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COVER: Commuting en masse, cyclists make slow headway across Shanghai on a rainy spring afternoon. Photograph by Stuart Franklin.

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Shanghai

Where China's Past and Future Meet


乳酸菌之王
TAXI

By WILLIAM S. ELLIS ASSISTANT EDITOR
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WHEN IT IS RAINING and millions of bicyclists have pulled on slickers of yellow and blue and red, and the city is awash in soft, wet color—when the streets are mirrors calling down shimmering images of the bordering plane trees—that, I think, is the best time of all to first see Shanghai.

Come upon it by ship, along the fetid waters of the Huangpu River in the shameful wake of colonial gunboats and foreign opium traffickers. That way, the approach is at the Bund, Shanghai's famed waterfront promenade and site of the city's major historic buildings. Today along that broad avenue, as throughout Shanghai and much of southeastern China, you see and feel the dizzying swirl of a totally new and extraordinary era.

Shanghai has been chosen by the Chinese government to become (speak of leaps forward) the trade and banking center not only of Asia but of the whole world by the year 2010 or, failing that, at least to surpass Hong Kong as a financial giant. The greater goal may be out of reach, but the effort has started, and nothing is so important here now, it seems, as matters of the market. Suddenly the fetters of a controlled economy are relaxed, setting loose the entrepreneurial spirit of the Shanghainese. At the same time, there is a new openness to life in general in the city, and many of its 13 million people seem almost giddy with the freedom.

They speak more boldly now of love and hate, hope and despair. Even the eel skinner seems reborn. He squats curbside at a street market on Wenan Road, and beside him is a pail of black and shiny slithering eels. His hand movements are a blur as he hangs an eel on a nail in a board, pulls the fish taut, and then, with the deftness of a surgeon, exorcises its skin and bones. He does that, one after another, until his bare arms and legs are streaked with the splattering blood.

His name is Zhu Guo Hua, and he says to me: "I have been doing this for 30 years, most of my life, but it is better now. I feel like something good is going to happen, that I am going to become part of the world." He rises and flips his skinning and boning knife so that it sticks in the ground, as fine a mumblety-peg delivery as I have ever seen.

There are others here in China's greatest city who have ridden the

Shanghai chic, young Chinese promenade on the Bund (left), the waterfront where European, U. S., and Japanese colonial powers built one of the first commercial enclaves in China. Called the Paris of the Orient before World War II, Shanghai withered after the 1949 communist revolution. Now there is heady talk of eclipsing Hong Kong as a capital of enterprise.

On seething Nanjing Road (preceding pages) a million pedestrians daily stroll past shops loaded with foreign luxury items. "They're opening anything you'd see on Rodeo Drive or Fifth Avenue," says a Westerner who works in the 13-million-strong city. "They've got Gucci to Pucci—you name it."

Downpours spin a kaleidoscope of poncho-clad bicyclists. Nearly four million commuters rely on pedal power, and gridlock has become chronic in China's largest city. In attempts to keep cyclists and motorists safely

segregated, urban planners are experimenting with bicycle-only streets. Still, with the sheer volume of two-wheeled traffic, getting around can be perilous: Some 350 Shanghai bicyclists die in crashes every year.

recent changes to considerable wealth. Yes, there are millionaires in this land of the proletariat. There are investors with cellular phones filling the air with buy-and-sell babble. Ferrari, no less, is selling cars. Even yuppiness has sprouted; some aspirations reach beyond a washing machine or TV set to trendy designer clothes.

Meanwhile, the elderly, with their faded Mao jackets in blue or gray still hanging loosely on their bodies, smile and try to understand.

"Shanghai today? Everyone is making money, and I don't know if that's good or bad." Chi Chang was sitting on a bench under a statue of Pushkin, in a small green park, hugging the knees of his crossed legs. He blotted a drop from his nose with a sleeve, reflecting. "I myself was a businessman before the liberation of our country," he went on. "A little import, a little export. Later I was a policeman."

New apartments spike above Shanghai's Pudong New Area, a 200-square-mile complex of industrial parks, foreign factories, and housing developments. Such market-economy zones drive China's economic renaissance.

Energized by those dynamos, the nation's gross national product took a great leap forward in early 1993—rising by 14 percent, the fastest growth rate in the world.

Born in Shanghai nearly 90 years ago, Chi knew the city when it was so decadent a place, as one missionary noted, as to call for an apology by God to Sodom and Gomorrah. That was the Shanghai of the 1920s and '30s, the Shanghai known not only as the Paris of the Orient but also as Whore of the Orient. It was the city that inspired a film in which Marlene Dietrich purred, "It took more than one man to change my name to Shanghai Lily."

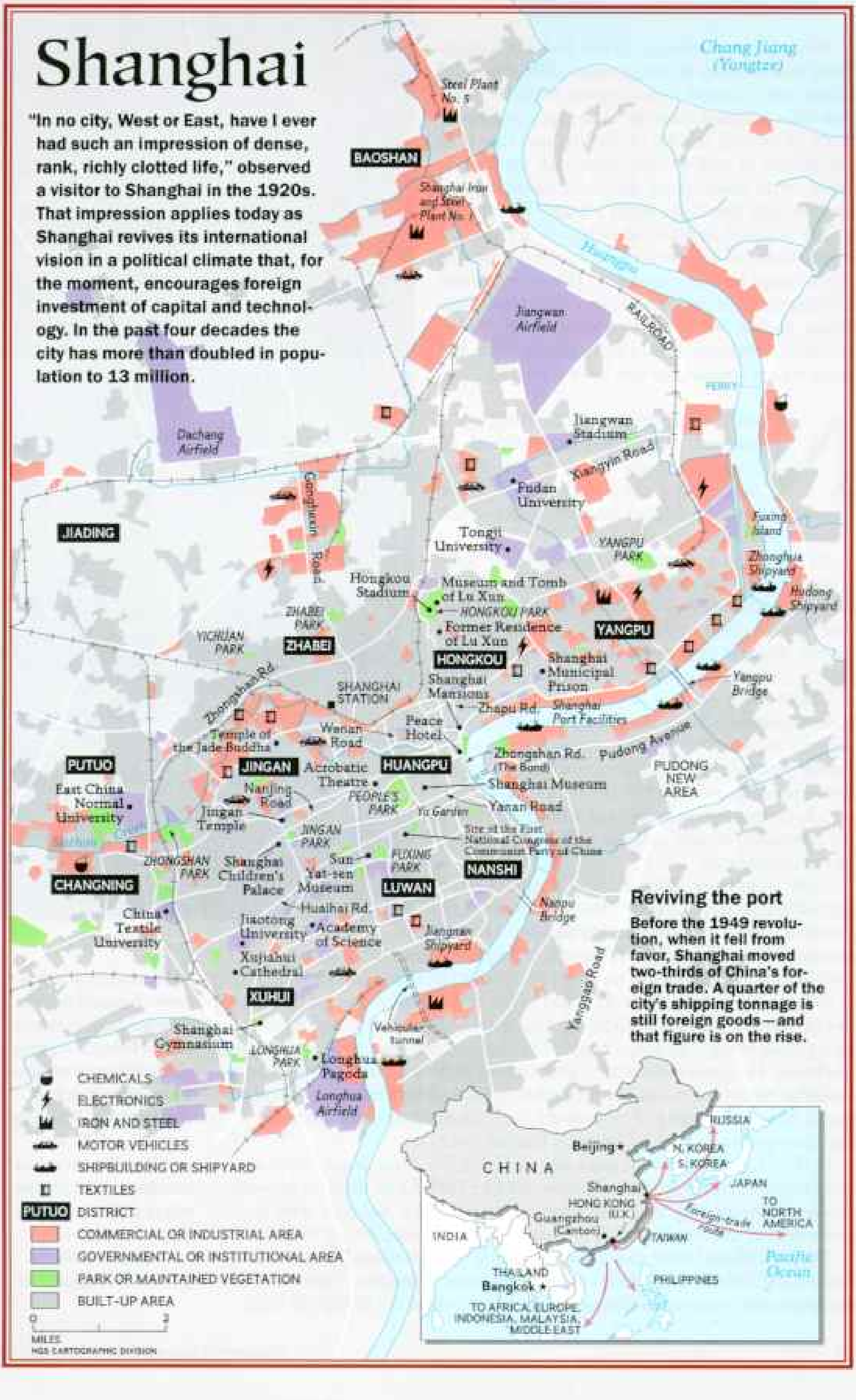
Chi professed to have only faint recall of that period, as did most of the elderly I spoke with. It was as if all memories of Shanghai before 1949, when the communists took power, had been declared counterrevolutionary and expunged. The worst was the decade of the Cultural Revolution, 1966-1976, when Red Guard zealots throughout China sought to stamp out "revisionism" in a campaign as cold as steel. Shanghai drew into itself, grew bleak and gray—a sad and harsh city where a person couldn't even own a pet dog.

"During the Cultural Revolution the police would kill dogs on sight," Wang Jian Chu told me. "But that has changed now, and they are once again being kept as pets. Most are small, of course—the French poodle is a favorite—because housing conditions in Shanghai are not good. You have seen a place here where someone lives, so you must know there is hardly room for a bed. Still, a pair of rottweilers, male and female, can bring as much as $30,000."

The work of London-born photographer STUART FRANKLIN first appeared in the GEOGRAPHIC in the January 1991 article "The Disease Detectives." His most recent story was "James Bay: Where Two Worlds Collide," in our November 1993 Special Edition on Water. He also covered Simón Bolívar in this issue.

Shanghai

"In no city, West or East, have I ever had such an impression of dense, rank, richly clotted life," observed a visitor to Shanghai in the 1920s. That impression applies today as Shanghai revives its international vision in a political climate that, for the moment, encourages foreign investment of capital and technology. In the past four decades the city has more than doubled in population to 13 million.



Reviving the port

Before the 1949 revolution, when it fell from favor, Shanghai moved two-thirds of China's foreign trade. A quarter of the city's shipping tonnage is still foreign goods—and that figure is on the rise.

Wang is the proprietor of the first pet shop to open in Shanghai in many years. His shop and others are grouped in a complex called "These Are Your Faithful Friends." It is like a miniature mall, alive with the din of yipping and the shrill cacophony of caged birds. Although his shop is small, with postings on the walls for flea soaps and biscuits that fight tooth plaque, Wang runs it like a proud captain of industry. Crisply he directed one of the three clerks to bring a poodle from a cage for my inspection. It was small and white and sad of eyes, and when I asked the price, Wang smiled his finest business smile: "Five hundred American dollars is the asking price, but since we are friends you can have it for 350."

NEW BUSINESSES like Wang's, I learned, are being established in Shanghai at the rate of five an hour. Some see a dragon of growth, with Shanghai as the head and the vast valley of the Yangtze River as the body.

But cloudburst prosperity has its rainy side: The cost of living rises at 20 percent a year. We had a beer, Zhou Wenbiao and I, in one of the several luxury hotels in the city proper, and the bill (seven dollars) amounted to more than half a month's income for a Chinese peasant.

Zhou is a 39-year-old businessman who wears two beepers on his belt. A tall and thoughtful person, he worked for a large government-owned textile firm for six years before starting an export business of his own. Such is the fluid state of China's hybrid economy today that while Zhou owns his company, he still remains affiliated with the government firm.

"The important thing for me is that I have gained flexibility," he said. "I now have the right to deal with my customers as I think best. I expect to export five million dollars' worth of fabrics by the end of the year. It's exciting to be in Shanghai now and be able to test these new values."

Born in Shanghai, Zhou is a child of the city in temperament as well. He carries that certain prideful air that sets the Shanghainese a trace apart from other Chinese, a conviction that beyond the city limits lies only darkness. He speaks Mandarin with the distinctive accent—almost unintelligible to outsiders—of the Shanghai-bred, and he prefers his food prepared in an abundance of oil pressed from the rapeseed, one of the culinary quirks on which Shanghai cuisine turns.

In this, China's most Western city, a distinctive aura lingers from a time when its thoroughfares bore names like Park Lane, Rue du Moulin, Avenue Edward VII. Not only were Europeans here, but they were in command of the city by virtue of victory in the Opium War of 1839-1842.

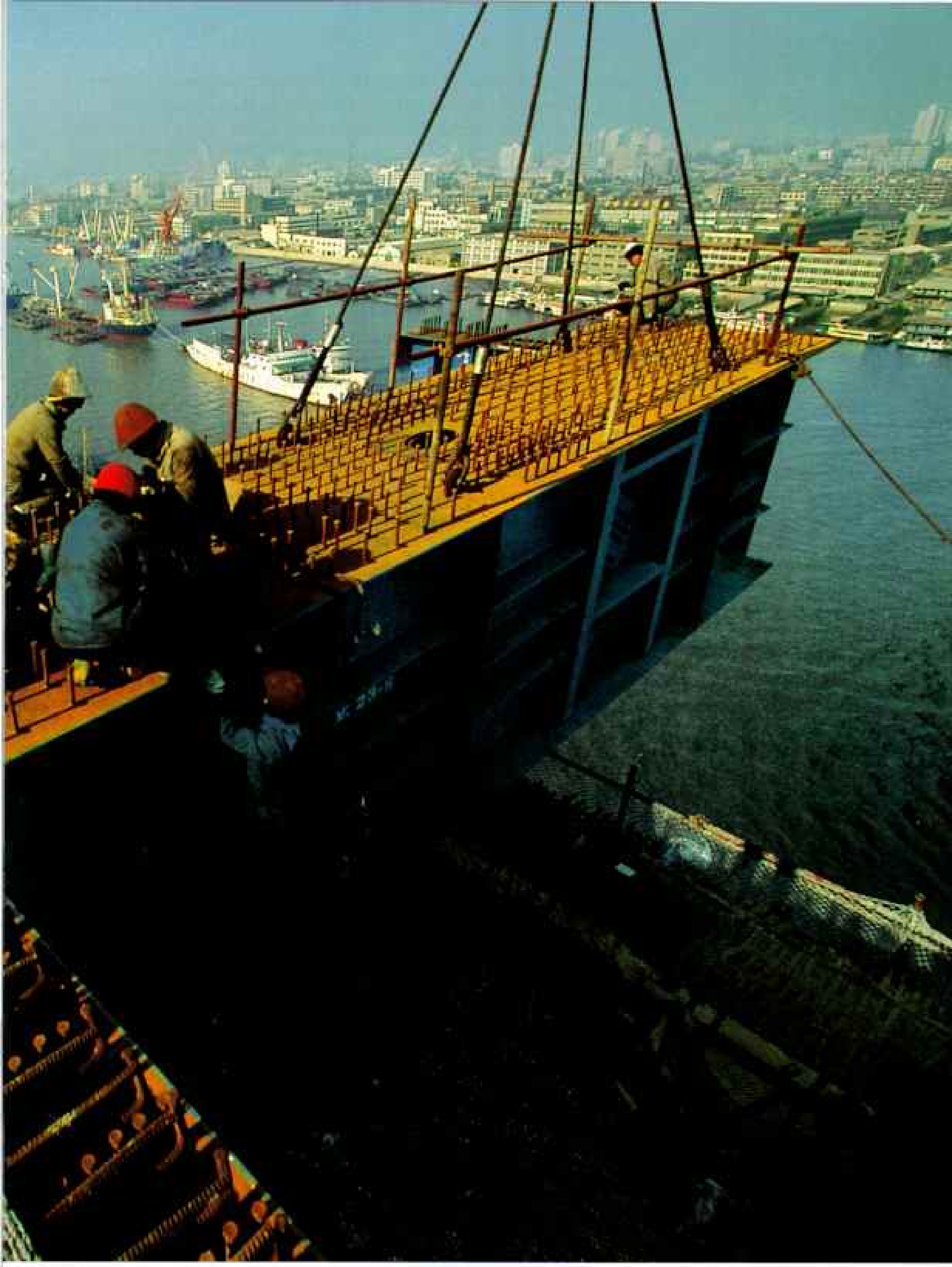
The British had their concession, thoroughly clubby and horsey. They helped build the Bund with its grand structures of granite. There was also an American presence in Shanghai, and they joined the British to form

Enveloped in pungent chemical fumes, workers tend ovens at one of China's biggest manufacturers of coke, a key component of steelmaking. Whiffing a profit, a U. S. firm provides the state-run company with technology to produce carbon black for rubber.

"Nobody wants to go back to imperialist

times," says a Shanghai business expert, recalling how gunboat diplomacy forced China to open its markets in the 19th century. "But we do want foreign cooperation on our terms." Volkswagen has found those terms lucrative; production at its joint-venture auto plant (left) has tripled in three years.

"Our Golden Gate," one Chinese booster calls the new Yangpu Bridge spanning the Huangpu River, one of several huge government projects aimed at modernizing Shanghai's infrastructure. In spirit, the Yangpu may have more



in common with the Brooklyn Bridge than with San Francisco's landmark.
"Many people say the Shanghainese are like New Yorkers," says a resident.
"They think we're too aggressive and rough."

the International Settlement. Adjacent to that was the French Concession, embracing leafy streets, *maisons tolérées*, as the brothels were called, and a sense of Roman Catholic mission. Later, some 20,000 White Russians made their way to Shanghai (borscht is still a staple in some restaurants in the city), as did thousands of European Jews fleeing the Nazis.

A city so internationally tainted naturally earned the distrust of the Communist Party hierarchy when they took over in 1949. Long the leading moneymaker in China, Shanghai was drained of its earnings by the central government and left, to this day, with roads, housing, and other urban essentials grossly outdated and inadequate.

Yet it was in Shanghai that Chinese communism took root. The first congress of the party was held here in 1921, and one of the 12 delegates was Mao Zedong. They met in a private house built of gray brick. It is a museum now, and among the exhibits on display is a watch with a card reading, "Specially made by the capitalists in Shanghai to supervise the workers." Outside, just a block away, is a banner strung across the street with this lection from the new openness: "Let the World and Shanghai Get To Know Each Other Better."

Miniature Maos—on buttons, rings, teacups, lamps, and watches—adorn Huang Miaoxin's 20,000-piece collection of Marxist memorabilia. What would China's Great Helmsman, who died in 1976, make of Shanghai's headlong rush toward capitalism?

"He too would want China to compete with the rest of the world," Huang declares.

A FRIEND FROM BEIJING accompanied me to the museum, and as we were leaving, he said, "Few people come here any more. This is dead history. If it were a brokerage house, they'd be lined up waiting to get in."

In addition to the Shanghai Securities Exchange, now housed temporarily in the former grand ballroom of a hotel, there are brokerage houses throughout the city, and the players come and go all day, borne on the dreams of instant riches. More than a million residents of the city play the market, some on a large scale, such as Yang Huaiding, a former member of the Red Guard who did so well that he gained wide fame in Asia as "Millions Yang."

Most, however, are small-stakes investors like the 37-year-old man I spoke with on the trading floor of the Shanghai Shenyin Securities Company. "Altogether I have several thousand shares in various companies," he said, declining to give his name for fear his absence from work that day would be noted. "In the beginning I made 50,000 yuan [about $8,500], but I have been losing money the past two years."

As often happens with stock speculation, at least one suicide has resulted. The investor was a woman, and they speak now in Shanghai of the irony of her fate: The day after she took her life, her stocks gained an average of three points.

With Shanghai's industrial output surging more than 20 percent in the first four months of 1993, the rumble of this giant economic awakening is reaching far beyond the banks of the Huangpu. American firms such as AT&T, Du Pont, Merrill Lynch, Hilton, and Sheraton have made their way to Shanghai, joining Volkswagen, Hitachi, Pilkington Glass of England, and many others.

The hotbed of development lies across the river on the east side of the city, in the section called the Pudong New Area. In a fever of construction and altering of the landscape perhaps unequaled anywhere, more than a thousand foreign firms have located there in the past three years, bringing investments approaching five billion dollars.

I was in Pudong for the first time when a cooling rain began to fall and wash the dust from the air. Planks lay in the mud and bamboo scaffolding stood in the shadows of other bamboo scaffolding. Heavy machinery rumbled all about, and the sparks of welders' torches sizzled and flared.

Barges freighted with building materials spanned the water from bank to bank. Aloft, a worker yelled a warning and dumped debris from a roof.

Pudong is now swept up in the manic rawness of a frontier town. When completed in 20 or 30 years at a cost of ten billion dollars or more, the vast industrial estate will consist of several zones, including: finance and trade, export processing, free trade, and high tech. It is to be the major showcase for China's new economic reform. Amid the frenzy some rice farmers still tend their paddies here, but that hourglass has been turned, and time runs out.

"We are moving at super speed now," said Pan Ahu, deputy director of the Pudong Urban Construction Bureau. "Our new airport in Pudong will far surpass the present one serving Shanghai. There will be new highways and railway facilities, and much more." He paused. "Of course, we are fortunate that we enjoy a lot of preferential politics at this time."

SHANGHAI KNOWS WELL the gains—and pains—of preferential politics. Over this century its people have struggled to keep up with the city's wide-turning changes. It is corrupt, it is virtuous, leftist and rightist, repressive and tolerant. Shanghai has been all of those, and now it has turned again, basking in a policy of declared openness. To be a factory to the world, it must let the world come in.

But more than a few China experts caution that it could all be an illusion. They point to the continuing Chinese crackdown on dissidents, the use of prison labor in manufacturing for export, and an overall

Dancing the night and their paychecks away, hip young Shanghainese pack China's largest disco (right), where the five-dollar cover charge equals a factory worker's daily wage. As spending power grows, China's new breed of business entrepreneurs—called *dahu*, or "new money people"—indulge worldly tastes unheard of among ordinary Chinese.

"Three years ago you didn't see many private cars here; now there are Porsches," declares one club manager. At one plush hotel bar (below) country-and-western-theme nights feature cowgirl waitresses and an imported Filipino band that croons Kenny Rogers ballads.

discreditable record on human rights. In 1992 alone, more than a thousand prisoners were executed in the country.

Yet, for a visitor to Shanghai today, there are places to go—and things to see—rarely made accessible since 1949. For example, on a morning in late May I drove with two official hosts past new apartment towers and factories to the outlying Minhang district. We pulled up at a walled complex officially called Shanghai Xin Zhong Hua Machinery Factory. It is also known as the Shanghai Aerospace Refrigerator Factory or the Long March Rocket Factory.

Indeed, the plant makes refrigerators—200,000 of them a year—along with freezers and air conditioners, but in the center of the complex there are workers who wear white. They design and build rockets—the towering 140-foot-long, 300-ton Long March rocket used in Chinese space probes. They also design and make rockets for use in China's military.

"We have contributed a lot to making China a rocket-launching country," said Chen Hui Lan, a spokeswoman for the plant. She seemed rather startled (me too) that I was there. "But, of course, we rely heavily on the civilian products. They can make money."

Long March has been used in 13 successive and successful satellite launchings, and the people at the plant would like it to be known that the

refrigerator they make, the Aerospace model, is no less trustworthy. And that, I suppose, is the answer to why I was allowed to go there.

SHANGHAI'S HIGH-TECH ROCKET PLANT seems a Long March, indeed, from the Bund, with its parklike, mile-long riverside promenade. Here visitors from all over China stroll and snack and smoke, but most of all they take pictures of one another. Most are tourists, and even though Chinese are prudent savers, it is a sign of the times that they can afford to be there. And there is another sign: The word *tong zhi*, comrade, has disappeared from their conversations.

The deep bellow of ship horns carries up and down the Bund, bouncing off buildings that once housed banks and shipping lines, trading companies, the Customs House, and the once influential *North China Daily News*. They stand in a row, a medley of architecture ranging from neo-Grecian to imitation Renaissance, and among them is the Peace Hotel, a Shanghai icon in reinforced concrete. After 65 years, with interruptions for wars and occupations, the hotel is still in business. Its famed Old Jazz Band—six men with an average age of 68—continues to play in the lobby bar, still somehow managing to make "When the Saints Go Marching In" sound like "Mexicali Rose."

The Peace Hotel was once called the Cathay, and it was there, in 1930, that Noël Coward wrote his best known play, *Private Lives*, in three or four days while bedridden with the flu. "Unfortunately we do not know what room he stayed in," Zhang Jing Yong of the hotel's sales department told me. "All the hotel records were destroyed at the time of the revolution in 1949."

The hotel is somewhat threadbare now, but the main ballroom floor, built with springs beneath it, continues to provide for truly easy dancing, and the elegant suites are to be shared with the ghosts of famed and world-wise travelers from the first half of this century. Probably nothing in the city is more redolent of the storied Shanghai of the past.

Veterans of many ideological about-faces share People's Park, formerly a British racetrack. During colonial times Chinese were often barred from such calm and leafy retreats.

Foreign tongues again echo through the greenery as Chinese students test new language skills. "They're keen on English," groans a Western visitor. "I've had 50 or 60 people asking me questions at once."

SHAO ZHEN FAN AND DA ZI ZHEN are both too young to give much thought to the way things were, except for the grand balls when the dancing continued until dawn. Like many in Shanghai, they have a passion for ballroom dancing.

I first met the couple in People's Park in early morning, when scores of old people were out under the trees, doing *tai ji quan* exercises with the slow and measured movements of a cat stalking prey. The pair were on a wooden-floored open-air pavilion, practicing ballroom dancing. They moved around the floor in a fugue of great sweeps and dips, no less fluid than Fred and Ginger, and Shao's head was swiveling sharply on his neck to throw sharp profiles to me and the others watching. He held Da's hand high, their fingertips joined like a steeple.

But there was no music, no sound at all other than the gritty scraping of their feet on the wooden floor. When they stopped, I asked about that, and Shao said, "We have the music in our hearts and our minds. We can hear it."

They are there most every morning, before the sun has fully risen to show pale and watery through Shanghai's perpetual smog, or just as soon as Shao can get there from his night-shift work at a factory. "The two of us dance together in contests when we can," Shao said. "We share a dream of one day winning an international competition." That would certainly bring some glory to the old pavilion in the park.

Zhu Yong Zhong, a teacher at the Shanghai Sports Institute and an instructor of ballroom dance, explained that Shanghainese who are between 30 and 40 years old do not, for the most part, know how to dance. "They spent their youth during the Cultural Revolution when dancing was banned, and they never learned how to do it," he said.

It may be that the Cultural Revolution touched on every aspect of life except eating. And now, with a sharp sense of business in full play and with private ownership permissible, restaurants vie aggressively for customers. Zhapu Road, in the shadow of the Bund, is lined with new restaurants. At night the road, like the midway at a carnival, throbs with life as throngs move slowly along the lineup, sampling the smells in joyful anticipation.

Matters of food are not taken lightly here, as I observed in one restaurant named Huali where a friend had taken me for dinner. When he placed his order, the waitress stonily rejected it as unsuitable with a slight toss of her head, like a pitcher shaking off the sign for a fastball. He chose another dish. She nodded.

My own selections found approval: a fish appetizer called "Beautiful Butterfly Greeting Guest" and a dessert, "Eight Precious Rice," wherein steamed, glutinous rice is injected with a generous measure of red bean paste and topped with eight different candied fruits. In between, the feast ranged from bean curd with preserved duck eggs to freshwater crab in wine.

IN THE FIRST YEAR OF BUSINESS, I was told by a friend of the owner, the restaurant made a profit of nearly one million yuan, or about $173,000, flourishing by word of mouth alone. But commercial advertising is gaining importance in Shanghai with surges in purchasing power. Last year, advertising appearing on city buses alone sold for more than ten million yuan, and for those who bought the space that may be a golden bargain: There are 16 million boardings on Shanghai's public transport buses every workday.

The buses number in the thousands, and so do the taxis. Add to them the growing number of private cars, the trucks, millions of bicycles, and the pedestrian traffic that washes through the streets like floodwaters. Take them all together and the result is a disquieting urban experience. Only Bangkok, it is said, has traffic problems of such magnitude.

In downtown Shanghai, gridlock—the dreaded sheepshank knots of paralyzed traffic scored with the tinkling of a thousand bicycle bells—occurs with dismal regularity.

Most of the streets are much too narrow to carry the traffic loads. To widen them would mean destruction of living quarters and displacement of tens of thousands. "Traffic control in the city is minuscule," said Zukang Yao, professor of road and traffic engineering at Tongji University in Shanghai. "But more than anything, the problem is with the bicycles. They occupy more space on the streets than vehicular traffic."

Indeed, the prevailing condition is one of calm chaos, with six or seven million persons riding bicycles through the city, all pumping, it seems, at

Rooftops of the Bund's colonial era, foreground, seem to turn their backs on looming high-rise construction. Even history is for sale in Shanghai's rush to riches: Elegant landmarks such as bank buildings, villas, and once regal

hotels are on the auction block after half a century of government ownership. The bidders? Rumors fly that foreign banks are quietly negotiating to reoccupy their old Shanghai headquarters.

the same revolutions per minute. (It makes you wonder: If all that pedal power could be harnessed, would it be enough to light Seattle?)

Such observations do not deter the 7,000 workers at the Shanghai Forever Bicycle Company Ltd. from their annual production of 3.5 million bicycles. "Naturally we are concerned about the traffic problems here in Shanghai," said Cheng Hong Xin, senior engineer at the plant, "but we manufacture for the whole country and much of the world—even the United States, where our bicycles are called Wind Catcher. In all of China, one of every six people riding a bicycle is riding a Forever Bicycle."

We toured the plant, past piles of pedals and bells and gleaming handlebars. And then we came to Zhu Zhen Ling's station. For the past two years he has stood beside a bench for eight hours a day, five and a half days a week, reaching overhead and grabbing a hose, and then hearing the sound—that same sound, over and over and over: *Psssssh.*

Zhu Zhen Ling puts the air in the bicycle tires. He fills 200 tires a day. Being a young man in his 20s, he does not expect to make this his life's work. "You ask me if I like my work? Do I like my work?" He looked at me with disbelief. *Psssssh.*

Preparing to launch a globally competitive space program, technicians huddle near their handiwork at Shanghai's Long March Rocket Factory.

Short on frills but long on reliability, these boosters have become China's workhorses in space. To help pay for China's ambitious program—including manned space flight by the year 2000—the Long March facility produces refrigerators as well.

AT ONE TIME, years ago, Sikhs wearing red turbans directed traffic in Shanghai, but they are gone now, as are the 100,000 or so rickshas that once plied the streets. They were banned by the communists for being exploitative. You can still find a former ricksha puller in Shanghai, but it isn't easy.

The men in Yichuan Park said that Liu Yong Shun was around and they'd find him for me. First, though, they wanted to listen to the singing of their birds. It was early morning—a good time in Shanghai—and they had brought their pet songbirds to the park and hung the cages on the branches of trees. And then they sat close and listened to them sing.

When they led me to Liu, I spoke to him of rickshas, and he looked pained. "It was during the war," he said. "I had been working in a factory, but the Japanese burned it down. So I had to go to work pulling the wagon. I pulled it from early morning to dark. It hurt so much, in the shoulders and hands, and no one cared if you were living or dead. The money we made wasn't even enough to buy some rice."

The pullers wore rags, working no matter what the weather was like (uncounted Shanghainese froze to death on the sidewalks in winters past), and they were often struck or kicked or abused. "But for the liberation—I'm sorry but I have a disease of the tongue and cannot speak clearly—I would be a dead man now," Liu said. As it is, he has lived to the age of 83, having retired as an automotive mechanic.

Yichuan Park sits in the heart of a crowded, busy neighborhood west of the train station, a sprawling patchwork of narrow streets and alleys, or *long*, where clothes put out to dry fly from bamboo poles. Sidewalk dentists put their pliers on view and declare that the office is open. Rice steamed in bamboo leaves is the big seller in the snack shops at a few cents a ball. Chamber pots from the night before are at curbside, waiting for the cleaners to arrive on their rounds. It is a neighborhood where life itself is a street party.

The new prosperity is not likely to reach with much force this deep into the city, and that could be a blessing. Such neighborhoods are the strength of Shanghai's character, and much of the urban exhilaration could well be lost with the intrusion of apartment towers like those rising in outlying areas.

Still, housing in the central city is harshly inadequate, averaging 75 square feet per person—that's half the size of a parking space.

Eight million of Shanghai's 13 million residents live in downtown areas; the number has doubled since 1949. New housing has about reached its limits: Shanghai proper sits mostly on muck, and it is not easy to build there. And so it is to the outlying areas that attention has turned, to places across the river, to the suburban districts and to the fields where farmers stoop like cranes to tend their rice.

By government decree, workers may now own their living quarters, through a savings plan and assistance from employers. In this way it is hoped that the 1.2 million new housing units needed in Shanghai by the year 2000 can be obtained through purchase and not social welfare. As it is now, housing for the most part is provided by the city government on a rental basis.

So, with an official policy born of this strange marriage of socialism and free enterprise, city hall partly delivered itself of an enormous burden. Or so it would seem.

IN ALL OF CHINA there are more than 300 million urban dwellers, and for most of them housing is cheap. Among them is Shen Gui Ying, a woman who has lived in the same cramped two rooms for 42 years, giving birth to and raising her five children there. She is regarded as an important leader in her 900-household neighborhood just north of Suzhou Creek, a waterway that cuts through the center of the city, and indeed she has worked for some 30 years to improve living conditions in her community. In a way Shanghai neighborhoods are cities unto themselves, and of this one, Shen Gui Ying would be mayor.

Too cramped for comfort, Chen Jin-Zhu (right, at left) visits with her granddaughter in a tiny house shared with five other relatives. Like much of Shanghai's housing, her home is more than 50 years old; paper taped to the ceiling traps crumbling plaster. Acute housing shortages plague the central city, where a

person's living space may be no more than the area of a queen-size bed. Newly arrived migrant workers (below) make do with sleeping on their luggage; officials peg more permanent solutions on China's economic reshuffling. Subsidized housing is now being privatized to spur new construction.

She has won medals and honors, but she is as proud of her automatic water heater as she is of anything else. It is a rare appliance in this neighborhood—an enviable luxury. She turned on a faucet and after a few minutes asked me to put my finger in the water, and when I did and said it was hot, she smiled.

The place where she lives, like so many in Shanghai, is off an alleyway, a cleanly swept, six-foot-wide passage that runs from the street for 40 or 50 yards. Entrance to her quarters is through a communal kitchen and up a dark, winding staircase with a railing layered with grease from cooking. Once inside, there is little space for movement, for one room alone holds a bed, six chairs, some stools, two dressers, a TV, and clothes on hangers hooked to the cords of window blinds. She lives there with her husband, who has retired from working, a son, and his wife.

"We have the money for something better," Mrs. Shen said. "I've been waiting for a long time for the government to allocate some rooms, but nothing is available." She gave me a warm Sprite and spoke of the work of Shanghai's neighborhood committees. "They take care of most of the problems the people have, from cradle to grave," she said. Care is provided for the elderly, food for the hungry. Misdemeanors are adjudicated, and family disputes resolved—in these close quarters many involve wives and their mothers-in-law.

We walked together through nearby alleys, and she introduced me to some of the residents, such as the two elderly women sharing two rooms provided by the neighborhood committee. There were three, but one died, and now they stack some papers in the extra chair. All their needs are met by those who live close by.

The new openness is welcome here. "What we are absolutely against is a return of gambling or drugs or prostitution," Mrs. Shen declared. "We live here in harmony and happiness, but I have to say that if we had a little more room, there would be more harmony and happiness."

IT IS DIFFICULT to gauge the extent of the new openness in Shanghai. Prostitution is certainly returning, with no strong crackdown. Black marketeers who speak in croaky whispers work the Bund seemingly unhindered in search of foreign currency. Pawnshops have been allowed to open, along with the first private detective agency in China since 1949. But at the same time, political dissidents in the city are harassed and jailed. The press remains muzzled, and the Chinese-made film *Farewell to My Concubine*, co-winner of the top award at the 1993 Cannes International Film Festival, created controversy; it deals to some extent with homosexuality. Church attendance is allowed, but controls remain strong.

Officially the Roman Catholic diocese in Shanghai is recognized as a "patriotic association," but the Masses murmured in Xujiahui Cathedral on a lovely Sunday morning in May are not in praise of the state. The liturgy has

been edited, but there is no mistaking the fervor of the worshipers. They are the legacy of French Jesuits who, years ago, won converts in the city more easily than did the American protestant missionaries.

"There are now 140,000 Catholics in Shanghai and its suburbs, or one percent of the population," said Father J. Berchmans Shen Bao-Zhi, chancellor of the diocese. "It is true that most are old people, but many young ones are joining the congregation each year."

Of course, during the Cultural Revolution the cathedral was closed, and the Catholic priests in Shanghai were conscripted to make umbrellas. Since the end of that stern decade, some 60 churches have opened in the city.

"As the country opens up more, so will the church," the chancellor said. For now, the line between state and religion remains obscure; the church walks it like a tightrope. Hear the chancellor on abortion: "We are against abortion, but in view of the population of China we can understand the government's policy of limiting the number of children."

"It's mind over body," says antiterrorist-police spokesman Shen Zi Ping of run-ins with motorcycles (facing page) that cadets endure as part of their grueling training regimen. The secret weapon: *qigong*, a 3,000-year-old martial art that stresses breathing skills.

Sewing is just one skill prisoners must hone at Shanghai's Municipal Prison (above), where gardening, an orchestra for the musically inclined, and "political education" also help fill long hours.

IN PRYING OPEN the state's tight grip on the lives of the people, the economic restructuring has succeeded to some extent where the movement for democracy failed in Tiananmen Square in 1989. And so, much of the world now ponders how to deal with China.

There are companies here doing contract work for large U. S. clothing manufacturers, and they employ ranks of Chinese for what are by Western standards unconscionable wages. Other firms in Shanghai, such as AT&T, are clean, high-quality operations paying better wages. AT&T's plant makes optical transmission equipment for long-distance telephone service. It is owned jointly with Chinese interests, and the business has been highly successful, with estimated sales of 81 million dollars in 1993.

And that is in a country where there are 34 people for every telephone. For all its thriving economy Shanghai is still phone poor, but people rationalize: If your friends don't have a phone, what's to be gained if you have one? Who would you call?

You could call the new radio talk shows. *Talk shows!* They are on the air every day and night, venturing into areas long held taboo for public discussion. Of course, no one is allowed to suggest that Deng Xiaoping, China's aged and ailing senior leader, is getting dotty, but they talk of marriage, infidelity, and rip-offs in the marketplace.

"The people have needs, and the time has come to let the authorities know what these needs are," said Yuan Hui of Radio Shanghai. "That's the primary purpose of the talk shows." It is estimated that one million people in the city tune in.

A daytime program called *Citizens and Society* is mainly devoted to vexed discussions of shortfalls in the city's infrastructure. Among municipal officials frequently invited to the studio to take calls and answer questions is Cheng Xi Yuan, executive vice president of the Shanghai Post & Telegraph Administration.

Listen in:

Caller—"My telephone does not work well, and never has."

Cheng—"We are aware of problems with the telephone service, and we are making every attempt to correct them."

Caller—"What?"

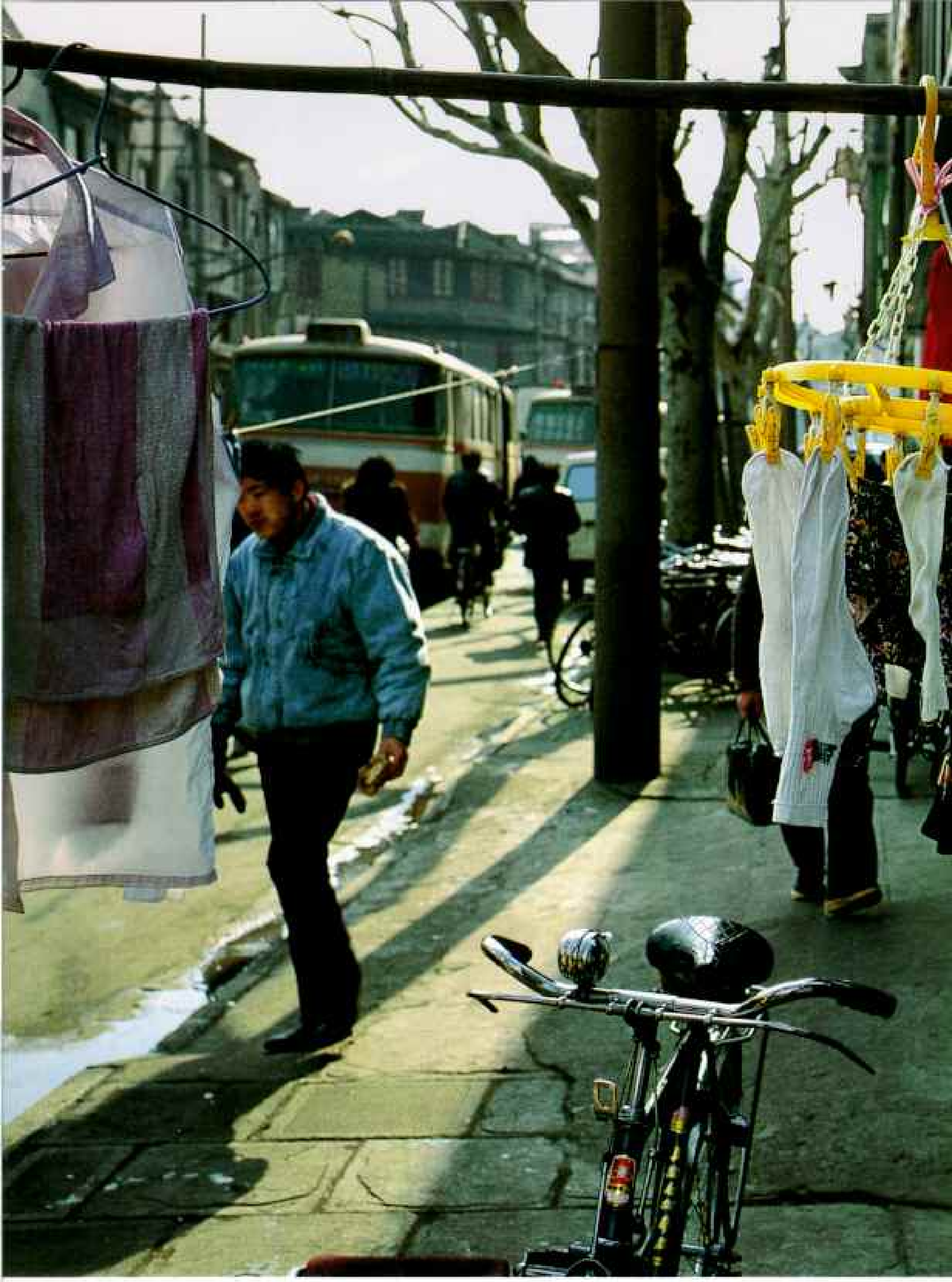
Cheng—"I said. . . ."

Caller—"I can't hear you on this phone."

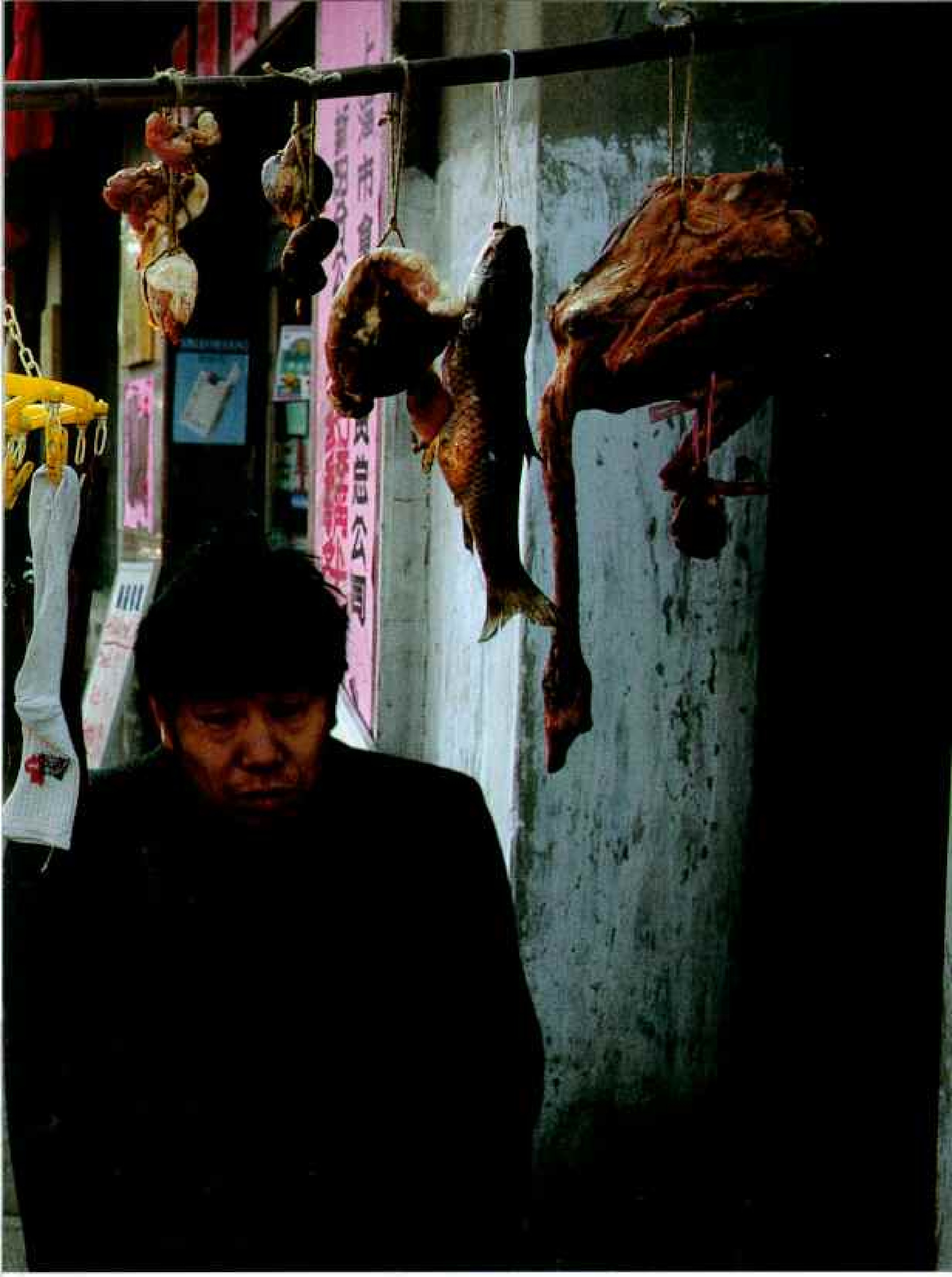
And so it goes. At night another show, called *No Appointments Tonight*, offers a format wide enough to embrace most aspects of love and marriage.

A COSTLIER KIND OF TALK SHOW lurks on Shanghai streets, where flimflam artists ply their trade. No city has a richer tradition of fleecing the unwary. I met a few of Shanghai's bunco journeymen in the Municipal Prison, a fortress in brick and stone built by the British at the start of the century.

Not often is a foreigner allowed into a Chinese prison. More than that, however, I was entertained—a one-man audience—for nearly an hour by a 25-piece symphony orchestra, a dance troupe, an operatic tenor soloist, a mixed chorus, and more. Here was a con man playing the violin, a



Strung out to dry, a plucked goose, fish, and laundry make use of premium space amid Shanghai's perpetual hustle. As late as the 19th century the metropolis sheltered fishing villages within city limits. That simplicity



still lingers on in older quarters, where neighbors sit, gossip, and eat outdoors long after dark. "Shanghai is safe," one native says. "In the summer some people will even pull their beds out on the streets."

rapist in the baritone section, thieves among the sopranos, and a robber on the podium conducting with the precision of a maestro.

The surrealism of it all was gripping, but it shouldn't have surprised me that much: If something like this was going to happen in China, it was going to be in Shanghai. I applauded at the end of the performance, and the performers applauded back.

Ma Yi Ping, the conductor, was in his fifth year of a seven-year sentence for robbery. "I was an amateur musician on the outside," he told me, "but I learned conducting in here." The operatic tenor, Pan Ze Ling, whose piangent singing voice fell off to a near whisper in conversation, said he had no musical training and was just "an ordinary worker" before his imprisonment for fraud.

The music program began nearly ten years ago, and whether it serves its purpose in preventing the participants from becoming repeat offenders isn't really known. It may be that no one cares much. It is an expression of culture, and Shanghainese take their culture where they can find it.

"This has been used as a prison since the British built it," the chief warden, Mai Lin Hua, said. As we toured, we came to a room where prisoners were working at sewing machines, making clothes. China has been condemned by the West for using prison labor to make garments for

Efficiency begins in infancy for babies in a washing line at a Shanghai hospital (left). China's strict birth-control laws get an unintended assist in business-obsessed Shanghai. "Some young people who are busy pursuing their careers aren't having children any more," explains a young banker. "Economically speaking, that's very sound." Not necessarily: Shanghai's graying population already swamps an overburdened social-care system. At Nanhui retirement home and hospice (below), those lucky enough to gain admittance enjoy the calm of a country garden and occasional beach excursions during their final years.

export, and I was taken aback to think that the new openness went this far—putting the violation on view. Warden Mai was quick to explain that the clothes were uniforms destined for Chinese government agencies, and, indeed, that is what I found them to be.

In the days when Shanghai was synonymous with sin, the prison held 8,000 inmates. "We have 3,500 in here now," Mai said. "Most of them—70 percent—are in for crimes related to theft of property. Major crimes such as murder and rape are less than 10 percent." More and more, he said, the rising crime rate is related to the economic boom, but he foresees no return to the wide-open Shanghai of the thirties. "We must guide the people to good behavior," he said.

Guided or not, the young of Shanghai are claiming their place in the new openness. At night, discos and karaoke clubs scream with neon. There is an obsession among young women for miniskirts of black leather, and while that may or may not be chic, it is a firm disavowal of the Cultural Revolution. Parents, meanwhile, are seeking places for their children in the growing number of expensive private schools.

Only a fortunate few find a place in a public school offering a quality education, such as Shanghai Nanyang Model Middle School, from which graduates have gone on to become government ministers, ambassadors,

and literary figures. Most of those who are admitted have been carefully prepared. Many have been doted on by parents and grandparents from the time of birth; each represents the one child quota allowed couples under China's strict family-planning rules.

For many youngsters, however, schooling remains an unproductive and unhappy experience. Fewer than 35 percent of China's youth—the figure is higher in Shanghai, but not much—actually enter high school, and the dropout rate is high.

Some in the city turn to specialized schooling, such as training for the world-renowned Shanghai Ballet. There are theaters and theaters in Shanghai, and some now consider the city the cultural center of China, that it is New York to Beijing's Washington. Shanghai is home to the Acrobatic Theatre, where men and women take balancing and juggling and flights of body to new dimensions. The long tradition of filmmaking in Shanghai is thriving. For the first time in many years, films are being made for entertainment rather than propaganda. And more and more, the intelligentsia—the thinker/radicals—are linked with Shanghai rather than Beijing.

FOR ALL THAT, Shanghai remains, at heart, a port city. (In times past how many drunken drifters here were spirited down dark alleyways and trundled aboard shorthanded ships, to awaken far out at sea . . . "shanghaied"?)

Much of its history was staged on the river. It was on the Huangpu that a freighter lay moored by the Bund, across from the Peace Hotel, early in 1949, waiting to receive all the gold in the Bank of China. Facing defeat by the communists, Nationalist leader Generalissimo Chiang Kai-shek was about to flee China, and he had no intention of leaving the country's gold reserves behind. And so one morning, coolies padded from the bank across the road to the ship, loading the precious cargo in preparation for the successful escape to Taiwan.

Today the port handles more than 160 million tons of cargo a year through loadings and unloadings along the 40 miles of wharves on the river. They come from around the world, the freighters and other ships, leaving the East China Sea for the Yangtze River, and then the Yangtze for the Huangpu, past the container terminals and the shipyards and all the soul-felt emanations of a city forever linked to the sea.

There is a shipyard too where vessels of 70,000 deadweight tons slide down the ways. Such ships are still built faster in Japan, but that gap is closing. Indeed, there is so much catching up occurring in Shanghai now that sometimes it seems that the city is out of breath.

When that happens, it is good to put away all that is new and seek out some of the old. One

With the flash and crackle of fireworks, a family heralds the Chinese New Year in their alleyway. Celebrators traditionally banish demons with a bang and, in a happy coincidence of astrology, ushered in 1993 as the Year of the Rooster, ancient symbol

morning I went to the ancient Yu Garden in southern Shanghai, where the old Chinese city stood in the midst of the International Settlement and the French Concession. Work on the garden began in the 16th century, and, having been restored, it now rolls gently over nearly five acres. There are pavilions and ponds, curving walls and pathways there.

Among the many trees in Yu Garden is a ginkgo said to be more than 400 years old and a magnolia that has bloomed every spring for at least two centuries. Both are close to the Bridge of Nine Turnings; spanning a pond filled with emerald algae and lotus leaves, it leads to the Huxinting Teahouse. It was there I went to sit by an open window and drink Longjing tea and eat quail eggs. It was a good time to ponder the almost total disappearance of the old Shanghai. But the people of Shanghai are not looking back; why should I?

On the way out of the park I went again to the old ginkgo and knocked wood for good luck. □

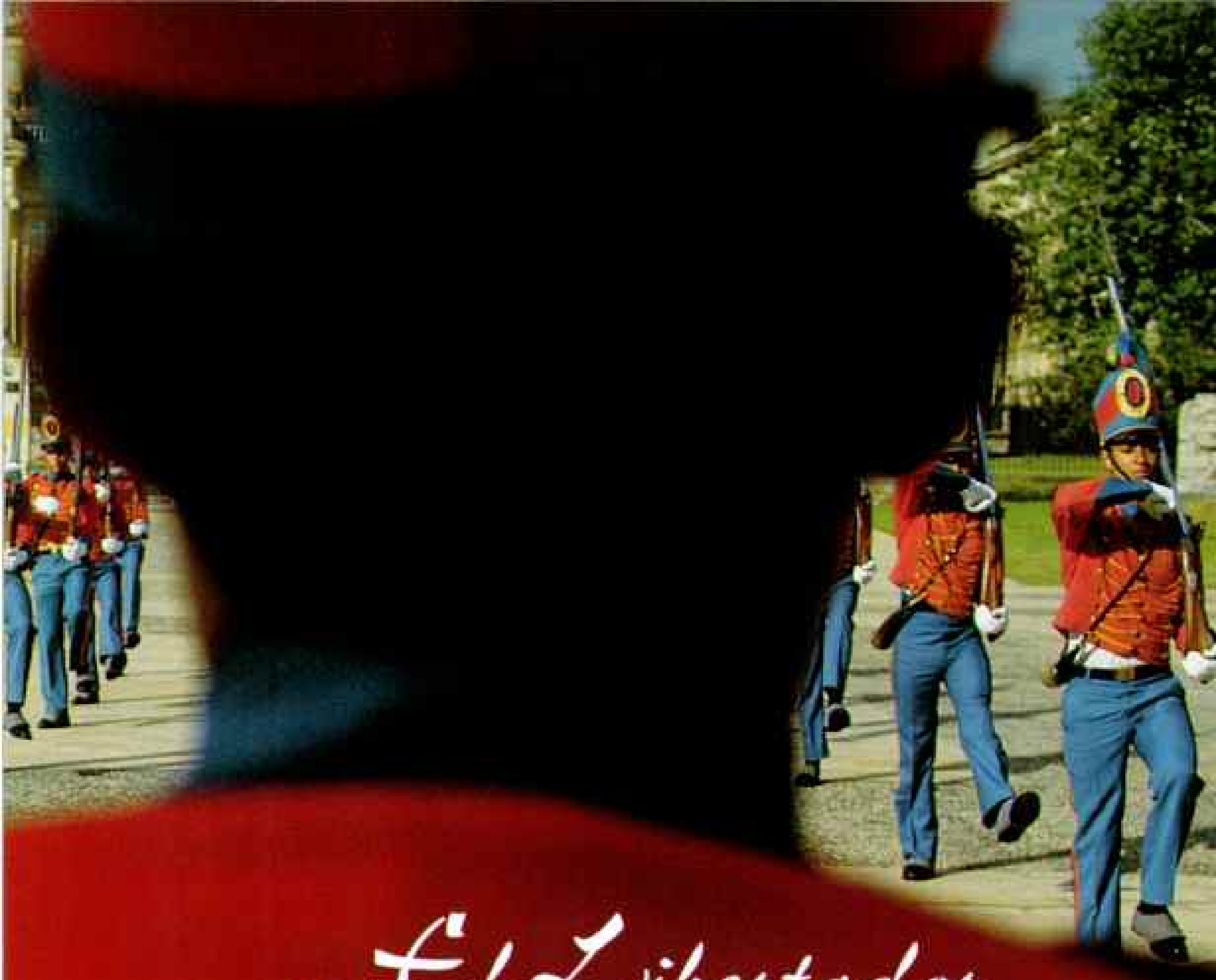
of merit and fame.

Crowing has already awakened a vital city long lost in faded dreams: "Shanghai will become the leader in developing all China," predicts a Shanghai customs broker with typical bravura. "Now is our time."

By BRYAN HODGSON NATIONAL GEOGRAPHIC SENIOR WRITER

Photographs by STUART FRANKLIN

Paintings by HERBERT TAUSS



El Libertador

SIMON BOLIVAR

A Colombian honor guard marches in uniforms designed by Simón Bolívar, leader of South America's 19th-century liberation from Spain. From Colombia's plazas to the plains of Venezuela to Bolivia's high plateau, Bolívar's dreams of unity haunt the continent today.

SOUTH AMERICA'S

"I MAKE BOLÍVAR NAKED to protest the sainthood that has been thrust on him." Colombian sculptor Arenas Betancourt shapes the thought with powerful hands, telling me why he has portrayed Simón Bolívar, South America's greatest hero, as a naked man on muleback. "His custodians have transferred him to museums. They are afraid to humanize him. Bolívar makes sense *today!* He points out the social problems of South America. He understands the continent must be united. He imagines a world and makes us hope for it. That is his banner, his anthem."

WATERCOLOR PORTRAIT OF BOLÍVAR BY JOSÉ MARÍA ESPINOSA (CIRCA 1826). MUSEO NACIONAL, BOGOTÁ, COLOMBIA. ORNAMENTAL SWORD GIVEN TO BOLÍVAR BY THE CITY OF LIMA, PERU.

I had been following Bolívar's banner for months, fascinated by this young Venezuelan aristocrat who burst onto the battlefield in 1811 to lead ragged armies of colonists and cowboys in a 14-year revolution that broke Spain's colonial stranglehold on today's republics of Venezuela, Colombia, Ecuador, Peru, and Bolivia (map, page 42).

I'd found his memorials everywhere, in statues and portraits dominating town squares and official walls. I'd also heard him quoted by conservatives and liberals, Marxists and Christians,

dictators and democrats, all claiming vindication in his name.

But I was seeking the man who had written his own memorial with a caustic brilliance that put all his aficionados to shame. In a torrent of letters, declarations, and denunciations, he had described his dream of a peaceful confederation of independent Spanish American nations. Bitterly, he had watched the new republics disintegrate into chaos and civil war. At the end, stripped of power and honor by those he had led to victory, he described a nightmare:

"There is no good faith in America, nor among the nations of America," he wrote just before his death in 1830. "Treaties are scraps of paper; constitutions, printed matter; elections, battles; freedom, anarchy; and life, a torment." Here was the naked rider of an apocalypse that still convulses South America, saying what seems unsayable today.

How would he describe Venezuelan rebels who swear in his name to crush an elected government, I wondered. Would he approve of Marxist guerrillas of the *(Continued on page 44)*

BANCO CENTRAL DE VENEZUELA, CARACAS

Cowhand of the tropics, Jesús Querales tends cattle on the llanos of Venezuela. Expert horsemen and ferocious warriors, the llaneros *first opposed Bolívar—then provided crucial support for his military campaigns.*

Born to a family of Venezuela's colonial elite in 1783, Bolívar had quietly joined the independence movement by age 24, later rising as a leader of insurgent forces.

Campaigns of Bolívar

- Battle
- 1812–14
- 1818
- 1819
- 1821
- 1822
- 1823–24

0 300 MILES

HGS CARTOGRAPHIC DIVISION
RELIEF BY CHRISTOPHER A. KLEIN

"Unity, unity, unity must be our motto in all things. The blood of our citizens is varied: let it be mixed for the sake of unity."

After years of defeats and exile Bolívar addressed an 1819 revolutionary congress in the town of Angostura. He outlined his proposal for a nation uniting modern Venezuela, Colombia, Ecuador, and Panama that would be the cornerstone for an alliance of Latin American states. Over the next six years Bolívar boldly led the liberation of Venezuela, Colombia, Ecuador, Peru, and Bolivia. Though an admirer of George Washington—he carried a lock of the President's hair (right)—Bolívar favored strong central rule, fearing that U. S.-style federalism would spread anarchy across Latin America.

BANCO CENTRAL DE VENEZUELA

"Let us hasten to break the chains of those victims who groan in the dungeons."

Bolívar Coordinating Group, who commit thousands of assassinations and bombings a year? Would it surprise him that Maoist guerrillas stage public mass executions of villagers in the Peruvian Andes, and government forces respond with ruthless bloodbaths of their own?

And what business was it of mine? I had discovered Bolívar's writings while traveling on assignment in Argentina, haunted by the fate of more than 9,000 *Desaparecidos*—"disappeared ones"—who had been accused of subversion, kidnapped and murdered on the orders of military dictators, and buried in unmarked graves.*

Bolívar gave me no answers but a requiem: "Your brothers, and not the Spaniards, have torn your breasts, spilt your blood," he wrote to his fellow Venezuelans as the revolution turned into a civil war of pillage, rape, and revenge.

For me, he had also etched South America's timeless contradiction—and his own: "We are not Europeans; we are not Indians; we are but a mixed species of aborigines and Spaniards," he wrote in 1819. "Americans by birth and Europeans by law, we . . . are disputing with the natives for titles of ownership."

Five centuries after Columbus, 180 years after his war of liberation began, Bolívar's words clearly matter. More than any leader of today, his words and works could still define a revolution not yet won.

Injured in a prisoners' dispute, a forlorn inmate cowers in Bogotá's Modelo Prison, testament to the failure of Bolívar's dream: that political liberation would free Colombia and its neighbors from social chaos.

IN CARACAS, Venezuela's capital, where Bolívar was born in 1783, street merchants near his childhood home murmur his name like a litany: "Bolívares . . . bolívares . . . bolívares," they say, telling the prices of their trinkets in Venezuela's currency. Not far away, on the altar of a deconsecrated church, a marble Bolívar gazes over his own bronze sarcophagus, impassive and remote. This saintly personage looks little like the portrait drawn from life by Gen. Daniel O'Leary, an Irish soldier who became his aide and friend:

"His chest was narrow, his figure slender, his legs particularly thin.

STUART FRANKLIN also photographed Shanghai in this issue. HERBERT TAUSS's work appeared previously in the GEOGRAPHIC in "Pizarro, Conqueror of the Inca," in February 1992.

His skin was swarthy and rather coarse. His hands and feet were small . . . a woman might have envied them. His expression, when he was in good humor, was pleasant, but it became terrible when he was aroused. The change was unbelievable."

Bolívar was one of four children born into a wealthy family of cacao and sugar planters. He lost his father by the age of three, his mother by nine, and lived unhappily with relatives until he was sent to Spain as a teenager to gain European polish. In 1802 he gained a charming bride named María Teresa Rodríguez del Toro y Alaysa, brought her home to San Mateo, and watched her die of tropical fever within eight months.

Of these early years Bolívar left few signs of genuine emotion. One was a tribute to his black childhood nurse, Hipólita: "Her milk has fed my life, and I have never known another father than her." Another was only a hint that grief drove him back to Spain in late 1803. There he plunged into the international ferment created by Napoleon Bonaparte, whose armies were rearranging Europe into a "continental system" of his own design. Bolívar's grand tour included Paris, Geneva, and Rome, often with a boyhood mentor named Simón Rodríguez, who filled the young

*See "Argentina's New Beginning," NATIONAL GEOGRAPHIC, August 1986.

man's ears with the heady rhetoric of philosophers like Voltaire and Rousseau, who believed that monarchs had a sacred obligation to guarantee the citizen's right to equality before the law. When Napoleon crowned himself emperor for life in 1804 and set about modernizing French law, the young Venezuelan was mightily impressed: "I confess this made me think of my unhappy country and the glory which he would win who should liberate it."

Bolívar left few impressions of his journeys, but their impact was clear. Returning to Caracas in 1807, the 24-year-old squire joined a clandestine movement advocating independence from Spain.

"My every action was prompted by calculation, and more, by daring."

IT SEEMED a quixotic dream. The Spanish colonial empire stretched from California to Tierra del Fuego, its cities rich with three centuries of culture, its mines transfusing a remote monarchy with a lifeblood of gold and silver and emeralds. But beneath the opulence lay mother lodes of unrest. In Spanish America some three million American-born colonists known as Creoles chafed under political discrimination, royal taxes, and restrictions on lucrative foreign trade with Europe. Beneath them toiled a volatile mixture of Indians, black slaves, and a palette of ethnic blends known as *zambos, pardos,* and mestizos, some 14 million strong.

When Napoleon dethroned the Spanish king, Ferdinand VII, he unwittingly gave the would-be revolutionaries their chance. Creoles quickly formed juntas, ostensibly loyal to the deposed king but intent on displacing the royal bureaucracy. By 1810 ardent separatists took control in many regions of South America. The Republic of Venezuela was officially born on July 5, 1811, and later adopted a constitution largely based on that of the United States. Soon after, as royalist forces and loyalist Creoles organized resistance, the new republic went to war.

"Without a doubt we are Bolivarianos," says Colombian politician Antonio Navarro Wolff, supporting an ally's congressional bid in 1991. A former guerrilla, Navarro forsook warfare and helped write his country's constitution. A 1994 presidential candidate, he invokes Bolívar's call for Latin solidarity.

The revolution began in a blaze of ignominy. Poorly trained Venezuelan militiamen were defeated by a small Spanish force. Bolívar, now a militia colonel placed in charge of the coastal town of Puerto Cabello, was forced to flee when turncoat rebels released the imprisoned royal garrison. After the Venezuelan commander, Gen. Francisco de Miranda, surrendered, he secretly tried to leave the country. The furious Bolívar accused him of treason and allowed him to fall into the hands of the Spanish commander. Bolívar later received amnesty and a passport to leave Venezuela.

It was the first expression of the imperious will that would soon catapult him to fame. Escaping to nearby Cartagena, the old coastal fortress then in rebel hands, he poured out his fury in a manifesto that excoriated the Venezuelan government's failures.

"Forgive me if I . . . sketch briefly the causes that brought Venezuela to its destruction," he wrote in December 1812. Among its principal failures, the government had refused to create a professional army. By printing paper money to support a huge bureaucracy, it had fueled inflation, alienating the powerful Creole agriculturists.

"But what weakened the Venezuelan government most was the federal form it adopted in keeping with the exaggerated precepts of the rights of man. . . . The popular elections held by the simple people of the country and by the scheming inhabitants of the city added a further obstacle . . . the former are so ignorant that they cast their votes mechanically and the latter so ambitious that they convert everything into factions. As a result . . . the government was placed in the hands of men who were either inept, immoral, or opposed to the cause of independence. . . . Our

division, not Spanish arms, returned us to slavery." It was a theme he would return to again and again: With no tradition of local government, South America was not ready for North American-style democracy, which he would dismiss as "a government so sublime . . . that it might more nearly befit a republic of saints."

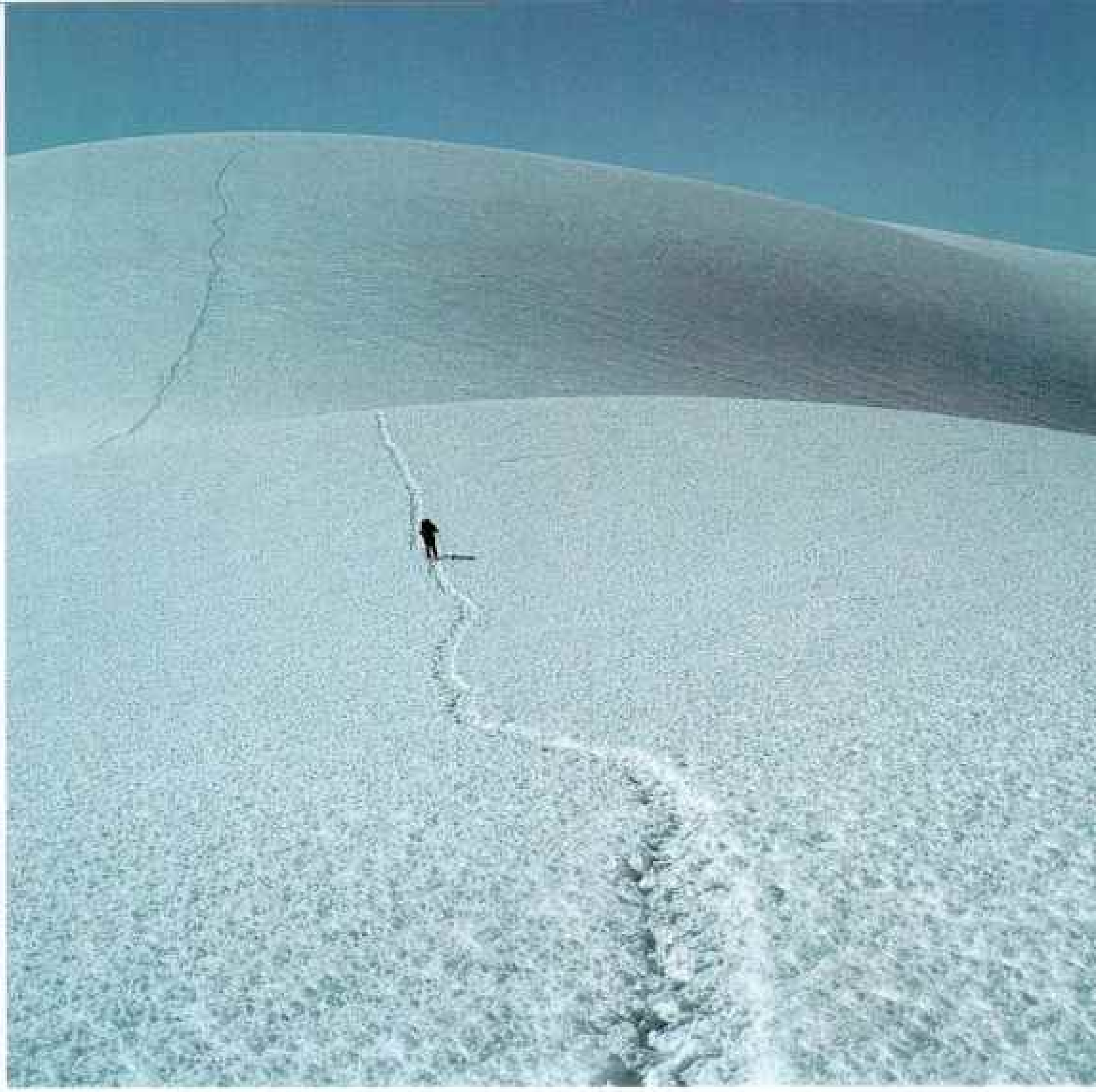
His view was not so different from that of Thomas Jefferson, who in 1811 wrote to the Polish patriot Tadeusz Kościuszko that "Spanish America is all in revolt. The insurgents are triumphant in many of the States, and will be so in all. But there the danger is that the cruel arts of their oppressors have enchained their minds, have kept them . . . as incapable of self-government as children."

Venezuela was not alone in disarray. Cities like Bogotá and Cartagena had declared independence from Spain and each other, threatening civil war. Other Colombian cities, like Santa Marta and Pasto, remained fiercely royalist. Sensing Bolívar's charismatic leadership, Cartagena's rulers assigned him to hold off royalist forces east of the city. For Bolívar this was not enough. Recruiting more troops, he staged a lightning campaign that routed Spanish garrisons all the way from Cartagena to Caracas, where in 1813 he was greeted by ecstatic crowds and given the formal title of El Libertador, becoming absolute dictator of Venezuela.

Triumph was brief. Spanish cavalry commanders had enlisted the *llaneros*, half-wild horsemen and cattle drovers of the plains, and turned them against their Creole masters. Joined by black slaves, they ranged the land with unmatched ferocity, routing Bolívar's troops and subjecting civilians to looting, rape, and execution.

Bolívar had declared "war to the death" and now ordered the execution of 800 Spanish prisoners. Twice he was driven from Venezuela, and twice he returned with fresh troops along with armaments and funds provided by British merchants and Haitian President Alexandre Pétion.

A downpour drenches Embera Indians in the Chocó rain forest of western Colombia. Despite his passion for unity, Bolívar was never able to pull together South America's diverse ethnic groups.



THE WAR TOOK A NEW TURN in early 1817 with the capture of the city of Angostura, on the Orinoco River, by a young mulatto rebel general named Manuel Piar. Bolívar praised him for a "most brilliant" victory, which for the first time gave him a secure headquarters in Venezuela's heartland, reachable by seagoing vessels. But Piar had an ambition to be a liberator himself. Appealing to other pardos, he planned an insurrection in the easternmost province. As a lesson to other would-be rivals, Bolívar had him shot against the wall of the Angostura cathedral on October 16, 1817.

"Never was there a death more useful, more politic and . . . more deserved," he wrote.

In Angostura fortune began to favor the revolution. Napoleon's downfall at the Battle of Waterloo released huge stocks of surplus armaments and unemployed soldiers, which Bolívar acquired with borrowed British funds. Meanwhile, the llaneros had switched sides behind one of their own, Gen. José Antonio Páez, who rallied them to the republican cause.

Bolívar used the opportunity to further his own ambitions. In February 1819 he convened the Congress of Angostura, which would

proclaim the unification of the territories of present-day Venezuela, Colombia, Ecuador, and Panama into a vast republic that became known as Gran Colombia and make him president with dictatorial powers.

That summer he staged a military masterpiece. Riding with his forces some 300 miles over flooded plains, he led them across the Andes into Colombia in weather so harsh that one-third of his troops and most of their mules and horses died on the way. Such feats of endurance would earn him the honorific title "*culo de hierro*" from his men—meaning, roughly, "iron bottom."

The 1,500 survivors were fed, clothed, and provided mounts by villagers, and a few days later the llaneros annihilated royalist cavalry at Pantano de Vargas. On August 7, at Boyacá, the main force of Spaniards was routed in only two hours by a mixed army of South Americans and British mercenaries.

Bolívar was euphoric: "The triumphal arches, the flowers, the hymns, the acclamations, the wreaths offered and placed upon my head by the hands of lovely maidens, the fiestas, the thousand demonstrations of joy are the least of the gifts that I have received," he wrote. "The greatest and dearest to my heart are the tears, mingled with the rapture of happiness, in which I have been bathed and the embraces with which the multitude have all but crushed me."

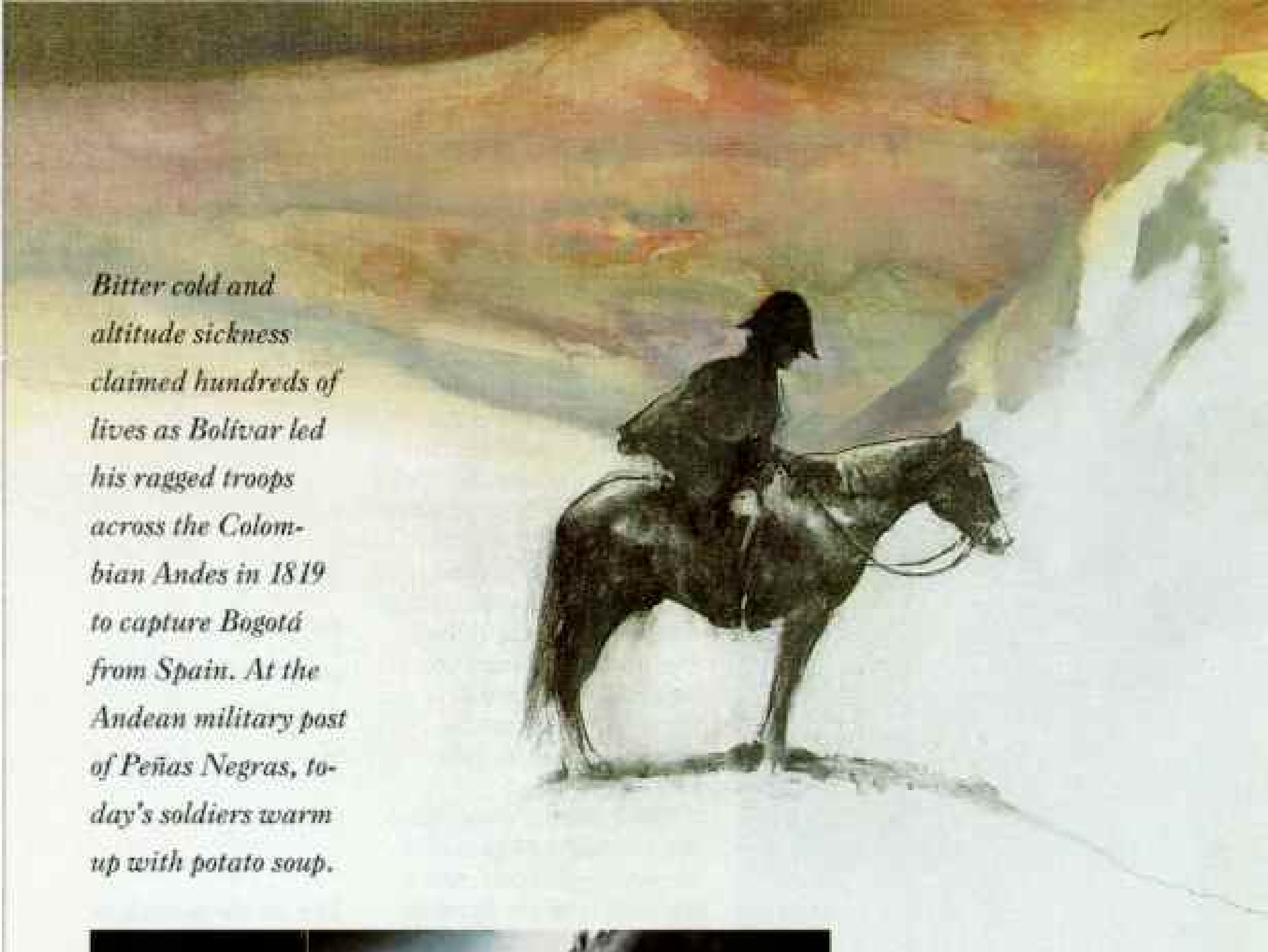
Success begat success. In June 1821 the llaneros of Páez and the British legion ended the major Spanish threat in Venezuela at the Battle of Carabobo. That left the formidable task of dealing with Peru, heart of Spain's South American empire, where a 20,000-man royalist army waited in the Andean highlands. Leaving the new vice president of Gran Colombia, Francisco de Paula Santander, in charge, Bolívar headed south, where his troops first captured Quito, capital of modern-day Ecuador.

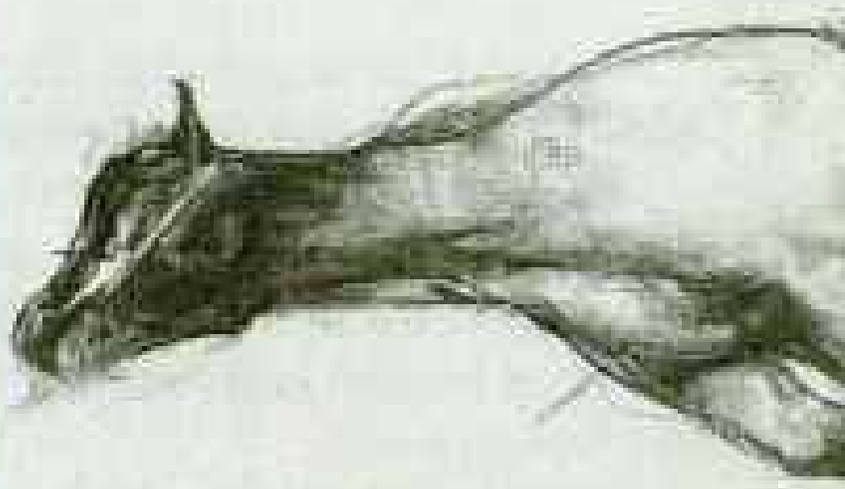
There he was conquered himself, by a beautiful and tough-minded 24-year-old Quiteña named Manuela Sáenz. Unlike a multitude of previous lovers, she became his indefatigable companion, often following astride a cavalry charger in colonel's regalia, fiercely hostile to his enemies, fiercely loyal to his cause. *(Continued on page 56)*

"I feel as though inflamed by a strange and sublime fire."

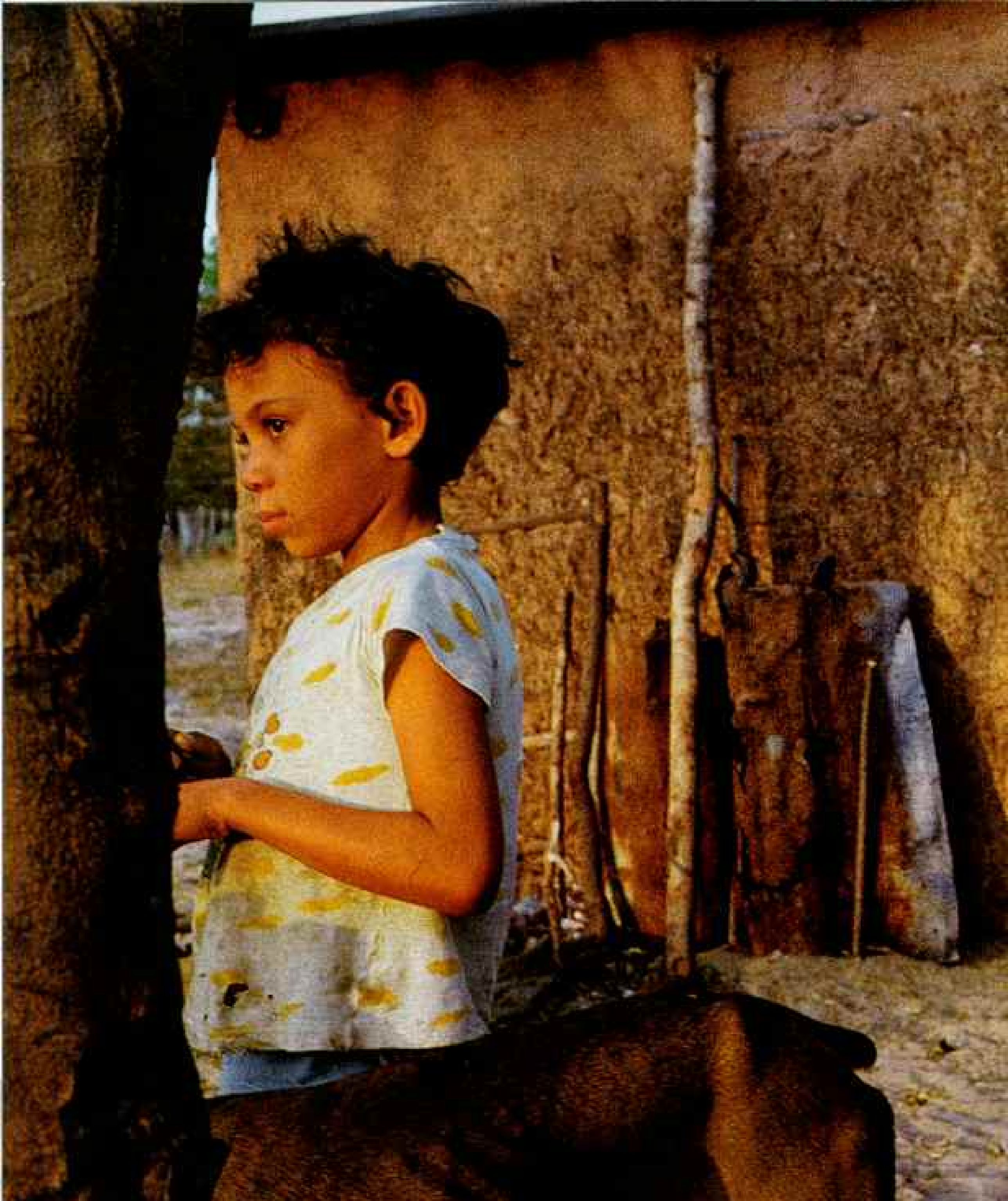
Blinding snow surrounds a climber on Ecuador's Chimborazo volcano. Bolívar described the supernatural vision that seized him on the mountain in his poetic essay "My Delirium on the Chimborazo"—but he never reached the top.

Bitter cold and altitude sickness claimed hundreds of lives as Bolívar led his ragged troops across the Colombian Andes in 1819 to capture Bogotá from Spain. At the Andean military post of Peñas Negras, today's soldiers warm up with potato soup.





"*I have met with obstacles which only the most unflinching determination could overcome. The ruggedness of the mountains we traversed would be inconceivable to anyone who has not traveled that route.*"



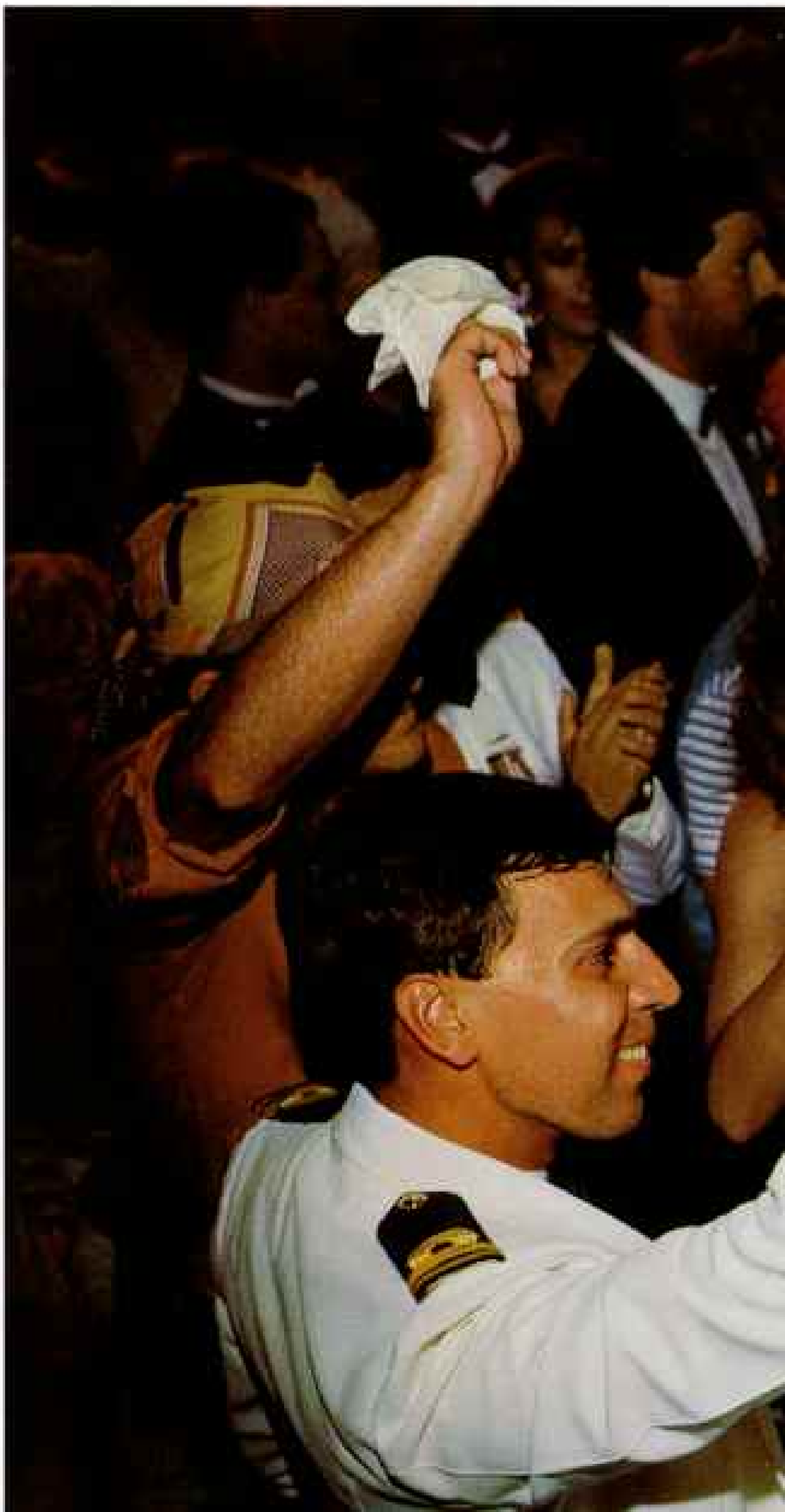
Llaneros and their animals share spartan living in the ranching community of Cunaviche. Though Bolívar granted land to his llanero soldiers, their plots often ended up in the hands of wealthy officers.

"I too suffer from this searing fever, which consumes us like two children."

Bogotá's haughty matrons would view her as a harlot, but Bolívar had the last word: "The memory of your enchantments dissolves the frost of my years," he told her, in one of the many love letters he wrote.

LIMA, PERU'S CAPITAL, had been occupied peacefully by Argentine Gen. José de San Martín, who had sailed north after staging a masterful march across the Andes to conquer Spanish forces in Chile. In July 1822 the two liberators met in private at the Ecuadorian port of Guayaquil. What transpired between them is the subject of a never ending and frequently rageful debate between Argentines, who consider San Martín the real liberator of South America, and their bolivarian cousins, who believe that the Argentine had lost control of the situation in Peru. But within two months San Martín gave up his title of Protector of Peru and sailed home to Argentina, leaving his troops to fend for themselves. They rebelled, turning the coastal fortress of Callao over to

MUSEO 20 DE JULIO, BOGOTÁ



A liberator-style celebration breaks out in Cartagena as naval officers and beauty queens observe the city's Independence Day. Bolívar "was a friend of dancing, gallant, and highly addicted to ladies," said one ally. He burned with passion for Manuela Sáenz (above), his loyal Ecuadorian lover.

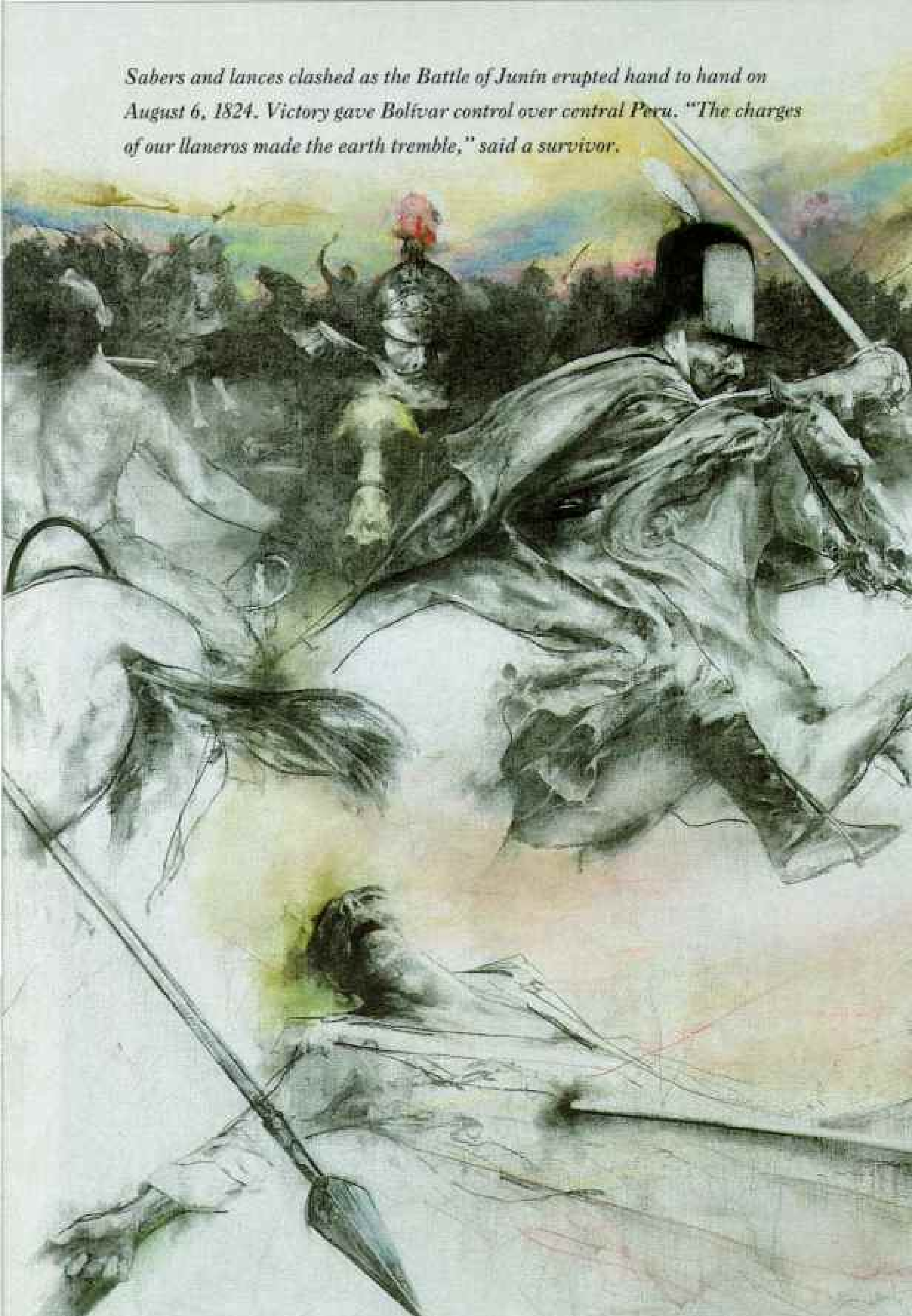
Spanish forces in 1824. Lima's aristocracy followed suit, surrendering the city. Meanwhile republican leaders had persuaded Bolívar to take over as dictator.

"Peru is a chamber of horrors. . . . Corruption . . . envelops me on all sides. . . . Every ally is guilty of defection or of treachery," Bolívar wrote to Vice President Santander. Nevertheless he marshaled his formidable military skills, molding Peruvian villagers and Colombian troops into an efficient army, demanding funds and churchly treasures to pay for the final stage of the revolution.

Visiting Bolívar at the time, U. S. Navy officer Hiram Paulding left a vivid picture of the leader joining his officers at dinner after a melancholy day of brooding.

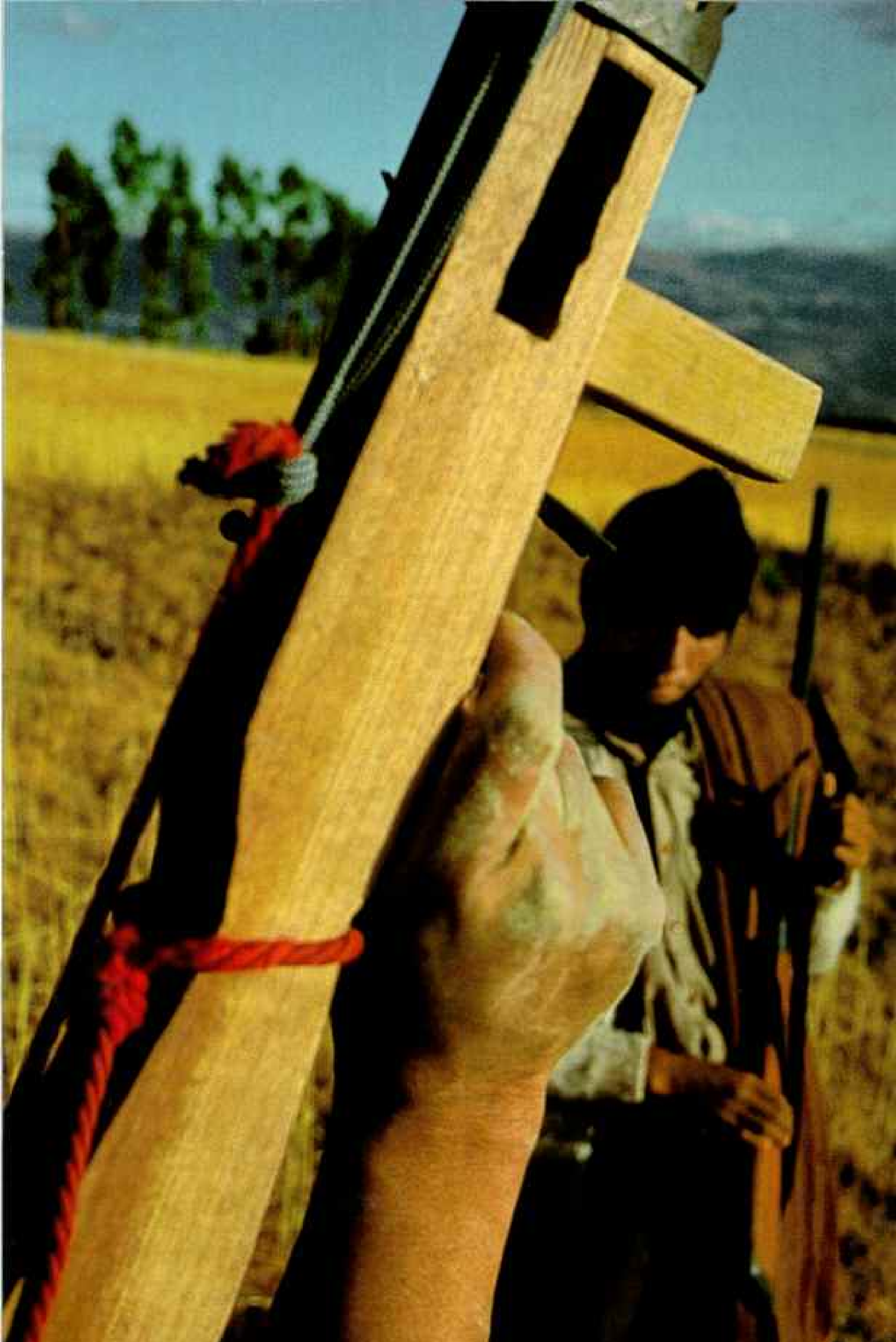
"The settled gloom passed from his careworn features," Paulding reported, "his eyes sparkled with animation, and with a flow of eloquent raillery or good-natured sarcasm . . . he threw such a charm round the social board that all eyes were fixed *(Continued on page 62)*

Sabers and lances clashed as the Battle of Junín erupted hand to hand on August 6, 1824. Victory gave Bolívar control over central Peru. "The charges of our llaneros made the earth tremble," said a survivor.



"Soldiers! . . . *Fastened upon you, entranced, is the gaze of liberal Europe—because freedom in the New World will give hope for freedom everywhere.*"

Brandishing a homemade rifle, a Peruvian farmer protects against Shining Path guerrillas near the city of Ayacucho. Bolívar's outnumbered patriots trounced royalist forces here on December 9, 1824, in the last great battle for South American independence.



"The poor Indians are truly in a state of lamentable depression. I intend to help them all I can."

upon him with gratification and delight."

Inspired by his leadership, the new army gave him victory over the Spanish cavalry at Junín on August 6, 1824. A few months later, on December 9, 1824, Gen. Antonio José de Sucre inflicted a final defeat on Spain at Ayacucho. The war was over. The business of peace could begin.

Throughout his military campaigns Bolívar had written extensively on the future.

"I shall tell you with what we must provide ourselves in order to expel the Spaniards and to found a free government," he wrote in exile in 1815. "It is *union*, obviously; but such union will come about through sensible planning and well-directed actions rather than by divine magic."

Bolívar had no illusions that it would be easy. In 1821 he described Gran Colombia as "this amazing chaos of *patriots*, godos [pejorative term for Spaniards], self-seekers, blancos, pardos . . . *federalists, centralists, republicans, aristocrats,* the *good* and the *bad,* and the swarm of hierarchies which divide each of these groups." Mindful of racial and regional divisions that had plagued him in war, he wrote this prophetic letter to Pedro Gual, his minister of foreign affairs:

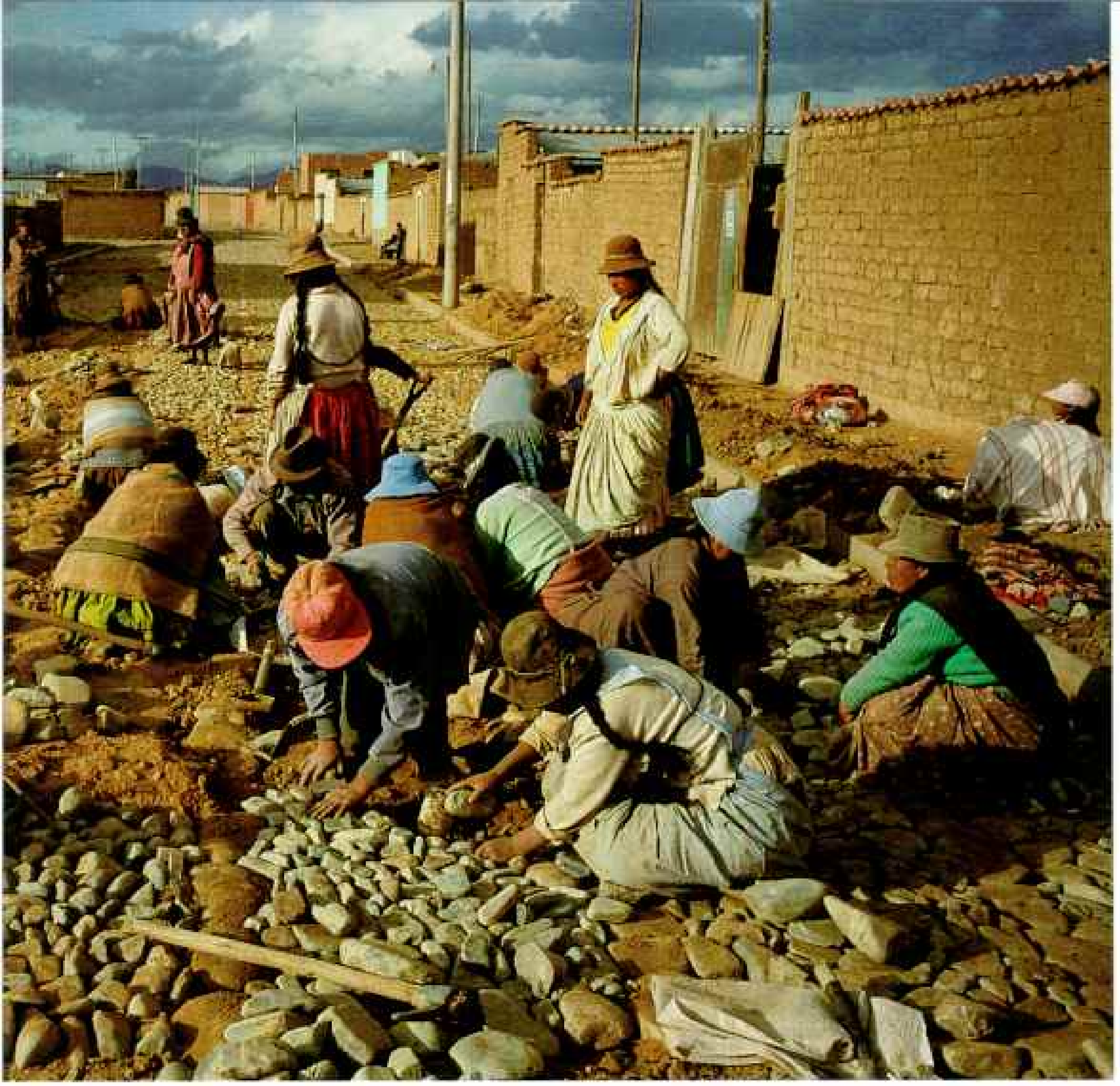
"You can be sure, Gual, that we are over an abyss, or, rather, over a volcano that is about to erupt. I fear peace more than war."

Trading work for food, Indian women lay stones for a road outside La Paz, Bolivia. The country's first president and author of its 1826 constitution, Bolívar declared the equality of all citizens and did away with laws exploiting the country's largely Indian population.

TO COUNTER THE FORCES of division, Bolívar had a continental plan. While preparing for the final battles in Peru, he had invited the new republics to attend a congress in Panama to form a confederation "that should act as a council during periods of great conflicts, to be appealed to in the event of common danger, and to . . . conciliate all our differences." Poignantly aware of these differences, he wrote, "It is my feeling that we will live on for centuries if we can only survive the first dozen years of childhood."

Only four countries showed up, and the confederation died aborning.

The Liberator turned his thoughts and hopes toward the newly formed republic of Bolivia as his revolutionary promised land. Impressed by his ideas, leaders there asked him to write a constitution for the new



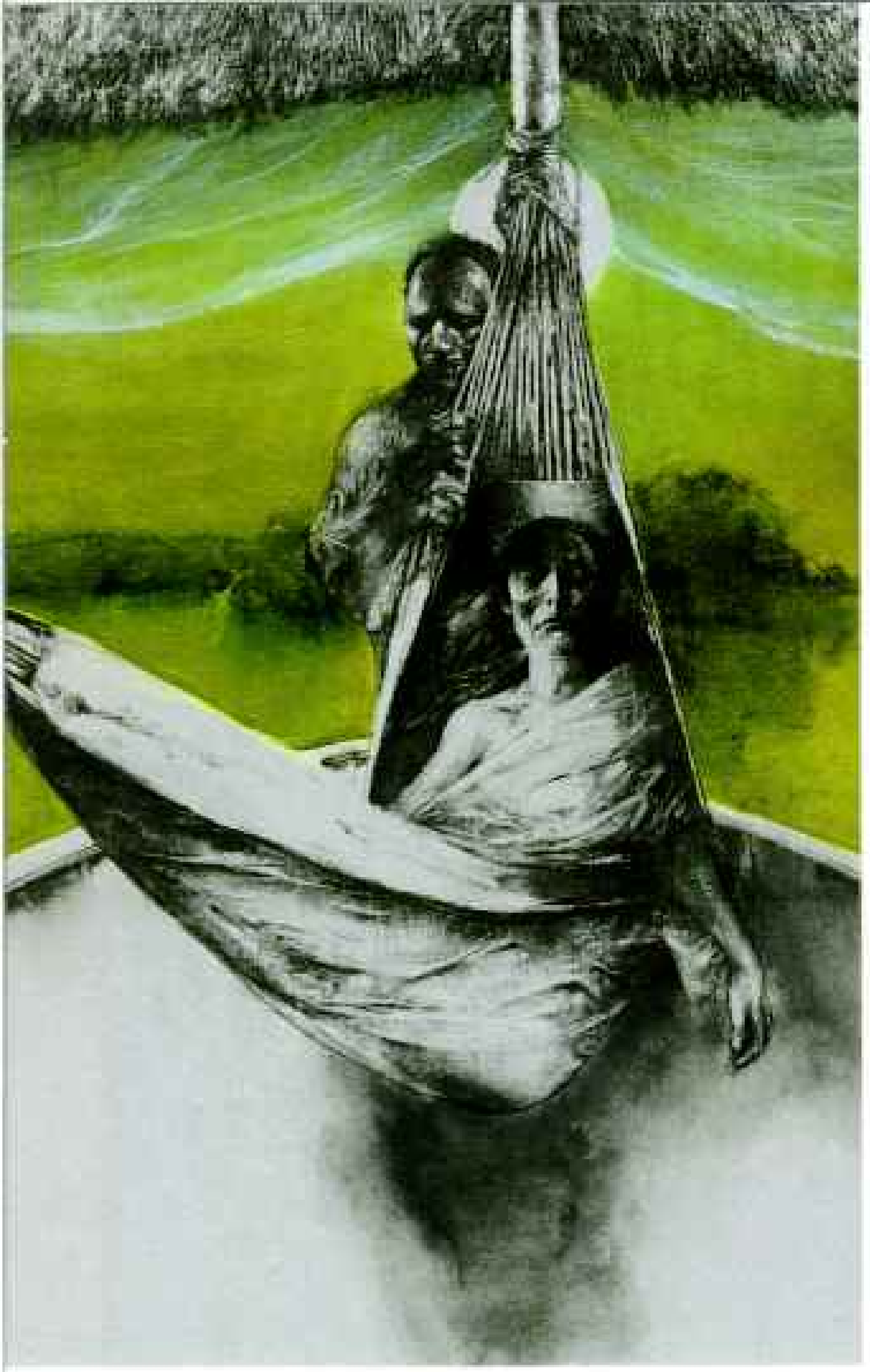
country. He poured his dreams, his experience, and his heart into the document he submitted to them on May 25, 1826.

It abolished slavery, which he called "the negation of all law," and stripped away governmental recognition of any one religion. Instead, public and governmental morality would be guarded by a house of censors, who, overseeing "the sciences, the arts, education and the press. . . . exercise the most fearful yet the most august authority."

His most dramatic prescription was for a lifetime president, who "becomes the sun which, fixed in its orbit, imparts life to the universe. . . . Upon him rests our entire order, notwithstanding his lack of powers . . . *a life-term president, with the power to choose his successor,* is the most sublime inspiration amongst republican regimes."

In a letter to Santander written shortly after sending him a copy of the constitution, Bolívar emphasized his view: "I am convinced, to the very marrow of my bones, that our America can only be ruled through a well-managed, shrewd despotism."

It was this almost napoleonic philosophy, articulated now with the full force of military glory and charismatic will, that created a political gulf between him and Santander and earned him scorn and denunciation



from Americans north and south.

William Tudor, U. S. consul at Lima, wrote in 1826 of the "deep hypocrisy" of Bolívar, who allowed himself to be deceived by the "crawling, despicable flattery of those about him."

Later, John Quincy Adams would define Bolívar's military career as "despotic and sanguinary" and state baldly that "he cannot disguise his hankering after a crown." In Bogotá the U. S. minister and future president, Gen. William Henry Harrison, accused Bolívar of planning to turn Gran Colombia into a monarchy: "Under the mask of patriotism and attachment to liberty, he has really been preparing the means of investing himself with arbitrary power."

Bolívar was intent on demonstrating just what enlightened despotism meant. Traveling the Bolivian highlands, he decreed new schools and highways, ordered judicial reforms, and relieved villagers of centuries-old taxes.

Meanwhile, the revolutionary edifice began to collapse at home. Venezuelan General Páez, rejecting the authority of Santander in Bogotá, was threatening to secede from Gran Colombia. Bolívar appeased Páez and in 1827 returned to Bogotá to resume control. But Santander had governed wisely in Bolívar's absence, building a strong base of supporters who began to attack the Liberator's increasingly imperial ways.

"I am the victim of my persecutors, who have brought me to the grave. I forgive them."

In early 1828 a convention was held at Ocaña, Colombia, to resolve differences between the factions and decide on a constitution. Brusquely Bolívar told representatives that they should undo "a swollen code of laws" that paralyzed government and adopt a more centralized rule. When his delegates saw his proposed constitution threatened, they paralyzed the convention by withdrawing. In what amounted to a coup, on June 13, 1828, he was proclaimed dictator by a partisan council meeting in Bogotá.

Santander's supporters plotted revenge. On September 25, 1828, they entered the Palacio de San Carlos, where Bolívar was spending the night with Manuela Sáenz. Hearing a commotion, she commanded him to swallow his pride and escape through a window, then contemptuously stared down the would-be assassins when they burst into the room.

Fourteen conspirators were executed. Without any evidence of his involvement, Santander himself was sentenced to death. Bolívar granted clemency on the condition that Santander go into exile.

But the collapse of Bolívar's empire became inevitable. He raced south to halt Peru's threats to recapture Bolivia and Guayaquil. In his absence Venezuela seceded. Returning to Bogotá, Bolívar called a new congress to reorganize the republic.

WHEN THE LIBERATOR addressed the congress in January 1830, an eyewitness described a broken man, wasted by illness and adversity: "Pale, exhausted, his eyes . . . lightless; his deep voice, hardly audible." He resigned his office, and his final words tolled like a funeral bell: "Fellow-Citizens, I am ashamed to say it, but independence is the sole benefit we have gained, at the sacrifice of all others."

Bolívar left Bogotá for the last time in early 1830 and traveled down the Magdalena River toward Cartagena. It is a powerful current, the color of earth, that flows through Colombia's central valley. Ostensibly he was going into exile in Europe. For a time he probably had hopes that he would be called once more to power.

But there was no more time. Tuberculosis devoured his body. Bitterness devoured his spirit. He died in a very small room at a ranch near Santa Marta, on the Colombian coast.

Today the room is a shrine, with yellow walls and a barred window that admits birdsong and the bright colors of flowering bushes. A stone tablet records the moment: December 17, 1830, at 1:03:55 p.m.

Outside, beneath a gigantic saman tree said to be as old as the ghosts of the conquistadores, stands a marble statue of Bolívar. A bird has nested in his hat. Nearby, in a modern art museum, I saw a painting by a Peruvian artist, José Carlos Ramos, which shows a quizzical Bolívar surrounded by forests, birds, and wraithlike white figures that symbolize justice, prosperity, joy.

There is no place here for the naked liberator, I thought. It seemed important to remember the searing words he wrote shortly before his death: "America is ungovernable for us.

"He who serves a revolution ploughs the sea. . . ." □

Unable to control provincial forces tearing apart the liberated continent, a frail Bolívar spent his last days in this house (below) outside Santa Marta, Colombia.

"My name now belongs to history, it will do me justice," he wrote, before tuberculosis claimed him in 1830.

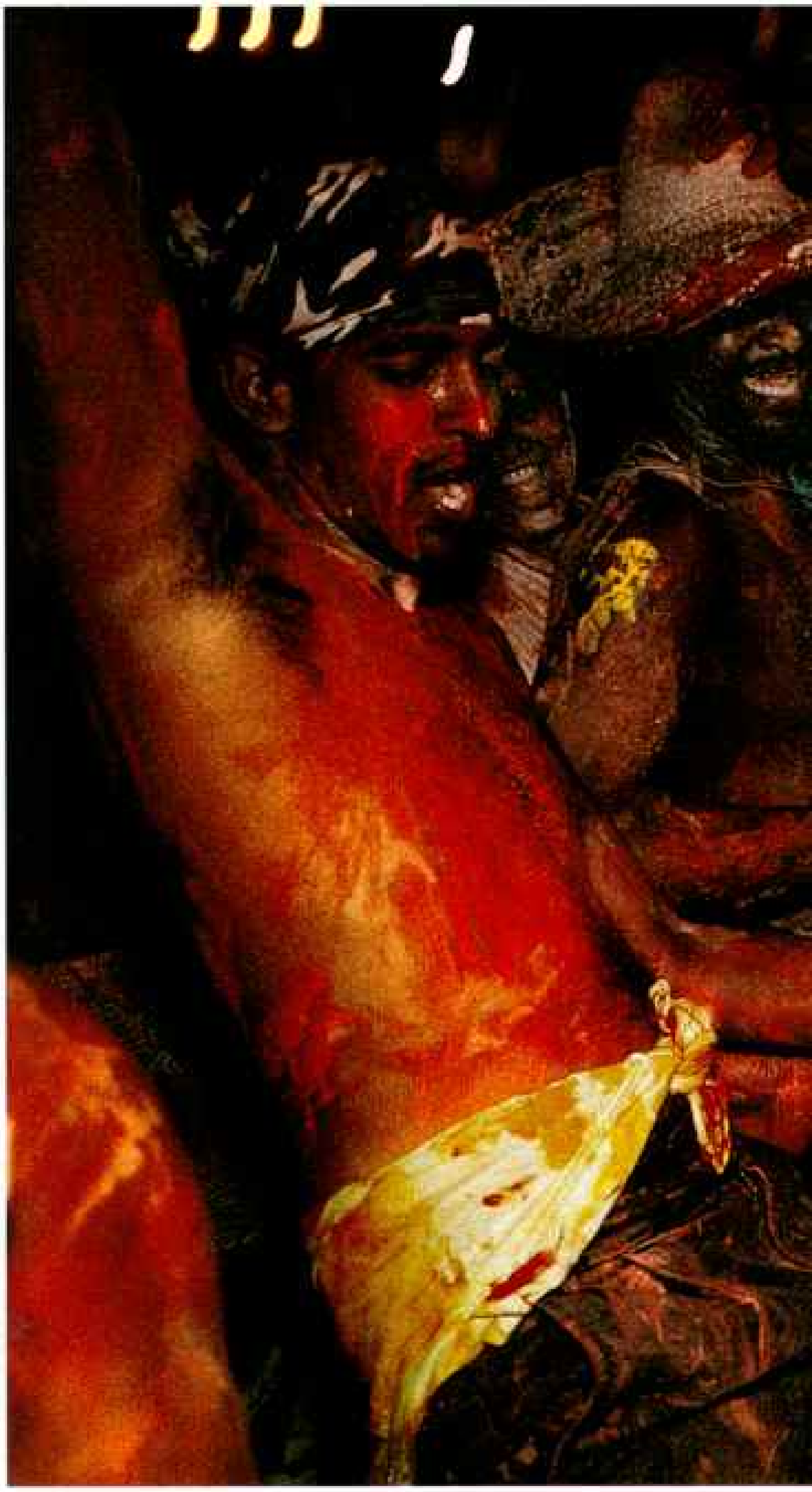
The Wild Mix of TRINIDAD

Streaked and slathered with mud, masqueraders carouse before dawn as Carnival surges through Port of Spain, capital of the Caribbean's southernmost island nation. Music born in Trinidad—steel band tunes and calypsos—carries the crowd away.

Parties are a serious pastime here, and Carnival is the biggest bash of all. It unites revelers of diverse backgrounds and shows them at their festive best—vibrant, inventive, and dedicated to seizing the day.

BY A.R. WILLIAMS
NATIONAL GEOGRAPHIC EDITORIAL STAFF

PHOTOGRAPHS BY DUDLEY M. BROOKS AND DAVID ALAN HARVEY



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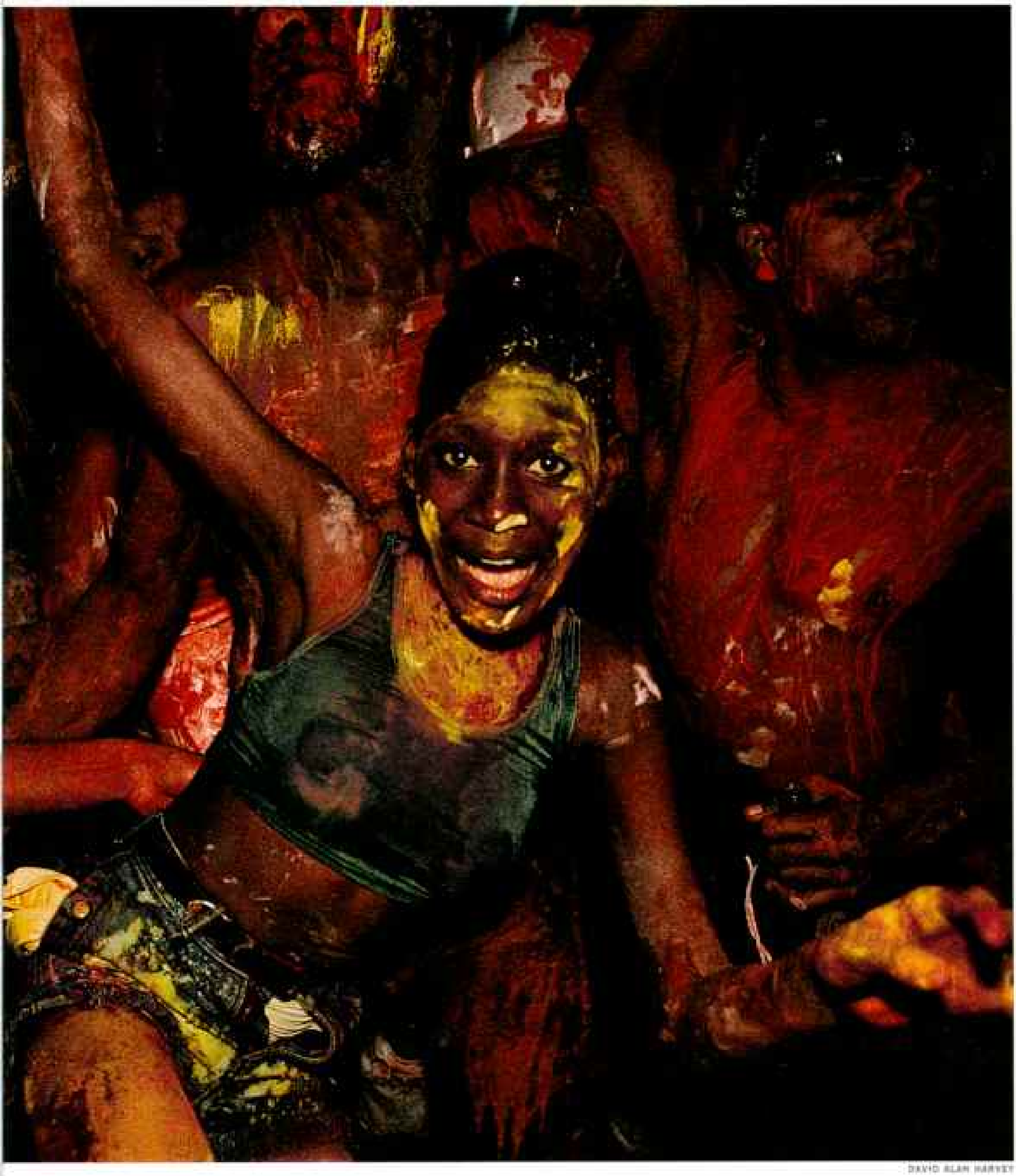


DAVID ALAN HARVEY

DAVID ALAN HARVEY

FAMILY TIES

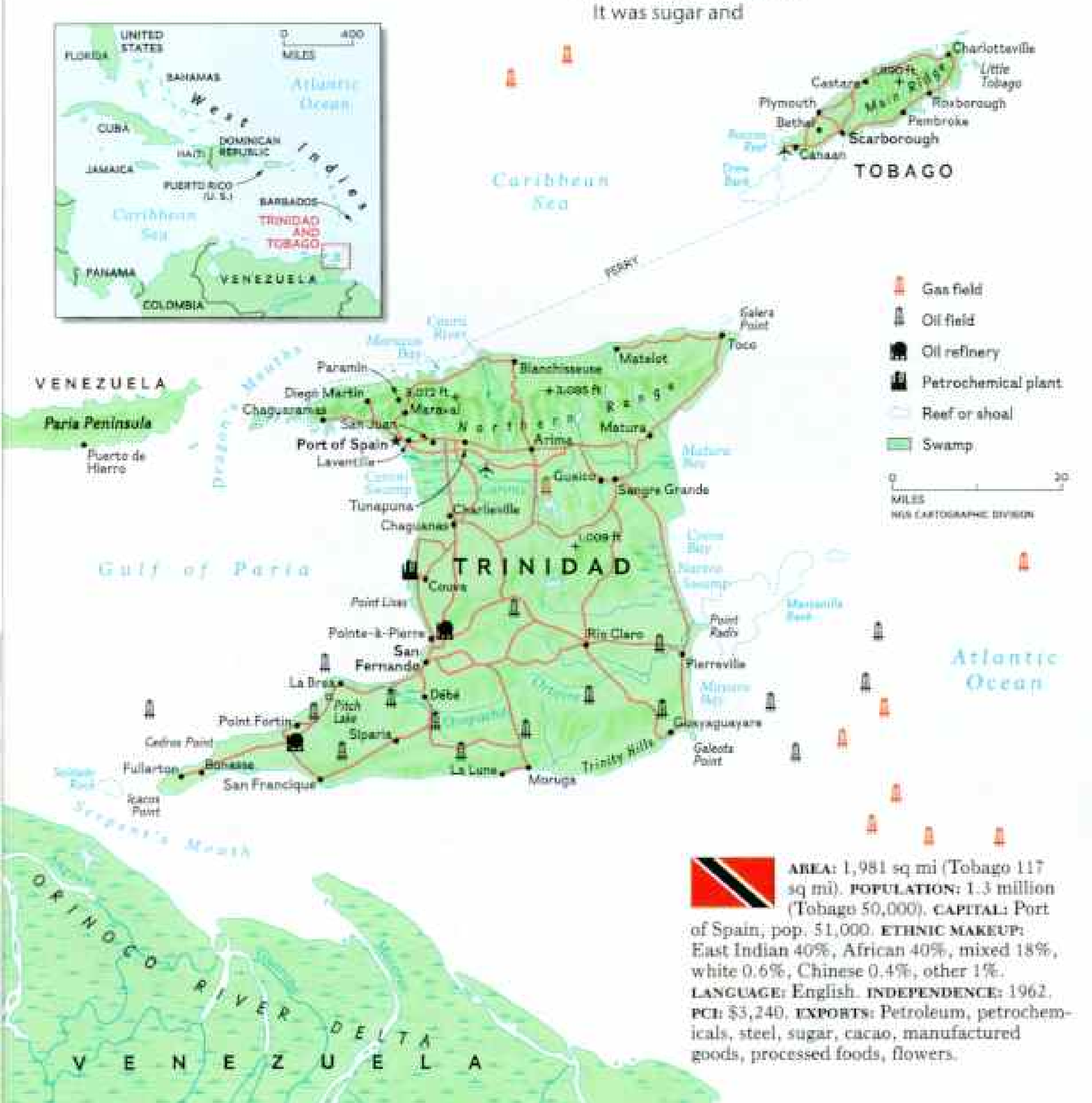
Raising a son can be fun, as Patrick Ganessingh proves while visiting Trinidad's sylvan north coast with kin from Canada. Little Patrick was, by chance, born in New York City, making him an American. His parents, merchants of East Indian stock, are Pentecostal in faith. All in all, a typical Trinidadian family.

LIQUID ASSETS, CASH CROPS

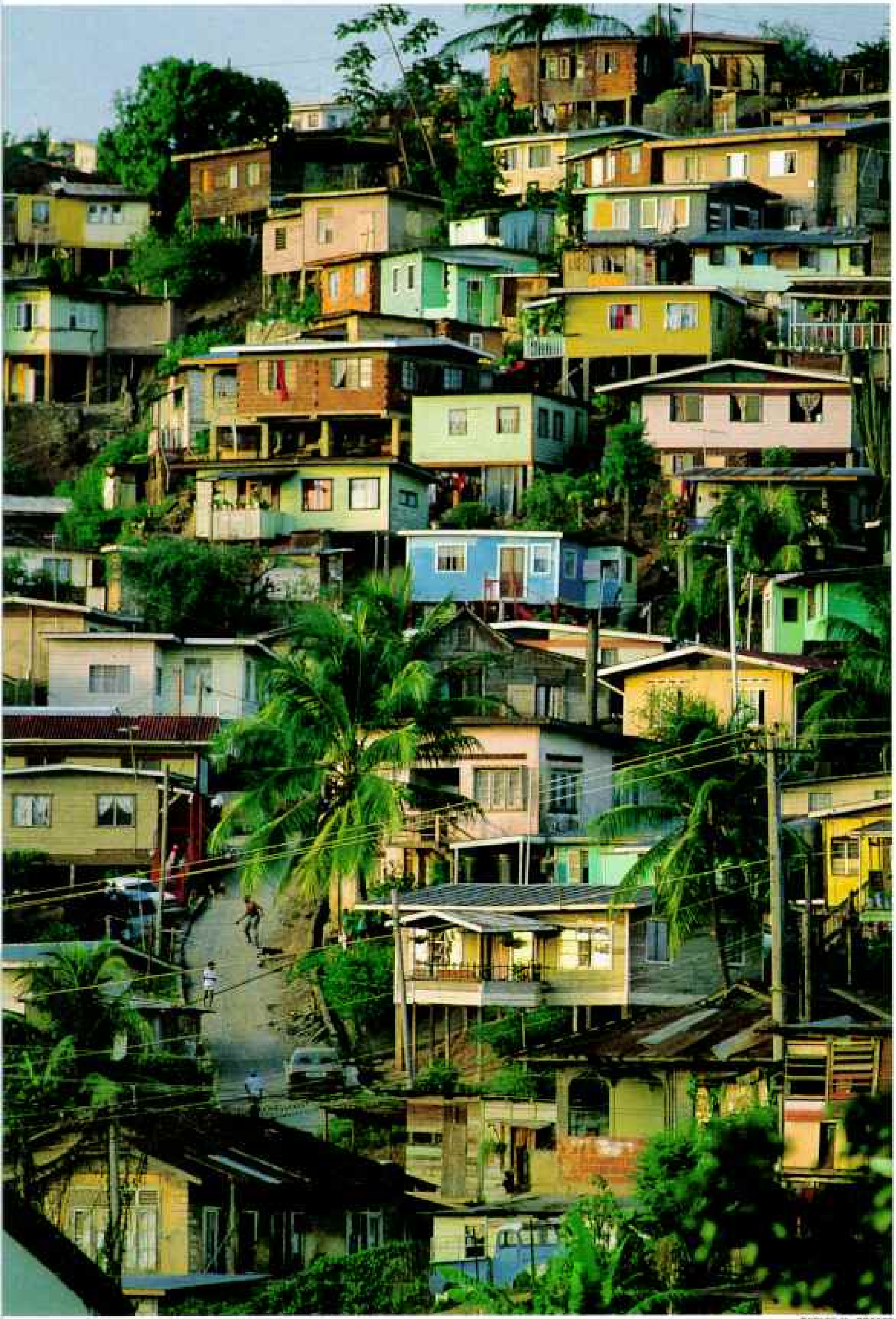
Pitch oozes from the ground to form a great dark lake in southwest Trinidad. Discovered by Sir Walter Raleigh in 1595, it hinted of underground treasure.

"Reservoirs show the same trends as Venezuela, a tremendous oil province," notes petroleum engineer Vincent Pereira. Sweet crude and associated natural gas fuel one of the Caribbean's strongest economies. Even residents of tough neighborhoods such as Laventille (right), crowding above the capital, live better than many in the region.

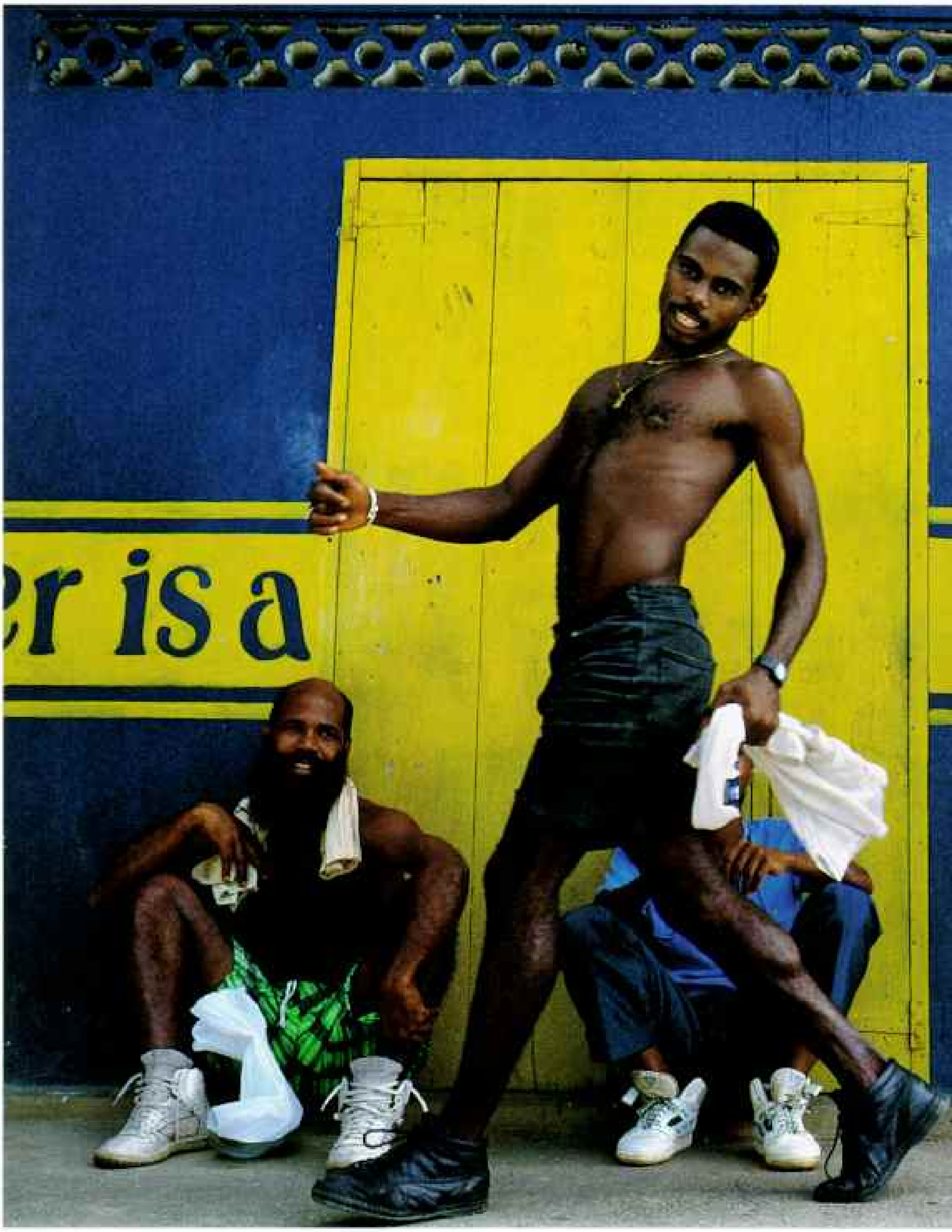
It was sugar and cacao, however, that first made Trinidad and Tobago rich. Developed as separate plantation societies by various colonial powers until Britain united them in 1889, the islands retain distinct identities—Trinidad running at city pace, Tobago rural and relaxed.



AREA: 1,981 sq mi (Tobago 117 sq mi). **POPULATION:** 1.3 million (Tobago 50,000). **CAPITAL:** Port of Spain, pop. 51,000. **ETHNIC MAKEUP:** East Indian 40%, African 40%, mixed 18%, white 0.6%, Chinese 0.4%, other 1%. **LANGUAGE:** English. **INDEPENDENCE:** 1962. **PCI:** $3,240. **EXPORTS:** Petroleum, petrochemicals, steel, sugar, cacao, manufactured goods, processed foods, flowers.



DUDLEY M. BROOKS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BUDLEY M. BROOKS

CHILLING OUT

A cool move cuts through a "lime"—a casual gathering of friends—outside a bar in Paramin. Trinidadians and Tobagonians alike have perfected the art of hanging out. When a lime makes long hours seem short, they call it sweet. When it languishes like a withered peel, they sigh, "This lime has no juice."

PLAY HARD, WORK HARD

Beach jocks scramble for a score at Maracas Bay (below), a hot spot for weekend fun on Trinidad's north shore. Beyond mountains to the south, Port of Spain and its suburbs sprawl for miles. A fleet of factories and a busy harbor (right) make it a commercial hub.

Hotels are few, though, and see more business travelers than tourists. Oil money flowing with the force of a gusher in the 1970s and early '80s allowed Trinidad to leave tourism to Tobago.

At the height of the boom, oil brought in 90 percent of export revenues. But falling prices have yanked the bottom from under recent national budgets. "For a number of years we've tried to diversify into other commodities to expand the export base," says Ronald Barrow, a government agriculture specialist.

Farmers now export new crops that require

DUDLEY M. BROOKS (ABOVE); DAVID ALAN HARVEY

less labor and earn more cash than those grown traditionally. Citrus orchards dot fields that used to rustle with sugarcane. Cattle graze beside old stands of silvery mauve coconuts. Orchids and anthuriums bloom under shade tents not far from cool groves of cacao.

At Point Lisas, on the island's west coast, a new industrial estate and port neatly divide an area once covered with sugarcane and mangroves. "We make everything here from cereal to steel," says estate spokeswoman Angela Couveia, "and 95 percent is exported."

INDIAN RITES OF PASSAGE

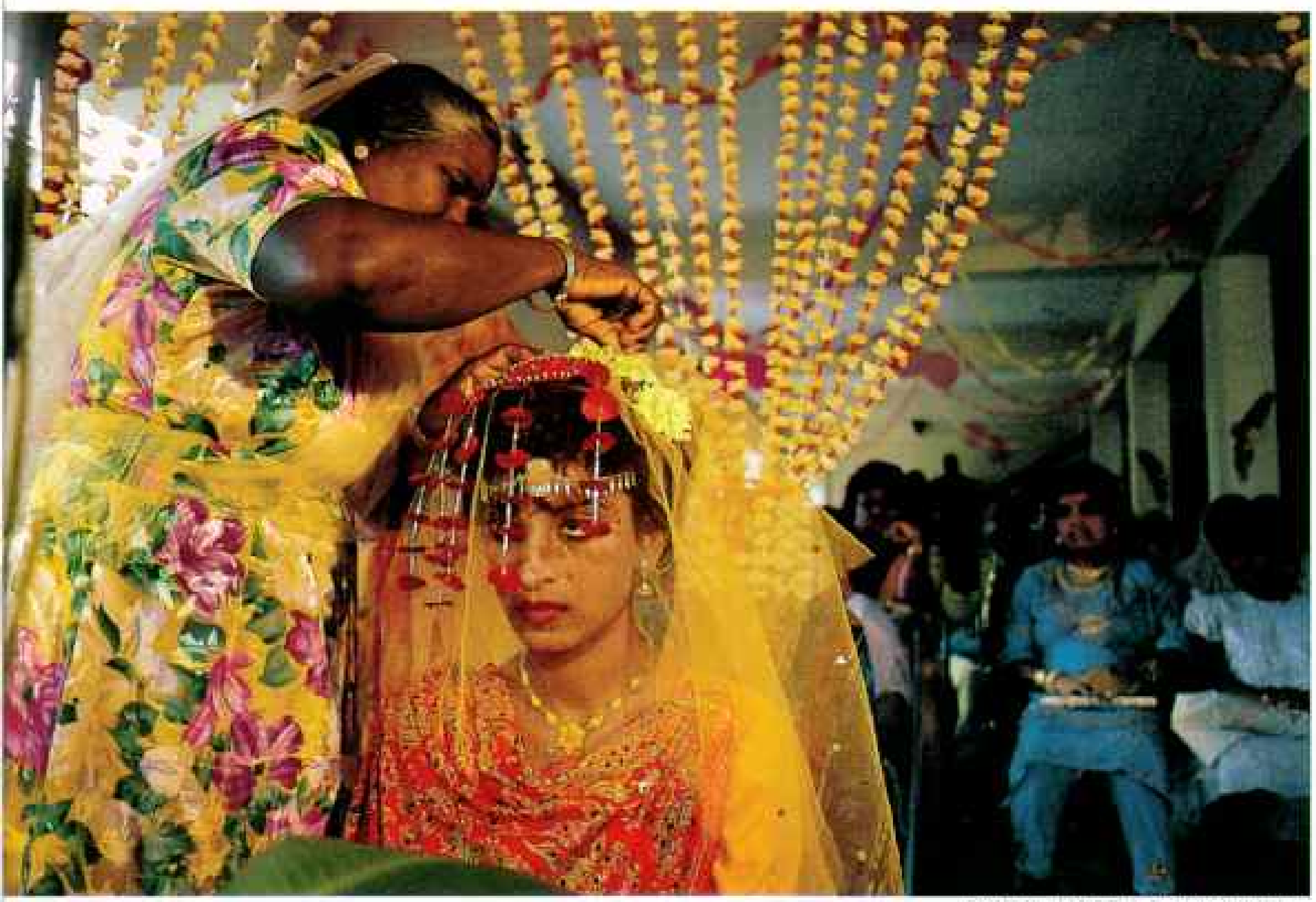
A final tug readies Veera Ramsumair for her wedding in Charlieville. In the Hindu tradition the groom was not allowed to see his bride until late in the ceremony, when she exchanged her yellow sari for a red one. "Everything was done in the Indian way, like they did a long time ago," she recalls.

Keeping another Hindu custom, Dayanand Dookie marks the end of mourning for his mother by having his head shaved. The cool water of the Caura, like rivers in India, carries the hair away to complete the renewal.

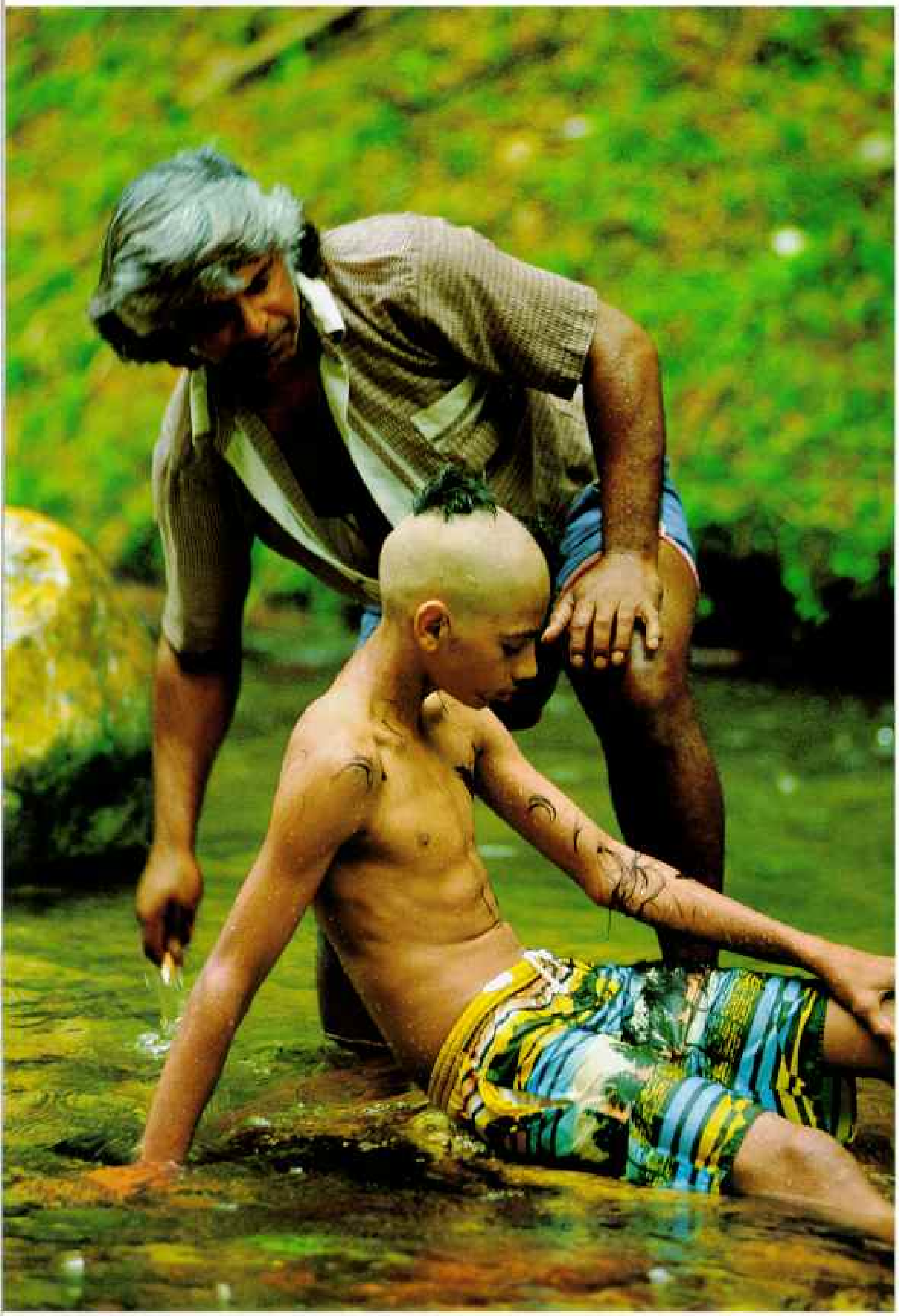
"These traditions came from village India," explains Ravi-ji, a community leader, "and over the years people have added drama and color."

East Indians came to Trinidad as indentured laborers to work on sugar plantations after the emancipation of African slaves in 1834.

Though many pursue other occupations today, descendants of those immigrants still harvest sugar, now a government monopoly. In the center and south of the island, where cane ripples across rolling acres, life moves to the rhythms of the East.



DUDLEY M. BROOKS (RIGHT); DAVID ALAN HARVEY

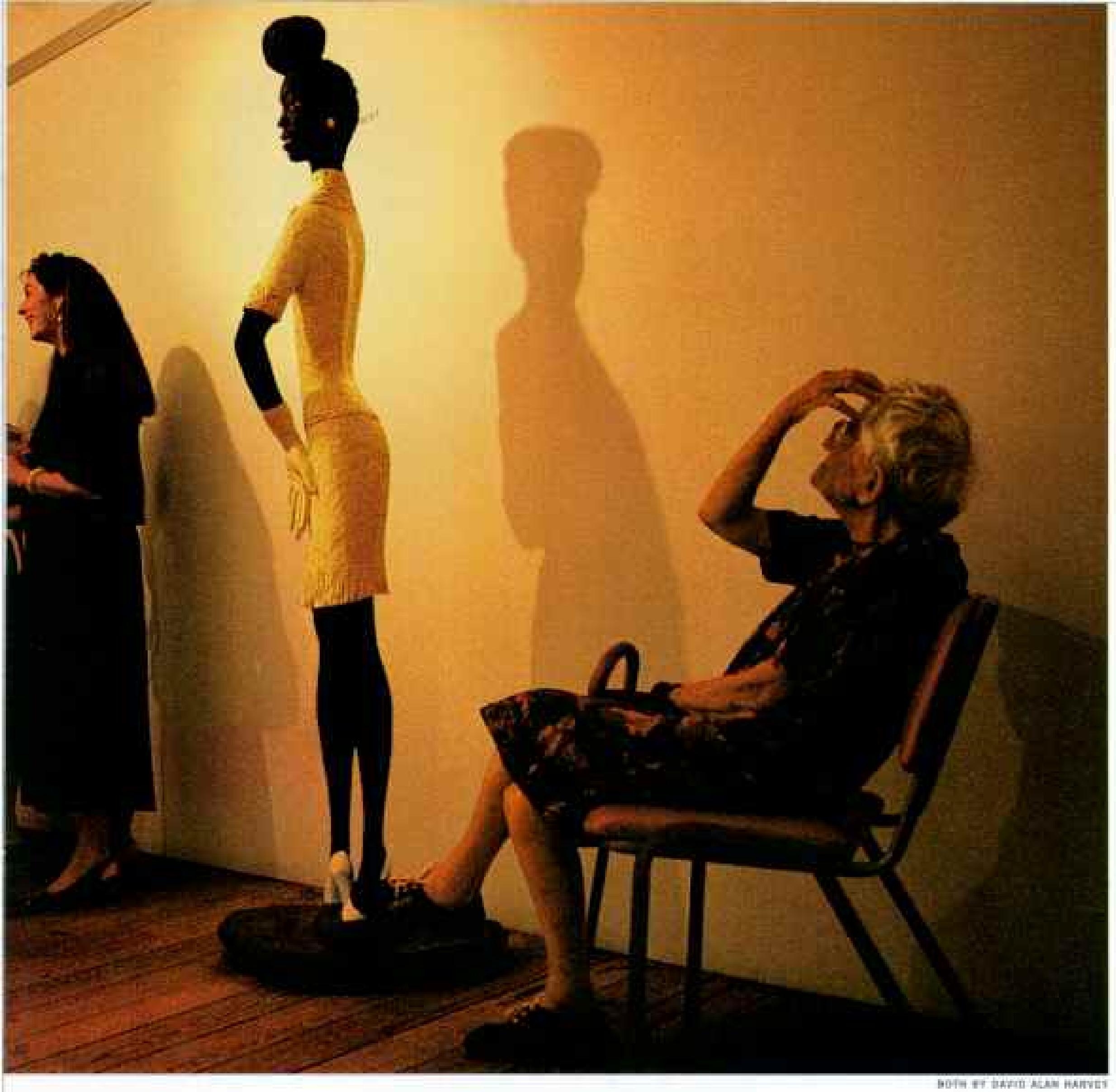


PALETTE OF PEOPLES

Like Carnival and cricket, art is a universal language in Trinidad. Embodied in a saucy figure (right) by German sculptor Luise Kimme, who works in Tobago, art brings together collectors, artists, socialites, and diplomats in a Port of Spain gallery. "They come from every single ethnic group," says gallery owner Mark Pereira.

More than any other Caribbean island, Trinidad is a multiethnic stew. Africans and East Indians, each with about 40 percent of the population, make up the base, while smaller groups add their own flavor.

Spanish and French families trace their roots to the 18th century,



BOTH BY DAVID ALAN HARVEY

when their ancestors came to clear land for plantations or to trade. The hostess of a party in Maraval (left) follows her family's history to England via Barbados. Portuguese, Chinese, and Syrian immigrants became merchants and shopkeepers.

Today Trinidadians compare the resulting mix to *callaloo*, a soup with many ingredients. They also borrow the Indian word *douglo*—something of mixed origin—to describe people of East Indian-African descent.

References to ethnic origin and skin color pepper conversations and sometimes carry a bite. "By listening to people, you might think there was more active prejudice than there is," says a Syrian businessman. "But what's important is how people live."

Though the different cultures often stand aloof from one another, they sometimes find common ground and interact. "We're all Trinidadian, regardless of which ethnic group our ancestors came from," notes an East Indian office manager.

DUDLEY M. BROOKS

UP-COUNTRY CULTURE

Three hand-tilled acres in hillside Paramin are farm enough for Joseph Arieatas, who also runs a taxi over the treacherous track to a paved road. Isolation has preserved the French patois of colonial days. "I speak a little, not much," says Joseph, but older neighbors still greet friends with a *"Bonne journée."*

COLLIDING CURRENTS

Perfect crescent beaches beneath hillside villages such as Charlotteville (below) scallop northeastern Tobago, as far from Trinidad in spirit as you can get.

Streets here carry more pedestrians than cars. Fishing nets dry in the sun on seawalls. A rum shop sells newspapers, all spoken for. A tailor pumps the treadle of his sewing machine with bare feet.

Mostly of African descent, residents supplement their part-time government jobs with fishing and backyard gardening. "If you don't have here, it's because you don't try," says one woman. "Everything you plant gives

BOTH BY DAVID ALAN HARVEY

you something to eat."

Sharing an abundant crop of mangoes, perhaps, or lending a hand to build a house, neighbor looks after neighbor like family.

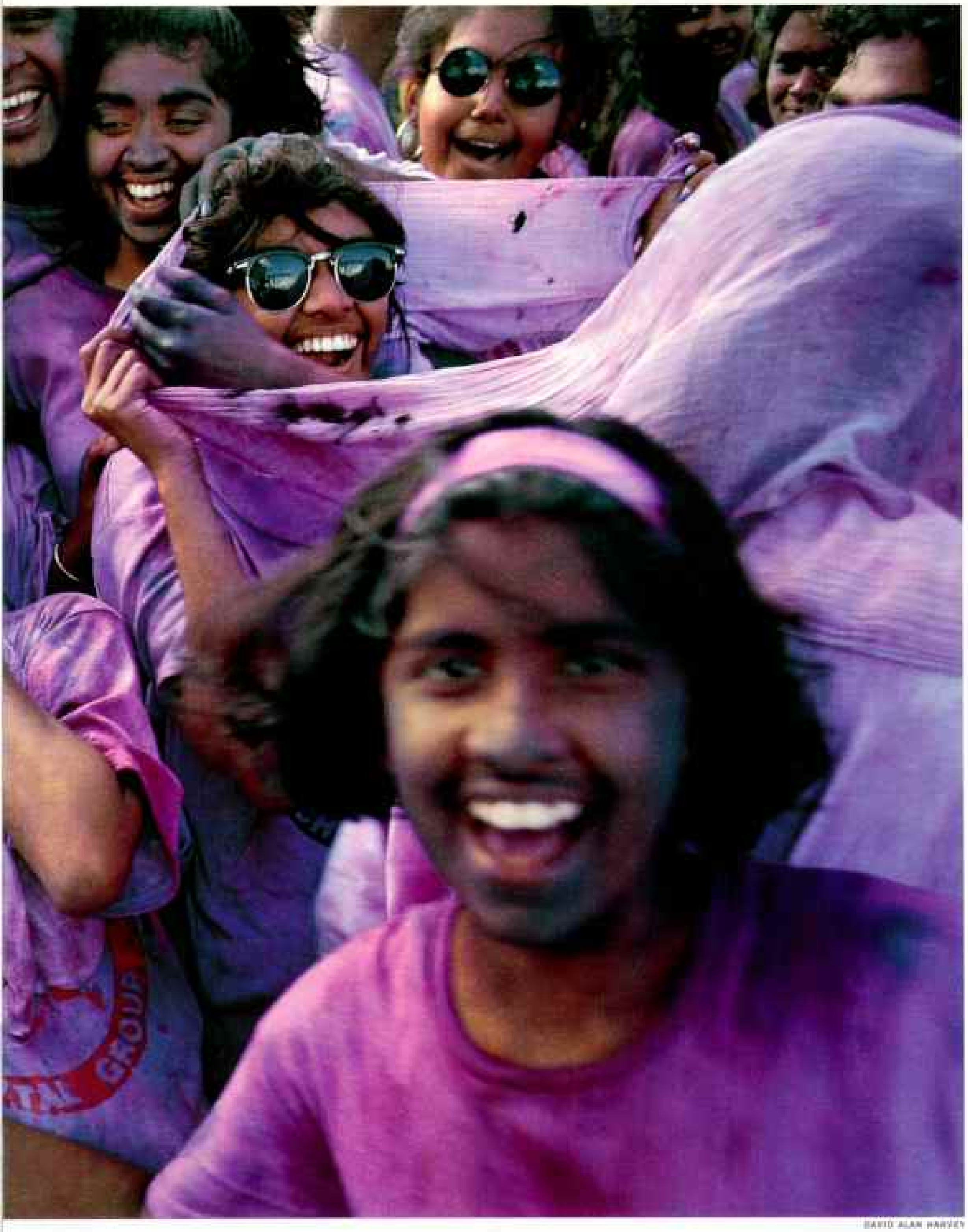
"I think that kind of closeness begins in the church," says Spiritual Baptist archpriest Michael Anthony. Holding a shepherd's staff in a shallow sea, he helps baptize a woman blindfolded for meditation. In his parish of Bethel six churches minister to 5,000 souls.

Southwest of Bethel hills flatten into a narrow plain, and the island takes a fast turn. Tourists, mainly from Europe, tan on hotel beaches and fill roads with rental cars.

Government-funded improvements to the airport and cruise-ship harbor have boosted tourism, Tobago's only real industry. But those who cherish a slow pace and simplicity urge caution for future development. "Tobago was forgotten for years," says one man, "and thank God."

FOREIGN LORE, LOCAL COLOR

The lightness of laughter and a heavy dose of *abeer*, a sprayed dye, unite a crowd during Phagwa in San Juan. Evoking the flowers that brighten India in spring, the festival celebrates rebirth and the triumph of good over evil in Hindu mythology. Epic pageants, ancient and modern songs, and dancing also mark the day.



DAVID ALAN HARVEY

STRUTTING THEIR STUFF

"You have to have stamina to get through Carnival," explains a dedicated masquerader. Revelers jamming by their sound truck in Port of Spain on Shrove Tuesday (right) have been celebrating since New Year's Day.

Carnival artists begin even before that. In chaotic workshops costume designers confect illusion from flashy fabrics. The fanciest creations, which can weigh several hundred pounds and cost some $5,000 U. S., compete in a nighttime extravaganza (below) on the last Sunday of the celebration.

Vying for acclaim, calypso singers with stage names like Lord Kitchener, Black Stalin, and the Mighty Sparrow convulse crowds throughout the season with their stinging social commentary.

Steel bands practicing for their own competition send the sweet sounds of mallets plinking against metal "pans" into the cool

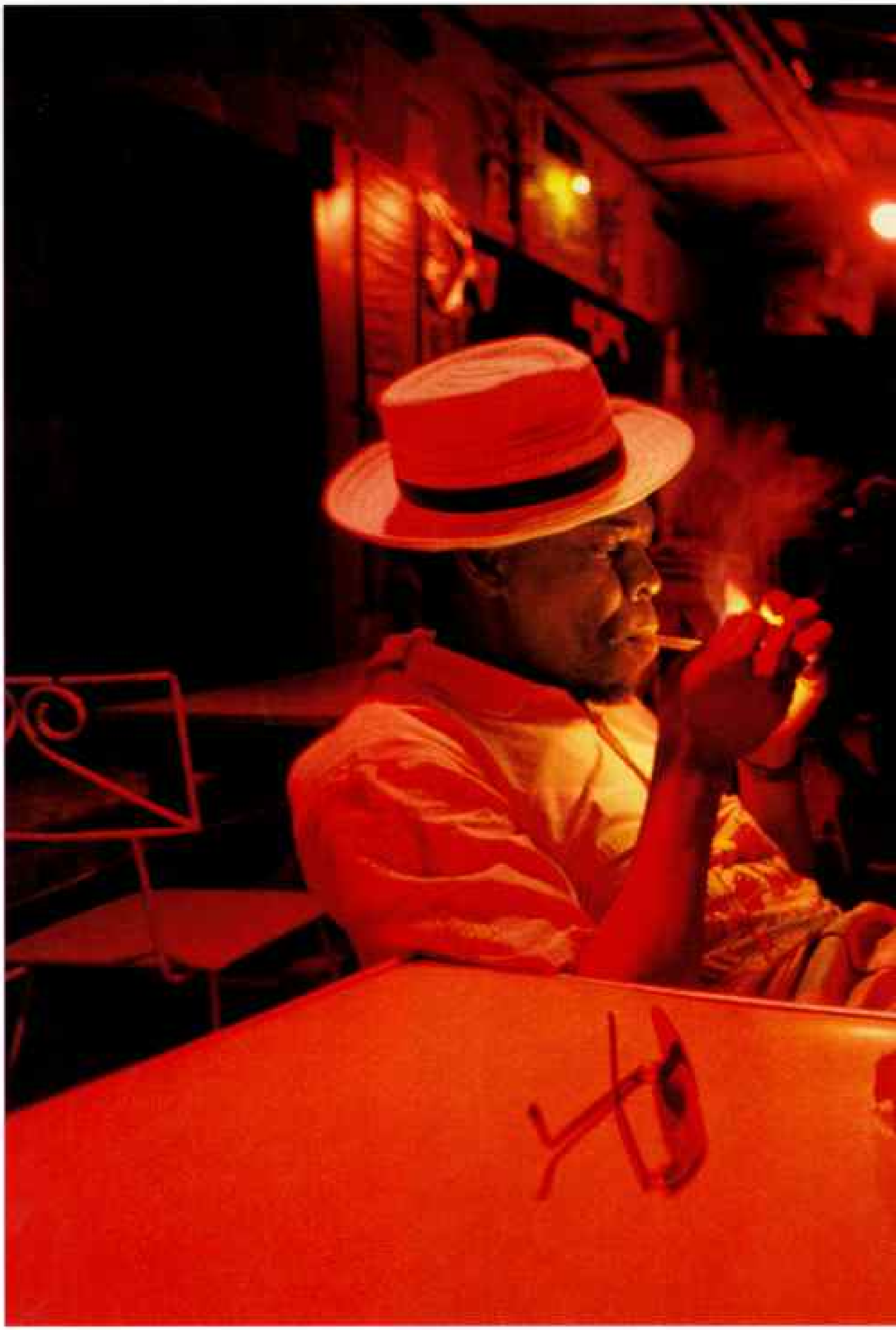
BOTH BY DUDLEY M. BROOKS

evening. Fans visit pan yards regularly to follow the progress of their favorites—the Merrytones, perhaps, or Renegades.

Parties, called fetes, become increasingly frequent. Partygoers shed inhibitions to roll bellies and backsides while hit songs play at body-slamming volume. Bleary-eyed by dawn, they stumble home through empty streets.

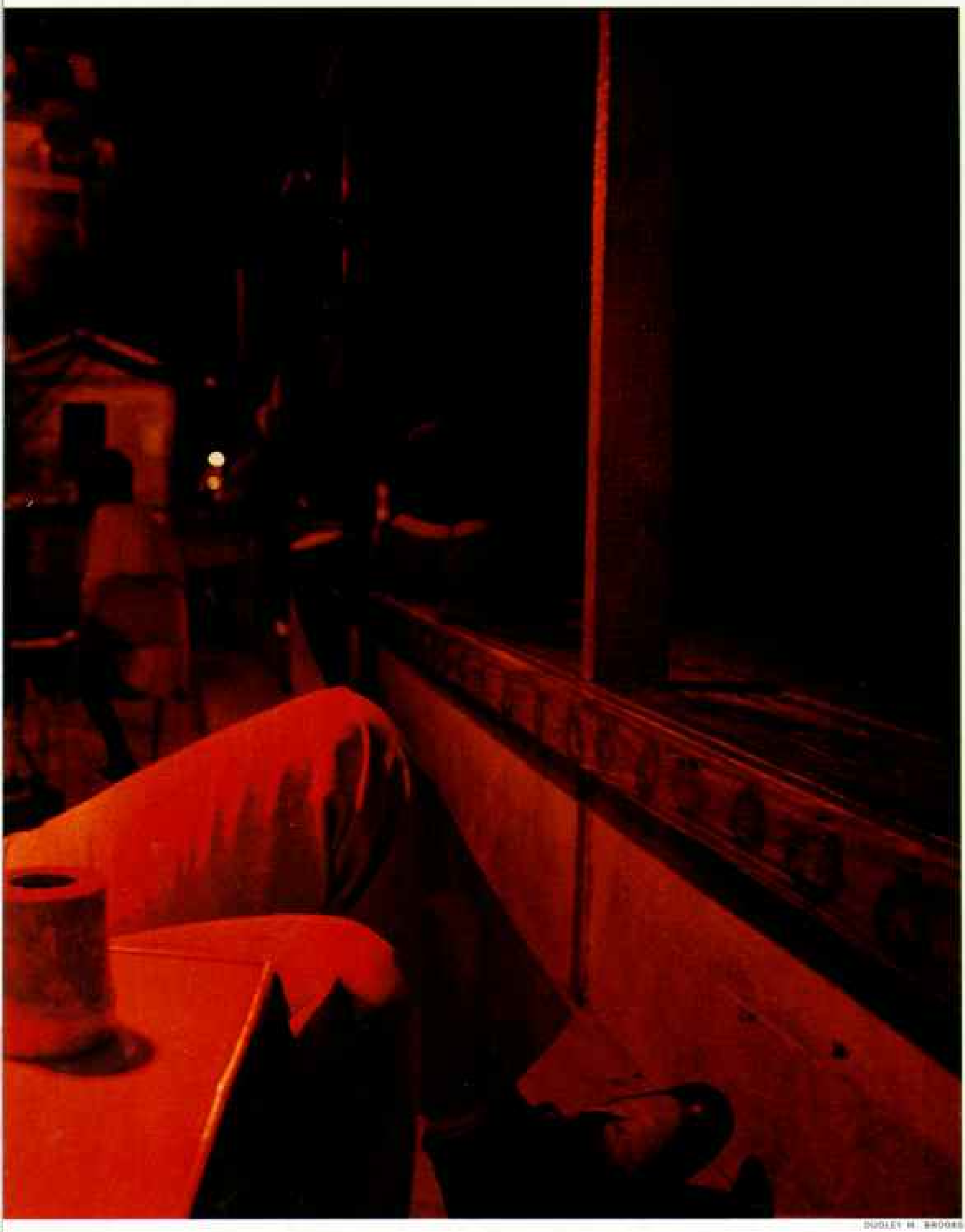
In a final crush on the last day of Carnival, revelers play mas, or masquerade, until midnight, the start of Lent.

"If they applied that energy to business, they could do a lot more than they do," notes an observer, "but then it wouldn't be Trinidad."



EASING INTO THE NIGHT

Alone of an evening, fisherman Malcolm Morris will soon have company at a Tobago club. "Everybody goes down there to drink, play cards, talk about how the country going," he says. People here count their wealth in friendships and take the time to cultivate them. It's their recipe for a long and happy life. □

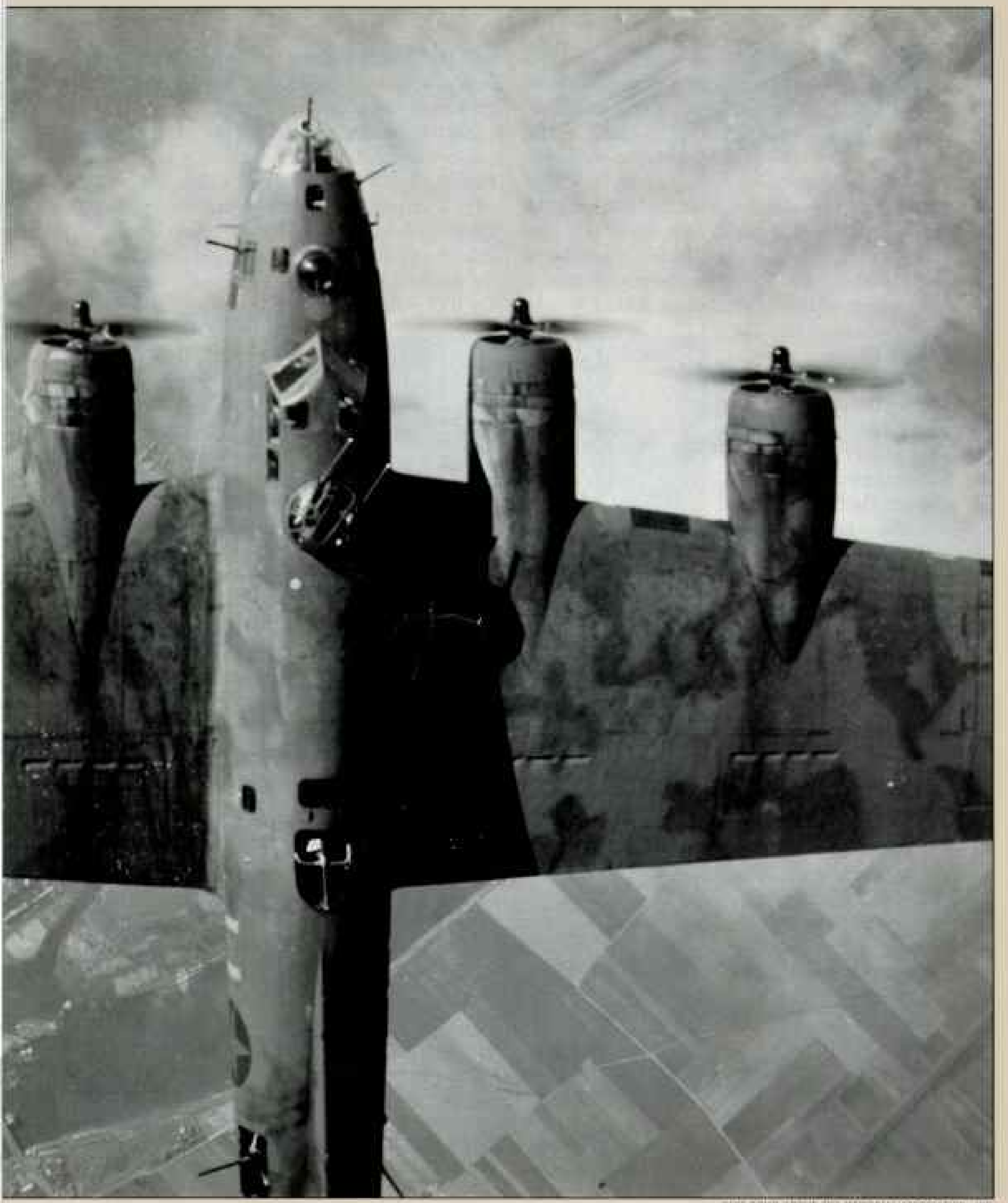


DUDLEY M. BROOKS

As the maelstrom of war spun faster, the U. S. Army Air Forces pressed its extraordinary effort to cripple Hitler's fighting machine. For 33 months Eighth Air Force planes flying from England pounded Germany's great industrial web with strategic bombing strikes. The warhorses were the B-24 and, shown here, the B-17, an indomitable craft called the Flying Fortress.

THE WINGS

How the Yanks of the Eighth Air Force helped



B-17 BOMB GROUP (H) MEMORIAL ASSOCIATION, INC.

OF WAR

turn the tide in World War II

By
THOMAS B. ALLEN

Photographs by
IRA BLOCK

NOVEMBER 26, 1944: A B-17 is afire, nearly five miles above the earth. The flight engineer, Staff Sgt. Quilla Reed, a slim 21-year-old, bulky in his flying suit, grabs a portable oxygen bottle, leaves his post at the top turret, and lurches aft along the catwalk above the bomb bay. He deactivates the bombs. Then he gropes for a handle to crank open the bay—the electric motor is out—and releases three tons of dud bombs somewhere over the Netherlands.

Reed looks farther aft in the narrow fuselage and sees a hole carved by the gunfire of German fighters. He returns to his post, just behind the cockpit. "How much time?" asks the pilot, Lt. John Stevens. "Johnny, there's no time," Reed replies. "*No* time left. Everything's on fire."

"Get out!" the 21-year-old pilot shouts. Because the intercom is dead, Stevens can only hope that his men will bail out without hearing an order. He struggles to keep *Seattle Sleeper* from nosing over and pinning his crew in the flaming wreckage. Reed hooks on his parachute and heads for the forward escape hatch.

Usually a crew of ten mans a B-17 Flying Fortress. But the war has claimed so many U. S. airmen that many crews are down to nine: pilot, copilot, navigator, bombardier, flight engineer, radioman, a tail gunner, one waist gunner where two had been, and a ball-turret gunner curled in a transparent ball hanging below the fuselage.

The plane quivers, and Reed, crouched in the hatch, sees the bullet-riddled tail section break away. We've lost Hank, he thinks, imagining the gunner trapped in the plummeting tail. Reed, the copilot, the bombardier, and the navigator leap through the hatch. As Reed falls, he sees *Seattle Sleeper* explode. Johnny didn't make it, he thinks.

Seattle Sleeper was one of the nearly 4,000 combat aircraft that flew for the U. S. Army's Eighth Air Force when it ruled the skies over Europe during World War II. Most of the Eighth's bombers and fighters flew from the East Anglia shoulder of England, which jutted toward the German-occupied continent. On this green flight deck, some 80 miles wide and 40 miles long, were 122 U. S. air bases (map, pages 96-7).

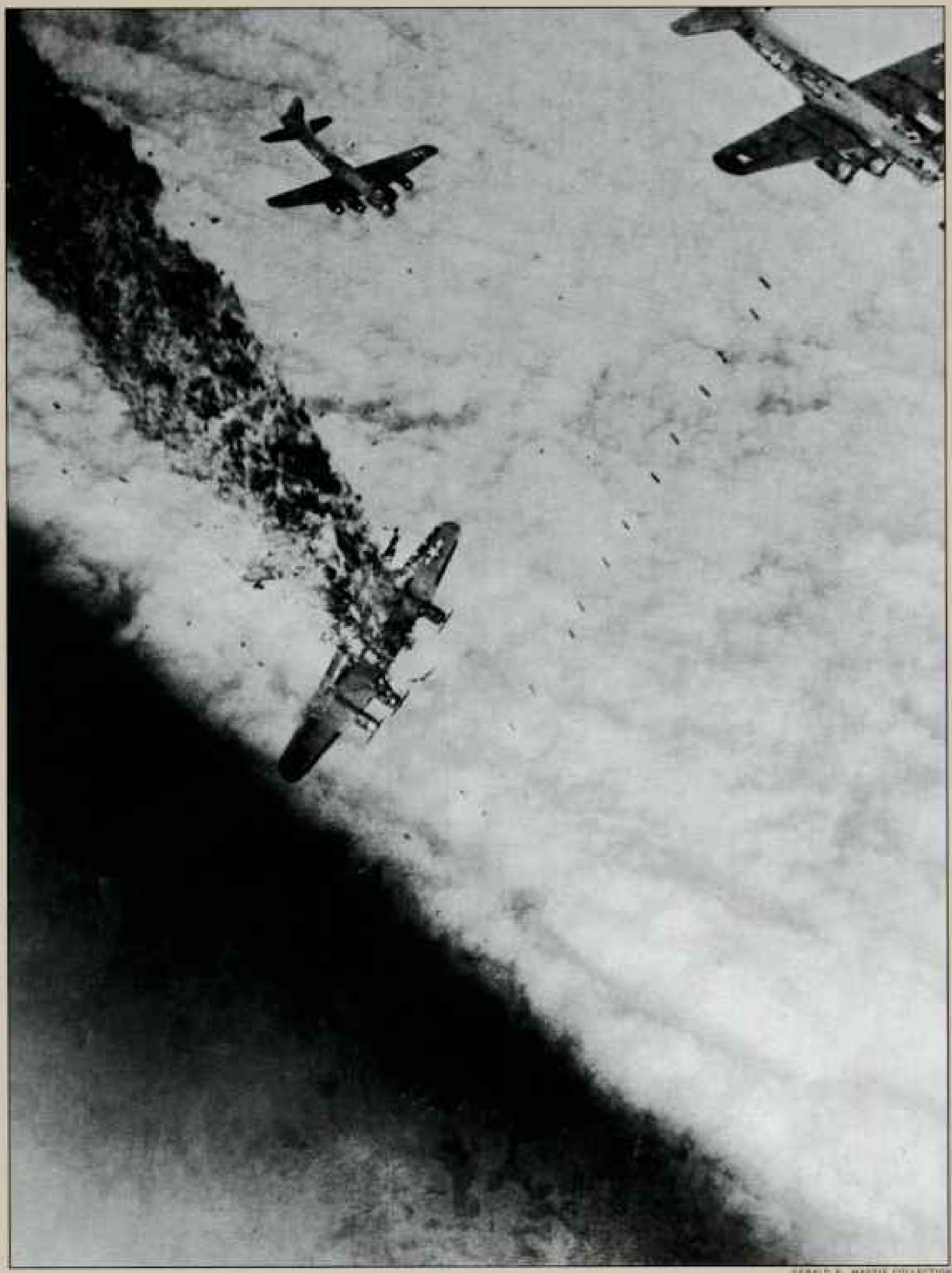
Christopher Columbus thumbs his nose at der Führer in the logo of the Nine-O-Nine Flying Fortress, emblazoned on the jacket of a surviving crew member. The plane flew in one of the most productive and hardest hit units: the 91st Bombardment Group.

"For a thousand days," a local man remembers, "the sky was never still." In his village of Bassingbourn, near Cambridge, was the base that was home to the 91st Bombardment Group's B-17s, including *Seattle Sleeper*. Bassingbourn, built before the war for the Royal Air Force, had tile bathrooms, sidewalks, even brick houses. U. S. airmen called it the Savoy of the Eighth.

Nearly all the air bases vanished after the war. But Bassingbourn became a British Army base, and some relics of remembered valor remain: four huge hangars, a control tower, remnants of runways.

Year after year Bassingbourn summons aging men who want to see again the place that once called them to duty and peril. Half a century after the first Yanks arrived, I joined some of them and listened to them talk about the days when thousands of young men fell from the sky.

Quilla Reed, back at Bassingbourn for the first time since the morning of November 26, 1944, finished the story of *Seattle Sleeper*. His wife was nearby, and she told me that Quilla had rarely spoken of his war. Bassingbourn



GERALD F. WARREN COLLECTION

The wild blue yonder above Germany turned cold, gray, and lethal on November 2, 1944. As another Flying Fortress drops its bombs on Merseburg, the Blue Streak explodes when hit by the B-17s' nemesis—flak, exploding shells fired from antiaircraft guns. The Eighth Air Force's mission was a high-stakes crapshoot: Precision bombing from high altitudes in daylight was a first in aerial warfare. Britain's Royal Air Force bombers complemented the new strategy with nighttime barrages. The Allies struck at railways, aircraft plants, ball-bearing factories, oil depots, and power stations as they tried to beat the German military into submission. The cost in American airmen's lives was about 20,000.

GERALD R. MASSIE COLLECTION (ALL)

A horrible turn of fate took the life of Marvin D. Lord (facing page). On February 2, 1945, foul weather canceled the following day's mission over Berlin. With his commander's approval, B-17 pilot Manny Klette went to London to see his girlfriend. But the weather broke, and the mission was back on. Lord, who was eager to go, took Klette's place as pilot and was shot down; he was killed, along with Klette's entire crew. Lord's photograph is part of a collection left by the late Gerald R. Massie of Jefferson City, Missouri. An Army Air Forces photographer whose work included portraits, Massie did not document the identities—or fates—of the five men pictured above.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P

was drawing the story from his long-locked memory. First, what happened to Johnny Stevens, the pilot who named his plane for his hometown. Unseen by Quilla, Johnny leaped out seconds before the explosion. When the tail broke off, Hank the tail gunner had been left dangling from his seat belt. He crawled into what was left of the plane and found the wounded waist gunner lying in a puddle of icy blood. Hank gave the waist gunner a shot of morphine and told him, "Now, when you get far enough out, you just pull the rip cord." Hank rolled him out the hole in the fuselage and followed, along with the radioman.

Every chute opened. Every man survived. Youngsters in the Dutch underground found and hid Quilla, Stevens, the bombardier, the tail gunner, and the wounded waist gunner. German patrols tracked down the other crewmen and took them prisoner.

Quilla became what was officially called an evadee. One long night he and another airman lay in the loft of a Dutch farmhouse; with them was 20-year-old Kobus Woering and his sister's husband. Below, German soldiers, searching for the airmen, beat up and carried off Kobus's mother, his sister and her baby; they took away his father to kill him. Later in the night Kobus slipped downstairs, overpowered a Nazi sympathizer left to guard the house, and led the airmen to their next refuge. On the run for more than a month, they then hid for 91 days in a shed ("No bath, no soap, no change of clothes"). Moved to another refuge, they hid for several weeks more before seeking out Canadian troops, who were liberating the area in April 1945. Someone in the Dutch underground, writing of Quilla's exploits, called him boyish, and he still has that quality. Speaking softly, in an Alabama drawl, he somehow manages to make heroism sound ordinary.

Another 91st veteran, Chasten Bowen, also had an evadee's story to tell. Chat bailed out of *Take It Easy* on July 8, 1944. Members of the French underground found him, put a beret on him, and eventually slipped him into a house

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THOMAS B. ALLEN, who often covers military subjects, wrote "Pearl Harbor" for the December 1991 GEOGRAPHIC. He is writing a book with Norman Polmar about the planned 1945 invasion of Japan, *Codename Downfall*, to be published in 1995. Photographer IRA BLOCK's most recent assignment for the magazine was "Pueblo: Search for the Ancient Ones," in October 1991.

NORWAY

SWEDEN
(neutral)

Baltic Sea

North Sea

DENMARK

A TEXTBOOK RAID

On October 9, 1943, Eighth Air Force planes flew feints at the Low Countries and made a diversionary strike at Anklam, Germany. The main payloads were delivered by 346 B-17 and B-24 bombers that struck at Danzig and Gdynia in Poland and destroyed a Focke-Wulf aircraft plant at Marienburg in Germany. A prime example of deception and high-altitude precision bombing, the mission required a 1,500-mile round-trip and about ten hours in the air.

EAST PRUSSIA (GER.)

Gdynia

Danzig

DANZIG

Marienburg

Flensburg

Kiel

Peenemünde

Anklam

Wilhelmshaven

Hamburg

Stettin (Pölitz)

POLAND

Bremen

Leeuwarden

NETHERLANDS

HOLLAND

Amsterdam

Berlin

Hanover

Rotterdam

Brunswick

Oschersleben

Dessau

Hamm

Dortmund

Essen

Dresden

Liegnitz

Leipzig

Merseburg

Cologne

Gotha

Buchenwald

Brussels

Lille

GERMANY

Bonn

Schweinfurt

Prague

Frankfurt

Mainz

BELGIUM

Luxembourg

Saarbrücken

Nuremberg

Regensburg

SLOVAKIA

Krems

Vienna

Stuttgart

Linz

Braunau

Munich

Budapest

Berchtesgaden

HUNGARY

LIECHTENSTEIN

SWITZERLAND
(neutral)

ITALY

YUGOSLAVIA

0 100
MILES

Boundaries as of September 1, 1939

NGS CARTOGRAPHIC DIVISION

SELECTED EIGHTH AIR FORCE TARGETS

- U-boat installation
- Shipbuilding or naval base
- War industry
- Aircraft factory
- Railway center
- Rocket launch site
- Oil refinery

OTHER SITES

- Fighter field
- Antiaircraft battery concentration
- Prisoner-of-war camp

Allied leaders in January 1943 agreed on a Combined Bomber Offensive. The U. S.-British initiative sought to destroy Germany's industrial and military muscle and demoralize the civilian population before Allied forces attempted to invade Europe. In support, aircraft manufacturers scrambled to produce both bombers and long-range escort fighters to penetrate deep into the Continent.

in Paris. One day he, several other Americans, and two Englishmen were loaded into a covered truck. They were told they were being taken to a field where a rescue plane was to land and whisk them back to England.

"The truck stopped," Chat told me, "and they threw back the canvas, and we were at Gestapo headquarters in Paris." The Americans, betrayed by pro-German collaborators, were labeled "saboteurs and terrorists" instead of prisoners of war and were taken to the Buchenwald concentration camp. "There were 1,300 little Gypsy kids there, six to ten years old, when we arrived," Bowen remembered, "and they killed all of them."

One day officers of the Luftwaffe, the aerial enemy of the Eighth Air Force, appeared in the camp to check on air-raid damage at an adjacent munitions plant. A German-speaking American prisoner walked up to an officer, saluted, and said that he and his comrades were airmen who belonged in a camp run by the Luftwaffe, not the SS, the black-garbed Nazis who ran Buchenwald. The officer said he would do what he could. Four months later the SS transferred the Americans to a prisoner-of-war camp.

An estimated 26,000 U. S. airmen in Europe became prisoners and spent the rest of their war behind barbed wire. In the three years that the Eighth Air Force fought German flak and fighters, some 20,000 airmen

Ultimate gratitude shows on Quilla Reed's face as he hugs Hendrik Woering at Reed's home in Alabama. Fifty years ago, when Hendrik was a member of the Dutch underground, 21-year-old Reed (right) parachuted into the Netherlands after his B-17 was shot down. Hendrik helped the Yank hide from German soldiers. At their reunion (below) Hendrik listened to his brother Kobus retell the story for Reed's son David, second from left, and other family members.

In the Woering farmhouse Reed and Kobus had lain hidden while German soldiers crashed open the door. The soldiers stabbed bayonets through a false ceiling, missing Kobus by inches. Kobus later passed Reed along to others in the underground, where he spent "91 days in the same clothes without a bath. I'm a survivor. I was going to do anything to get home and see my wife and new son."

DUTCH REED (TOP)

were killed and 9,300 wounded. They fell in a war whose battlefield was the daylight sky. The Royal Air Force, which had been fighting since 1939, bombed by night because daylight bombing cost too many men and aircraft. When U. S. airmen began arriving in England in May 1942, they brought the doctrine of daylight, high-altitude precision bombing. B-17 Flying Fortresses and B-24 Liberators, U. S. advocates boasted, could drop a bomb in a pickle barrel from five miles up.

To prove the boast, men suffered or died while they learned how to fight a war at 25,000 feet, breathing pure oxygen. Ice clogged oxygen masks, and men choked and coughed up blood and then choked again on the ice in their blood. If an electrically heated suit failed, a waist gunner could freeze at his open port. Pilots who had learned to fly B-17s in clear U. S. skies now flew in battle. Thick clouds blinded bombsights.

When men of the 91st began to fly in combat in November 1942, they had about one chance in three of completing their tour. Bud Evers reported to Bassingbourn in August 1943 as a 19-year-old replacement pilot. He remembers being told, "Don't get to know anybody too well. It hurts too much to lose a friend." He tried to hold off grief with a flippant gesture: He saluted the missing by drawing wings on photos of them, then adding halos when he knew they had been killed.

With his hand raised toward the heavens, Capt. Michael S. Ragan confers his blessings on a "Fort." A Roman Catholic priest and a chaplain for the 91st, Ragan stood beside the runway and blessed each plane as it taxied for takeoff. While the planes were on their missions, Ragan circulated among overworked ground crews to boost morale. When flight crews returned, he offered hot chocolate and solace. He enlivened a Sunday Mass by explaining his vestments as he removed them one by one. To cries of "Take it all off!" he ended by revealing his regulation Army attire.

If Ragan couldn't make a man pray, German guns could. "Even at 27,000 feet they could fire up a shell and land it in your lap," one crewman recalls of the deadly black confetti of flak that peppered the skies.

The Flying Fortress—groaning with the weight of bombs, guns, ammunition, and fuel—had limited agility. Pilots could do little more than hope for the best, particularly when nearing the target with bomb bays open. Following the lead plane, they were committed to maintaining a tight formation to concentrate their hits and cause the greatest damage possible.

GERALD R. MASSIE COLLECTION (MSM)

The 91st entered combat with four squadrons, each usually flying nine B-17s. Six months later, more than a third of the original planes and crews were missing. "When I got there," Evers says, "a squadron was expected to put up six planes, if six could be found."

At first, an airman who completed 25 combat missions would go home on leave and then get a ground assignment or become an instructor. In 1944 the mission ante was raised to 30, and later to 35. "We were expecting we'd do our 25th and be home by Christmas," Quilla Reed remembers, "and then they made it 30, and we cried like babies." He went down on his 26th mission.

In July 1943 the Eighth launched some 330 B-17s in a highly publicized Blitz Week. By the end of that week only about 200 planes survived. The rest had gone down or were too damaged to fly again. About 900 men from the total blitz force had been killed, wounded, or made prisoners of war.

Three months later, 60 bombers—including one from the 91st—were lost in a single day. The next day Gerald E. McDowell, a tail gunner, arrived in England. "As we were getting out of the plane," he remembers, "this young fellow comes over rubbing his hands, looks at the planes, and says, 'Boy are we glad to see these!' " McDowell was immediately ordered to Bassingbourn as a replacement. His *Hell's Belle* crash-landed in Germany on his eighth mission, on December 1, 1943.

McDowell's mother received a telegram that began: THE SECRETARY OF WAR DESIRES ME TO EXPRESS HIS DEEP REGRET. . . . It said her only child was missing in action, the dreaded words that weeks or months later could be followed by "killed in action." She learned that her son was a prisoner. Sometimes, though, the next of kin got not a telegram but a letter from a comrade who thought he had seen a man go down. The wife of Maj. Paul Brown, after getting three letters of condolence from 91st fliers, cabled him at Bassingbourn: HEARD REPORTS OF YOUR DEATH PLEASE CABLE. The next day he replied: LIVING FOR YOU. And he did. He survived the war and stayed in what became the U. S. Air Force.

Many men kept mission logs, faded and water-stained now, the stuff of attics and forgotten bureau drawers. One typically starts off full of impersonal words—"bomb load, primary target, formation." Then, suddenly, scrawled sideways on a page: "Kelly almost got it here," here being Berlin. The logs begin at Mission No. 1 and continue, mission by mission (with No. 13 called No. 12B) until No. 25 or No. 30 or No. 35, the ticket home.

From the log of Lt. Robert G. Abb, bombardier on *Stormy Weather*, March 4, 1943: "radio man shot in leg . . . plane on fire . . . copilot had right side of face shot off . . . navigator hit in head." Seventy-one B-17s had aimed for Hamm, railroad gateway to the industrial Ruhr Valley. Bad weather diverted all but the 16 planes of the 91st. They bombed Hamm under fierce attack from flak and fighters. As the planes turned for Bassingbourn, an explosion shot slivers of glass into the face of *Stormy Weather*'s pilot, Capt. George P. Birdsong, Jr. Shells knocked out the electrical system and two engines. Blind in one eye and losing altitude, Birdsong skimmed the waves. Abb's log tells how Birdsong brought them home: "no hydraulic system, no flaps, no brakes . . . hit runway about 135 miles per hour . . . ground looped into pile of manure."

From the log of Staff Sgt. Earl G. Williamson, Jr., April 13, 1944: "I looked out . . . and we saw one, two, three, four, five, Forts go down. . . ." The target was the ball-bearing plant at Schweinfurt, which the Eighth repeatedly bombed in a vain attempt to wipe out a key arms industry. Still, their relentless bombing hurt production by forcing the Germans to disperse factories as a defense.

Williamson's B-17, *Hi Ho Silver*, dropped its bombs and turned for home, and he looked back: "a Fort on fire and spinning. I saw five chutes come out. . . . It was a square three miles of burning hell." Williamson flew his 30th mission on May 20, 1944, amazed that he still lived. "At times it seems as if the Lord just reached out and pushed us on."

PEOPLE WHO LIVED around Bassingbourn warmly welcomed the young men who descended on this quiet land. Farmers took the Yanks in for meals, and the Yanks gave ice cream, candy, and bananas to kids who seldom saw such treats. Jim Buchan, who lives down the road from the base, calls up a boyhood memory: "Have a stick of gum, chum." Jim cherishes an autograph book signed by dozens of Yanks.

Yanks and RAF airmen sipped beer at the Angel, a pub in nearby Royston presided over by Doris Foster. The pub is gone, but the men of the 91st still seek out Doris. I met the belle of

GERALD E. MCDOWELL COLLECTION (ABOVE); GERALD E. MCDOWELL (BELOW LEFT)

Crewmen of the 079 marvel at the B-17's durability after a heart-stopping flight. As the bomber headed toward a strike at Bremen, Germany, another B-17 hit it in midair, its propeller chewing a 15-foot-long bite out of the left wing. Over the target area, the bombs had to be manually jarred loose before they would drop. Then the bay doors stuck open, making the landing more terrifying. The crew returned unhurt, including tail gunner Gerald E. McDowell (above and right), who checks out his old position in a B-17 at the Imperial War Museum in Duxford, England. McDowell was later shot down and captured, then spent 18 months in the Nazis' notorious Stalag 17 prisoner-of-war camp. He and other prisoners were then marched 280 miles to Braunau, where they were later liberated.

the reunion, who is now in her 80s, at the officers' mess in Bassingbourn. She was surrounded by former customers and had a big, black-velvet hat perched on her head. She once again was telling the tale of her marvelous hat. Nervous airmen, she said, would ask her to wear it at certain times. "They used to say, 'If the instruments get shot up, never mind. Beam in on Doris's hat, and you're sure to get back.'" She looked around and laughed. "And it still brings them back."

What really brought them back was the indestructible Flying Fortress. With gaping holes in fuselage and stabilizer, with two or even three engines out, wounded Forts miraculously made it home. The 91st's *Little Miss Mischief* was so shot up that ground crewmen had to cut off the shattered rear end of the fuselage and splice on one taken from a B-17 with a wrecked front end. She flew 15 missions as a hybrid. Then one day she skidded into Bassingbourn on her belly and was too torn up to be put together again. *Sad Sack*, battered on her first two missions, became a hangar queen, giving up her four engines, nose, tail assembly, and windshields to other planes. Later, a 91st ground crew restored her, and she fought her way through more than 30 missions until she flew to retirement in the United States.

Each plane had its own ground crewmen. They were the men who, in a waning mission day, stood around waiting. They squinted at

First among the Forts, the Nine-O-Nine compiled an astonishing record of 140 missions without an aborted flight or losing a crewman. After having 21 engines replaced and sustaining some 600 hits from enemy fire, she was retired. An identical plane, built in 1945 and given the same name, now flies for enthusiasts, complete with a swastika for each downing of a German fighter by the original's gunners. The chin turret was added on later B-17s, after enemy fighters had success with head-on strikes. The bombardier, stationed behind the plastic nose, took control of the lead plane as it neared the target. Upon hearing "Bombs away!" the pilot headed for home.

In the cockpit, tail gunner Dick Murphy, at left, reminisced with pilot John Pullen, ball-turret gunner Sam Cipolla, and Bob Mefford, who served as bombardier and navigator. Mefford feels "blessed" to have survived 35 missions, 20 of them aboard the Nine-O-Nine. Lives depended on the engineers and mechanics who labored in England's chill predawn, readying the plane for takeoff. "Our ground crew chief was very good," says Mefford.

the distant specks, trying to count them. Then, as the planes appeared over Bassingbourn, they looked desperately for the B-17 they had handed over to the sky that morning.

One of those ground crewmen, Otto E. Meikus, was among the original 91sters who arrived at Bassingbourn in October 1942. His B-17 was *Jack the Ripper*, whose crew was the first in the group to make it through ten missions; she went on to fly 34.

We spoke in the huge shadow of one of the old hangars. Otto, a crew chief, looked around and remembered, not the broken planes but the men who never came back. He was there for those early missions, when the 91st lost three of its four squadron commanders, when planes were shot up by panicky bomber gunners, when B-17 casualty rates were higher than those of any other U. S. combat force. "The names are with me all the time," Otto says and looks away.

At first, enlisted men of the ground crews and the air crews shared the same barracks. The ground crewmen would return to their barracks from their vigils at day's end and could not bear the sight of the empty bunks of crewmen from missing planes. To improve morale, the commander of the 91st put the crews in separate barracks.

Hangar space was limited. So crews did much of their maintenance outdoors, working at night by flashlights because the base was

As a German teenager, Lotte Lawson fed silkworms used in the production of the Luftwaffe's parachute silk. The planes that bombed her hometown of Anklam were dispatched from the 91st's tower at Bassingbourn, where Lawson, married to a former British soldier, now lives. When bombs destroyed the Deutz Bridge over the Rhine River in Cologne (right), concussions shook the nearby cathedral (below), which later survived direct hits. Hundreds of thousands of German civilians died in bombings during the war, since homes, workplaces, and schools often sat near military targets.

GERALD H. MAXIE COLLECTION

blacked out. In the predawn dark, armorers loaded a plane with several thousand rounds of .50-caliber ammunition and two or three tons of bombs. Fuel crews pumped in more than 2,700 gallons of 100-octane gasoline. All the B-17 needed was her crew.

IT IS 0300 (3 A.M.). Airmen roam officers' quarters and enlisted men's barracks, awakening the day's crews for breakfast at 0400. At 0500 they assemble for a briefing in a corrugated-iron structure, one of the few Nissen huts on the base.

Many men are secretly courting Lady Luck. (Former navigator Robert H. Friedman explains: "He goes on his first mission, and he doesn't shave. He has one egg for breakfast. He picks up a flying suit. He comes back safely, and he asks himself, 'Why did I survive?' He thinks, 'I didn't shave. I had one egg. I wore this flying suit.' Now on every mission he won't shave, he will have one egg, and he will always wear the same suit until it can stand up by itself.")

On a stage in the front of the hut, a curtain hides a map of Europe. Attached to the wall is a red cord that runs through a counterweighting pulley, then disappears behind the curtain. Men look to the weight to see how far they must fly today. The higher the weight, the more red cord has been pulled across the map to trace a course—and the more cord, the more of Germany that must be crossed.

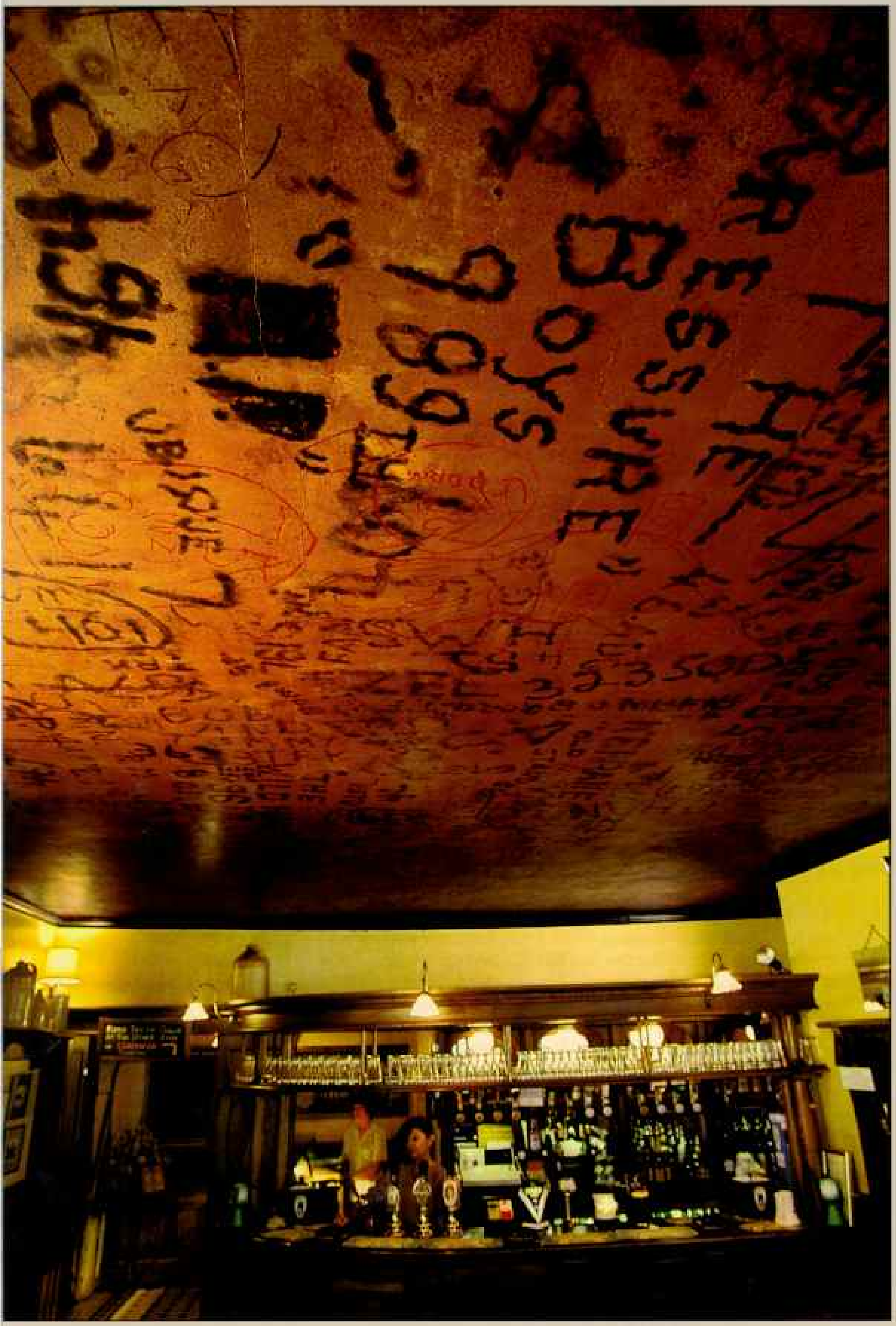
On the morning of October 9, 1943, the weight hangs high. Then the curtain opens, and the men see the long red cord. Today 378 B-17s and B-24s from several bases will make what Eighth Air Force strategists call a maximum effort. Most of the bombers will fly far to the east to strike a German fighter-plane assembly plant and Polish targets. About 100 other B-17s, including the 91st's, will fly first on a feint toward Berlin, then turn northeastward to bomb an aircraft plant in Anklam, a small town in northeast Germany. The 91st's planes are to fly at 12,500 feet, luring German fighters away from the main force.

"It was a suicidal mission," says Bud Evers, who piloted one of the 11 planes that the 91st flew to Anklam. "We were sending 100 B-17s against 300 German fighters. It was, to me, the greatest air battle of the war. For the first time, I saw German fighter-pilot faces. They were that close."

In Anklam on this Saturday morning,

The ache of men without women inspired a dream-girl mural in the mess-hall kitchen at Shipdham airfield near Thetford, England. Over Germany, thoughts turned to getting back to Doris Foster (below), who befriended airmen at the Angel pub in Royston. "If we get hit and the navigation equipment goes haywire," they would joke, "we'll just home in on Doris's hat"—which she still wears.

Pride and ale mixed freely at the Eagle pub in Cambridge (right). After a pint or two, Yank crewmen climbed on each other's shoulders and, with candles and Zippo lighters, burned in the names of planes and units.



15-year-old Lotte Doebbert is approaching the market square. She is going home from her empty school, where she has just fed the silkworms that the pupils are growing to produce silk for Luftwaffe parachutes. "All the farmers were in the square," Lotte recalled when I talked to her half a century later. "It was full of carts and horses. People were lining up to buy from the farmers. It was a sunny day, a blue sky. Then we saw shadows on the square." She wondered what the shadows were. In four years of war Anklam had never been bombed.

Someone yanked her into an air-raid shelter. "We thought no one could get this far," Lotte continued. "No one saw them. Then all hell broke out. After the bombing it was like the blackest night." In four minutes the B-17s dropped about 300 thousand-pound bombs and 500 hundred-pound incendiaries. The bombs nearly wiped out the center of Anklam, turned a church steeple into a torch, destroyed two empty schools, and killed at least 350 civilians. A boulder crashed through the roof of Lotte's apartment building and plunged into her flat, smashing her bed.

High above, in the 91st's *Old Standby*, the bombardier hits the switch to open the bomb-bay doors. They do not open. Fighter attacks have already killed a waist gunner. More fighter gunfire now wounds the tail gunner, severs control cables, ignites an oxygen bottle, and sends the plane into a diving right turn.

Hotdogging in celebration, pilot John C. Bishop buzzes the control tower at Bassingbourn after bombing a construction project in occupied France in January 1944 on his 25th mission. When Claude Putnam completed his tour four months later, the observance was a dunking in the canvas-lined bed of a truck. "I fought like hell," one crewman recalls of his own immersion. "It was no fun if you didn't put up a fight."

For much of the war in Europe, 25 missions for the Eighth Air Force was considered the minimum tour of duty, though some volunteered to keep flying instead of returning home. As the conflict wore on, a shortage of crewmen and the buildup for the Pacific offensive brought more demands, bumping the minimum to 30 missions and eventually to 35.

JOE HARLICK, FROM 91ST BOMB GROUP (H) MEMORIAL ASSOCIATION, INC. (LEFT); GERALD R. MASSIE COLLECTION

The pilot sounds the bail-out alarm. Everyone leaps except the ball-turret gunner, who did not hear the alarm. As the incendiary bombs aboard burst into flame, an enemy shell hits the mechanism of the ball turret, which spins to the exit position. The gunner, popping up in the flaming fuselage, sees he is alone and dashes to an escape hatch. He bails out moments before the plane hits the ground.

Other parachutes open as fighters shoot down 18 planes, including five from the 91st. William W. Turcotte, a navigator who had ditched in the North Sea on his first mission, ends his 14th by landing in a rutabaga field near where Lotte's father was born. Turcotte and 19 others from the 91st become prisoners.

I met Turcotte and Lotte in Bassingbourn, where Turcotte had come as a survivor of German bullets and Lotte lives as a survivor of American bombs. She is married to Victor Lawson, a former British soldier who served in West Germany in the 1950s. They eventually happened to settle in Bassingbourn. He became a member of the local group that preserves memories of the 91st, and he discovered the Anklam-Bassingbourn connection.

In the view of Eighth Air Force strategists, the October 9 raids were successful, despite the cost of the Anklam diversion—18 planes and their crews lost, 51 planes damaged, 25 men wounded. The aircraft plant at Anklam had been hit, along with the market square.

And the diversion had worked: Most German fighters swooped down on the bombers of Anklam, and few fighters attacked the other bombers. Their mission, whose targets included a larger aircraft plant, was hailed by Prime Minister Winston Churchill and Lt. Gen. Ira C. Eaker, commander of the Eighth, who said the raids proved that "pinpoint bombing" had "altered the course of the war."

The European war went on for 19 more months. The 91st would fly 340 group missions, producing one of the longest continuous combat records of any U. S. air unit in Europe. In 1944 more and more long-range U. S. fighters arrived to fly escort—Little Friends, the bomber crews called them—and ultimately the Eighth and the Royal Air Force won the battle for the sky.

I saw the cost of that battle on a morning in Cambridge when we all went to the American Cemetery, on the outskirts of town. Thirty-nine pairs of small American and British flags, scattered amid the 3,811 graves, fluttered in a cold, rainy wind. The flags marked the graves of men from the 91st. Elsewhere, in military cemeteries or hometown graveyards, lie the bodies of the 862 other men who died while members of the 91st during World War II. Of those who survived being shot down, 59 evaded capture and 957 became prisoners. Another 114 lived through a ditching or a crash. And 233 men are still listed as missing. They have no graves.

The rain flowed down the long Wall of the Missing, and rain ran down the faces of men seeking familiar names. Seeing Sam Cipolla, I thought of what he had told me about his visits to Cambridge as a 91st ball-turret gunner celebrating another day of life. He would stop by the Eagle pub, where U. S. and British servicemen would stand on tables and with Zippo lighters and burnt cork write smoky names on the ceiling. *Sad Sack* and other names of planes and men can still be read there.

"You'd see a face at the Eagle one night," Sam told me, "and then on the next night you were there, you might see the same face, and you would look at each other and give each other a little nod. It was a way of saying you both were still alive. And if you never saw a face again, well, you never knew what happened. We didn't know names. Just faces." Here on the wall were 5,125 names of the missing, and I wondered how many belonged to faces that Sam had seen in the Eagle. □

The end for Wee Willie, one of the last bombers lost by the 91st, came on April 8, 1945, when flak made a direct hit on a fuel tank. Though the copilot and eight other crewmen were killed, the pilot managed to bail out and survive.

Some of those who gave their lives were laid to rest in a cemetery outside Cambridge. At the grave of Joe Urich, the Union Jack stands beside an American flag holding a wreath placed by Sam Cipolla, who snaps a salute. "Joe was my best friend," he says of

GERALD R. MASSIE COLLECTION

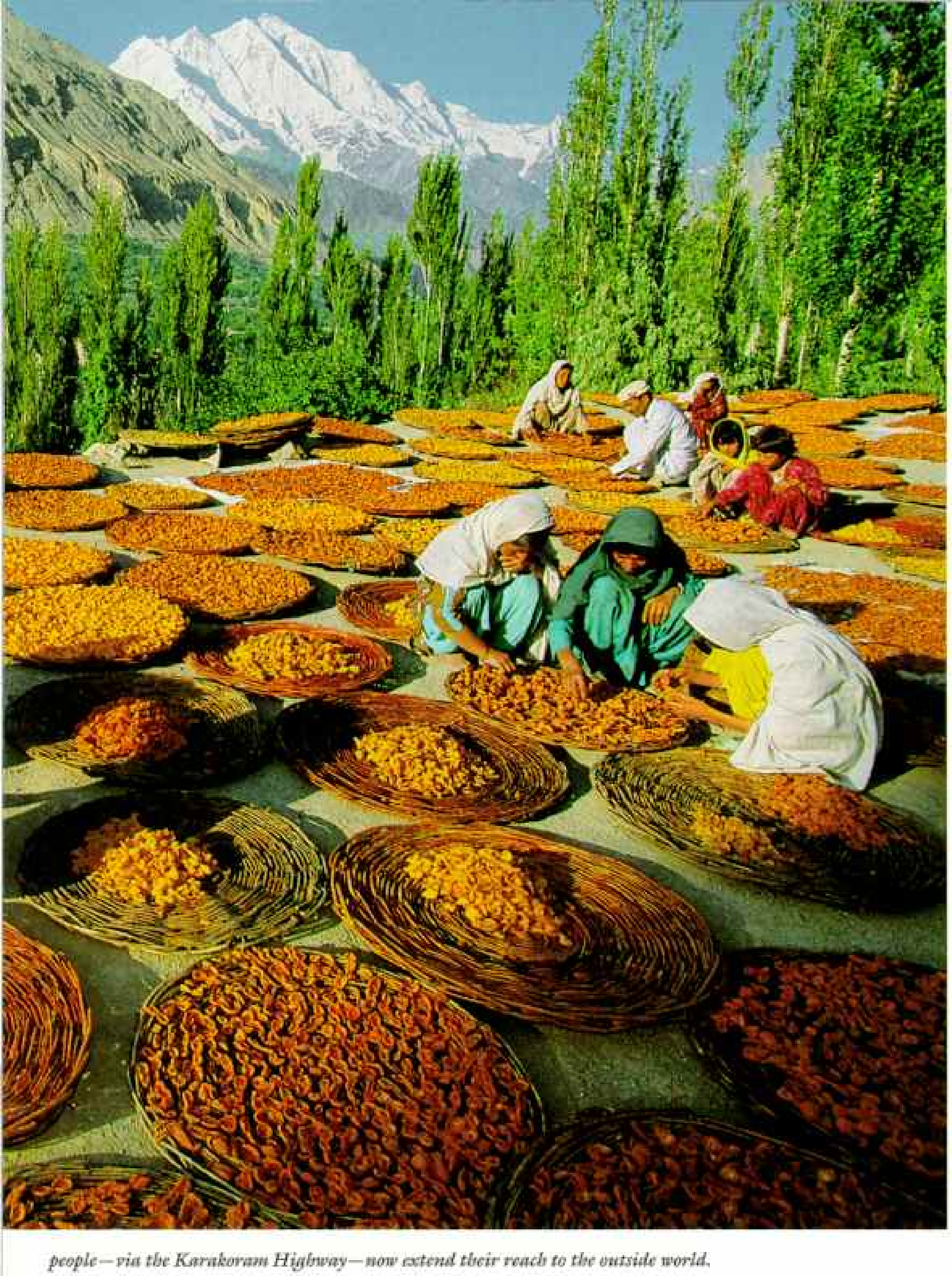
the man who welcomed him at the barracks when he was a greenhorn, urging him to take the adjoining bunk.

On Urich's second-to-last required mission, his B-17 was struck by flak as Cipolla watched from the ball turret of the Nine-O-Nine, flying alongside. Cipolla figures that during his tour about 600 airmen of the 91st lost their lives. Every Christmas Eve, the anniversary of his own last mission, Cipolla raises a glass to toast Urich and the rest of the men he calls "the six hundred."

Deft hands sort apricots for rooftop drying in Pakistan's Hunza, a once isolated enclave whose

High Road to

By JOHN McCARRY



people—via the Karakoram Highway—now extend their reach to the outside world.

HUNZA

Photographs by JONATHAN BLAIR

AT PISSAN, a lonely settlement 6,230 feet up in the Karakoram Range of northern Pakistan, a landslide stops my jeep. This ancient rented vehicle is being driven by a man named Javed, whom I hired in Gilgit to drive me up into Hunza. He looks at the rocks and sighs philosophically. The narrow road, known as the Karakoram Highway, or KKH, is already littered with stones.

I glance at Javed and detect impatience in his eyes. *"Chalo,"* he says in Urdu. "Let's go." Chalo? I repeat unsurely, but he is already stepping on the gas, his eyes fixed on some loosening boulders at the top of the mountain. Rocks clang off the hood, thump onto the backseat, ricochet from the windshield. Javed swerves, and a rock he has been watching that's half the size of the jeep bounces onto the pavement inches from my knee.

We speedily round the mountainside onto a clear stretch of road. I look down over the edge of the highway, into the gray, churning waters of the Hunza River. The river seems to be the same color as the road, which is the same color as the sky. The steep mountainsides too are a grayish jumble of rock. A telephone wire runs parallel to the road, which runs parallel to the river—three lifelines moving in the same direction: toward Hunza.

About half the size of Massachusetts, with a population of 35,000, Hunza has long been one of the most remote regions of the subcontinent, a realm jagged with glaciers and 20,000-foot-high peaks, connected to the outside world only by footpaths and a few barely serviceable tracks. But in the mid-1960s the ruling mir persuaded the Pakistani government to route the KKH through central Hunza. It took more than a decade to finish and cost 476 workers' lives and uncalculated millions of dollars. In 1974 the mir stepped down, and Hunza came under the direct control of Pakistan; in 1978 the highway was completed. The combination of events transformed Hunza.

We rounded another bend, water spraying from our treadless tires, and suddenly the looming mountains opened and I glimpsed irrigated plots of corn. This lush oasis of green was so startling amid the lunar landscape that I caught my breath. Javed gunned the engine, and we sped toward Karimabad, the former capital (map, page 120).

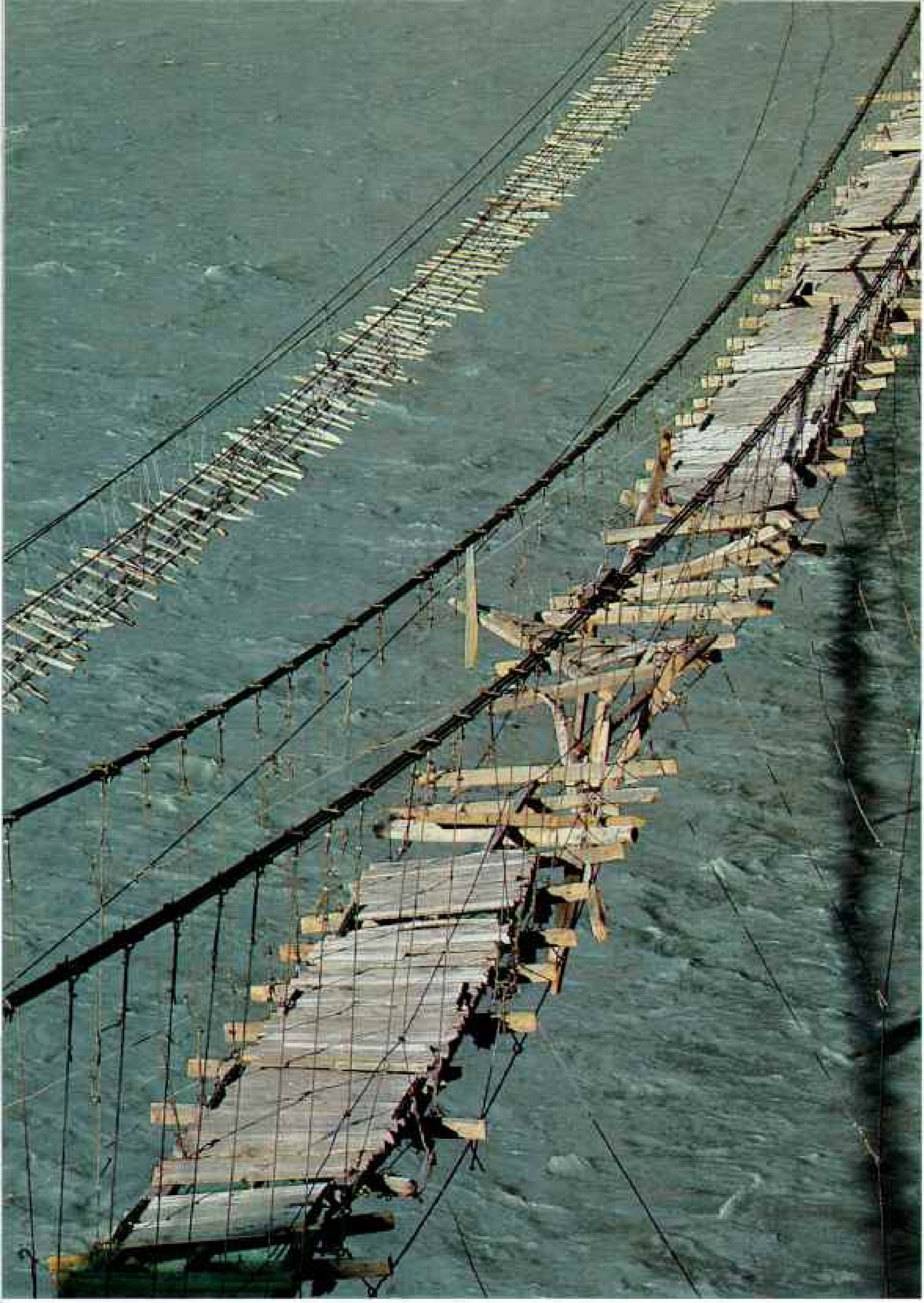
Several days later I walk with a young farmer named Deedar Aly Shah through the terraced fields of the nearby village of Baltit. The Hunzakuts remain subsistence farmers, as they have been for more than a millennium. Every family owns at least one small plot of land, and the food they grow on their painfully cultivated plots is the food they eat; rarely has there been a surplus to sell or trade.

Deedar Aly is a member of the Buroong clan of the Burusho, the dominant ethnic group of Hunza. Four Burusho clans are centered in Baltit: the Diramiting, *(Continued on page 122)*

Sunup's warmth touches shepherdess Hamida Begum at her camp in pasture rising to 10,500 feet—as high as grazing land at nearby Ultar Glacier, whose meltwater turns rocky ground green with promise (right). Storied for valor and self-reliance, Hunzakuts scratch a modest living from plots traditionally passed from one generation to the next.

BOTH BY BROWN CORE

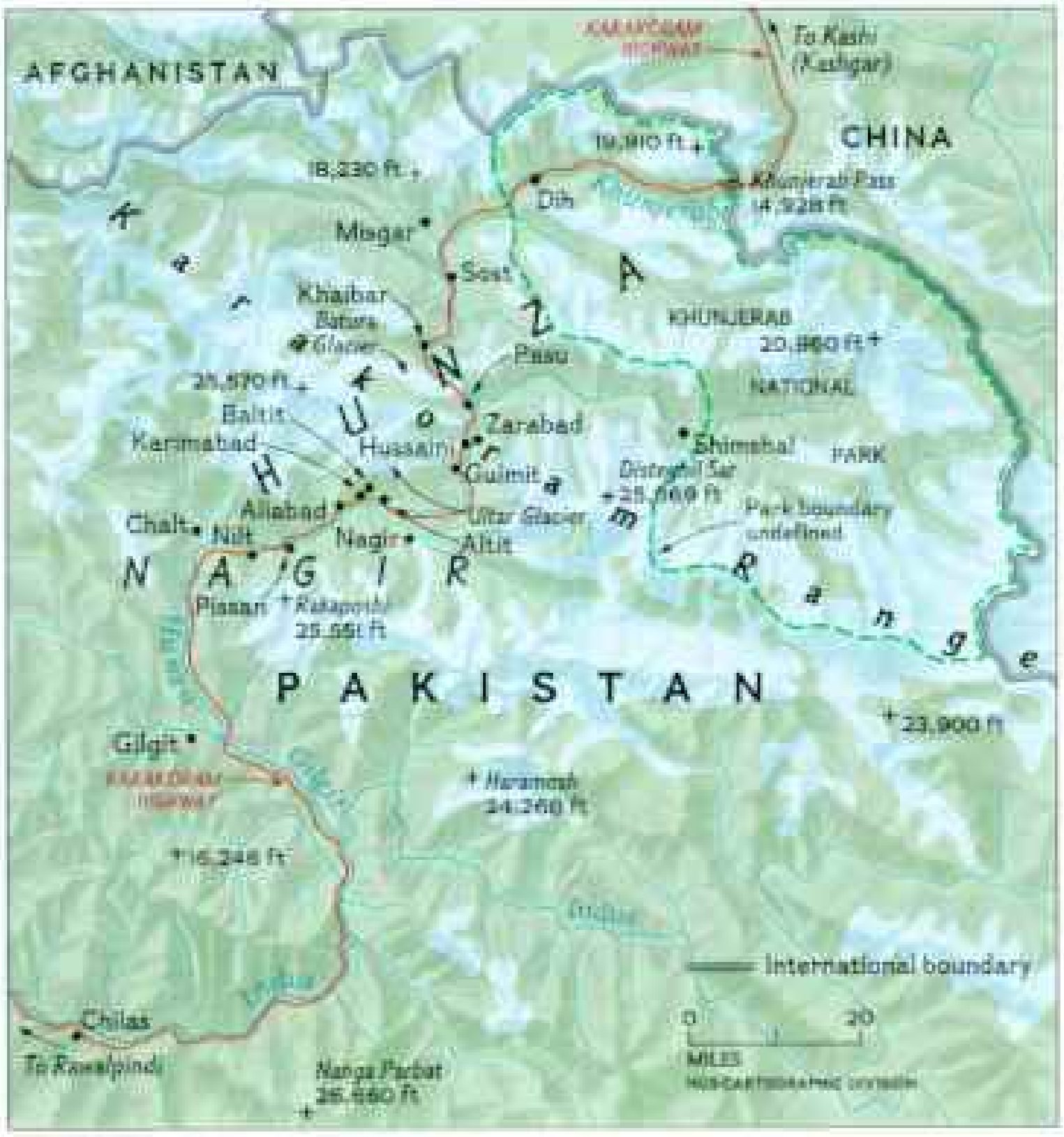
Winter winds blasted gaping holes in a new bridge built to carry villagers and their livestock across the Hunza River. Its predecessor, with ties of juniper branches,



hangs on to carry a surefooted Hunzakut woman from her fields in Zarabad to Hussaini village in the upper Hunza Valley.

Hunza

Sheltered by the four-mile-high embrace of the Karakoram Range, the Hunza Valley cradles scattered oases in a highland desert (above). In the 1930s Hunza may have been the inspiration for James Hilton's vision of Shangri-La, but in the 1890s the region proved



GARY OTTE (BELOW)

no utopia for British soldiers who paid in blood to subdue it.

Nor was it without pain during the building of the Karakoram Highway, when earthquakes and landslides killed nearly 500 Chinese and Pakistani workers. Completed in 1978 and opened to unrestricted travel in 1986, the road stretches 500 miles.

To help prepare Hunza's 35,000 people for economic opportunities brought by the road, the Aga Khan (right), spiritual leader of the dominant Ismaili Muslim sect, encourages involvement in the education, health, and rural-development programs supported by his foundation: "The tradition of self-help has strong cultural roots in much of the Third World. That approach—in my experience—works."

(Continued from page 116) the Barataling, the Khurukuts, and the Buroong; they are said to be named for founding ancestors. All speak Burushaski, a language apparently related to no other in the world. The Burusho make up nearly 70 percent of the population of Hunza, and they seldom intermarry with the minority Wakhi of the north, the Shin of lower Hunza, or the Dom, who live in small numbers among the Burusho.

The Buroong are considered, in some respects, the second most influential clan in this part of central Hunza, after the Diramiting, and Deedar Aly's father owns 47 *kanal* of land—about six acres—making him one of the largest landowners in Baltit.

I make an impressed noise when Deedar Aly tells me this, but he explains that only about 10 kanal of that land is actually irrigable. "Not a single tree, not a single plant has grown here by itself," Deedar Aly says. "Only it has been grown by man—all of these big trees, all of these small plants."

He shows me his family's modest but flourishing orchard of apricot trees. Apricots have traditionally been an important crop; they are eaten fresh in summer and dried in winter, and the kernel is crushed to produce cooking oil. Every farmer has at least one tree. He shows me some tiny fields where barley and corn are grown, and we wave to his mother and father, two hunched figures in the distance carrying loads of grass on their backs to feed to their oxen.

"And no man in Hunza can sell his land to an outsider," he continues firmly. "This is traditional law. Only you can receive it through inheritance. For if a man were to sell his land, it would be like selling his children; it would be a shameful thing to do."

He stoops to lift a stone, and a stream of icy water creeps over some rocks and into the soil. The stream comes from a system of irrigation canals stretching five miles from the glaciers to the crops, the oldest of them carved into the treacherous mountainsides centuries ago by Hunzakuts using the horns of ibex. Deedar Aly makes an expansive gesture, indicating his family's lands. Yet he frowns, remembering how it used to be.

"Even if we have this much land," he tells me, "and can produce two crops a summer, it is not enough food to last a whole year; maybe it is enough food for six months only. By the end of the winter we once had only dandelion leaves, turnip tops, and other weeds to eat." Now, with the highway, he says, supplies can be had year-round.

American journalist JOHN MCCARRY, who now resides in Washington, D. C., lived for two years in Pakistan. His most recent article for the magazine was "Mauritius: Island of Quiet Success" (April 1993). JONATHAN BLAIR's photographs have appeared in NATIONAL GEOGRAPHIC for nearly three decades.

WHEN THE BRITISH first explored this area at the end of the 19th century, they were astonished to meet people who claimed to be more than 120 years old. These encounters inspired, some believe, the Shangri-La of James Hilton's best-selling 1933 novel, *Lost Horizon*.

Hunzakuts don't mind feeding the myth that they live longer than anybody else in the world, attributing it to their "pure" diet, which, they claim, became corrupted when the British introduced "the five adulterants"—sugar, tobacco, spices, tea, and vegetable oil—into their mountain fastness.

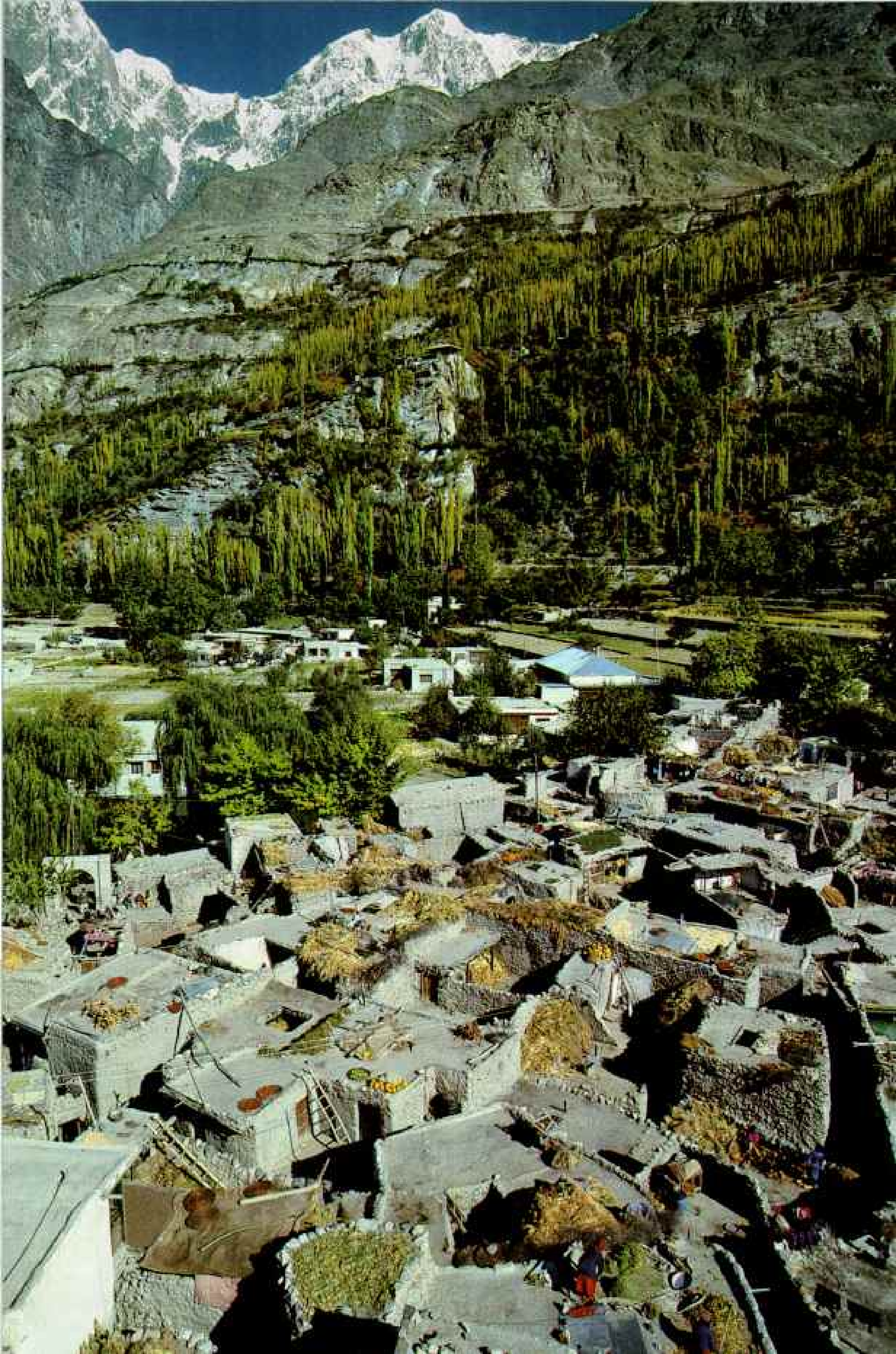
I was sitting one afternoon drinking tea in a *chai* shop in lower Hunza when a wrinkled gentleman casually mentioned that he was 119. When he saw my surprise, he shrugged his frail shoulders inside his *choga*—the traditional woolen cloak with extra-long sleeves that completely cover the hands—and added that most of his friends are as old as he, and some are even older. His nephew came up to me a few minutes later. "Actually we think Uncle is about 80," he smiled. "But don't be offended that he told you he was older; he was only trying to be amusing."

Though relatively shy with foreigners, Hunzakuts are full of fun with one another. This humor lightens a violent history. Isolated among high glaciers, the Hunzakuts established one of the most formidable domains of the Karakoram. This eminence was earned chiefly by their incorrigible raiding of the caravans trading between Leh and Yarkand (now Shache). Col. R.C.F. Schomberg, who traveled through the region in the 1920s and '30s, was so impressed by their physical stamina that he wrote: "The men of Hunza . . . are an oasis of manliness in a desert of trousered women."

Their fierceness had long been recognized. When, in 1891, Mir Safdar Ali Khan learned

Stocked with goods made in China—a Hunza trading partner for centuries—the Aliabad shop of Mashroof Alam (above, at center) marks the change from barter to a cash economy. While caravans no longer fear the onslaught of raiding bands, the uneasy terrain still hurls rocks that must be cleared from the path of commerce.

Stippled with grains and fruits, the roofs of Altit (right) hold the immemorial harvest of villagers. Yet a growing prosperity alters the lives of Hunzakuts. In Khaibar electricity makes life a little easier, powering a family's toaster oven and slow cooker (above), delivered by way of the Karakoram Highway. Passing up a small profit, Wajid Ullah Baig (below) lends his television and VCR to friends free of charge. Such equipment rents for about 150 rupees (five U. S. dollars) a day.



that the British planned to seize his principality in order to secure their frontier against the Russians, he reportedly sent off a letter to the British political agent at Gilgit announcing, "I care nothing for the womanly English, as I hang upon the skirts of the manly Russians, and I have given orders to my followers to bring me the Gilgit agent's head on a platter."

Russian promises to help were not kept, and, at a battle at Nilt, the British defeated the mir's army, but not without great difficulty. Three British officers won the Victoria Cross during the siege, a testament to the fighting spirit of the Hunzakuts no less than to their own.

Until Pakistan assumed direct control of Hunza, the people of the region lived under the rule of the mirs, a single family of rulers who claimed to have reigned uninterrupted for more than 900 years. The mirs were despots, like neighboring autocrats, though somewhat less harsh and more forward-looking. "The mirs contributed to the rise of Hunza because they promoted contacts with the outside world," explained Stephen Rasmussen, an American who is general manager of the Aga Khan Health Service for the Northern Areas and Chitral.

"And the Karakoram Highway is a perfect example of this. When they surveyed this road back in the 1960s, they actually surveyed it through the neighboring principality of Nagir. But the mir of Nagir didn't want the road, so at the mir of Hunza's request they put it through Hunza instead.

"That's the attitude toward change that other areas have not always had."

Ghazanfar Ali Khan (pages 130-131) would be the ruling mir if his family had not surrendered its power. Today his influence is several times removed; he is a member of the Northern Areas Council, an advisory board to the federally appointed commissioner. But he hasn't given up his title, even if it is only ceremonial.

A well-fed, sleepy-eyed man at the beginning of middle age, the mir gives an impression of almost marblelike stillness. "When my father, Mir Mohammed Jamal Khan, had the chance to bring the road through here, he did so because he saw that it would bring the people many good things," he says. "Now, thanks to investments made by the Pakistani government, 80 percent of the people of Hunza have electricity, and almost all the households have water pipes with clean water coming through them. There are roads connecting almost all the villages with the KKH. There are five high schools in Hunza and two intermediate colleges."

The mir takes a sip of Coca-Cola and sonorously adds, "I, in my elected position, have given all of these things to my people, and, as has been our tradition, I ask nothing in return."

PERHAPS. But there are other sides to the story. For one, the mir's electrical and plumbing successes are said to be much exaggerated. And a week or two after my talk with him I hear another view of the dynasty's traditional generosity from Mehboob Ali Khan, an urbane bank manager and former revolutionary.

He leads me to the roof of his house, which is furnished with simple carpets called *dari* and with *charpoy*, the ubiquitous rope beds of the subcontinent. He offers me tea and apples and hard-boiled eggs. Overripe peaches thud onto the carpets from the trees that shade the roof.

"It was in 1960 and I had completed my education," he recalls in the whisper of an old conspirator, "but I could not return to Hunza as long as it was being oppressed by that bloody mir. For you see, during the mir's time someone would call from the mountainside, commanding first members of one clan, and then another, to quit their work right away and work the mir's lands. We used to have to pay him a bribe of a goat or a bushel of wheat just to get permission to travel down to Gilgit. He used to take taxes from us as if he was sucking blood.

"So I helped form the Hunza-Nagir Liberation Front. At the time, the mir was staying at the Inter-Continental in Karachi, and I and the other members of the front gathered around him in the lobby of that very luxurious hotel and insulted him for being cruel to our people. We spat betel nut juice on him also. So that when Prime Minister Zulfikar Ali Bhutto annexed Hunza, we felt nothing but great happiness."

Most Hunzakuts agree that they have been more successful than other communities along the KKH because they are better educated. More than 90 percent of Hunzakut children today attend school, and a large

number go on to college. Until recently, when the Pakistani government began to introduce middle schools and high schools to the region, many Hunzakuts would travel downcountry, sometimes to Gilgit but more often to Rawalpindi or Karachi, for further education.

Their respect for education is profound. I see this one evening as I walk through the tiny bazaar at Baltit with Deedar Aly and Farhatullah Baig, the nattily dressed son of a local shopkeeper.

Suddenly a group of women clamber onto the road from a field of barley. Their eyes flash with amusement at our encounter, and, unlike women elsewhere in rural Pakistan, they make no effort to avoid the curious looks of a male stranger. They recognize Deedar Aly, and one by one they reverently kiss his small pale hand; he in turn politely kisses the place their lips have touched.

I assume it is his position as the son of a large landowner of an important clan that inspires this humble greeting, but Farhatullah Baig explains that it is because Deedar Aly used to teach at a government school. According to the only hierarchy resembling a caste system, "smart people" (especially teachers) are respected almost as much as strong people or people who have proved themselves brave in battle.

"And also Deedar Aly has carried out a spiritual obligation," Farhatullah Baig adds. "Education is encouraged by the Aga Khan. It is a religious commitment for us to come back here and share our education with our people. And for that reason I am studying engineering."

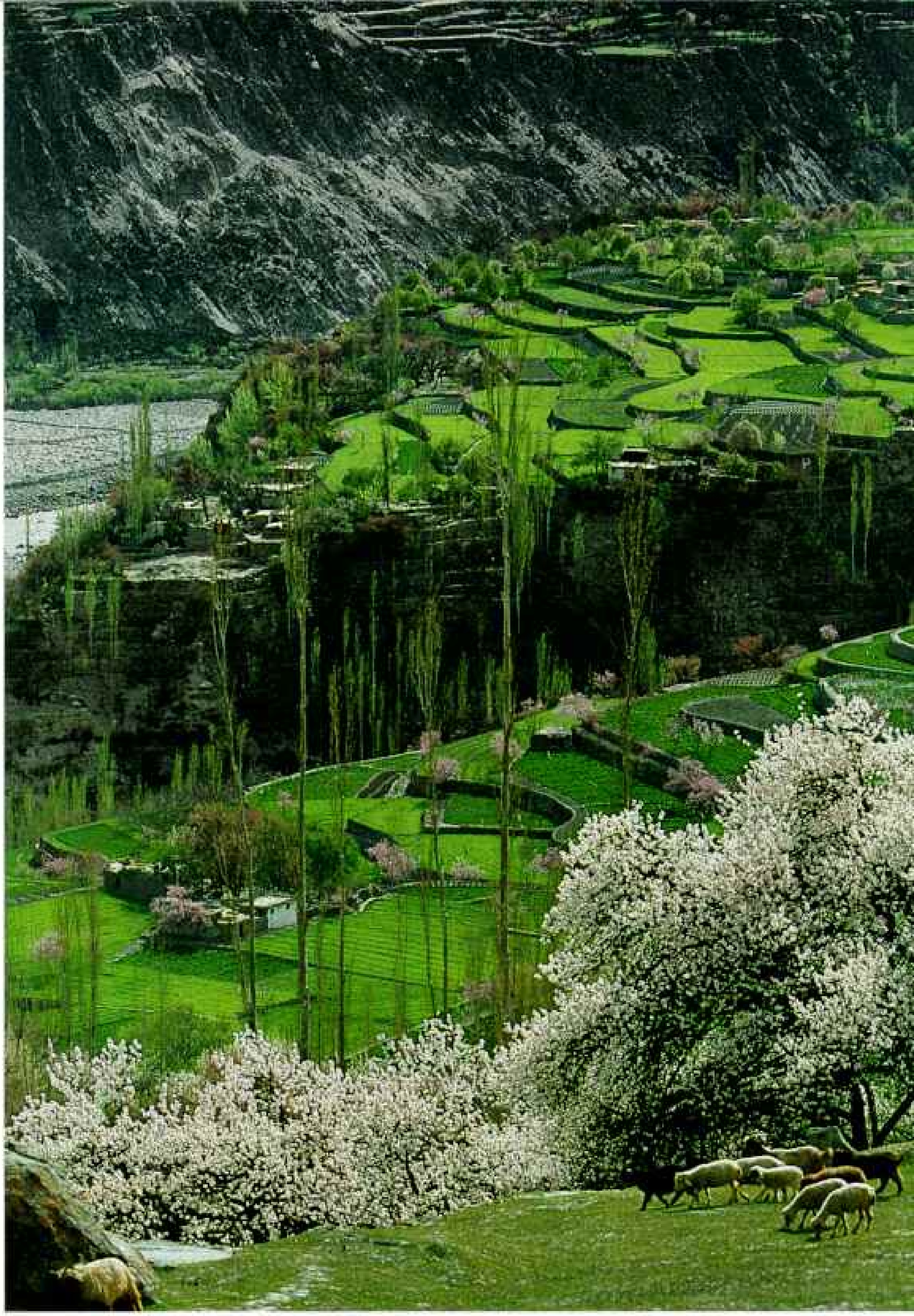
ISLAM CAME TO THE REGION along the trade routes, and by the 1800s most of Hunza had converted. Today the overwhelming majority of Hunzakuts are Ismailis, members of a small sect of the Shiite community; its spiritual leader, the Aga Khan, is considered by his followers to be a descendant of the Prophet Muhammad through his cousin and son-in-law Hazrat Ali, and therefore an imam.

To many Westerners the Aga Khan's name evokes the image of the present imam's father, the playboy Prince Aly Khan, who married movie star Rita Hayworth. I found in Hunza, however, that this extravagant image belies a long-held humanitarian commitment on his part and that of his family.

As the unembarrassed demeanor of the unveiled women from the fields clearly showed, women in Hunza enjoy considerable rights. It is even the *farman*, or spiritual directive, of the Aga Khan that if his followers have both a son and a daughter and can educate only one, they should educate the daughter; the son, they say, will always find a way to look after himself. In Hunza, at least, this has largely proved to be the case. The Aga Khan Education Service began setting up schools for girls nearly 50 years ago; schools for boys were nonexistent.

One evening in the fields above Baltit, I recognized the daughter of the owner of the hotel where I was staying. She was wearing the uniform of the Aga Khan Academy, which, inaugurated in 1987, is the first

Adorned in a necklace of Chinese beads, a shepherdess brightens drab surroundings. Her traditional-style hat has been abandoned by many younger women, yet it remains as useful as it is ornamental: At night she draws a needle from the crown to mend clothes or pick out splinters.



Delicate scent of apricot blossoms drifts on chill spring air to perfume the Hunza Valley. Twenty varieties of the fruit, a staple of both Hunzakut diet and economy,

are grown here and sold to a cooperative. The Hunza River rushes past sculpted terraces to join the Gilgit River and then the Indus.

boarding school for girls in the Northern Areas. She was busy pulling up grass to feed her father's oxen before the sun died. Next to her, giggling in sisterly harmony, was her younger cousin.

I ask the girls how many hours they work each day, and the older one replies, "Well, I finish school around two, and then I go home and have some lunch and a rest, then I come out here about three and work until sunset, and then I go home and have dinner and help out at my father's hotel cleaning up or preparing food for the foreigners, then I study, and then I go to sleep."

Does she find it difficult to manage all these chores and also to study? She giggles again. "Of course not." I ask her if her cousin has the same schedule, and she says that her cousin does, but that her older sister is married and works in her husband's fields. "She didn't pass her matriculation exam," she explains.

So she chose marriage instead of education and a career? "Of course not," the older girl says. "Her husband and his family are saving money so that she can take her matriculation exam again and then go down to Rawalpindi and study to be a doctor."

There are now 175 Aga Khan Diamond Jubilee schools in Hunza and other parts of the Northern Areas. In the 1970s the present Aga Khan also began to introduce health care centers, which have significantly reduced TB and dysentery, the principal causes of death in Hunza 20 years ago. And in the 1980s he introduced his most ambitious project, the Aga Khan Rural Support Programme. Since 1982 the project has sponsored the formation of more than 2,000 local organizations that help train their members in horticulture, animal husbandry, marketing, and accounting. Like the KKH, these innovations are transforming Hunza.

Of all the changes the highway has wrought, the biggest, everyone agrees, is the widespread use of money.

FRANC SHOR

Palace pet gets a treat from Rani Atiga, wife of Mir Ghazanfar Ali Khan (right), whose elective office on the Northern Areas Council carries more power than the now ceremonial title of mir. A boy in 1952 (above), he stood beside his father, Mir Mohammed Jamal Khan, last ruling member of his dynasty. The father advanced the highway; the son helped build roads to link it with distant villages.

I am drinking tea at a newly opened hotel in Gulmit with Zafar Iqbal, a handsome young man with a green Mao cap and a very straight spine. He returned to Hunza with a degree in commerce from the University of Karachi, and he has many plans. "I have joined my older brother, who started up an import-export business with China soon after the Khunjerab Pass was opened to the public in 1986," he says in impeccable English. "My brother and I take scarves and tea and cigarettes into China, and we take carpets and silk clothes back into Pakistan. Before the KKH the price of an ox was calculated in wheat. But now we are trading on a big commercial scale, and we are trading for money."

Positioned near the Karakoram silk routes, the Hunzakuts, of course, are no strangers to commerce. "We have been carrying out trade with the Chinese for centuries," Majahidullah Baig, the honorary wazir, or adviser to the mir, tells me. "We think of ourselves as the grandchildren of China because the Chinese have always been very good to us. They made special trade agreements with us that they made with no other kingdom in the region. They used to send us eight-pound blocks of silver and their finest silk carpets and excellent heavy cooking pots;

in return, we would send them strong ropes made from yak wool, and dried fruits and apricot seeds."

Sitting cross-legged on the throne of a centuries-old palace at Baltit, the wazir gazes out over the valley at the mountain of Rakaposhi. "But selling things in China for cash is something that only the KKH has allowed us to do."

One of the biggest sources of cash income in Hunza today is tourism. Since the Khunjerab Pass opened, travelers have been coming to Hunza in increasing numbers; in 1991 nearly 40,000 foreign tourists passed through.

CHANGES of this magnitude and speed typically leave a wake of shattered customs, but most of Hunza's culture seems to be as hardy as its people. Yet the blessing of tourism is inevitably mixed, as I see on the night the shaman makes his predictions for the Hunzakuts before an audience of Japanese tourists.

The Japanese have arrived before me at the Kisar Inn in the village of Altit, reachable only by mountain tracks, and are busily affixing cameras to tripods. Local children sit on the wall of the inn, the silhouette of the mir's medieval-looking castle etched against the evening sky behind them.

The musicians begin—a beating of drums, and then the hollow plaint of a flute. After a crowd-pleasing sword dance, a small man with wild eyes and tangled black hair darts out from behind the musicians; the children cry out excitedly. He is the *bitan*, or shaman, and he has come to learn the future from the fairies who live on the mountaintops. He leaps and canters in a circle. An assistant puts a long colorful silk coat on him; another hands him the severed head of a goat.

The tourists gasp. Camera shutters snick as the bitan resumes his dance, holding the

BROWYN COOKE (ABOVE)

Kicking up dust on the Altit polo ground, young riders sans horses slice at a ball. Though many fields have been converted to other uses, polo remains a popular sport.

In class, pupils tackle English at a Gulmit school. English and science, says the Aga Khan, are "global intellectual currencies." Hunzakuts esteem learning; many are high school grnduates.

goat's dripping head to his mouth to drink the blood. He stops for a moment to inhale the fumes of burning *gal*, or juniper, which grows only on those mountaintops where fairies dwell, and begins to sing in a whining, high-pitched voice.

The old man sitting next to me interprets: "This bitan says that the people of Hunza are blessed because the Aga Khan will come soon to see them, and when he does, he will build them a hospital." The bitan inhales more gal and makes more predictions, but the old man beside me advises me not to believe him.

"This bitan is a fake," he says. "He is making these things up as he goes along so the tourists will give him big tips." How can you tell? I ask him. He points to one musician. "He's playing a *futek*, a flute you hold vertically from your lips," he says. "If he were the real thing, the musician would be playing a *gabi*, which is a flute you play horizontally from your lips and which is the only flute fairies can hear."

THEN THERE ARE THE POETS, or rather the poet: Allamah Nasir al-Din Nasir Hunzai. He describes himself as "the first poet of the Burushaski language and also a religious scholar." He is escorted by two young men who bow whenever he speaks to them.

Allamah Nasir Hunzai tells me in grave English that he has spent 62 years researching the Burushaski language. It has been difficult because "Burushaski is not a recorded language, so there is no written history. And now, because of the KKH especially, the language is coming very much under the influence of English and Urdu. So my role, I feel, is to preserve the language, and this I can do through poetry, by writing it down."

Allamah Nasir Hunzai's face lights up with pleasure as he talks about his poetry, as do those of most other Hunzakuts, who all seem to possess at least one cassette of him reciting his verse. "Burushaski is a language wonderfully suited to poetry," he says. "There are so many teasing words, so many sweet words, so many mysterious words. For example, the word *tal* can mean so many things: a kind of bird, the roof of your mouth, a grass in the fields, a birch tree, the ceiling of a room, motionless water. How beautifully a word such as tal suits itself to poetry, especially poetry devoted to God."

Also at risk are some of the more beneficial old ways. Under the mir minor disputes within a village were settled by an elder called an *uyum* or by the mir's appointee, the *trangfa*. Abdul Bari, the proprietor of the Gulmit Tourist Cottage, claims to have been the principal trangfa for all of upper Hunza.

He points to an antiquated black telephone, saying, "Under the mir, only the trangfa was permitted to own a telephone, and this was my telephone. With this telephone I would contact the mir in central Hunza and discuss with him important judicial matters."

What sort of judicial matters?

"Very grave crimes."

Such as what? Murder?

Abdul Bari is taken aback. "Oh no," he says, as if murder was unheard of in Hunza. "That is the sort of misdeed that has been imported here from downcountry. In the times of the mir the sort of crimes I used to have to judge were crimes such as a man receiving a blow to his arm or his face during a personal dispute with another man. Since this was certainly the most serious of crimes, we would usually decide that he should get an ox or two; that is to say, if the victim had received one injury to the head, then he should receive one ox from his tormentor as compensation, and if he had received two wounds to his head—or one wound to his head and one wound to his arm—then he should get two oxen; arms and heads, of course, being considered equally."

Abdul Bari pauses, shakes his head indignantly. "But now our old efficient judicial system has been replaced with the ridiculous system of these bloody Pakistanis," he says. "Under the mir's system a trangfa used to be able to make a decision in five minutes; now it takes five months and costs a lot of money in bribes to get things decided in government courts."

Exuberant invaders from Europe jolt along the Karakoram Highway to Rawalpindi. The cash left behind by tourists—nearly 40,000 of them in 1991—provides Hunza's people with an option that their traditions cannot: a ticket to the world.

BUT SOME IMPROVEMENTS are welcome. One evening I was walking with a friend along a dusty mountain path. As the light failed, my other senses sharpened: I smelled woodsmoke and heard the echo of a small flute and the chatter of glacier water in the irrigation canals. On an especially tricky turn in the path we met two local boys. Dressed in jeans and sneakers and bright, ironed shirts, they were trying to maneuver a wheelbarrow bearing a TV and a VCR around us.

Because the Hunzakuts could not pick up Pakistani television signals, and there were no movie theaters, the boys were on their way back to their village, where dozens of people were eagerly waiting for them. Later they would all sit down to watch an Indian film on video with singing and dancing and girls wearing saris in the rain.

In the end, most Hunzakuts would probably agree with Subedar Mir Hazar, a retired man in his 80s I find harvesting potatoes in his fields above Aliabad. As he works his hands in the soil, excavating his crop, I ask him if the people of his generation regret the changes that the KKH has brought.

He looks over his shoulder, giving me a strange look, and I think that maybe he hasn't heard me, but when I try to repeat the question, I realize that the expression on his face means something else altogether.

"Regret them?" he says. "Are you being funny? The road is the best thing that ever happened to us." □

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*Based on MSRP comparison of comparably equipped 1994 Escort LX, Toyota Corolla DX and Honda Civic DX.
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†Based on 1992 New Vehicle Buyers Survey

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Mrs. Quail Introduced Her Students To Quiltmaking. The Rest Is History.

If students have a sense of belonging to history, they'll be more responsible participants in its future.

That's always been Harriet Quail's approach to teaching her sixth-grade Social Studies class.

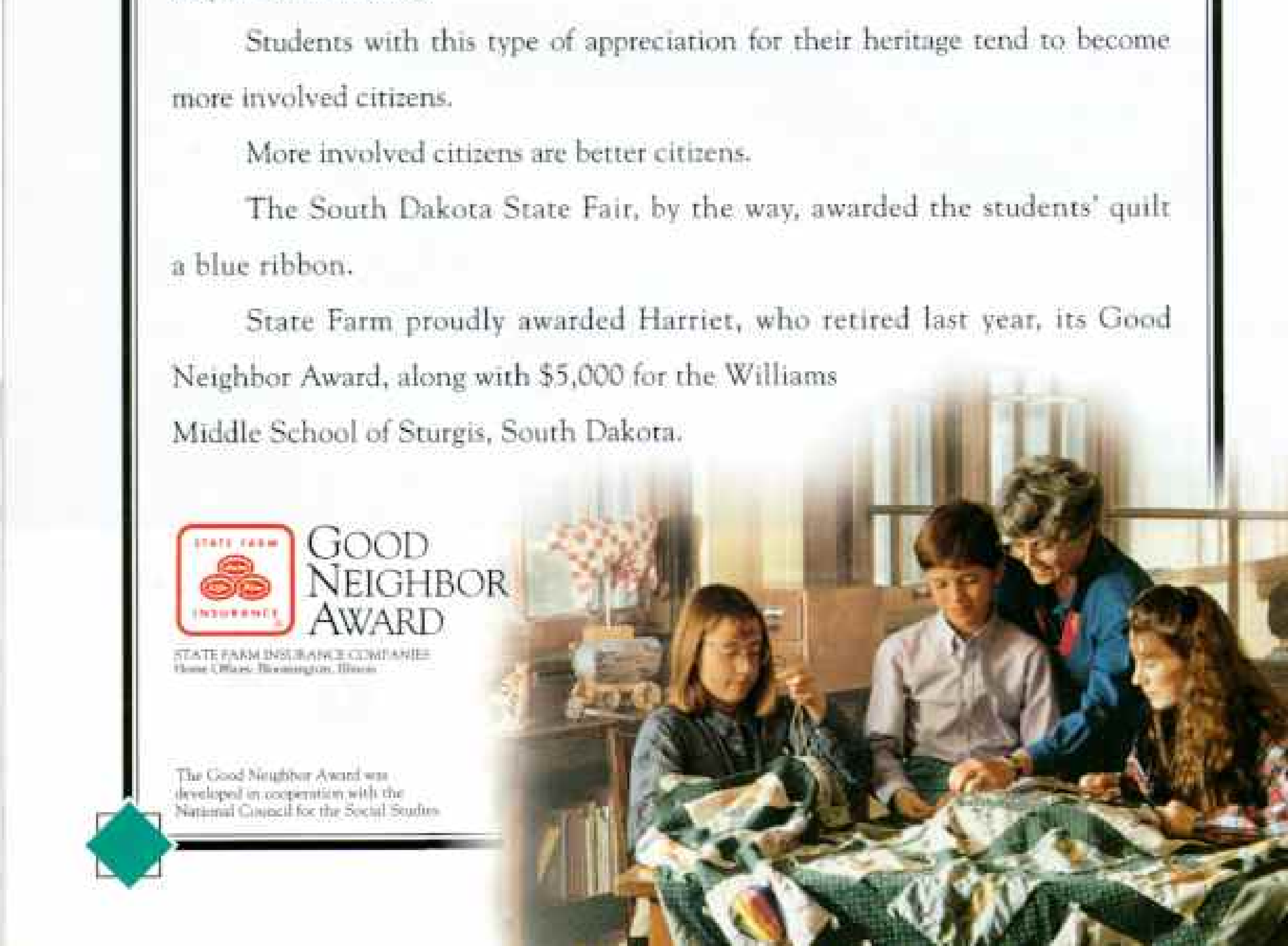
Case in point. She introduced quiltmaking to her class as an expression of art and history. The class became so involved in both the quiltmaking and the history, it embarked on a remarkable classroom project: A quilt depicting the history of South Dakota.

Students with this type of appreciation for their heritage tend to become more involved citizens.

More involved citizens are better citizens.

The South Dakota State Fair, by the way, awarded the students' quilt a blue ribbon.

State Farm proudly awarded Harriet, who retired last year, its Good Neighbor Award, along with $5,000 for the Williams Middle School of Sturgis, South Dakota.



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The Good Neighbor Award was developed in cooperation with the National Council for the Social Studies

THE PRESIDENT'S REPORT ON THE

Education Foundation

Digging Deep for Science and Education

A quiet rage seized Linda Grable-Curtis (below) when she read an article in which I lamented that American youngsters were woefully lacking in geographic skills.

"I've always loved geography and just had to do something to help bring it to life for kids," says a determined Linda, a career professional in the travel industry.

From her corner of southwest Idaho, Linda approached the Society with her desire to support our Education Foundation. She now makes an annual gift of $5,000.

It takes a committed person to offer that kind of support to the furthering of geographic knowledge. In fact, Linda is one of some 14,000 individuals whose financial support keeps the Society's research and education programs growing.

Those programs are paying off: U. S. schools are emphasizing geography as a classroom subject, and youngsters are becoming more aware than ever of their world.

"I really am a behind-the-scenes person," adds Linda. "I can do my part this way, out of the spotlight, and still get that warm fuzzy feeling that I'm doing some good.

"Kids need to understand that among the world's people we are all very different, yet we are very similar. Geography brings that home."

Contributions like Linda's support a broad range of educational activities, while other gifts and bequests from Society members and private donors are aimed at specific areas of study.

For example, the estate of Helen Duplantis in 1992 earmarked more than $800,000 for the Society's support of oceanic research. Her gift is helping fund the work of marine biologist Rikk G. Kvitek (right).

Rikk works at Moss Landing Marine Laboratories on California's Monterey Bay. For several weeks each year you'll find him diving in Canada's frigid Barrow Strait, studying huge gouges dug into the seafloor by moving icebergs and buckling ice fields.

"It looks like a bunch of bulldozers have been at work digging

BOTH BY ROBB KENDRICK

trenches down there," he says. The scraping ice kills shellfish and other creatures, but it also acts as a plow, turning up nutrient-rich sediment and giving rise to vast carpets of microscopic plant life.

"These nearshore areas are a chief source of food for walruses, seals, and whales in the Arctic," says Rikk. "As our climate shows signs of changing, ice formation and movement are bound to be affected. We need to understand the relationship between ice gouging and seafloor life, and what impact global warming might have on it."

Rikk is in his second year of this ongoing study, working with a team of other scientists.

"Researchers like me have to go out and raise every dollar for our studies. It's good to know there are people out there keeping this kind of work alive."

Thanks to the generosity of people like Linda Grable-Curtis and Helen Duplantis, Society-funded researchers and educators will continue to illumine our world.

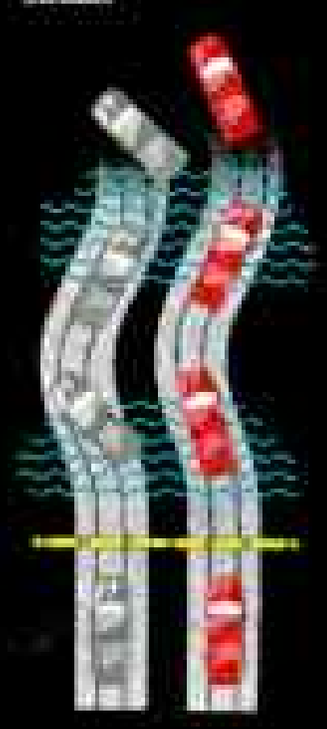
Gilbert M. Grosvenor

THE NATIONAL GEOGRAPHIC SOCIETY EDUCATION FOUNDATION WAS ESTABLISHED TO RAISE AND DISTRIBUTE FUNDS FOR EDUCATIONAL AND SCIENTIFIC PROGRAMS.

INTRODUCING *MOTOR TREND'S* "TRUCK

To hear the editors of *Motor Trend* talk about the new Dodge Ram is to realize the rules have changed. They proclaimed the Ram to be "...a new standard by which full-size pickups will be judged." And declared it "...a force with which to be reckoned." Our sentiments exactly.

Dodge Magnum series V-6, V-8 and Cummins Turbo Diesel engines wrote the book on power. And with the new Ram's available Magnum V-10†, they're getting two cylinders better. To the tune of 450 lb ft of torque and 300 horsepower.

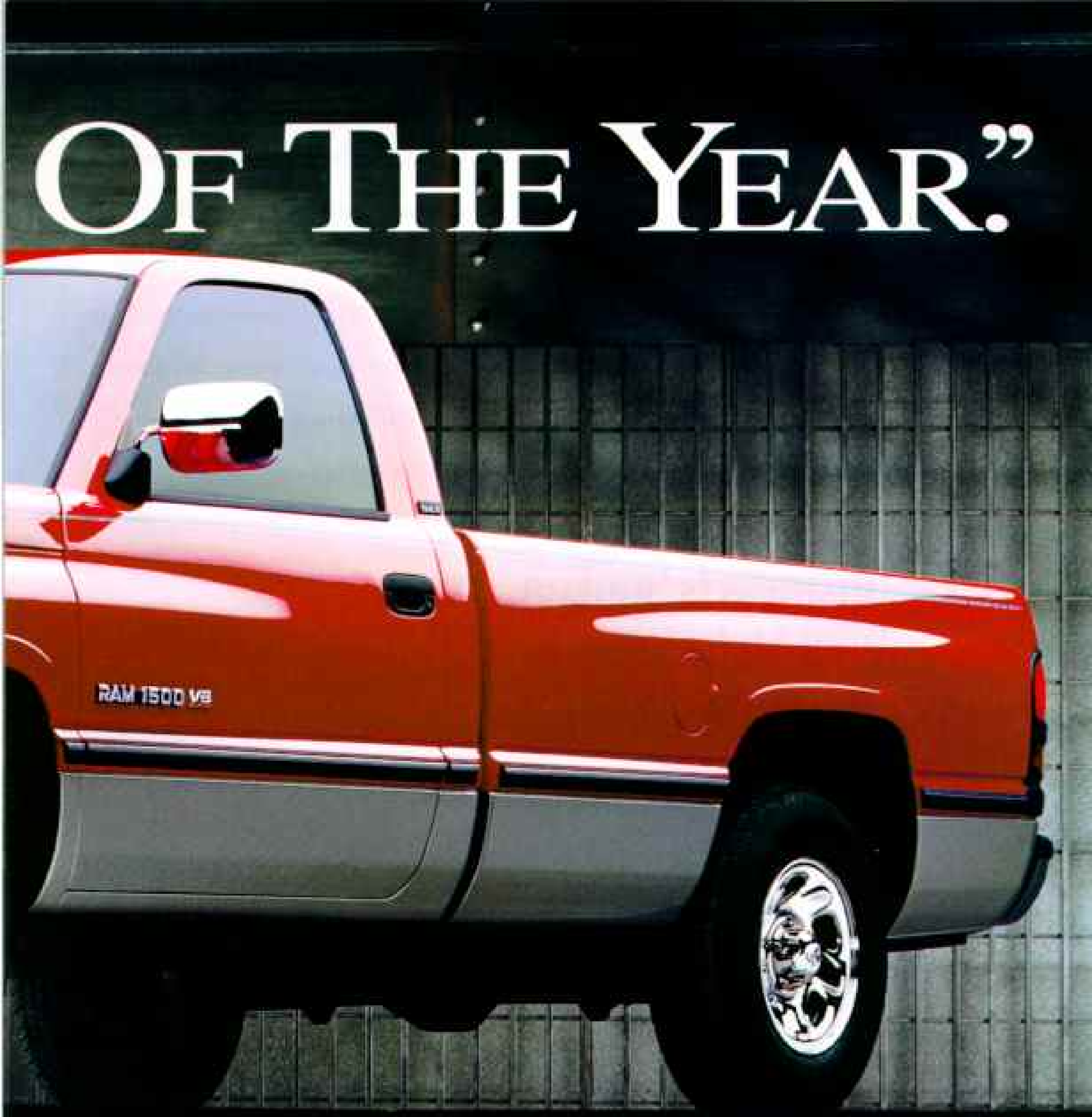


Ram makes a powerful statement when it comes to safety, too. It has one safety feature no full-size pickup ever had before. A standard driver's airbag.* There's also available four-wheel anti-lock brakes. Along with high-strength steel door beams. And a dozen other safety features.

There's no rule saying trucks have to ride like trucks. That's why we gave our new Dodge Ram a new frame and improved suspension travel. We just wouldn't hear of making a noisy pickup, either. Fact is, we worked very hard to make our new Ram a standard for quietness.

Sure, pickups have always been workhorses. Now

OF THE YEAR."



they're a convenient place to conduct business. With an available center console between the front seats. Behind the seats, there's plenty of room for an ingenious optional storage system. And back in the bed, you'll find a set of tie downs so well engineered, they can support the weight of the entire truck.

We've provided an extra measure of protection, too – using more exterior galvanized steel than any other full-size pickup on the road, and making substantial use of anti-chip materials.

Here's one last point to consider: Ram also has more maximum payload than other full-size pickups. Not to mention the terrific amount of weight it carries...with the editors of *Motor Trend*.

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Geographica

From Museums, Indian Remains Go Home

BOB ZELLAR, BILLINGS GAZETTE

NATIONAL ANTHROPOLOGICAL ARCHIVES, SMITHSONIAN INSTITUTION

Borne in cedar boxes, the bones of 25 Northern Cheyenne return to the Montana soil from which their people were banished more than a century ago. The funeral procession, led by James Black Wolf, marks another chapter in an ongoing story of restitution: the repatriation of Native American remains from the museums where they have been studied and displayed.

Most of the 25 men, women, and children died at the hands of U. S. soldiers near Fort Robinson, Nebraska, in January 1879. Two years earlier the nomadic Northern Cheyenne had been forced to settle in Indian Territory, in present-day Oklahoma. Disease-wracked, unfamiliar with the land, and homesick, about 300 fled north. Then hunger drove some 150 to turn themselves in at Fort Robinson. Ordered south again, they balked; their leader, Morning Star (also known as Dull Knife), vowed that they would die rather than comply. Furious over low rations and intimidation, the Cheyenne broke out. Mounted, better armed soldiers tracked the outnumbered, thinly clad band across the snow, killing 64. Newspaper accounts and drawings (upper right) fueled an outcry that led to the creation of the Northern Cheyenne reservation in Montana.

Army doctors gathered Indian remains to study skeletal diversity and the effects of modern weapons. Many bones ended up in the Army Medical Museum, then were sent to the Smithsonian Institution. Under a 1989 law the Smithsonian's National Museum of Natural History has returned nearly 2,000 sets of bones and skulls, but its collections hold 16,000 more. Some will stay there because tribal taboos bar dealing with the dead.

Driving to Montana with the remains, the Northern Cheyenne paused at Fort Robinson to offer prayers. Steve Brady, a tribal official, recalls, "We told our ancestors that they were to be taken home."

EDDIE MOORE, WINSTON-SALEM JOURNAL

Planting the Seeds of Community

Willie Mae McArthur, a Winston-Salem, North Carolina, homemaker, had never gardened before she heard about a program called Winston Grows. Last year, with some of her neighbors, she learned to plant, water, weed—and harvest.

Winston Grows began after David Rice, an assistant city editor on the *Winston-Salem Journal*, read about community gardening programs in the May 1992 NATIONAL GEOGRAPHIC and thought, Why can't we do something like that here? He rounded up support from the garden club council, his publisher, and the state Extension Service to help install vegetable gardens in 11 city neighborhoods for residents like Mrs. McArthur and Della Evans (left).

The result? "Delicious!" Mrs. McArthur exulted. "We raised 60 pounds of squash, as well as tomatoes—fresher and better vegetables than I'm used to." To Rice, the benefits included "building community, eating healthily, getting exercise. There was only one case of vandalism: Someone stole a squash."

National Geographic, March 1994

BUCKLE UP—TOGETHER WE CAN SAVE LIVES

Ford designers from left to right:
Susan K. Westfall, David Hilton, Gary Braddock, Soo Kang, Paul Arnone, Aaron Walker

IF YOU WANT TO KNOW WHAT CARS AND TRUCKS WILL BE LIKE IN *2005* TALK TO SOME OF THE PEOPLE WHO *LIVE THERE.*

AT Ford Motor Company, our young designers help keep us in touch with the future. SHARING THEIR VIEWS of the world they'll be inheriting and the vehicles they envision there. To widen their horizons even further, we provide them with access to other Ford design studios from Turin, Italy to Melbourne, Australia, all of which are linked electronically. In this "GLOBAL STUDIO" environment, these men and women of the computer age use the latest tools and technologies to design vehicles for people living in a RAPIDLY CHANGING WORLD. As Ford, this is one way our young designers make sure that our customers get what they want, before they even know they want it. To us, that's what quality is all about.

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QUALITY IS JOB 1.

Geographica

Reis gave the map to Sultan Selim I in 1517; it came to light in Istanbul's Topkapı Palace in 1929.

A Turkish Portrait of the World in 1513

This remnant of a full map of the known world survives as one of the earliest depictions of the knowledge gained on the voyages of discovery. Drawn on a gazelle hide in 1513, it came not from Portugal or Spain but from the hand of a Turkish mariner.

Piri Reis, a Gallipoli-born navigator who sailed when the Ottoman Empire was flexing its naval muscle, drew the West Indies and the coasts of South America, Europe, and Africa based on the reports of others. Notes state that he had used data gleaned on Columbus's voyages; he even claimed that he had obtained a map drawn by Columbus. One note describes how "a Genoese infidel, his name was Colombo," pestered the Spanish king for ships.

Along with phantasmagoric creatures, Piri Reis sketched contemporary vessels, European and African rulers, parrots, monkeys, an elephant, and an ostrich. He included rivers of South America and the islands of Hispaniola, Trinidad, and Puerto Rico. Piri

Four U. S. Women Trek to the South Pole

Sixty-seven days and 660 miles after they began, Ann Bancroft and three other American women skied to the South Pole on January 14, 1993. "We pulled our sleds, stood shoulder to shoulder, and had fun doing it," says Bancroft, who became the first woman to trek to both Poles.

The former Minnesota teacher, a member of Will Steger and Paul Schurke's dogsled expedition to the North Pole (GEOGRAPHIC, September 1986), trained four years for the Antarctic journey, which set off from the southern edge of the Ronne Ice Shelf. Each team member hauled 200 pounds of supplies on a seven-foot sled. "Our training and experience gave us the ability to make good decisions," Bancroft says. "But mother nature calls the shots." Delays caused by bad weather and illness led to supply shortages. They considered evacuating two members so the other two could continue across the continent as originally planned but chose to end the trek at the Pole as a team.

During training the women had focused on dealing openly with the low points that come from facing icy winds and temperatures down to minus 45°F. "When you can talk about a problem and burst into tears without being afraid of looking like a wimp, the others can help you out of it," Bancroft says.

SUSANNA SORBY

"We need to take care of the forest and the things that live here."

"Out here, you understand that the forest is more than just trees. And that caring for the wildlife that lives here is important. To all of us. My company, Georgia-Pacific, believes that. And we're doing something about it. One way

is with a plan we've developed to protect the Red Cockaded Woodpecker. We're finding nesting sites, then creating safe areas around them. Areas we'll leave undisturbed. Just to make sure the birds will always have a place to live and thrive. That makes me feel good about the work I do. And about the company I work for." Carlton White, Forest Specialist. **Georgia-Pacific**

Geographica

National Trail to Recall Civil Rights Marches

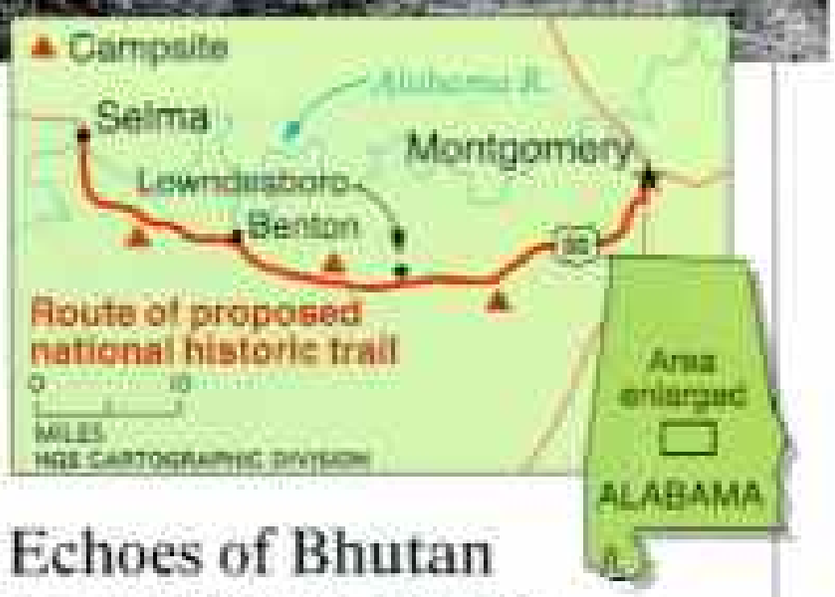
On a Sunday in March 1965, 25-year-old civil rights activist John Lewis led 500 marchers out of Selma, Alabama, bound for the state capital of Montgomery. They were protesting southern practices such as literacy tests, poll taxes, and intimidation that kept black citizens from exercising the right to vote. At the Edmund Pettus Bridge, state troopers barred the way.

"They started beating us, gassing us, tramping us—forced us all the way back through downtown Selma," Lewis recalls. Injured and hospital-bound, he called for federal protection.

Two weeks later Lewis, with the Reverend Martin Luther King, Jr., and 3,000 other demonstrators, began the 54-mile march from Selma to Montgomery. "Bloody Sunday" and the subsequent "holy march"—Lewis's words—stirred the nation. Five months later Congress passed the Voting Rights Act.

Now John Lewis, in his fourth term as a Georgia congressman, has introduced a bill to commemorate the marches with a National Park Service national historic trail. Along the route, markers would identify the church that served as march headquarters, several campsites, and the place near Lowndesboro where Viola Liuzzo, a white civil rights worker, was fatally shot. Emblematic of the changes since 1965, Selma's city council today has a black majority.

MATT HERON, BLACK STAR



Common Fish Fossils, Uncommon Preservation

In the northeast Brazilian state of Ceará, calcite nodules are so common they go into road paving. But to scientists they are a treasure—yielding some of the best preserved fish fossils ever found.

In 100-million-year-old specimens, eyes, gills, and muscles are visible; blood cells can be seen under the microscope, says Philip Wilby, a geologist at the Open University in Milton Keynes, England. Primitive bony fishes like this *Notelops brama* make up most of the fossils.

ADAM WOOLFITT

Ceará was under the ocean during the Cretaceous period. When dead fish sank to the seafloor, phosphates turned the carcasses to stone in a few days, before decay destroyed the soft tissue.

Echoes of Bhutan on a Texas Campus

The buildings beneath the mountains evoke the architectural heritage of the Himalayan nation of Bhutan. But these structures sit on the campus of the University of Texas at El Paso. "It happened thanks to the GEOGRAPHIC," says Diana Natalicio, the university's president.

In 1916 fire gutted the main building of what was then the Texas State School of Mines and Metallurgy. Kathleen Worrell, wife of the school's dean, recalled an 89-page piece in the April 1914 GEOGRAPHIC: "Castles in the Air: Experiences and Journeys in Unknown Bhutan." She suggested adapting Bhutan's architecture, with its high indented windows, massive dark-banded walls, and projecting eaves. Her husband agreed. Since then most of the campus's 65 structures have been designed to recall the serenity of Bhutanese architecture.

Besides giving the campus a coherent style, the buildings are educational. "For our 17,000 students, it's a window on a part of the world they know little about," Natalicio notes.

—BORIS WEINTRAUB

STEVEN FUQUAY

National Geographic, March 1994

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CADILLAC
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CREATING A HIGHER STANDARD

A strange sporting event took place the other day. A man under a hurdle caught a runner in midair.

Sounds like fun, huh? To Antonis Achilleos, part-time busboy and amateur photographer, it's a blast. In fact, Antonis thinks making great photographs is more fun than making touchdowns, jump shots or holes in one.

One hot, lazy afternoon, Antonis

Homestretch
by
Antonis Achilleos, busboy

hopped in his car to get a cherry Slurpee. On the way to the store, he spotted a vision of beauty in sweat socks flying through the air.

Something clicked.

He grabbed his Nikon N6006, leaped out of his car, then flung his body under a hurdle and waited.

Antonis Achilleos, part-busboy, amateur shooter, caught this flying woman with a Nikon N6006. Please don't try this at home.

Was it worth it?

What do you think?

Antonis chose the N6006 for several reasons. It has an autofocus system that works quickly and precisely in light as dim as a single candle. There's Center-Weighted Metering, Spot Metering, and 5-segment Matrix Metering, for rapidly changing light or fast-moving action.

It also has a powerful pop-up flash with 28mm coverage. Here Antonis brightened the foreground by increasing the flash one stop. And he underexposed by one stop to maintain the ominous sky and provide contrast with the brightly lit foreground.

He created the strong sense of motion (like she really needed it) by using Rear Curtain Sync. It fires the flash just before the shutter closes, and he shot at 1/15th.

Although the flash isn't designed to cover the entire frame, Antonis decided to use a 24mm AF Nikkor to exaggerate the angle. He could have chosen any of nearly eighty legendary lenses. The same Nikkor lenses most pros use behind the dugout or in the end zone. The N6006®, however, is the Nikon designed for people who do not have press credentials. Or sideline passes.

The Nikon N6006 has autofocusing, a built-in flash, and more honorable Nikkor lenses. It's how amateurs get their stuff in magazines. Ask Antonis. For a free booklet, call us at 1-800-NIKON-35.

You see, it's the Nikon designed for people with a passion for photography who just might happen to be dentists, plumbers, and busboys. This is the Nikon amateur photographers can really show their stuff with.

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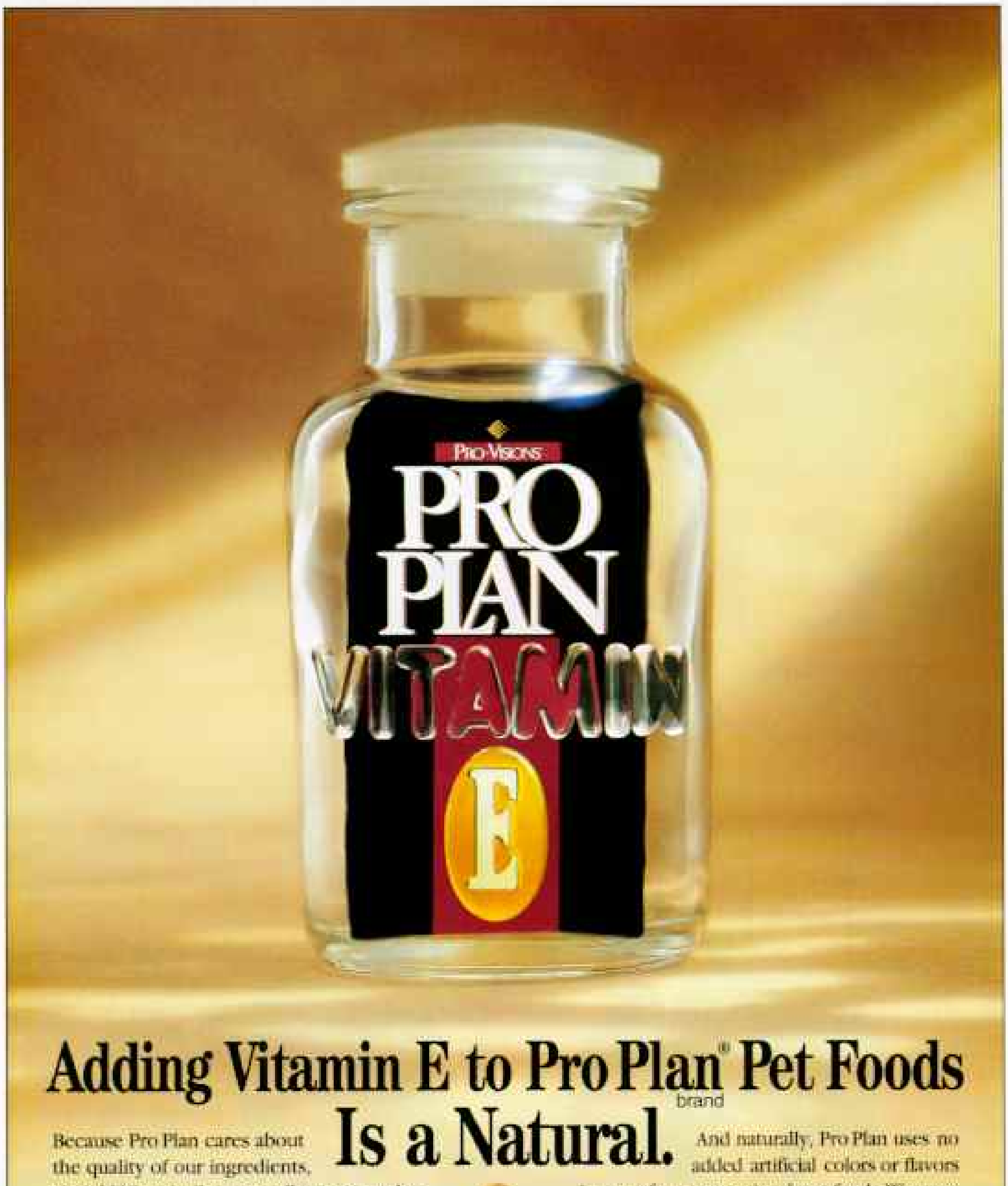

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Forum

Taiwan

Regarding the description of Taiwan in the November 1993 issue, my wife and I traveled around the island recently and saw firsthand how bad an environmental disaster it is. Mountains were turned into farmland and were planted with fruit trees, despite their steep slopes. Rivers were filled with stinky things with disgusting colors. The government is spending more money but with little result. The main problems are government corruption and people's unawareness of the current situation or of possible solutions. Their news media have failed entirely to bring these to public attention.

FENG-YANG KUO
Denver, Colorado

It is true that without American economic and military aid in the 1950s and '60s Taiwan would not have become an economic powerhouse. However, economic and military aid alone did not create a democratic Taiwan. That was largely due to American universities educating Taiwanese graduate students. The best examples are President Lee (a Cornell Ph.D.), Prime Minister Lien (a University of Chicago Ph.D.), and the majority of cabinet ministers, who also have advanced degrees from the United States. These leaders together with tens of thousands of U. S.-educated civilians have brought real democracy to Taiwan.

HONG Y. YAN
Lexington, Kentucky

The article says that 85 percent of the people of Taiwan are descendants of Chinese from Fujian Province and elsewhere along the China coast. The "elsewhere" included Guangdong Province, and about three million people from there speak the Hakka dialect at home. The majority of Hakkanese live around Hsinchu Science-Based Industrial Park, Taiwan's Silicon Valley.

KUEI-WU HUANG
Irving, Texas

The latest manifestation of increased democracy is a popular demand for UN membership for Taiwan. The KMT [Nationalist Party] government, which has agreed to make UN membership a top priority, still claims to represent China, Mongolia, and Tibet as well as Taiwan—a position that has cost Taiwan dearly. Currently the government has diplomatic relations with only 29 countries, the most powerful being South Africa. Grassroots groups and the opposition Democratic Progressive Party are advocating UN membership for Taiwan alone. Mainland China has actively opposed any form of UN membership for Taiwan.

ROBIN HERR
Asia Resource Center
Washington, D. C.

The endangered wildlife species of the world have little reason to celebrate Taiwan's prosperity. Taiwan is a global clearinghouse for tiger bones, rhino horns, bear gallbladders, leopard skins, live baby orangutans, even skins of the giant panda. If it's rare and endangered, it's probably for sale on the streets of Taiwan.

WILLIAM B. HUTCHINS
West Palm Beach, Florida

Having lived for the past 12 years in Wushe, Taiwan, I was delighted to see the faces of friends (pages 22-3). They are neither mainlanders nor Taiwanese, but indigenous Atayal tribespeople.

FR. PAUL DUFFY, M.M.
Maryknoll Fathers and Brothers
Chicago, Illinois

Kodiak, Alaska

You captured the beauty and majesty of my first Alaska home, Old Harbor, with sensitivity and generosity. While scholars debate exactly how many indigenous people lived in the archipelago at the time of contact, it is clear that the Baranov regime (1791-1818) decimated the region. But not all Alutiiq died. Many were drafted into company service and shipped off to the Kurils, the Pribilofs, the Hawaiian Islands, the Alaska mainland, and the California coast. Thanks to the efforts of Russian Orthodox missionaries, they became bilingual and literate and were able to assume management positions within the colonial administration. They ran the schools, churches, stores, trading posts, and shipyards. Some became explorers and military leaders. We have yet to match that educational record today.

THE REVEREND DR. MICHAEL J. OLEKSA
Sealaska Heritage Foundation
Juneau, Alaska

The good fortune of the *Desiree C.* in the Togiak herring roe fishery is an exception. I participated in the 1992 operation as a crewman on my son's boat, *Lynx*. After reaching the fishing grounds, we, along with perhaps 500 other vessels, lay idle for two weeks. When the fish finally arrived, a 20-minute seine-boat fishing season was permitted. We captured a school of 200 to 300 tons but found our fish had spawned and were worthless. After releasing the school unharmed, we beat a slow, disappointed retreat to Kodiak while contemplating the wisdom of such a costly gamble the next year.

GERALD M. REID
Harbor, Oregon

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†Always wear your seat belt.

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ANTI-LOCK BRAKES

A Division of the Chrysler Corporation.

My son and I were two of the 90 winners who participated in Kodiak's 1992 bear-viewing program. "Lifetime thrill" is hardly an adequate term. There are no words for the sense of privilege at being allowed to share their home with such magnificent beings. We "met" all the bears mentioned and had our own close encounter with Gloria. She brought her cubs toward our viewing platform within three yards of my feet before detouring. The next day the platform edges sported some large teeth marks.

GRETCHEN M. FRENCH
Desert Hot Springs, California

The Red Sea

I greatly enjoyed David Doubilet's article "The Desert Sea." Having wanted to scuba dive in that location, I found myself captivated by the exquisite scenery and enlightening text. The photographs of the hawksbill turtle and school of glassy sweepers deserve special commendation. I am now planning a trip there in 1994!

JOHN KORSTAD
Trondheim, Norway

The Olmec

To George Stuart's excellent summary of Olmec studies I would add mention of two key scholars—the late Philip Drucker and Robert F. Heizer. Drucker published on Olmec art and ceramics. Drucker and Heizer, sponsored in part by the National Geographic Society in 1955, made most of the key discoveries at La Venta, including the figurines on page 107.

THOMAS R. HESTER
Texas Archeological Research Laboratory
University of Texas
Austin, Texas

Nowhere are we told how the huge heads were carved. Basalt, greenstone, and similar rocks are very hard. The Olmec had no steel; copper probably, bronze possibly, but neither would scratch basalt and greenstone.

MELVIN MARCHER
Oklahoma City, Oklahoma

The Olmec had no metal tools. They fashioned implements from quartz, flint, and other stone to produce their monumental sculpture.

Harlequin Ducks

Many thanks for the informative report "Bird of White Waters" by Douglas H. Chadwick and wonderful photographs by Bates Littlehales in the November issue. When we moved to our home on the Sandy River near Mount Hood 16 years ago, we found and identified a small group of ducks as harlequins. We have a rock bar in front of our home where we have watched these demure little ducks perform their mating rituals, swing into action to chase male rivals away, and endure the antics of their young. We have eagerly awaited the arrival in late March or early April of our five little friends, and they have never failed to return. Our harlequins will be even more special to us now.

PAT SCHAFFER
Zigzag, Oregon

The caption for the photo of the drake having a wire run through his nostrils to secure a plastic tag (pages 128-9) claims "the tags don't hurt." Though the drake may not bleed to death or suffocate, he will suffer irritation to the soft tissue of his nostrils and bill. The bills are actually bony frames covered by soft membranes, which ooze blood when cut. I've hand-raised ducks for 20 years. Many will allow their bills to be lightly touched; only one drake in my current flock enjoys having his bill gently scratched. All of them will, when picked up in cold weather, root their bills inside my collar or jacket hood and sigh gustily. This is not affection; the opportunistic rascals are just warming their cold wet noses. Duck bills may look like plastic, but they do have surprising sensitivity, and nostril tagging of waterfowl must be stopped.

M. D. GULDAN
Jackson, Tennessee

After five years of tagging harlequin ducks, experts have found no evidence of irritation or injury to the extremely tough bill of this species.

Other readers may be as delighted as I was to learn that Parks Canada has closed the Maligne River in Jasper National Park to all human traffic from May 1 to July 1 each year so that harlequin ducks can breed in peace. The park service deserves recognition and support for this tough stance, especially as it has not been welcomed by all human users of this popular white-water river.

JEREMY BAUMBACH
Whitehorse, Yukon Territory

Geographica

Imagine my surprise upon opening my November issue to Geographica and seeing a picture of Kevin Dust, a Crow Indian from southern Montana, in a T-shirt from Reggae Sunsplash, our annual summer music festival in Kingston. His braids even resembled our Rastafarians'. It truly is a small world.

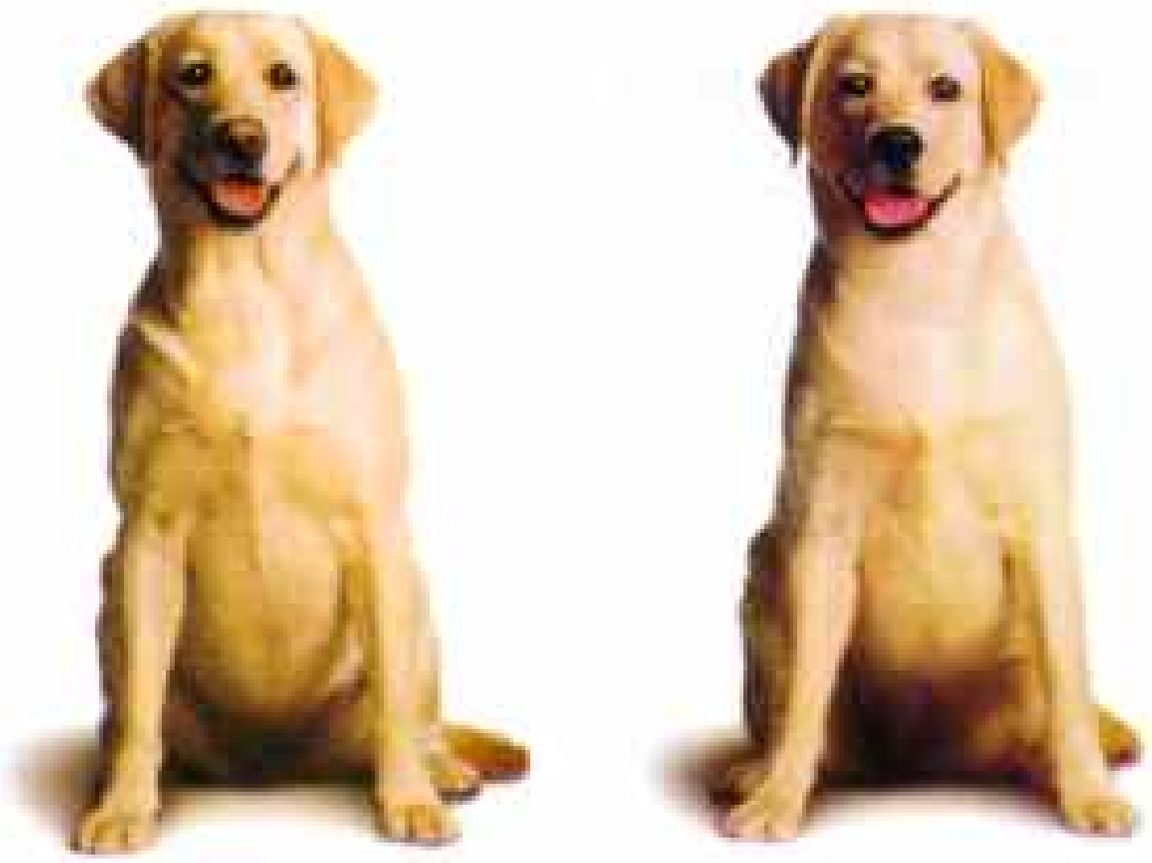
GRETCHEN ROE
Ocho Rios, Jamaica

I was surprised to find the reference in the November Geographica to caves in Ajanta, India, as "bat infested." The use of such negatively charged language, while possibly unintentional, only serves to promote the poor image most people have of these beneficial mammals. Why is it that we refer to areas inhabited by small animals—insects, snakes, and bats—as "infested"? Nobody has ever called the Serengeti Plain "wildebeest infested."

JENNIFER SHIELDS
Maumee, Ohio

Letters should be addressed to FORUM, National Geographic Magazine, Box 37448, Washington, D. C. 20013-7448, and should include the sender's address and telephone number. Not all letters can be used. Those that are will often be edited and excerpted.

Which Lab Has Too Much Flab?



It's hard to spot an overweight dog using your eyes. Instead, use your hands. Put your thumbs along your dog's spine and your fingers around his middle. If you can't easily feel his ribs, you may have a good reason to get your hands on Purina® Fit & Trim® brand adult dog food.

It's specially formulated with fewer calories and less fat than the leading brand, to help dogs that lead *too* much of a dog's life.

So try the test. And if your Lab's too flabby (like the one on the right), try Purina Fit & Trim.

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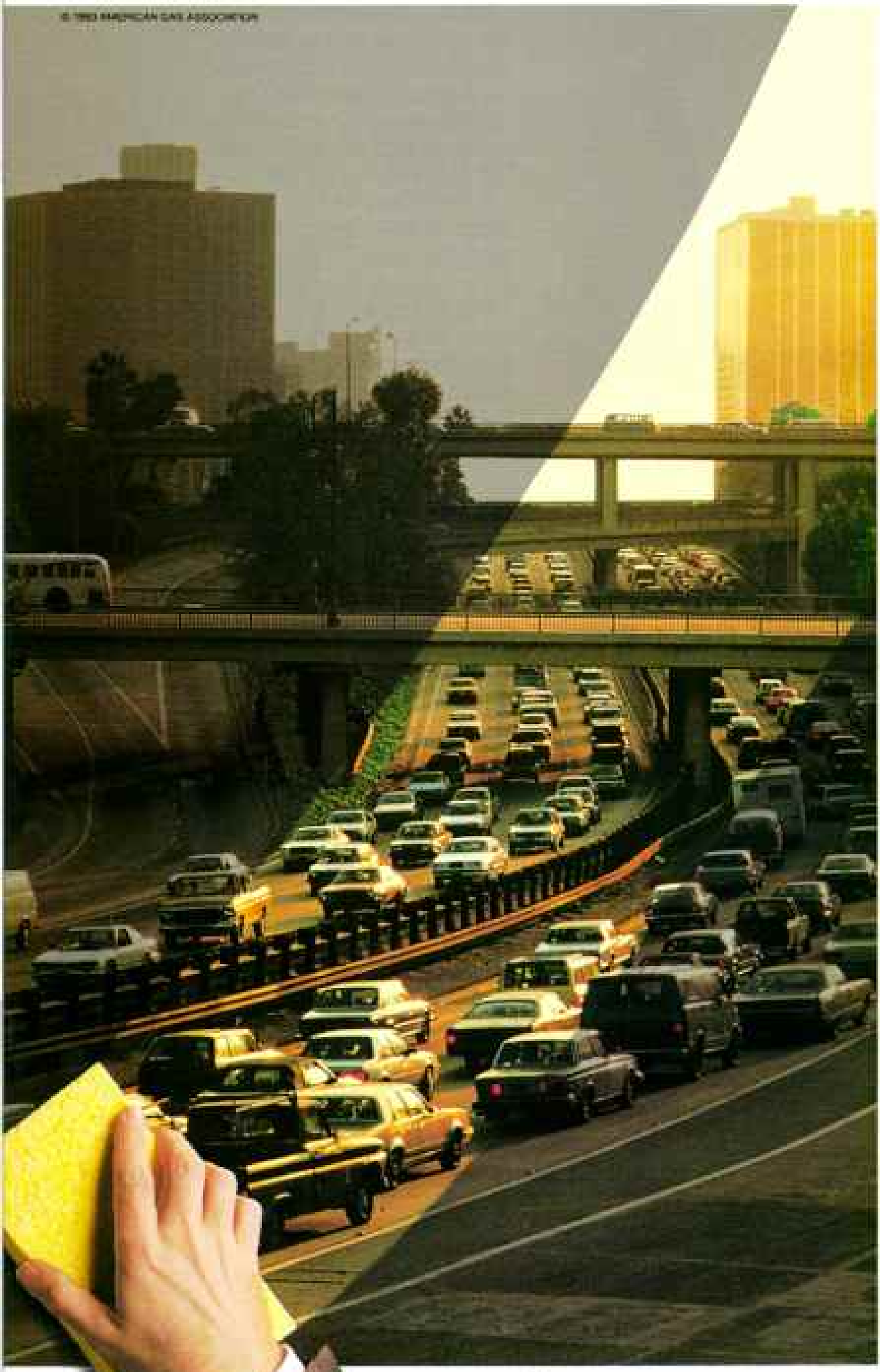
Don't you wish we could just do this to air pollution.



In a way we can—because cars and trucks that run on natural gas reduce the emissions that cause smog by 80%—and virtually eliminate soot.

The fact is, natural gas is the cleanest burning alternative fuel available today.

And the least expensive.

30% less expensive per mile than gasoline.

Because it's so clean, natural gas also cuts maintenance costs. Oil changes and tune-ups are cut in half, and there is less engine wear.

Small wonder that there are thousands of natural gas cars and trucks on America's roads today.

With more being built by Chrysler, Ford, and General Motors every day.

If all fleet owners—companies and communities—across the country would switch to natural gas as they replace cars and trucks, it would really make a difference in our air.

A breathtaking difference.

Clean, economical natural gas. Think what we'll save.

NATIONAL GEOGRAPHIC MAGAZINE

It's not surprising that people have been trading in cars for the Town & Country minivan. What's surprising is which cars.

BMW's, Mercedes, Acuras, Jaguars, Lincolns, Cadillacs, some interesting cars are being traded in for the Chrysler Town & Country minivan. For some interesting reasons. One is the Town & Country's high level of luxury and safety: leather-trimmed quad seating, 10-speaker Infinity Sound System, dual air bags,* four-wheel ABS, 3.8-liter V-6 and available all-wheel drive. Another reason is its sheer practicality. You get seating for seven, and when you don't need that, just remove the rear seats and you'll have more cargo space than any conventional station wagon on the market.

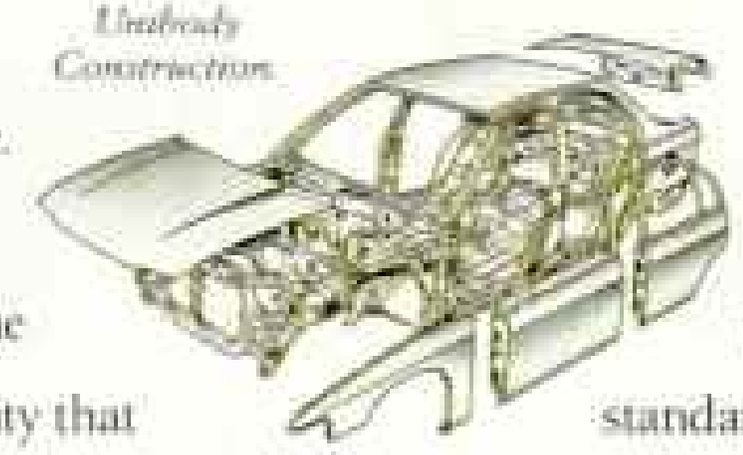
But perhaps the most important reason people accustomed to great cars enjoy the Town & Country is because it handles like a great car itself. One test drive and even the most discerning luxury car owners realize they don't have to compromise anything to own a vehicle that's stunningly practical. Least of all, their standards.

For more information, Call 1-800-4A-Chrysler.

FORM FOLLOWS FUNCTION

CHRYSLER

* Always Wear Your Seat Belt.

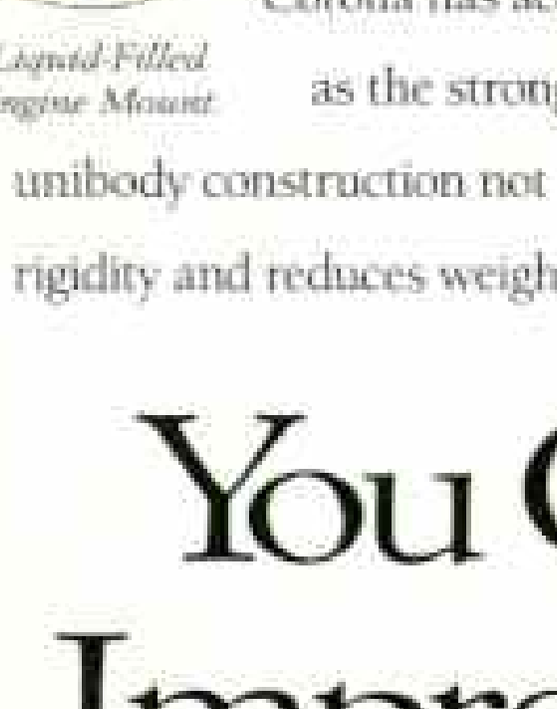


Unibody Construction.

Some cars may offer more. Some cars may cost less. But only with Corolla do you get the unwavering dedication to quality that comes with its Toyota heritage.

If quiet is considered a measure of quality in a car, it's no wonder Corolla has acquired a reputation as the strong, silent type. Its unibody construction not only improves rigidity and reduces weight but it also helps minimize noise and vibration. Corolla's quiet ride and smoothness are enhanced even further by strategically placed sound insulation (sheets of asphalt and steel covered with a layer of heat-hardened resin) and a liquid-filled engine mount.

Liquid-Filled Engine Mount.



Three-Layer Sound Insulation.

Available Anti-lock Brakes.

Driver- and passenger-side air bags* are standard equipment as are ventilated front disc brakes with available Anti-lock Brake System (ABS). Corolla's air bag system even has gold-plated electrical connectors. Not just to impress, but for longer life and greater corrosion resistance.

*Dual Air Bags**

You Can't Buy A More Impressive Car For Less.

The goal was to make the best possible car at an affordable price. The result was Corolla. And for over twenty-five years it has been a benchmark of quality in America. That's impressive.

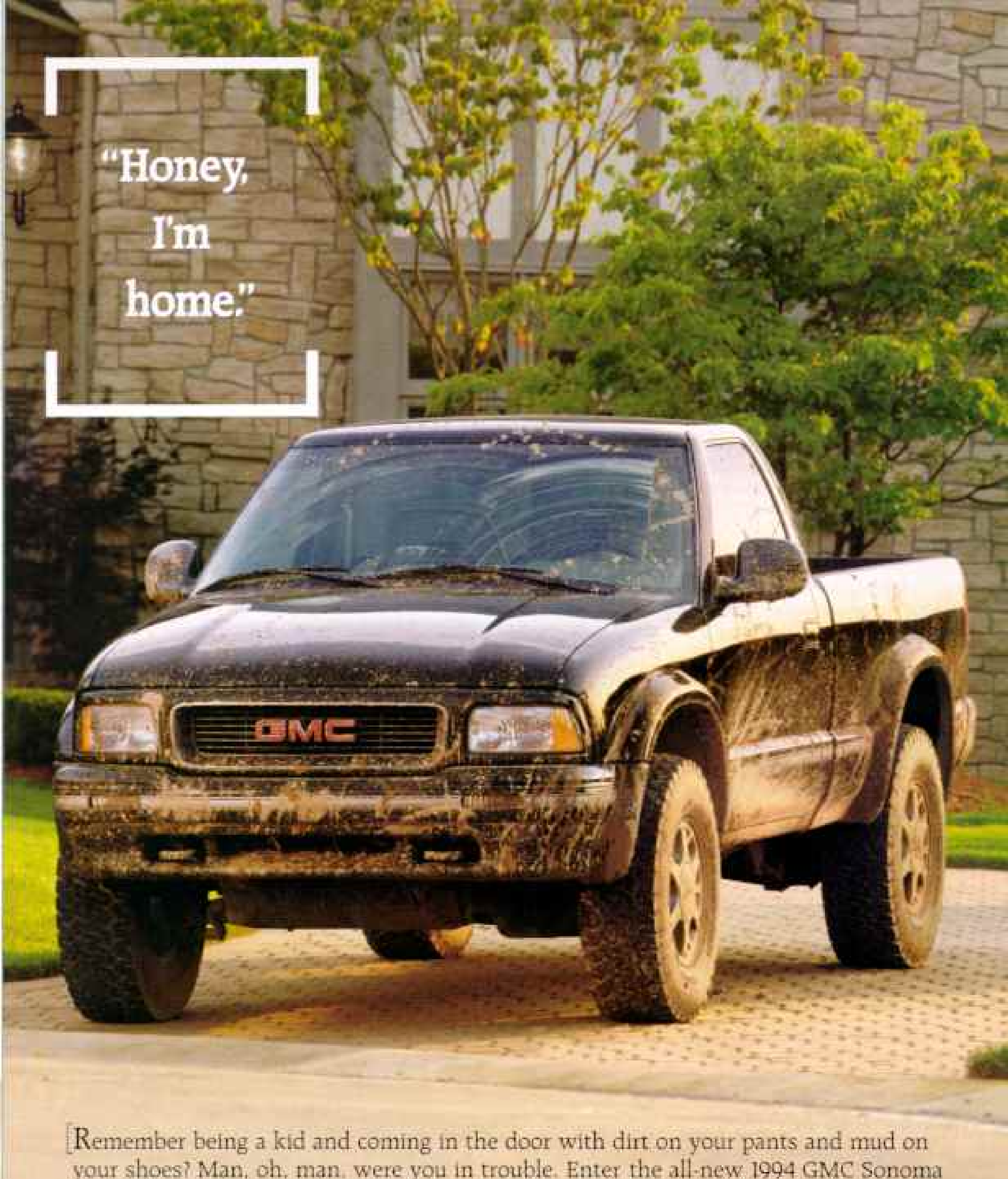
Call 1-800-GO-TOYOTA for a brochure and the location of your nearest Toyota Dealer.

Gold-Plated Electrical Connectors.

TOYOTA Corolla

"I love what you do for me."

*Always use your seatbelt. Driver and passenger-side air bags are a Supplemental Restraint System (SRS). Buckle Up! Do it for those who love you. ©1995 Toyota Motor Sales, U.S.A., Inc.



Remember being a kid and coming in the door with dirt on your pants and mud on your shoes? Man, oh, man, were you in trouble. Enter the all-new 1994 GMC Sonoma Highrider. You're in trouble again.

The new Highrider package is designed to handle the kind of trouble you'll find off-road. It comes with 46mm Bilstein gas-charged shocks and 15" wheels. You sit high. Look good. Ride smooth. (Firm, but smooth.) And with its available 195 HP Enhanced Vortec V6, Highrider is more powerful than anything in its class. Combine all that with standard 4-wheel anti-lock brakes and it's in a class by itself. But don't take our word for it. Call 1-800-GMC-TRUCK for the name of a dealer and go for a ride. It's no trouble.

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On Television

Life Cycles of the Cold and Famished

Heir to extremes, this emperor penguin chick survived what common sense would label impossible. From the open sea, its mother and other emperors walk across the sea ice to their traditional rookeries. As the long dark winter approaches, each female lays a single egg directly on the ice.

A special three-hour-long EXPLORER show hosted by Sir David Attenborough and coproduced with the BBC, "Life in the Freezer" offers an unprecedented look at animals living through the seasons and trials of Antarctica.

To hatch and protect a new life there demands exceptional dedication, as the male emperor proves. The mother retreats to the sea to feed, but he incubates the egg for two months. Expectant fathers huddle together by the hundreds, enduring hurricane-force winds and temperatures as low as minus 70°F.

When the females return at hatching time, they bring food—but only for the chicks. The males' job of incubating is finished. Now, all but starved, they must waddle perhaps a hundred miles or more to the open ocean. The chicks fledge in the spring, which increases their chance of survival.

As the film reveals, there is much more to Antarctica than penguins as parents. Filming the teeming sea life demanded rugged remote video cameras and tough human divers.

"The divers did great things under the ice in the middle of winter and in the high seas," says Attenborough. In one dangerous sequence a diver swims with a leopard seal—a fierce predator—as it hunts penguins.

From humpback whales to lichen-dwelling insects, "Life in the Freezer" presents an astonishing world apart, where humans will always be out of their element.

"Life in the Freezer" airs Monday, March 14, at 8:05 p.m. ET, on a special presentation of EXPLORER, TBS Superstation.

ART WOLFE, ALLSTOCK

RAIN GEAR.

Water, water everywhere. The slippery kind. That's when you'll sure be glad you've got Goodyear's all-season Aquatred.® Because Aquatred has an advanced deep-groove AquaChannel™ that sweeps water away at more than a gallon a second. Leaving you feeling secure and in control of the situation.

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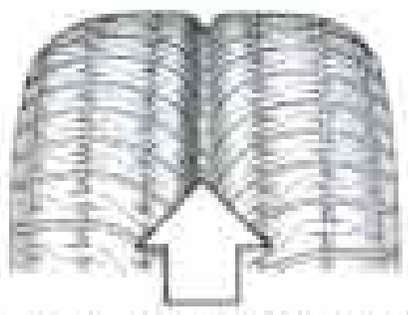

☐ *AquaChannel sweeps water away at more than a gallon a second.*

☐ *Unique Goodyear compound adds to the Aquatred's superb road grabbing wet traction.*

☐ *The AquaChannel design is now used in Goodyear's Formula One racing rain tire.*

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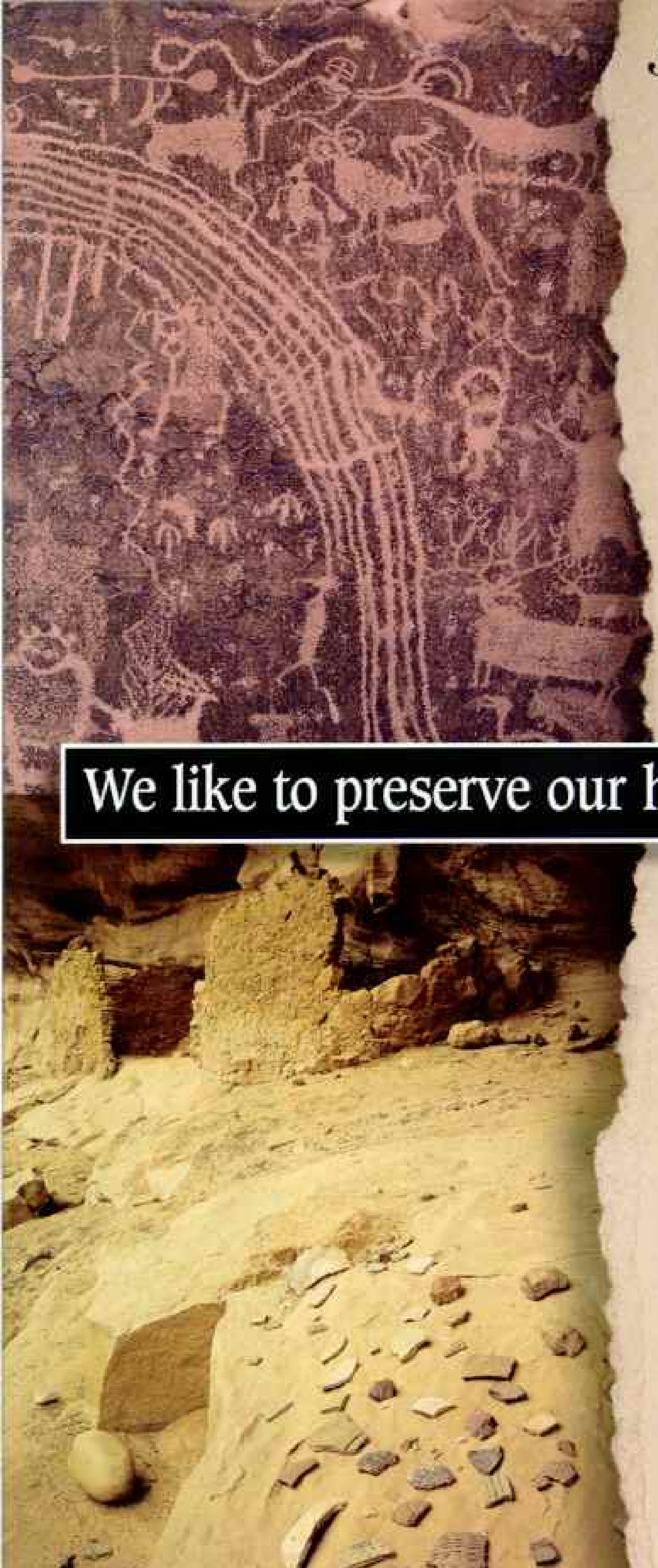

There are few places on earth where you can literally come face to face with ancient civilization, like this priceless Anasazi pictograph at Grand Gulch. It's a living record of a culture that existed from 1 A.D. to the 1300's. What the "Ancient Ones" left was a remarkable history book etched in stone. Utah is literally covered with historical and archeological treasures for you to explore. But these fragile remnants of the past

Indian Rock Art, San Rafael Swell

stand mostly unprotected, at the mercy of those who visit. Please come share our rich past, and help

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Anasazi Cliff Dwellings, Grand Gulch

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Earth Almanac

California Comeback for Blue Whales

To see a blue whale gliding through the Pacific—once a rare sight—is no longer so unusual. The largest animals that ever lived, up to 100 feet and 160 tons, were hunted nearly to extinction by the 1940s. Killing blue whales was banned in 1967, but their recovery seemed slow. Only 500 remained off the California coast, according to a 1979-1980 survey. Now researchers are finding remarkable numbers of the whales in California waters—at least 1,000, and possibly twice that.

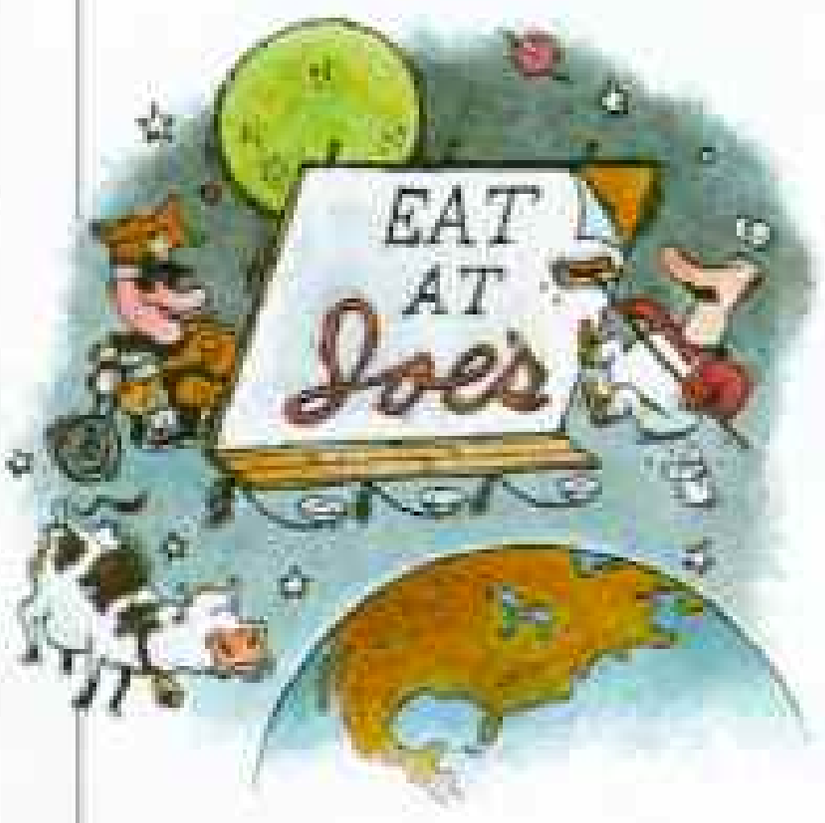
The increase showed up in a 1991 study. "It's not physically possible for these whales to have reproduced that fast," says biologist John Calambokidis. "I think this population is far larger than anyone suspected, and it's more concentrated." His estimate of 1,000 is based on his own individual identifications; he tells blue whales apart by distinctive patches of mottled skin on their backs. He and Jay Barlow of the National Marine Fisheries Service, who believes the whales may number more than 2,000, directed a three-month survey last year to attempt a more accurate census.

But Calambokidis warns that in other areas where blue whales were heavily hunted, such as off Alaska's Aleutian Islands, "sightings are still very rare."

FLIP NICKLIN, MINDEN PICTURES; DAVID CLARK (LEFT)

Space Advertising Doesn't Sell on Earth

A notion to commercialize the heavens has gone over like a lead balloon. Last year a Georgia company planned to launch a huge inflatable billboard along with scientific experiments. A platform would have carried ozone-measuring instruments and the highly reflective 80-acre panel 200 miles above the earth. The panel would have displayed a giant symbol that also would appear on sponsors' products.



Environmentalists and astronomers went ballistic, and five members of Congress introduced legislation that would prohibit the launching of such commercial displays.

Astronomers say a sky full of such ventures would interfere with their telescopes. "Besides, I wouldn't want to be looking at a beautiful sunset and see this man-made thing flashing by," says Peter Boyce of the American Astronomical Society. Amid the furor the company shelved its idea.

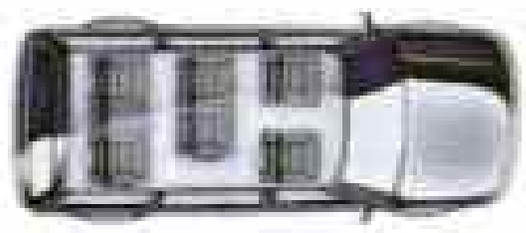
National Geographic, March 1994

MERCURY VILLAGER It's true that the competition may not be all that excited about the overwhelming success of the Mercury Villager.

After all, it *is* the only front-wheel-drive, V-6 powered minivan that gives you the smooth, quiet ride, comfort and easy handling of a Mercury.

Our competitors would breathe a lot easier if you didn't know about Villager's innovative sliding rear seat that easily moves forward to provide extra cargo space. Or

Villager's innovative sliding rear seat moves forward in seconds for extra cargo space. Its removable middle seat provides even more cargo space.

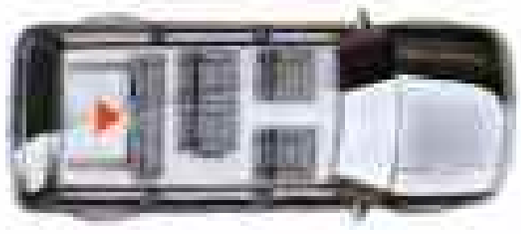


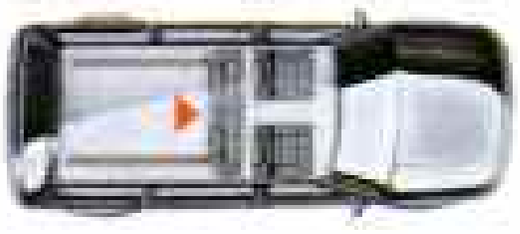
Our Competitors Have To Turn This

LINCOLN-MERCURY DIVISION

about Villager's standard driver-side air bag* and four-wheel anti-lock brakes, available power moonroof and keyless entry system. The kind of amenities that separate a Mercury minivan from an ordinary minivan.

So if you want to know more about the Mercury Villager, we suggest you take it for a test drive or call 1 800 446-8888. And pay no attention to that gentleman in the lower right-hand corner.





MERCURY

ALL THIS AND THE QUALITY OF A MERCURY

Would Be Happy Page For You.

Earth Almanac

BRAGG LAWATUY BY JOHN GIUSTINA, THE WILDLIFE COLLECTION

Proboscis Monkeys Lose Ground to Loggers

Named and famed for their long and bulbous noses, proboscis monkeys live only in Borneo's forests. There they face several threats. This male was shot in the leg by a hunter, rescued and treated by wildlife officials, and flown to the Bronx Zoo, where he recovered.

Proboscis monkeys total only a few thousand and are rapidly losing their habitat. They dwell in trees near large rivers—the same areas where people settle and where timber companies often base their operations. In the Malaysian state of Sabah many of the monkeys live along the Kinabatangan River in an area proposed as a wildlife sanctuary. The forest there was cut a few years ago so oil palms could be planted. Now loggers have begun illegally felling other trees near the river.

The monkeys have little fear of humans, thanks to their recent contact with researchers. Such tameness is an attraction to foreign visitors, who are able to get close to these wonderful primates without alarming them. Revenue from ecotourism may supplant cash from oil palms.

A Glowing Success: Using Algae as Purifiers

If effluent discharged into rivers from sewage plants after treatment still contains excess nutrients, the algae nourished by the nutrients will explode into an algal bloom. When the organisms decay, they rob the water of oxygen, suffocating aquatic life; some algae can even be toxic.

Researchers at a British company called Biotechna have turned this idea around. At a treatment plant near Nottingham they use algae to remove those unwanted nutrients from sewage before it can become pollution.

JAMES KING-HOLMES, SPL/PHOTO RESEARCHERS

"We're just doing what nature does—but we're controlling it," says Stephen Skill (lower left), silhouetted against a special tank called a Biocoil, which he and colleague Lee Robinson developed. Interior lights stimulate the growth of *Chlorella* algae—the project's super scavengers. The algae remove 95 percent of the ammonia and nitrates in the wastewater and 90 percent of the phosphates. This Biocoil model processes the amount of sewage generated by a town of about 2,500 people. Excess algae that result clump obligingly together for easy harvesting and can be sold as animal feed—or even burned in a power plant to generate electricity.

Giving New Zealand's Alien Wasps the Sting

"We've had to close schools because of the danger. We've had loggers walk off the job." So says researcher Eric Spurr, who seeks to alleviate New Zealand's severe wasp infestation.

VESPULA GERMANICA BY OTTO ROGGE, AUSTRALASIAN NATURE TRANSPARENCIES/NHPA

Two European wasp species, the German wasp (above) and the common wasp, were accidentally introduced years ago into New Zealand, which had few problem wasps—and no wasp predators. The invaders have thus multiplied unchecked, imperiling outdoorsmen and destroying winemakers' grapes. Spurr, of Landcare Research New Zealand Ltd, has hit upon a new wasp bait—sardine-based cat food laced with pesticide. Dispensed from a pet-proof bait station, the poison takes three days to kill, allowing worker wasps to return to the nest and feed the bait to their friends.

—JOHN L. ELIOT

National Geographic, March 1994

"I recommend WALTHAM FORMULA™ Diets because they give pets all the taste they want, with all the nutrition they need."

Dr. Steve Diehl DVM

Dr. Steve Diehl, D.V.M.,
PetCare Veterinary Hospital,
Santa Rosa, California.

It's not enough just to buy a premium pet food that says it's full of nutrients. Because nutritious food won't do any good if your pet doesn't like the taste and won't eat it. That's why more and more veterinarians are switching to WALTHAM FORMULA™ Diets for Dogs and Cats.

Each WALTHAM FORMULA™ Diet provides 100% complete and balanced nutrition. And each WALTHAM FORMULA™ Diet has been taste tested on over 17 breeds of dogs and a wide variety of cats. Since they all loved it, chances are your pet will, too.

WALTHAM FORMULA™ Diets, from the people who feed over one third of the world's pets.* WALTHAM FORMULA™ Diets come in a range of diets and sizes. Now available only at your veterinarian or local pet store.

* Based on worldwide sales of prepared pet foods. Data on file, the Waltham Centre for Pet Nutrition.

WALTHAM™
THE WORLD'S LEADING AUTHORITY ON PET CARE AND NUTRITION™

THIS CAGE ISN'T FOR ENDANGERED SPECIES! IT'S FOR THOSE WHO ENDANGER THEM!

Smuggling is a universal scourge. The smuggling of drugs, arms and endangered animals is a terrible burden on the law enforcement authorities of every nation on earth.

The trafficking in endangered species is particularly troublesome. Fortunately, some nations, such as the Republic of China on Taiwan (ROC), are making strong progress against abuses of animals on the endangered species list. From January 1 to September 30, 1993, ROC customs authorities uncovered 118 wildlife products smuggling cases. From January 1992 to November 1993, 188 persons were prosecuted for violation of the Wildlife Conservation Law and 176 violators were convicted. The ROC will continue to work with the international community to protect endangered species. It has also won the support of the Chinese medicine community on Taiwan, which has agreed not to serve elixirs made with by-products of endangered species.

Moving decisively to stamp out smuggling and eradicate markets at home, the ROC on Taiwan is setting a good example by doing more than its share to ensure a safer world for such animals as tigers, rhinos and elephants.

Saving animals from extinction is something we all care about. Together, we can make the smuggling of endangered species extinct. So do your part! Avoid products made from endangered species!

TODAY'S TAIWAN

REPUBLIC OF CHINA

On Assignment

"Any landing you can walk away from is a good one!" GERALD R. MASSIE, a U. S. Army Air Forces photographer, wrote in December 1944, after his B-17 crash-landed at Bovingdon, England. He lost not only film and equipment but also six bottles of French perfume he had bought for his fiancée, Henrietta Hendrich. Massie survived the war and became chief photographer for the state of Missouri. After his death in 1989 Henrietta Massie revealed to NATIONAL GEOGRAPHIC his historical trove—1,500 World War II photographs, 12 of which appear in this month's Eighth Air Force article.

At an aviators' reunion in Bassingbourn, England, writer TOM ALLEN (right) met Doris Foster, who arrived in the same trademark hat she wore while running a wartime pub. "She was the mom of the Royal Air Force and the Yanks," says Allen, who became a reporter in Connecticut at age 17 and is himself a Navy veteran. A former book editor for the Society, he trekked through Mongolia for his first GEOGRAPHIC article (February 1985).

Photographer IRA BLOCK, born in Brooklyn four years after the war's end, got a flying history lesson in a restored AT-6 Texan, once used to train pilots and gunners. "After you find out how many fliers were killed," said Block, "you understand their bravery."

GERALD R. MASSIE COLLECTION (TOP); IRA BLOCK

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Gaur *Genus:* Bos *Species:* gaurus ***Adult size:*** *Height, up to 195 cm at the shoulder* ***Adult weight:*** *Up to 900 kg; females are smaller* ***Habitat:*** *Remote hill forests and bamboo thickets in India and Indo-Malaysia* ***Surviving number:*** *Estimated at 450–500 in Malaysia; unknown elsewhere. Photographed by Fiona Sunquist*

WILDLIFE AS CANON SEES IT

A gaur bull gazes warily from the edge of an Indian forest. Deep-chested and thickly muscled, dominant male gaur are jet black, with legs seemingly too slim for such a massive body. Shy by nature, gaur spend the day secluded in dense forests and venture out to graze only at night. Gaur are still found in remote areas, but hunting and habitat loss have caused their numbers to decline drastically. To save endangered species, it is vital to protect their habitats and understand the role of each species within the earth's ecosystems. As a global corporation committed to social and environmental concerns, we hope to foster a greater awareness of our common obligation to ensure that the earth's life-sustaining ecology survives intact for future generations.