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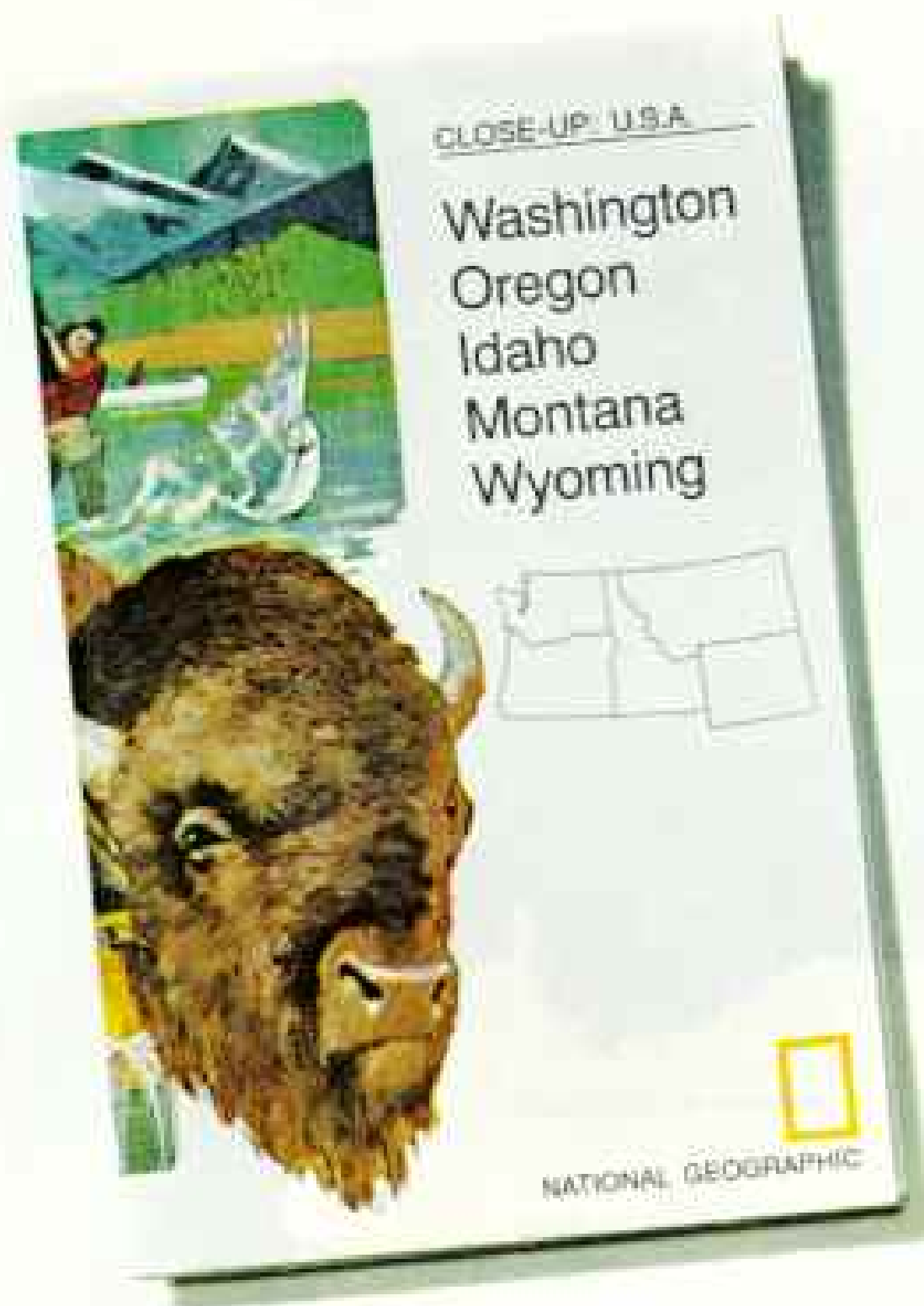
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Close-up: U.S.A. —a fresh look at our land and its heritage

By GILBERT M. GROSVENOR
EDITOR, NATIONAL GEOGRAPHIC

AMERICANS are fascinated as never before by the sights and sounds and sensations of their own country. In car and camper, by plane and train, bus and boat, afoot with packs, even on bicycles, 120 million of us will go forth this year in search of city excitement, small-town charm, or back-country solitude.

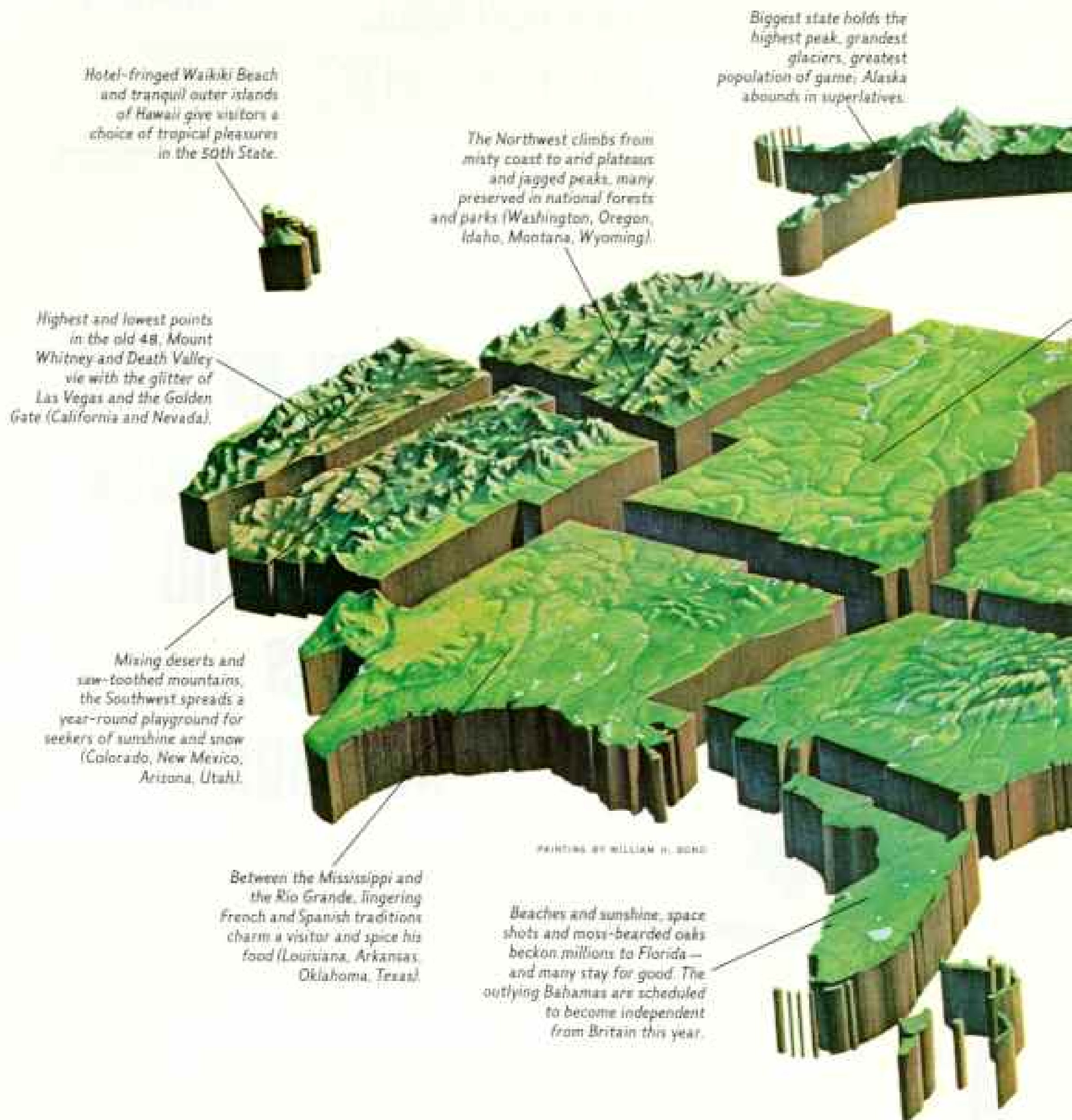
Concord and Chinatown, Gettysburg and Glacier Bay, Los Angeles and Los Alamos—the mosaic of our nation's past and present, its peoples and places, is a work of infinite variety. But how best to enjoy it?

With so much to see, with superhighways and airplanes beckoning us to go farther and faster, planning a vacation often becomes a complicated undertaking—even a vexing one.

Some months ago I asked our cartographic and editorial staffs to think of a way in which the Society could help its members get more pleasure from their American travels. The result is a new series of regional maps, which we call Close-up: U.S.A. The first, focused on the states of the Northwest, accompanies this issue of the magazine.

Comprehensive in scope, the Close-up series will present, visually and in text, not only important highways and cities but the many other features and facets that a traveler wants, and needs, to know about.

The maps will locate historic shrines, parks, forest preserves, and wild and scenic rivers, as well as significant landmarks: lakes, high peaks, and seashores. They will show ski areas,

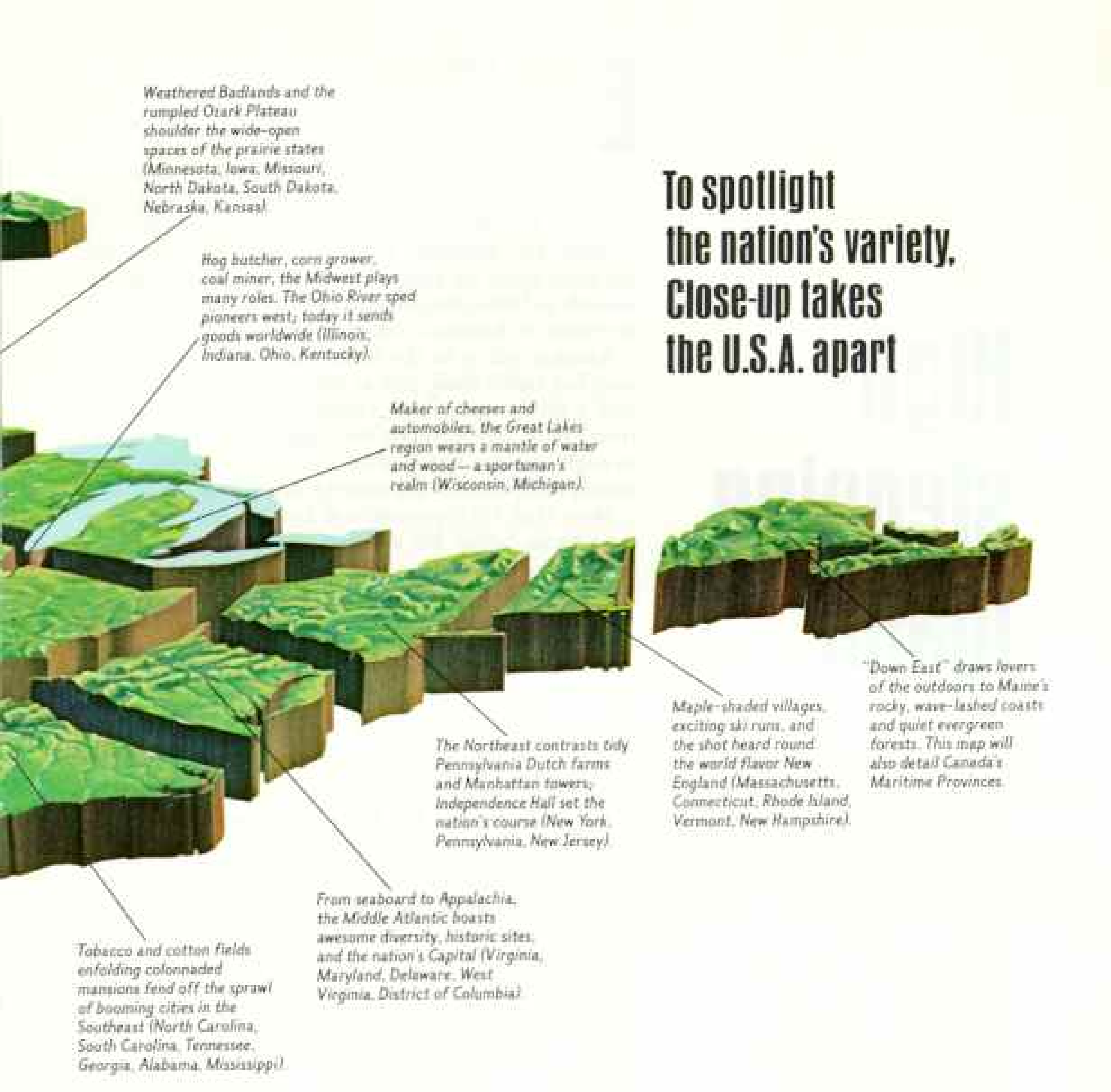


hiking trails, the sites of important sports contests. Calendars of special events and tours will tell where and when you can attend rodeos, fairs, and festivals, or visit mines, dams, and factories. National Geographic writers will touch on major historic events, tell how the people of a region earn their living, describe the landscape you'd see on a trip, even add a few important notes about weather.

Our intention isn't to duplicate travel atlases or gas-station road maps. We designed Close-up maps to be useful in *planning* a vacation trip, long before you start, and to

serve en route as a handy reference—a reminder to detour for a ghost town or a museum, or to stop in a park or forest.

The Northwest map, showing Washington, Oregon, Idaho, Montana, and Wyoming, will be followed by a Close-up of the Great Lakes region. Next fall, in time to help with winter-vacation plans, we will present Florida. The map will also include the neighboring Bahamas, scheduled to attain independence in July. We plan 12 other maps, completing Close-up's new look at the U.S.A. in 1976, the nation's bicentennial year.



Weathered Badlands and the rumpled Ozark Plateau shoulder the wide-open spaces of the prairie states (Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas).

Hog butcher, corn grower, coal miner, the Midwest plays many roles. The Ohio River sped pioneers west; today it sends goods worldwide (Illinois, Indiana, Ohio, Kentucky).

Maker of cheeses and automobiles, the Great Lakes region wears a mantle of water and wood—a sportsman's realm (Wisconsin, Michigan).

The Northeast contrasts tidy Pennsylvania Dutch farms and Manhattan towers; Independence Hall set the nation's course (New York, Pennsylvania, New Jersey).

Tobacco and cotton fields enfold grand mansions feed off the sprawl of booming cities in the Southeast (North Carolina, South Carolina, Tennessee, Georgia, Alabama, Mississippi).

From seaboard to Appalachia, the Middle Atlantic boasts awesome diversity, historic sites, and the nation's Capital (Virginia, Maryland, Delaware, West Virginia, District of Columbia).

To spotlight the nation's variety, Close-up takes the U.S.A. apart

Maple-shaded villages, exciting ski runs, and the shot heard round the world flavor New England (Massachusetts, Connecticut, Rhode Island, Vermont, New Hampshire).

"Down East" draws lovers of the outdoors to Maine's rocky, wave-lashed coasts and quiet evergreen forests. This map will also detail Canada's Maritime Provinces.

No traveler's map of manageable size can be complete to the last detail; whole books have been written about the attractions of each state. But you'll find that *Close-up: U.S.A.* provides a well-rounded picture of each region and an abundance of useful information—material you could duplicate only by consulting dozens of guidebooks, brochures, atlases, and directories.

Our first map locates in Washington alone 9 national parks, monuments, and recreation areas; 9 national forests; 5 wilderness areas; 16 wildlife refuges; 73 state parks; 21 Indian

reservations; 20 ski areas; and the Pacific Crest Trail. You can plan a tour to include such listed events as the Loggers' Jubilee, held each August in Morton, or the Maytime apple blossom festival in Wenatchee.

Elsewhere in the Northwest, map and text direct you to a remnant of the Oregon Trail, suggest good fishing areas, even tell you where to tune your radio to learn if campgrounds at Yellowstone National Park are full.

Touring with *Close-up* maps isn't, as they say, the only way to travel. But I think you'll find it one of the best. □

High- stepping Idaho

By WILLIAM S. ELLIS

Photographs by

DEAN CONGER

WITH NATIONAL GEOGRAPHIC STAFF

Saturday-night stomp kindles a crowd at Stanley, vanquishing the brittle cold of winter. Long thought of as half empty and forbidding, Idaho today draws increasing numbers in search of clean air, clear water, and untrodden snow. Now the state must look for ways to guard its heritage from the specter of "people pollution."

ELEVEN, TWELVE, THIRTEEN...

On and on they come, raft after raft after raft, tumbling and swirling through the rapids of the river like so many rubbery whales.

The river is the Salmon, and in the caramel light of an August morning in the high mountains, I sit on a patch of beach beside the famed stream and watch the procession. And watching, I wonder: What's left, now that the great quest for escape has carried deep into the piny innards of Idaho, this longtime lockbox of inaccessibility for many of America's crown jewels of wilderness?

Another raft is in the white water. It's about to capsize, but rights itself just as the sight of the craft routs half a dozen squawking chukars from brush near the river's edge. Higher up on the craggy canyon wall, a golden eagle remains hunched on a limb of a pine tree, imperiously indifferent to the panicky neurosis of lesser birds.

More than 4,000 persons will float the Middle Fork of the Salmon before the summer ends (motorized vessels are prohibited from travel on the Middle Fork because of its designation as a wild and scenic river), and the United States Forest Service has to control the traffic by setting trip departure dates for the 35 commercial operators. There is a sharp focus on water in this discovery of Idaho. And of all the rivers and lakes in the state—of which there are many—none quite equals the appeal held by the 425-mile-long Salmon, the one early explorers called the "River of No Return."

Let Me In—But Keep the Others Out!

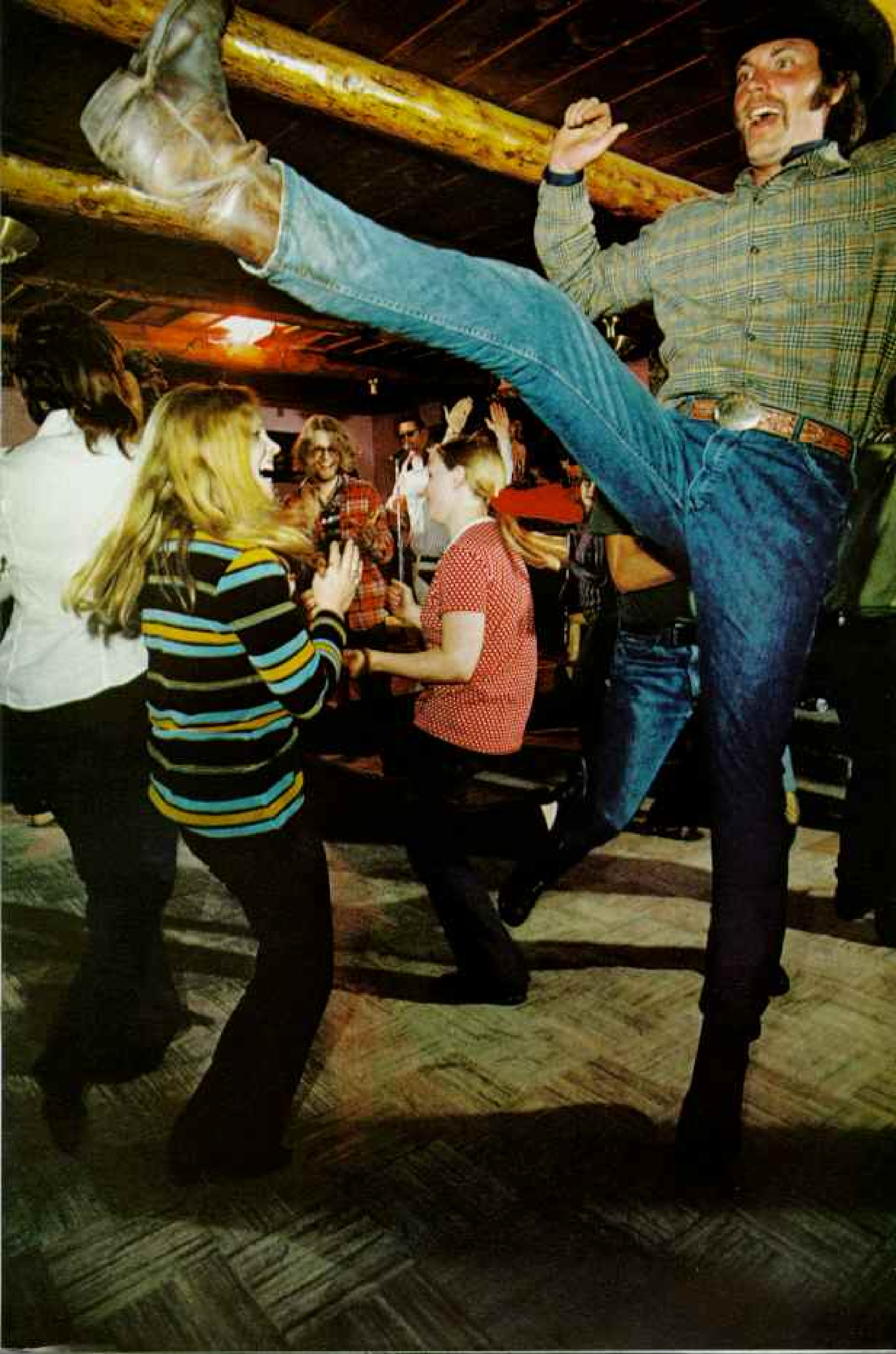
An elfin young woman walked out of the wilderness and joined me on the beach. Her name was Terry Crawford, she said, and she had been hiking alone in the primitive backcountry.

As we talked, Terry, 23, made it clear that she would rather that the Californians who make up the majority of visitors to Idaho set their sights on some other destination. "Idaho is so vast and untamed that it's really an American adventure," she said. "I'd like to see it stay that way, that's all."

I asked her where she was from and, confirming a paradox I would encounter many times, she replied, "California." Once they arrive in Idaho, urban Californians feast on the fresh air until, with lungs cleared, they are able to shout "Keep out!" to other Californians.

When I began my discovery of Idaho, I had only a shadowy knowledge of the state. Certainly I knew that Sonja Henie had skated there, at a place called Sun Valley. I knew too that they grow some dandy potatoes in Idaho. I was even aware that Ezra Pound was born in the state, and that Ernest Hemingway wrote parts of *For Whom the Bell Tolls* there. Generally, however, Idaho seemed distant and vague, and its capital, Boise, remained a stumper in name-the-state-capitals quizzes.

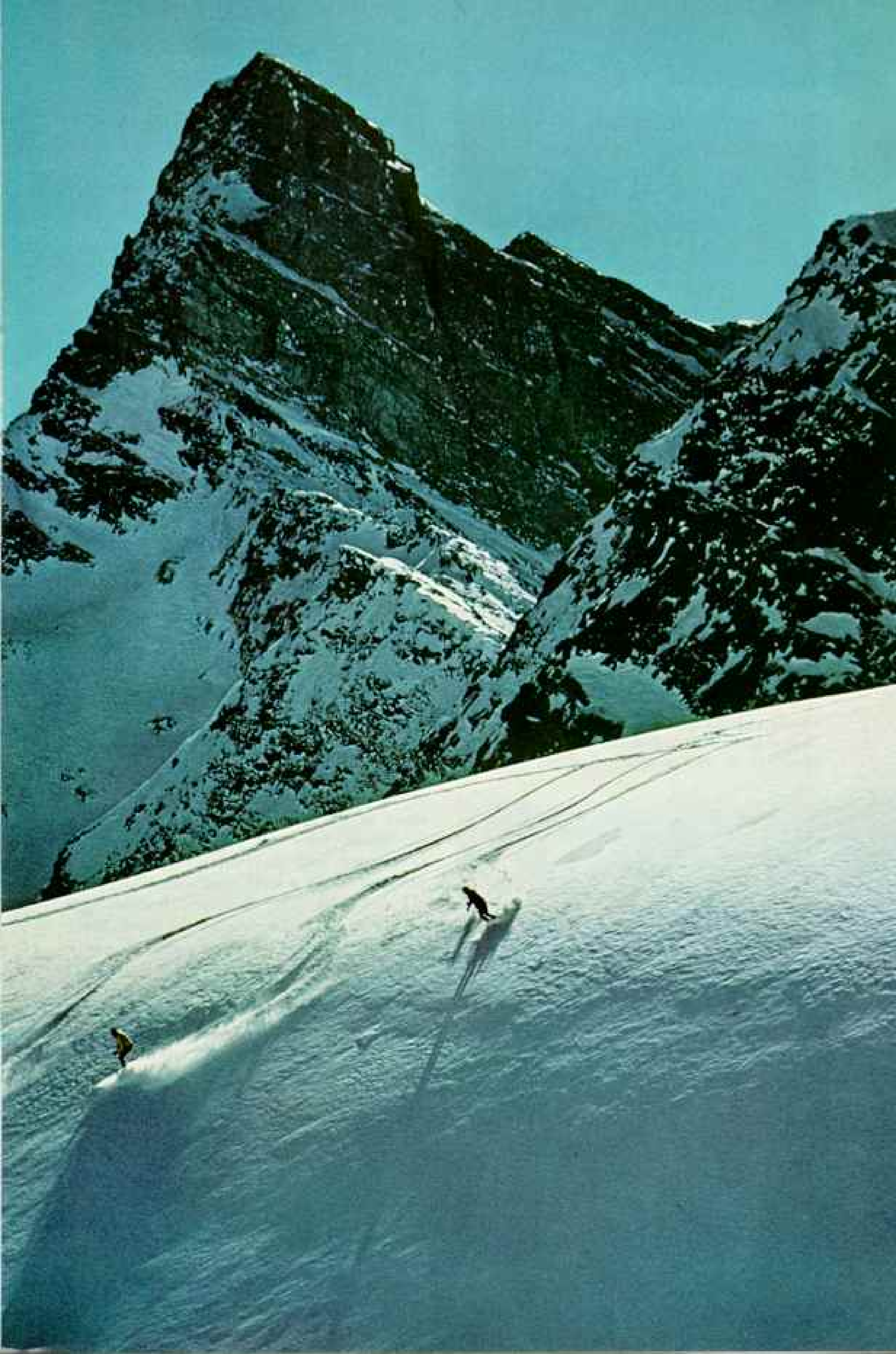
But now I have traveled the state from top to bottom and side to side, and am familiar enough with it to regret



PRISTINE AND POWDERY,
*alpine slopes of the Pioneer
Mountains spread a feast for
skiers from nearby Sun
Valley. Borne by helicopter
to virgin snow, the trio will
swoop downslope for miles,
then reboard the copter for
yet another lift to the top.*

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Awash in smogless sunshine, Idaho's State Capitol looks up Boise's Capitol Boulevard. The city of 78,500—one Idahoan in nine—prosperes as the commercial heart of a farming region.

A pledge to protect the state's legacy of natural beauty won the governorship for Democrat Cecil D. Andrus in 1970 (below). Here he and his family parade in the annual Winter Carnival at McCall.



having waited so long for the introduction. For here, wedged between Wyoming and Montana, and Oregon and Washington, is a piece of America still ruggedly attuned to the primeval order of things. Even as a cross-country jet roars overhead, this raw land whispers with the crunchy hush of a cougar stalking through snow.

Almost 70 percent of Idaho, a segment larger than New York and Massachusetts combined, is publicly owned. Much of the state is given over to mountains—scores of separate ranges with more than 50 peaks reaching above 10,000 feet. (See **Close-up: U.S.A.—Washington, Oregon, Idaho, Montana, Wyoming**, first in a new series of National Geographic historical and travel maps, distributed as a supplement with this issue.) Some are rock-faced towers of granite, bald of trees except for an occasional pine held like a wilted bouquet in a glove of mail. Others are covered by dense forest. None is more spectacular than the jagged Sawtooths, a range in central Idaho embracing steely alpine lakes and valleys banked in extraordinary scenery.

Here rise the headwaters of the Salmon. It is to these pools and creeks that mature salmon return to spawn after three or four years in the Pacific. Their heroic journey covers some 700 inland miles.

Salmon's Death Renews Life Cycle

It was early afternoon when Ken Stearns and I arrived at Alturas Lake Creek, a tributary of the Salmon in central Idaho. Ken, an official with the Idaho Department of Commerce and Development, was accompanying me on a week-long tour.

I followed him through shoulder-high clumps of willow bordering the creek. Stopping, he pointed at the water—shallow, swift-gaited, full of frothy rips where it broke over rocks. The creek was about 15 feet wide, and near the middle were two large salmon. Suddenly, the female was seized in the furious, flapping delivery of her eggs. The seizures continued on and off until, finally, she lay still again.

Wracked by the torturous and suicidal struggle to reach the spawning grounds, the fish would soon die, most likely within a few days. The waters of Alturas Lake Creek probably would bear the body to rest against a rock, and there this noble death would pass with only the buzzing of flies for a eulogy.

We drove northward through the Sawtooth Valley. In the meadow grass on both sides of the road were signs advertising recreational acreage for sale—subdivision slices of once productive and profitable ranches. The ubiquitous A-frame dwelling had made its appearance in the valley, and in some places where once there were heifers and haystacks, there were now poodles and patios. Still, the valley remained largely unspoiled, and measures have been taken to protect it from tacky commercialization.

Ecology Decides a Political Issue

The 750,000-acre Sawtooth National Recreation Area was established in 1972 under legislation first introduced by Idaho Senator Frank Church. Included are portions of the Sawtooth, White Cloud, and Boulder mountains, as well as connecting valley lands. Development of privately owned acreage within the area is subject to control by the Forest Service. An equally important control feature aimed at preventing abuse of this stately landscape is a ban on new mining claims.

Mining in Idaho, as in the rest of the nation, is regulated by an 1872 law. Now, as then, it is little more than a license to ravish the land. It is still legally permissible for any citizen of the United States to stake a claim on much of the mineral-rich government land in the West. Then, if it can be proved that the claim has potential for production, the claimant is entitled to acquire the land at a price of no more than \$5 an acre.

Three years ago a young insurance executive from Boise spoke out against mining interests that operate with scant concern for the environment. His opposition was aimed particularly at a proposal to mine the White Clouds region for molybdenum, a metal already in surplus. His name is Cecil D. Andrus, and in 1970 he was elected the first Democratic governor of Idaho in 24 years, following a campaign in which ecology—specifically mining in the White Clouds—was clearly the overriding issue.

After taking office, Andrus continued to challenge those who would gouge the beauty out of the mountains with open-pit operations. And by supporting the establishment of the Sawtooth National Recreation Area, the 41-year-old governor became the high priest of a new environmental ethic in Idaho.

"The people and industries who come to Idaho are going to have to come on our ground

rules," he told me as we sat in his office in the State Capitol. "People are starting to put a high value on breathing fresh air, or seeing a mountain uncluttered. We still have that to offer here in Idaho, and I'm not going to sit by and see it lost."

Governor Andrus has vowed that there will be no more dams constructed in Hells Canyon "unless it's over my dead body." He has lowered the number of out-of-state big-game licenses, a bold move indeed in a section of the country where the right to hunt is equated with freedom of worship. The anti-pollution efforts instituted during his administration have been what he terms "hard-nosed," and as a result, the amount of organic waste released into the Snake River has dropped appreciably in just one year.

The Snake traces the Idaho-Oregon border for almost 200 miles. For the past two million years or more, the waters of this mighty river have been etching Hells Canyon, the deepest river trench on the face of the North American Continent, deeper even—by 2,500 feet—than the Grand Canyon.

I boarded Guy Snyder's powerful water-jet boat at Lewiston for a trip upstream on the Snake, which, because of the northward flow, means we would be heading south. He told me we would be out most of the day, covering 60 miles of the narrow corridor. We would encounter many white-water rapids, he added.

Giant Sturgeon Are Gone From the Snake

A lean, lithe man, Guy Snyder has been a boatman-guide on the Snake for the past ten years. He is fussy about his vessel, and the sight of a speck of mud on the carpeted deck is likely to bring a frown. He crushed out a cigarette in a beanbag ashtray and pressed the two buttons that brought a roar to the pair of 365-horsepower engines. The boat backed away from the dock and then veered off, trailing an arch of spray tinted with wispy rainbows.

"You'll be surprised at all the signs of one-time human habitation we'll see in this canyon," Guy said.

The first such sign we came across was a group of rocks decorated with aboriginal petroglyphs. The designs were created by pecking the images into the stone. The age of the art has been estimated at as much as 5,000 years.

To get a better view, Guy eased the boat

alongside the rocky embankment. I stepped ashore and traced my finger over indentations depicting a battle scene. The rock was hot, for the sun was high and full over the canyon. The name Hells Canyon was bestowed at least partly in acknowledgment of the searing heat.

Not far from the boat was a deep hole in the riverbed—a fine place to catch steelhead trout in the fall and spring, Guy told me. In summer the Snake offers mostly bass and some rainbow trout. There was a time when the river held white sturgeon weighing as much as a thousand pounds each. They had to be hauled from the river by mule teams. Taken to Boise, the monster fish would be pulled through the streets on wagons and whittled down to bones (bones the size of javelins, no doubt) as residents came forth to chop out a dinner-size portion for only a few nickels. As late as 1956 a 394-pound sturgeon was taken from these waters.

Place-names Tax the Imagination

In Hells Canyon, as in most parts of Idaho, there are imposing rocks bearing names meant to reflect their appearance. Devils Tooth, for example. They almost always puzzled me, for seldom was I able to see the resemblance. Someone would point to an outcropping and make a remark such as, "That's Moose Head Mesa. See the horns?" And I'd look and see something with about as much resemblance to a moose head as a snowy egret has to King Kong.

Thus, when Guy pointed in the direction of a ledge of basalt on shore and mentioned something about "Chinese Massacre," I was prepared for a rocky abstract of Oriental mayhem. Instead, he was identifying the place where ten Chinese gold miners were robbed and murdered in 1887.

The heat was thick and oppressive now, and I looked forward to our next encounter with white water, when I could stand in the open stern section of the vessel and take the cool slap of the river full in the face. It wasn't long in coming. The boat approached the rapids with throttled-down readiness, like a plane taxiing to its take-off runway. This rupture in the river extended for fifty yards—small powerful bites of arrogant and angry water. The fangs of the Snake.

The full thrust of the engines hurled the boat into the rapids. Guy was standing now, his hands tight on the wheel. The bow rose



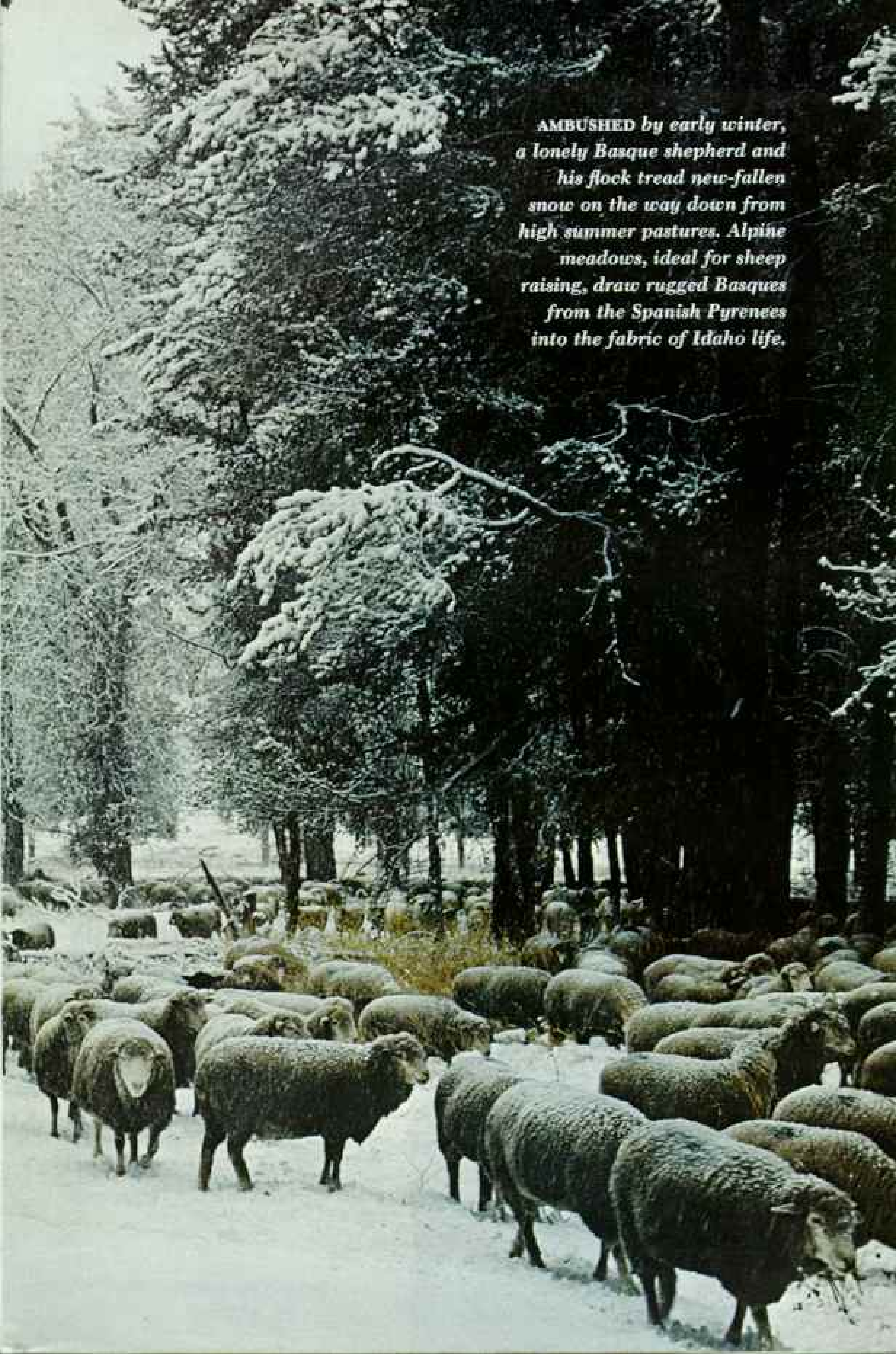
Lash of white water stings a jet-boat pilot taking tourists down the seething Salmon River. Careening between mile-high canyon walls by day, camping at night in the haunt of bear and bighorn sheep, some 4,000 sightseers a year brave the "River of No Return" and its turbulent feeder streams. Conservationists press to have the Salmon join its Middle Fork tributary as a federally protected wild and scenic river, to preserve its beauty and isolation.

Sliced by erosion's scalpel, the Bruneau Canyon bisects a desert plateau in the state's mostly roadless southwest. The gorge drops nearly 1,000 feet between walls so close in places that a visitor on one rim can fling a rock across to the other.









AMBUSHED by early winter, a lonely Basque shepherd and his flock tread new-fallen snow on the way down from high summer pastures. Alpine meadows, ideal for sheep raising, draw rugged Basques from the Spanish Pyrenees into the fabric of Idaho life.

high and then slammed down with a jarring thud. Guy whipped the wheel to port and the boat skidded sideways across the river. Then to starboard and back again, like a broken-field runner. A rock the size of a Volkswagen loomed dead ahead, only barely visible through the vaulting spume. Another quick wheel maneuver and the rock was behind us. Then the sprint to the finish along a course perilously close to shore. Finally, the rapids gave us to still water, and Guy Snyder poured himself a cup of coffee.

Tragedy Marks the Nez Perce Past

On our return to Lewiston we stopped at a point along the Snake where, in early June 1877, Chief Joseph of the Nez Perce Indians led his people across the river to begin one of the great, and tragic, treks of history.

The river was running high when the Indians arrived with 6,000 head of cattle and horses. Horsehide rafts were constructed for the crossing. Towed by swimming horses ridden by young braves, the rafts moved back and forth across the swollen river until all were on the other side. The rest of the animals were driven into the water and made to swim, but many perished. There is a sign at the site describing the event, but otherwise the setting is little changed from what it was on that June day nearly a century ago.

The retreat of the proud and peaceful Nez Perce from their homes in the bountiful Wallowa Valley of Oregon was prompted by encroachments on the tribal lands by hordes of gold seekers. Acting to serve the interests

of the whites, the government had induced the Indians to sell their lands. A treaty negotiated in 1863 reduced the tribe's vast holdings of some 10,000,000 acres to a 757,000-acre reservation at Lapwai, Idaho.

There were those among the Nez Perce, however, who refused to sign the treaty. Petitioned by the government to lead the rebels onto the reservation, young Chief Joseph replied: "Neither Lawyer nor any other chief had authority to sell this land. It has always belonged to my people. It came unclouded to them from our fathers, and we will defend this land as long as a drop of Indian blood warms the hearts of our men."

When the government finally set out to force compliance in 1877, Joseph and his band of about 400, which included women, children, and old men, began their 1,300-mile-long fighting retreat nearly to Canada. And though it was a retreat, it was also a brilliant military campaign, a source of prolonged embarrassment and frustration for the Army.

It was October before Joseph gave himself up. The children among his followers were freezing to death, he told his captors, and there were no blankets, and no food. Then Joseph ended his surrender speech with words destined to be remembered as an eloquent cry of spiritual pain:

"Hear me, my chiefs! I am tired; my heart is sick and sad. From where the sun now stands I will fight no more forever."

The Lapwai reservation continues in existence today. I went there to talk with Richard Halfmoon, chairman of the Nez Perce



Modish member of the Nez Perce tribe attends a festival of old-time Indian games and dances at Lapwai. Today more than 6,000 Nez Percés, Bannocks, Shoshones, and other tribesmen dwell on five Idaho reservations.

Sweet notes drowning the sour, students learn music by playing harmonicas in a schoolhouse in Stanley. Linking homes and classrooms poses monumental problems in Idaho's remote mountains. The school's 25 students will attend eight grades here; most go on to high school at distant Challis, where they will board during the week.

Tribe Executive Committee. A doleful and shy man, he seemed to be burdened by all the sufferings of his people.

"We have about 80 percent unemployment on the reservation," he told me. "We've been trying to get some industry in here, but we haven't been successful."

Tribe Stakes Everything on a Motel

The tribal rolls now number 2,400 people, and the reservation covers less than 100,000 acres. "We sold most of our timber 23 years ago, so what we have now is still too small for marketing," Mr. Halfmoon said. "Of course, we have Project 44 in the works."

Project 44 involves construction of a 50-unit motel complex on the reservation. Now in the planning stage, it is to include a convention hall, curio shop, and cocktail lounge. Richard Halfmoon is not totally convinced that it will work out. "I'm skeptical," he said, "but I guess we have to take risks if we are going to get anywhere."

He went on to tell me that the tribe had obtained a loan from the Federal Government to finance Project 44, but there was a hint of bitterness in his voice when he recited the terms. "They granted us the loan, yes, but do you know what we had to post for collateral? All tribal income and assets."

And yet no more than three miles down the road from Richard Halfmoon's office is the headquarters of a park established less than ten years ago to memorialize this once persecuted and now downtrodden tribe. The "Nez Perce National Historical Park

commemorates an epic chapter in the history of the American Northwest," a government brochure proclaims.

The park includes 23 sites connected with the history of the Nez Perce. "There are eight themes in the story that the park is designated to interpret," Superintendent Jack R. Williams told me. "They include the early history of Nez Perce country up to Lewis and Clark, the missionary era, the discovery of gold, the Nez Perce War, and the settlement of the area by non-Indians."

Of all these, none played a more important role in the history of Idaho than the discovery of gold. It was in 1860, when Idaho was still part of the Washington Territory, that a party led by Capt. Elias D. Pierce of California discovered gold on Orofino Creek, a tributary of the Clearwater River.

That find didn't amount to much, but it was gold, and the tinkle of only a single nugget in a pan was enough to bell a region. Thousands heard, and thousands came. Three years later the Idaho Territory was established. Not until 1890, however, was Idaho admitted as the 43d state of the Union.

Idaho today is littered with the legacy of the gold-rush era. Mining equipment stands rusted and broken on mountainsides and by creeks. Bulky dredges the size of ferryboats rest in dry creek beds, and the wonder is how they were ever brought over the mountains. In early summer, when the rivers and creeks recede, the land along the banks often yields a miner's boot, a tin pan, or maybe a jar that once held some tangy homemade chowchow.





Sharing the bed of shallow Chatcolet Lake, the St. Joe River bears a log tow toward sawmills at Coeur d'Alene. The St. Joe builds its forested levees when spring floodwaters, overflowing their



banks, suddenly slacken their pace, leaving layers of sediment behind.

To curb erosion resulting from timbering operations, the Boise Cascade Corporation and the



United States Forest Service log experimentally with the aid of a balloon. Capable of lifting five tons, it wafts logs from cutting site to road, eliminating the scars left by dragged timbers.

Most of all there are the ghost towns. These relics of instant communities are found in many parts of the state. One of the most picturesque and best preserved is Silver City, in southwestern Idaho. The town is situated in the Owyhee Mountains, and is reached only after a grueling drive over a narrow and bumpy dirt road.

"Silver City was laid out in the fall of 1863," Mrs. Wilma Statham told me. "At first they took only placer gold from the creek. But then tremendous silver and gold deposits were discovered." Mrs. Statham's father was born in Silver City, and she attended school there herself. Her weekend cottage sits high on a hill, overlooking the ruins of the courthouse and most of the town, which once had a population of 2,000. The Masonic Hall still stands, as do the hotel, newspaper office, various stores, and a schoolhouse.

And there is the cemetery, a hillside burial ground offering a glimpse into the past through its markers. Mrs. Statham and her husband, Harold, took me to where Hiram E. Leslie was buried in 1882.

Leslie was a photographer who was accused of cattle rustling. He denied the charge, saying that if he were guilty, "may the Lord strike me dead." Two days later, the story goes, he was dead—struck by lightning.

Mine Fire Claimed 91 Lives

Mining remains an important industry in Idaho. The activity is centered in the Kellogg-Wallace area and includes the production of silver, lead, zinc, copper, and antimony. The famed Sunshine Mine, long the largest lode producer of silver in the United States, is there. In 1970 this mine, with operations below 5,000 feet, yielded nearly 8½ million ounces of silver. Last May a fire in the Sunshine sent lethal carbon monoxide and smoke wafting through 100 miles of workings. The death toll of miners was a staggering 91.

This area was the scene of some of the most violent labor wars in the nation's history, culminating in the assassination in 1905 of a former governor, Frank Steunenberg. He was killed by a bomb attached to the gate to his house. Among those charged with conspiracy in the crime was William D. Haywood, a top official of the Western Federation of Miners. His celebrated trial, which resulted in acquittal, included such lawyers as Clarence Darrow for the defense and Senator William E. Borah for the prosecution.

The mining district is in northern Idaho, in the panhandle that reaches up to press against Canada's British Columbia border. This is lake country, where the land is splashed with the rich green of pool-table baize. The three major lakes here are Coeur d'Alene, Priest, and the largest body of fresh water in Idaho, Pend Oreille.

Summer finds the lakes caught up in a flurry of recreational activity—boating, fishing, swimming, water-skiing, anything wet. In winter a pale beauty settles over the area as the lakes rest under thick jackets of ice.

Bullet and Pistol Vie for a Trophy

I visited Priest Lake in February, when snow was falling, adding to the hip-high accumulation on the ground. At the town of Nordman I met Bill Burke, late of California ("Thirty-one years with the Los Angeles Post Office") and now an Idahoan with a chauvinistic devotion to the state.

"I went to Rush Creek in the High Sierras to fish and found fishermen there lined up elbow to elbow," he said. "That was too much for me. It's not only uncrowded here in Idaho, but the fishing is great; and besides, I've never felt better in my life."

At the time, Bill was involved in publicity work for Priest Lake, and the coming weekend was a big one for him because of the championship sled-dog races. Teams of dogs had been brought in from throughout the Northwest to compete over a course laid out through the woods just south of town. I was at the starting gate early Saturday morning when the teams got off with a yelping lunge. They were handsome dogs with such names as Bullet and Red Baron and Pistol.

One special event was for entries driven by contestants over the age of 50. Mrs. Lydia F. Hoke, who is 72, told me as she waited her turn to compete that she had been racing dogs for five years. "I go to all the races in the Northwest," she said. "It's fun—something to do." She crouched on the driver's stand of her sled and got her dog off with a shrieking "Yahaaaaa!"

Her time was not good, and when her dog finally crossed the finish line, I asked her what happened. "He had to make too many potty stops," she replied.

There are more than 25 established ski areas in Idaho, including that dowager of winter resorts, Sun Valley (pages 306-307). Now almost 40 years old, Sun Valley was the

creation of W. Averell Harriman, who at the time was chairman of the board of directors of the Union Pacific Railroad. He commissioned an alpine expert, Count Felix Schaffgotsch, to find the most suitable place in the West for a winter sports resort. The count's search carried him from Colorado to California, but it wasn't until he came to Idaho that he found the perfect site—a small basin ringed by high mountains, sunny, and banked with an abundance of powder snow.

To skiers the world over the main attraction of Sun Valley lies in the challenge of descending 9,151-foot-high Bald Mountain. With dozens of runs slashing across the wooded slopes, Baldy is conceded to be one of the greatest skiing mountains anywhere.

Celebrated in song and film, Sun Valley has worn its fame well down through the years, always with just a trace of stuffiness. The beautiful people who played there dressed for dinner and sniffed their wine corks.

Today, as ever, most of the guests are accomplished skiers, and those who aren't usually manage to make a leg cast appear as a fashionable accessory. But now a corporation headed by Bill Janss, a former U. S. Olympic skier, has purchased Sun Valley from Union Pacific and seeks to change the old image. Under his guidance, the private-club atmosphere has been diluted to one of gracious tradition.

"I remember how I felt the pressure of snobishness when I first came to Sun Valley years ago," he told me. "We no longer have that problem."

People Come First in a "Walking Village"

There has been extensive building activity in the valley in recent years, with the emphasis on condominiums. A sister resort, Elkhorn at Sun Valley, is being developed in the basin, and that too will be in line with the trend toward privately owned vacation housing. At the height of the winter season, there are more than 3,500 skiers on the slopes of Bald and Dollar Mountains, and though traffic is increasing on the one road leading to the resort, Janss says he intends to maintain Sun Valley as a "walking village." Free bus service is provided to discourage the use of private cars within the village.

Mrs. Dorice Taylor is a lively, warm-hearted woman of 71 who still skis. She first came to Sun Valley in 1937 and now lives here the year around. She remembers Ernest Hemingway,



Riverside ritual: A fisherman readies his tackle beside Idaho's shimmering Salmon. More than 35,000 miles of streams and 2,000 lakes abound with salmon, bass, and lunker trout, while millions of acres of mountain forest beckon the hunter and hiker.





With light-hearted ease, a skier leaps expertly above Sun Valley's immaculate slopes (left). Setting out for a spectacular ride up one of the resort's lifts, a group of skiers leaves the warm comfort of Sun Valley Inn (above). Established in 1936 by the Union Pacific Railroad, the resort capitalized on the powder snow, brilliant sunshine, and shelter from winter winds provided by Idaho's Sawtooth Mountains. Today the valley burgeons with condominiums and cozy lodges (below), retreats of those dedicated to a life of roughing it—in luxury.



who stayed at the Lodge. She remembers all the bad films made there, the worst being, in her opinion, *Duchess of Idaho*. She remembers World War II, when Japanese balloons carrying fire bombs drifted harmlessly into the valley.

And she recalls the late Steve Hannagan, the publicity genius who was responsible for the resort's worldwide fame. "He was met at the train station in Ketchum by a sleigh with a potbellied stove in it. The snow was deep all around, but the sun was bright and warm. Right away he said, 'We'll call it Sun Valley.'"

I asked Mrs. Taylor if Hannagan skied. "Heavens, no," she replied. "He hated snow."

Sun Valley's sophistication is self-contained, but Idaho as a whole has enough of its own to belie the myth that remoteness breeds cloddishness. Though cursed with the faceless front of downtown vapidness, Boise has its philharmonic orchestra, art galleries, and professional stage productions. Its hostilities do a brisk convention business, and as the state capital, the city has a high political awareness.

More than one economist has expressed astonishment at learning that Boise, with a population of fewer than 100,000, is the headquarters for four firms listed on the New York Stock Exchange: Albertson's (food stores), Morrison-Knudsen, Boise Cascade, and Idaho Power. The trappings of corporate power are visible—at the airport, where private jets come and go, and in the downtown section, where the Boise Cascade Corporation's new 16-million-dollar home-office building sprawls over an entire block.

Balloon Helps Harvest Timber

Morrison-Knudsen, also headquartered in a costly and imposing building, had its beginning in Boise 61 years ago, when Morris Hans Knudsen teamed with Harry Winford Morrison to form a construction company. Knudsen owned the horses, and Morrison the ambitious drive. Since that time the company has constructed dams and highways and pipelines throughout the world. Bridges, airports, subways, shopping centers—these also carry the M-K label. In South Viet Nam the firm



Warming up with a winter swim, visitors soak in a pool fed by hot springs at the Robinson Bar Ranch near Stanley, one of a growing number that find greenhorn guests a lucrative cash crop.

headed a consortium that was responsible for construction work amounting to 1.9 billion dollars. At the John F. Kennedy Space Center in Florida, Morrison-Knudsen erected the Vehicle Assembly Building, a behemoth among structures throughout the world.

The main business of Boise Cascade is forest products. Its timber operations in Idaho are widespread. I went with Glen B. Youngblood to the Garden Valley area of the Boise National Forest, where timber was being harvested experimentally by use of a massive onion-shaped balloon. Youngblood said Boise Cascade had a contract to take almost 30 million board feet of pine and fir from this section over the next five years.

The loggers were working deep in the forest, hidden in the heavy growth that covered the hills. Overhead, however, the helium-filled balloon was in view for many miles (page 303), lifting logs out of the remote pockets and depositing them only a few yards from trucks waiting to take them to a mill. Control of the 113-foot balloon is maintained through manipulation of cables.

Later on I visited a Boise Cascade factory in the town of Meridian, where some of this timber was going into the assembly-line construction of houses. The units are fully completed at the plant, down to installation of appliances, and then loaded onto trucks for shipment to building sites throughout much of the West.

Meat and Potatoes Build State's Economy

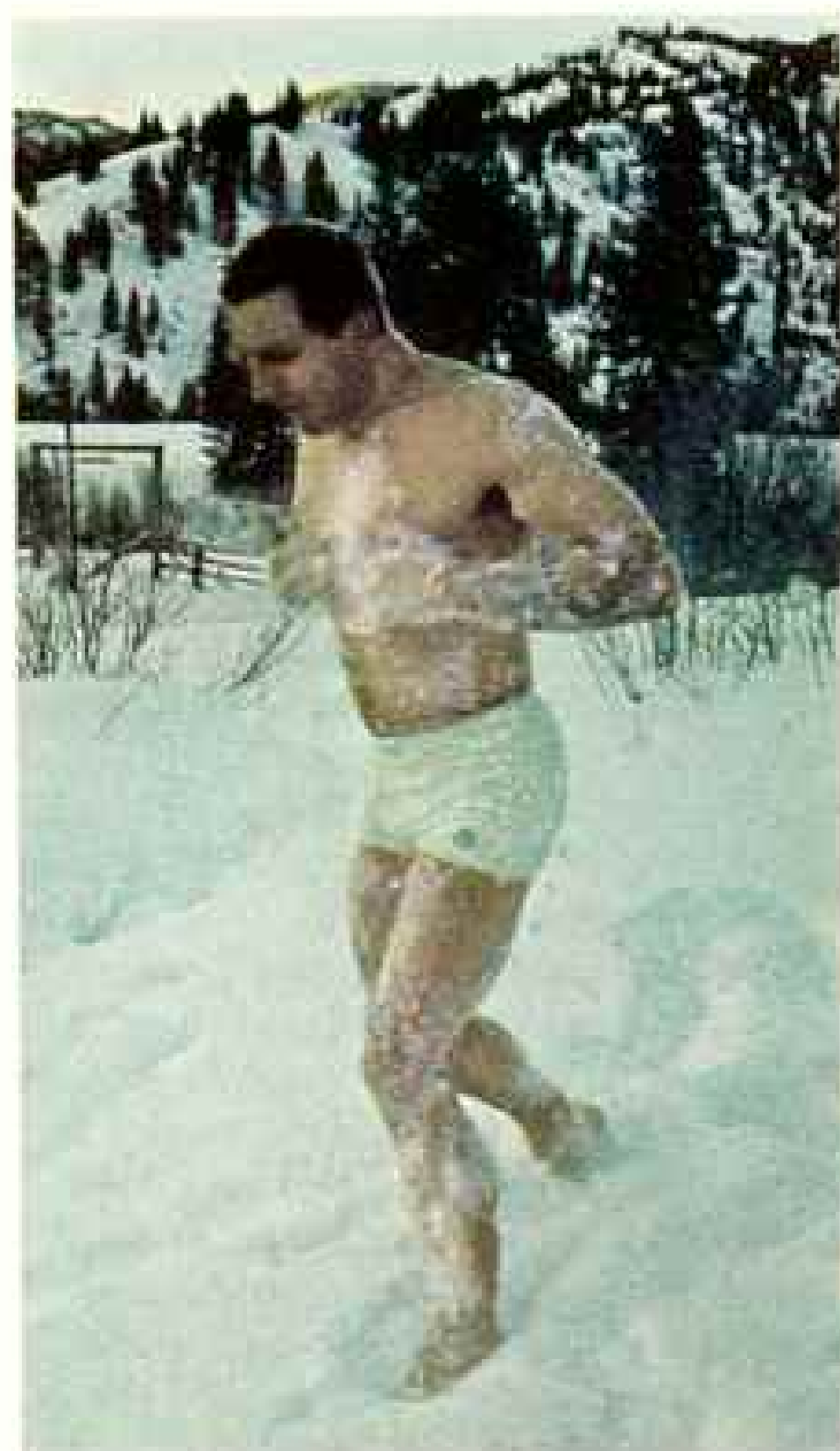
Of all commercial activities in the state, Idaho leans most heavily on agriculture for its economic well-being. It is the tenth largest producer of wheat in the nation, and the leader in potatoes. Alfalfa seeds and barley, onions and sugar beets are important crops, as are hops and mint. But it is the cattle industry that is responsible for the largest single share of the 700 million dollars in annual farm-marketing cash receipts.

With its many wild grasses, Idaho spreads a vast and scrumptious grazing banquet for cattle. Driven into the green hills in summer, and then back to the ranch for winter feeding, the animals put on profit-making weight. Some critics charge that the land, most of which is owned by the Federal Government, is being overgrazed, thereby reducing the habitat for wildlife. The danger to Rocky Mountain bighorn sheep is especially acute, according to some wildlife biologists.

Rancher Basil Aldecoa runs about 200 head of cattle, but on the February day I visited his spread near the town of Marsing, all attention was centered on sheep. It was lambing season. The wind was strong, blowing out of a sky still puffy and dark from yesterday's heavy rains.

"It's good, this wind," Basil said. "It will dry the mud in the fields." We watched as a large black horse pulling a cart was led toward a group of several hundred sheep. A ranch hand walked through the herd, inspecting the animals. Finding one about to lamb, he quickly separated it from the others, lifted and plopped the 180-pound sheep on its back in the cart. The horse plodded off to a nearby shed, where the lamb would be dropped in a bed of straw.

All the ranch hands were Basque, brought over from Spain on three-year contracts. Basil Aldecoa is of Basque heritage himself, as are some 20,000 Idahoans. "We'll get about 1,600 lambs this year," Basil told me as we entered the bunkhouse to wash up for lunch. "Around the middle of March we'll load them



Quick cool-off with snow ends one venture-some bather's swim at the Robinson spread.

in trucks and take them into the hills, where they will stay until May. Then we move into higher country until June 15, when they go into the forests. After that, we turn around and start back down again."

Basil said he runs his cattle behind the sheep. "The old Western magazine stuff about the sheep ruining the land for cattle is baloney," he said. "They work very well together. The sheep eat the tender part of the grass, leaving the tough part for the cattle. That's the part that's best for them."

None of the men spoke more than a few words of English. One puzzled over a dentist's bill he had received in the morning mail. Basil spoke to him in Basque, saying he would take care of it. We all walked through the mud to the kitchen house. Seated on wooden benches around a long table, the Basque sheepmen quickly ate their stew and codfish, drank their red wine, and then went back to the fields being dried by the wind.

Idaho Spuds Take Many Forms

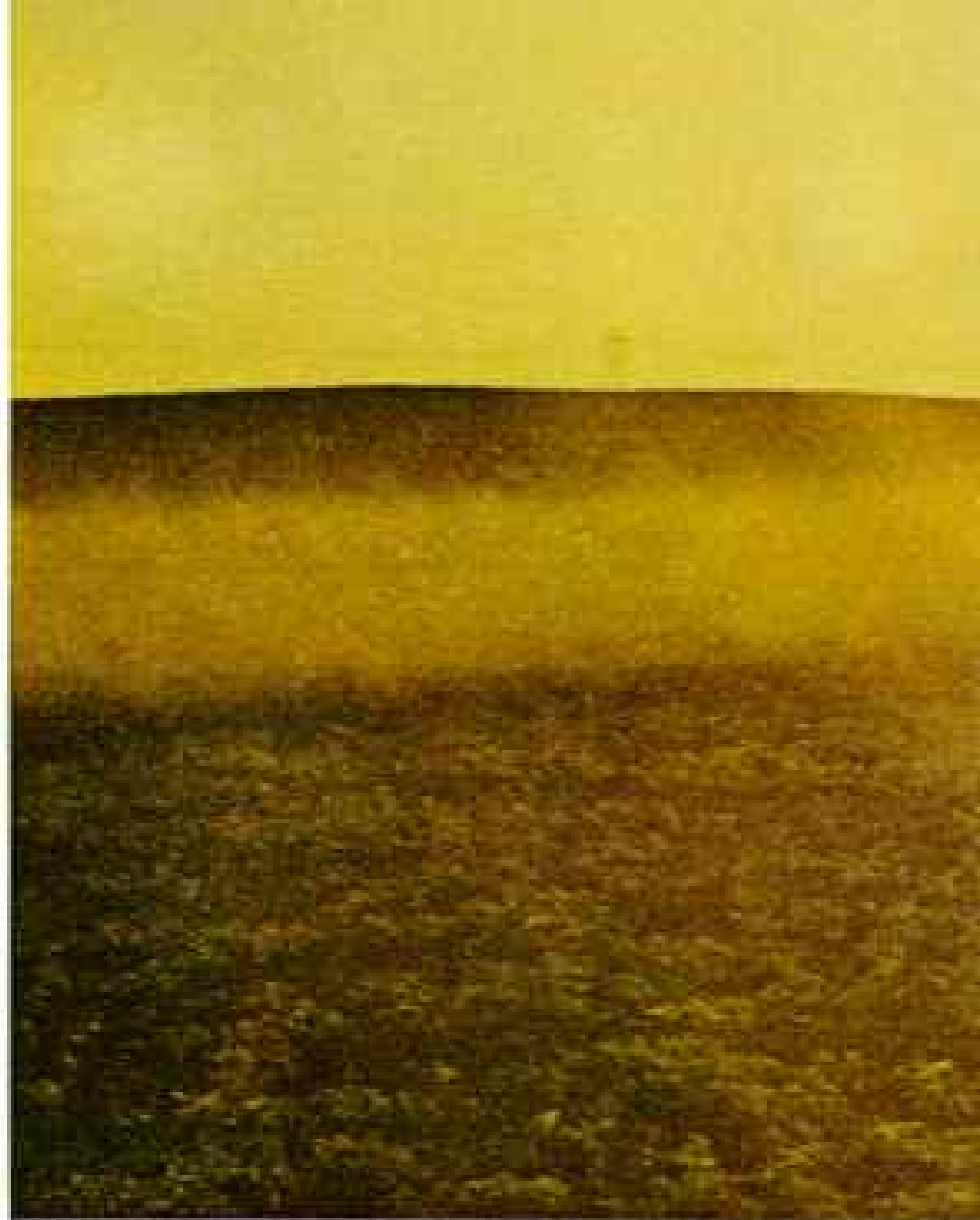
As I drove north from the ranch, I passed potato fields that stretched for many miles in seemingly endless rows from the road toward the horizon. These were some of the 306,000 acres planted to potatoes in Idaho. Of the total production of nearly 79,000,000 hundredweight (hundred-pound sacks), only 20 percent is sold as fresh produce. Almost an equal amount is grown for seed, or fails to meet market standards.

At several plants in different parts of the state I saw what happens to the remainder. They go into processing, mainly frozen French fries (150,000 tons a year in one plant alone) and instant mashed potatoes. And also everything from Southern-style hash browns to potato-pancake mix.

For all of that, the big Idaho baking russet—steaming and mealy textured—remains dearest to the hearts of the potato-loving public. Off and on for nearly 25 years now, attempts have been made to label each Idaho potato marketed as fresh produce. Special stamping machines (GROWN IN IDAHO) were designed, but for one reason or another, each failed. A new labeling effort is now underway. Imprinted or not, the Idaho potato, like the Georgia peach, remains something of an American institution.

Potatoes thrive in southern Idaho, especially in the rich soil of the Snake River Plain.

(Continued on page 317)



Behind the potato, tricks and technology: In normal years, a timely cold snap kills potato vines before digging time, permitting the tubers to harden while still in the ground. But nature sometimes turns fickle, and cold weather holds off until growers fear the first frost will also freeze the ground, making harvesting impossible. To





avoid this situation farmers turn to science. A low-flying crop duster sprays defoliant, the vines die, and the harvest takes place.

Clanking down seemingly endless rows near Idaho Falls, a mechanical monster delicately unearths potatoes and sifts out soil and vines. As a conveyor feeds the harvest to a truck, a rider

tosses out potato-size clods that managed to fool the machine. Thriving in the fertile Snake River Plain, almost eight billion pounds of potatoes pour forth each year to satisfy the nation's hunger for French fries and tasty bakers.







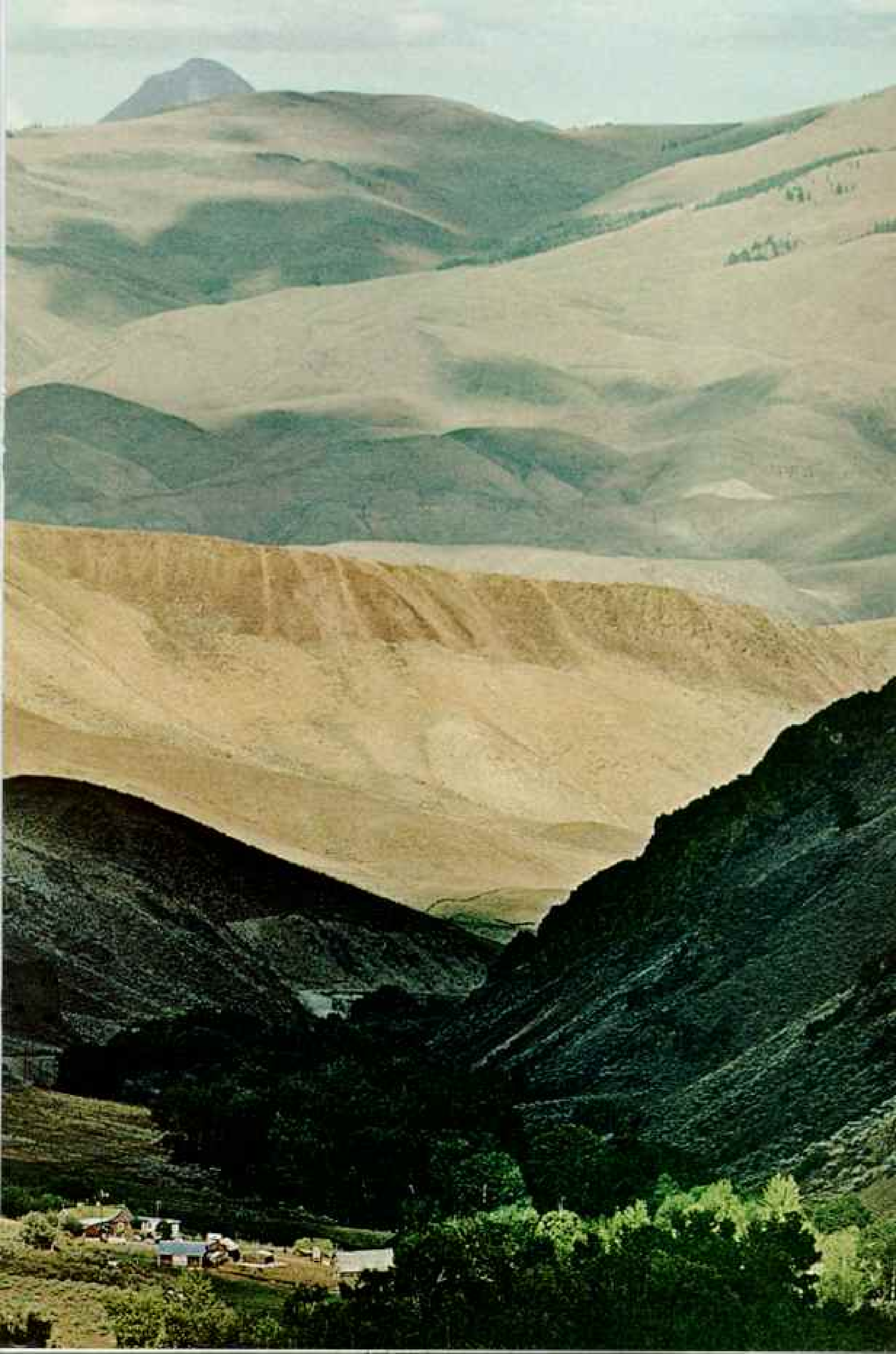
Living the legend of the West, cowboys muster for roundup by their bunkhouse. The crew rides for the Copper Basin Cattlemen's Association, whose members graze their herds in common on high meadows leased from the Federal Government. Cutting out yearlings, the ranch hands will herd them down from the hills (left) and into feedlots—a dusty, grueling seven days in the saddle that recall the celebrated drives of a century past. At trail's end, the fattened yearlings will join the 760,000 head that bring Idahoans more than 200 million dollars each year, and make livestock raising the state's largest single source of agricultural income.



Stubble sprouts from the face of a trail-riding ranch hand during roundup. Joining a crew of wranglers in the hills, photographer Conger found them living true to cowboy tradition—riding hard from dawn to dusk, then playing poker and sipping whiskey far into the night.

Hills piled on plump hills curtain the sky behind a toylike ranch in Klug Gulch. The arid, sage-clad slopes lie mostly within Challis National Forest; nearly three acres of every four in Idaho are under government management.







This is an area of grotesque landscapes, where black lava fields tell of a time when the earth was in roiling upheaval. Ice caves and gaping fissures are here. Eighty-three square miles of this region have been set aside as the Craters of the Moon National Monument. In few places is the earth so severely scarred with the violence of its geology as on the monument grounds.

It was in this general area, on sagebrush land, that the Atomic Energy Commission established the National Reactor Testing Station in 1949. The station today holds the largest and most varied collection of reactors in the world.

"When the station opened, it was hoped to have between 10 and 15 reactors by 1960," Dick Blackledge, an AEC spokesman in Idaho, told me, "but by that time we already had 40. As of now, 50 reactors have been built, of which 16 are still in operation."

The reactors include the first one to produce useful amounts of electricity from nuclear heat, as well as the most advanced materials-testing reactor in the world today.

Nuclear Navy Born in a Desert

It took more than two years for the Advanced Test Reactor to achieve full power. For every gram of uranium in its core, ATR is designed to produce about 30 kilowatts of thermal power. At full capacity it produces 250,000 kilowatts. The first materials reactor constructed on what is known locally as the "sagebrush campus" went into retirement in April of 1970. Four months later, however, it was put back into operation for 48 hours, at the request of the State of Idaho, to test the levels of mercury contamination in grain samples, livestock, and certain species of wildlife.

To ensure isolation, the station covers nearly 900 square miles, an area about three-quarters the size of Rhode Island. And there is nothing in it except antelopes, jackrabbits, and some of the most sophisticated pieces of equipment ever assembled.

It was in this Idaho desert that the nation's nuclear navy was born. In July of 1953 the

reactor carrying the designation STR achieved full power. It was the prototype nuclear engine for the atomic submarine *Nautilus*. This engine later accomplished a simulated submerged voyage, under full power, from Newfoundland to Ireland, while at the station.

The commission's Idaho headquarters is in Idaho Falls, one of the three cities in the state with a population of more than 35,000. The others are Pocatello and, of course, Boise. Moscow, home of the University of Idaho, has fewer than 15,000, while McCall, site of a winter carnival that attracts thousands of visitors, counts about 1,800. The town of Murphy, in Owyhee County, has 75 residents, making it one of the smallest county seats in the United States, though Owyhee is among the largest counties (7,641 square miles).

A Land of Distances . . . and Nostalgia

There are great distances between the cities and towns and hamlets of Idaho—distances that gave me time to reflect on the sights and sounds of the last stop as I headed for the next one.

Driving north, I remembered the previous night's concert in Twin Falls. A band has played in City Park every Thursday night in summer for the past 63 years. In how many other towns, I wondered, does this remnant of Americana survive? And how many tuba-playing druggists are there who sit in a band shell, blowing foggy notes into a warm summer night?

When I left the mountain-shaded town of Stanley, my thoughts were on an abandoned prospector's cabin I visited earlier in the day. I came across it in a weed-choked nowhere, a sagging, twisted rise of rough pine; door ajar and rigid; a screen of spider webs covering the single window opening; a shelf holding dead roaches and a Clabber Girl Baking Powder can.

And the cool, musty presence of ghosts, telling of a time when someone was there—someone who ate his beans and cursed his luck and maybe (just maybe) finally took riches enough from the ground to leave this shack and claim a castle. □

Home from a day on the diggings, prospector Daniel E. Mulcahy tidies his bachelor cabin in the Clearwater River region. An 1860 strike near Pierce launched Idaho's lusty gold-rush days. Sustained by infrequent finds and unflagging hope, men like Dan Mulcahy still comb the rugged fastness for "color," while mechanized mines wrench from the land a wealth of lead, zinc, and phosphate, and the nation's greatest outpouring of silver.

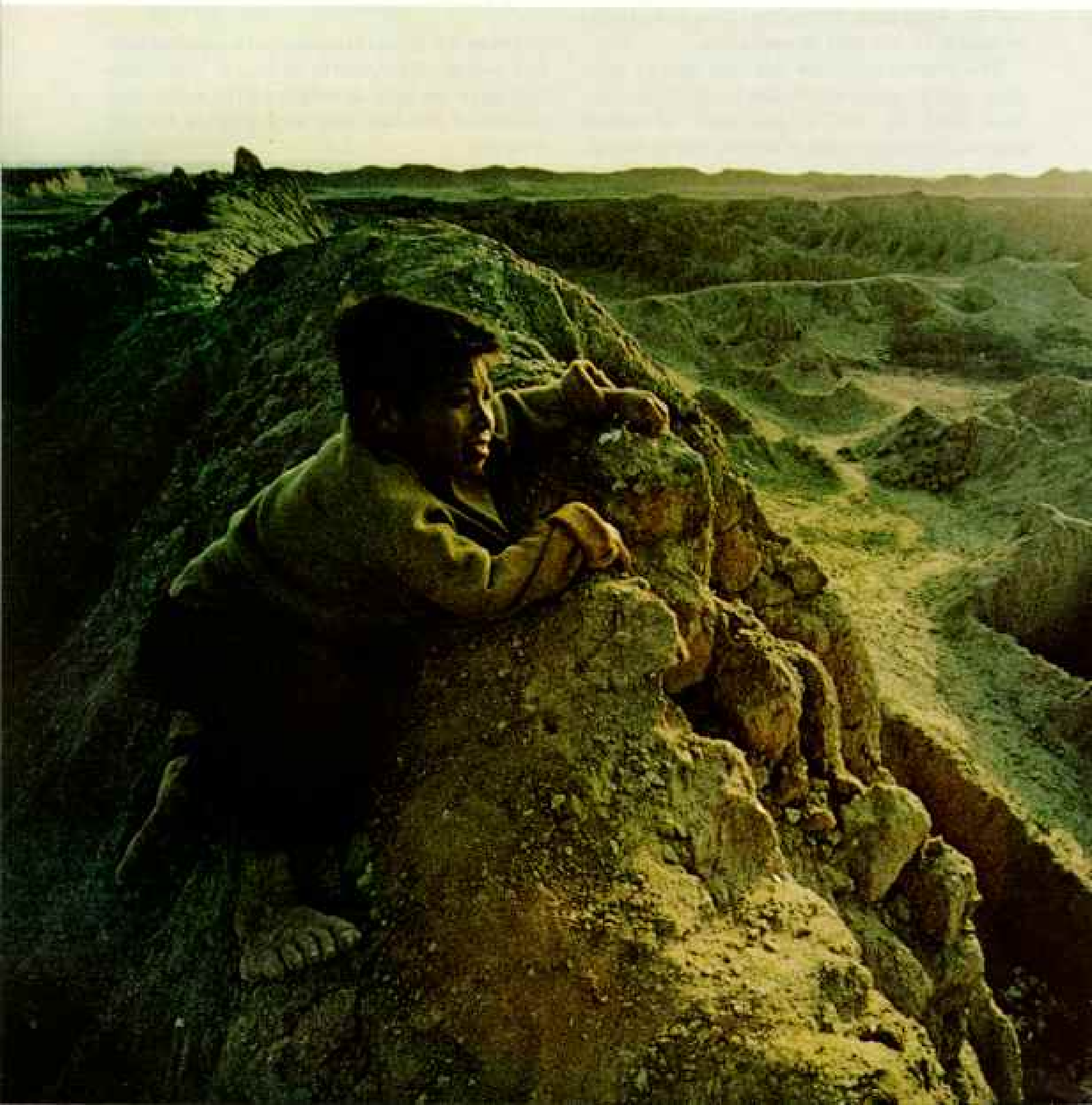
Chan Chan, Peru's Ancient

LIVING OR DEAD, every city has a unique character, I believe—an essence distinctly its own. But when I first saw the capital of ancient Chimor in 1967, I felt pangs of doubt.

Here, on the coastal desert of northern Peru, stood the fabulously wealthy center of a kingdom that had vied with the mighty Inca empire. But how could one hope to recapture, in this dun-colored sprawl of mud-brick ruins, the urban personality of Chan Chan?

It was simply too big. Covering roughly nine square miles, it was the largest pre-Columbian city in South America. I wandered past great desiccated earthen walls, some 25 feet high and nearly 2,000 feet long. They surrounded baffling mazes of corridors, courts, and rooms, shrouded for five centuries in sand and dust.

If there was an order, a plan, to Chan Chan, from my lizard's-eye vantage point I certainly could not see it.



City of Kings

The answer came about a year later, at the Peabody Museum of Harvard University. Carol Mackey and I pored with growing excitement over a set of aerial photographs that had been made in the 1920's.

"Look," said Carol. "You can see repetitive patterns here. There are nine of these huge walled compounds right in the center of the city. Each is generally rectangular, and most seem to have three distinct sections."

In the compounds we could pick out the



By MICHAEL E. MOSELEY, Ph.D.

and CAROL J. MACKEY, Ph.D.

Photographs by DAVID BRILL



ROBERT S. DAVIS
AND VICTOR H. BOWELL

These ravaged chambers kept their secrets until the authors' dig revealed them as the coffers of a king. Here in Chan Chan, on Peru's north coast, a monarch of the Chimor empire stored gold and silver, ornate textiles, and blackware vessels similar to the one above—wealth enough to rival an Egyptian pharaoh's. The pre-Columbian city, excavated by a National Geographic-sponsored team, was the seat of power of the Chimú. The realm prospered for well over a century before it fell to Inca invaders around 1470.



MICHAEL S. WHEELER

Farmer by day, treasure hunter by night, a grave robber probes at dusk for loosely packed earth that may reveal a burial site and its wealth. Art historians estimate that 90 percent of the Peruvian artifacts in museums and private collections come from such *huaqueros*, whose indiscriminate digging frustrates the work of archeologists. Little gold or silver remains in Chan Chan, continually plundered since the time of the Inca conquest.

same types of symmetrically arranged rooms, halls, plazas, and platform mounds. Other architectural features repeated themselves many times.

"This city didn't grow haphazardly," I agreed. "Its builders followed very specific plans and rules."

"So—we can break it down and analyze it in modular units," Carol reasoned. "If we study one or two examples of each type of building, we can interpret similar ones. If we do this for enough patterns, we'll be pretty close to understanding the urban personality of Chan Chan."

I was convinced. The National Geographic Society was receptive to our plans, as was the National Science Foundation. With generous support from these institutions, we launched major field operations at Chan Chan in 1969 with a staff of a dozen U.S. and foreign scholars and students.

Early Menu Offered Mastodon

We set up headquarters in a rented two-story home on the outskirts of Trujillo, several miles from the ruins. And over the past four years our team has mapped, probed, and explored not only Chan Chan, but also scores of others among the more than 2,000 archeological sites scattered through the surrounding Moche Valley, from Pacific surf to Andean foothills. In search of the city's roots, we have traced its inhabitants' ancestors as far back as shadowy hunters who feasted on a mastodon carcass some 10,000 years ago.

We were hardly pioneers. The irony of Chan Chan is that for five centuries it has been too well known. Built between the 13th and 15th centuries A.D., the city reigned as seat of the Chimor dominion that eventually stretched some 600 miles along the Pacific coast. In the late 15th century, highland Incas conquered Chan Chan and transferred much of its wealth (and many of its skilled craftsmen) to their own capital, Cuzco, 600 miles to the southeast.

When Pizarro's conquistadors reached Chan Chan some 65 years later, it was partially abandoned, yet still rich. The Spaniards literally formed mining companies to excavate in the city for gold artifacts and melt them into bullion. And ever since, *huaqueros*—grave robbers—have dug for treasure, heaping wreckage upon ruin.

Yet the lonely, ravaged city survives—a huge adobe monument to one of the driest,

bleakest regions in the world. (In March 1972 we felt curiously privileged to be soaked by intermittent showers—the last measurable rain had fallen 47 years earlier!)

How could Chan Chan have risen and prospered in this searing environment? The explanation was carved in the desert for miles around us: an astonishingly well-engineered irrigation system that tapped the nearby Moche River. One great canal even snaked through more than 50 miles of barren dunes to bring water to Chan Chan from another valley (page 332). The arrival of Spanish armies and a scourge of Old World diseases finally vanquished the desert peoples. Their farms lay deserted, as canals parched in the sun and dunes reconquered the land.

In our fieldwork we saw many large farms and mechanized sugarcane plantations reusing the ancient irrigation canals. Yet the skilled Chimú had cultivated the valley even more extensively; we continually find their channeled fields, waiting to be reclaimed.

Our first research goal was to map the entire city in detail with the aid of those old photographs. This tedious but essential task was to occupy six architects and draftsmen for nearly two years. The mapping not only helped us find the patterning we sought in the ruins, it also recorded for the future an archeological treasure that even today is undergoing sorry destruction.

Modern squatters threaten all Chan Chan. Farmers have occupied and plowed more than a third of the site (page 345).

Several of the squatters posed another kind of threat. One afternoon as I labored over paper work, project architect Japhet Rosell—a talented Peruvian member of our team—burst into headquarters in great agitation.

"Doctor Mike!" he stormed. "Those three Carrasco sisters farming on the west side of the site—they just pulled a gun on me and my workers!" The squatters, he continued, had taken their mapping gear and equipment, denounced them as "huaqueros," and threatened to shoot if they set foot in the area again.

We fetched a Trujillo policeman and drove back to the ruins, armed with our excavation permits and a map clearly showing the squatters' farm to be well within the government-owned Chan Chan National Monument. After heated debate with the belligerent sisters, the officer managed to retrieve our equipment. But the women flatly refused to let us map "their" 30-acre section of Chan Chan, where

alfalfa now grows over the plowed-up ruins. We had to make do with information from the aerial photographs.

As the mapping proceeded, we could readily see more and more repetitive patterns. A number of large rectangular pits—more than 125 of them throughout the city—caught our immediate attention. Earlier visitors had pondered them, too, identifying them variously as sunken granaries, reservoirs, and clay quarries for making adobe brick.

We chose one of the smaller depressions and put a crew to work. After weeks of digging, they uncovered traces of a clay ramp—evidence that people once moved in and out of the pit. Had it been submerged, the ramp would have dissolved; thus the old excavation could not have been a reservoir. Then we found cobblestones lining the ancient walls. This ruled out the idea of a clay quarry.

My Peruvian foreman, Andrés Castillo, observed that the soil was growing more moist as we dug, and demolished the granary theory. "It is too damp," he said. "The corn and beans, they would spoil very fast."

The Final Clue: Shattered Jars

At last, one afternoon a workman shouted excitedly from the soft shadows 30 feet below: "*Hay cerámica!*"

Carol and I scrambled down the ladder to the excavation floor. Dozens, then hundreds, of shards—undisturbed for centuries—came to light as we brushed away the sand.

"Water jars," Carol said, and the evidence fell into place. The clay ramp ended about a yard above the floor. There, too, the cobblestone walls were stained white with calcium carbonate, deposited by evaporating water. Now the jars had appeared. We were standing in the bottom of a huge walk-in well—the first of its type ever excavated in coastal Peru.

One of my staff workers, Kent Day, examined other depressions and found the pattern repeated throughout Chan Chan. "The same ramp sections, traces of cobblestone wall, and shards from large jars," he reported. These wells supplied the city with water as long as irrigation kept the water table at high level. The wells went dry when the canals, and Chan Chan itself, were abandoned.

The people of Chimor, unfortunately, left no written language. What little we know of them comes indirectly through their Inca conquerors, who borrowed heavily from their culture, from artifacts, and from legends



ALAN R. SARKIS

Opulence and pomp attend the burial of a Chimor king, garbed in larger-than-life mask and cloak and mourned by the elite of his court. History does not record the ritual of Chimu burials; the artist reconstructs the ceremony from artifacts that have survived. Feathers from tropical birds form a crest above the king's golden mask, daubed red with cinnabar. Alpaca brocade decorates the cotton tunic of a funerary official, who carries a staff and wears gold ear spoons. A similar earring (above) exhibits a marine motif, with cormorant, reed boat, and fish at center. The staff, like the one below from Harvard University's Peabody Museum of Archaeology and Ethnology, was carved of algarroba, a desert wood related to mesquite.

Revered as god-kings, Chimor monarchs went to their graves accompanied by much of their wealth and by female subjects perhaps sacrificed to tend to their needs in the afterlife. Excavating a Chan Chan burial platform pocked by centuries of looting, the authors found only the dregs of treasure and the skeletal remains of young women, "stacked like cordwood."

ROBERT L. DAVIS
AND VICTOR W. GIBBELL



preserved by several early Spanish chroniclers. One anonymous fragment lists the rulers of Chimor and tells of the kingdom's founder, Taycanamo, who came ashore on a log raft and proclaimed that "a great lord . . . sent him to govern this land . . . from across the sea."

Taycanamo's successors expanded the kingdom northward along the coast to the Gulf of Guayaquil, and southward nearly to Lima. From Chan Chan they ruled with, apparently, a harsh hand. Thievery, for example, was a capital offense; those disrespectful to shrines were buried alive; adulterers were flung from cliffs. Herb doctors enjoyed high privilege, but one who bungled and lost a patient



PAINTING BY STAFF WRITER PETER MARSH

was promptly beaten or stoned to death.

For the latter penalty, there was certainly no shortage of ammunition. Cobblestones by the million litter the plain at the western edge of the city, forming a tangled network of stubby foundations.

These puzzled us. John Topic, a patient red-haired Harvard graduate student who spent four seasons on our project, undertook to study them—and immediately ran into an architectural nightmare. Wherever he dug, the stone-and-brick alignments rarely formed a complete roomlike floor plan. Most of the helter-skelter foundations proved to be L- or U-shaped, and the absence of high walls—so typical of the city—was baffling.

The solution was weeks in coming. One

morning I found John sitting at the edge of his excavation looking happy, if tired.

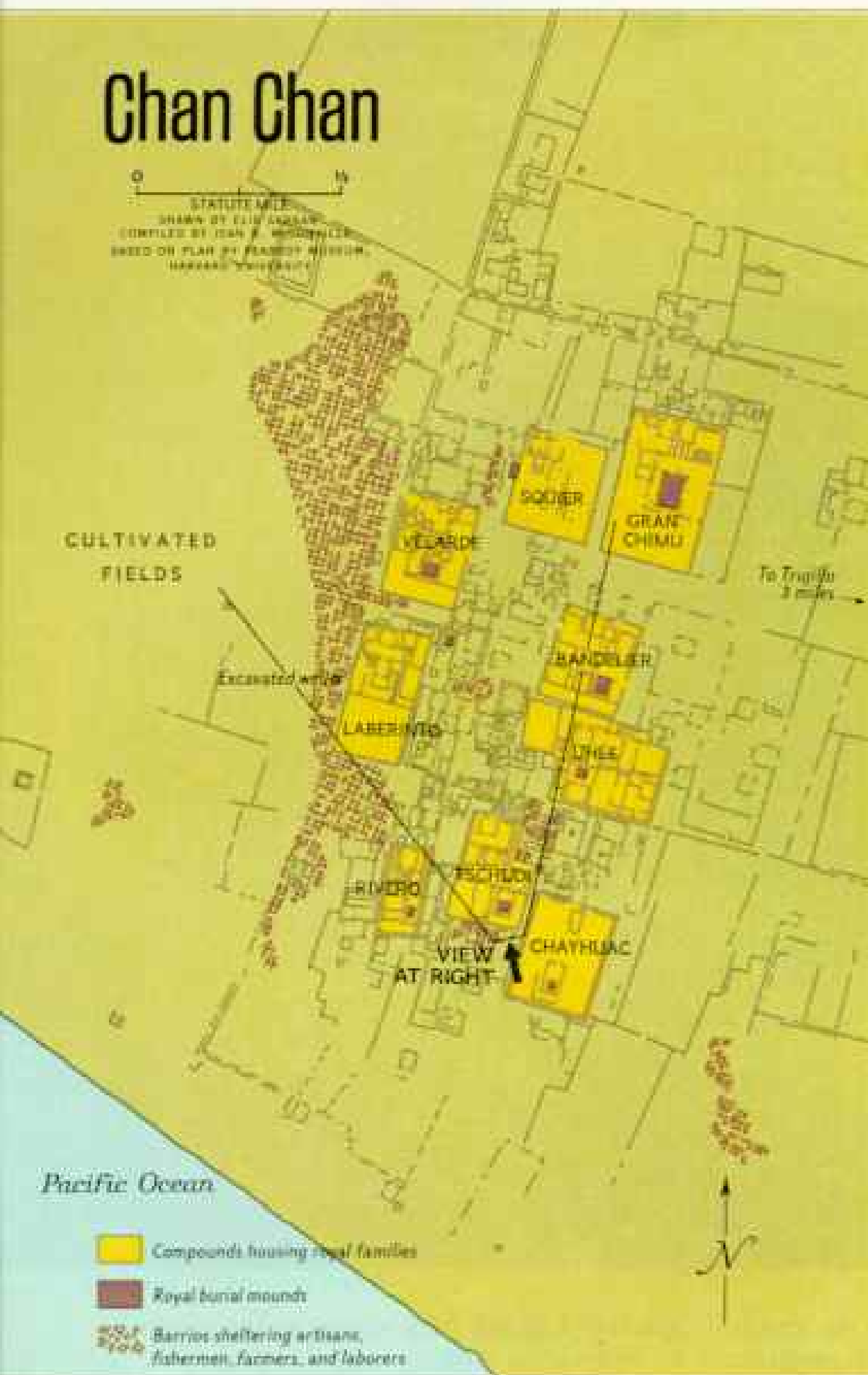
"I know what we've got now," he said with a grin. "But it cost me a lot of sleep!"

He had gone to an all-night fiesta with Zacharias, one of his workmen, who lived in a large *barrio*—an urban shantytown—on the outskirts of Trujillo.

Between numerous rounds of corn beer and rum, John explained, he had a chance to examine some of the *barrio* houses. "Many of them are built of cane and reed, with a little mud plaster on the walls. And along the windward side, the people often stack a low row of bricks or stones to anchor the walls."

At ancient Chan Chan the pattern was the
(Continued on page 328)

Chan Chan



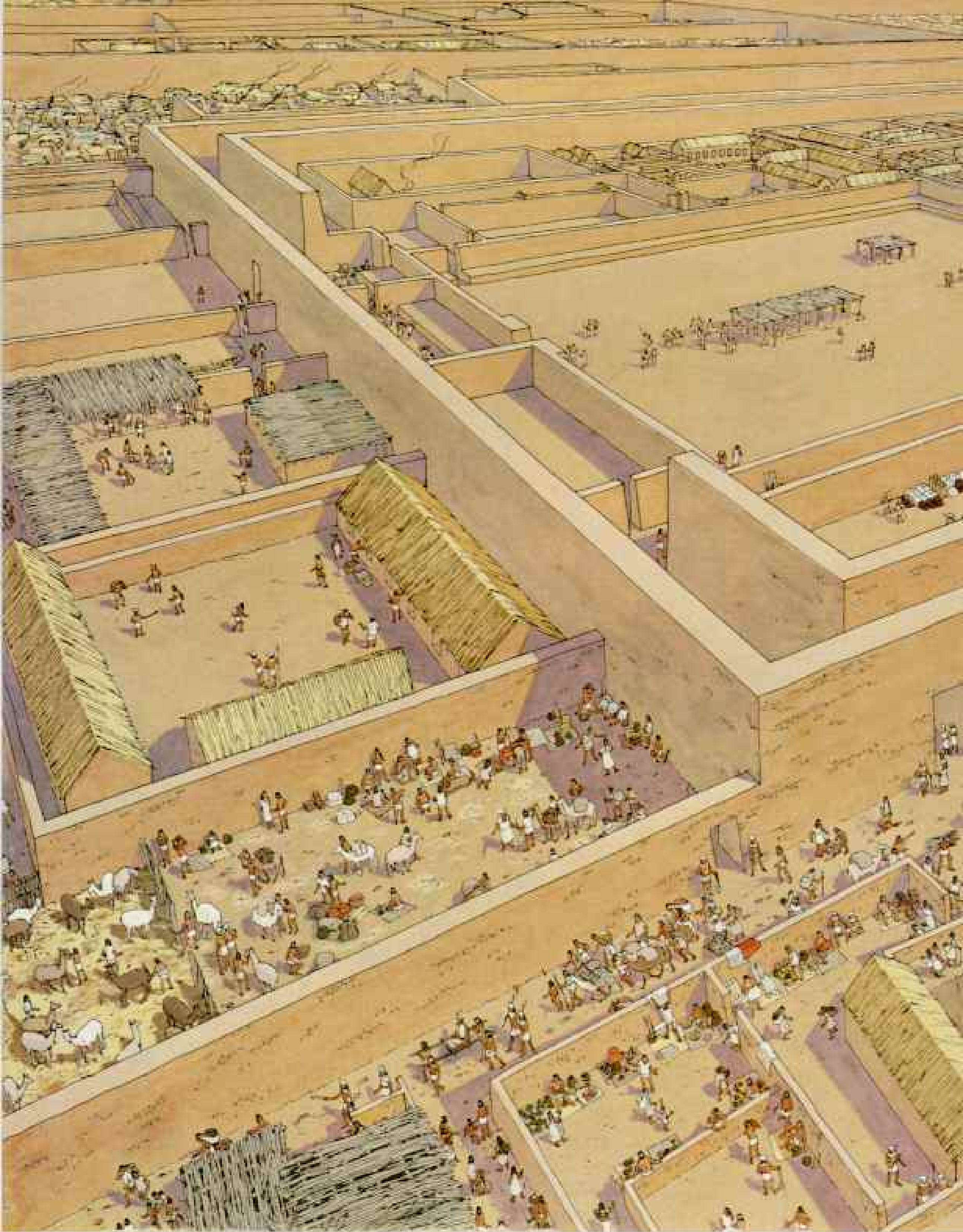
Heart of Chan Chan: Nine compounds served successive Chimor monarchs as palaces and treasuries in life, as shrines in death. Six bear the names of explorers and archeologists: Tschudi, Rivero, Velarde, Squier, Uhle, and Bandelier. Conquering Incas marveled at the city's splendor, which exceeded that of their own capital at Cuzco, 600 miles to the southeast.



"The Adobe Monster:" Thus the authors nicknamed Chan Chan, whose mud-brick mazes, such as these in the Tschudi compound (right), once safeguarded royal treasures. Riddled by thieves, the king's burial platform at lower center looks like a checkerboard.







Labor of many creates leisure for a few. Crowded on the fringes of a royal palace enclosure, ordinary citizens of Chan Chan tend llamas, fashion pots, weave fine textiles, and gather water from a walk-down well. At lower left, four men carry an official on a litter, symbol of office and status. Corn, peppers, and beans dry on the thatch roofs of simple dwellings (right) made of adobe



STAFF ARTIST ROBERT W. HICKOLSON

plaster, cane, and reeds. Sequestered inside the royal residence—large enough to accommodate nine football fields with room to spare—the elite of the realm live in more elegant surroundings. Conquistador Pedro Pizarro found a doorway in the Chimu capital slabbed with silver worth approximately \$500,000 in today's currency.

Elegance flourishes in modern Peru as it did in ancient Chimor. An equestrienne guides her mount on a leisurely afternoon ride through the grounds of her spacious hacienda. She and her husband, a banker, live near Trujillo, south of Chan Chan.



Tattered peasant dwells at Trujillo in a house of reeds (right) not unlike the wattle-and-daub shelters of Chimu commoners. He saves his earnings to replace the reeds with adobe brick.

same: The incomplete stone-and-adobe foundations generally faced the prevailing coastal winds. The cane-and-reed walls had long since vanished—re-used, or perhaps burned as firewood in this fuel-scarce region.

Much of the city's general populace, we were now convinced, lived in these tiny, tightly packed quarters on the west flank of the civic center. With an estimated 10,000 such living rooms, Chan Chan may have had a peak population of some 50,000.

To learn more of how these prehistoric barrio dwellers fed themselves and made a living, John selected a black-looking midden and put his crew to work sifting the refuse through a window screen. From desiccated seeds and other fragments of food, we could soon read a virtual daily menu of the people of Chimor: corn, squash, sweet potatoes, lima beans, chili peppers.

Desert Folk Still Look to the Sea

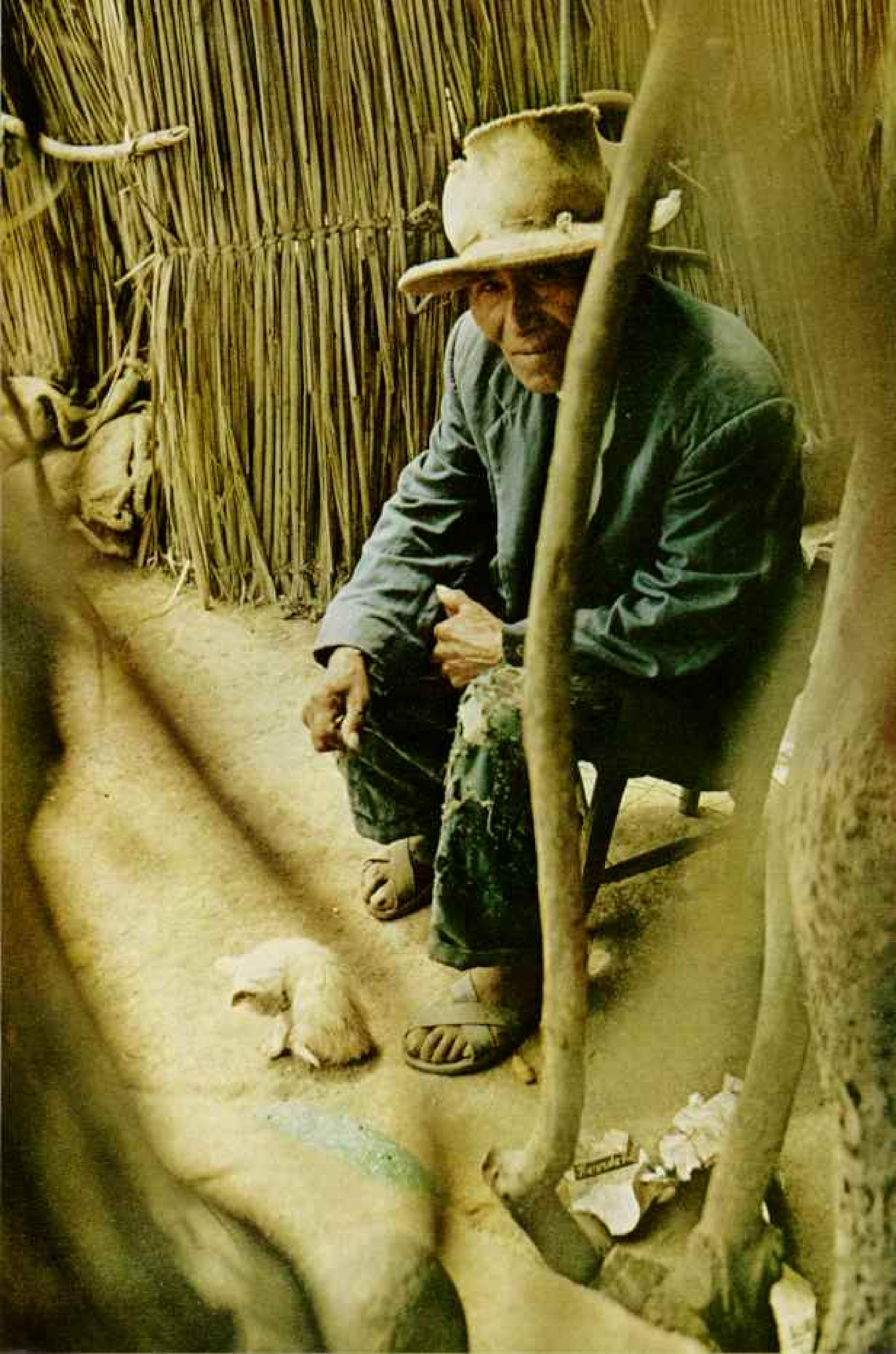
Among thousands of shells and bones, the remains of domesticated guinea pigs showed up in the screens—a delicacy still offered by modern Trujillo's restaurants. The ancient people of Chimor also relied heavily on the sea, as do their descendants. In the jumbled barrio we found copper hooks, fragments of fishnet, and gourd floats.

In one room John discovered tufts of raw cotton, dozens of pieces of thread, and several copper needles. Nearby he turned up a number of spindle whorls, some of them still unfinished. In another room a pile of copper slag came to light, along with several metal-working tools of stone and a tiny oven.

"There was plenty of manufacturing here," John observed, "but apparently not on a large scale. It seems to be more on the order of cottage industries."

The barrio, we concluded, was the seat of small-scale production, occupied not only by farmers, fishermen, and laborers, but also by skilled artisans who furnished the diverse services and craftwork demanded by a city of this magnitude.

In attempting to trace the economic foundations of Chan Chan, we searched out ancient rural communities whose inhabitants contributed to the city's maintenance. At a seaside village beyond the northern margin of the Moche Valley, archeologist Richard Keatinge found sunken gardens where fishermen probably harvested the reeds used to make their fragile boats. We sifted for food





Knifing through Pacific rollers, a fisherman from a village near Chan Chan spurs his reed boat with a paddle made of split bamboo (right). The craft, called a *caballito*—little horse—has changed hardly at all in more than 2,000 years; it appears frequently in the arts of the Chimú. An adobe frieze in the Velarde compound (above) shows a similar vessel adorned with a cormorant on its bow; ahead, a giant fish is about to gobble a squid. Venturing from their city by the sea, the Chimú reaped a rich harvest of fish from the waters of the Peru Current, swirling northwestward along the coast.

Frozen in a centuries-long conversation (left), two fishermen of Chimor ride a stylized version of the boat fashioned into a ceramic pot. Firing in an unvented kiln impregnated it with carbon.



MICHAEL E. WIDDELEY (TOP); ROBERT S. CARPIS AND MASON W. HODSWELL (LEFT); DAVID BRILL

remains at several farming villages along one of the old roads leading to Chan Chan. Deep within the Moche Valley, Richard and I located and mapped a rural administrative center from which the bureaucrats of Chimor supervised the construction of the canals and the flow and distribution of their waters.

While surveying ancient settlements in the steep foothills one afternoon, I joined European-trained specialists Paul Ossa and Claude Chauchat in digging beneath a huge rock overhang. We had unearthed a lance point and a few stone flakes—obviously the work of early hunters—when an uneasy sensation jolted me. "Let's get out of here!" I shouted. The others needed no urging; they had felt it too. We dropped our tools and ran.

Great boulders clattered down the slope behind us as the earth shook and rumbled. Even on the relative safety of the plain we

found it difficult to stand. The noise was incredible. The initial shocks continued for perhaps three minutes, and great towers of dust rose thousands of feet.

When the earthquake subsided, I retrieved my motorcycle—flung over on its side—and headed for Trujillo, with Paul and Claude following in their jeep. We wove around broad cracks in the road, passing scores of collapsed houses in outlying villages.

Our staff was safe and our headquarters-laboratory stood intact, but the colonial center of Trujillo lay in shambles. It was days before we learned the full devastation of the great quake of May 31, 1970: more than 60,000 Peruvians killed; scores of towns and villages wiped out.

The antiquities of the Moche Valley fared better. Most heavily damaged was the Huaca del Sol—the Pyramid of the Sun—a massive



River of life to Chan Chan, the Chicama-Moche Canal today is only a serpentine scar (left) in the desert hills north of the ancient city. The conduit funneled water 50 miles southward from the Chicama River to irrigate Chan Chan farmland. Seepage from the fields kept the water table high and city wells full.

Aided by a separate National Geographic Society grant, workers under the direction of Dr. James S. Kus, assistant professor of geography at California State University, Fresno, excavate the aqueduct across Quebrada del Oso—Gully of the Bear—where the canal spanned a dry wash more than 900 feet wide.

Though the desert coast of northern Peru receives less than an inch of rain a year, rivers coursing from the Andes bring a reliable flow of water to modern farmers, who use portions of the Chimu canal system in the Moche Valley. A farmer near Chan Chan displays the healthy roots of his maize (right), still a staple crop of one of the world's most arid regions.

JAMES S. KUS

pre-Chimor monument built more than ten centuries ago of some 50 million adobe bricks.

Aside from a limited area that had been reconstructed by the Peruvian Government, Chan Chan suffered scarcely at all. The great walled compounds stood silent and brooding as they had for centuries, disturbed only by the reckless hand of man.

Compounds Spacious, But Few Could Enter

It was these compounds we would have to understand before we could hope to comprehend the urban personality of Chan Chan.

What function had the vast structures served? In the late 1700's a Spanish cleric, Bishop Martínez de Compañón, concluded that they had been palaces. Other scholars believed them to be commercial wards, or quarters for various craft guilds.

Early in our mapping program we observed

something odd about the compounds. Each had but one or two narrow entrances. Interior doorways, similarly, could admit only one or two people at a time. Few hallways or corridors had entrances at each end; doors were placed to keep pedestrians on a twisting, angular course. Clearly, although their walls enclosed hundreds of rooms, the great compounds were not designed to make movement easy for large numbers of people. If anything, they were meant to keep access and traffic to a minimum.

Supporting this view, we found few wells inside the walls, whereas John Topic had turned up many in the crowded barrios. Almost certainly the huge compounds held relatively small numbers of residents.

What, then, were the hundreds of rooms used for? Many seemed to fall into distinct types—the repetitive patterns Carol and I



had noticed in the old aerial photographs. As a warm and windy summer set in, excavation began in the smallest of the great enclosures.

Small courts, lined on three or four sides by rows of narrow buildings, occupied much of the area inside the high walls. Each building was subdivided by adobe walls—three to five or more rooms in a row.

Kent Day set to work with a crew to strip away centuries of accumulated soil. Each chamber had a single small opening facing the courtyard. Curiously, the doorways were raised two or three feet off the floor.

"People did not live in these rooms," allowed Juan, one of the workmen. "A man coming home after taking too much *chicha*, he would trip and break his neck!"

Everyone agreed—these were not living spaces. But what were they?

The narrow rows of rooms were situated deep within the compounds, in areas difficult to reach, suggesting that they had not been centers of activity. Storerooms, perhaps?

Kent and his men excavated room after room, but found each empty except for fallen mud bricks. Had they contained grain or food, there should be telltale traces: a broken jar, a few kernels of dried corn, even rodent droppings. But there was nothing.

At last one day a broadly smiling Kent called me over to a partially cleared room.

"What do you think of this?" he asked, and cut out a piece of floor with his trowel. It seemed much like any other chunk of soil. But as I turned the specimen, the morning light caught a subtle crosshatched tracery—the imprint of a finely woven textile.

"There's more here," Kent said. "It looks as if a large bundle of cloth had been laid on the adobe floor when it was slightly moist." Later the fabric had been removed, but the dried mud preserved the imprint.

Audiencias Deepen the Mystery

This was a stroke of luck. Prehistoric Andean peoples were master weavers; the best of ancient Peru's fabrics compare favorably in craftsmanship with the finest textiles of medieval Europe. And the artistic products of their looms played an integral part in the systems of tax and tribute among pre-Columbian states. Kent's discovery implied that Chan Chan's storerooms were built to hold fine textiles, and very likely other valuables as well. It was not surprising, then, that the rooms had been stripped of their rich stores when the compounds were vacated.

Small U-shaped rooms, open at one end,



made up one of the most intriguing architectural patterns at Chan Chan. Each inside wall, about nine feet long, had two large deep-set niches which, we speculated, may once have held ornamental objects or figures.

We called these niched chambers *audiencias*, because they were reminiscent of scenes found on ancient Chimu pots. These depicted a richly garbed man seated in a little open-fronted enclosure, seemingly conducting business or holding an audience with the people standing outside.

The audiencias faced onto courtyards, and were strategically situated. It was all but impossible to reach the storeroom complexes and the compound interiors without passing one or more of the U-shaped rooms.

Scraping away time-dried soil in many audiencias, we found intricate friezes sculptured deep into the clay plaster. Pelicans, gulls, and cormorants; crabs, crustaceans, and starfish adorned the walls. Marine life formed the most prominent motif.

The sea, known as Ni, reigned as an important deity in the Chimu pantheon. Worshipers cast sacrifices of white maize flour and red ocher into its waters, and prayed to Ni that the fish might be plentiful. The friezes imparted a hallowed aura to the audiencias.

Further proof lay under the clay floors. Ulana Klymyshyn and Tony Andrews probed beneath several of the largest chambers, and found earth-stained bones of one or two adolescent girls, entombed in a seated position. In ancient America, important edifices were often built atop human sacrifices to ensure the favor of the gods.

Adorned by symbols of Ni, and consecrated by human sacrifice, the audiencias lay beyond the realm of the common man; whoever occupied them was highly prominent—perhaps even sacrosanct—in Chimu society.

We may never know the exact function of the audiencias. We can speculate that they played some role in controlling movement within the wealth-laden compounds. Perhaps they served, as well, as “offices,” from which the government and commerce of the kingdom were administered.

Chimor Kings Born of Stars

One evening after a sweltering day in the field, Carol and I sat in the laboratory mulling over what we had already learned about the great walled compounds of Chan Chan. She summed it up succinctly. “We’re dealing with a handful of people occupying elegant, spacious surroundings superior to anything else in the city. These elite quarters have a holy aura about them, overlying a basic concern with the storage of valuables.”

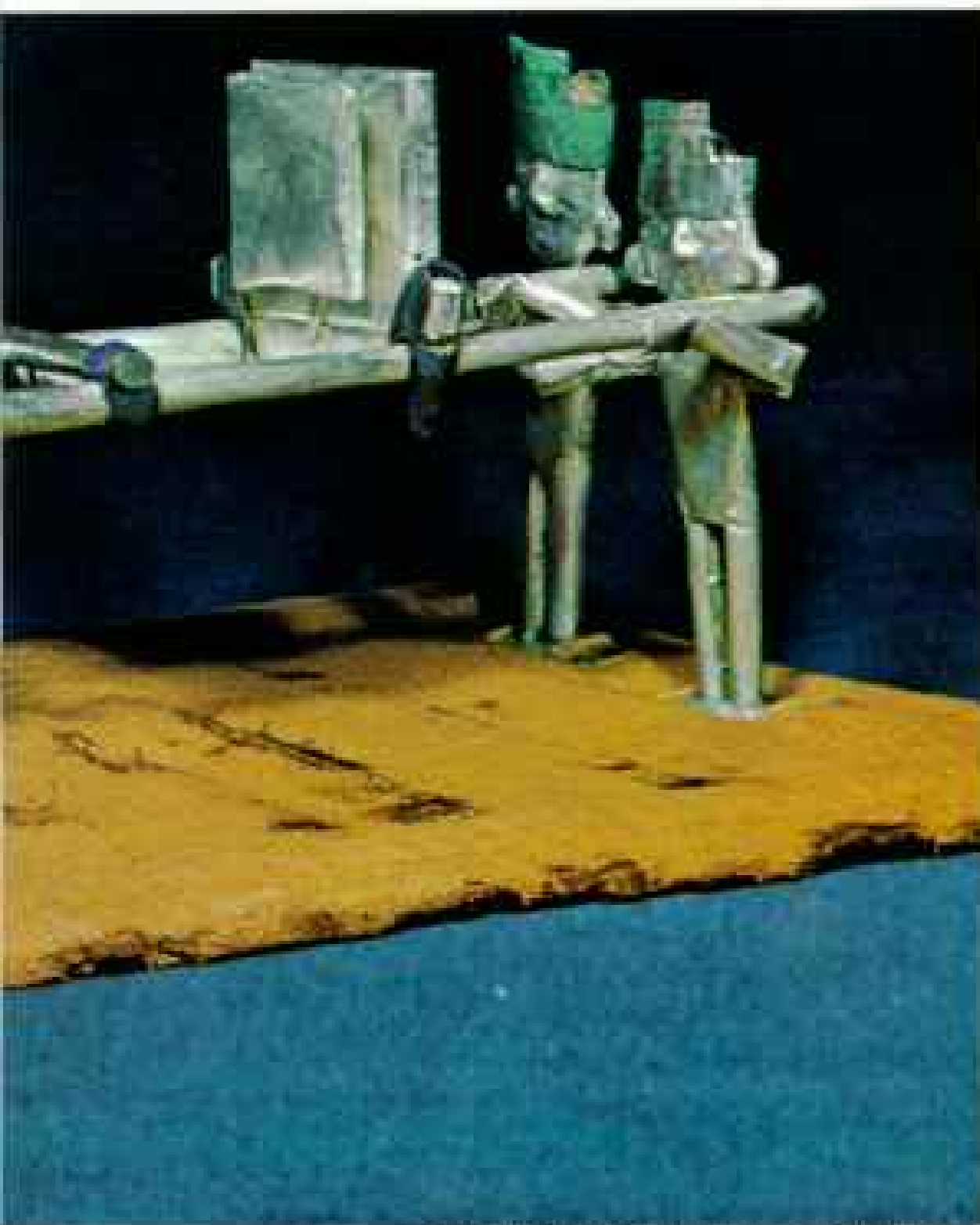
These two key themes—sacredness and property—echoed something I had read in an early Spanish account. Legend held the Chimu nobility to be the creation of two stars. Born of celestial bodies and descended from the mythical hero Taycanamo, the kings of the empire must have been regarded as divine.

The matter of property appeared in the remarkable legal preoccupation with stealing—both a capital crime and an odious religious offense. Quite likely the sovereigns of Chimu considered ownership their divine right.

Slowly, the personality of Chan Chan was beginning to emerge.

The towering compound walls epitomized

Silver men five inches high carry a litter and burial pod past a funerary urn holding a cockatoo feather. Cocoonlike coffins, often shown in Chimu art, may have been the mode of burial for important persons. A tomb in the Chancay Valley, north of Lima, yielded this artifact to a probing huasquero.



JOSEPH NUCERA, AMERICAN MUSEUM OF NATURAL HISTORY

United in death, a man and a woman lie as they were unearthed (**below**) in Huaca del Sol—the Pyramid of the Sun—a massive adobe structure built by a pre-Chimu people known as the Moche. Nearby vessels, containing offerings of food and drink for the couple, date the burial in the fourth century A.D. One account tells that in 1602 Spanish treasure seekers diverted the Moche River for use as a giant hose to wash away the pyramid and reveal its riches. They discovered a large gold idol and loot today worth more than \$3,000,000. “Huaca del Sol, before its partial destruction, was the largest adobe-brick edifice in the New World,” says Dr. Moseley of the truncated



pyramid, which measured approximately 1,200 feet long by 450 wide.

Nearby, excavators uncovered a portrait vessel (**top left**), depicting a sightless man blinded by disease or in battle. Crusted with the dust of centuries, it hints at the artistry of the Moche, who brought portraiture to its highest level in the Americas.

Thieves' tunnels (**top right**) pierce the face of Huaca de la Luna—Pyramid of the Moon—guarded by a rocky outcrop. Exploring one of the pyramid's chambers by lantern light (**right**), Dr. Moseley lowers a jerry can of water to his assistants. “Unfortunately, we found nothing here,” the archeologist said. “It was a ‘dry hole.’”





LEONARD CARRONHILL (TOP LEFT); MICHAEL E. WHEILEY (LEFT AND ABOVE); DAVID BRILL



the city's marked polarity, separating sacred from mundane, the rulers from the ruled. The walls kept the hallowed nobility—and their divinely held wealth—safe within a cloistered world.

One major architectural pattern in the compounds still demanded our attention. In the rear of each enclosure loomed a huge adobe platform, several stories high. These flat-topped mounds—the most dominant of the internal buildings—lay guarded by labyrinthine corridors and audiencia-controlled halls.

Among these platforms, the scale of the destruction was appalling. Holes the size of bomb craters riddled the buildings; several were completely cored. Obviously the early Spaniards had employed an army of laborers in “mining” the city of Chan Chan.

The looting still continues, though on a minor scale. At dusk huaqueros slip into the ruins, carrying candles for light, and chewing coca to brace against the desert chill. They stay until dawn, poking and digging for graves and buried riches.

Intuition whispered that these great plundered platform mounds had once been the tombs of kings. But we needed evidence.

New Treasures From Ancient Chambers

Two of our graduate students launched the investigation. Six-foot-plus Tom Pozorski towered over his teammate, Geoff Conrad, as they surveyed, mapped, and recorded construction details of the mounds. At the foot of each platform, in a central chamber built against its front face, they found a small stone-lined trough, some filled with a white-and-red powder. We identified it as the pulverized shell of the mollusk *Spondylus*.

Seashell dust. A Spanish chronicler tells us that the retinue of a king of Chimor included such functionaries as the Blower of the Shell Trumpet; Master of the Litter and Throne; Steward of the Face Paint; and the Preparer of the Way—who scattered seashell dust where his lord was about to tread.

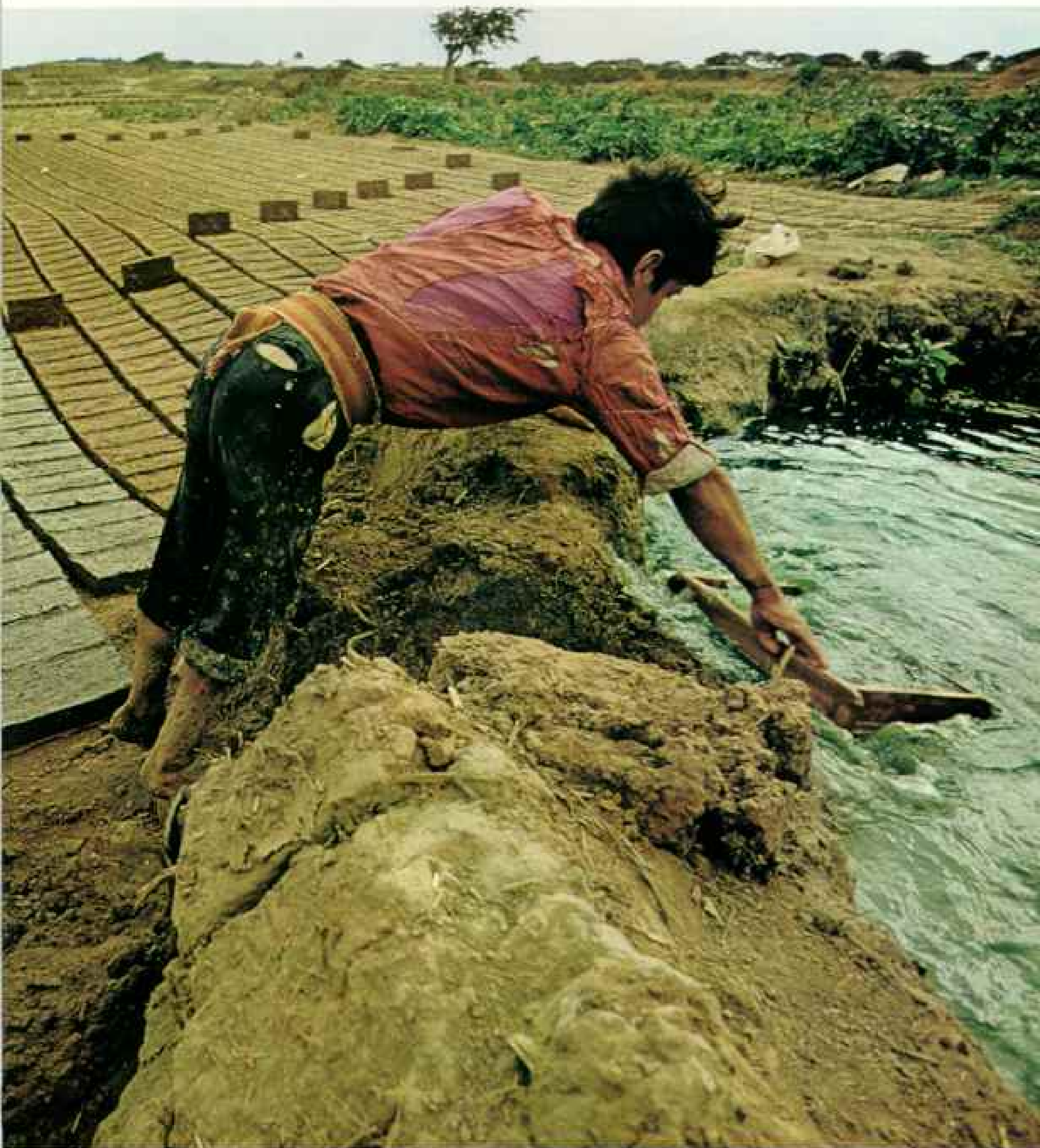
Geoff and Tom began excavating the best-preserved and next-to-smallest platform at Chan Chan; this mound contained only 25 chambers. Although it had been ransacked centuries earlier, the looters sought gold and silver, discarding less-valuable materials in quantities to warm an archeologist's heart.

As the excavation progressed, intricate fabrics with colorful embroideries came to light in and about the cells. Lengths of finely woven cloth in rich designs had been thrown over the platform edge. Their motifs reflected those we had found on the audiencia friezes—many fish, birds, and stylized human figures.

Remains of ornate pottery lay everywhere; we found deftly carved gourd bowls, small wooden objects, stone beads, and fragments of ornaments crafted of copper, gold, and inlaid shell. Collecting merely these dregs of once-great treasure, we were recovering far more than we



Building blocks for Trujillo houses, adobe bricks lie in ordered rows to dry; the brickmaker rinses his mold. Like his forebears of ancient times, he uses puddled mud—clay mixed with water—one of the few building materials the desert yields.

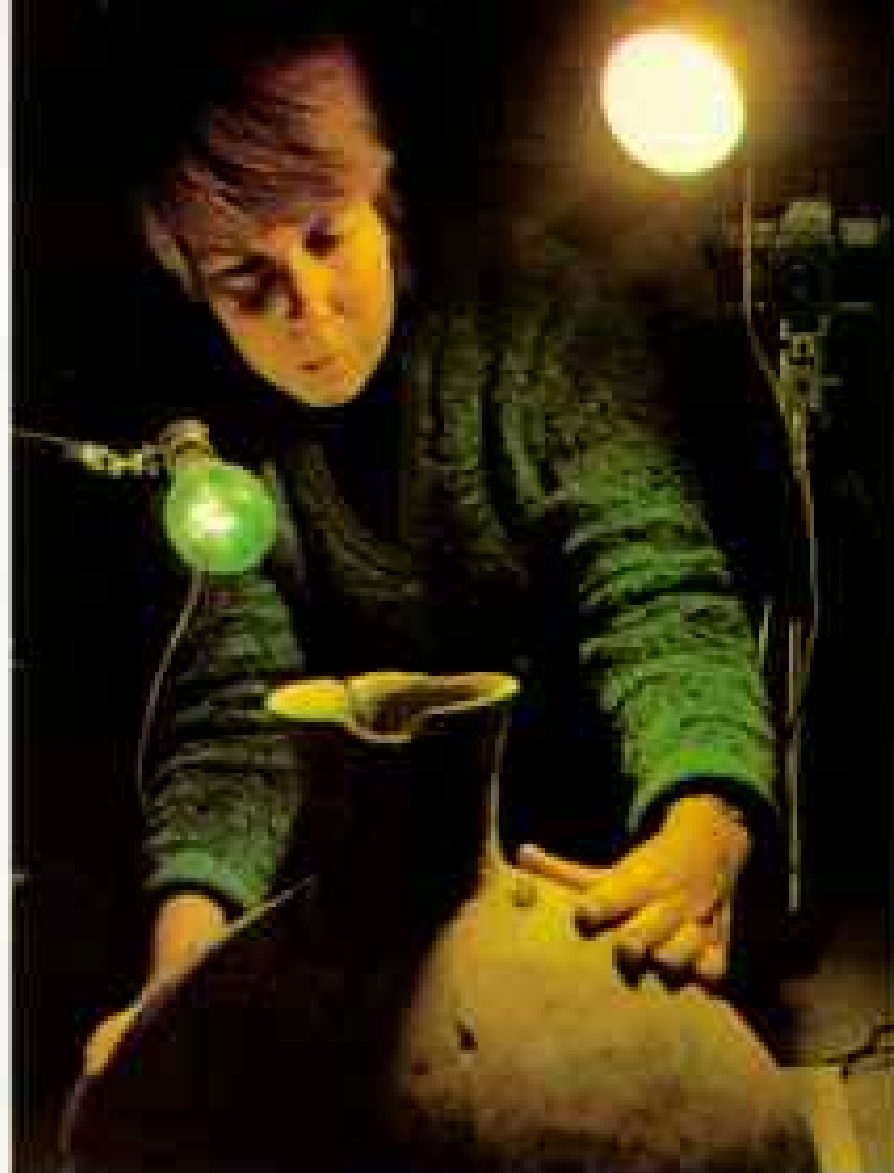


Maker's marks indent the tops of Moche adobe bricks (left). The hallmarks may have identified social groups that contributed to public edifices.

ROBERT FELDMAN (LEFT)

Cataloguing the past, Dr. Carol J. Mackey, project co-director, prepares to photograph a Chimu storage vessel as part of a study that will trace the urban evolution of Chan Chan. "To calculate how the city grew," she says, "we have to be able to calibrate time. This is shown by gradual changes in the style of ceramics, much the same as changes in dress styles."

Technicians (below) sight along a wall; the expedition's staff produced a detailed map of the city, based on ground measurements and aerial surveys.



Latticelike walls once stood six feet high in the entry sector of the Tschudi compound. Eroded by rare rains over 500 years, they outline the court of an *audiencia*, a chamber where, the authors conjecture, elite officials transacted royal business. Digging beneath similar rooms exposed the tombs of adolescent girls—"human sacrifice," says Dr. Moseley, "the sign of a sacred place."



had in three previous years of excavation.

In the forecourt of the platform, we had earlier discovered the remains of many llamas buried beneath the floor—testimony to the sacrifice of highly valued animals. From the audiencias, too, we had unearthed sacrificial victims. We fully expected to turn up further evidence of human sacrifice.

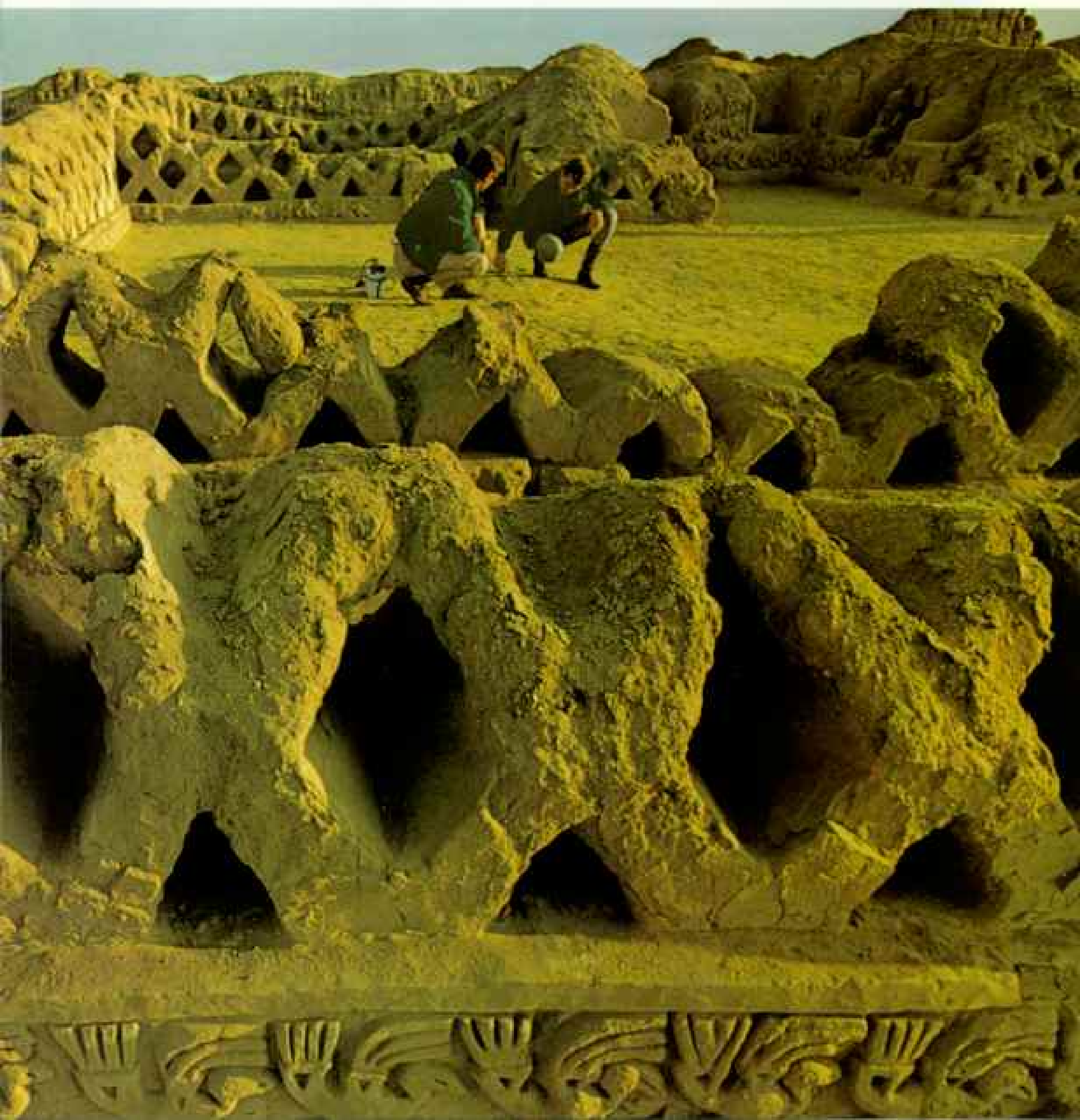
We did—on a scale that proved awesome. Probing just a few of the 25 cells yielded remains of some ninety bodies. Geoff spent more than a week in a single chamber, recording skeletons stacked like cordwood. By conservative estimate, 200 to 300 individuals had been entombed in the mound—and this was among the smallest of its kind.

Tom's painstaking analysis of the bones bore out our belief that these were sacrificial victims. "There are no males here," he said, "and no old people or children. We've found nothing but females—either adolescents or young women."

The remains showed no marks of violence. Probably the victims had been poisoned or garroted and interred deep within the platform. Why?

The answer emerged as we cut farther through the grave robbers' rubbish. A giant T-shaped tomb came to light. Occupying the central position in the platform, this was obviously the key sepulcher.

Gone were both the body and contents of





PRINTING BY STAFF ARTIST PETER BLANCH, GREGG CORNELL (BELOW), ROBERT L. JONES AND VICTOR E. BIRRELL.



Fabrics fine enough to catch the fancy of the king emerge from simple Chimu looms (left). An overseer examines a belt or sash executed in tapestry weave. In front of him, a woman brings to life a pattern of stylized birds. Working with looms like those still used in the Andean highlands, the pre-Columbian weavers of Peru mastered the intricacies of tapestry, twill, gauze, and double cloth, matching the finest in medieval Europe.

But to supply a metropolis as large as Chan Chan, the Chimu also had to produce cheap, simple cloth in abundance. The fragment (below), found by the authors in a tomb near the city, shows a school of fish painted on cotton cloth done in ordinary tabby weave.

Using a wooden spindle with a pottery whorl (far right), the Chimu spun filaments of cotton or alpaca wool into delicate yarn, then transferred it to a reel (right) for storage and later use.





RICHARD E. WISSELY

Rampart of a palace, this 25-foot-high outer wall in the ancient city shielded the king from public gaze. Today a farmer furrows the ground where a monarch once trod (right). Such illegal plowing at Chan Chan threatens to obliterate one of the most significant ruins in the Americas.

this pivotal crypt, looted long ago. But it was obvious now that the platform mound had been built to enshrine the occupant of the T-shaped tomb, who was then surrounded with the wealth and women needed to ensure a god-king regal status in the afterlife. The seashell dust, the buried riches, the massive human sacrifice, all pointed to the platform mound in each compound as the tomb of a Chimor king.

Carol voiced a clinching argument: "The old legendary king-list states there were ten independent monarchs before the Inca conquered Chan Chan. But the first one, Taycanamo, was probably a mythical founding figure, just as Romulus was to Rome. That leaves only nine rulers who can be historically verified. How many burial platforms are there?" There are nine.

Epilogue Written Amid the Ruins

The pieces of our puzzle fit. Each of the nine divine rulers of Chan Chan constructed his own compound to serve as palace, royal coffer, and mausoleum. When he died, apparently no sacrifice of wealth or human life was too great to ensure his return to the celestial pantheon. His compound became a great and sacred shrine, tended by royal relatives and retainers. Meanwhile his chief heir—the new lord of Chimor—founded his own high-walled domain, repeating the cycle. Here, then, was the elusive essence we had sought so long to capture.

Just as the nine great compounds dominate Chan Chan, so too did the great god-kings of Chimor bestow upon the city its unique urban personality. This was a place of sacredness, wealth, and military power centered upon each celestial king in his turn, that he might—with blessings from the gods—build, expand, and rule a desert empire.

This was the spirit of Chan Chan. And yet in its dry, crumbling ruins we could read a curious, and I suspect universal, epilogue.

When the last of the towering compounds was abandoned and Taycanamo's heirs departed, the barrio dwellers moved into the once-forbidden sacred civic center, threw up their rude huts, and for a time even farmed in the silent sunlit plazas. Thus they transformed the regal personality of Chan Chan into that of the urban proletariat. Perhaps while god-kings seek immortality in opulent mausoleums, it is the common man who ultimately proves more durable. □



The Last U.S.



Photographs
and text by
EMORY KRISTOF
NATIONAL GEOGRAPHIC PHOTOGRAPHER

THE BOWHEAD WHALE surfaces, parting the black water and scattering a meringue of broken ice. With quick, sharp strokes, my Eskimo crewmates send the *umiak*, their skin boat, through the sea in near-silent chase. Tommy Pikok stands and shoulders an antique whaling gun. At a hundred feet the bowhead looks like an indestructible submarine. Then—as quickly as it appeared—the whale sounds and disappears.

Whale Hunters



I watch the flash of disappointment cross the faces of my friends. This north coast of Alaska is a harsh and demanding place, and their quarry, source both of food and money, has escaped. But these men, like their ancestors, exult in the challenge of the sea. I am proud to be a member of their crew.

Later, in that washed-out world that belongs to midnight in the northland's spring, a booming across the water tells Capt. Wyman

Panigeo that one of the other 25 crews from Barrow, Alaska, has sighted a bowhead. Rushing to take part in the chase, we arrive in time for the kill of the season's seventh whale. Crews and townsfolk join to haul it onto the ice (above). The 24-foot-long carcass will help them survive another bitter winter. More important, the hunt brings something of the Eskimo's cherished cultural heritage into the confusing, often degrading present.



THE ALARM SOUNDS at 2 a.m. Looming like the Manhattan skyline, the pack ice is moving in on our camp three miles out on the frozen Beaufort Sea. The crew launches the umiak, gambling that a bowhead will appear before the lead closes. But soon the open water fills with slush. To keep from being crushed, the steersman turns sternward (**left**) and draws the boat onto shore ice.

With organized haste born of practice, the Eskimos strike camp and load sleds and snowmobiles for a move back toward shore. Just before the ice slams together, we hear the harsh breathing of two bowheads. The men look at one another in frustration.

Hours later the wind shifts, carrying the pack back to sea. Once again we move out. But the ice on which we had camped earlier has broken off and we must find another site. During the 17 days I serve with Captain Panigeo, we move incessantly, sometimes three times in 24 hours.

Ready for the sea again, the crew checks their old-fashioned equipment (**right**). Tommy Pikok loads a black-powder bomb in an 1870 shoulder gun—the Eskimos' main whale-hunting weapon. The missile, timed with a five-second fuse, penetrates the whale's skin. These bombs, however, can blow up as easily in the harpooner's face.

The shaft of a traditional harpoon lies

along the starboard gunwale with a line attached to a float. The bright red marker helps Eskimos track a wounded whale across the sea, or spot it after it sounds and resurfaces.

The waters off our camp again prove fruitless, but explosions down-ice send our crew roaring to help. A bowhead, surfacing 20 feet from the neighboring crew, has drawn their fire and, swimming helplessly in circles, is quickly dispatched (**bottom**).





AGVIK! AGVIK! The Eskimo word for bowhead resounds through the streets of Barrow as a hunter mounted on a snowmobile announces by word and flapping flag the capture of a whale. Soon several hundred of Barrow's 2,300 residents dash to the site. Anchoring block and tackle to landfast ice, all strain together to haul the bowhead out of the water—a joyous test of strength for men and women alike. Falling snow mutes the cries of pleasure and softens



the bloody scene as the men quickly slice into the carcass with flensing knives. Women help by pulling away the foot-thick blubber with long-handled hooks. Constant danger from the crush of pack ice drives everyone to work at top speed; they often reduce an eight-ton whale to a spot in the snow in five to six hours. We lost one whale this season when the pack rode relentlessly over the shore ice and completely covered a half-butchered carcass.





DIVISION of the whale is done by a rigid formula. The crew of the first boat gets the largest share. Traditionally, all of the bowhead is used, and some goes to every Barrow family.

As the butchering begins, the carvers slice away huge blocks of blubber. A brawny young man (left) helps wrestle one of the cuts. It takes six people—or one snowmobile (right)—to haul away a slab. Blubber, insulation for these warm-blooded mammals of the cold seas, is still valued by many as fuel. But Barrow residents, who live near a natural-gas supply, reserve the fat for cooking and as bait for Arctic-fox traps.

After the blubber is cut, the Eskimos pare off the tough, rubbery skin and a thin layer of attached blubber—called *muktuk*. A delicacy to the Eskimos, *muktuk* tastes surprisingly good when boiled and salted.

Finally comes the division of the rich red meat. The tender flesh tastes as if the whale had been feeding on grass instead of sea creatures. The Eskimos store it in subterranean caches carved out of the permafrost.

Soon the whale migration will end. In a few short weeks the Eskimo has shaken off the lethargy instilled by a long, monotonous winter and gone forth to challenge the Arctic at one of its most majestic times. With vast flocks of eider ducks winging overhead, the hunter has sought his quarry amid fantasies of ice. The man has kept faith with himself, and the father has taught his son what it is to be an Eskimo. □



"Ocean mammals are to us what

By LAEL MORGAN

From Arctic waters to Senate hearings, an Alaskan journalist chronicles the Eskimos' fight for their traditional whaling rights.



Alaska's U. S. Senators Mike Gravel and Ted Stevens hear Eskimo testimony on whaling rights.

AT THE HEIGHT of the whaling season last spring, Martha Aiken, a full-blooded Eskimo and the mother of six, appeared before a United States Senate committee hearing on the Marine Mammal Protection Act and pleaded haltingly but eloquently for the Eskimos' traditional rights to hunt the bowhead whale.

"If our livelihood and diet of centuries are taken from us, what's the use of being called an Eskimo? What's the use of trying to recapture our Eskimo culture, which is fast dying anyway?"

Martha Aiken was but one of dozens of Eskimos, Indians, and Aleuts who traveled by bush plane, dogsled, and snowmobile to Nome, Alaska, in May 1972 to testify against legislation that would permit only subsistence hunting of sea mammals by natives and would ban entirely the taking of endangered

species—the classification of the bowhead whale. Such laws would strike at the heart of Eskimo life. For not only do the coastal villagers need the whale, seal, and walrus for their diet—which they prefer to the white man's—but they sell muktuk to interior Indians and other Eskimos and sell bone and tooth carvings to tourists.

"Ocean mammals are to us what the buffalo was to the Plains Indian. Don't take from us our very lifeblood," pleaded David Stone, who comes from generations of whaling men dating back a thousand years.

To discover what the bowhead means to the Eskimo, I lived with a Point Hope family and served as assistant cook on their whaling crew—surely a rarity for a white woman.

Point Hope, population nearly 400, looks like a modest suburb misplaced on the tundra some 125 miles north of the Arctic Circle. All the homes, save one sod dwelling, are of frame construction—and each has electricity.

Hunting remains the chief livelihood of many Eskimos, and outside work merely augments their income. A good hunter is still the most respected of men.

Our whaling season began on April 12 with news of the first open water. By dogsled and snowmobile we traveled five miles to set up our camp. Our crew of ten quickly anchored the guy ropes of our tent to hefty ice blocks. Three plywood sheets were laid as flooring over our frozen perch, and a stove fashioned from an oil drum puffed smoke through a pipe in the canvas roof.

Outside the tent a sharp wind tore from the northwest, adding sting to the sub-zero temperature as our men launched the umiak and paddled off in search of whales. The lead was a narrow span of black water that spun off dark mists shot with sunlight.

Inside we drank tea and waited. In this land without trees we fed the stove chunks of seal blubber.

Ester Kingik Bosta was head cook and my boss. She is well traveled, educated, and

the buffalo was to the Plains Indian.”

currently lives in Fairbanks. But she came home for whaling because she likes the excitement of the hunt and is much sought after as a cook.

Her brother, Gussy Kowunna, Jr., 13, was our “boy.” Ester wrote a note to his teacher that read simply, “Gussy is excused to go whaling.” He would be on the ice six weeks, and his was the hardest lot of all. He fetched and carried, tended the stove all night, and did all the dirty work. As an apprentice whaler, he would get a man-size share of the kill and could hope to take his place at a paddle next year.

Women’s lot was generally not exciting, but we were an important support team. We turned out endless meals of caribou stew, boiled polar bear, muktuk, and eider duck.

It was also our job to cut blubber for the stove, baby-sit the dog team, and carry meals to our men keeping watch at the water’s edge.

Day after day passed with no success for our crew. We watched the men go out and followed them with our eyes until they vanished on the horizon. Hour after hour we waited, until one day, far off, we heard the echoing cheers of our men and five other crews.

We cheered and yelled back, laughed and cried and hugged one another. The tension was gone at last. It was the first time in two weary weeks on the ice that we women had really laughed. True, another crew had spotted and struck the whale first, but our men had helped in the kill, earning us a share.



Sharon Orr of Northeast Cape

“How much does a whale weigh?” I asked the captain of my crew.

“Why, up to 60 tons,” he said. “And we will use every bit of it, too. Everything but the liver and lungs, which will go to the dogs.”

I remembered the captain’s words as I listened to Point Hope hunter David Stone speak at the Senate committee hearing:

“The 1970 state manpower survey showed 64 percent of Point Hope’s population had an annual income under \$3,000, and the cost of living is double that of Seattle. Any money that can be gained from our use of sea-mammal products is sorely needed.”

Although, after Barrow, it is the largest whaling community in the state, Point Hope produced just 4,000 pounds of muktuk for sale to other Eskimo villages last season, Stone testified. At \$2 per pound, the average return per villager was \$23.52.

And what of the bowhead? Are the Eskimos a threat to the species?

Dr. G. Carleton Ray, marine mammalogist from the Johns Hopkins University, says, “It looks very much as if the bowhead is increasing in numbers. The Eskimos certainly do not pose a danger to these animals.”

Last October the pleas of the Eskimos paid off. The President signed into law the Marine Mammal Protection Act, including an exemption for Eskimos, Indians, and Aleuts, permitting them to hunt in their age-old ways and to market the handicrafts made from their catch. □



David Stone of Point Hope

Cyprus Under Four Flags: A Struggle for Unity

By KENNETH MACLEISH

SENIOR ASSISTANT EDITOR

Photographs by
JONATHAN BLAIR

The banners of Greece, Turkey, the United Nations, and Cyprus itself reflect the divided loyalty of the 659,000 Cypriots. Onetime crown colony of Great Britain, the island won independence in 1960.

A constitution drawn up by Britain, Greece, and Turkey gave liberal rights to the Moslem Turkish minority, rousing the ire of the nearly 80 percent of the population that is Christian and Greek. Heavy fighting broke out in 1963 and again in 1967. The Turks withdrew from the government in 1964 and formed a separate administration, which the Greeks have never recognized.

Now, while negotiators still seek solutions to the stalemate, the Turks and Greeks remain separated in armed camps. Here the Cypriot president, Archbishop Makarios (facing page), reviews his National Guard in the Greek sector of Nicosia; Turks will parade their might the following day.

IN THE SUMMER NIGHT the ancient city huddles within the perfect circle of its walls. New Nicosia sprawls around it, clean, modern, glowing under the moon. Within the circle there are only glimmers and disparate sounds to emphasize stillness and dimness.

My destination is a street more silent than the rest, and darker, a street that is a symbol, a boundary, a firebreak, separating by its inconsiderable width two inflammable worlds. Paphos Street is no simple political barrier. The race, religion, culture, customs, and concerns of the Turkish Cypriots on its north side differ vitally from those of the Greek Cypriots who live across the way.

A breeze brings illusory coolness and a touching scent of jasmine, as it did when the classic Greeks built their city here; when medieval Franks, then Venetians occupied it; when 16th-century Turks took it from them.

War soured the night air then, for a while. Afterward, through three centuries of Turkish rule, 82 years of British, and a dozen of independence, fragile peace was the rule in Nicosia, violence the recurrent exception. It recurred recently during "the troubles" of 1963 to 1967, when Greek and Turkish Cypriots killed each other in the name of differently defined patriotism.

My footsteps echo uncomfortingly from the shuttered fronts of abandoned stores. I make for a light bulb on the right, the Greek, side.

Inside the arched entrance is a small room with a bar across the back and a few little wooden tables. A dozen men sit drinking and talking. "*Peraste*," says one. "Come in."

I order wine and fill my neighbors' glasses from my bottle. Some of the men smile. My host smiles. Space is made for me at a table. In the tradition of such tavernas, free snacks are brought: sea snails, grapes, bread, goat cheese, cucumbers, bits of melon, olives, a small cold fish.

A neighbor speaks in fair English. "This is a place for simple men. All do not speak your language. But I myself am a merchant and will translate for you."

Talk eddies between the tables.

"That one, a seaman, has been in your country. He tells you he likes Americans too much. . . . This fellow was with the British Army. He says he is your ally. . . . The one at the bar wishes to sing."

The one at the bar does so, tilting back a joyous, virile face and blasting out his song



in trumpet tones. A portly, graceful man rises to execute a slow dignified dance, snapping his fingers as he turns among the tables.

I leave before good fellowship and wine can seduce me into forgoing my night passage through two worlds, and set out for the other one. The proprietor sees me out. "You go to Turkish side?" He sighs. "It is a problem, this 'Green Line' [the local term for the inter-communal boundary]. But not bad people, Turks. Only, they do not trust us."

I walk away from the light bulb, from new friends to new and thought-stirring solitudes.

FOR THREE THOUSAND YEARS wanderers of the Mediterranean have adored Cyprus, and warriors have coveted her. Today's tourists and tacticians follow suit. Even if Cyprus were a dreary, ugly islet, nations would still struggle to control her. For, loveliness aside, she is a stepping-stone set on the seaways (and now airways) of war.

Evidence of power politics was all around me. Barricades blocked the side streets. Dark gunports stared at other gunports a hundred yards away. I turned left and passed (politely

greeted and saluted) through a Turkish checkpoint beyond which Greeks may not go, and entered an Asian, Moslem world.

Here every sign was in Turkish. So was the speech of the few strollers in the narrow lanes. A minaret, perched incongruously on a Gothic cathedral-turned-mosque, thrust its dark spire into the night sky. Kebab grilled fragrantly over coals in a closet-size shop. I took a tray-size table by the door.

A young man, intense, small, crinkly haired, suddenly joined me. "Sir, you are interested to know how it is with us Turks. I shall tell you, for we do not believe the world understands the problems of Cyprus.

"Here is my life: I am a seller of goods. I drive a small van among the Turkish villages. Now, there are Turkish words on my van. They do not say 'Moslem,' but that is understood. As I pass through Greek Cypriot villages, police may stop and search me. I do not accept to be treated as an alien or a second-class citizen. My people have been here for 400 years, and ruled for 300. But if I resist, I may be seized. So I have a problem."

"How can it be solved?"



"By dividing the island, so that we have full control of our portion, or by dividing the government, so that we have full rule of ourselves. Partition, or condominium."

Cyprus has been politically divided and redivided since its beginnings. Its archeology proclaims its violent past. The island is studded with splendid relics of every age from the dawn of civilization, but nowhere is the succession of cultures more spectacularly displayed than in and around Famagusta, on the island's southeast coast (map, following pages).

With my friend George Tsigarides, an amiable gentleman with an indolent manner and a lead foot, I set out for that second city and first seaport of the nation. We were not long on the way. Once clear of the capital, George seemed to relax completely, allowing the accelerator to sink gently to the floorboards and leaving it there, averting disaster by occasional adjustments of the steering wheel.

The dusty Mesaoria rushed by, a plain whose Greek name defines it as being "between the mountains," the two ranges of Cyprus. Brown, desiccated, unkempt with stubble of the recent grain harvest, it resembled the stubbly faces of the old peasants whose goats gleaned there. Adobe villages floated in the heat haze. No cloud cluttered the Wedgwood sky.

We turned at last off the highway onto a shard-strewn side road leading to a broad area of roofless rectangular pits.

"This was Engomi," George said, "a rich city of the Bronze Age. A Mycenaean city."

The Mycenaeans, the Greeks of Homer's time, traded here for *kypros*—the copper whose name was synonymous with that of the island. Engomi's population was a Mediterranean mélange, but the place flowered most fully under the Greeks. Fully, and briefly: By the 11th century B.C. earthquakes and invaders with iron weapons had destroyed the city based on bronze. Nearby Salamis succeeded it in importance.

What you see of Salamis today is Greco-Roman, and beautiful. But it changed its form and its allegiances over 2,000 years, paying tribute in turn to the successive masters

of the Mediterranean, and initiating a pattern of foreign domination that has lasted until today. Assyrians, Persians, Phoenicians, Egyptians, Romans, and Byzantines wooed it, won it, often enriched it. Cicero was proconsul here. St. Paul and St. Barnabas founded a Christian church here some 12 years after the Crucifixion. In the end, earthquakes and seventh-century Arab raiders destroyed it.

The sequence of cultures continues in Famagusta itself, five miles away, where the Byzantine was replaced by the French Gothic of the Crusaders, the defenses of the Venetians (who built walls and little else), and the Asian additions of the Turks.

FAMAGUSTA is a lively little port, a tidy, uninspired seaside city with misplaced illusions of Miami Beachhood, and an outstanding collection of medieval buildings. It is reputed to have once contained 365 churches. The fine medieval Cathedral of St. Nicholas is now ludicrously topped by a spindly minaret, for the old town is a Turkish enclave.

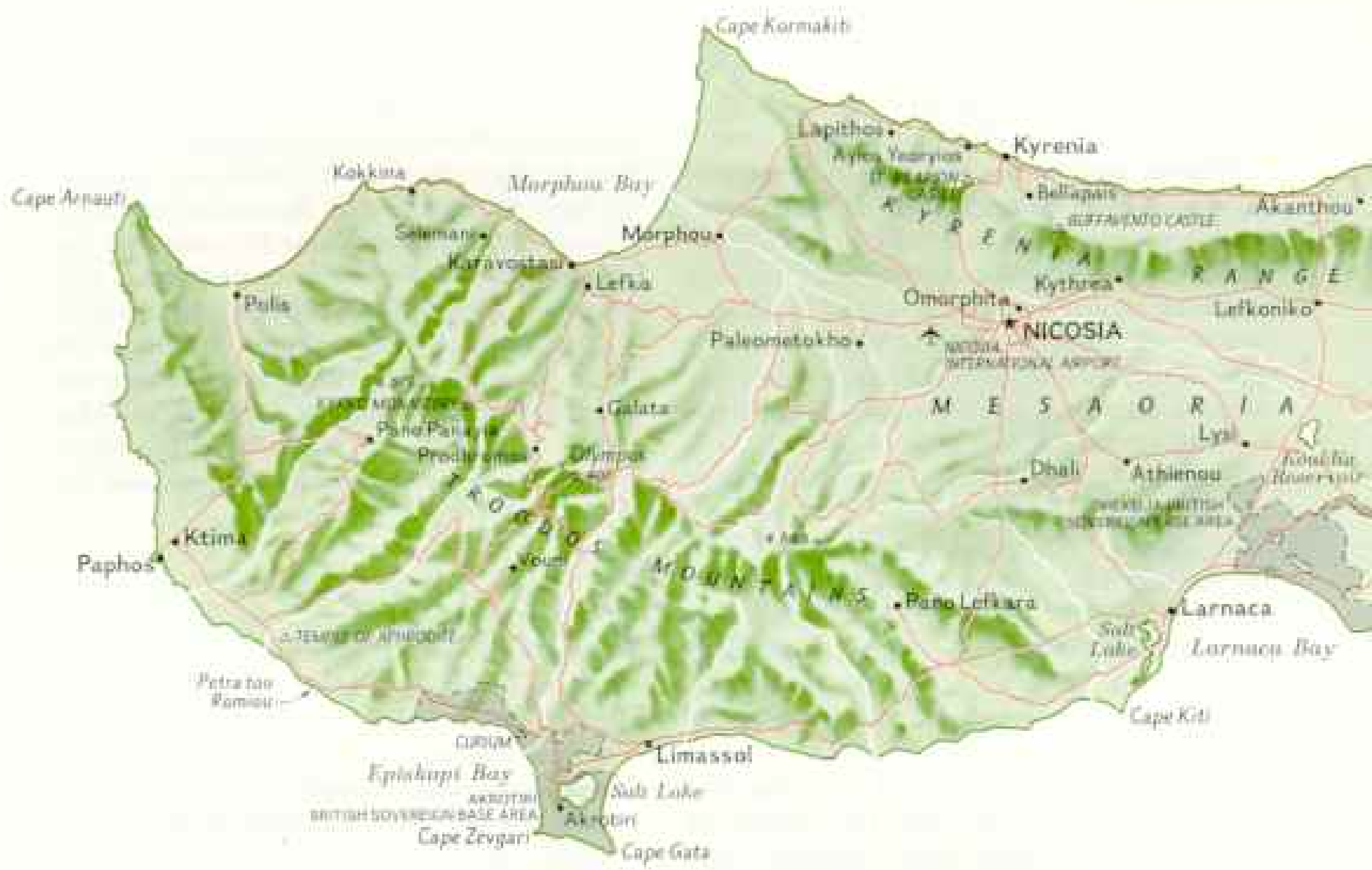
After a good, cheap meal in a modern hotel, I left George to his contemplation. The urban Greek Cypriot insists upon contemplation, occasionally tempered with slumber, during the scalding midday hours. George sat back, closed his eyes, his mind, and our conversation. And I, like mad dogs and Englishmen, went out in the midday sun.

I prowled the Gothic buildings alone, which is the best way to prowl them, and later investigated a curious phenomenon that had been described to me by a Famagustan friend: As the day wanes, the shadows of the new beachside hostelries reach eastward across the strand, so that sunbathers must range themselves in regimented rows along narrow sunlit strips. He was right.

But a well-oiled British basker to whom I spoke seemed unconcerned. "Lovely place," he said, "not too dear, sun every day, water's warm, beer's all right. Everything nice and new. Could a man ask for more?"

I went back to the Place Where George Contemplated, roused him, and put that question to him squarely.

Turkish flag signals off limits to Greeks at the "Green Line" border between Greek and Turkish districts of Nicosia. Behind these barricades the capital's Turkish Cypriots have lived since 1963. They may leave to work and shop, but Greeks cannot enter. When Ottoman Turks began their rule of Cyprus in 1571, they added the two minarets to the cathedral and converted it into a mosque—the Selimiye.





CYPRUS

Phoenicians, Greeks, and Romans colonized 140-mile-long Cyprus; it was one of Mark Antony's gifts to Cleopatra. The Byzantine Empire ruled the island from A.D. 395 until 1191, when Richard the Lionheart took it, making it a Crusader's haven. Later, Venetians annexed the island and ringed Nicosia, the capital, with arrow-shaped bastions (lower left) that now separate the city's center from its suburbs. Turks ruled for more than three centuries; Britain administered the island from 1878 until 1960. She still controls 99 square miles in two military bases, a major source of Cyprus's income. The 12-year-old flag of Cyprus flies only over national offices.



Elected vice president of Cyprus under the 1960 constitution, Dr. Fazıl Küçük now heads the separate Turkish administration and owns a Turkish-language paper in Nicosia. He seeks local autonomy for Turks in a reunited regime.

"Some do," he said. "Some want charm instead of modernity. They go to Kyrenia, on the north coast."

THE SHORT JOURNEY from Nicosia to Kyrenia is as fascinating as the destination itself. Your way of going depends on the ethnic antecedents of the man you go with. There's a short, good highway, running north from Nicosia through a pass in the Kyrenia Range. That road is in Turkish Cypriot territory. On your own, or with a Turkish driver, you pass at will. Greek Cypriots join long, slow-moving, U.N.-escorted convoys, or take the long way around.

A friend in the Turkish Information Office

(he used to work in *the* Information Office before the Turkish Cypriots pulled out of the central government and set up an administration of their own behind old Nicosia's walls) offered to run me up to Kyrenia.

"Our main enclave extends from the heart of the walled city to the northern mountains," said Abdulkadir Tansu as we left the capital. "There are other enclaves, scattered about the island. The Turkish national contingent is based in this one. They and the Greek national troops and the U.N. people—and the British, who hold two bases on the island—are the official guarantors of our security.

"Our constitution, written in 1960, led to our troubles. The Greek Cypriots claimed it



gave us too many rights. We didn't agree. Fighting broke out in late '63, and several times since. The present enclave lines—the Green Lines—show where we all were when the fighting stopped. The land we held then, we still hold. We will not give it up until a government is formed that will accept us as full citizens with full rights.

"We recognize Greek authority in Greek areas. They don't recognize ours in any, though we have our own military, our own police, our own courts. That's why we won't let them in."

Tansu slowed in a suburb north of the city, carefully watching the road ahead and his rearview mirror. "This is Omorphita," he

said. "Once it was Turkish. Now it is a ghost town. Greeks hold it. Turks may not return."

Most of the houses stood empty. Many were burned and broken, scarred by small-arms fire. Gun emplacements hunched in weedy yards.

"Many Turks died here. Now I will show you what happened to those who did not die."

We drove to a refugee camp on the Kyrenia road. Barrackslike buildings stood efficiently grouped on the plain, looking like what they were: adequate shelter for homeless people.

"The Greeks will tell you that there *is* no refugee problem, that the Turkish leadership forbids their return to their homes in scattered hamlets, so that they will remain concentrated in large, strong groups. Not so. We *do* want our people back in their villages, but only when they can live in them in dignity and as Turks."

"But the Greeks are not devils," I said. "Did not Turks and Greeks live decently together for many years?"

"Of course," said Tansu politely.

AS WE NEARED the Kyrenia Range, Turkish sentries watched and waved gravely. We climbed the pass, and, at its top, angled up toward one of the three medieval forts constructed on the summits to command the north shore.

St. Hilarion lies on three levels, almost encompassing a couple of crags. Hollywood could not have contrived a finer Enchanted Castle (page 374). It contains some 80 buildings spanning ten centuries and three cultures—Byzantine, Frankish, and Venetian. It, and Cyprus, changed hands four times in the 13th century alone. The Franks, driven out of Palestine by Saladin, brought it to its noblest state, complete with terraces from which well-bred French ladies could watch their champions joust on a field below.

I could make out that field, and, in the hills above it, the three flags that dominate Cyprus today: Greek, Turkish, and that of the U.N. The flag of Cyprus was nowhere in sight. Nothing so clearly defines the situation as

Zest for life overcomes political uncertainty as Christos Christodoulakis dances for his family on a Sunday afternoon. His two-room home in Lapithos opens onto a sunny court with a beloved lemon tree. Weekdays he runs an asphalt-making machine in Nicosia.





this defiant display of symbols that, in a less tormented nation, would be inconceivable as well as illegal. But so the situation has always been, since copper, timber, and a strategic situation brought conquerors here to create and destroy with staggering impartiality.

And so down the pass road to Kyrenia, a small, delicious town wrapped around a gem of a harbor too shallow to serve commercial shipping (pages 368-9). For which the Kyrenians, and the many resident aging English folk who share their community, must regularly praise God.

A massive fortress flanks this pool of bright water, reflecting in its several styles the succession of its rapacious tenants. Pleasant hotels share the shoreline. And on the curving quay, tanned youngsters of assorted (but mainly British) origin stroll about in fascinating degrees of undress, watching each other while their elders watch them. And sigh. And have another glass of wine.

I left Tansu at a seafront restaurant, where a young Greek Cypriot friend waited to give me a Greek's-eye view of the north coast and the U.N.-escorted convoy home to Nicosia. Andreas Kontos is a medical student of conservative views and unfailing good nature, a true Cypriot in all ways but one: He hurries.

We hurried now to Bellapais, where stands all that remains of the 12th-century French Abbaye de la Paix. The Gothic Abbey of Peace lies largely in exquisite ruins, but part of it lives on as the functioning church of Bellapais village, which clings to the steep slopes above it in happy disarray. Pastel-painted houses of mud or stone snuggle into the mountainside. Flat roofs provide terrace space from which the sea and the ordered ranks of citrus and olive groves on the coastal plain can be seen beyond the serene abbey, dozing in its medieval dream.

We spent the afternoon in that enchanted spot. Then it was time to hurry back to Kyrenia and join the Nicosia-bound convoy. As we waited in the lengthening shadows for the U.N. Land-Rovers to escort us through Turkish territory, I tried a blunt question.

"Do you hate the Turks, Andreas?"

"Of course not," he replied indignantly. "Sir, when I was growing up I had a Turkish friend and we were best friends. I tell you that he and I, Turk and Greek, can live together."

He really meant "live side by side," I thought. For years Greeks and Turks lived peacefully as neighbors. But never have their cultures mixed. The Cross and the Crescent remain separate symbols.

Andreas qualified his optimism. "See, they are the minority. In the troubles they lost many more than we. We can forget. But they cannot forget this thing."

The convoy crawled up the pass under the expressionless stares of armed guards.

"Curious situation," I said. "Cypriots driving along a Cypriot road with foreign escorts to protect them from other Cypriots. And this in peacetime. Or what passes for peacetime in this land where only the unpredictable is predictable."

"We have no real peace because the Turks ask too much. They are few, still they want an equal voice in national decisions."

"You mean about *Enosis*?"

ENOSIS. The most conspicuous word in Cyprus. Painted on walls. Spelled out in stone on hillsides. Headlined in papers. Repeated endlessly in conversation. It means union—union with Greece. It is a dream, a political device, a state of mind. To the Turks, it is an intolerable threat.

Many a Greek Cypriot acknowledges privately the implausibility of giving up sovereignty and a strong economy to become a province of another and no-more-affluent country hundreds of miles away. They concede that Enosis would make Turkish Cypriots second-class citizens—something that Turkey would not tolerate. And Turkey, stronger than Greece, is only 40 miles away (map, page 361).

But the appeal of Enosis is emotional. It does not always succumb to logic. Hear Andreas on this crucial topic:

"People who want Enosis most are intellectuals who know we are Greeks and should be

To ensure a joyous marriage, Greek villagers of Ayios Yeoryios celebrate the "blessing of the bedding." After a priest has prayed over the mattress, matrons bearing gifts of fine linens dance around it and then roll a small boy across it in the hope that sons will be born. Traditionally, parents build a house for each daughter as part of her dowry, and brothers defer marriage until their sisters have wed.

Wedding-day windfall comes to Dimos and Chrystalla Toumpas (below) when guests pin them with gifts of money. The couple dance at their new home after leaving the church with a procession of musicians and friends (right). Here at Paleometokho on the Mesaoria—the breadbasket plain of Cyprus—Greeks and Turks live side by side in peace, but do not mingle socially.



part of Greece. People of money don't want it because they must pay more taxes and are not having such a good life. The Communists, maybe one-third of Greek Cypriots, they want independence of Cyprus, not rule from Athens. Some peasants don't care."

The improbable notion that there were villagers in Cyprus who didn't care much about Enosis charmed me. I went next day to the Troodos Mountains in search of some.

THE TROODOS COUNTRY is almost completely Greek, and has been for centuries. Old ways persist in those time-smoothed mountains. There, intensely husbanded soil, irrigated by streams and conduit-directed springwater, produces lushly under dry hillsides where sparse forests grow.

The apples were ripe in Galata. I walked into an orchard below the road and found

Loucas Schizas sitting among his trees, sorting fine big fruit. Sitting, because it is impossible to move erect in a Cypriot orchard. The trees are trained so that the branches are low and easily reached, and planted so thickly that they interlock. In the rich earth and blazing summer sun, the trees thrive at a density not found in American orchards.

"I have here 110 trees," Loucas told me, offering a fruit polished on a pant leg. "Not enough to support a family. So I must go by bus to Limassol and work in a machine shop."

"Have you thought of moving there?"

Loucas looked at me closely, and decided to be courteous. "I was born and raised here," he said. "This is my home."

We talked for a while of crops and prices and water. Enosis never came up.

The top of the Troodos is Olympus, at 6,401 feet the highest mountain in Cyprus. Tall



thick pines crown the summit, their tops warped and flattened by the weight of winter snow. From December to March, Cyprus offers excellent skiing.

The mines that brought Cyprus her first foreign trade lie in these mountains, still producing copper, iron, and asbestos. Second in economic importance are the dozen or so hotels that cater to visitors from other lands whose countries contain no cool summer resorts. Israelis come here. So do Arabs.

Gardens are bright with roses and lavender, and fruit trees bear generously. Wherever the land can be made sufficiently productive, there are villages. The highest of these is Prodhromos. I made my way to it alone, down a cobbled trail made principally for mountain mules.

People watched me from the dense arbors that form an additional summer room for

every house, returning greetings as I offered them. A small stretch of level land appeared, and I walked gratefully onto it before a chimney pot at ankle level signaled that I was on somebody's roof. As I tiptoed off it, I heard gales of giggling from a window, and saw there a 10-year-old moppet who could have been cast as Homer's Helen in her early years: golden haired, brown eyed, and beautiful.

"*Kali mera, Kyria,*" I said. "Good morning, Madam."

More giggles. A pleasant voice from the arbor below put a name to my nymph: "Marina!"

The mother spoke to me in tolerant tones, one adult to another. I had to acknowledge that I could not converse in Greek.

"No matter," she managed, and gestured me into the house. Marina and her siblings gathered to observe the stranger, as their



Day lingers like a welcome guest at Kyrenia, jewel of the north coast. "Its chief boast is its good harbour," wrote a 13th-century pilgrim. Today the shallow bay fills with yachts and fishing boats;



onetime warehouses now accommodate hotels, seafood restaurants, and a folk museum. At quayside, Greeks sipping Cypriot wine watch tourists and shout to friends, "*Koplaste*—Come join us."



mother brought out candied fruit, a fork, and a glass of water—the old-fashioned Cypriot offering to a welcome guest.

When I left, laden with apples and peaches, the children came along to carry my fruit and see me safely back to my car on the road high above the village. Marina held me possessively by the hand, and neighbors smiled from their arbors as we passed.

THE SOUTHERN and western Troodos slopes are wine country, and have been for hundreds of years. Now, in late August, the first grapes were being harvested. Through an interpreter I made the acquaintance of one of the Troodos vintners, Savas Papageorgiou, on the road above Vouni. Instant friendship was established, instant hospitality offered. We would go to his house for a little something, then visit his lands.

In his shaded fig-scented courtyard, iron barrels and great pottery jugs stood awaiting the new harvest. A copper pot still shone in a shed. Papageorgiou and his wife explained

its functions, simultaneously and at the top of their lungs, with gestures and feeling.

"Juice ferments two weeks," my interpreter explained, "then goes in machine. Comes out *zivania*, like clear water but strong. Too much strong!" His face lit up.

So did mine, when I downed a glass of the grapy-smelling liquor. Too much strong, I acknowledged as one knee buckled slightly, but delicious. Papageorgiou hollered approval and slapped me on the back.

After a feast of fruit, we left to look at the land. "I live by grapes," said Savas. "I have 60 donums [20 acres], all in grapes."

Beside the road a truck was taking on a load of early ripening Malagas. Mules ridden by black-shawled women carried them from distant vineyards in panniers attached to the saddles. Men weighed each pannier and emptied it into the truck.

Below us the valley was filling with shadows. We set out along winding roads for Kykko, one of the holiest and certainly the richest of Cyprus's many monasteries. Perched



Breezy rider, a grape harvester dismounts from his mule to pick fruit ripened on the sun-swept slopes of the Troodos Mountains.

Passing at his peril on a juice-slick road (above), the driver of a van overtakes a truck laden with grapes en route to Limassol wineries. A pipeline carries the wine to offshore tankers, most of them bound for Great Britain.

near the summit of a 4,300-foot peak, Kykko has no casual visitors. Yet thousands of pilgrims come on the feast day of the Virgin Mary's birth. At any time, except when winter snow seals its approaches, there are at least hundreds. And all these must be given shelter and—if necessary—food, at no cost.

Kykko was founded in the 11th century and received at that time its finest treasure: an icon of Mary, believed to have been painted by the Apostle Luke. Nothing remains of the earliest buildings. Those that stand today are of the 15th and 16th centuries, and undergoing modernization. But the sacred icon, now entirely sheathed in silver, still rests on the iconostasis with other holy pictures.

Splendid objects of gold and silver adorn Kykko's church. Yet for all its overwhelming trappings, it is a cheery place. There is a comfortable, basic humanness about it, as there is about the Cypriot church in general.

In truth, the changeless church of Cyprus is deeply involved in the daily lives of Cypriots, and in their politics. It is no accident

that Makarios III, the president of the republic, is also the nation's archbishop and ethnarch. The church he heads represents the only cultural continuity Cypriots have known over the past millennium. Even in Turkish times churchmen managed administrative matters for the sultan, and so became active in secular affairs.

I spent a pleasant night and day with the merry monks of Kykko, then headed out of the cool hills for a closer look at the problems of Cypriots born into the world of Islam.

NO MAN can present the Turkish Cypriot position more concisely than Rauf Denktaş, president of the Turkish Communal Chamber and spokesman for his community during years of intercommunal talks.

"The Greeks say we ask too much," he told me. "Yet all we ask is that we, one of two distinct communities here, have a voice in matters that shape our destiny. Since their 80 percent will always outvote our 20 percent, the communities must vote separately."





Calm center of political storms, Archbishop Makarios has survived internal dissension, outside pressure, and attempted assassination. Fulfilling a priestly duty, he christens the son of his secretary at St. John's Cathedral in Nicosia (left).

Early in 1972, the leader faced down a major challenge when the Athens government pressured for more authority in island affairs. Concurrently, three Cypriot bishops asked Makarios to resign as president. Greek Cypriots with signs, shouts, and the blue-and-white Greek flag demonstrated for Makarios at the Archbishop's Palace (below). Their placards acclaim him "worthy leader" and accuse the bishops of capitulating to foreign demands.





"Sovereignty is theirs *and* ours. But many of them wish to be free to destroy ours by uniting with Greece in Enosis. They have not the right to give away our independence for a dream. While we argue, our people live on donations from Turkey, and in a state of temporary disruption that has become permanent."

Not all Turks live in camps or enclaves. Many live in mixed communities. But 10,000 to 15,000 Turkish Cypriots are still refugees. Two thousand of these live around the fringes of a village on the northwest coast called Kokkina. A young officer of the Fighters, as the Turkish Cypriot armed force is called, showed me the crowded little community.

"I'll never forget the winter of '64," he said. "People lived in caves, two or three in holes six feet wide. We had a few tents, but we couldn't get any building materials until the talks between Mr. Denktas and Mr. Clerides, the Greek spokesman, began in 1968.

"We ate potatoes cooked in seawater, because we had no salt. The Greeks blocked our supplies. Well, now we have food, we have prefabs; we get along, thanks to help from Turkey. But we are still displaced people."

Thousands of years of survival under foreign domination has required a high development of Byzantine gamesmanship by all Cypriots, which sometimes includes measures of double-think and double-talk. But honest convictions are often honestly presented outside the political arena. And just as Rauf Denktas had given me his about the Turkish Cypriot situation, so Glafcos Clerides, the Greek Cypriot spokesman, offered me his government's view.

"Like the Turks, we want Cyprus to be independent. But as a unitary state. They demand a federation of two communities. Yet these two communities, distinct as they are, are not physically separated. There are Turks all over the island. So we would have two governments, one for each side, and a central government, 80 percent Greek and 20 percent Turkish, to preside over both. Such a system would be unique in the world. And it would be exceedingly costly.

"Yet partition of Cyprus between the two peoples would be worse. It would uproot land-

loving folk by the thousands and reestablish them on both sides of a border through this little island. And that border would become a border between Greece and Turkey. The state of Cyprus would be dead.

"We have no choice—any of us—but to think more in terms of Cyprus as a whole, while remaining Greeks or Turks. And we must hurry. The young men of today have no contact with each other, as we older ones did. They can become fanatical. The pot is boiling. The pressure is building."

And I recalled Mr. Denktas's brooding statement: "There are too many guns on this small island. And too little authority."

THERE REMAINED two segments of Cyprus to see, regions in which guns and fanaticism are, respectively, few and uncommon, regions of relatively untroubled coexistence between Greek and Turkish Cypriots. These are mixed areas along the southwest and northeast coasts. I traveled first to the former, this time with George Demetriades, a multilingual driver. We started at Larnaca, on the south shore.

Larnaca, once the main seaport (it has lost that honor to Famagusta, farther east), is a pleasant, sedate town, oddly adorned with ultramodern schools. It contains, among a number of mundane industries, one ancient and curious one: the harvesting of salt from a lake that dries up in summer, leaving a hard white crust over deep black mud.

On down the coast, a dusty road leads into the hills to Pano Lefkara, a village forced by adversity into artistry. "The name comes from *lefka*, meaning 'white,'" said Demetriades. "It is a poor country. The people cannot grow crops, so they must make things to sell."

Perhaps because of the pallid earth they occupy, the Lefkarese have made their village especially colorful. Blue walls, red roofs, and green, well-watered little gardens give it the look of a flower in a boneyard. We found Louis Papaloizou plodding patiently up the way and picked him up. He took us home.

In his stone-floored, reed-ceiled shop he displayed superb embroidery made with French cotton on Irish linen.

Proclaiming their allegiance, soldiers hoist a huge Turkish flag near their post at St. Hilarion, a medieval fortress overlooking the Kyrenia road, the historic jugular vein between Nicosia and the sea. Turkish-controlled enclaves are widely scattered—a complication to any plan to partition the island.

Louis led up narrow streets where women sat against the walls sewing and gossiping. A little girl worked on a practice pattern, big eyed and open mouthed in concentration.

"I must to take these ladies' work to England and sell door to door," Louis told me. "It is our custom. Ladies make, men sell. And sometimes that is not enough. Some men go down to Limassol and find jobs there."

We were headed there ourselves. That southernmost city of Cyprus handles the products of its hinterland, mostly carobs and grapes. It has no deep harbor, but lighters load off-lying freighters with the odorous seedpods (used mostly as animal fodder), and a pipeline fills tankers with wine.

BETWEEN LIMASSOL AND PAPHOS the aura of the pre-Christian and medieval world enchants the land. In a fortress chapel at Limassol, Richard the Lionheart married his Berengaria; not far to the west lie the ruins of Curium, a city that lasted 2,000 years and left a great Roman theater as its cenotaph; farther on is the place where Aphrodite was born.

Homer wrote, "...laughter-loving Aphrodite went to Cyprus, to Paphos, where is her precinct and fragrant altar." For centuries pilgrims of many sects and nations have come to the spot on the shore marked by the Rock of Romiou, where the goddess of love chose to be born to the world of men. The languid waves of summer do not re-create the foam out of which she rose, naked, on the day of her coming. But in spring the sea breaks white upon the shore and the woodlands are bright with the crimson anemones brought into being at Aphrodite's command.

Paphos, or Ktima, to use the name of its present residential section, is sleepy, friendly, and unpretentious. It has a remarkable past. Its Roman governor, Sergius Paulus, was the first such official to accept Christianity—perhaps because St. Paul himself taught (and was scourged) here.

But the finest remnants to be found today are pre-Christian. A Greco-Roman city of the dead, rock cut and becolumned, lies under the plain. Above ground is a mosaic floor showing Dionysus, the god of wine, teaching Icarus how to make the Olympian potion—an act that must forever endear him to Cypriots of every persuasion.

Demetriades and I consumed some of that god's gift to man at a pleasant seaside restaurant called the Pelican, enhanced by two living birds of that species and an embittered bittern that crouched by the door and croaked dismally. Fried squid, red mullet, broiled lamb, yogurt, bread, and salad rounded out a meal worth lingering over, a fitting finale for our western trip.

For the run out east I went back to Nicosia and looked up young Andreas. At the tip of the Karpas Peninsula (map, page 361) stands the Apostolos Andreas Monastery, and I had guessed correctly that my young friend had been baptized there.

"This is a long voyage, for most Cypriots," said Andreas, making frighteningly short work of it in a large rented Mercedes. "Most would consider for weeks before coming a hundred miles to the end of the island."

The hills dropped away, and we traveled over tired land, good chiefly for growing tobacco. The sea, sometimes fringed





Soldier without enemies, this Dane serves with the U.N. peace-keeping force. He scans Selemeni as Turkish villagers, who fled in 1965, begin to rebuild their homes. Invited to Cyprus in 1964, the U.N. forces, now 3,000 strong, watch, report, and mediate.



Homeless Turks at a refugee center in Nicosia were among the more than 25,000 displaced by fighting between 1963 and 1967. The camp was recently dismantled and its people moved into prefabs built by Turkey.



"Hills worn to the grey bones . . . by the wash of thousands of years of rain and bleached in the fiery Cyprian sun." Thus a traveler early in this century described the island's crumpled landscape. Olive trees thrust gnarled limbs from terraced hills of Vouni; a grape harvester leads his animals homeward in October. Spring awakens blazes of anemones and iris, barley and wheat. Farming remains the focus of Cypriot life; citrus, wines, and vegetables



are the main exports. But lack of water and excessive fragmentation of land slow the pace, and Cyprus must import twice what it exports. To lessen dependence on agriculture, the government promotes tourism and light industry.

by fine beaches, appeared occasionally on either side as the peninsula narrowed.

Silk making, a lost art in most of Cyprus, hasn't quite died out in this remote region. It was not the season for harvesting cocoons and spinning their floss, but I stopped to meet silk makers and see their creations. These are usually stiff shirts or large bedcovers.

Said Andreas, "The ladies make these for their child; they cannot sell." But they brought out armloads of the precious cloth and spread it on beds in earth-floored rooms where carved posts supported central beams and fireplaces glowed in dark corners.

APOSTOLOS ANDREAS is more a pilgrim's motel than a monastery. Few monks reside there, but pilgrims come by the thousands on holy days. A sacred spring is the basis of the church's fame, one that rose from the rock when the Apostle Andrew, shipwrecked on the then barren point, prayed for water and was granted it. Andrew put some of the water from the miraculous spring on the eyes of his captain's blind daughter. It restored her sight.

A genial monk showed me the beautiful little church, with its well of sweet water a few feet from the salt sea, and recounted miracles that had occurred at this sacred spot.

"People bring gifts here, because they *know* there is something for them. And the saint makes miracles also for the Turks. Oh yes! Moslem or not, he will help them all."

Indeed, people do believe in St. Andrew and his miracles. The large modern church built above the old one is full of *ex voto* images: hearts, eyes, hands, legs of stylized pattern in silver and gold or humble wax. And presents of watches and jewelry and beautifully painted eggs.

On the way back we stopped for coffee in a mixed section of the Mesaoria, where Greek and Turkish farmers owned adjacent fields of grain and lived in all-but-adjacent houses.

Greeks filled the coffeehouse, brown-faced men taking their ease and ready to talk.

"Turks? Yes, many live nearby. They are not afraid to buy at our shops. They have their hair cut by our barber, quite permissible. Why, in the next village along they live together with Greeks. They are on one side of the street, we on the other. United, you see. No trouble. So we are good neighbors. You understand?"

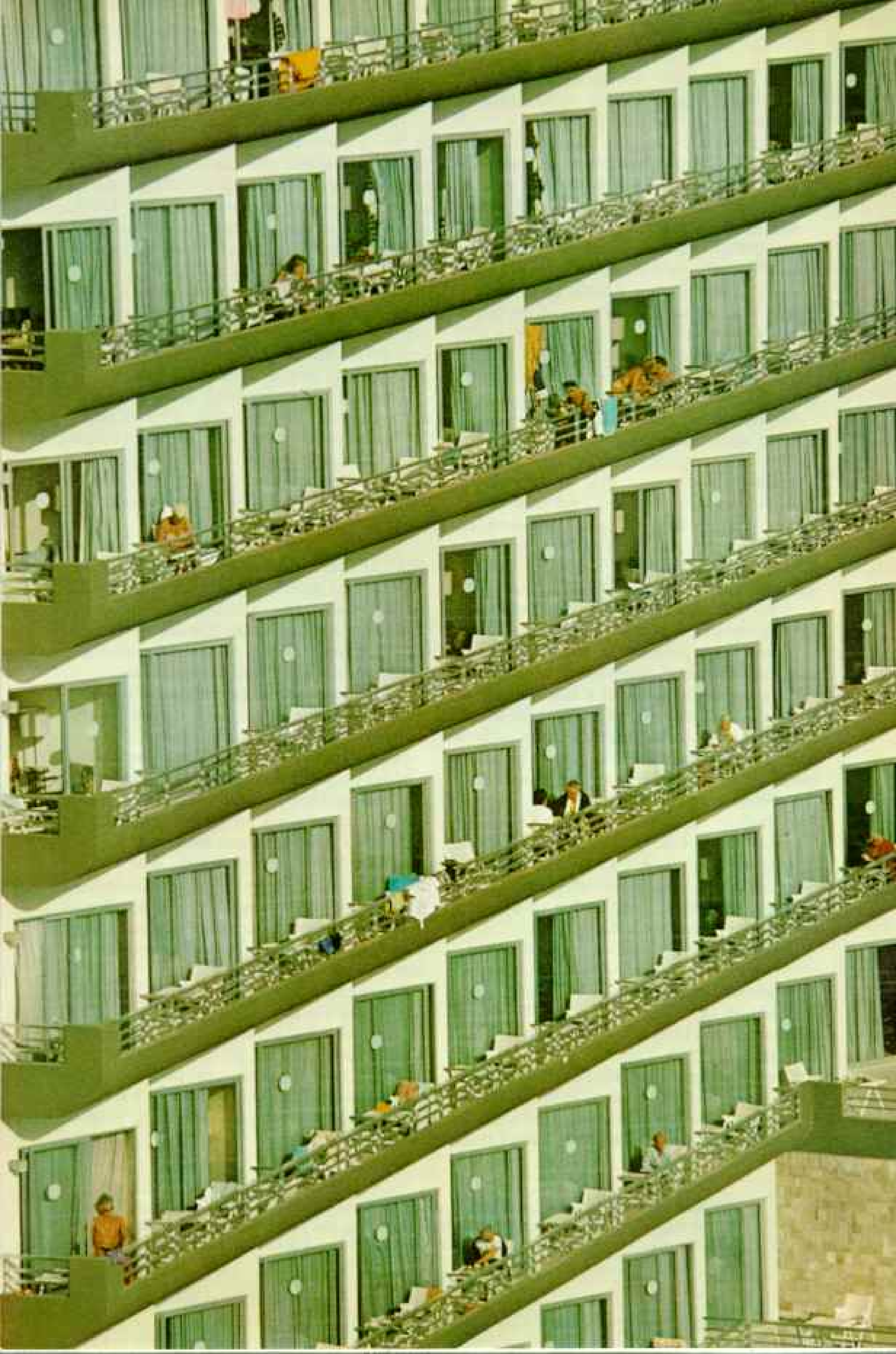
I understood.



Reaching for prosperity, new hotels and apartments jam the eastward-facing shore of Famagusta. On their balconies, vacationists (facing page) catch the fleeting morning sun. In the afternoon the buildings themselves will eclipse much of the sunshine from the beach.

Center of unrivaled riches and luxury in the 14th century, Famagusta hopes to regain former grandeur by improving its port facilities and by catering to tourists. The Turkish enclave in the old city draws visitors to a great cathedral-turned-mosque and to what islanders proclaim as the castle setting of Shakespeare's *Othello*. But the sector boasts few enterprises to capture the tourist dollar. A nightclub in Nicosia pulls in a share when Turkey's rock idol Barış Manço (right) brings his show to the Turkish quarter.





LLEFT CYPRUS then, feeling deep affection for the place and its people, little as many of them love each other. The outlook was not bright. Still, given the innate kindness of Cypriots of all sorts, there seemed hope of a solution to the problem of justly governing two distinct cultures on one small island.

But in a few months I was back. In February 1972, right-wing bands were being formed by officers responsive to Athens, not Nicosia, and favoring Enosis, not independence. The left-wing 30 percent of the Greek Cypriot population rallied to President Makarios, declaring that, like him, they wanted an independent Cypriot government rather than one dominated by distant Athens.

Athens itself publicly pressured the president to accord Greece, as the center of Hellenism, more say in Cypriot affairs. Three Cypriot bishops urged that he step down. The president listened, and said nothing.

The Turkish leadership, I discovered, favored a victory by Athens on the very practical grounds that Greece, fearful of Turkey, would require any new Cypriot government to grant the Turkish Cypriots concessions the archbishop might not.

Tension was palpable in the capital. More gun emplacements appeared. I could count eight from one window of a favorite restaurant near the north edge of the Turkish sector. Chickens still roasted there, but the soldiers wore helmets. One shot, I thought, and Cyprus could explode with a blast that would rock the Mediterranean and jolt Moscow and Washington. No one fired it.

In the midst of the crisis, the president took time to talk to me, not about the scorching political issues of the moment, but about the lasting problem of Cyprus: that of the government of a divided country.

"The Turkish Cypriots want partnership," said Archbishop Makarios, "such partnership as might be formed between two states existing side by side. But Greeks and Turks are intermingled. There is no demographic basis here for federation.

"So we suggest that the Turkish Cypriots have autonomy in religion, culture, education. We would offer them reserved seats in the House, to which they could elect their

own officials. And they would have 20 percent of the public service.

"This is what I think of as partnership. But in this partnership, we are 80 percent. It is not unreasonable that the majority have a louder voice in state matters. And I would prefer that other nations spoke less loudly about our affairs. Outside interference has always made us a place of conflict. Unless we are very careful, it still can."

But His Beatitude is a very careful man. This time he would triumph over his adversaries by simply ignoring pressure and threat and proceeding, beatifically, along his presidential path. At least, for the time being.

I thought the interview was over, and started to rise. The president stopped me.

"In my village there were 15 Turkish families. We lived peacefully with them. In one of these families was a shoemaker. He had most of the customers, including my family, because he was the best shoemaker."

SO SPOKE MAKARIOS. How about ordinary Cypriots? Many of the people I talked to in this troubled time took refuge in slogans and platitudes. But one spoke fearlessly, as an individual. Andreas Cariolou is a Greek sponge diver and lemon grower.

"We Cypriots have no tradition of thinking for ourselves, as citizens of a nation. No one has ever asked us what we wanted.

"Cyprus itself has no problem. The famous 'Cyprus problem' is an invention of foreigners. Our real problem is fresh water. If I had half an inch more in my orchard, I could manufacture six more sons and educate them.

"Look: We want democracy, and we can make it work if we are left alone. Greeks and Turks lived well enough here for centuries—not together, but side by side. Why not again? The Green Line is typical of Cyprus today, and it is a classic mistake.

"I am only a simple man, under the lemons and on the sea. Do I have any say about what is to be decided here? No. Neither has the Turk. Foreign powers try to control us. Yet if we are to be a democracy, the people—all the people—must be asked what they want.

"But, does anyone care about us as people? Any of us?" □

Wealth beyond measure, his first son, comes to Lukas Christodoulakis of Lapithos. The new arrival may grow up in an era of better understanding, since negotiators from both sides now redouble their efforts to find a lasting way for Greeks and Turks to live together as Cypriots.



Oil and Penguins Don't Mix

Photographs by
MIKE HOLMES

ON SEASIDE STROLLS he looks like a proper old gentleman, elegantly suited and full of stuffed-shirt decorum. But the jackass penguin gives the game away when he opens his beak. Loud and strident, his cry is an inelegant bray—a startling “hee-haw.” Thus the bird got the most familiar of his nicknames.

Today his cry seems more like a call for help, as problems—largely caused by man—claim an increasing toll of these birds.

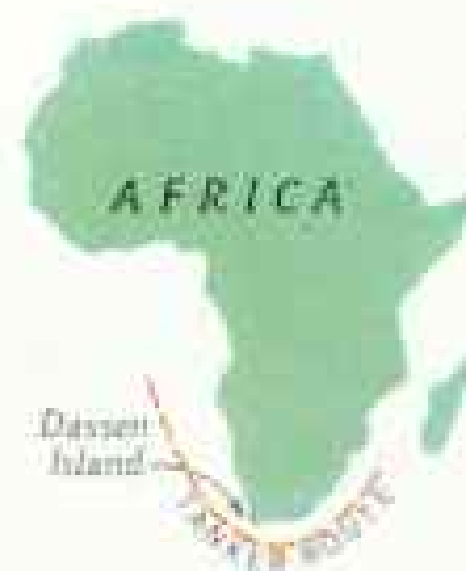
Thirty years ago millions of jackass penguins nested on coastal islands off South Africa's tip. One primary breeding ground, tiny Dassen Island, lies 32 miles northwest of Cape Town. Today scarcely 60,000 birds return to Dassen each spring and autumn on their twice-yearly nesting cycle, after weeks of fishing in offshore waters.

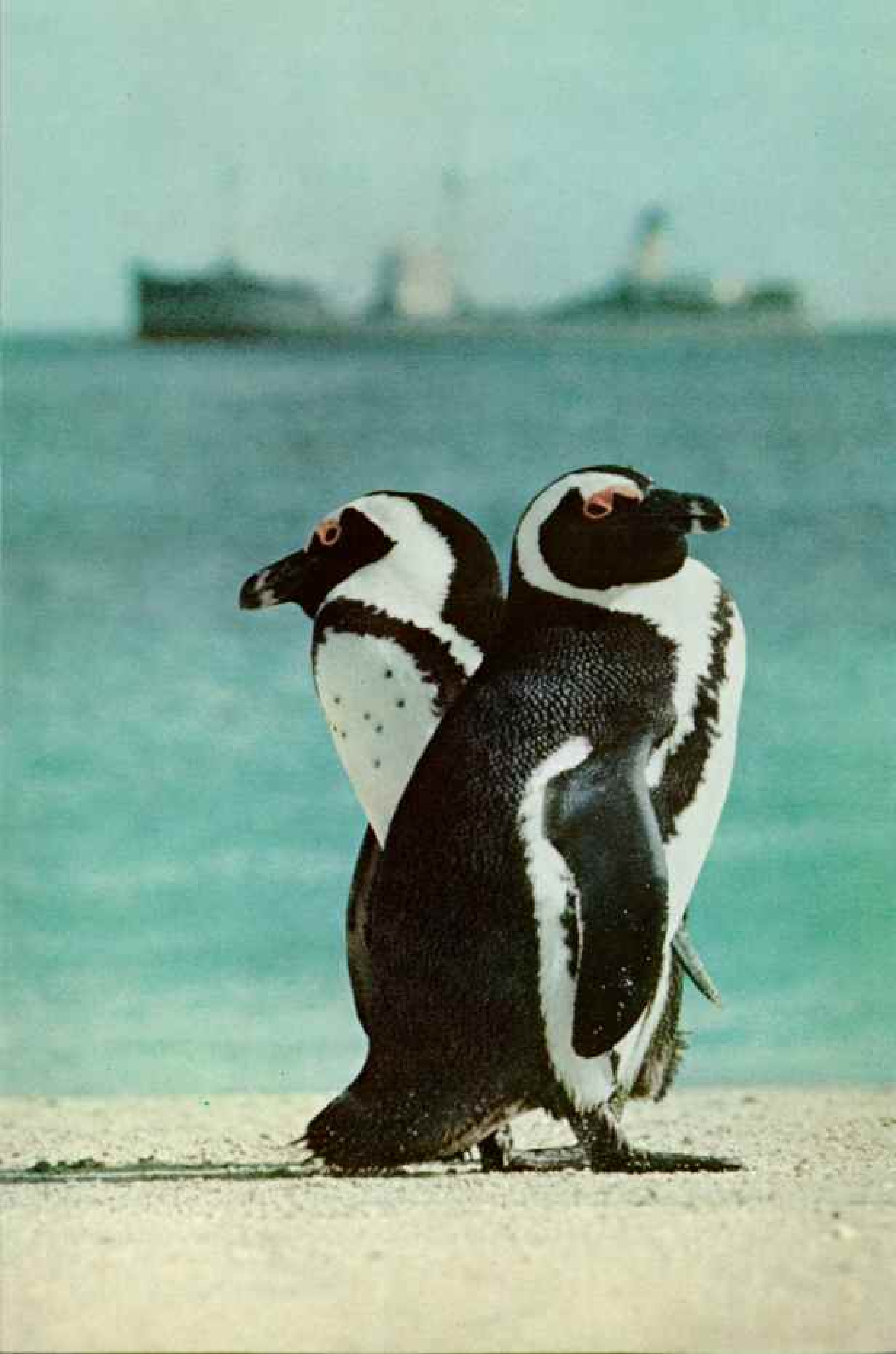
Where nest-robbing seabirds once posed the only real threat to the island's penguin colony, human egg collectors have diminished the birthrate and guano harvesters have destroyed many nests. Fishing fleets net the pilchard and anchovy on which the penguins feed. Ironically, the teeming schools of such fish depend, at least in part, on the penguins, whose nitrate-rich guano deposited in the sea nourishes plankton eaten by the fish.

But the most devastating hazard is oil pollution. Since the closing of the Suez Canal in 1967, rerouted oil tankers—some 650 each month—grind past Dassen. Oil from shipwrecks and from bilges pumped at sea has killed penguins by the tens of thousands.



Jackass penguin (*Spheniscus demersus*), also called black-footed, African, Cape penguin. **Distinctive characteristics:** adult stands 15 inches high; 6-7 pounds; white stripe on each side of head. Seeking their lifetime mates, birds put on a show of hee-hawing and flipper flapping, as above. Proclaiming an engagement, a pair nuzzles. The nest site they choose may serve throughout their lives. The female lays two to three eggs; chicks hatch in five to six weeks, with both parents alternately tending the young. **Breeding range:** Coastal islets of South and South-West Africa. **Total population:** 100,000 to 250,000. Ten-year life-span. First described by members of Vasco da Gama's expedition of 1497.







Spooked by intruding ornithologists come to study their plight,



jackass penguins churn an inlet into a frothing caldron.



BLACK BILLOWS signal the end of the *Wafra*, an American-owned tanker that struck a reef off Cape Agulhas, southernmost tip of Africa, in February 1971. The disaster spelled an oil-soaked death for thousands of coastal birds. To prevent further damage, the ship was towed 217 miles out to sea, where the South African Air Force bombed and sank it.

In oil-polluted waters, the flightless penguin stands little chance of escape. Seeking its meals of small fish, it dives and leaps with the grace of a porpoise, "flying" underwater with its flippers as if winging through the sky. Each time it surfaces through a slick of crude oil, it becomes heavier and less buoyant. If it stays in the water,



JIM MILLAMAN, PHOTO TRENDZ (ABOVE); DAVID RAFFERTY, PHOTO TRENDZ (RIGHT)



it will probably drown before the oil it has swallowed poisons its vital organs. If it comes ashore, the befouled bird (above) will try to preen, and thus ingest more oil.

The birds' best friend, John Cooper (left) of the South African National Foundation for the Conservation of Coastal Birds, keeps busy with full-time research and rescue operations on Dassen and other Cape islands. Aided by a three-year grant from the World Wildlife Fund, the foundation seeks to determine the full effect of oil pollution and commercial fishing on the hard-pressed penguin population.

OFFERING SUCCOR to thousands of stricken penguins, volunteers toil in a Cape Town treatment center. There, powdered clay is gently patted onto the oiled parts of the bird (below). Left on for two hours to absorb the oil (right), it is then washed away. Repeated over many days, this muddy therapy avoids the feather damage and loss of waterproofing that would be caused by cleaning with detergents.

Rescue workers have to force-feed disoriented birds, which do not recognize dead fish as a food source. More than half the treated penguins survive after two to six weeks of care.



BOTH BY DAVID PLYNTER, PHOTO THINGS





BEYOND SALVATION without human aid, an oil-coated penguin flops ashore on Dassen Island (below). Exhausted, discolored, unable to utter a sound, it is rejected by the healthy members of the colony. Failing to recognize it as one of their own, they snap at the stricken creature as if it were an intruder (right, center). If not rescued and cleaned, the bird will die amid the clamor of a city of penguins braying their discordant hee-haw symphony.







EGGNAPPER! A thieving southern black-backed gull raids an unattended penguin nest on Dassen Island (above) and lifts off with a prize the size of a goose egg (right).

Gulls steal up to 40 percent of the egg crop. To lure the curious penguins from their nests—scooped-out holes lined with sticks, seaweed, and grass—gulls rattle nearby bushes. The bandits also flap their wings at the penguins, causing them to rush off the nest in angry reaction.

Another intruder in the nesting ground, a rabbit (left) scurries away from nipping beaks. Early ship captains, lighthouse keepers, or guano collectors may have introduced the animals to Dassen Island as a handy source of fresh meat.







MINIATURE CHARLIE CHAPLIN, a penguin waddles toward the beach. The birds have been in possession of Dassen Island for so long that even the rocks have been worn away by the passing of millions upon millions of feet. The penguins keep to centuries-old paths that run nearly arrow-straight from nesting ground to sea. Egg and guano collectors who descended on Dassen were amazed to find ready-made roads; a truck has made a two-laner of this route.



The South African Government now prohibits the taking of penguin eggs for Cape Town tables and, to protect the nests, limits the guano harvested for the nation's gardens. Oil is another matter. Even if Suez should reopen, today's giant tankers are too big to pass through the canal; they will continue to plow the Cape sea route. Only strict enforcement of international maritime law and man's caring for all things wild can keep the jackass penguin plodding its age-old paths, keep it braying its raucous cry. □

YESTERDAY'S CONGO, TODAY'S ZAIRE

By JOHN J. PUTMAN

NATIONAL GEOGRAPHIC STAFF

Photographs by

ELIOT ELISOFON

BY THE NATIONAL ASSEMBLY in Kinshasa, and on the mount that overlooks the river's rapids, sit two empty bases. Once they held proud statues: Belgium's King Leopold II on horseback, and Henry Morton Stanley, one hand shielding his eyes as he scanned some distant horizon. For years the two images symbolized the coming of the modern age to the heart of "darkest Africa." The king had claimed the land as a personal fief, and the explorer had opened it to European colonization.

But the old Belgian Congo is now independent Zaire (Zah-EEER) and not long before my arrival in the capital the statues had been pulled down on the orders of President Mobutu—an act that symbolized the turning from the past toward the future.

That past was often grim. It included centuries of slaving and intermittent warfare, decades of colonial rule, and—following independence in 1960—half a decade of chaos and slaughter. Only in the past five years of peace and stability have Zaire's people been able to turn toward the building of a nation.

That task is not easy. Zaire's 21 million citizens spring from more than 200 tribes and speak perhaps 400 tongues. Its 905,000 square miles hold vast mineral wealth and agricultural potential, but it is severed into bits and pieces by rivers, swamps, and forests. And



JOHN J. FITZGERALD

Fisherman of Kitombe typifies Zaire, youthful giant among Africa's emerging nations.



the immemorial African heritage, with all its values, often pulls against the future.

In Kinshasa, the capital, I found the signs of a developing nation: officials in Mercedes limousines, banners, flags—and parades, with marchers chanting praise of their president, his party (the Mouvement Populaire de la Révolution), and their land.

"Mobutu, Mobutu, he is our leader! ... MPR first, before all else! ... Zaire! Zaire! Zaire! Our land, our river, our money!"

I saw the new satellite-communications station outside the city, cranes swinging up new buildings and plants, boatloads of new cars and trucks on the river, and representatives from a dozen nations with briefcases full of plans for new development projects in Zaire.

But I decided, before searching for the future, to journey into the interior to learn something of the past. And so I boarded a plane for Mai Ndombe, formerly Lake Leopold II (map, page 407). There, I was told, the lives of the people are guided both by the government and by the god of the lake—and the present is still the past.

"Widowed" Village Finds a New Chief

At Inongo the past was represented by Grand Chief Basambi Iyeli, 59, a squarely built man who measures his words with care and wields tribal authority over the village chiefs and people of the region.

The chief loves crocodile meat, white and tender. So one day, after a drive through the forest in a Land-Rover, the chief and I returned with three small crocodiles, tightly lashed and smelling richly of the creeks, tucked under our legs.

I went with Chief Basambi to the village of Nkolobeke, 20 miles to the north. There men sat in the shade of palm trees, mending nets of plant fiber, and the house roofs leaked smoke from kitchens where fish was being dried and manioc boiled.

They were kind people and welcomed me. The village, I learned, was without a chief. Since the old one had died, the elders said, the village had been like a widow—there was no one to apportion the land, to settle the inevitable squabbles, to provide guidance. Now they had a candidate for *botikela*, interim chief, and Grand Chief Basambi agreed to return the next day and invest him.

That night the grand chief told me about

(Continued on page 406)



BOOTH BY ALAN WOLLETT

Symbols of shame, shackles that once bound Congolese slaves (left) now rest in Belgium's Royal Museum of Central Africa. The top ring collared a captive's neck; smaller bands cuffed the wrists. In the same museum, mannequins (above) have been arranged to depict a Congolese fending off his Arab master. The Congo endured more than three centuries of slaving, losing hundreds of thousands of people to the labor-hungry New World.

Time has dimmed the memory of slave caravans, but President Mobutu's powerful one-party government must deal with other problems created during a convulsive past. Zaire's diverse peoples—descendants of more than 200 separate tribes—have only recently come to accept the concept of nationalism. Mobutu's determined administration seeks to forge Zaire into a strong, modern, and economically sound nation.



Symbols of strength: Arrows, bow, and horn, held by a bearer (left), denote the martial prowess of a candidate for interim village chief (right). Chosen by the elders of Nkolobeke, he wears a scarlet cape and orange powder, sacred signs befitting his high station. For his investiture, the local historian and the widow of the former chief sit at each side of his throne (below); a roof supported by canoe paddles shades them. Across the courtyard the grand chief of the region, Basambi, presides with his retinue. Runners dash between the groups in a conversational ballet, relaying Basambi's formal queries about the candidate's abilities, then returning with answers. Flutes and throbbing drums (bottom) enliven the ritual, which will end when an aide to Basambi crosses to the new chief and marks his forehead with a vertical line of white powder.



ALL BY JOHN J. PUTMAN





Wagenia tribesmen brave the tumultuous Zaire River above Kisangani, nimbly



scrambling down scaffolds to gather their catch from cone-shaped fish traps.

the god of the lake, Mbomb Ipoku, from whom he had drawn his authority. "He is, he is. We don't see him, but he is. You go out in a boat, you don't see him, but you know he is there. From the ancestors, he was; from the beginning of the lake, he was."

The people of the lake, the chief went on, know other spirits. There are evil ones who dwell in dark sinkholes and cause illness, madness, and death. There are good spirits too, who, when properly propitiated, defend against evil, cure sterility, and guard children against short life.

Spectator Faints—and Proves a Point

The next day we returned to Nkolobeke. The drums were pounding, the young people dancing. Everyone took his place around a courtyard, Chief Basambi and his notables on one side, and on the other the botikela (page 403). He was a young man, slender, clad in a red cape, grasping a spear. Beside him sat the wife of the deceased chief, and the village historian who would recite the proverbs and deeds of the past. There was a solidly built man in warrior's garb, symbolizing the candidate's strength, also two spokesmen, for the principals did not speak directly but preserved their dignity with aloofness.

The dialogue began. In time the spokesman for Chief Basambi demanded proof of the

candidate's validity. The answering spokesman said that the young man had foreseen in a dream that someone would faint. Now a man in the crowd suddenly fainted. Thus was proven the candidate's spiritual power. Without this proof, he would never enjoy the people's respect.

Finally Chief Basambi's spokesman crossed the courtyard, placed a crown on the new botikela's head, and smeared a white line down his forehead. A joyful cry filled the courtyard. The village was no longer a widow.

The present—and the national government—is represented at Inongo by Nyime Bampili, the territorial administrator. Nyime, a soft-spoken man, is passionate in his task of building a nation. He goes into the villages to urge the planting of more fields, the payment of taxes, the construction of toilets.

A third force, I discovered, also shapes the lives of the people of the lake region—the missions. I visited their schools, agricultural stations, and clinics. One I remember best. It was at Pendjua, up the dark and mirrorlike Lotoi River and then deep into the forest.

The clinic was operated by three Dutch nuns—Sisters Elise, Régine, and Hortense. They told me they treated about 300 people a day; the most common diseases were tuberculosis, malaria, and worms. "Sometimes we treat a whole family for TB. We have no





TITAN WITH A TOE HOLD on the sea, the Republic of Zaire (pronounced Zah-EEER) touches the Atlantic for only 25 miles but sprawls for nearly a million square miles across Africa's equatorial heartland. Western man knew little of its wonders until Henry M. Stanley explored the region and claimed it for Belgium's King Leopold II; it became a Belgian colony in 1908. Independence came 52 years later. President Mobutu, who took command in 1965, gave the old Belgian Congo its new name—a Portuguese version of *nzadi*, a local word for river. Zaire boasts a huge and varied treasury of minerals, including copper, tin, zinc, and the world's largest reserves of cobalt and industrial diamonds. Much of the nation is arable,

producing palm oil, sugar, cotton, rice, coffee, rubber, and tea. But transportation is a continuing problem; most roads turn to ribbons of muck in the wet season (left). The Congo River, also renamed Zaire by the new government, continues to be the nation's major highway.

AREA: 905,563 square miles. **POPULATION:** 21,000,000. **MAJOR CITIES:** Kinshasa (formerly Léopoldville), capital; Lubumbashi (Elisabethville); Kisangani (Stanleyville). **LANGUAGE:** Officially French; many African tongues. **RELIGION:** Traditional African animism and Christianity, or a mixture of the two. **CLIMATE:** Generally hot and humid.



doctor now, but we can do cesareans when an emergency situation demands it, and also hernia operations. We charge one likuta [two cents] a visit; most pay with wood."

The sisters removed a dainty cozy from a pot and served tea. Then, as I departed, talking drums announced the reopening of the clinic. The drums are fashioned from lengths of tree trunk, hollowed out and with a slit (the "lips") on one side. With these instruments, drummers can imitate the rhythms and intonations of local speech—and so pass their messages from village to village.

I often stayed at missions. I would arrive sometimes unannounced and after dark. Always there was a welcome, always a room.

Diamonds End as Precious Dust

A helicopter took me into diamond country, skimming over the savanna and the long, linear hills, sweeping over villages, police posts, and the winding river that flows blood-red with mine tailings. It is beautiful country, the Kasai, and precious—the world's greatest source of industrial diamonds, and among Zaire's largest sources of foreign-exchange earnings (with copper and palm-oil products).

Diamonds lie thickest around the city of Mbuji Mayi. The first were found in 1907; in 1919 the Belgians began systematic exploitation. Today the mining company, MIBA, is owned half by the nation, half by Belgian interests—and the government preaches the gospel of work. On my first day at Mbuji Mayi, I attended a political rally. The governor was there, but he sat dignified and silent while party leaders led chants and songs:

"*Kwenzal Kwenzal—To do! To do!*"

"*That's the way to move ahead!*"

"*Ya, ya, ya, mundenge!—Ya, ya, ya, work!*"

After the speeches and the slogans there was beer, and roast chicken cooked with peanuts. Then I went with the Belgian director of mining, C. L. Fieremans, to see the open pits where power shovels bit into the red earth.

In the plant where the gravel was washed and the diamonds separated out, Mr. Fieremans introduced me to young Zairians being trained to take over top company positions. One handed me a tray of brownish diamonds, a day's production—worth, at \$4 a carat, some \$150,000. Eighty-five percent of the diamonds are crushed for industrial use, 13 percent are used as solid industrial diamonds, and 2 percent are sold as gems.

Mr. Fieremans told me that MIBA had to

limit production because of competition, largely from synthetic diamonds. Then, flying over the diamond fields, he showed me another reason; a creek bank pitted as if by heavy artillery bombardment.

"At night," he said, "villagers come out to dig diamonds illegally. Sometimes there'll be five hundred people at one site. They are good prospectors. We know from statistics on the quantity of diamonds exported from neighboring countries—countries without diamond fields—that the poachers' production one year equaled nearly half our own."

The legal diamonds leave Mbuji Mayi twice a month in a small twin-engine plane. Illicit diamonds leave in scruffy bundles of clothing, pressed inside packages of manioc, and on the persons of men and women.

In time, they all arrive in the London offices of the international diamond cartel, which controls distribution. Mr. Fieremans shrugged. "Diamonds tell no tales."

Compared with diamonds, copper may seem drab, but it shaped the land—and still does. In 1885, when Belgium's King Leopold II established his personal African domain (and ironically named it the Congo Independent State), he included a bulge at the southeast corner. This became the province of Katanga, now Shaba, the land of copper.

Leopold's personal rule over a land 80 times larger than his own ended in 1908. Under heavy criticism for the corruption and cruelty rampant in the Congo, he ceded his fief to the Belgian Government. But in claiming that bulge, he had ensured Zaire's future.

Zaire's Goods Still Move by Water

Today Shaba's treasure belongs to a government-owned mining company. In Lubumbashi I talked with the Zairian director, Kandolo Lopepe, who told me that the 400,000 tons of copper produced each year provide the nation with more than 60 percent of its foreign-exchange earnings.

"We are increasing our own plant capacity by 50 percent," Mr. Kandolo said. "The government has granted two new concessions: One to a Japanese syndicate, the other to an international consortium."

From Shaba I turned to the great river that remains the chief artery of the nation's commerce—the Zaire, formerly the Congo. With its tributaries, it offers almost 9,000 miles of navigable waterway (map, preceding page).

I went first to the river's mouth, where red



Solemn devotees of the Kimbanguist Church bring babes to be blessed at the dedication of their new religious headquarters and theological school in Kinshasa. Founded by Congolese prophet and faith healer Simon Kimbangu, the church fosters a strict moral code for its three million members, who forgo tobacco, alcohol, and "licentious" African dances.

bluffs meet the sea. Here the first white man to step ashore, Portuguese navigator Diogo Cão, landed in the 1480's. He found the flourishing kingdom of the Kongo, and for a time the kings of Portugal and Kongo exchanged "Dear Royal Brother" letters and ambassadors. But then the slave ships began to stand offshore. Over more than three centuries they bore away from Africa perhaps nine million men, women, and children.

Rails Take Over Where Rapids Begin

Just above Matadi, 80 miles upriver, the rapids begin. Here ocean freighters disgorge their goods for the rail trip to Kinshasa, where they are loaded onto river steamers for the voyage into the interior.

I booked passage on one of those steamers, the *Col. Ebeya*, bound for Kisangani, eight days upstream. She was a big three-decker with twin diesels; lashed to her bow and side were three tenementlike passenger barges

and an open cargo barge. With a thousand fellow passengers I pushed through a partly opened dockside gate and went aboard. My cabin, on the third deck, was large and comfortable. Second- and third-class passengers crowded four to six into small cabins on the passenger barges. Some slept on the open cargo barge to guard their possessions.

Life on board assumed a set pattern. Each morning many passengers drew water from the river with buckets to bathe themselves and to wash clothes, pots, and children. Then came the pilgrimage to the vendors, who huddled here and there on the barges, offering smoked fish, manioc, soap, cigarettes.

Now and then pirogues came out from the villages to trade. The men would paddle out and wait upstream; then, as we overtook them, they would grab frantically for the sides, their slim, beautiful craft quivering in our bow wake. Once the wave swept the length of a pirogue, emptying it of its meager

cargo of manioc and fish. The oarsman stood a moment, then, without a word, paddled back toward his village.

The ship's officers were Zairian. The Belgian officers, they said, had been assigned to shore jobs.

The Zairian captain, a short rotund man, seldom smiled. One morning he told me he had not slept well. "The responsibility, all these people." Then he left for the bridge.

That was on the third day, when the river changed character. The foothills of the Crystal Mountains had given way to a rain forest—and the river, free of constraint, spread several miles wide and embraced countless islands. Beneath its surface lay shifting sandbars. We hit one of them, but backed off and resumed our steady $5\frac{1}{2}$ knots within minutes.

At night only the beams of the *Col. Ebeya's* two great searchlights cut the darkness, sweeping this way and that, now catching an island, now the river—its surface dotted with clumps of water hyacinths that seemed to race toward us.

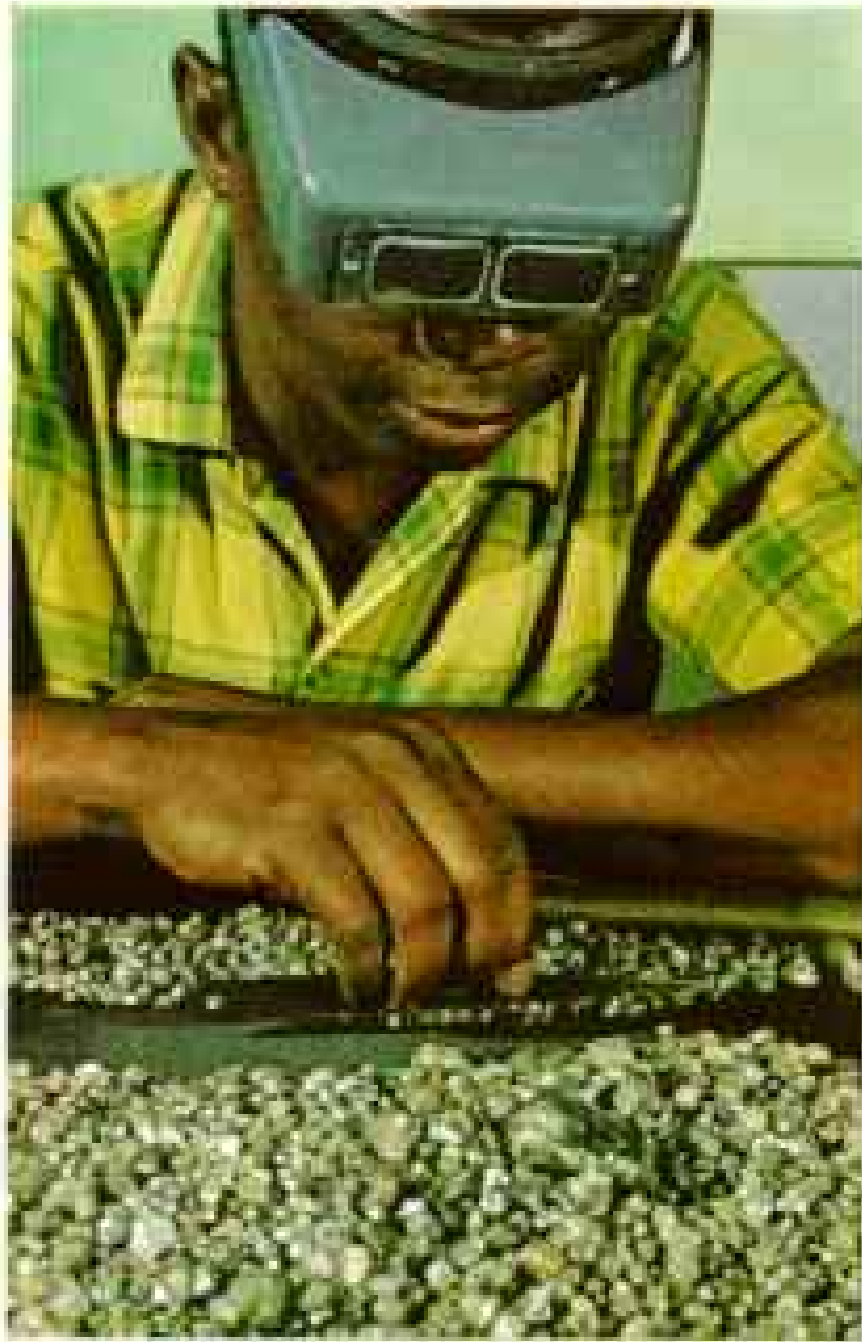
At Kisangani, the entrepôt of northeast Zaire, rapids again halted navigation. Formerly Stanleyville, the city memorialized the explorer who passed here on his epic 999-day traverse of the continent in 1874-77. Here and to the south had lived Arab slave traders who plundered the land until suppressed by the Belgians at the close of the 19th century.

Here, too, had centered the worst of a series of disasters that befell the nation after independence. The Belgians had only begun to plan for eventual independence for the Congo when, in the late 1950's, winds of freedom buffeted all Africa at gale force. The Belgians quickly pulled out, leaving in 1960 an exultant but ill-prepared young nation.

Within weeks the army mutinied, copper-rich Katanga seceded, and tribal fighting broke out. With the help of United Nations troops, the central government was preserved. But in 1964 the Eastern Rebellion erupted and enveloped a third of the nation. It fed on personal ambitions, the inexperience and

(Continued on page 416)





Mammoth earthmover chews through a layer of sand to reach diamond-bearing kimberlite in the province of East Kasai (below). Crushed, washed, and sifted, tons of ore yield a bonanza in industrial gems—only a handful, but worth thousands of dollars. Wearing magnifying lenses, an engineer examines the day's take (left).



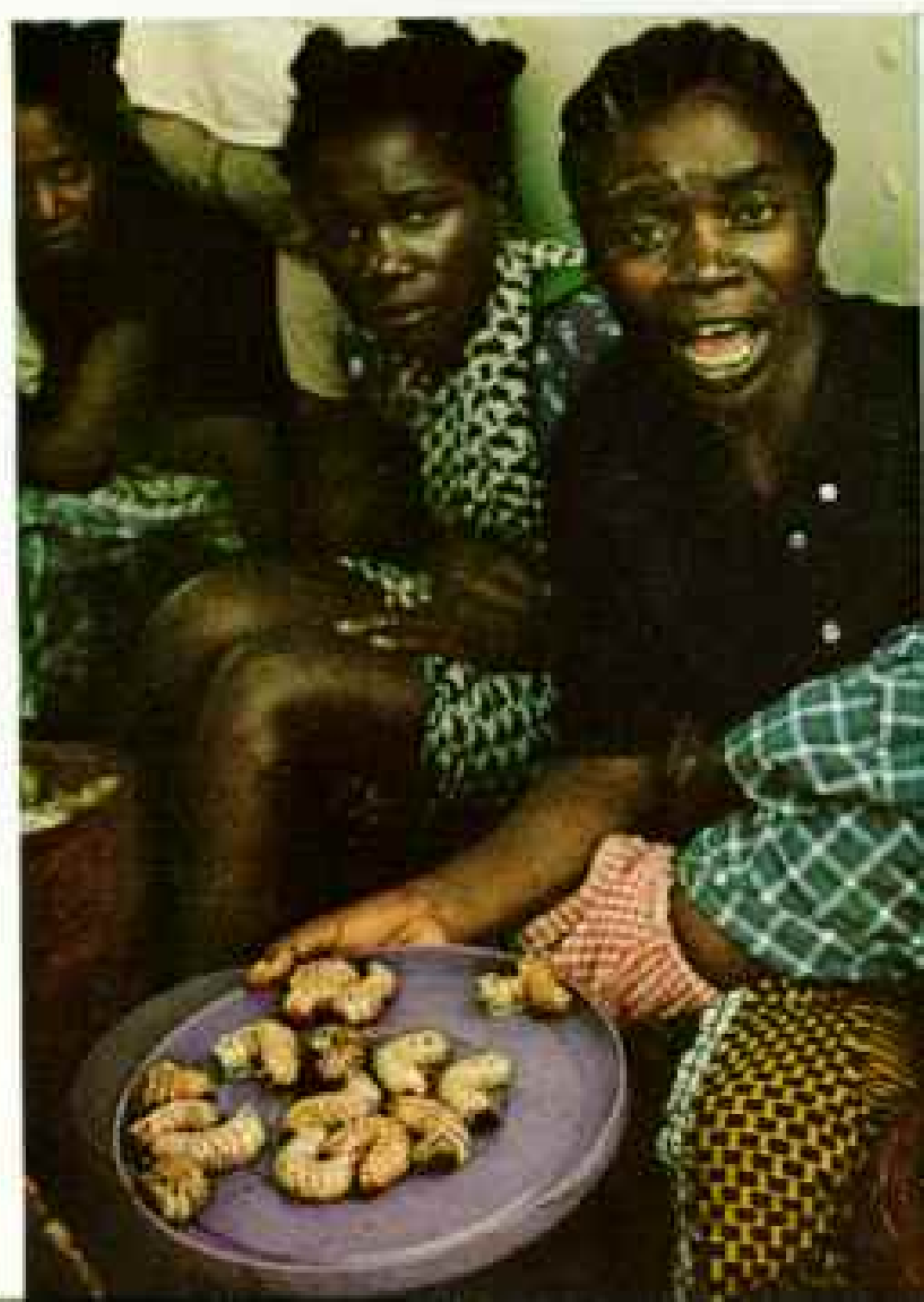
City that copper built: Lubumbashi (left) reigns as capital of Shaba, once Katanga Province. Shaba copper accounts for more than 60 percent of the country's export income. The distant slag pile attests to the metal's dominance over a region also rich in cobalt, tin, uranium, and manganese.







Hair-raising coiffures spring from the heads of imaginative students at a Protestant secondary school for girls in Mbandaka. The full "Afro" hairstyle popular in the United States is rarely seen in Zaire, although short Afros and Afro wigs are catching on.





JOHN J. PUTNAM (ABOVE AND LEFT)

Like ants drawn to sugar, pirogues from Bolobo town converge on a steamer bound up the Zaire River. Paddlers sell fresh fish and smoked meat to wholesalers on board, then load up with bread, beer, and other supplies.

Floating villages, riverboats use lashed-on barges to accommodate the overflow of passengers and cargo, and the vendors who sell cloth, bananas, fish, and succulent palm grubs (far left). Third-class passengers often camp out on the cargo barge (left) amidst crates and cars destined for Kisangani, where rapids block navigation. At some stops people and packages are off-loaded by pirogues, which serve as lighters (right).



corruption of local officials, a trickle of Communist arms and support, and the frustrations of the poor.

It also fed on witchcraft.

In Kisangani I talked with Dr. Alexander Barlovatz (below). The Belgian doctor, now 76, had chosen to remain in the city when the rebel army marched on it in August 1964. They held it as their capital for 111 days.

"One of the rebel leaders had developed a magic water that was supposed to make men bulletproof," Dr. Barlovatz said. "There were taboos, of course; if a man stole something, or if he had touched a woman, it didn't work. If someone was killed or wounded, then of course he had violated one of these taboos.

"The rebels believed in this magic water. Many regular army soldiers believed in it too. This city was taken by 2,000 men, armed in part with lances, bows, and arrows, and led by chanting fetishers. The regular army garrison collapsed.

"The rebels turned first on Congolese who had adopted European ways—schoolteachers and such. They simply slaughtered them."

When the tide of war turned, the rebels seized white hostages, hoping to use them to stop the advance of the army and the white mercenaries it had recruited. The Belgian and United States Governments, unable to free the hostages through negotiation, decided on an airdrop of Belgian troops.

The doctor and I drove to a residential

street, close by the city's heart. "The massacre occurred here," Dr. Barlovatz said. "A rebel colonel was marching the hostages toward the airport. But when they reached here, there was firing; the paratroopers were skirmishing with other rebels only 200 yards away. Then a rebel major—a deaf mute called Bubu, the local name for any mute—became excited and started firing on the hostages. They scattered. Some tried to reach the bungalow over there—and were shot down. In all, about 30 whites were killed here, perhaps 300 in other towns and in the bush. But the strength of the rebellion was broken."

Disorders Left a Bitter Legacy

The years of chaos cost Zaire dearly; plantations, medical stations, and schools were abandoned. Squatters and the forest moved in. Businesses were stripped of goods, bank safes blown open, government funds stolen. Highway maintenance ceased; rain and wind diminished the 90,000 miles of road to 12,000.

But a massive road rehabilitation program is underway. With loans from the World Bank, AID, and other agencies, the government hopes in five years to restore 30,000 miles. And thousands of whites have returned. They are needed now, as technicians, administrators, teachers, doctors.

The majority are Belgians, drawn back by commercial and family ties, or by sentiment. But there are other non-Africans: Portuguese,



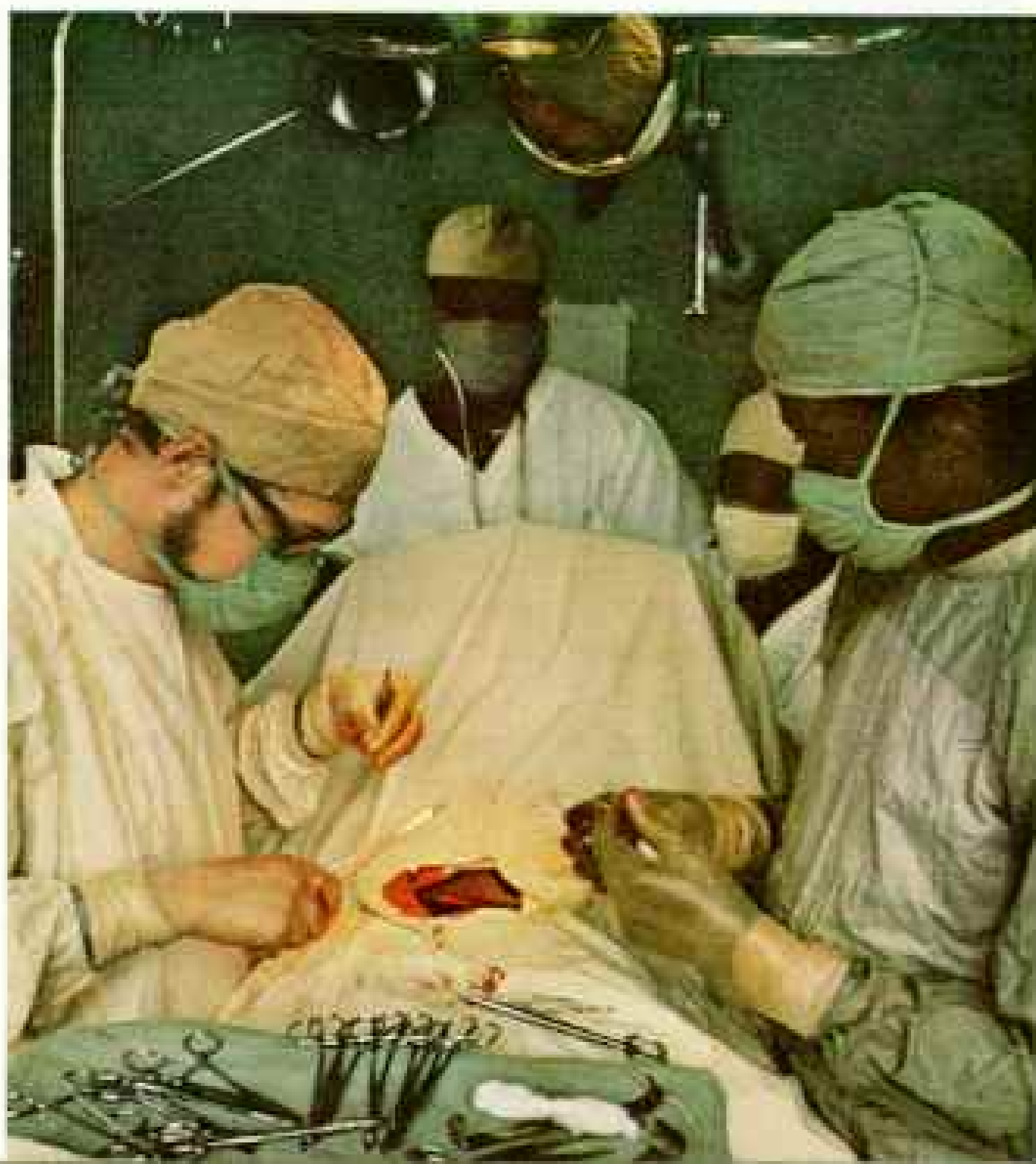


JOHN L. PUTMAN (ABOVE)

Medicine and witch doctors compete in a land where protein-deficient diets render even measles a major child killer.

Self-proclaimed "Prophet of God," Mampuya Mpesa diagnoses ills with huge metal keys applied to the afflicted area (above), then treats them with palm oil and "sacred" water.

Education, on lay and professional levels, promises to supplant folk medicine. An infant is examined (left) in the private clinic of Dr. Alexander Barlovatz. At a Presbyterian hospital Dr. Evert van der Veer performs a hernia operation (right). The Zairian nurses train as they work.





Five tons of friendship, benign Joseph scrounges a handout at a village

Greeks, and Pakistanis who run much of the nation's small retail business; the Israelis who train the elite paratroopers; the West German, Dutch, and Swedish pilots who fly the bush; the Americans, Canadians, and English—aid officials, consultants, missionaries.

It was on the road east from Kisangani that I met one of the private planters who—along with the great corporate plantations—produce the palm oil, coffee, and rubber that earn Zaire 13 percent of its foreign exchange. My car had broken down; there was no other traffic on the road. I watched the sun set and the moon rise; then a villager came to tell me of a plantation nearby.

As I stepped through the door of the house, I felt that I had been transported to a Greek island. The room was whitewashed, sparsely furnished, dimly lit by a gasoline lantern. At the table sat an old woman in a Greek head shawl, an old man clutching a shortwave radio, and a young man whose face showed years of toil and responsibility.

The young man was Andre Gerassinou, 22; the old woman, his mother; the old man, his uncle. Andre told me his family had come to Africa in 1938. His father died when Andre was 15, and he has run the plantation since. They have 750 acres of coffee trees, a rice mill, and two trucks—at the moment broken



in Virunga National Park.

down. They market their crops at Kisangani.

"It is a hard life—and lonely," he said. "We have no social life, only work. For a time it bothered me—now perhaps I am old before my time, for it doesn't bother me. Yet I know my life is not complete. But what Greek girl would want to come here to live?"

As if in a dream I heard Greek taverna music in the night outside; then Andre's younger brother entered. He carried a tape recorder from which came the voice of Melina Mercouri. He greeted me. We all talked on.

After a time I heard a child's cry. The old woman rose and left the room. She reappeared with a child in her arms, a beautiful mulatto

girl of two. She was limp, her coffee-colored face streaked with perspiration.

"She has malaria," Andre said, stroking her damp, matted hair. "She is my brother's child. When she was born, she was so beautiful we decided to adopt her. So beautiful we named her Diamando." The old woman rocked the child in her arms.

The next morning there was thick, sweet, Greek coffee and a bustle of activity. The uncle came by in a very old pith helmet on his way to the mill; workers raked coffee beans; the boys each bent over a broken-down truck; the old woman carried Diamando into the sun.

The boys got one truck running and filled my patched tire with air. Andre would accept no money. "Only, if you can, send us a photograph of Diamando." I did.

Government Ponders the Pygmies' Future

Now I had come to the Ituri forest, the last domain of Zaire's pure Pygmies, the country's earliest inhabitants. Their future is uncertain.

Today they gain their livelihood in three ways: They share a symbiotic relationship with their taller Bantu neighbors, trading the game they catch and guarding fields in exchange for metalwork and cultivated food; they move to the roads to demonstrate their skills to tourists and sell their wares; and they roam the forest in the immemorial manner, living off its plants and animals.

The government is considering what to do with them: Should they be integrated into modern life, or should their way of life be somehow preserved? *Can* it be preserved?

I wanted to see that life before it vanished, and so with two Bantu interpreters I marched into the forest from Epulu.

After five hours we reached our destination—a circle of conical huts. Here lived some twenty families. Their leader was named Makubasi. He wore a khaki shirt and shorts, and stood just over four feet tall.

He told me his band had moved here only two days earlier, when they could no longer find animals near their old camp. The women were still completing the houses. As we talked, Makubasi's house grew around us—his wife adding phrynium leaves to the sapling framework.

Life in the camp was never hurried, never idle. Men peeled and stretched plant fiber to make their nets, or fashioned bows and arrows; women cooked manioc or searched



Jungle miracle — or hoax? Pende tribesmen of the Mungonge sect seemingly skewer their cheeks with thorny sticks and arrows. After a brief dance, they remove their awesome adornments in secret, then return to the clearing—mysteriously free of wounds or scars.

their children's scalps for lice. That night I sat round a fire with the chief and some of the men. They brought drums, a bell, notched sticks. They sang: first a hunting song, lilting and charged with promise, and then the sweet and melancholy song for breaking camp and moving on.

The Pygmies had given me a hut; I slept on a straw mat on the earth. After everyone had settled for the night, I heard shouting and the blasts of a wooden trumpet in the forest. Two men had gone out to drive animals away from the encampment.

I awakened with the first pale light; the first sound was coughing; then a few quiet voices; then the camp was awake. The men draped nets over their heads and shoulders, took lances, knives, and machetes, and we walked swiftly into the forest. We stopped at a river to clean and sharpen lances in the sand. Then we splashed across. At length we sat down and the leader explained the plan for the day's hunt.

As we talked, the women passed by, some

with babies on their backs and spears in their hands. They would range far out, then turn and, with cries, drive the animals back toward the men's nets. We strung the nets, some of them fifty yards long, from branches and bushes, then retreated and fell silent.

In time we heard the distant cries of the women: "Ooh-AH, ooh-AH... Whoo-OP, whoo-OP..." The cries grew louder. Then, just as they were almost on us, we rushed toward a net.

When I reached it, the men were lifting out two *mboloko*, small antelope, beautiful, gentle-looking creatures (page 422). While two men held each animal by the legs, a third cut its throat, then set it on the earth to die. As the men gathered up the nets to reset them, I heard fragments of the hunting song that they had sung the night before.

Hours later, when the hunters returned to the camp, the women's back baskets were heaped with meat. At the sight of the bountiful catch, the camp grew lively.

That night there were more songs and

much talk. The meat smoked on racks above the fires, pots of plantain simmered, and the door of each hut was lit by a lovely forest lamp, fashioned from a leaf and fueled by an oil drawn from trees. The village seemed changed, more at ease. Food is a daily concern for the Pygmies, and for that day the concern had been laid to rest.

Virunga Looms Large in Zaire's Future

Animals have become more than just food to the majority of Zairians; today they have a new role—attracting foreign tourists to the country. I flew southeast from Kisangani to Goma, gateway to Virunga National Park. Established by the Belgians as Albert National Park in 1925, it stretches some 190 miles north from Goma. Within its boundaries lie grottoes and live volcanoes, one of the last homes of the mountain gorilla, and—at its northern end—a part of the Ruwenzori, the fabled Mountains of the Moon.

But my interest lay in the Rwindi-Rutshuru plains; there beside Lake Idi Amin Dada roam the great herds. At Camp Rwindi, the government-operated resort in the midst of the plains, I arranged a tour in a safari wagon with a Dutch family from Kisangani.

We started at daybreak. The two young children rose from their seats time and again: "Look, an antelope! . . . Look, an elephant! . . . Look, oh, look!" We saw rivers black with hippos (pages 424-5), and herds of dark and massive buffaloes. There were warthogs, baboons and blue monkeys, mongooses and jackals, hares and hyenas.

Once we followed a lion as he stalked a herd of Thomas's kobs—to me the most beautiful animals in the park. The antelopes spotted the lion and edged away; some of the males cried and trotted back and forth. The lion paused, then walked on. The kobs turned and bounded off as if on legs of springs. The lion shook his head and turned away. Perhaps another day.

I wanted a closer look at the animals. So Jean-Pierre von der Becke, a Belgian park employee, suggested a walk along the forest-fringed Rwindi River. An armed park guard accompanied us.

As we walked along, relishing the smell and snorts of hippos, he said, "We have about 25,000—the largest hippo concentration in the world. I consider them among our most dangerous animals. They look so benign, but they can run faster than a man. It is not wise

to get between a hippopotamus and the river."

Fresh elephant dung told us other behemoths were nearby. When they came crashing through the bush toward us, I knew a moment of fear. The park guard slammed a cartridge into his rifle chamber, and we stood frozen—for perhaps 30 seconds. Then the great beasts rushed past us to the river.

That night, in the comfortable lodge of Camp Rwindi, Jean-Pierre told me that the Rwindi, Rutshuru, and other rivers provide the herds with plentiful water and that the park holds adequate grazing. "There was a great slaughter of animals here in the '60's," he said. "It began with the disorders after independence and climaxed in 1968 with invasions by poachers from the surrounding territory. The animals survived only because of the heroism of Zairian park personnel; 23 were killed in line of duty."

During the troubles, Zaire's modest tourist trade vanished. Now it is growing anew. Jean-Pierre told me Camp Rwindi registered 5,000 visitors in 1971. The crowds will come. An airstrip has been built within the park, more comfortable round bungalows added at Camp Rwindi, and travel agencies are beginning to send groups.

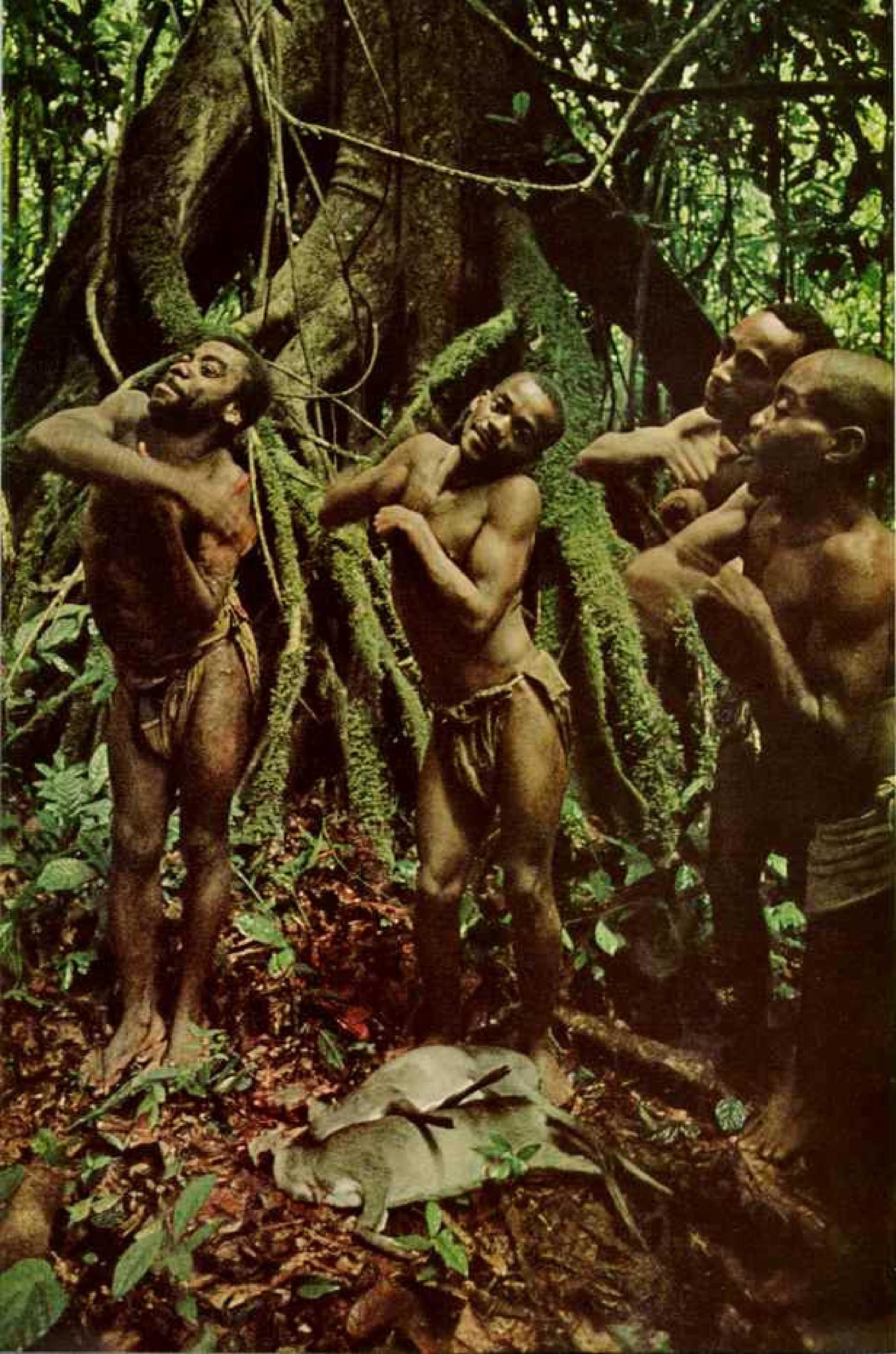
Life is Rich in the "Other" Kinshasa

Back in Kinshasa, the hub, I joined Sunday crowds to stroll the Presidential Gardens, like Versailles with fountains and formal walks. I visited the National Museum, not yet open, its rooms full of priceless tribal art—and then made my own purchases at the open-air Ivory Market in the heart of town.

In the evenings I might dine in one of the fancier restaurants on mussels flown in from Belgium, sit in the sidewalk Café de la Paix, or walk along the road by the river, with its fine old houses and great trees, and its view of the sun setting over the water.

I learned that Kinshasa was really two cities. One was composed of the business and government center and the plush suburbs—with their swimming pools and high walls, lush gardens, and barred windows and doors. The other was the Cité, in colonial times the "native quarter," today the home of the less than wealthy and of the poor.

With its small cubical houses, its bare yards, and freshly planted trees, the Cité seemed to grow before my eyes— inching outward across the stubble fields and up the hills, fed by a ceaseless flow of villagers come to



find jobs and bright lights. I spent several days and nights in the Cité with Malanza Lukusa, a young musician who writes and sings in the traditional modes of the Luba tribe. He is a gentle man, popular but often broke, and lives in a small house at the end of a puddle-filled dirt road.

We often visited his kin. At a cousin's house we lunched on *moamba*, a national dish—chicken cooked in palm oil—with a sauce of *pili-pili*, hot peppers, on rice.

And we passed the nights in the Club Zaire, a favorite of those of the Luba tribe. One night it featured a band from the Kasai. They were country boys, lean and taut, in white shirts and ties that stood out amid a sea of city sport shirts. They played flutes, whistles, and the *likembe*—an instrument consisting of a sound box and eight or ten metal spokes plucked by the thumbs—while their leader, Kabala, performed the hip dance.

Toward the end, Lukusa wrapped a brightly printed cloth around his own waist and stepped to the dance floor. Like pro fighters, he and Kabala faced each other and began to dance.

They danced and laughed into the night—and for the moment these Lubas were not in Kinshasa, but back in the rolling savanna of the Kasai. "I'm not lost here," they seemed to say, "I am known."

"What the President Plants Will Live"

In the streets of Kinshasa I heard a different kind of music, a song hit celebrating the country's new name:

*Day begins, my brothers,
The sun is here,
Night falls, my brothers,
Let Mobutu think,
What's he thinking of?
The heritage left to us by our ancestors. . . .*

The song reflects the power and thrust of the 42-year-old president of Zaire. Expelled from secondary school for truancy, Mobutu became in turn a sergeant major in the colonial army, a journalist, and chief of staff of the independent Congo's army. In 1965, amid

the troubles, he took charge as president.

Since then he has abolished all political parties but his own, made every official personally responsible to him, and struggled to weld his many peoples into one.

In 1971 he took up the cry of "authenticity," urging the revival of positive aspects of African culture. He changed the name of the country and of the river to Zaire. He dropped his own Christian names, Joseph-Désiré, to become Mobutu Sese Seko—meaning "the adventurous land." Throughout Zaire others were ordered to follow suit.

Clearly, he calls the shots. Perhaps in such a country it can be no other way. Few observers see an alternative, and all admit, "He brought stability." One Zairian told me grudgingly: "What the president plants will live. We are a stubborn people and need a strong hand."

Mobutu Woos Foreign Investors

General Mobutu has planted well in a number of areas, but none of his efforts seem more important than those to expand and diversify Zaire's industry. He has traveled abroad, offering generous profit and tax regulations to encourage foreign investment.

Often in Kinshasa I met representatives of the companies that have responded to that call: Goodyear, completing a new factory; First National City Bank of New York, opening a branch office; Gulf Oil, drilling offshore; General Motors and Ford, signing to build assembly plants. There were others, including British Leyland, Renault, Unilever.

Downstream from Kinshasa rises the most dramatic symbol of Zaire's quest for economic growth, the Inga Power Project. Designed by Frenchmen, built by Italians, the system and its dam, when fully developed, will be able to generate more power than any other hydroelectric plant in Africa. The dam's first phase was inaugurated in November 1972 and is expected to be completed in early 1974. Two additional phases will follow. Zairians hope the massive dam will make of their river valley an African Ruhr. They plan also an

(Continued on page 428)

Excited by the kill, Pygmies stand over two blue duiker antelopes and loudly slap their arms, signaling to the camp the kind of game netted. The little nomads—few are taller than 4½ feet—roam the Ituri forest in small bands, gathering wild plants and subduing prey with fiber nets or poisoned arrows. A close relationship exists between them and their taller neighbors, the farming Bantus. The Pygmies depend on the villagers for cultivated food and metal goods; in return they provide the Bantus with meat, honey, and leaves and saplings for housebuilding.



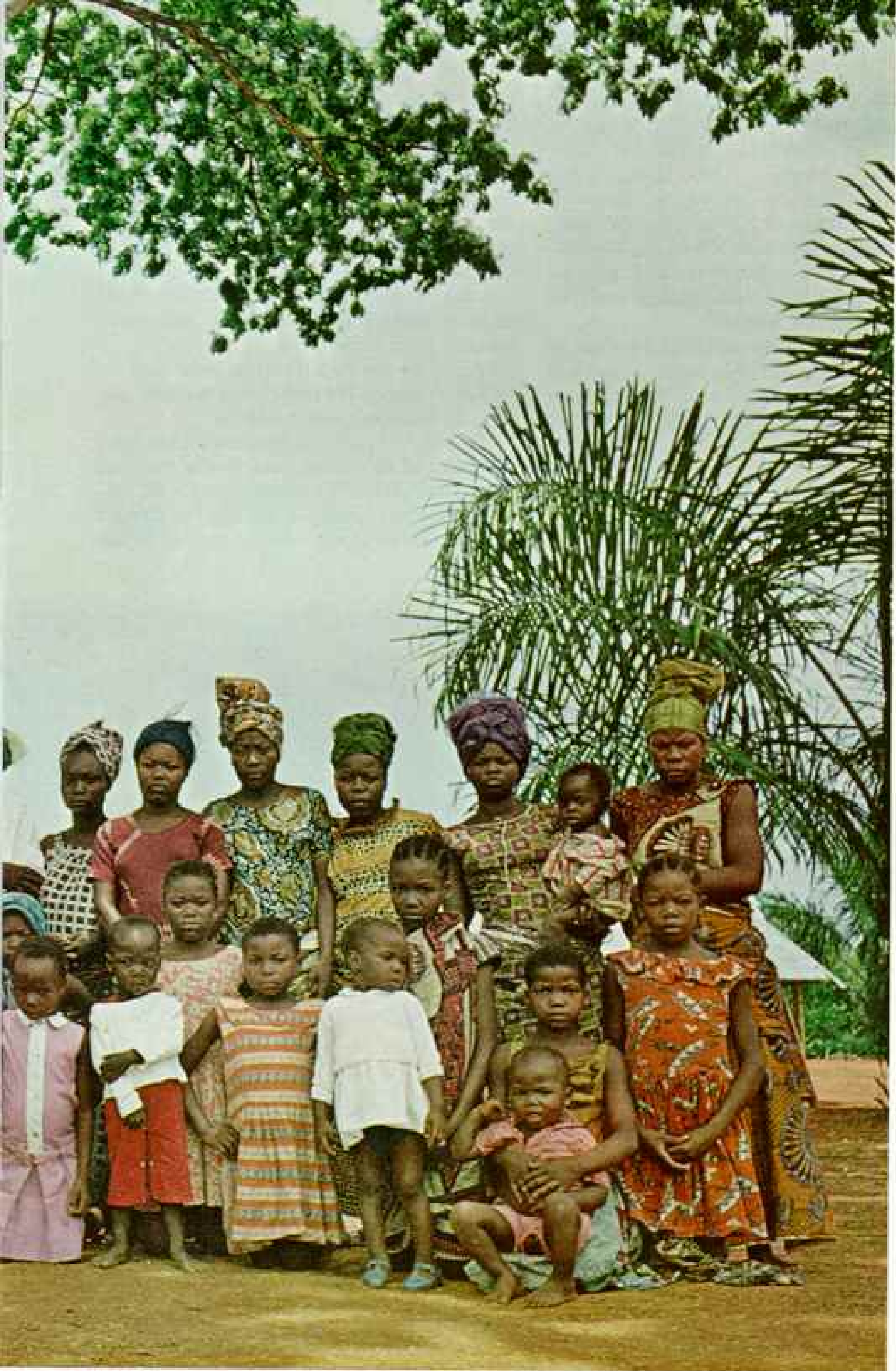


Watery fingers of the Zaire, as the Congo is now called, probe dense rain forest downstream from Kisanangani, alternately creating and destroying countless islands, ever molding new passages and shoals. In his travels on the river, explorer Stanley found it howling with "the insensate furies of savageland." Fighting off cannibals, hunger, and disease, he became the first to follow the mighty Congo's course.

Teeming with fish and crocodiles, some of Zaire's waterways also abound with hippos, here lounging in a river in Virunga National Park. Home of the world's largest concentration of the massive animals, the 190-mile-long park shelters some of Africa's most varied terrain and wildlife.



Family fit for a king: Chief Teingu's 36 wives and 25 children—more than half of them assembled for this portrait—proclaim his wealth as head of a Mangbetu clan in Upper Zaire. Heirs of one of the ancient kingdoms in the Congo Basin, the Mangbetu once



bound the heads of their young to elongate them. The beautification practice has nearly died out, but other traditions remain, including that of polygamy and a feudal system where tenants work the chief's land—here principally cotton and coffee plantations.

1,100-mile transmission line from Inga to feed Shaba's power-hungry copper industry.

Among the people I talked to about Zaire's prospects was Ekwa Bis Isal, a small, intense man in a dark suit and dark tie; only the small silver cross in his lapel marked him as a priest. He was born in 1926 near Kilwit, in Bandundu Province. His father was chief, and his mother was of a line of tribal judges and lawyers; neither was Christian.

Had he been born a generation earlier, he would have become a tribal judge, or possibly chief. But in the early 1930's the missions began to move into the area, asking the chiefs to let their children go to school. His parents agreed.

Today Père Ekwa, a Jesuit, is president of the Bureau of Catholic Education for Zaire—an important post in a nation where well over

half the students attend schools operated by the Roman Catholic church.

Père Ekwa explained that the Belgians had built a good primary school system, with some 50 percent of primary age children in school. But a secondary system scarcely existed and, at independence, there were fewer than 30 Congolese university graduates.

Zaire has moved strongly to overcome the gaps in postprimary education. But much remains to be done.

"First, we are dependent in large part on foreign teachers. We must build teachers colleges to make our own teachers.

"Second, the existing system does not meet the needs of all our students. It was designed almost exclusively to prepare people for secondary and university levels. We must find a way to train those who will not go on to higher



levels, so they can return to their villages with useful skills—in agriculture, animal husbandry, and so forth.”

Other educators have questioned the sharp increase in the number of university graduates. A developing nation often finds it impossible to offer suitable jobs to all. The result is sometimes unrest. And so Zaire races against time.

Sacred Powder and Human Sacrifice

I drove east from Kinshasa through the mountains, and swung south onto a dirt road. It quickly became two rutted tracks—leading first across a vast savanna, then into green humpbacked hills. I reached the Kwango River at dusk, crossed on the ferry to Popokabaka, spent the night at a mission, and the next morning drove on to Kasongo Lunda.

This is in the district called the Kwango, after the river. I had come here because it is a poor and isolated region, lacking development and still bound by ancient custom.

At Kasongo Lunda resides Kiamfu (King) Panzu Nzama Fumukulu. He is 72, has more than 20 wives and 70 children, and holds royal sway over some 400,000 people in some 40,000 square miles. As ruler of the Yakas, he is one of the heirs of the great Lunda Empire that rose before the 16th century and eventually ruled much of the southern Congo and even parts of Angola and Zambia.

The kiamfu sat on a lion-skin rug and recalled the old days. “There were terrible wars with the Chokwe and other tribes. But the Lundas, painted with the sacred red powder called *khula*, relied on their courage.

“On the morning of an attack the chief



Zaire's elite consists of a small corps of educated citizens like Mushieta Mahema Mpale, his Belgian wife, and their children (above). Son of a brewery truck driver, Mushieta became one of his country's first university graduates. He has served Mobutu's government as minister of finance, of economics, of culture, and of communications, and as ambassador to France. The family enjoys the luxuries of a new home and swimming pool, and riding at a nearby club.





JOHN L. PUTMAN (RIGHT)



Tree-lined boulevards and lush gardens reflect Kinshasa's Belgian origin. Named Léopoldville by explorer Stanley, Zaire's capital and largest city supports a wealth of industries, from textiles to shipbuilding to brewing beer. The city of 1½ million people throbs with nightclubs for the young at heart (left) who dance to hot, loud music—part rock, part African rhythms.

"One must keep pace," believes Luambo Makiadi (right). The songwriter and singing idol had switched from romantic ballads to tunes with political lyrics long before a nationalistic 1972 law abolishing foreign-sounding names caused him to drop his old name, Franco. His willingness to change reflects the mood of young Zaire, faced with the problems and growing pains of 20th-century nationhood.



would go into his house and smear his face with the powder, while his first wife would stand outside with her legs apart. Then the chief would race out of the house, through the first wife's legs, and direct to battle."

The kiamfu's son, who carried a transistor radio to hear the day's soccer game in Kinshasa, said that in the old days the tribe practiced human sacrifice. "Usually it was a nephew of the kiamfu; they twisted his head until he died. Then, with tendons from the back of his neck, they made the royal bracelet. Today, of course, the bracelet is made of sheep tendons."

But there are those in Kasongo Lunda who say that the present kiamfu's bracelet, or *kazekele*, is made of human tendons. The kiamfu kindly showed me his royal regalia—the *nzundu*, two iron nails linked by a short piece of cord; the *tsapu*, the basket in which is kept the khula and the sacred white clay; the *mbele poko*, the short, wide-bladed ceremonial sword symbolizing life and death. But he did not show me the *kazekele*.

Banana Plant Teaches a Lesson

There were four priests at the little mission at Kasongo Lunda. The two older serve the town; the younger two, traveling by jeep and on foot in two- and three-week swings, each serve about 60 villages and 50 hamlets.

Père Alain van der Beken, one of the younger priests, showed me the little book in which he keeps his parish records. His villages hold 8,156 people, of whom 70 percent follow traditional African beliefs.

The village of Dibulu, which we would be visiting, holds 295 people, of whom 196 are baptized. Of the 45 married men, seven have more than one wife. All seven are baptized, but do not observe church teachings.

We drove the next day through the hills down to the Kwango River, dark and swift, and the village beside it.

As we walked through the village, women were pounding and sifting manioc. One house was being pulled down; a man had died there, so it harbored evil spirits. The door to another house was hidden by a screen; behind the screen was a young banana plant,

indicating that twins had been born there recently, but that only one had survived. The father came to the door. He told us that when he planted the banana plant four months earlier, it was only 2½ feet tall—now it towered 12 feet.

When would the screen come down? "When the living child can walk." What was the origin of this custom? "It has been done so since the ancestors."

"There is a proverb about the banana," Père Alain said. "When the plant dies, the shoots grow."

He led me to an old plant, its fruit gone, its top withered and black; at its base, green shoots reached upward. "It is a way of accepting death, and understanding immortality."

Freedom Has Brought Few Jobs

That night some of the older men brought chairs and stools and we sat in a yard around a kerosene lantern and talked.

I asked what changes had come into their lives since independence.

"Before, there was no work; now, there is no work. But we like independence." What was their hope? "Work, to get money, classrooms for our children—if there is work, all suffering will end."

While we talked, a few young men brought drums, warmed the hide heads over a straw fire, and began to play and sing. A few girls joined them. Their songs revealed that Radio Kinshasa had penetrated the hills that had barred progress. One song proclaimed:

*The young are Zairian,
The old are Congolese. . .*

The older men shifted in their chairs.

The next morning Père Alain heard confessions, set up a small portable altar in a yard, and celebrated Mass. His sermon told of salvation, of joy following suffering—as the banana shoots follow the death of the old plant.

But for the people of Dibulu, I had learned, salvation had a second meaning: "Work, to get money, classrooms for our children. . . With work, all suffering will end."

I hoped, in their reach for the future, the people of Dibulu and of all Zaire would find the salvation they sought. □

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As one of the benefits of membership in the National Geographic Society, an index for each six-month volume will be sent free, upon request, to members who bind their *GEOGRAPHICS* as works of reference. The index to Volume 142 (July-December 1972) is now ready.

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COVER: Eskimo whalers ply slushy waters off Alaska in their walrus-skin boat (page 348). JOHN BRIDGES

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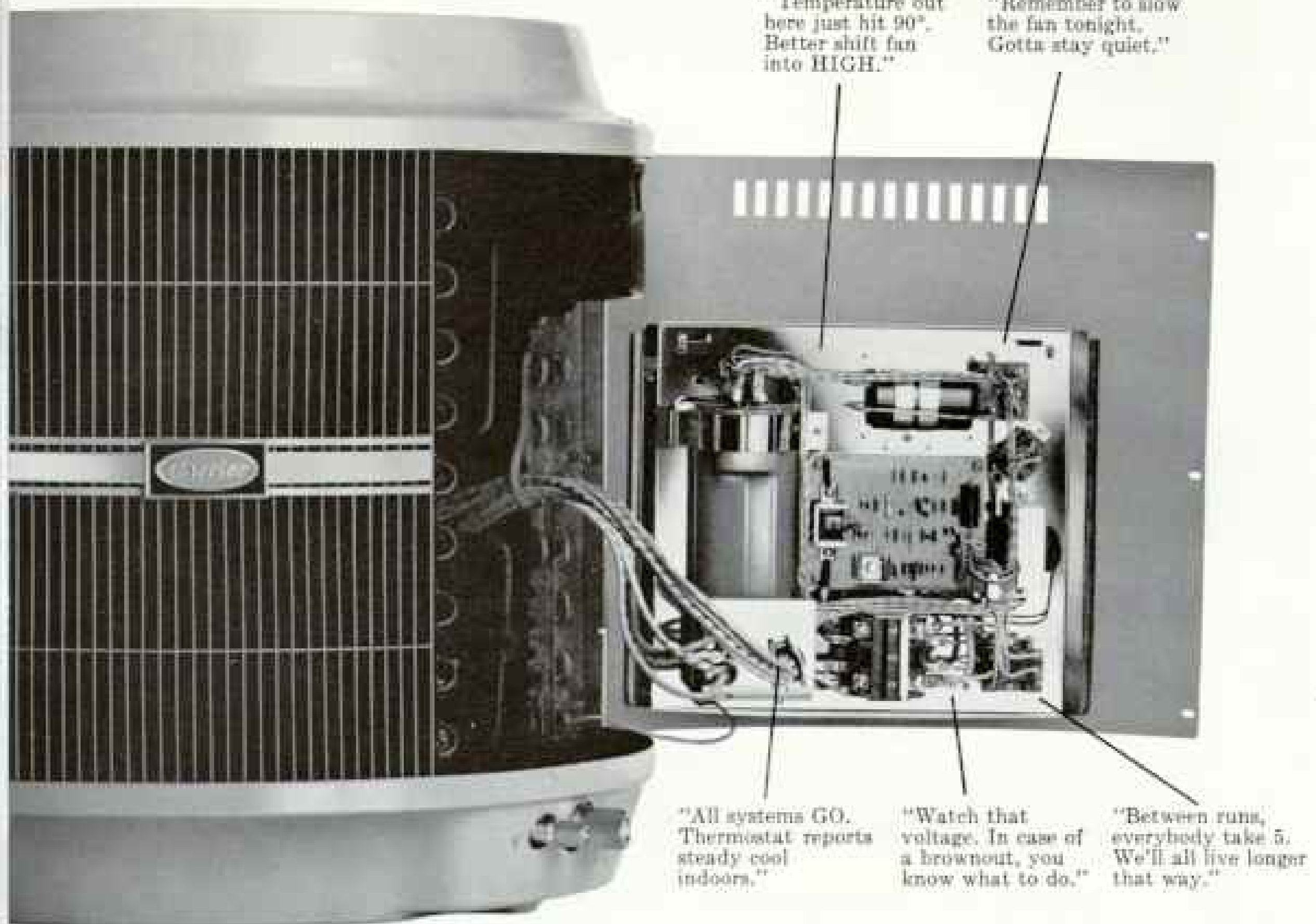
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Poet with a camera

"I LIKE TO MAKE PICTURES of the small things so that people will love them and not step on them." In this spirit, Harry S. C. Yen celebrates on film the poetry he sees in nature's everyday creations. Here, lying prone in his backyard, he composes an ode to a stalk of arrowhead. A mirror reflects sunlight onto the small blossom, shaded by a nearby tree.

Born in Hangchow, China, Mr. Yen joined the photographic laboratory staff of NATIONAL GEOGRAPHIC in 1964. His nature portraits have earned him wide recognition, culminating recently in the prestigious Master of Photography degree, an award by the Professional Photographers of America.

Throughout the year skilled photographers like Harry Yen capture earth's rare and familiar beauties for NATIONAL GEOGRAPHIC. Let your friends share your pleasure; nominate them for membership on the form below.



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How to get the for your money.

Buying stereo can be confusing.

One friend says you have to spend a mint. Another tells you about a "special" bargain on a foreign-made set. And overly enthusiastic salesmen might just confuse you with all kinds of technical specs.

Well, fact is you do have to know a little bit about stereo to make sure you're getting the most music for your money. But you don't have to be an engineer. Or even a buff. Just an intelligent shopper armed with a few basic facts.

So here they are.



Start with the Receiver

A good music system starts with a good stereo receiver. (A stereo receiver is a combination of a stereo amplifier and AM/FM/FM stereo tuner.) So that's a logical place to begin your buying.

But picking the right receiver is no picnic. Because receivers by themselves don't do a thing you can see or hear. They just receive tiny sound impulses from a record, tape, or radio station, magnify them millions of times, with as little distortion as possible, and drive the speakers with the magnified impulse.

All of which means that two of the most important things to look for in receivers are how much distortion takes place and how much power there is to drive the speakers.

Distortion ratings (called T.H.D.) are simple. The lower the number the better. For example, Sylvania receivers CR2742 and CR2743 both have a rating of 0.5% at full power output, which is considered good.

Power is a bit more complicated. There are several kinds of ratings. But the one that counts is the

"continuous" or RMS rating. Here the higher the number, the more power you have to drive speakers. A receiver like the Sylvania CR2742, with a continuous power rating of 25 watts per channel, can easily drive four big speakers. If you want an even larger system, with speakers all over the house, the Sylvania CR2743 can handle them with a continuous power rating of 50 watts per channel. If you can't get a continuous power rating, be suspicious!

The next things to check are the features. A good stereo receiver should have solid-state circuitry, Field Effect Transistors (FETs), and ceramic filters. We won't go into their technical functions here, but be sure to look for them while buying. Quality receivers will have them.

Your receiver should also have a full-function jack panel (like the one on the back of the Sylvania CR2743 shown below) that allows you to add extra speakers, tape decks, headphones, or other equipment. And make sure there's built-in capability to adapt the new quadraphonic sound systems in case you want to expand in that direction.

Every Sylvania receiver, for example, has built-in Phase Q4 matrix four-channel circuitry to enhance ordinary two-channel stereo. This gives the effect of four-channel sound. In addition, you can get true (discrete) four-channel sound simply by adding our special new DMQ2784W quadraphonic converter. (And of course in both cases you need two extra speakers.)

Finally, check the price. As a guide, the Sylvania CR2742 gives you 50 watts total continuous and all the rest for \$199.95.* The CR2743 gives you all that and 100 watts total continuous for \$279.95.* So no matter what brand you choose, make sure you get just as much for just as little.



Onward to the Speakers

The technical stuff's out of the way. Now comes the fun part.

most music

The only way to buy speakers is to listen to them. Compare the different sounds from the different sizes. Ask the salesman about "air" or "acoustic" suspension speakers. In general, they deliver the most satisfying speaker sound.

Make the salesman work a little. Switch back and forth between the big, medium, and small speakers. Play it by ear. The ones that sound best to you are the ones to buy.

Just keep your eyes out for a few things while your ears are busy. Make sure the receiver driving the speakers you're hearing is the same as the one you're buying. Otherwise you won't be getting the same sound once you get the speakers home and hooked up to your receiver.



And remember, the word "speaker" refers to two things. It means the individual speakers... woofers, tweeter, etc. But it also refers to the whole speaker cabinet, which generally contains more than one individual speaker. Be sure to check out how many speakers there are in any speaker cabinet. Two, a woofer for low notes and a tweeter for high ones, is a minimum. Bigger speakers, like the Sylvania AS125A, will have at least three: a woofer, a dome mid-range, and a dome tweeter.

Prices range from \$149.95* for the big Sylvania AS125A with three speakers to a cabinet, down to \$59.95* a pair for the Sylvania AS1706W with two speakers each.

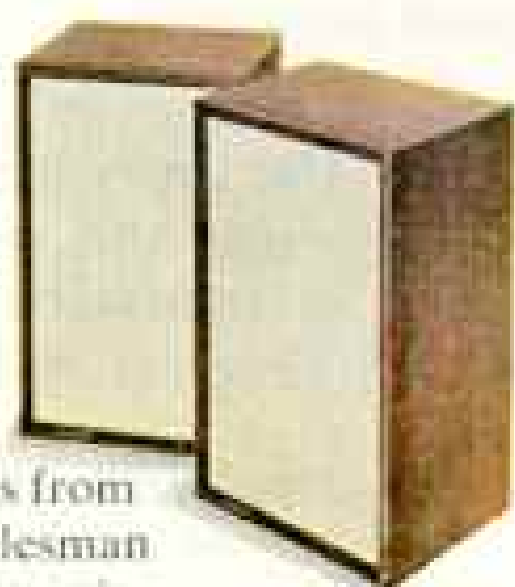
But above all else, pick the speakers that sound best to you.

Now It's the Turntable's Turn

There are a few manufacturers who specialize in making turntable mechanisms. It's their thing, and their product is definitely superior.

The only trick to buying a turntable, then, is to make sure that you get one whose guts come from one of these specialists.

Any audio manufacturer should be more than happy to tell you who made his turntable mechanism.



For example, Dual (one of the big names) made the changer in Sylvania's T2705 Automatic Turntable. Garrard (that's another big one) made the changer in our Model T2703.

Ask for magnetic cartridges on your turntable. They're more sophisticated and pick up sound impulses better than ceramic cartridges.



Both Sylvania turntables have them.

Things like cue-pause control (which allows you to gently raise and lower the tone arm to any hand you choose) and anti-skate control (which equalizes

pressure on both walls of a record groove to give less sound distortion) are usually standard on quality turntables like a Sylvania.

E-x-p-a-n-d-i-n-g

Price guidelines are \$139.95* for the T2705 and \$79.95* for the T2703.

Adding tape facilities is a simple way to expand your basic stereo system.

You can add a Cassette Play/Record Tape Deck like the Sylvania CT160 to play pre-recorded cassette tapes over your speaker system. Or you can record your own in two-channel stereo.



Or, you can go the 8-track route, with a Playback Deck like the Sylvania ET2750W.

That way you can use car stereo tapes at home, and vice versa.

Good Luck!

By now you're a lot smarter about stereo. You know basically what to look for. And you've got some guidelines on what to pay.

So now's the time to go shopping. Look around. Compare. Get the most music for your money.

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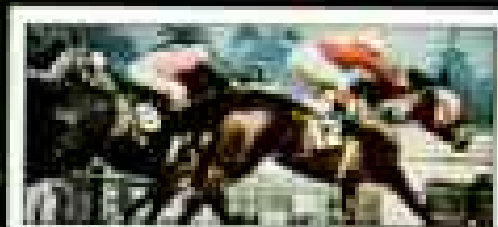
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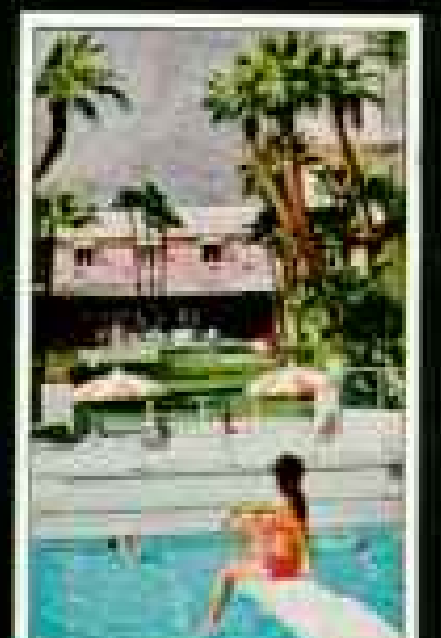
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*Manufacturer's Suggested Retail Price for the Century Luxus includes vinyl top, bucket seats, whitewall tires and disc wheel covers, outside rear-view mirror, protective moldings, bumper strips, bumper guards, and dealer new vehicle preparation charge. Other options, state and local taxes and destination charges are additional.



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1. A NEW ERA IN MOTORHOMES IS BEGINNING.

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We found that the simpler the basic construction, the fewer the problems. So we started with a strong, durable, steel perimeter frame and attached to this a cage of heavy aluminum ribs.

On top of this, we bonded both aluminum and fiberglass panels molded to a smooth finish. It's the same construction people are flying all over the world in.

Except now you'll be driving.

2. MORE POWER TO YOU.

To give you excellent road performance, we installed a 455-cubic-inch V8 engine up front and coupled it to a

3-speed Turbo Hydra-matic transmission. We coupled that to a front wheel drive unit with a 3 to 1 ratio and put it all on top of torsion bar springs and stabilizer bar.

3. A MOTORHOME IS NO FUN IF IT'S NO FUN TO MOTOR IN.

We took our basic construction and raised it only 15" from the ground. This puts the center of gravity only 37 inches above the ground. For easy handling.

See the rear wheels. We put one behind the other for four reasons: To give you a wider base. More room inside. Greater stability than you'd have with dual wheels. And so we could place a special air spring between the two wheels to pass the bumps from one to the other instead of to you!

These air springs are the only ones of their kind on motorhomes.

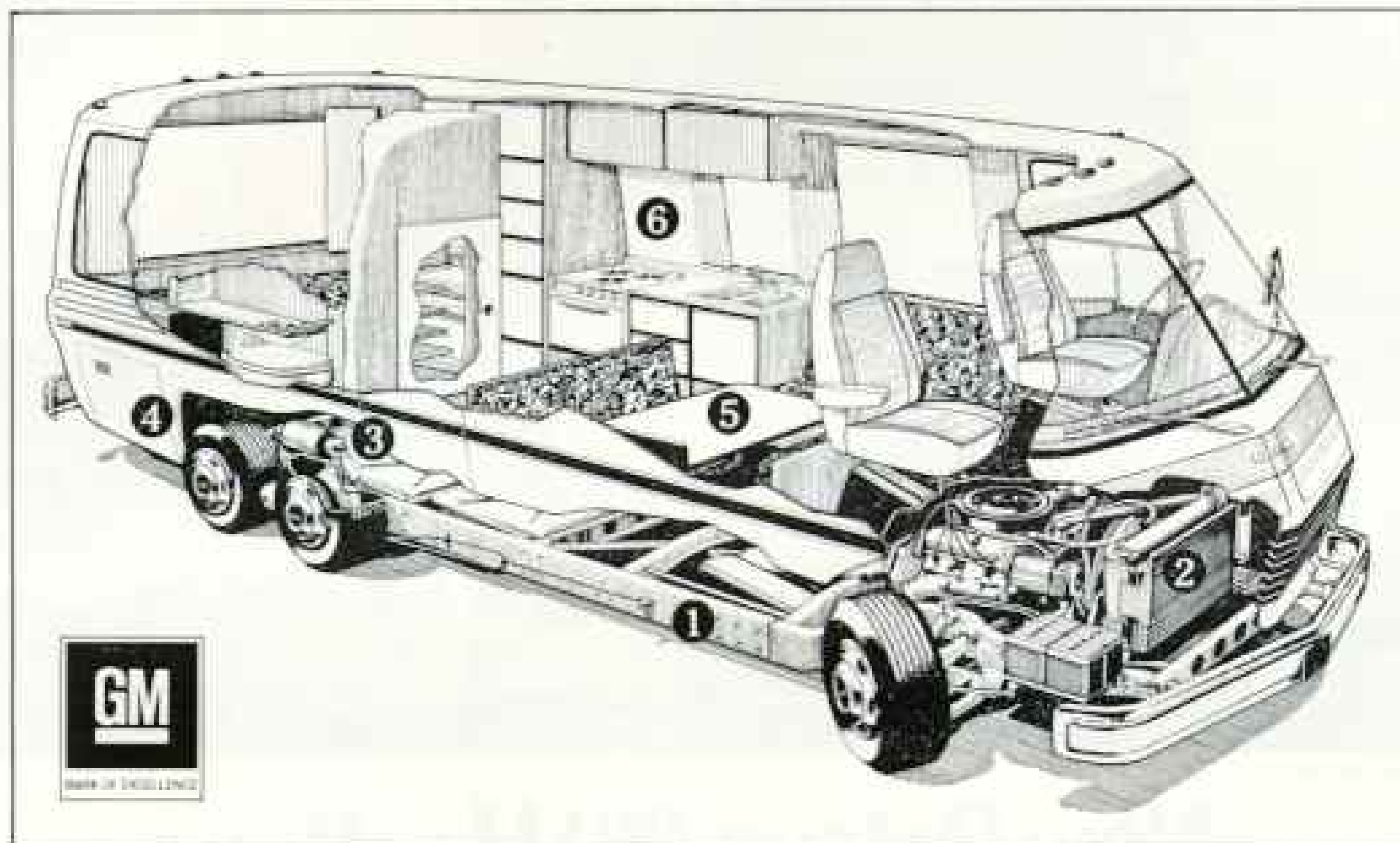
4. ABOUT OUR SIX-WHEEL BRAKING SYSTEM.

In addition to power steering, there's a six-wheel braking system with power disc brakes up front and four large finned-drum power brakes in the rear, plus an available leveling device operated from the driver's

inside, we had *House and Garden* magazine's interior designers help us.

There are thick, shag or cut pile carpets. And wood-grained vinyl on the walls and cabinets.

You also get a choice of four color-coordinated interior decors.



compartment for parking on uneven ground.

Incidentally, the parking brake grabs all four rear wheels.

5. CHOOSE FROM 15 DIFFERENT FLOOR PLANS. TWO LENGTHS.

The GMC MotorHome is available in 23- and 26-foot lengths. The standard 26' floor plan includes a dinette that converts to a double bed opposite a sofa that turns into double bunks. In the middle, a double sink, 6-cubic-foot refrigerator (it's electric so there's no pilot light that'll blow out), a range and oven with exhaust hood. There's also a bath with all the necessities plus ample cabinet space.

6. WE INCLUDED TOP INTERIOR DESIGNERS IN OUR PLANS.

To put the finishing touches on the

7. ONE-STOP, ROUND THE CLOCK SERVICE.

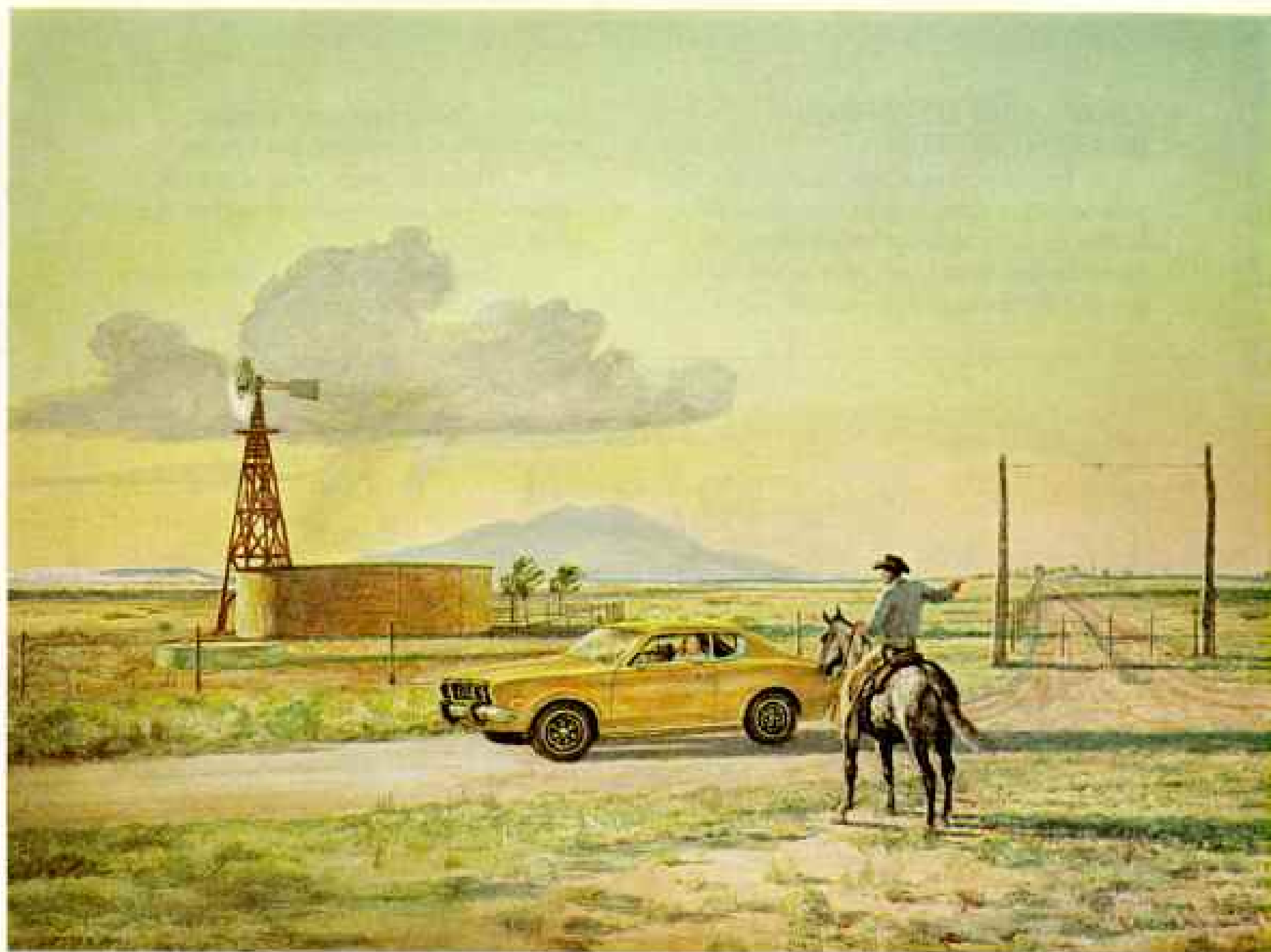
Your GMC MotorHome dealer services everything he sells. Inside and out. From the engine to the air conditioner and furnace. And there's a toll-free number you can call and immediately get the number of the nearest MotorHome dealer representative available for assistance around the clock.

For our 28-page, four-color catalog, write GMC MotorHome Headquarters, Drawer Y, Dept. 113, Lansing, Mich. 48909.

Better yet, see your GMC MotorHome dealer. He'll show you around the house.



The MotorHome from General Motors.



"There is the right road"

©Peter Hurd

New Datsun 610 Hardtop. An original portrait by Peter Hurd.

We asked Peter Hurd, one of America's best-known artists, to portray the new Datsun 610 for several important reasons. His career has given us a treasure of landscapes and portraiture. His is an intensely personal style that we felt could best portray the unique, personal nature of our newest automobile. The result is shown here, a Datsun Original by Peter Hurd.

The 610 2-Door Hardtop is a luxury economy car.

It has an 1800 cc overhead cam engine, solid unibody construction. Power-assist front disc brakes. Fully independent suspension. Plus luxury touches like vinyl upholstered interior with fully reclining bucket seats and center console, tinted glass, full carpeting and more, *included* in the price. Mr. Hurd has found the real essence of our car. A test drive will bring the same rewarding experience to you.



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For more information, get in touch with your travel agent or Eastern.

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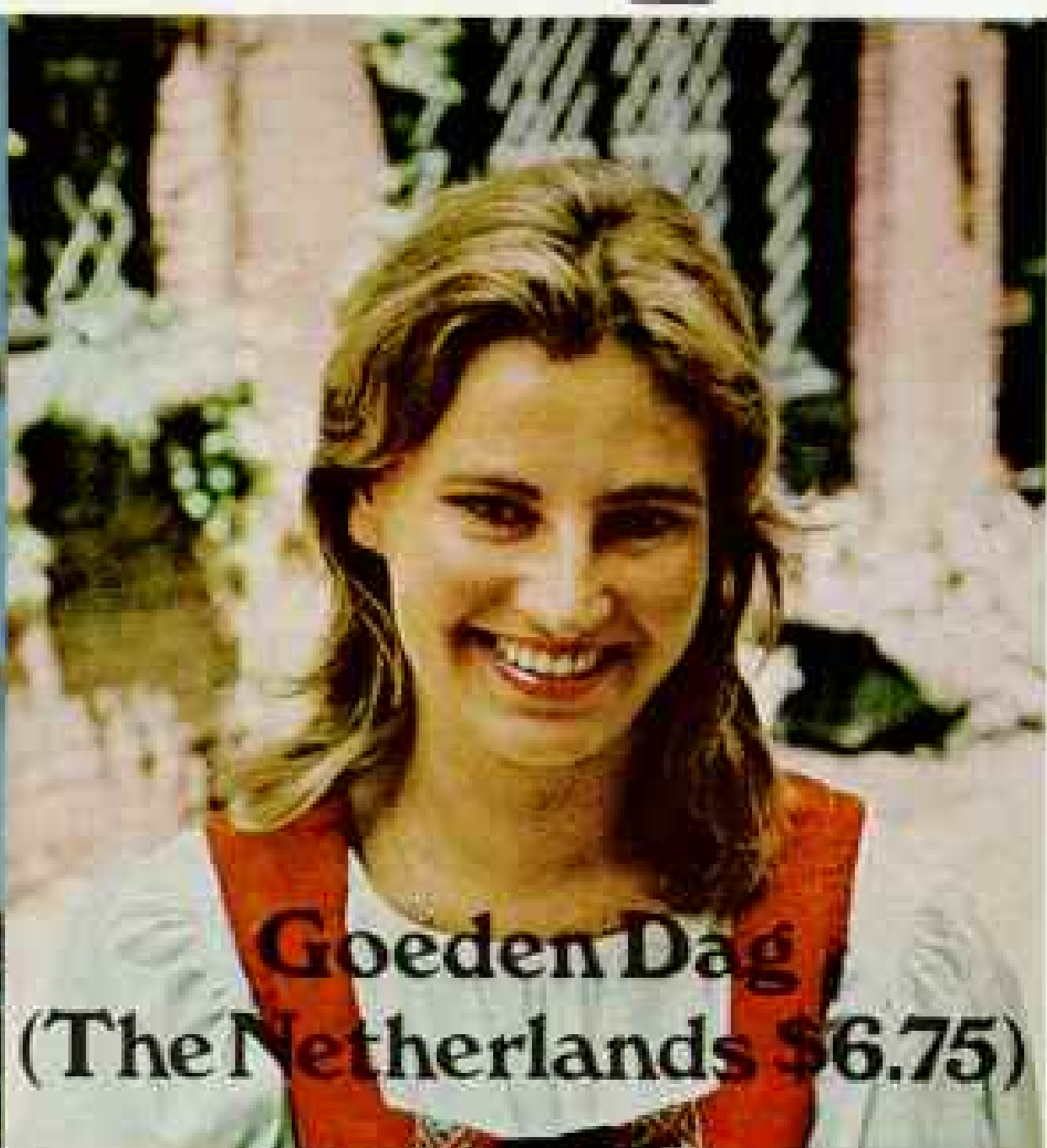
EASTERN The Wings of Man.



Hello, Europe.



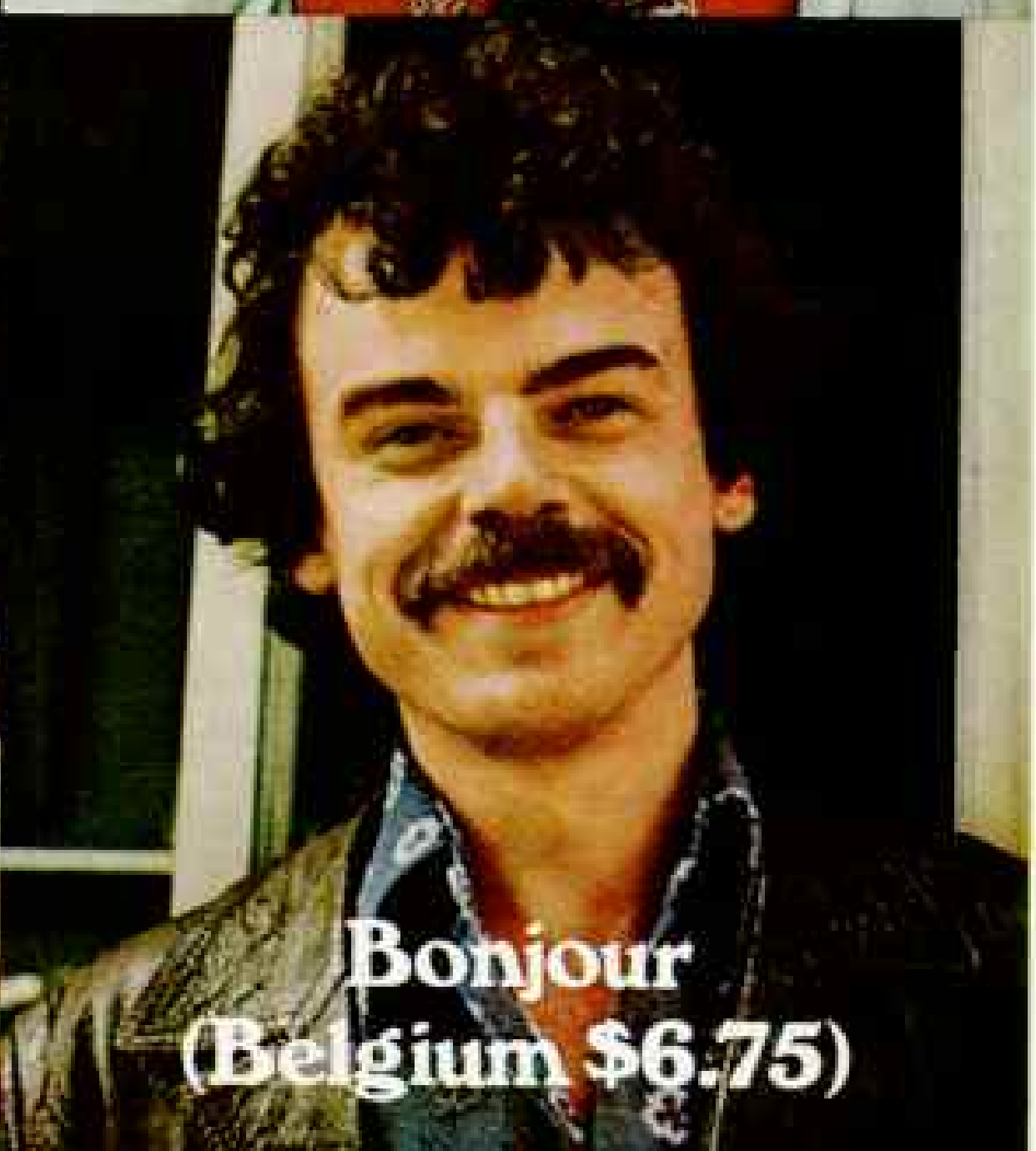
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with a pocket Carousel projector.



Did you know that the same little Pocket camera that gives you big, beautiful snapshots can also give you dazzling slides?

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To show them at their best, there's the Kodak pocket Carousel projector. It's only a little over 8 inches square. Yet the slide tray holds 120 slides! (You can also show your Pocket slides on a 2x2 projector using special slide adapters and, preferably, a 2½- or 3-inch lens.)

See the Kodak pocket Carousel projector at your photo dealer's. There are three models and a choice of automatic features. From less than \$100.

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"It sure makes you feel better about your breath," Jesse exclaims. Clinical test results show Colgate freshens breath as long as a leading mouthwash.

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He wouldn't think of brushing with anything else.



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Taster's Choice® looks,
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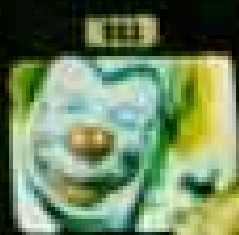
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not all.



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MAKES FRESH COFFEE
IN SECONDS.**

**OUR COMPETITION
IS STILL
BOILING.**

Which Color TV has the best picture ?



People from all over America looked at the six leading big-screen color TV's. They voted Zenith the best picture by more than 2 to 1.

Test conducted by Opinion Research Corporation, at the Conrad Hilton Hotel, Chicago.

How the test was made

The entire test was conducted by a leading independent research organization, Opinion Research Corporation, of Princeton, New Jersey.

Opinion Research purchased six new color television sets directly from retail stores. All sets were 25-inch (diagonal measurement) solid-state, full-

featured models representing the six largest-selling brands in the United States.

The test was set up in the lobby of America's largest hotel, the Conrad Hilton in Chicago, to reach people from all over the country.

All six sets were masked so they couldn't be identified. Only the pictures were visible. Each picture had a number above it. Viewers were asked to vote, by number, for the best picture. At the end of each day of voting, the sets were rotated to new positions.

Different independent TV servicemen, selected by Opinion Research, were brought in each day to readjust the sets after they were rotated.

These servicemen, who monitored the performance of all sets continually, had authority to replace components or make any alteration necessary to maintain all sets at peak performance.

By the end of the test, 2,707 people, representing every state in the nation, had voted. The ballots were compiled and tabulated by Opinion Research.

As shown in the table, Zenith was picked by more than 2 to 1 over the next best brand.

See the difference for yourself at your Zenith dealer.

Which color TV has the best picture?	
Zenith	50.1%
2nd best brand	21.1%
3rd best brand	8.8%
4th best brand	5.5%
5th best brand	5.8%
6th best brand	5.7%

Percent of Ballots



Simulated TV picture

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**Smile,
you're with
 Safeco**

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So the book we wrote about it isn't just another one of those travel leaflets.

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It talks about golf courses, from one of Sports Illustrated's "18 Best," to courses you can enjoy even if you don't break 100.

It talks about fishing, from mountain streams to piers on the Atlantic Ocean.

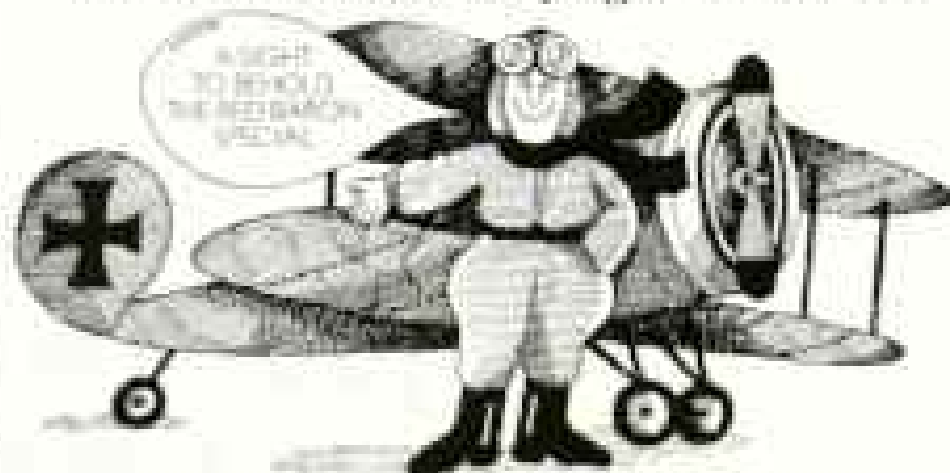
It talks about camping, from the most civilized campsites you'll find anywhere to backpacking in the Blue Ridge.

It talks about our gardens, from three of "the World's Thirty-Eight Great Gardens," to some less famous, but just as beautiful.

And it talks about a few hundred other things that we think will make you want to come here on your vacation.

Just send us this coupon and we'll send you our beautiful book. Free. Do it now.

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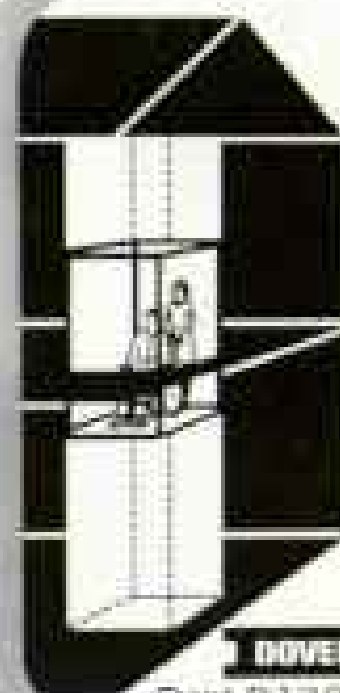
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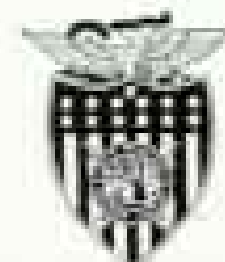
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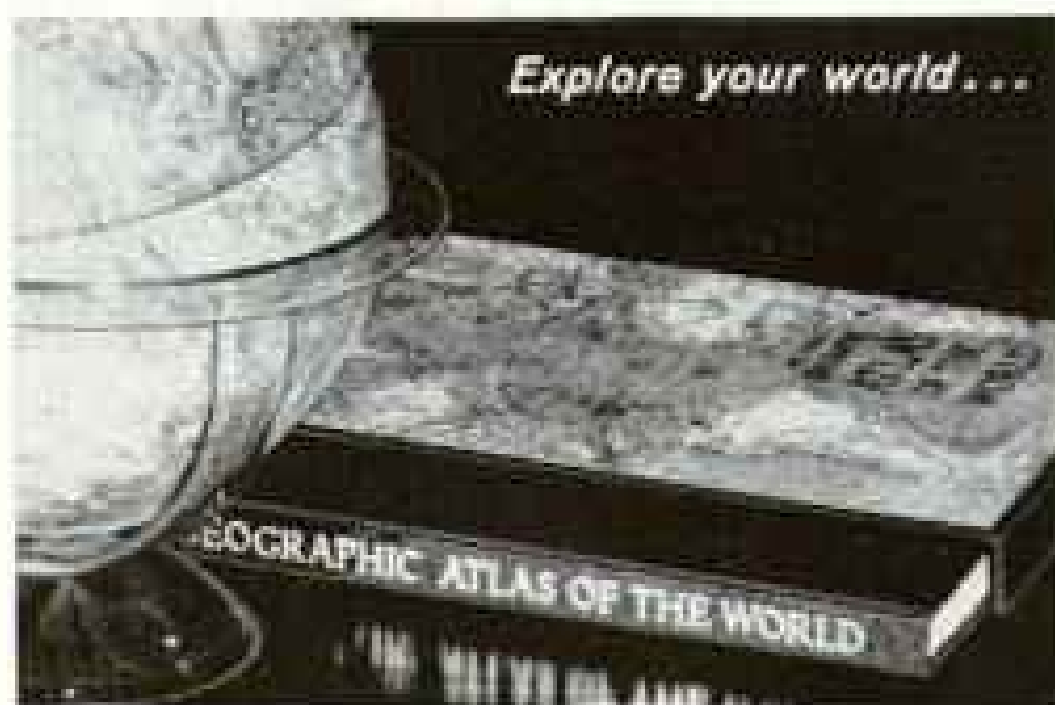
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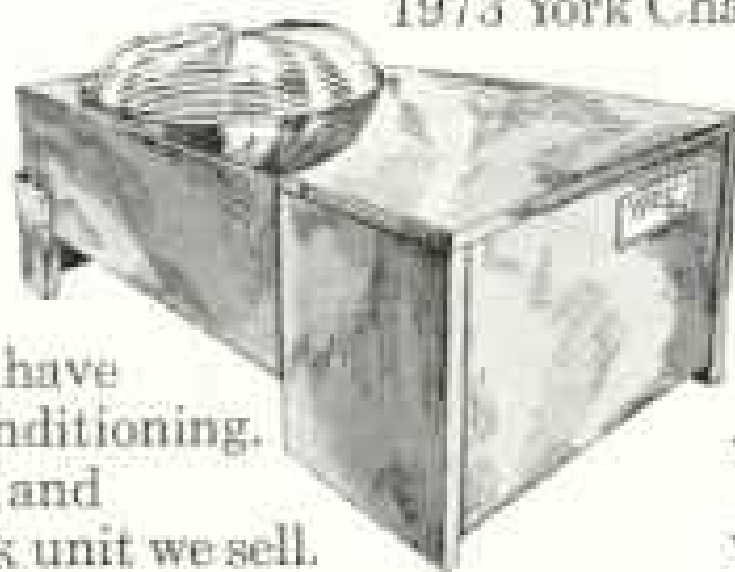
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