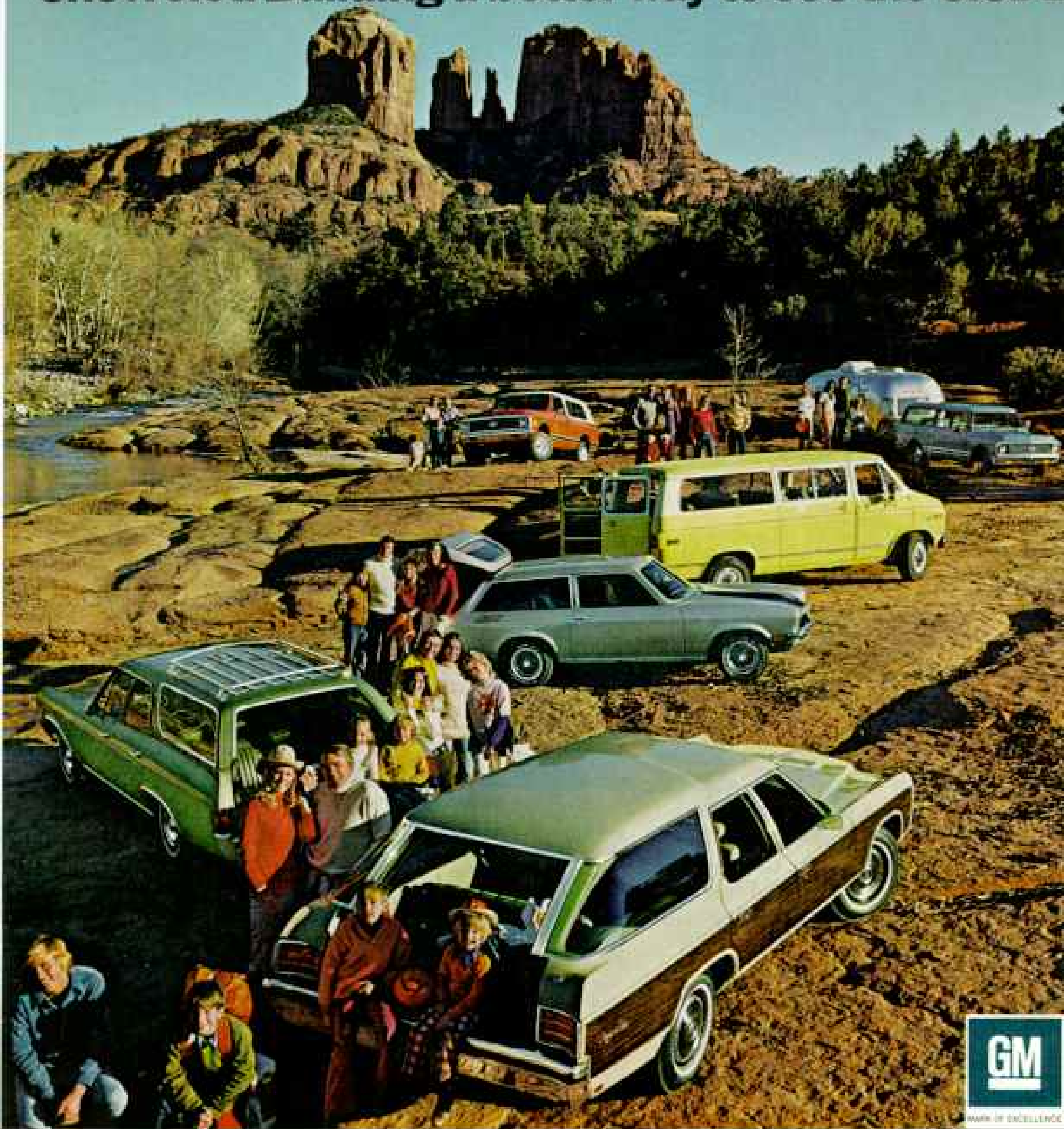
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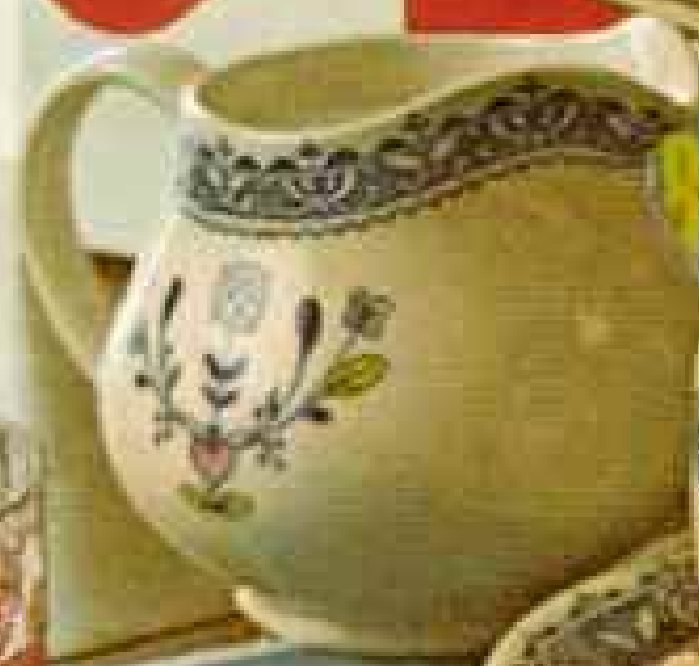
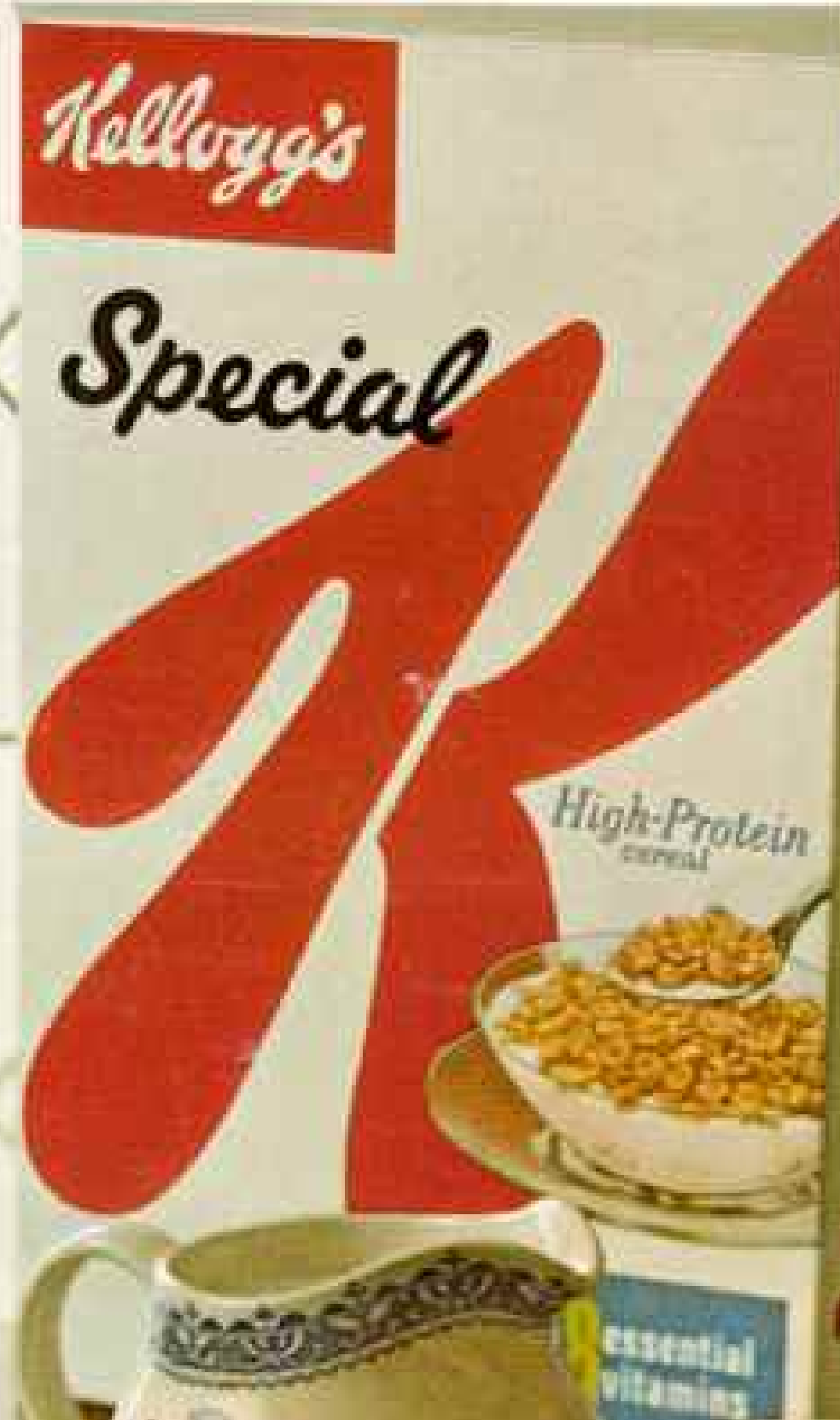
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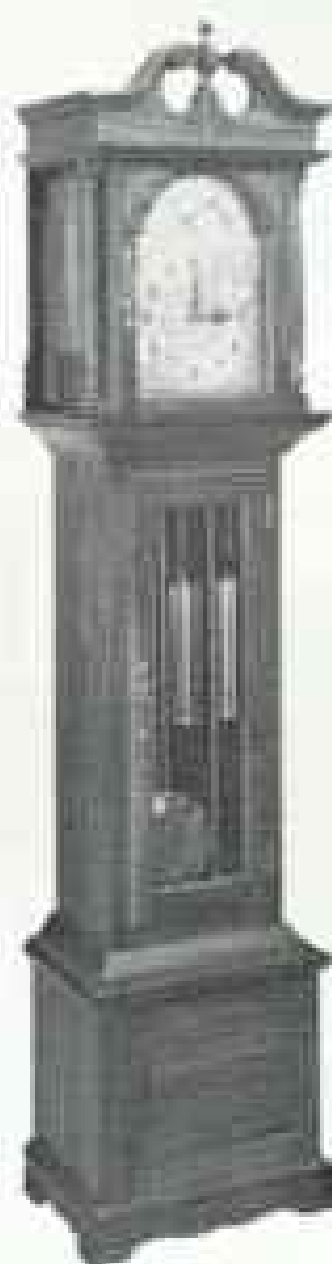
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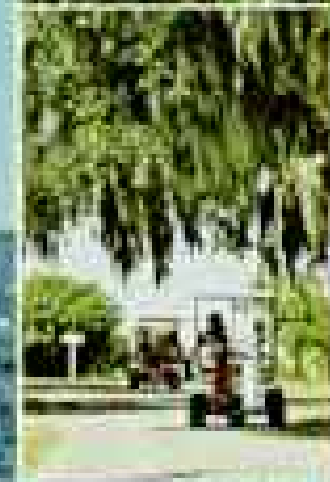
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