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COVER: *Handprints of Islam decorate a wall in Morocco. From this North African land the Moors launched their conquest of Spain in A.D. 711. Photograph by Bruno Barbey.*

THE NATIONAL GEOGRAPHIC MAGAZINE
IS THE JOURNAL OF
THE NATIONAL GEOGRAPHIC SOCIETY

FOUNDED 1888

ON JUNE 4 our photography began to be looked at in a new way. Washington's Corcoran Gallery of Art, one of the city's oldest and best loved cultural institutions, honored the Society's centennial year by opening an exhibition of photographs from our archives, organized by Corcoran chief curator Jane Livingston.

In September the exhibit will move on to the International Center of Photography in New York City and then to art museums in San Diego, Miami, Mexico City, Detroit, Toronto, Houston, and other locations around the world. Those of you who cannot see it will be able to enjoy the best of the images in a future GEOGRAPHIC.

It may come as a surprise to some to find our photographs on gallery walls, being critiqued as art, not journalism, since artists and journalists are thought to march to different drummers. But I am sure it comes as no surprise to you who have told us for years about the often compelling beauty and insight in GEOGRAPHIC photographs.

It is that sense of the enduring that makes us strive for articles of truly lasting value. That is why we print the magazine on paper made to last more than a century.

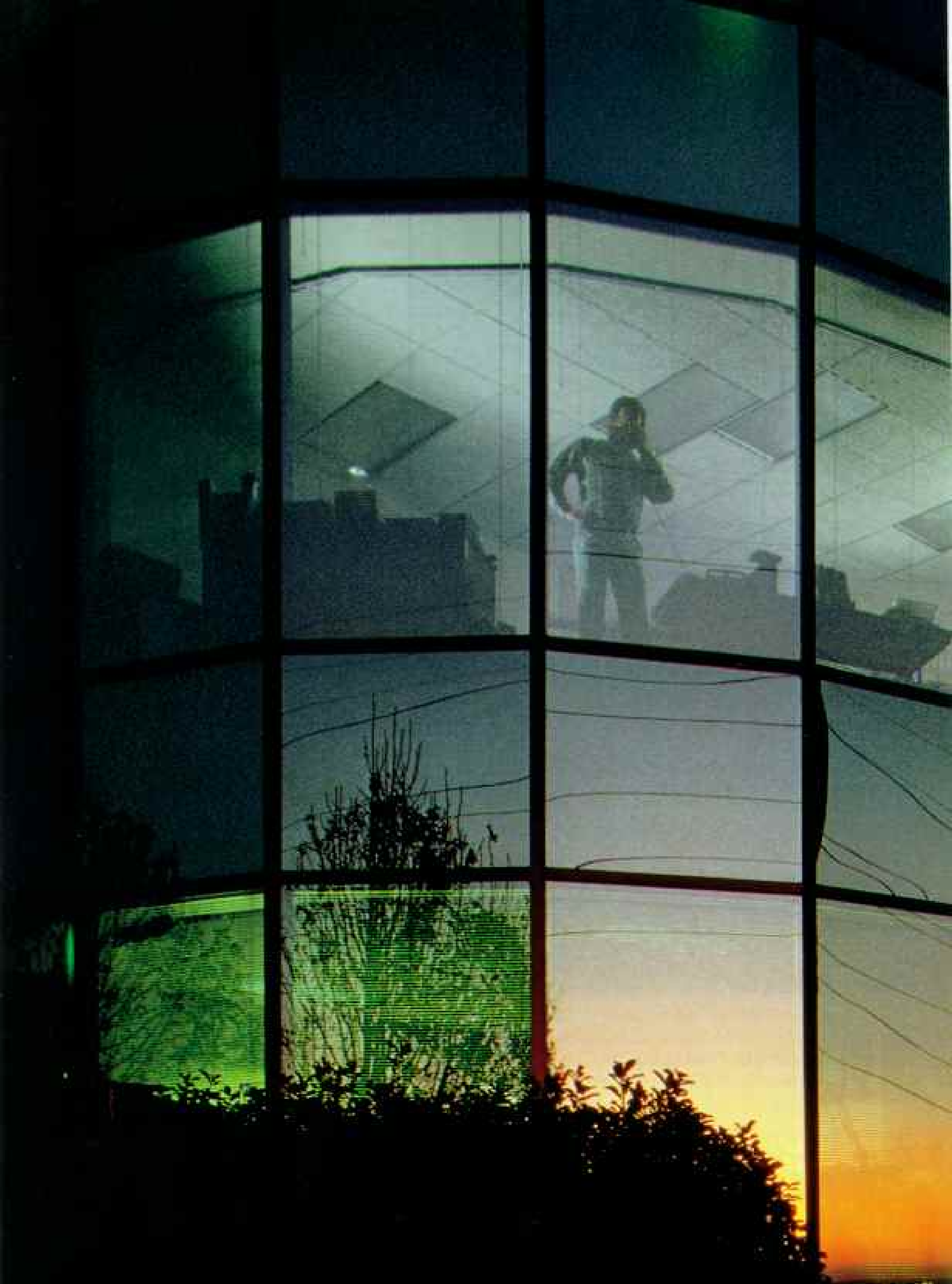
As we have been somewhat different in the field of journalism, we have also been somewhat different in our attitude toward photography as art. The photographers whose work appears in the exhibition—people we grew up with here, like Bud Wisherd and Bob Moore and Joe Roberts and Luis Marden and Tony Stewart and Kurt Wentzel—did not see themselves first as "artists of the camera." They were thoughtful recorders of places and events, out to "get the story."

Happily, several are still here to enjoy their work being looked at in a new and rewarding way. Their reaction? First, a search for the photographs that did *not* run in the magazine ("I always told them that was a good photograph!"). Second, a memory of the assignment itself, the story and how they went about getting it. Finally, a humble but deeply pleased silence as they stand before the images that transcended their purpose and became part of America's artistic heritage.

It inspires us to keep on covering stories the way we always have.

Wilbur E. Garrett

EDITOR



By ERLA ZWINGLE

Photographs by JIM RICHARDSON

Undisputed capital of the New South, Atlanta rides a wave of heady growth in size and stature. Gleaming office towers, such as these in the village of Vinings, rise from the suburbs as the city spreads ever upward and outward.

ATLANTA

Energy & Optimism in the New South

CHEERFULLY FORGOING a conventional wedding reception, Annette Solomon and her husband, Godfrey, at left, join in the city's Fourth of July parade with a host of well-wishers on Peachtree Street. Dancing to calypso music through the

downtown, they celebrate their love for each other and for the carnivals of the groom's native Trinidad. With a population more than two-thirds black, Atlanta prides itself on a degree of racial harmony and cooperation rare among large U. S. cities.

MRS. RUTH C. VANNEMAN put on her hat and fur coat to show me the leafy streets of Vinings. Lying exactly on the trajectory of Atlanta's northwest development, the village of Vinings has become extraordinarily valuable, and Mrs. Vanneman (facing page) surveys her native territory with a fiercely proprietary eye. A direct descendant of early settler Hardy Pace, she has retained his keen commercial sense and has her own ideas of what constitutes progress.

Ruth Vanneman remembers the old days vividly, down to antique family feuds and Sunday school picnics, but she's perfectly in tune with today. Dallas developer Trammell Crow has already built three office buildings and a hotel atop historic Vinings Mountain, but that doesn't bother her. "Man came up here and said he'd give me 15 million dollars for 20 acres of my land." She grins. "They all want my property. People ask me 'What would Mr. Hardy Pace think?' I think he'd *love* it. The only thing he would say is 'Why in hell did you let Mr. Trammell Crow come out and build a skyscraper when you could have done it yourself?' "

Energy. Optimism. Sometimes Atlanta can hardly believe itself. A city that began as a railhead in the north Georgia woods a scant century and a half ago has survived the devastation of the Civil War and the vagaries of economic development to become not merely the premier city of the Southeast, not simply one of America's major urban centers, but even the "world's next great city."

Fanfares of statistics surround these claims. Once known primarily for Coca-Cola, Bobby Jones, and *Gone With the Wind*, this metropolis of 2.6 million people has spent the past 20 years or so propelling itself into the future. Hartsfield Atlanta International Airport, which carries on the city's tradition as transportation hub, has become the world's busiest, with as many as 2,400 daily flights. Atlanta, with 43,500 hotel rooms and more than a million square feet of exhibition space, is among the top three convention cities in the nation, along with New York and Chicago. It has become a top corporate-relocation center, drawing blue-chip businesses from around the globe (431 of the Fortune 500 industrial companies have offices in Atlanta, not to mention 134 firms from Japan).

You can hardly find a native Atlantan any more amid the tide of newcomers, and this population—much of it transient—seemed to me the youngest, the wealthiest, the smartest, and, if it could be measured, probably the most ambitious in the country. Atlanta's toll-free dialing area is now the world's largest. The municipal emblem shows a phoenix rising from the flames, and the arrival of the Democrats (July 18-21) is regarded as clear evidence that Atlanta's resurgence is complete: This is the first national political convention to be held in the Deep South since the Civil War.

Visiting politicians may feel as I did. It's still not clear to me at what point I actually sensed I was "in" Atlanta—there are so many of them. I certainly felt it at historic Five Points, still an important commercial center on weekdays, though rather tranquil on weekends. Shoppers nearby bustle through Macy's and Rich's department stores, and professional people stride purposefully among the office buildings stretching from the gold-domed State Capitol to the Richard B. Russell Federal Office Building. There are parks scattered about, but not many people pause in them: Downtown is for doing, not sitting.

The city basks in the brilliance of its favorite sons: Martin Luther King, Jr., Hank Aaron, Ted Turner, architect and developer John Portman. And here are storied institutions: the Centers for Disease Control, the Yerkes Regional Primate Research Center, the Fernbank Science Center, the Martin Luther King, Jr. Center for Nonviolent Social Change, and Morehouse College, a molder of black leadership.

Now 69 percent black, the urban center promotes its history of opportunity and racial harmony. Civic pride, in fact, has acquired an almost religious quality, as if on the seventh day God hadn't rested after all, but decided to make Atlanta instead, and saw that it was surprisingly good.

This juggernaut of progress is due in part

ERLA ZWINGLE wrote about "Doc" Edgerton, developer of stroboscopic photography, in the October 1987 NATIONAL GEOGRAPHIC. JIM RICHARDSON's photographs illustrated the June 1985 article on the Great Salt Lake.

to moderate climate, fortuitous location, cheap labor. But its real force is a terrific commercial drive. "It's a fabulous city for business," said novelist Pat Conroy, a native (and one of the city's more vocal critics). "Atlanta can write a contract, cut a deal, sell an insurance policy, transfer accounts, put up a new building, issue a stock option, hire an attorney, leverage a buy-out, or clinch a deal as well as any city in the world."

I asked Mayor Andrew Young why everyone's moving to Atlanta. The former ambassador to the United Nations grinned and rubbed his fingertips: "To make money."

Wondering if this passion for growth was simply some new phase, I went to visit Franklin M. Garrett (generally known as "Mr. Atlanta") at the Atlanta Historical Society. His office on Andrews Drive, full of railroad memorabilia and a stately grandfather clock booming the hour ten minutes late, comfortably holds the present at bay. But he's not worried.

"Atlanta has never been your typical moonlight-and-magnolia southern town," he said. "It's always been a rough-and-tumble place, forging ahead, gung ho for progress."

GRANDE DAME RUTH CARTER VANNEMAN HAS WITNESSED ATLANTA'S EXPLOSIVE MODERN EXPANSION

TOURISTS clamor fruitlessly for tangible reminders of Scarlett and Rhett, but their Atlanta survives exactly as Margaret Mitchell described it in *Gone With the Wind:* "The people who settled the town called successively Terminus, Marthasville and Atlanta were a pushy people. Restless, energetic people. . . . They were proud of the place, proud of its growth, proud of themselves for making it grow. Let the older towns call Atlanta anything they pleased. Atlanta did not care."

It would be easy to conclude that Atlanta has no heart. That wouldn't be fair. But to take the city at its own valuation would be a mistake. It has become a cliché to define a place as being one of contrasts, and of course Atlanta has them, most painfully between rich and poor, and most interestingly between reality and myth.

The metropolitan area now spreads across 18 counties (map, page 11) run by more than a hundred different governments. While Andrew Young stoutly maintains that "nobody goes to New York and says 'I'm from Dunwoody' or 'I'm from Sandy Springs'—they say 'I'm from Atlanta,' " there is plenty of debate as to what that actually means.

The amazing growth of the suburbs has had a centrifugal effect on municipal life, creating satellites that rarely touch the central city. Whether this is good or bad depends on which Atlantan you ask. And the prevailing enthusiasm clouds the view.

"One of the things you're up against is this relentless boosterism," Pat Conroy told me. " 'We're a growing, vibrant, can-do city'—they make it sound like the Ollie North of cities. Destiny's daughter. It drives me nuts. It seems bad for the soul of the city. To criticize Atlanta is like criticizing the Vatican. What's the best thing about the city? Well, a hundred people have come up with it: Trees—'you gotta see our trees.' "

I began to get the impression, though, that all this hoopla is nothing new. "Atlanta has long lived on hype way beyond its merit," reporter Larry Woods said with a smile of affectionate exasperation. "When Atlanta started its campaign as the 'world's next

RIDING HIGH on a bold concept, architect and developer John Portman rises through the cavernous interior of the Marriott Marquis hotel. Portman pioneered the concept of the modern hotel atrium, making it the heart of the nearby Hyatt Regency, one

of the centers of downtown Atlanta's thriving convention business. Worldwide attention focuses on Atlanta this month as Democrats hold their national convention here, the first in the Deep South for a major party since the Civil War.

great city,' bars closed at midnight, and you couldn't get a drink on Sunday. There was a saying back in the early seventies: 'If Atlanta could suck as hard as it can blow, the Chattahoochee River would run backwards.' "

ALL THE BALLYHOO is the natural result of two things: Atlanta's youth and its southernness. No matter where I went—from redneck Smyrna in the northwest to downtown's black Atlanta University to the old-money bastions of Ansley Park—Atlantans described their town indulgently as "adolescent."

And Atlanta remains a profoundly southern city. It doesn't want to be, but it is. By this I don't mean the accent, which is rare, or the overwrought southernisms adopted mostly by newcomers. But Atlanta still bears the scars of Civil War destruction—and not just the bits of shrapnel occasionally found in Oakland Cemetery—though conversational references to that disaster inevitably bypass the negative and focus on the city's miraculous rebirth. Atlanta's first and enduring importance has been as the shining capital of a region haunted by futility, guilt, and defeat.

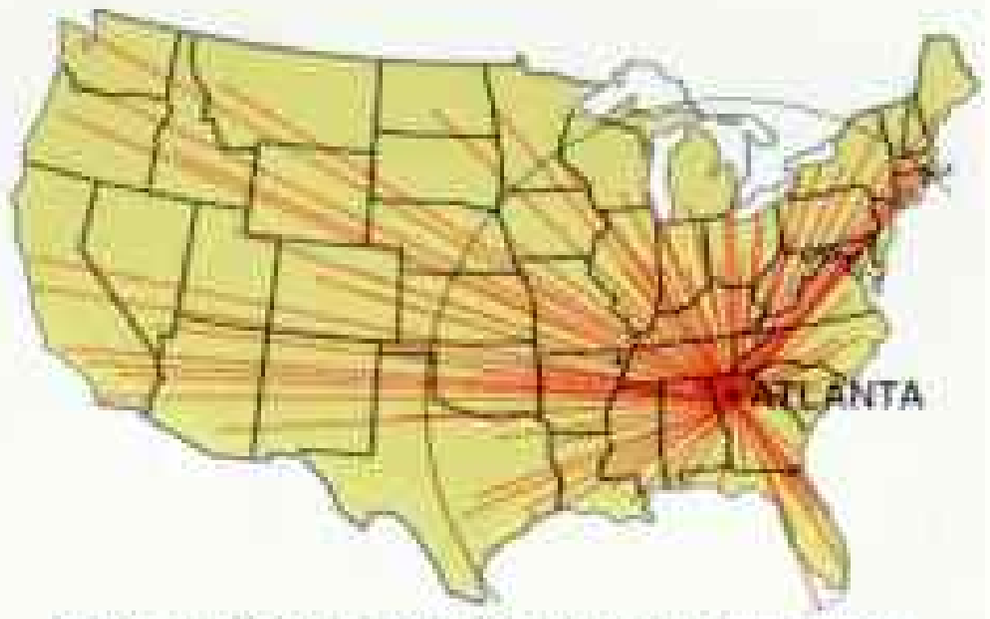
W. J. Cash, in his seminal work *The Mind of the South*, wrote: "The key to this atmosphere . . . is that familiar word without which it would be impossible to tell the story of the Old South, that familiar word 'extravagant'. . . . Do you not recognize it for the native gesture of an incurably romantic people, enamoured before all else of the magnificent and the spectacular? A people at least as greatly moved by the histrionic urge to perform in splendor . . . to testify to faith in their land and to vindicate it before the world's opinion, as by the hope of gain. . . ."

I was drinking coffee in Bill Kovach's kitchen while he mulled that one over. "Atlanta still struggles with regionalism," he agreed. Kovach is resigned to being seen as something of an outsider even after almost two years as editor of the *Atlanta Journal* and the *Atlanta Constitution*—not because

WORLD'S BUSIEST AIRPORT in number of flights, Hartsfield Atlanta International is also Georgia's largest employment center, accounting for more than 36,000 jobs. As the major transportation hub of the Southeast, Atlanta is more way station than destination. Seventy percent of all passengers change to planes bound for other cities.

ATLANTA

"THE HISTORY OF ATLANTA is transportation," a state official says of the city, founded as a railhead in 1837. A major Confederate supply depot, Atlanta was burned by Union forces in 1864; four years later the city became Georgia's permanent state capital. The interstate highway system, railroads, and airport propelled growth of this major transshipment center, now a metropolis of 2.6 million persons.



NONSTOP FLIGHTS FROM ATLANTA, GEORGIA
(80 percent of U. S. population is within two hours' flying time. Arc represents approximate two-hour distance.)

Built-up area 1954
Built-up area 1970
Built-up area 1966
University or college
Point of interest

CHEROKEE
FORSYTH
FULTON
BARROW
GWINNETT
PAULDING
COBB
DOUGLAS
WALTON
DEKALB
ROCKDALE
COWETA
FAYETTE
CLAYTON
HENRY
NEWTON
BUTTS
SPALDING

Acworth
Kennesaw
Kennesaw College
Alpharetta
Roswell
Buford
Chattahoochee
Marietta
Southern Tech Inst
Sandy Springs
Dunwoody
Norcross
Lawrenceville
Lilburn
Snellville
Smyrna
Vinings
Georgia College
Mercer University
ATLANTA REGIONAL COMMISSION PLANNING DISTRICT
Austell
Atlanta
Emory Univ
Stone Mountain
Georgia Tech
Ga. State Univ
Atlanta Univ Center
Decatur
Agnes Scott College
Douglasville
Six Flags Over Ga.
Lithonia
Yellow
Conyers
City Limit
East Point
Hapeville
Conley
South
College Park
Hartsfield Atlanta Int Airport
Forest Park
Union City
Fairburn
Riverdale
Clayton State College
Palmetto
Jonesboro

0 10 km
0 10 mi

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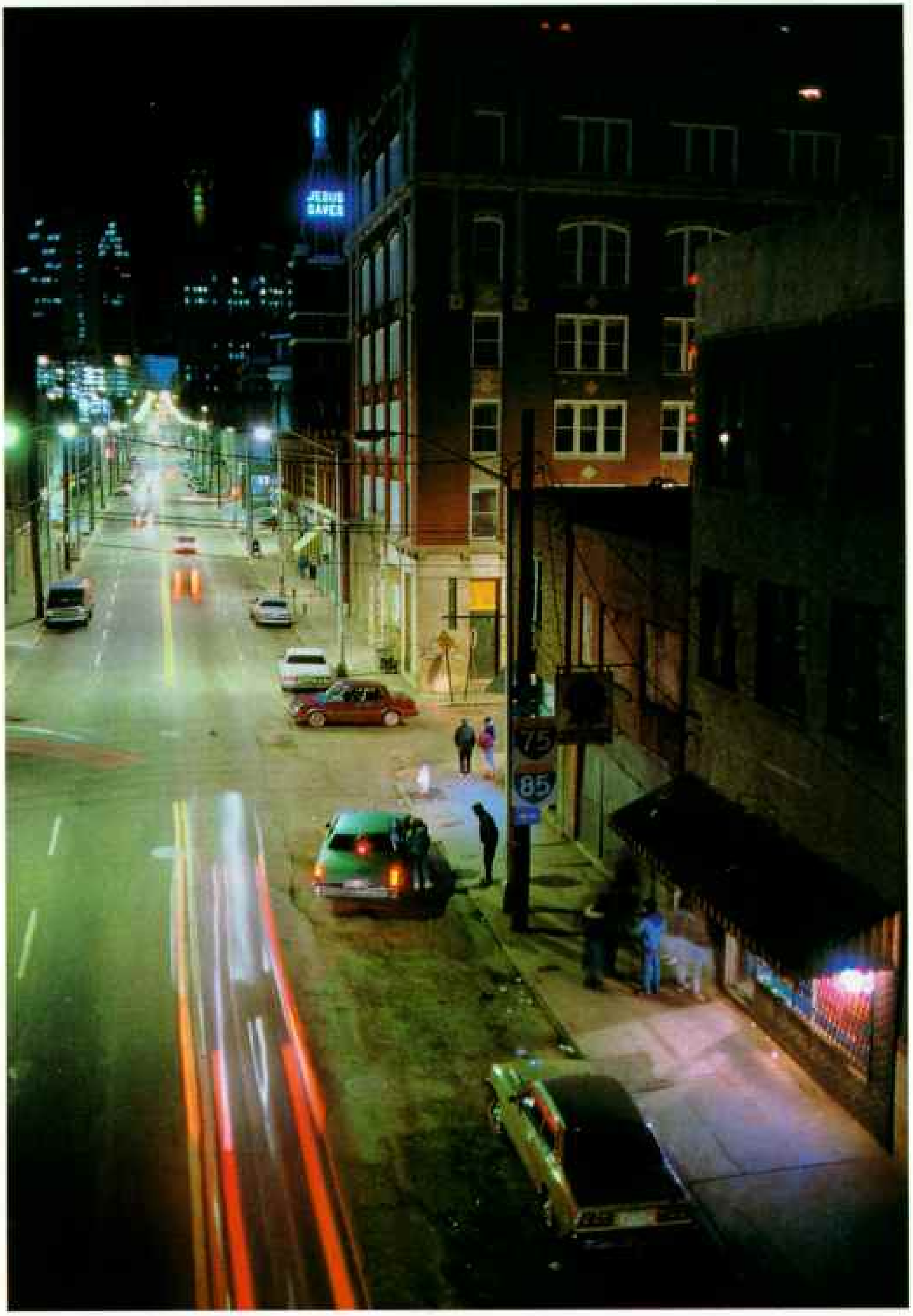


THE FLAVOR OF LIFE has soured on "Sweet Auburn," the avenue that earned its nickname before Atlanta's black elite moved from the inner city, leaving the night to the derelicts. By day, merchants work for a turnaround. At the Silver Moon Barber Shop, Samuel Shell waits with his daughter Rachel for a haircut.

he's a Tennessean, but because he came from the *New York Times*.

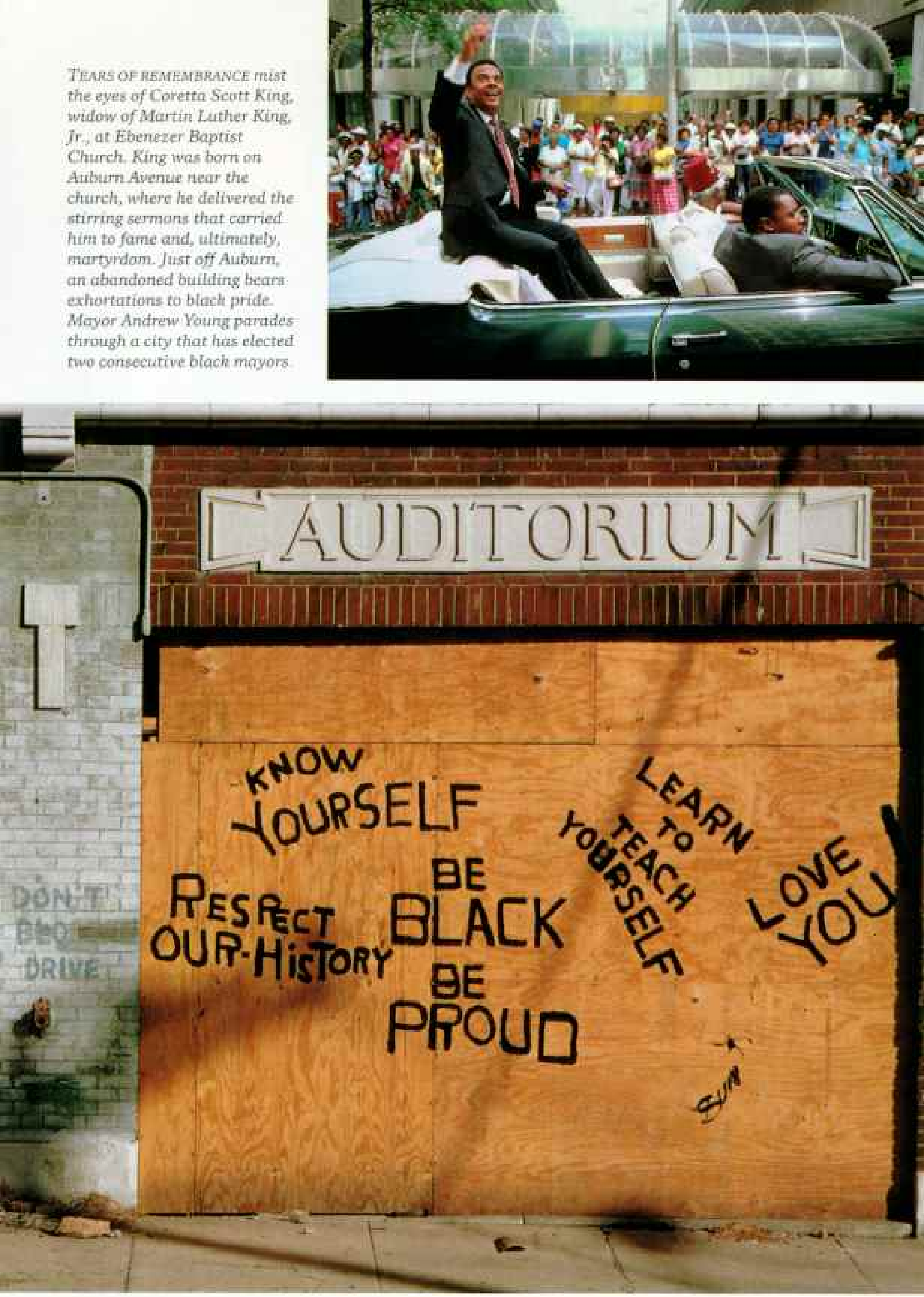
"Georgia was the last state that came back into the Union, and there is that won't-be-reconstructed-and-I-don't-give-a-damn attitude," he explained. "That myth provides a unique strength to the people and their vision of themselves. But there's also a southern thing that holds itself back and waits for someone from outside to say, 'You really are as good as you think you are.' "

ATLANTA WAS BORN in 1837, near a spot now marked by the Zero Mile Post where the Western and Atlantic Railroad was expected to meet with the Georgia Railroad. What you'd expect to be a major municipal monument is actually a small, battered obelisk lurking in the dark shadow of a viaduct near City Hall. (No signs or bunting; someone casually pointed it out as I lined up to board the *New Georgia Railroad*, a restored vintage steam train that circles the inner city.) As I read the plaque, I concentrated on feeling solemn and historical, but it didn't work. "That was a long time ago," was the unspoken message. "It doesn't matter now."

No, nostalgia is not an Atlanta affliction. After all, the town that Gen. William T. Sherman torched on November 14, 1864, was only 27 years old. Today's boom is not the first. In 1855 Atlanta's streets were among the first to be lighted by gas. In 1890 Atlanta had one of the most complete systems of street railways in the country. In 1881 the ambitious International Cotton Exposition in Oglethorpe Park was the nation's first international fair, enjoyed by an average of 300,000 visitors a month. And the famous have always turned up here sooner or later, from Sarah Bernhardt, Gen. John J. Pershing, and Charles Lindbergh to Woodrow Wilson (who started his legal career here in 1882) and soprano Rosa Ponselle, whose radio debut on station WSB ("Welcome South, Brother") blew out the transmitter.

But for all its accomplishments Atlanta has never been prone to the backward glance (except where white colonnades are concerned: "I have an antebellum house," one man proudly told me, "built in 1895"). While this insouciance is felt to be one of the city's strengths, to me it is also a weakness—you can't always be starting over.

TEARS OF REMEMBRANCE mist the eyes of Coretta Scott King, widow of Martin Luther King, Jr., at Ebenezer Baptist Church. King was born on Auburn Avenue near the church, where he delivered the stirring sermons that carried him to fame and, ultimately, martyrdom. Just off Auburn, an abandoned building bears exhortations to black pride. Mayor Andrew Young parades through a city that has elected two consecutive black mayors



PLENTY IS STILL starting in Buckhead, the "gold coast" northern suburb. Here I drove past splendid mansions (including that of the governor) hidden in high-priced forestry, and here I wandered through some of the most expensive shopping centers known to man: Lenox Square and Phipps Plaza, with Neiman-Marcus, Louis Vuitton, Laura Ashley, Gucci, Alfred Dunhill, and more. Boutiques and chic restaurants abound, not to mention cheerfully altered archetypes. At the very upscale Peachtree Café, Sunday brunchers can sometimes savor their Bloody Marys while being entertained by the music of a black gospel quartet.

A great deal of Atlanta is still to be found in Zone Three, one of the squalid, despairing districts of Southside. This area, which the police call the "combat zone," contains 31 percent of the city's 42 housing projects. Here some houses still have backyard privies, and some ten-year-olds cut cocaine.

I went out on patrol one afternoon with officer Jeff Jones. As we jounced over the potholes on Garibaldi Street, he pointed out houses selling illegal and often fatal corn liquor, places where crack addicts gather. But the children walking home from school grinned and called out, "J J!" Jeff grinned and waved. Sometimes he plays touch football with them, and after three years on this beat makes a point of remembering their names. "Most of the parents are too far gone," he said. "Their mama tells them, 'You better behave, or I'll put you in that policeman's car and let him take you to jail.' But I want the children to feel they can call on me. Even just to ask a question—I'll be there. I love this zone. If they put me up in Buckhead, it'd be culture shock."

And there is a very special Atlanta hiding in Cabbagetown. Wedged between Oakland Cemetery and the piggyback railway yards,

ROADS TO NOWHERE will improve part of Atlanta's 127-mile freeway system to accommodate the city's rapid growth. In the midst of the boom, low-income housing lags in the slow lane. Although she held a job, Katherine Johnson (above) spent weeks with her son, Michael, at this church-run shelter before finding an affordable apartment.

FROZEN CLUES to human origins are held in a vial lifted from a liquid-nitrogen freezer by biochemist Douglas C. Wallace (below) of Emory University. Studying genetic material inherited only through females, he believes that all living humans share a common female ancestor who lived 200,000 years ago, a theory disputed by some anthropologists.

With government laboratories, industrial parks, and 30 colleges and universities, Atlanta is a major business and research center.

At Delta Air Lines' world headquarters (above right), mechanics check a jet engine by attaching a "bellmouth" to intensify the air intake.

In the city where Coca-Cola was invented, Sharon Churney takes a sip in a lab at Coke's headquarters (right), where new products are evaluated and beverages are checked for quality. Georgia Tech engineers Gene Weaver and Brian Shirley (far right) position a scale model in the Compact Range where they study aircraft antenna performance.

Cabbagetown is the ten-block remnant of the village once occupied by families drawn from Appalachia to work in the Fulton Bag and Cotton Mill. The mill closed in 1980, but a number of families hung on. Wander into Leon Little's grocery store and you could be in any mountain hamlet from Georgia to Pennsylvania. Old men in bib overalls are passing the time on the lunch-counter stools, and a cluster of children watches a homemade video of their friends.

"When the mill was running, it made a lot of noise," Leon told me, "but you never noticed it until Sunday. This store got started back in 1929, when my parents would take sandwiches and drinks to the railway workers. In the forties and fifties it was like one big family here—we used to have Easter egg hunts." But when the mill closed, many eventually drifted away. Leon moved to Conley to find better schools for his children, but he has every intention of moving back when they're grown. "When you see those smokestacks," he said, "you know you're home."

One block down the street Esther Lefever is working at The Patch. She's not a native, but 17 years ago she felt the pull of this remarkable little neighborhood and helped develop support activities for the community. One of her recent projects is a ceramics workshop where young people make decorative tiles and giftware from Georgia clay and sell them; many now have gotten valuable work experience.

"This is the old mill store," Lefever related as she emptied the kiln, checking the plates for flaws. "A friend of mine said, 'Just think, my grandfather used to buy his groceries here.' Cabbagetown has a heritage we need to protect."

FANCIFUL FOURSOME: Andy and Sharon Abroms dine alfresco at Chastain Park during an Atlanta Symphony Orchestra Summer Pops program last August. Their fans depict Clark Gable and Vivien Leigh, stars of Gone With the Wind, *the epic Civil War film based on the novel by Atlanta-born Margaret Mitchell.*

ACCEPTING the coexistence of myth and reality is part of the secret of living here. By "myth" I don't mean something false, of course, but something fundamentally true, and Atlanta has held onto some very important myths in order to ease the strain of growing up.

A good one is that of the "livable city," with its mild climate and flowering forests. This notion unfortunately runs straight into the reality of traffic of Gordian complexities. Atlantans are among the nation's top spenders when it comes to buying automobiles. ("It's not important to own a car in Atlanta," one man quipped, "but it *is* important to own a Mercedes.") And the

interstates (75/85 north-south, 20 east-west, and the encircling 285) are continually being unraveled and reknitted in a vain attempt to accommodate the increase. There were days when I seriously considered leaving a trail of bread crumbs behind me as I left my hotel.

"If you're an intowner and have a friend in Dunwoody, it's almost impossible to socialize," said attorney Ann Leslie Unger.

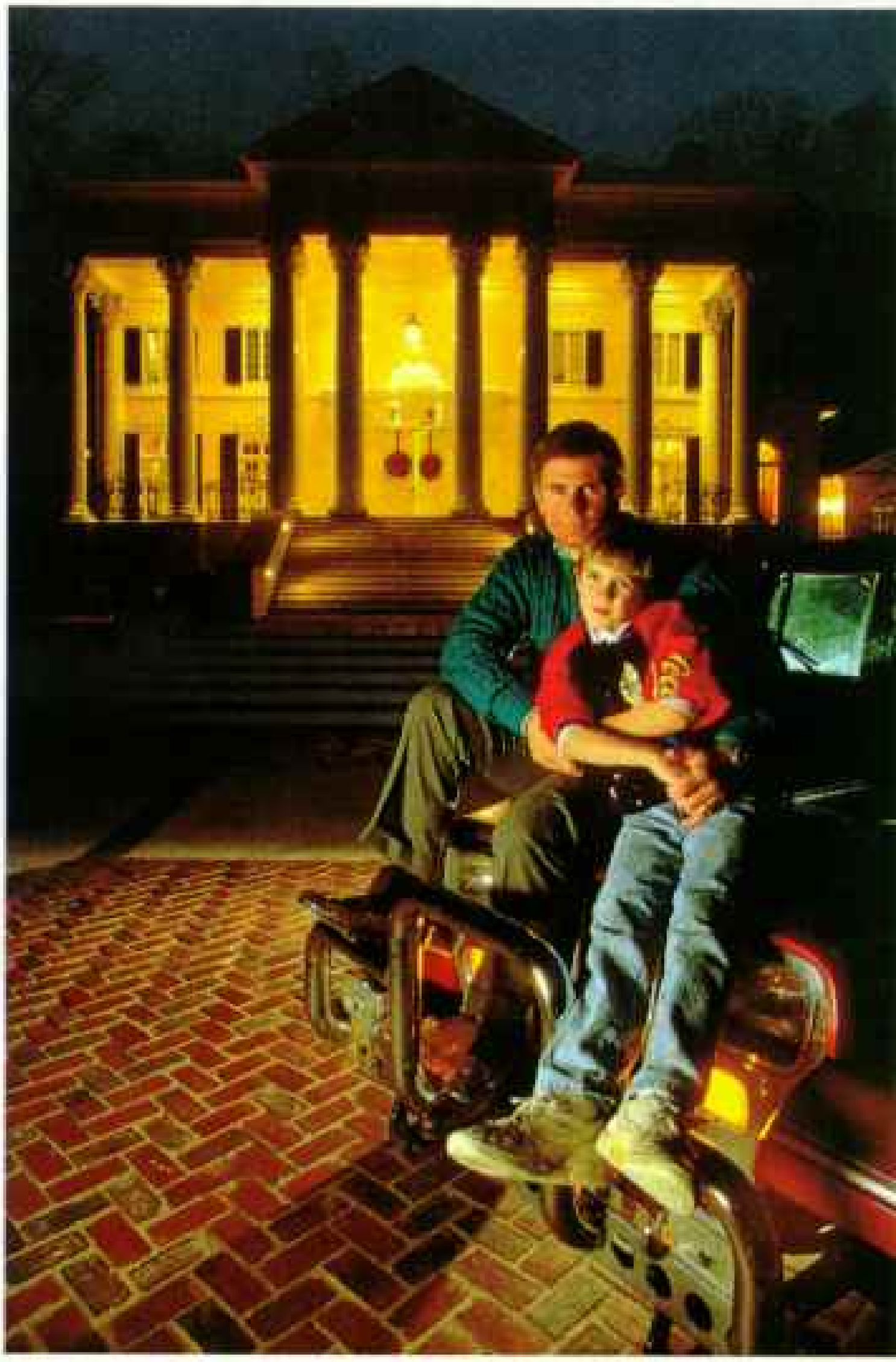
Atlanta does have charm, though it can be maddeningly elusive amid the featureless suburban subdivisions, the weedy, reproachful downtown vacant lots, and the hideous new buildings everywhere (redeemed mainly by Philip Johnson's superb granite hymn, the new IBM Tower). But gradually I began to find elements of real beauty that made me want to linger: The sylvan strand of parks through Druid Hills designed by Frederick Law Olmsted, spacious and golden on a serene October Sunday morning; the grace of Inman Park's restored Victorian mansions; and the unstudied courtesy with which total strangers bless the most casual encounters.

The arts are blossoming where critic H. L. Mencken at one time saw a "Sahara of the Bozart." The Robert W. Woodruff Arts Center is home to the well-regarded High Museum of Art, as well as to the local symphony and children's theater; artistic impulses are nurtured down through the Atlanta Boy Choir to the Center for Puppetry Arts; and Peachtree Publishers continues to search for new southern writing talent.

But I was really surprised by the genuine street-level vitality in experimental theater. Midtown's small theaters are being dispersed by developers, but modest marquees pop up throughout the city announcing productions of anything from *What the Butler Saw* to *Five Things Einstein Didn't Know*.

The idea of Atlanta as the "world's next great city" is also problematical. True, the universities have traditionally accepted foreign students—some, like the Georgia Institute of Technology, to a very large degree. There are a number of foreign consulates and banks now established, and an interesting roster of ethnic restaurants is developing, from Abyssinian to Vietnamese. The city fathers have made it a remarkably attractive business environment, starting with easy access through Hartsfield Atlanta International (80 percent of the U. S. population is within two hours' flying time of Atlanta).

"One of the things Andrew Young has



GREEK COLUMNS AND A JEEP define the style of Frank A. Argenbright, Jr., a successful businessman of humble beginnings. Hugging his son, Hunter, Argenbright describes his home as "redneck revival," echoing his days as a possum trapper. Seeking to help others get a head start, Argenbright donates to local black colleges and charities.

helped to sell," said editor Bill Kovach, "is the notion that this society is attractive to foreign investors," largely because of its record of racial harmony. It can be an effort to live up to this cosmopolitan ideal, though, in a city that can still look askance at an interracial couple, have a Klan rally (admittedly in rural Forsyth County), or expect Jews, who have been part of city life since 1845, to have their own country club.

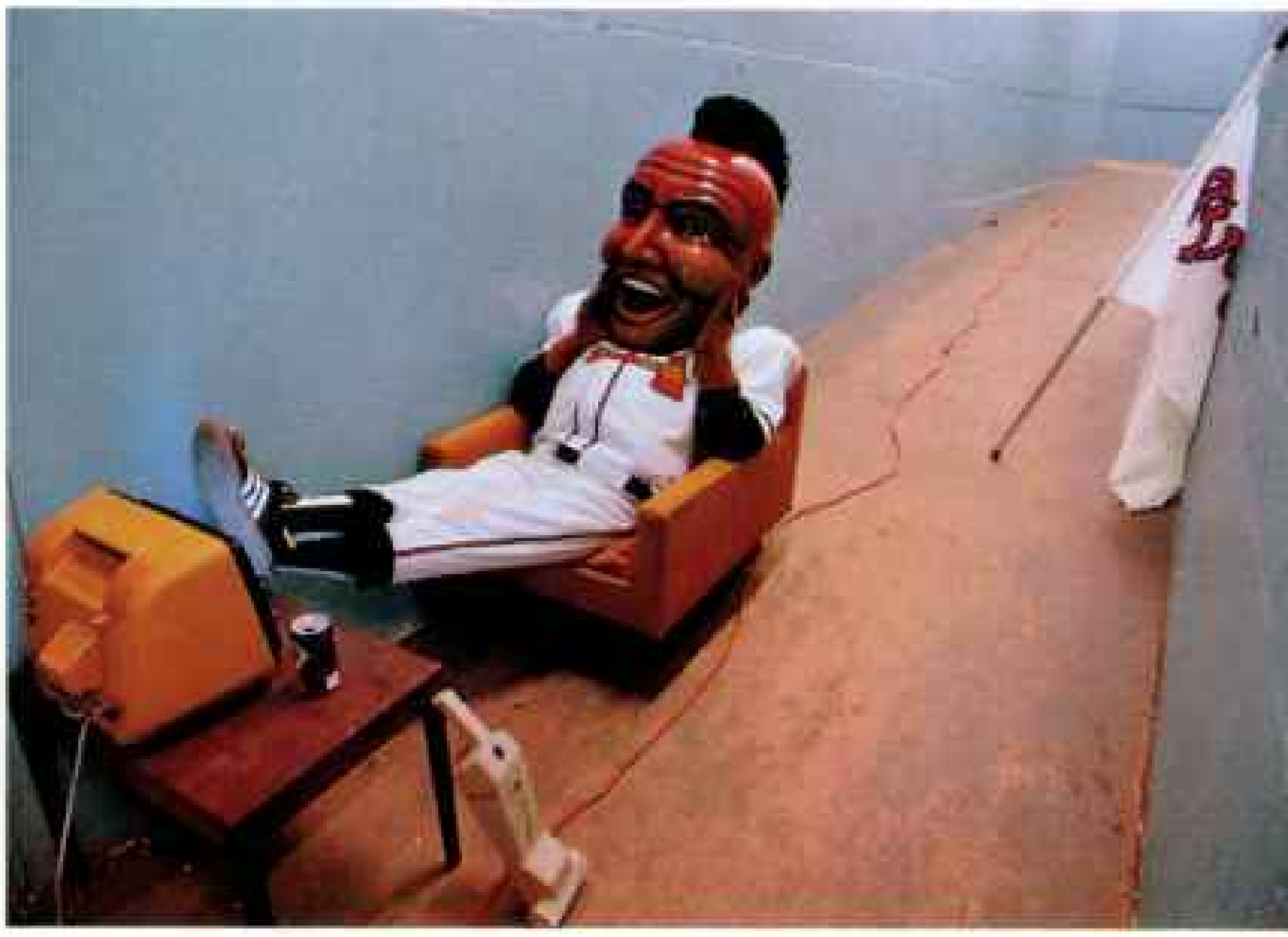
Atlanta notices its overseas contingent at the Dekalb Farmers Market. Whole Asian clans are shopping, two blond yuppies are deep in debate over the mullet roe, while an elderly black couple get their bearings by one of the meat counters.

Despite its humble name the market is an international city in itself. Most of the 500 workers are Asian, and the counters teem with live blue crabs, Thailand sandgobies, frozen salted beltfish from Korea; sugarcane and green coconuts and banana blossoms; bitter melon, Sang Qua okra, lemongrass, Georgia butter beans, yucca, tahini, and kielbasa.

The market has become something Atlantans like to brag about, a kind of tourist attraction like the Cyclorama painting or Stone Mountain Park. But Atlanta, to me, simply does not feel like an international city. It's too quiet, the sidewalks are too empty, and there really aren't noticeable ethnic neighborhoods. "There is a lack of cultural diversity," admitted Ann Leslie Unger.

SPIRITS UNDAMPENED by a cooling shower provided by the fire department, a group of runners exults after the Peachtree Road Race.

An opening-day score by the Atlanta Braves pleases the team's owner, broadcasting magnate Ted Turner (right, at center), and U. S. Senator Wyche Fowler, Jr., of Georgia. Watching a game from inside the stadium, Homer the Brave (below) takes to the field after every Atlanta home run.



"Atlanta doesn't have the urban flavor of most cities. It's *flat*. It's suburbs all the way into downtown."

GIVE THEM TIME. I was sitting in a downtown restaurant that is something of an institution for its cheerfully bogus antebellum decor and its name, Pittypat's Porch, in honor of the scatterbrained spinster in *Gone With the Wind*. "People actually come in and ask, 'Was this really Pittypat's house?' " waiter Greg Stoots observes. "They ask, 'Where is Tara?' I say, 'There is no Tara.' "

Pittypat's Porch may look like somebody's idea of the Old South, I thought, but the owner is Czechoslovakian, the busboys are Hungarian and Mexican, and a couple of tables away a jovial black waiter is serving "plantation" drinks to a group of Japanese businessmen.

The group that feels the press of the foreigners most strongly is, not surprisingly, the blacks. "The Asians are growing so fast, we're beginning to get a little tension there," said one young black professional. "Also—ironically—between black and black. A lot of born Atlantans are against the Ethiopians driving cabs, but those guys really *hustle*."

More than money, Atlanta is obsessed by race. The city is proud of the fact that it has never suffered the race riots of the 1960s. Though many blacks credit that to what they call their "passive" attitude, it is largely due

to Atlanta's history of black higher education and civil rights leadership.

Busloads of pilgrims arrive at the Martin Luther King, Jr. Center on Auburn Avenue in the heart of the first important black neighborhood. Like many of Atlanta's institutions, it is more in the city than of it. Well-to-do black families have their pictures taken in front of King's tomb, ignoring the black derelicts on nearby benches, then head for the gift shop to buy "I have a dream" ashtrays and "Free at last" key rings.

At street level, however, blacks and whites alike regard the legendary racial tolerance and economic opportunity as

CONFEDERATE HEROES Jefferson Davis, Robert E. Lee, and Stonewall Jackson ride in perpetual glory on Stone Mountain. Henry Lewis and his daughters, Sandra Ogletree and Jean Horner, make regular visits to the site. In a stunt discouraged by authorities, a daredevil leaps from a rock into the Chattahoochee River.

interestingly flawed. No one disputes Atlanta's impressive record of successful black businesses, from Alonzo Herndon's insurance company and Herman Russell's construction firm to the computer and other high-tech businesses of today. But many people wonder why, given the city's resources, blacks haven't accomplished more.

It was Friday night at V's On Peachtree, one of the most popular bars for "buppies" (black urban professionals). W. A. Bridges, Jr., a black photo editor, was bemused as he regarded the crowd. "If you fit in a niche, OK," he said. "If not, you'll find yourself on the outside. Blacks' biggest problem is themselves. People here divide themselves economically, so you can't say this is a black issue any more. Which blacks?"

Cal Jackson, a spokesman for the police department, privately agrees: "They call it the 'first city of opportunity,' and that's really stuck with us. But there's not so much opportunity here as you think."

Social mixing is still not the norm. Neighborhoods that start out mixed eventually evolve toward one side or the other; old neighborhoods are also transmuted. Professional interactions haven't carried over much into the personal realm.

Entrepreneur Arthur Cohen tried to explain it to me. Cohen founded the Circle of Friends as a singles network and as a way to ease the strain of relocation for newcomers, but he also ran into limitations.

"There's a big color separation," he said. "I wanted to start a black singles network managed by blacks but within the Circle of Friends, and I had my head handed to me. The blacks said, 'Hey, I'm not going to promote anything socially that would indicate blacks need special handling.' "

POLITICS IN ATLANTA is virtually all "handling," with complex personal alliances, primarily among businessmen, bearing much of the weight of civic enterprise. Says Otis White, editor of the business monthly *Georgia Trend*: "Atlanta's not run by public debate but by a sort of equal-opportunity elite. There is almost a fear of democracy: 'Look what democracy gave us. Lester Maddox.' It's the business people who really decide things."

They do so in a proliferation of committees and discussion groups, from Central Atlanta Progress and Atlanta Action Forum to informal confederations of interested parties,

black and white. In many ways Atlanta's history of racial harmony can be traced as much to interracial handshakes in the Commerce Club and over breakfast at Paschal's Motor Hotel as to any formal programs.

"There are strict rites of passage" in Atlanta, said James Crupi, president of a Dallas firm that studies urban power structures. "You must give of yourself voluntarily. . . . You are tested by your involvement in civic organizations. It takes time. Atlanta has a sort of benevolent, patriarchal leadership, the kind that looks after the city. That can be traced to Robert Woodruff, the Coke chairman. . . . [He] promoted the whole notion of giving some of yourself back to the community. You're not in the Atlanta power structure unless you do that. You don't get there because you have dollars."

Society puts these good intentions to work. "Atlanta has a black-tie ball every weekend," Martha Woodham, society columnist for the *Atlanta Journal-Constitution*, told me. "The disease balls are big—the Heart Ball is the biggest. The zoo just got accredited, so its benefit was a huge success. Atlanta," she noted pointedly, "does not support failures."

ATLANTA CAN'T SEEM to make up its mind about its past. "Oh, history's like anything else here—the symphony, the art museum," one man said airily. "If it's a good thing, Atlanta wants to have it." So far, so good, but Atlanta's past holds little charm for Mayor Young. He brought in 16 billion dollars in new business last year, with the requisite new construction, and cheerfully contends that "Atlanta is building its history now. *This* is the golden age of development."

"They'd build a high rise on the bones of Margaret Mitchell and Martin Luther King," I heard someone say, "if they thought they could make some money out of it." No hyperbole; at this writing, the fate of the house where Margaret Mitchell wrote *Gone With the Wind* is under debate.

This is typical of the ongoing struggle to draw sprawling Atlanta's attention back to its center. Yet while John Portman has been highly praised for his work in revitalizing downtown since the sixties with his convention-oriented properties (Peachtree Center, Westin Peachtree Plaza, Hyatt Regency, and Marriott Marquis hotels), even he is turning his gaze to the suburbs and is now developing a town center near Dunwoody.

Certainly there are neighborhoods—Grant Park, Virginia-Highland, Inman Park, even Cabbagetown—being revitalized by the young and enthusiastic. But the official attitude is one of rather tense tolerance. Travel authority and noted writer Arthur Frommer, in a speech to the Atlanta Historical Society (a group that, despite its name, has not been particularly active in architectural preservation), sounded a warning: "An increasing number of conventioneers to this city . . . are reporting that . . . Atlanta itself is characterless and

STEPPING OUT in their Sunday best (left), a young trio and their mother leave the Peachtree Café in north Atlanta's trendy Buckhead district. On the dance floor at the Sigma Gamma Rho sorority's 37th debutante ball, the Reverend Gregory Sutton embraces his daughter Theresa Cook Sutton.

Though black and white Atlantans work and sometimes play together, high society events remain largely segregated.

without charm, dull and excessively devoted to business and finance."

I SAW SIGNS OF LOVE for the old Atlanta, however, as I quartered the city with Eileen Brown Segrest, who founded the Atlanta Preservation Center in 1980. She pointed to the Georgia-Pacific Building now on the site of the Loew's Grand Theatre where *Gone With the Wind* premiered. "It was demolished after a fire in 1978. Probably arson. Only the office building in front burned; they could have saved the theater, but they just tore it all down. Today we'd *love* to have a 2,000-seat theater downtown—the Atlanta Ballet and the Atlanta Opera are looking for one now. The mayor, business people, and preservationists are slowly coming together, but some think development equals new construction."

It was the threatened demolition of the Moorish Fox Theatre that awakened many to the advancing army of destruction. Blacks, however, were conspicuously absent then (as they generally still are) from the barricades. "They said, 'That's not *our* monument. We had to sit in the balcony.' " Mayor Young once defended his desire to obliterate a Gothic folly known as The Castle by publicly calling it a "hunk of junk."

But historic neighborhoods, even in black areas, are being refurbished, from West End to Grant Park, and houses such as Alonzo Herndon's brick mansion and the more whimsical Wren's Nest of Uncle Remus creator Joel Chandler Harris are open to the public. Castleberry Hill's warehouses are being converted to artists' lofts, and even forgotten blocks downtown in Fairlie-Poplar are now being restored.

Atlanta's expansion, unfrustrated by any natural barriers, has also, oddly, contributed to the city's growing population of homeless people. In many cases workers come for jobs and then discover they can't afford to get to them; the much touted rapid-transit system, MARTA, only serves two counties.

The city's first emergency shelter opened in 1979. Anita Beaty, co-director of the Task Force for the Homeless, has been struggling with a mixture of impatience and compassion to shift public attention from charity to real problem-solving. We sat talking in her house in Grant Park while her adopted son, Donny, played underfoot, a bouncy blond four-year-old who was literally born on the street.

"Many homeless people come to Atlanta because it is a boomtown," she explained. "But laborers who come to the city find that the jobs are outside the Perimeter, or circle highway, and there's a reluctance in those counties to add public transportation because they think, 'Now the poor people can get out here.'

"We hear people say that we have too many shelters, that we'll attract too many homeless people. I've never known anyone who moved to Atlanta to live in a shelter."

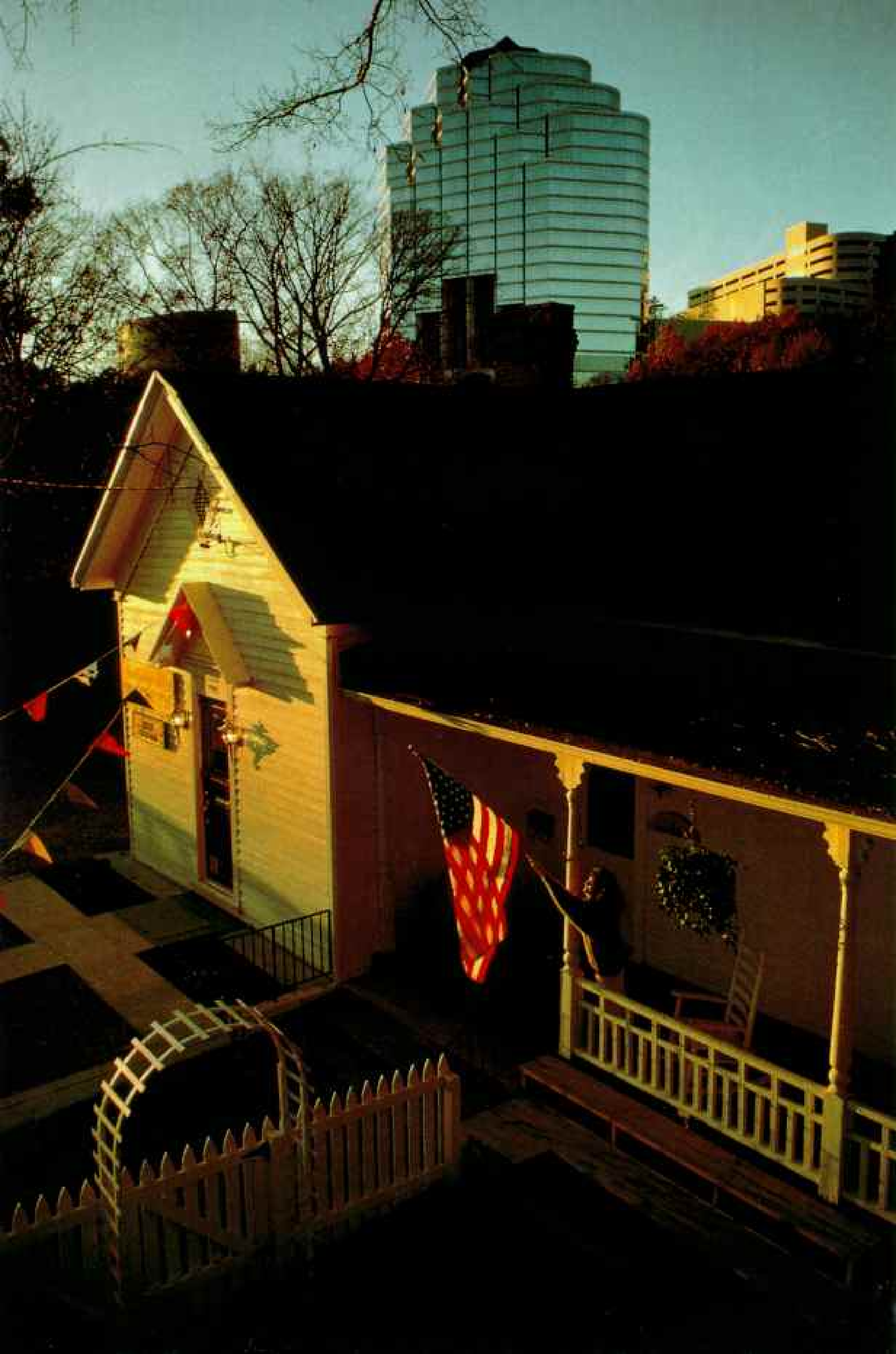
Shelters are not the ultimate answer for the homeless, Beaty insists. Despite all the new construction under way, "there is no low-rent housing being built, except by small, underfunded nonprofits. I bet not more than 200 houses were built last year, while now we have 52 shelters.

"Middle-class people are so into relieving pain, but they don't get into long-term work. We have to address the causes and the prevention, find a long-term remedy."

Sitting in traffic, I saw a bumper sticker: "Business is great! People are terrific! Life is wonderful!" Atlanta's energy and optimism are still carrying her over the bumpy parts of the road to fulfillment.

"What is it that makes people have faith in this city and want to hang around?" reporter Larry Woods wondered aloud. "I think it has to do with that hazy thing called 'promise.' We all sense excitement living here. There's a certain indefinable thing about what's going on here that has nothing to do with hype or the Chamber of Commerce. You sense something's happening and you'll stick around for the ride, and you hope that at the end all the Roman candles will go off. And if they don't—what the hell. It's been fun." □

"SPIRES OF ATLANTA are glittering in the sunlight," wrote a Union soldier in July 1864, when Gen. William T. Sherman first beheld his objective from Vinings Mountain. From that vantage point today, Overlook III office building surveys the town of Vinings, where Sandra Player operates a gift shop in the old post office building. As Sherman later predicted, Atlanta rose from ashes to eminence—and is rising still.



THE DAY THE WORLD ENDED AT KOURION

Reconstructing an Ancient Earthquake

By DAVID SOREN

Photographs by MARTHA COOPER

THEY WERE in their bedroom. The mother, a young woman of 19, still clutched her one-and-a-half-year-old baby to her breast. The child, its teeth still coming in, grasped its mother's elbow. Over them lay a man of about 28, presumably the father, who had tried to shield the pair from a deadly rain of limestone building blocks weighing as much as 300 pounds.

The woman, whose neck had been snapped by one of the blocks, had a bone hairpin on her skull. The man wore a Christian ring inscribed with the Chi-Rho, the first two letters of "Christ" in Greek (above). Bald skeletons now (facing page), they had been a family of three, clinging together for life as their home exploded and crumbled in an earthquake that devastated the city of Kourion on Cyprus 16 centuries ago. That's how we reconstruct their final moments.

On the other side of this once stately house, we found a laborer of about 55 years who had taken refuge in the doorway of his quarters, a tiny room decorated with frescoes. The wall collapsed against his skull, scattering his teeth like shot, while falling blocks pinioned his torso. His legs had jutted from the debris, and at some point wild animals, possibly dogs looking for food, may have torn them away, because we found no trace of them.

Death came with little warning—certainly to hundreds and likely to thousands in Kourion and southwest Cyprus on that fateful day. We now know that a massive quake, whose epicenter lay under the seafloor about 30 miles to the southwest, dealt a series of punishing shocks to the city, accompanied by a tsunami whose great wave thrashed the coast of Greece to the west and Alexandria, Egypt, to the south.

Most witnesses of the event were almost certainly killed, and the city faded from historical record. Though a new urban center was begun 18 years later, ancient Kourion became in effect a lost city.

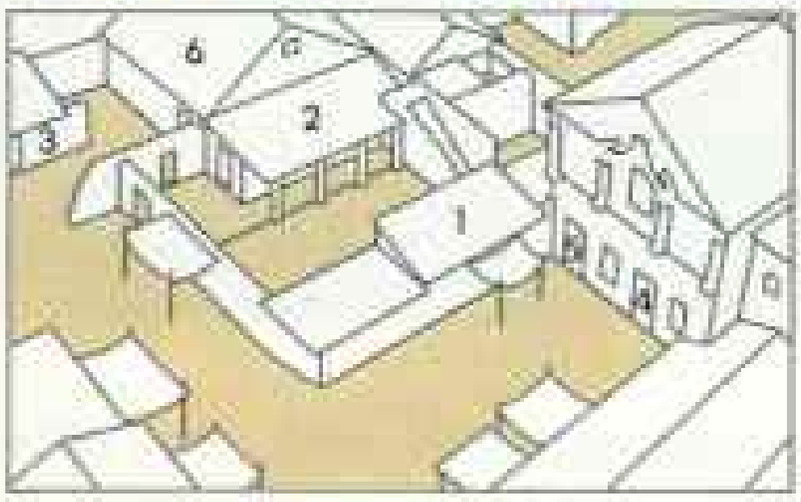
For a young archaeologist like me, teaching at the University of Missouri in 1978, the fate of this major seaport became a matter of intense curiosity. What was the character of its inhabitants? What were the circumstances of their demise? What might we learn about their art, architecture, commerce, and family life?

Founded in the Late Bronze Age by Greek seafarers, the port of Kourion was coveted by conquerors. In the eighth century B.C. the island was captured by Assyrians, who were displaced by Egyptians and later by Persians. By 450 B.C. influences from the mainland put Greek customs and traditions in the ascent, and many Cypriot Greeks left the island to fight in the army of Alexander the Great.

After the death of Alexander and the division of his empire, Cyprus came under the rule

Times were hard in Kourion, a Greek-speaking Christian city of thousands on Cyprus. A spacious residence of the late first or early second century, at center, had been divided into apartments, stalls, and workrooms. Old columns, blocks, and roof tiles—toppled perhaps by earlier quakes—were used in its rebuilding. This painting depicts the excavated area as residents shop in the street in front of the market on the day before the earthquake struck—July 21, A.D. 365.

PAINTING BY DAVID J. VANDERBEEK



1. *Family of three in bedroom*
2. *Teenage girl and mule in stable*
3. *Laborer in mid-50s in doorway*
4. *Man in early 30s in market*
5. *Man in early 20s in market*
6. *Large workroom, now site of museum*

of the Ptolemies of Egypt. In 58 B.C. Rome annexed the island as part of the province of Cilicia and placed it under such governors as Cicero and Cato the Younger. By the second century A.D. Kourion may have grown to 20,000 and covered four square miles.

EVIDENCE THAT an earthquake may have leveled Kourion surfaced first in 1934. J. F. Daniel, a young American archaeologist, searched the bluff above the harbor and uncovered the remains of a late Roman house. Inside he found the telltale fingerprints of a quake: debris, collapsed structural materials, and two skeletons later described as embracing in a "Romeo and Juliet tragedy." (These were not the skeletons we found later.)

Daniel became curator of the Mediterranean section at the archaeological museum of the University of Pennsylvania in Philadelphia. Amazingly, though he kept a diary of his work, he never published it.

In 1980 I read the diary, which listed the museum registration numbers of the coins, pots, and lamps that Daniel found in the lost house with the bodies of Romeo and Juliet. When I traveled to the Episkopi museum near Kourion to examine the coins, I made a pulse-quickening discovery—the latest of them were minted about A.D. 365.

I knew from ancient literary sources that on July 21 of that year a great earthquake had struck the eastern Mediterranean, a cataclysm perhaps greater than the volcanic eruptions at Pompeii and Herculaneum. Originating under the seafloor, the quake shook the entire region. Was this the catastrophe that had leveled Kourion?

A RESEARCH PROJECT SUPPORTED IN PART BY YOUR SOCIETY

Though Daniel's diary listed the precise shape of his trench—a long rectangle with two projections—he failed to note its location on the mile-long bluff. I scoured the bluff in 1980, but my search was ended by a near-fatal virus and a fall that caused two ruptured disks and a broken wrist.

While recuperating, I chanced upon a book of Kourion inscriptions by epigraphist Terence Mitford that contained a map of the city. On the bluff, near the southwest cliff edge, there was the sketch of a trench in the exact shape of Daniel's excavation.

Finally, chance had provided me with the information to test my theory that the earthquake that had leveled Kourion was indeed the famous quake that had devastated the Mediterranean in 365. For a hundred years archaeologists and *(Continued on page 39)*

DAVID SOREN chairs the Department of Classics and Classical Archaeology at the University of Arizona in Tucson and has excavated sites in Roman Cyprus for nearly a decade, along with other Roman ruins in England, Italy, Portugal, Tunisia, and Turkey. MARTHA COOPER photographed a GEOGRAPHIC article on pollen (October 1984) and has contributed to articles on the Maya (July 1982) and Ellesmere Island (May 1981).

The devastation at Kourion, perched 230 feet above its now drowned harbor (below), appears to have been total. Striking at about dawn, the earthquake caught most people indoors. A tiny fraction of the city's area has been excavated since 1984 under the direction of the author. A red-roofed museum was built on the ancient walls in 1987. Team members handling chemicals wear masks as they prepare a display of the young family, three of nine skeletons found.

The last moments of Kourion

"A FRIGHTFUL DISASTER, surpassing anything related either in legend or authentic history," historian Ammianus Marcellinus wrote of that morning in the eastern Mediterranean. His account, the archaeological evidence, and the calculation that the sun rose just before 5 o'clock suggest this scenario in Kourion: Foreshocks imperceptible to humans agitate a mule, and a teenage girl rushes to the stable to calm it. Moments later, a family embraces as the first wave jars their home, cracking rotting ceiling timbers. Then the second wave—delivering more than a hundred times the energy of the atom bomb dropped on Hiroshima—rocks the city, crushing a man in his market shop. Entombed, the city becomes a time capsule of provincial life in the late Roman Empire. Sporadic aftershocks may have occurred for 50 years. The excavation site was never built over, and it was nearly two decades before nearby land was resettled.

The epicenter of this quake has been debated; theories have placed it in Turkey, Crete, and Palestine. Plotting the epicenter from the lie of the rubble here and in Paphos, on the west coast of Cyprus, the author estimated the origin to be in the sea 30 miles off Kourion. Further investigation found that point to be along the tectonic battleground of the Eurasian and African plates. Only here would plate interaction produce this level of damage as well as the accompanying tsunami.

The sequence of seismic waves crossing Cyprus on these screens is based on a computer simulation of the earthquake (bottom). When the third wave buckled the earth at 4:52:31, few were alive to witness it.

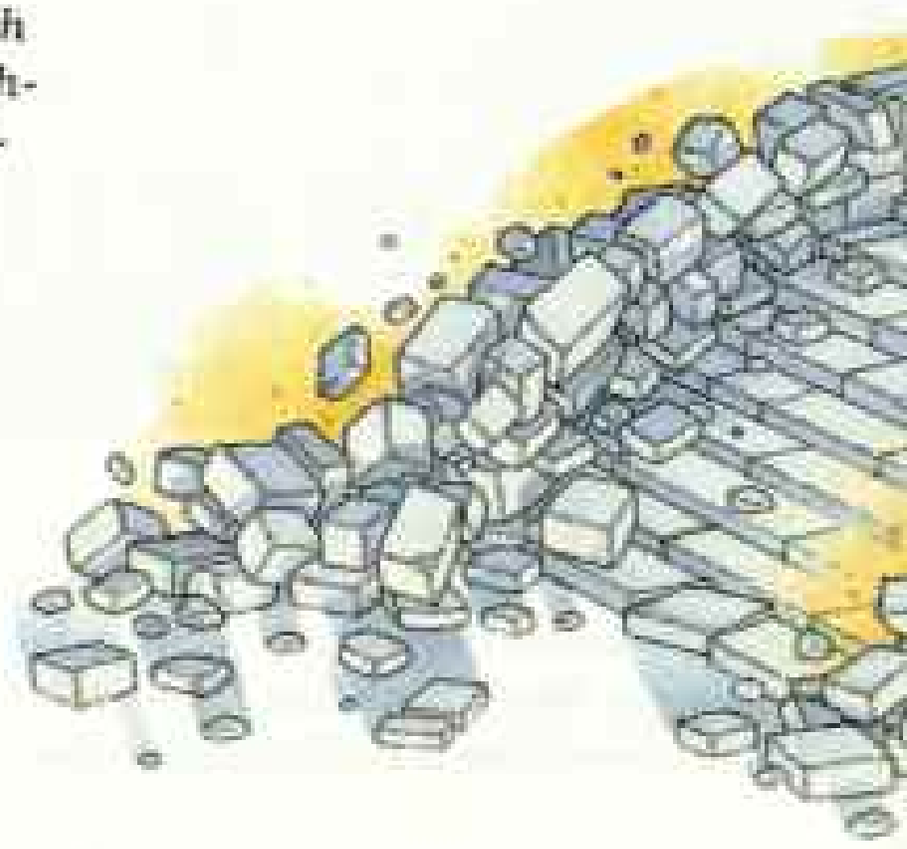
"The mad discord of the elements" reported by Ammianus convulsed Egypt and Greece as well. Then the rush of a powerful tsunami spawned by the earthquake "killed many thousands of men by drowning" in Alexandria, 250 miles southwest, and the Peloponnesus, 550 miles northwest. Its effect on Kourion is not known. Traveling as fast as 500 miles an hour, the tsunami is believed to have reached as far as Gibraltar.

PAINTINGS BY BRYN BARNARD; GRAPHICS BY DAVIS METTLER

To have wrecked Kourion and generated the tsunami, the quake would have registered at least 7 on the Richter scale, calculated seismologist Terry Wallace of the University of Arizona. He modeled this synthetic seismogram on data from a 1983 Japan Sea quake that left similar damage 40 miles from its epicenter. Ground acceleration is calibrated to the force of gravity (% G).

PAINTING BY DAVID L. VANDENBERG

Exploding in the cataclysm, the first-century Temple of Apollo—two miles from the house site—tumbled to the north and east, providing the first clue that the epicenter lay southwest of Kourion, called Curium in Latin. Analyzing the pattern of roof tiles, members of the author's team interpret the fall of the workroom at the house (above). Beneath the wall blocks they find a trail of tiles that rained in as the seismic waves snapped the room's central limestone column. The imprints of the tiles on pieces of mortar reveal the angle of the roof gable. Beyond, the skeletons of a teenage girl and a mule were found beside an 800-pound trough.

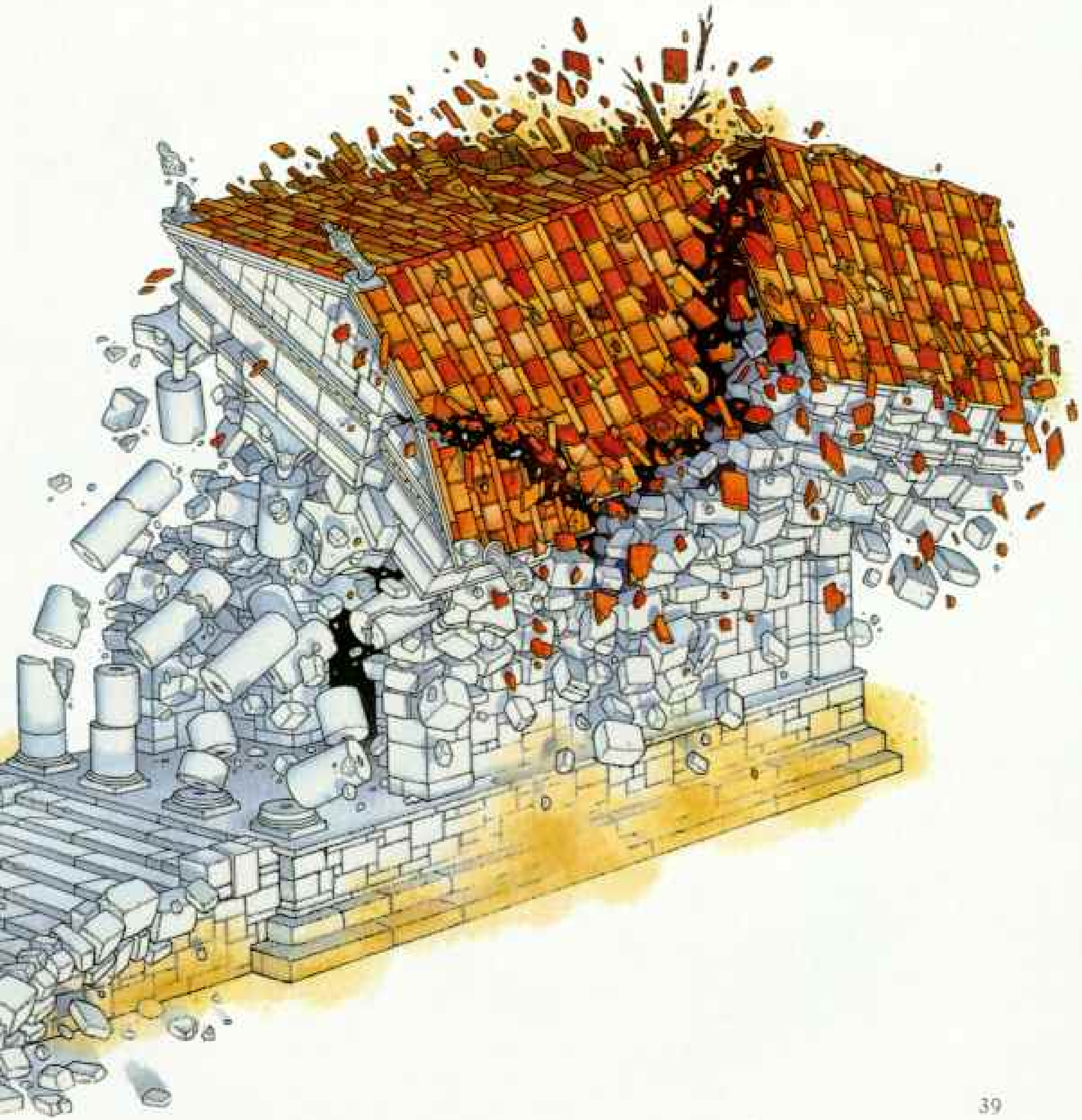


historians had wrangled over the location of the epicenter of this earthquake. When I presented my view, many of my peers scoffed. At a conference in Nicosia they responded with laughter.

It was put up or shut up. In 1984 I assembled a team of 14 specialists and students principally from the University of Arizona, where I now serve on the faculty. We arrived at Kourion on June 2, anxious to find Daniel's trench. The next morning, expedition architect John Huffstot arose early and departed for the bluff. He returned to announce dryly that he had found the trench's outline in a mere ten minutes!

For four years my team has been unearthing Daniel's Roman house room by room, including the unfortunate occupants who had been entombed. We have also dug at other locations in Kourion, with spectacular results. I had hoped to find isolated pockets of sealed earthquake debris that would bolster my theory. But I never expected to uncover a site that was virtually undisturbed: Kourion had been completely abandoned after the disaster. No one had returned to collect the dead. We felt like a rescue team arriving 16 centuries too late.

About two miles to the west, in the ruins of Kourion's Temple of Apollo (left and below), built after the mid-first century, we found a



major clue to the epicenter of the earthquake. Archaeological geologists Reuben Bullard and Frank Koucky noted that the temple's massive rear wall had fallen to the north and east, indicating that the seismic wave may have come from the southwest. But where on this southwest vector did the epicenter lie?

At Paphos, a city to the west that had also shown evidence of the quake, our team noted that walls there had fallen to the north and west—thereby acquiring another vector. We found that the lines intersected 30 miles southwest of Kourion. And there, where the African and Eurasian plates meet, occurs the only area where colliding tectonic forces could have produced such a destructive earthquake.

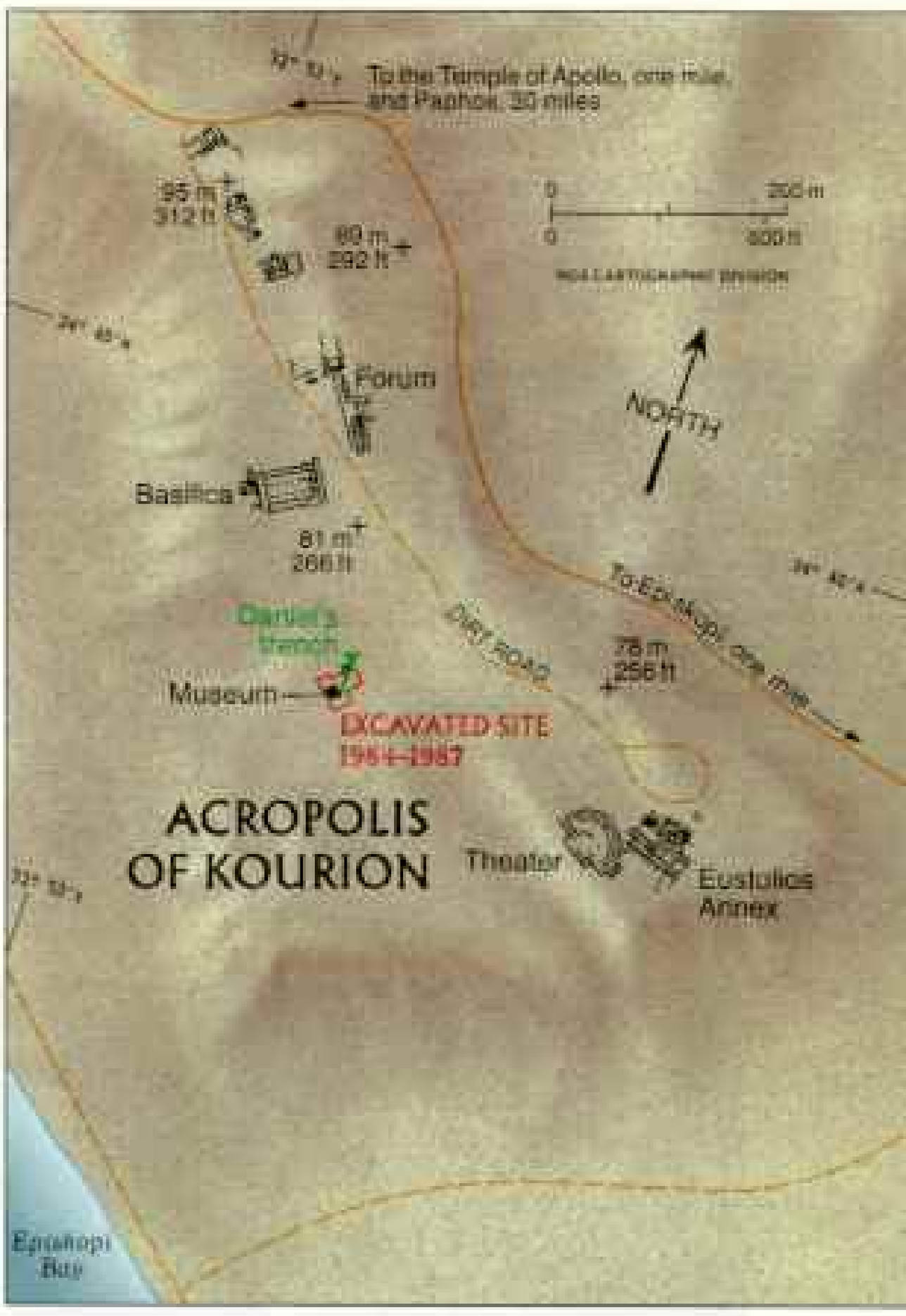
The early shocks of the quake had sheared the upper third of the temple wall at Kourion, which became buried in earth and debris. In years to come, scavengers seeking building stones plundered the portion still standing above the rubble. We thus found ourselves in the bizarre situation of trying to reconstruct a temple with a top and bottom but no middle.

WITH THESE DISCOVERIES the project, which had begun on a shoestring budget, now required all sorts of specialists: numismatists, conservators, physical anthropologists to move human skeletons intact, paleobotanists, and, most important, computer mappers to record every fragment uncovered.

Returning in 1985, we left the outlying temple site and moved within the city of Kourion to give special attention to Daniel's house. When it was constructed in the late first or early second century A.D., it was spacious and stately. Although the house lacked the mosaic floors that testify to opulence, it was comfortable and private. Occupants entered it through a long alleyway that concealed the entrance from the street. Once inside, a guest came upon a lovely paved courtyard with a handsome portico supported by Doric columns.

Behind the portico we found a tablinum, a sort of conversation room, suitable for intimate entertaining. From the tablinum two spacious doorways opened into a room 20 feet square with a carefully tiled, gabled roof supported by a central column. The largest room in the house, it may have been a triclinium, or dining area. I envisioned Romans ensconced on couches as sumptuous repasts were served.

Though the house differs in its floor plan from those found elsewhere in the Roman world, it bears a striking resemblance to traditional village houses in Cyprus found today in nearby Episkopi. Cypriot architect and team member Tony Polycarpou noted with surprise that the Kourion house resembled his own, which also has a secluded alleyway entrance leading to a paved courtyard backed by a portico. His courtyard is shaded by a grape arbor for dining in summer—and I would bet that the ancients had one too.



Huddled behind the market facade—knocked 20 degrees out of plumb—a man in his early 30s instinctively covered his head as his world collapsed.

In its heyday in the first and second centuries, Kourion counted perhaps 20,000 people. Recovering in the fifth century, it gathered a population of about 2,000 who raised civic buildings and a forum, worshiped in a Christian basilica, and patronized elegant baths built by Eustolios, scion of an old Kourion family.

We discovered other links between present and past. The veneration of stone fetishes has formed part of Cypriot religious practice since ancient times. We unearthed some conical stones (bottom), of a type associated with the shrines of ancient Cypriot gods. And near our excavation house there is a rectangular stone with a perforated center. As part of a traditional Christian ceremony still observed, young girls crawl through it to assure fertility, and babies are handed through it for protection.

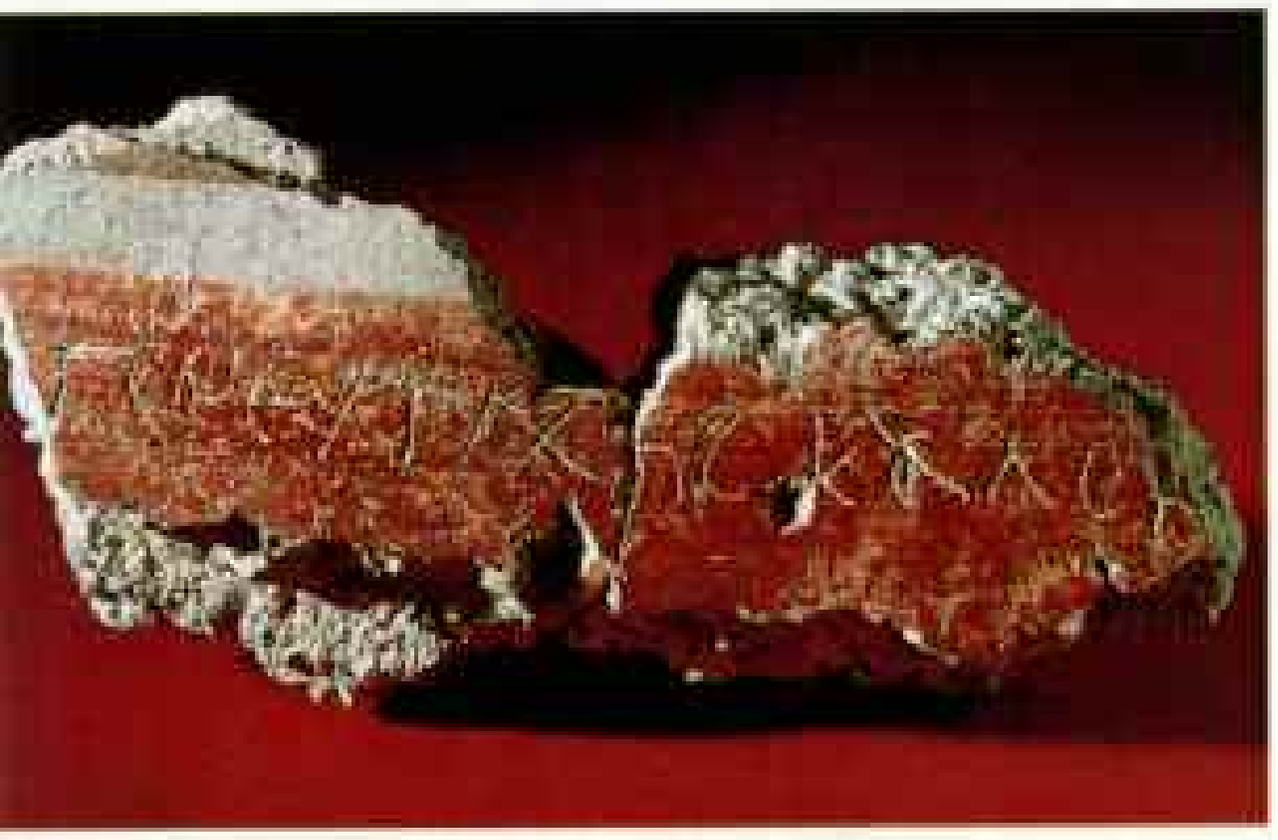
Near the stone, a sacred tree was dedicated to Spyridon, a saint of healing, and the Virgin Mary. Villagers hung articles of a sick person's clothing on the tree to help the sick one get better. In our dig we unearthed a large round building, in the center of which were pits once planted with sacred trees.

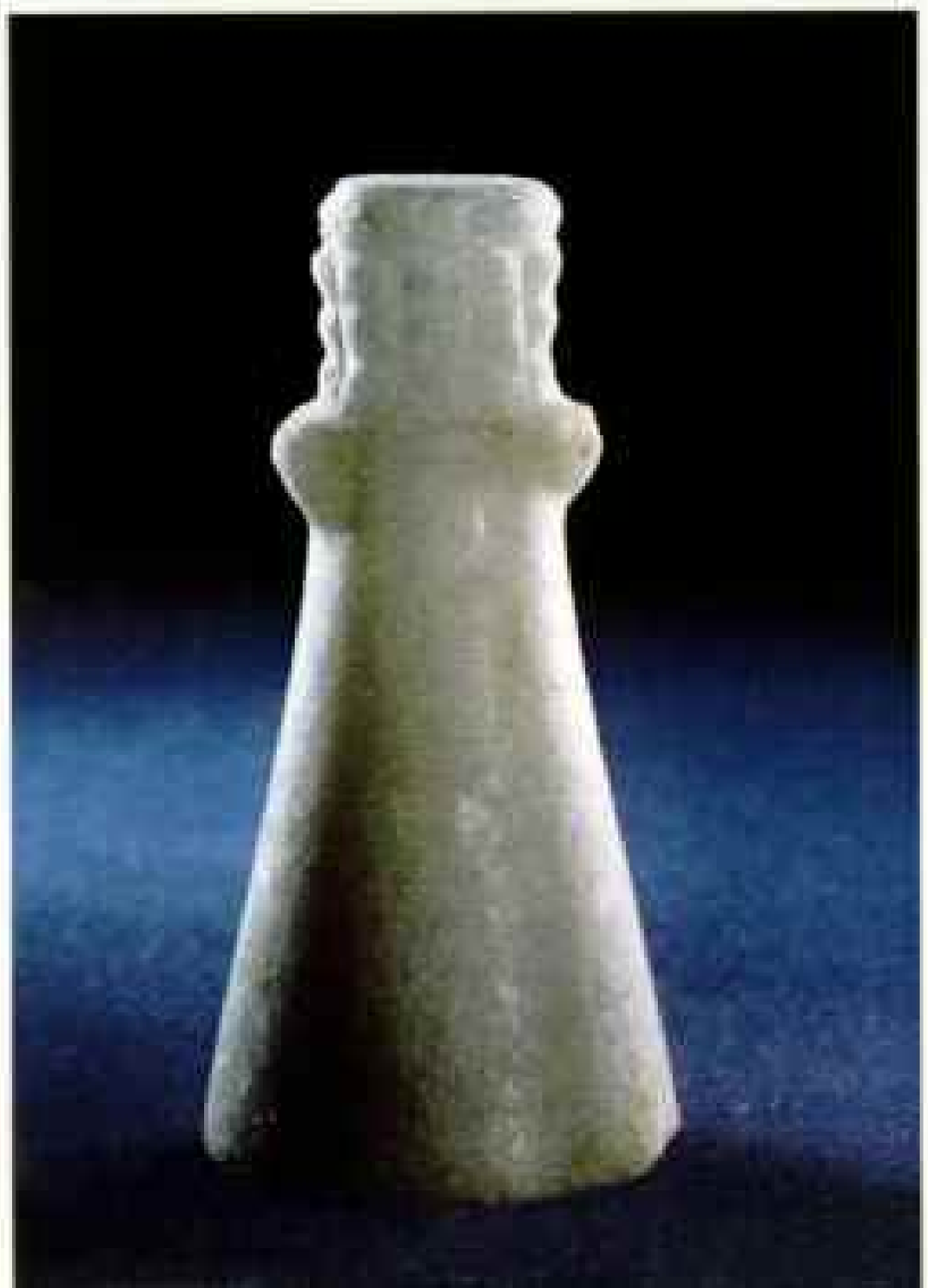
The ancient house remained much the same for almost three centuries. Of course we cannot be absolutely sure that it was a private home; the unusual size of what seems to be the dining room suggests that it could have accommodated the headquarters of a club or guild.

Around A.D. 340, a serious seismic shock brought the city to its knees. It may have been one of the well-known earthquakes of 332 or 342 that leveled the city of Salamis some 70 miles away on the east coast, spilling docks and buildings into the harbor. At Kourion, the portico of our house came crashing down, and the survivors or perhaps new occupants stacked up some of the fallen column drums around the courtyard.

After this quake the citizens of Kourion struggled on. The stately house became a divided structure occupied by poor people, most of whom appear to have been Christians. From the time of the emperor Constantine early in the fourth century, Christianity was the preferred religion of the Roman Empire. Thus most Roman residents of Kourion, who spoke and wrote Greek, worshiped Christ.

An admirer of "Eutyches the handsome" scratched these words at the market. Another fragment reads, "O Jesus . . . of Chr{ist}." Although paganism was still tolerated in the Roman Empire, it was waning. A sacred carved stone called a baetyl, from the Roman period, was recycled as filler in a market wall.





By 365 the Roman Empire was in crisis. The brother emperors Valentinian I and Valens, whose coinage abounds at Kourion, faced a rising tide of barbarians. Valentinian defended the Rhine frontier but was unable to repel the Picts, Scots, Franks, and Saxons overrunning Britain. Valens looked to the east where fierce Goths gathered along the Danube, and Persians brooded beyond eastern frontiers.

Moreover, the Roman Army itself was a threat—a mutiny led by the usurper Procopius was underway in Constantinople. With these problems another earthquake was the last thing anyone needed on Cyprus.

As the time neared for the cataclysmic quake, the house was but a shadow of its former glory. The corridor entry had been blocked off so that the main entry for people, and now animals too, was from the southeast.

Once inside the new entry one walked straight ahead into a small room created by

National Geographic, July 1988

dividing up the old tablinum. This new space was probably a bedroom, and it was here that Daniel found his Romeo and Juliet in 1934. In the corners where he didn't dig, we found finger rings, *Charonia* shells fashioned into trumpets for calling animals, and scraps of animal bone from chickens and sheep or goats, possible evidence of sloppy snackers.

The old portico had been partly and crudely rebuilt outside Romeo and Juliet's bedroom door, and simple ovens had displaced the columns at the east end. The rest of the tablinum had been turned into a stable where, to our surprise, we discovered the remains of a mule that had been tethered with an iron chain to an 800-pound feeding trough. The halter rings, one iron and one bronze, were still in place on the animal's muzzle. On top of its hind quarters lay the crushed skeleton of a girl about 13 years old.

I have thought about the drama that must have taken place in this room. Many observers have reported that animals seem far more sensitive than humans to foreshocks. Recently in California a veterinarian noted a high number of stressed dogs prior to an earthquake near Los Angeles. So it is easy to imagine that the child, whom we named Camelia, arose from her bed to see why her animal was so agitated. Then the house rocked with the great quake, and Camelia put her hands over her face and sank to her knees, becoming hopelessly entangled in the mule's flailing legs.

Such speculations prompted new questions: What was it like on that fateful morning? Could we concoct a sort of instant replay, frame by frame, of those terrible events?

Reuben Bullard and Frank Koucky, our archaeological geologists, joined in, as did seismologist Terry Wallace, Cypriot geophysicist J. P. Neophytou, and cartographers John and Peggy Sanders, who had electronically plotted the location of every bone and sherd and rock. This enabled us to call up three-dimensional representations that we could view, at will, from any angle.

From the vantage points of our different disciplines, we focused on four critical areas: the archaeological evidence, writings by ancient authors, knowledge of the behavior of the Eurasian and African plates off southwest Cyprus, and comparisons with other seismic catastrophes around the world in modern times.

In the process we found ourselves creating a new investigative tool that I call seismic archaeology. Though no one can state with exactitude what transpired, the following scenario represents our best educated guess for the quake at Kourion.

On the 21st of July, 365, after initial tremors discernible only to animals, a major seismic pulse struck Kourion just after dawn, when most people were still abed. Walls began to shake and some roofs collapsed. Glassware and pottery on tables and shelves teetered and fell. People jarred awake during this four-second episode had only time to reach

"It's nice to see the city live again," said Cypriot digger Elpenike Andonion, holding bits of a human skeleton she discovered. The team includes Americans, Britons, Portuguese, French, and Italians. Jokes the author, "No one speaks the other's language well enough to get on one another's nerves."

Picking up the pieces, stratigrapher Michael Schiffer (right) shares his expertise in analyzing layers of debris with the 1985 site team. Amphorae and other vessels reconstructed from these boxes of sherds and replaced where they fell (bottom right) probably held olive oil, wine, or fish sauce, "the ketchup of antiquity."

A careless potter left fingerprints on a dish of Cypriot red slipware, rendering it something akin to a factory second.

out for loved ones and huddle for protection.

Had this been the only wave to strike Kourion, the loss of life would not have been so high. But a second wave of much greater intensity followed immediately. It struck with deadly force. The modified Mercalli scale, which seismologists use to gauge earthquake severity by observing displacement of objects and terrain, assigns the figure XII to the highest level of devastation. On the Mercalli, the blast that now hit Kourion was estimated by the team at IX or X.

The violently shaking ground disoriented residents, and coordinated movement became impossible. Some walls collapsed while other walls seemed to explode. Objects caromed around the rooms, ricocheting off walls and felling individuals.

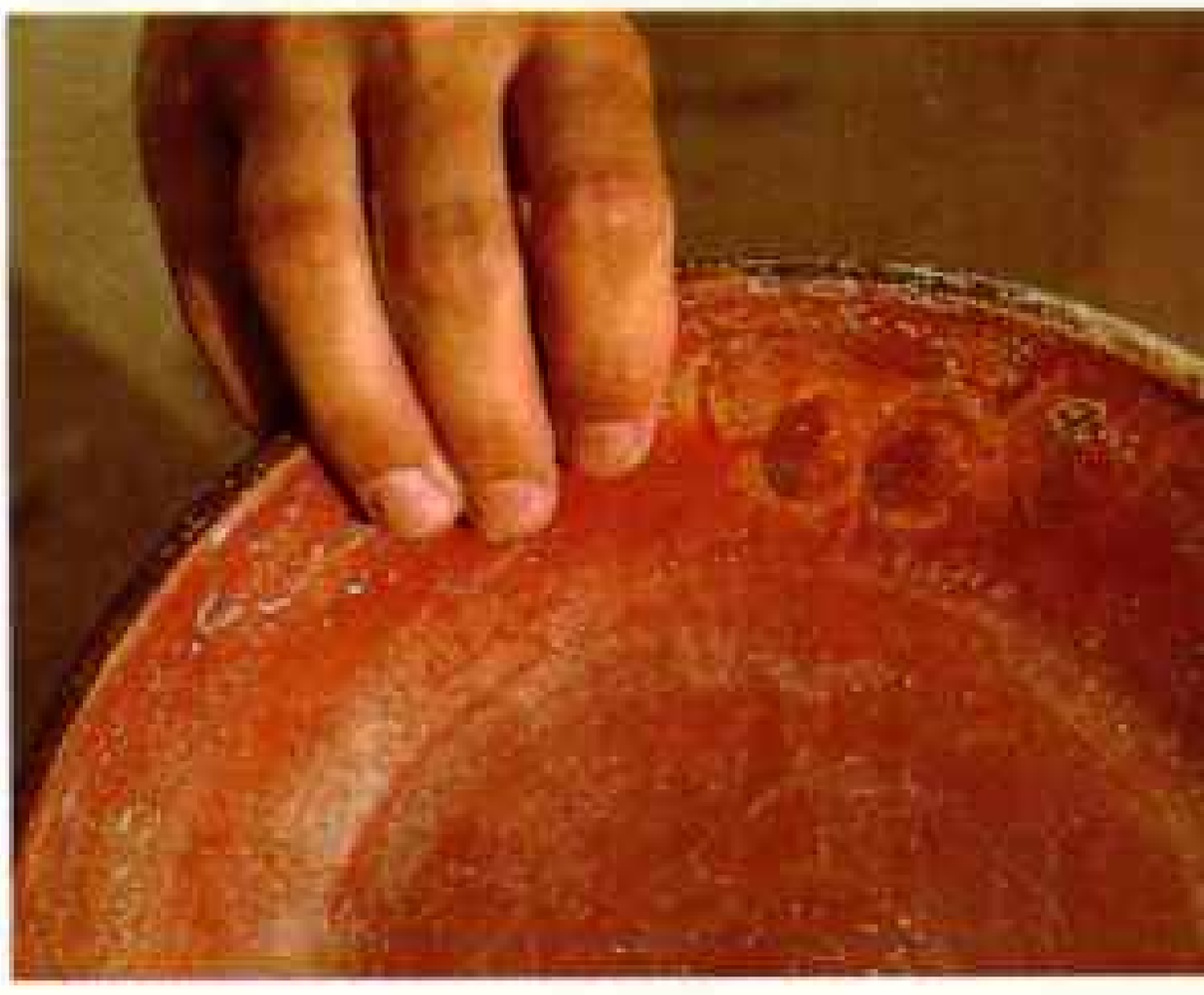
In the Daniel house a block from the ceiling struck our 19-year-old mother, snapping her neck like a twig. A doorway collapsed on the laborer, while the mule in the stable flailed about, trapping Camelia. Other victims curled in the fetal position, only to be crushed or suffocated by thousands of pounds of rock and roof tile.

Reuben Bullard described the ground as "a mass of quivering Jell-O." Terry Wallace likened the experience to "being underwater in the dark with no frame of reference."

The violence of the second wave that doomed the city lasted perhaps ten seconds, a very long time to be imprisoned in rooms that shake violently while objects bombard you and walls and ceilings are caving in.

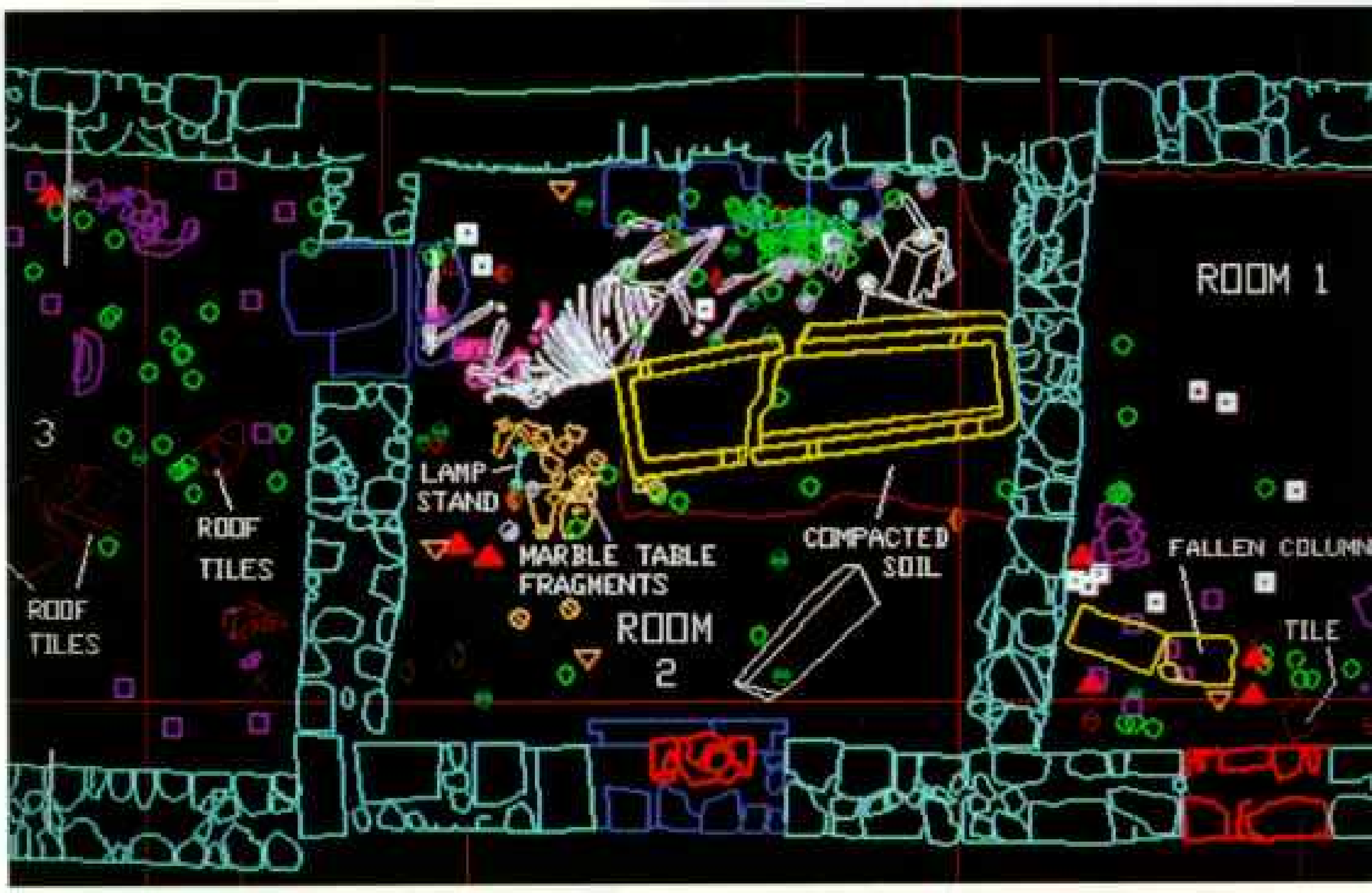
Then a third wave struck, lasting about five seconds. But by now most of the people in the Daniel house and in the rest of the city were dying or already dead under tons of rubble.

We estimate that at least 500 people died in the Kourion area, but the toll in all of southwest Cyprus was perhaps in the thousands. The quake probably affected much of the coast



Like survivors with amnesia, many Kourion artifacts are mute on their former lives. What did this marble fragment incised with a lion adorn? What was the use of the only glass vessel (top right) found intact? A rage for games—depicted on Greek vases as early as 530 B.C.—explains a bone die found in the market. Were ten bone and glass hemispheres collected nearby (center right) also gaming pieces? Too dull to be pins, more than 200 carved bone pieces were identified by local villagers as bobbins used in lacemaking, still a Cypriot tradition. Yet bobbin lace is believed not to have been made before the 16th century. Posing no mystery, utilitarian bronze cookware adds to our understanding of daily life in this era.

Coded by colors and symbols, a computer-generated map (below) focuses on the stable where a teenage girl and mule fell beside a trough that fractured. A pioneer in this field, computer cartographer Peggy Sanders studies a close-up of the mule. She and her husband, John Sanders, plot every object on the site. Their system dramatically speeds the mapping process, provides instant recall of data, and allows a room to be analyzed from different angles.



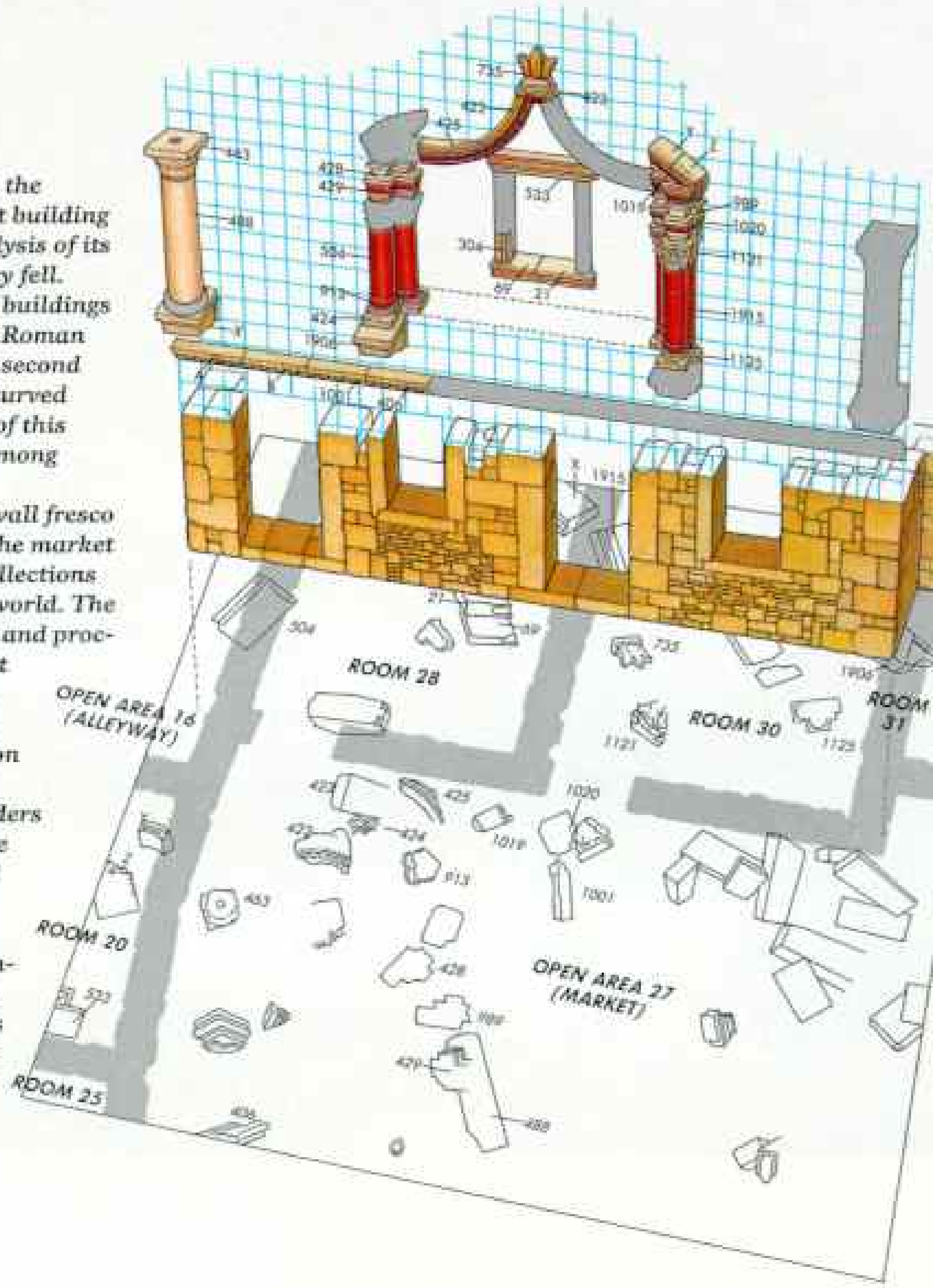
from Kourion to Paphos, some 30 miles west.

One must also take account of the enormous tsunami that spread from the offshore epicenter and traveled hundreds of miles to strike coastal areas such as Alexandria and the southern Peloponnesus of Greece. The sea wave would have engulfed the harbor of Kourion about 200 seconds after the primary ground wave damaged the house.

For the doomed family of the Daniel house the situation had been aggravated by a massive building towering above it on a small hill. When this building crumpled, it showered huge blocks of limestone onto the north end of the house, precisely where the family of three were huddling. They had no chance.

What was this building? In 1934 Daniel had uncovered three massive, elaborately worked cornice blocks appropriate for a community structure of obvious significance. As we excavated, more and more garishly painted blocks appeared: cornice pieces, cluster columns, broken pediments, arched moldings.

Traces of a two-story facade emerged, opening onto a large open space that yielded abundant animal bones, some of which showed indications of butchering. There were the bones of cattle, pigs, chickens, ducks, fish, and birds as well as of sheep or goats—virtually impossible to distinguish. We also found the



A jigsaw puzzle in progress, the reconstruction of the market building is assisted by computer analysis of its known pieces and where they fell. Vividly painted ornate civic buildings were popular in the eastern Roman Empire during the first and second centuries. But the unusual curved molding on the upper story of this structure makes it unique among Roman ruins on Cyprus.

The 32,000 fragments of wall fresco plucked from the rubble of the market include one of the largest collections of graffiti from the ancient world. The earthquake saved messages and proclamations written in ancient Greek, as well as drawings and tallies scratched in the fresco. An intense translation effort begins this summer.

Bronze proportional dividers (bottom) came to light in the workroom of the subdivided house, now covered by the museum. Architects and marine navigators use essentially the same tool today to measure and compare plans or charts of different scales.

DIAGRAM BY DAVID J. VANDENBERG

THE ORIGINAL LOCATIONS OF STONES A, B, AND 30A ON THE PLOT ARE UNKNOWN.

bones of rabbits and hares, including one variety that may have weighed 40 pounds.

Smallish rooms gave the impression of live-in shops, especially on the lower southeast side where two almost identical rooms faced the courtyard. I visualized an ornate market building with open-air stalls in front.

We counted some 32,000 fragments of wall fresco, some brightly painted. As we brushed and cataloged the pieces, it became evident that the market patrons had done what people still do everywhere—they scratched graffiti.

In this first significant cache of graffiti discovered on Cyprus, one artist awkwardly sketched a lady with a flower. Another drew

an amateurish portrait. But most seemed to delight in scrawling Greek phrases, which became the special study of Holt Parker of the University of Arizona.

On one white fresco a believer scratched: "O Jesus . . ." with the message broken off until it ended, "of Chr[ist]." A less skilled scrawler, possibly a child, practiced the Greek alphabet with shaky hand. Demetria, Eutyches, Sozomenos, and other citizens wrote their names.

More surprises awaited inside the market. Warrant Officer Harry Heywood of the British Royal Air Force had dug with us every summer and also served as our security adviser. But Heywood had the reputation of never finding anything, and his assignment to a trench was regarded as the kiss of death.

Inside the market, however, he unearthed a room that held the skeletal remains of a man in his early 30s who measured five feet seven inches in height, the tallest victim recovered at Kourion (above). He had curled up in the fetal position with his hands shielding his head.

In an oven in the same room paleobotanist Karen Adams found burned traces of wheat grains that indicated the making of bread. Barley was present too, probably for grinding as flour, along with rye.

On the landing, bronze cooking vessels and pottery came to light, including an extraordinary bronze lamp in the shape of a duck (page 52). The wicks rested in an opening in the tail, so that when they were lit, the bird appeared to be turning around to examine why its tail was afire. A set of delicately wrought chains for hanging objects was found next to the lamp.

A mystery arose with the discovery of more

"A robust individual," said forensic anthropologist Walter Birkby of this man in his 30s, found in the market stall excavated by Priscilla Molinari (above). He may have been preparing to bake bread; the stall holds stones for grinding grain and charred grain in a bronze pot on the oven.

Birkby (top right, in headband) directs removal of the skeleton. Surrounding soil is whittled to a pedestal. Chemically stabilized, the bones are covered with protective gauze and foil. Planks are set into a heavy coat of plaster (center right), and the soil pedestal is severed at its base. Flipped the next day, the 500-pound package is hoisted from the site by crane.

than 200 slender bone objects (page 47). These had the size and shape of bobbins used for weaving the decorative fabric known as bobbin lace. But bobbin lace is unknown prior to the early 16th century, almost 1,200 years after Kourion. Yet when I showed the objects to villagers who made lace, for which Cyprus is noted, they unhesitatingly identified the bones as bobbins. If ours prove authentic, they will constitute a significant find.

In another room of the market were ten pieces of glass and bone, perhaps for board games, and a simple bronze tool for weaving fishnets. Such tools, pencil-shaped with hooks on both ends and now made of plastic, are used by Cypriot fishermen today. The market contains many more rooms to excavate. I feel it will yield many more secrets.

SEEKING MORE CLUES to date the disaster, numismatist Eugene Lane of the University of Missouri studied coins unearthed in Kourion. Many so-called "split Valens" were found, with the name of the emperor Valens divided around his head. These coins suggest the disaster occurred early in Valens's reign—A.D. 364 to 378. No coins appear of the emperor Gratian, who took the name Augustus and first issued coins in 367 when he was seven years old. Nor are there any of the usurper Procopius, who put out coins late in 365.

Evaluating this evidence, Lane narrows the window of Kourion's demise from late in 364 to mid-367. He suggests that a date in 365 is most reasonable. This is the same conclusion I reached after studying the coins that Daniel had unearthed in 1934.

Though the epicenter of the disastrous quake had never been located, the ancient accounts show tantalizing similarities with our hypothesis. Ammianus Marcellinus, a fourth-century historian, recounts that the quake began offshore just after dawn on 21 July, 365, creating a tsunami that struck southern Greece and Egypt.

"For a little after daybreak," he wrote, "preceded by heavy and repeated thunder and lightning, the whole of the firm and solid earth was shaken and trembled, the sea with its rolling waves was driven back and withdrew from the land, so that in the abyss of the deep thus revealed men saw many kinds of sea-creatures stuck fast in the slime; and vast mountains and deep valleys. . . . Hence, many ships were stranded as if on dry land.

"The roaring sea, resenting, as it were, this forced retreat, rose in its turn; and over the boiling shoals it dashed mightily upon islands and broad stretches of the mainland, and leveled innumerable buildings in the cities. . . . For the great mass of waters, returning when it was least expected, killed many thousands of men by drowning; and by the swift recoil of the eddying tides a number of ships, after the swelling of the wet element subsided, were found to have been destroyed. . . . Other great ships, driven by the mad blasts, landed on the tops of buildings (as happened at Alexandria), and some were driven almost two miles inland, like a Laconian ship which I myself in passing that way saw near the town of Motho, yawning apart through long decay."

This account agrees with our version of the Kourion quake, in which the water would have initially receded and exposed sea creatures, only to rush back with devastating force and high loss of life. The tsunami could easily have struck Alexandria and Greece.

To date, our hypothesis regarding the offshore epicenter is the only one that fits all the data. Though the rubrics of seismic archaeology do not permit absolute certainty, the evidence certainly points to the quake of 365 as the earthquake that killed Kourion.

As we continue excavating in seasons to come, Kourion's ruins promise to yield the most complete picture yet of life in the late Roman Empire as well as a rare chance to study an ancient population in its original context.

As room after room is mapped and restored and the skeletons are cleaned, lifted in a cocoon of mortar, and mounted in our on-site museum, I wonder what discoveries remain to be made—and what human tragedies lie waiting to be unveiled. And sometimes I think about a one-and-a-half-year-old child, with its baby teeth still coming in, whose days on this earth were so very, very few. □

Relic of wealthier days, a bronze duck oil lamp would have looked with alarm at its burning tail. A bronze coin called a "split Valens" (above), issued by the co-emperor Valens around 365, is a clue to the date when this post of a crumbling empire vanished in a roar.

The innocence of child's play mimics the strut of a palace guard unit in Santiago, capital of a country that marches toward the right under a military junta led by Captain General Augusto Pinochet Ugarte. Once South America's most stable democracy, with a wealth based on copper, fishing, and agriculture, Chile's political anxieties burgeoned in 1970 when Marxist Salvador Allende Gossens won a three-way race, carrying the country left and the economy down. Following Pinochet's coup and the violent end of Allende's government in 1973, elections were suspended and military rule imposed. Soon Chileans will vote for or against a junta-named presidential candidate, who may or may not be Pinochet himself. The choice, he maintains, is "me or chaos." Chileans are unsure whether it will be either, neither, or both.

CHILE

Acts of Faith

By ALLEN A. BORAIKO

Photographs by
DAVID ALAN HARVEY

"Chile was invented by a poet," wrote Pablo Neruda, himself a Nobel laureate for poetry. The lyricism of the Andes proves the point. Near the southern reaches

of the range, the Torres del Paine form an ascending scale of glaciers and peaks, embellished by the ridge-skimming flights of condors and eagles.

The quiet light of contemplation shines from a woman who has finished dressing a Christ figure for an Easter celebration in a Roman Catholic church in Chiuchiu. The

nation is predominantly Catholic. The church, keenly conscious of social inequities, champions human rights and provides health services and food for the poor.

MASONED into the nave of the Basilica of Our Lady of Perpetual Help in Santiago are hundreds of small white marble tablets. These testify to "a miraculous cure," or "the restored health of my little girl." One votive offering foresees that Our Lady's aid may again be needed: "*Gracias Madre Mía, Ayúdame Siempre*—Thank You My Mother, Help Me Always."

Augusto Pinochet Ugarte was perhaps more self-possessed than other worshipers when he put up his plaque in 1936. At 21 a newly commissioned infantry officer, he had just gotten through a national military school that had originally rejected him. It would have been like him to finger the pommel of his dress sword while reflecting that the Lord helps those who help themselves.

It was certainly a self-reliant Pinochet who on September 11, 1973, overthrew Chilean President Salvador Allende Gossens, Latin America's first freely elected Marxist leader. By then army commander in chief, Pinochet acted to "keep faith" with Chile's history and to preserve Christian values from a "pernicious and contaminating" ideology. No less inspired, Allende died suicidally resisting in La Moneda, the bombed and flaming presidential palace in Chile's capital, Santiago.

Chileans once enjoyed the longest tradition of political stability and civil liberty in Latin America, seldom broken since they won freedom from Spain in 1818. Constitutionalists, democratically voting, peaceful compromisers, models of mutual respect, and sticklers for legality, only in their pride were Chileans extreme. With the hemisphere's second oldest congress, after the United States, they bragged they were the English of South America.

Against this background Allende, who in 1970 garnered a razor-thin plurality in a three-way race reflecting the habitual division of Chileans into right, center, and left voting blocs, began to rule as a minority president. But increasing strife among a privileged elite, a large middle class, and a vast pool of the poor reached such a pitch that by 1973 many Chileans, fearing civil war, at first welcomed the coup that ended a thousand days of Allende's socialist-communist regime.

They have found military rule neither brief nor relatively bloodless. At 72 Captain General and President of the Republic Augusto Pinochet (now wearing five stars, more than any other Chilean officer in history) still strives to lay to rest the ghosts of Marx and Allende—an exorcism conducted through a sweeping capitalist overhaul of Chile's economy, coupled with ruthless war on ultraleft urban guerrillas (who nearly assassinated him in 1986) and internationally condemned abuses of human rights aimed at even peaceful democratic opponents.

Conceivably in 1989 or 1990 he may exit, for the coming months will bring a presidential plebiscite, by all odds the most decisive event for Chile since the 1973 coup. The one-man contest with a yes-no ballot and a still unnamed candidate climaxes a "transition period" opened in 1981 by adoption of a constitution of Pinochet's own design. He or

President on his own terms, Pinochet, here with his wife, María Lucía, took power in 1973 after air force planes bombed the palace occupied by then President Allende. A canny, tireless politician, Pinochet sees his mission as the eradication of Marxism, by any means. "I wasn't looking for this job," he says. "Destiny gave it to me."

CHILE

SHOESTRING Chile, no more than 380 kilometers wide anywhere, stretches 4,265 kilometers (2,650 miles) down the western coast of South America. Nearly twice the size of California, it is an area of geologic instability, prone to earthquakes, tidal waves, and volcanic eruptions. The Andes trail down its length, isolating it from the rest of South America, and make a final appearance at Cape Horn, peak of a submerged mountain. Chilean possessions include Easter Island and the Juan Fernández Islands. The country claims a 1,250,000-square-kilometer (483,000-square-mile) wedge of Antarctic territory, which overlaps similar claims by Argentina and Britain. Resolution of the dispute remains in abeyance under a multinational treaty.

AREA: 756,626 sq km (292,135 sq mi). **POPULATION:** 12,500,000. **CAPITAL:** Santiago, 4,500,000. **PRINCIPAL CITIES:** Concepción, 280,700; Valparaíso, 273,200; Talcahuano, 261,000. **RELIGION:** Roman Catholic. **LITERACY:** 94%. **LIFE EXPECTANCY:** 71 years. **ECONOMY:** Mining: copper, petroleum, nitrates. Industries: food processing, cement, textiles. Export crops: fruit, fish meal, wood and wood products, wine. Per capita income: $1,465.

NGS CARTOGRAPHIC DIVISION
DESIGN: JOHN W. LOTHERS
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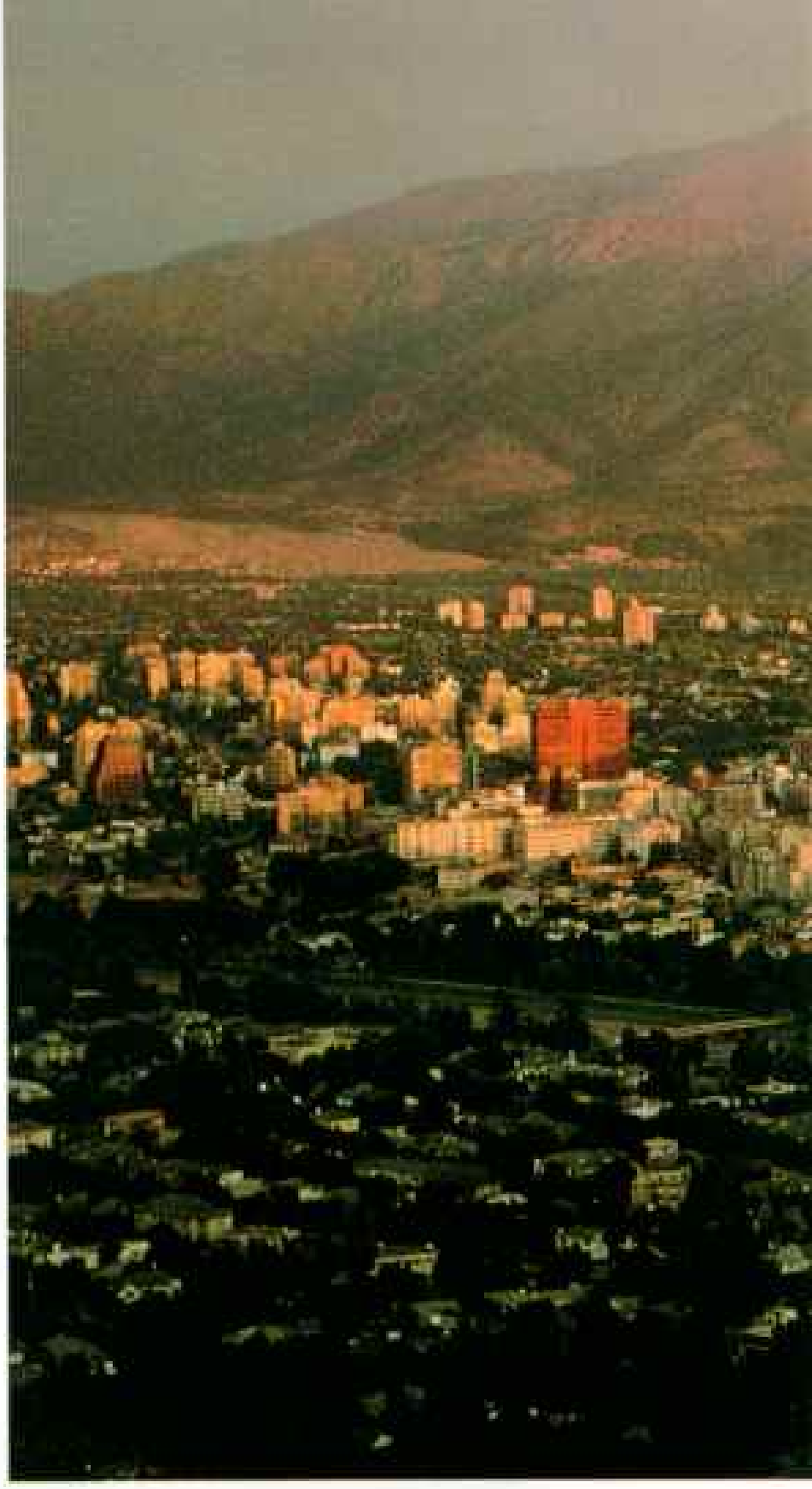
PRODUCTION: NICKI MORAN, BARBARA CARRIGAN
MAP EDITOR: JOHN T. WILCOX

Cradled in the lap of the Andes, Santiago harbors 4.5 million, more than a third of all Chileans. A veil of smog is common; the Andes form a wall that traps pollution. In an outlying town bikers get ready to roll in a procession highlighting the post-Easter holiday known as Quasimodo.



someone of the regime's confidence must win the coming referendum or within 12 months hold free elections and step down. But some Chileans fear that a resounding "no" vote might drive a desperate Pinochet to kick over the game board with savage repression rather than retire.

Chile faces this crisis behind the barriers of the world's driest desert, deepest ocean, coldest ice fields, and longest mountain chain, the Andes. Their nation's extraordinary geography accustoms Chileans to view themselves as remote islanders, but it has cost them psychological contortions to endure isolation these 15 years in a political landscape whose excesses depress, repel, and intimidate.

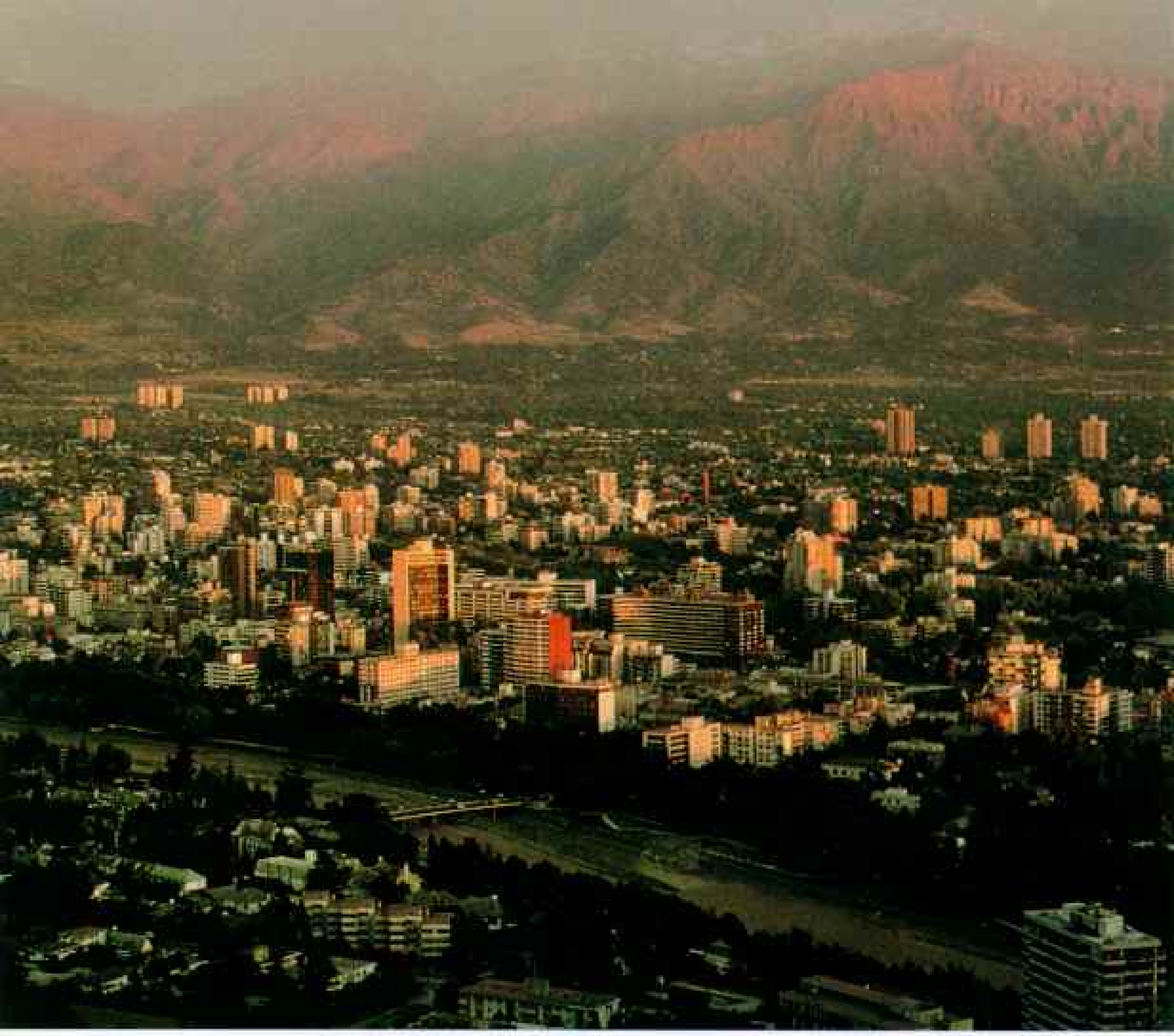
Yet they have learned a secret of survival:

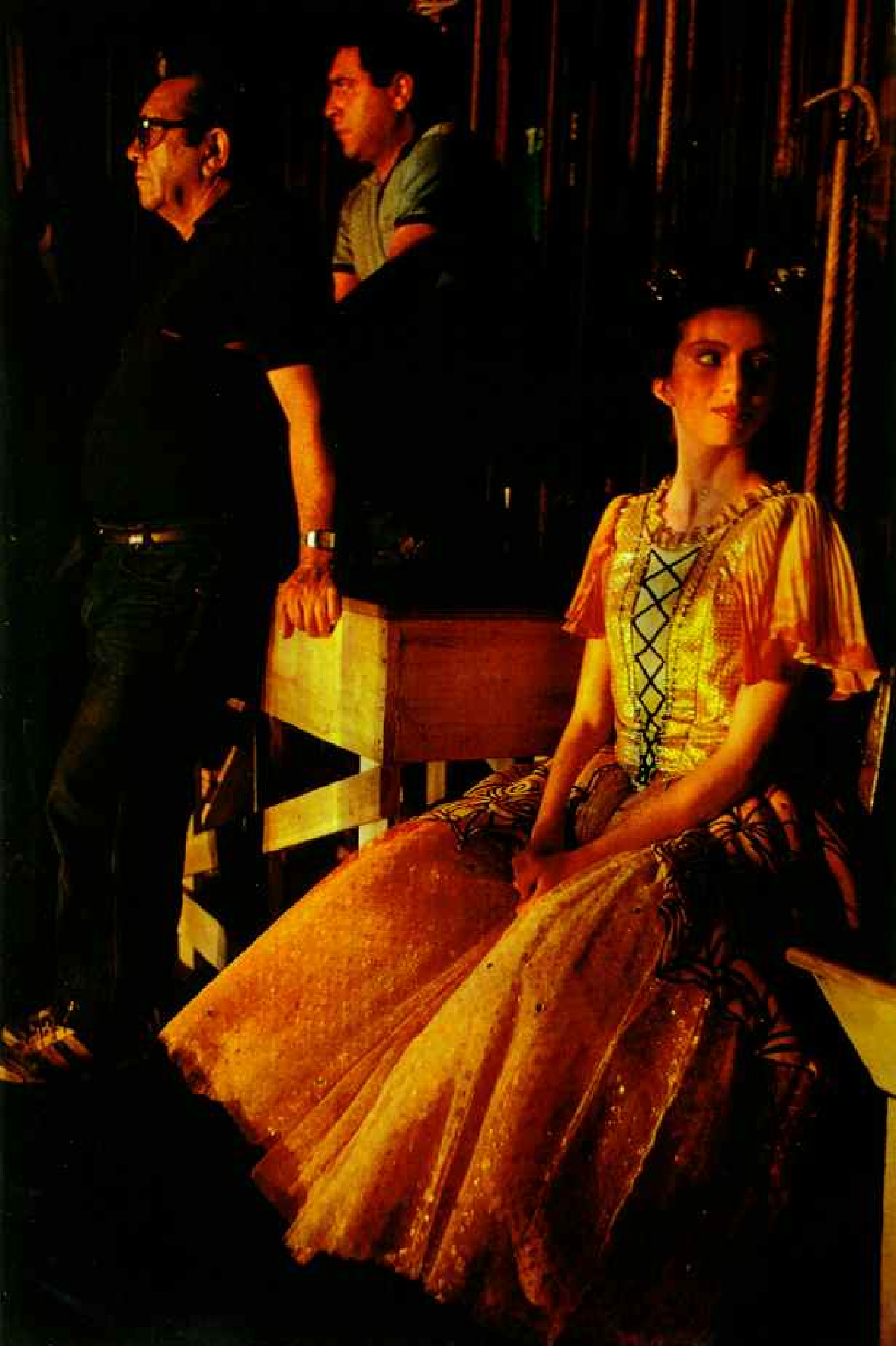
"Maybe we're just wise enough to know how to have fun once in a while," maintains a journalist friend, herself a past target of threats and bullets. "Some think they shouldn't, that Chile is too depressing ever to be happy in. They're wrong, for even if Pinochet died tomorrow, no one could give you back the years you stopped laughing." There are real grounds for the self-appraisal: "*Somos chilenos, somos diferentes*—We're Chileans, we're different."

FEW SINCE Ferdinand Magellan have come with such dramatic effect upon the longest narrow country on the planet—only 177 kilometers (110 miles) wide on average and strung like a ribbon down South America's lower west coast between the Andes and the Pacific. At other latitudes Chile, with the Antarctic territory it includes within its borders, would stretch from the North Pole to Jamaica. Its remotest city of Punta Arenas clings to land's end some 2,000 kilometers south of Santiago, yet lies only a third of the way from the capital to the South Pole, the limit of a Chilean claim to 1.25 million square kilometers (483,000 square miles) of the coldest continent. And 3,800 kilometers west over the Pacific brood the giant stone heads of Chile's most distant oceanic speck, Easter Island.

None of this appeared on Magellan's charts in 1520, when the Portuguese navigator sailing for the Spanish crown gambled that a strait wending V-shaped between the toe of South America and a labyrinth of islands might prove a long-sought sea track from Atlantic to Pacific.

Magellan took on water from a mountainous island half as large as Portugal, which he christened Tierra del Fuego, "land of fire," for the Indian watch fires he saw. Its clouds, flame-lit like auroras, fell away behind as Magellan swung his three *naos* northwest, skirting ever more islands, channels, glaciers, and twisting peninsulas. They splinter Chile's southern third into a wilderness slowly opening as geostrategist Pinochet, his wary eye on more populous Argentina, forces forward a dirt-and-gravel highway in a Chilean colonization thrust toward Punta Arenas.





It took Magellan and his fleet nearly six weeks to reach the Other Sea. The region he transited—Magallanes—was still little known when Charles Darwin landed there in the early 1830s, surveying coastal South America in H.M.S. *Beagle*. In central Chile the naturalist found fossil shells high in the Andes, proving that earth's second tallest mountains were once seafloor. From such insights Darwin evolved his famous theory on the origin of species. But for stupendous proof of geologic upheaval he need only have gone 400 kilometers north of the Strait of Magellan, to what is today Torres del Paine National Park.

The wind was up—as it always is, fiercely, in Magallanes—when I approached the park's namesake *torres*, three granite towers, the loftiest of them 12 million years in rising 2,600 meters (8,530 feet). Other Chilean peaks rear taller, Ojos del Salado to 6,885 meters in the north, second in the Western Hemisphere to Argentina's Mount Aconcagua, yet still the highest volcano on earth. But few thrust as sharply as the Towers of Paine, so sheer they went unscaled into the late 1950s.

From the park the wind blew me eastward into Patagonia. I couldn't tell Chile's portion of the semidesert steppe from Argentina's vaster share; sheep ranchers on both sides of the frontier potshot at pumas while ignoring condors and tawny, compact ostrich-like birds called *ñandúes*. In Magallanes flamingos and penguins also flock, the stilt walkers oddly near Antarctica and the frock-coat crowd seemingly just as out of place off the ice.

One golden afternoon in the uttermost part of earth I met Tomás Morrison Dick, a blue-eyed sheepman of 59 very much in place in Patagonia. Near the Río Penitente in 1891 Tomás's grandfather founded a typically Chilean *estancia*. Breeding and shearing sheep on the other side of the world from his native Edinburgh, Alexander Morrison Mackenzie centered his estate on a welcoming yellow house whose two-story red roof sheltered a world now waned: chintz-covered armchairs, lace curtains, French doors, wainscoting, tiled fireplaces, carved oaken mantels. Patagonian Indians, then vanishing, had left behind their bolas—stone-weighted throwing cords for snaring ñandúes. Somehow those relics were not so poignant to me as rolls of piano music moldering in an outbuilding, along with a book of etiquette for ocean travelers.

Thousands of Europeans pioneered Chile's southern frontier from the 1870s to 1914, when the new Panama Canal diverted windjammers and steamers from the strait and storm-lashed Cape Horn, ending Punta Arenas's boom. Founded in 1849 as a penal colony depot, the capital of Magallanes had swelled with a flow of arrivals such as Tomás's grandfather, Yugoslav merchants and farmers, and sailors jumping ships of all nations.

Such immigrants have leavened but not leveled a society of 12.5 million once predominantly Castilian on top and still primarily of mixed Indian and Spanish blood—mestizo—at middle and on bottom. Upper-class Chileans scrum on rugby fields at the Prince of Wales Country Club in Santiago and officer a navy modeled on Britain's. Lower-class migrants scrabble for spots in the mills of Lebanese-born textile magnates who weave deals in Spanish; two members of Chile's military junta chat in their grandparents' German when not with Pinochet, a middle-class son like them, but of French descent.

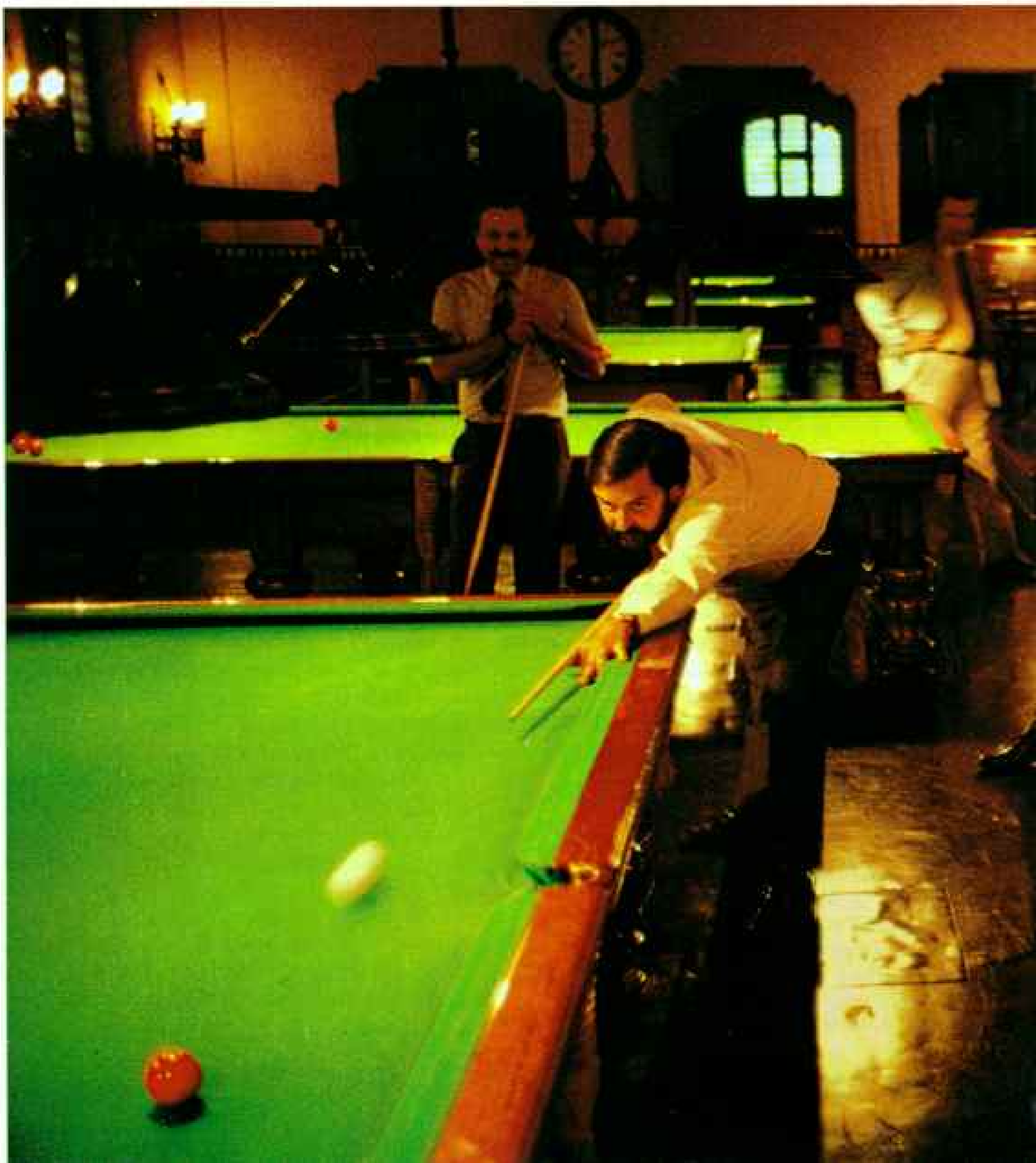
IN THE PEWTER LIGHT of early morning, several kilometers over wide-rolling pasture and shallow stream, I drove from Tomás's house to a scene of purposeful bedlam: shouts, whistles, dogs barking, sheep bleating as men herded flocks into a corral.

"I'm not political. I've never been interested in politics," Tomás protested amid the rising dust. In a day spent clipping blinder-like tangles of fleece from around the eyes of his sheep so that they could see to graze, Tomás deflected with alarm all my political questions save one: "What did you make of Allende?"

"I'd look at the Poles, the Czechs, the Hungarians and wonder how they could have let themselves be taken over by Marxists. Next thing I knew, the same was happening here in Chile."

Charting a "Chilean road to socialism," Allende vowed by peaceful means and in alliance with Latin America's oldest Communist Party to redistribute land and wealth, to nationalize industries, and to wrest natural

In graceful stillness a ballet dancer waits her turn at Santiago's Teatro Municipal. Although ballet and opera are popular, poetry remains the nation's cultural crown jewel. Besides Pablo Neruda, Chile boasts Gabriela Mistral, who won a Nobel Prize in 1945.



resources from foreign hands, especially U. S. firms with a choke hold on copper, Chile's main export.

The state took over most mines, many factories and banks. Wages jumped, but inflation skyrocketed. Hoarders and government blunders emptied food stores. A feeble land reform begun in the 1960s spun out of control as urban radicals led peasants in *tomas*, seizures—often at gunpoint—of farms and ranches.

"Landowners were labeled criminals," said Tomás. "I planned to take my family out to Argentina if things got too bad." Expropriation whittled his estancia to a fraction of his grandfather's 22,000 hectares (54,400 acres) and 8,000 sheep, most still unrecovered.

Pinochet quelled the disorder—sown in part by CIA aid to Allende's opponents—but not to restore political stability as most Chileans understood it. The new regime dissolved congress, outlawed the Communist Party, suspended even non-Marxist parties and labor unions. Troops swept up as many as 90,000 avowed and suspected leftists—one in every 125 Chilean adults. Many were purged from job or classroom, others tortured, perhaps 5,000 killed. Nearly 700 vanished without trace. Thousands were exiled or confined in concentration camps like one, now closed, on Dawson Island in the strait, actually a part of the Andes trailing into the sea.

"MOST CHILEANS are surprised when I tell them that at least 400,000 of us are Mapuche," said Carlos Aldunate, director of the Chilean Museum of Pre-Columbian Art in Santiago. The only Indians in the Americas to resist the Spaniards successfully throughout the colonial period, the Mapuche today are vitally interested in cultural survival. With each passing decade, the "people of the land" lose more of it.

Had he realized that they knew no word for tribute, conquistador Pedro de Valdivia might have hesitated before trekking from Peru across a searing desert into Chile's fertile Central Valley, where in 1541 he proclaimed Spanish rule, founded Santiago, and demanded land and gold of the Mapuche and related tribes, collectively called Araucanians. They killed him 12 years later and overwhelmed most of the towns south of Santiago in an uprising beginning in 1598. The rebellion ignited three centuries of sporadic frontier battles. When the "Araucanian War" finally ended in 1883, the Mapuche recognized but did not surrender to the Chilean government and were compensated by partial restoration of collective farmlands in south-central Chile.

This long conflict, its compromise conclusion, and above all the melding of its

Business and billiards click at Santiago's Club de la Unión, haven of Chile's old money. One of Chile's new entrepreneurs, Carlos Cardoen (top, with family and friends) parlayed his explosives company into the country's largest privately owned arms manufacturer. He exports more than 100 million dollars' worth of armament a year, chiefly to Iraq.

Freedom has severe limits in Chile, where the government allows some protests, such as one held by students in Santiago (right), yet often uses force to disrupt them. Of opposing political philosophies Pinochet says, "We have nothing against ideas. We're against people spreading them." At a cemetery marchers (lower right) commemorate the 1985 murder of three Communist Party members. Though officially downplayed, human-rights abuse has been documented by such groups as Amnesty International. A clergyman told the author, "The need is not to argue the existence of torture, but to stop it." In some respects the vise has eased. Chile's independent human-rights commission listed 118 cases of torture in 1987 as compared with 291 in 1986, but death threats have doubled.

combatants attested the birth of a Chilean temperament, at once sober and expressive, as given to solidarity in hardship as to individual triumph, and disposed always to hope, never to defeat. Just as well for Chileans, tested constantly by nature—as in this past year by cattle disease, a killer earthquake, summer drought, and the worst winter floods of the century.

Ironically, peace sapped Mapuche culture more than war. Cohesion forged by centuries of resistance decayed, and the Mapuche joined a general rural exodus that today has better than 80 percent of Chileans living in cities and towns, the reverse of a hundred years ago. A government drive to parcel communal Indian tracts into individually owned plots threatens further to fragment the Mapuche.

One advocate of privatizing Mapuche lands is Oscar Manquilef Aravena, Mayor of Nueva, or "new," Imperial, old Imperial having burned in the 1598 uprising. He is the first Mapuche mayor of this *comuna*, or municipal district, three-fourths of whose 35,000 people are Indian. Like all mayors and governors, he is also a Pinochet appointee.

"Recently the government has built 500 houses in Nueva Imperial; 3,000 in our Region of Araucanía," Manquilef told me. "They're free; recipients provide only the land, and they get title at once." The inducements to subdivide are many: new schools, health clinics, rural electrification, improved roads, farming assistance. "The point is to halt Mapuche flight to the big cities, especially by young people," he went on. "If we don't give them decent housing and services here, our Indian traditions will depart with them."

Others hold a different, embittered view: The regime's emphasis on fiscal prudence, private initiative, and free enterprise means that taxes squeeze more easily from one landowner than from a group of 20 or 30 Mapuche families; and anyone unable to raise enough to eat as well as pay taxes has the "liberty" of selling—usually to *huincas*, a double-duty Mapuche term for whites and thieves.

TO A TOURIST the loveliest region of Chile is a zone of limpid, mirrorlike lakes, roaring waterfalls, and gently fuming volcanoes perpetually capped with snow. To a Mapuche shaman, or *machi*, the Lake District is a


Pollo
Gol

meeting ground between God and man, and a battleground between good and evil.

"My life is always in danger," said José Gerardo Queupucura. "My greatest struggle has been to overcome a local male witch possessed by Satan, and Satan is very strong."

Machi Gerardo, 45, hardly seemed a match for Satan's surrogate: slender as a boy beneath a red-and-white poncho and with a high-cheeked face as mild and untroubled as a child's, set off by a purple bandanna. Still, we seemed safe enough in his *ruka*, a traditional Mapuche house, in the rolling wooded farmland outside Temuco, Indian market and crafts center and gateway to the resorts of Lake Villarrica. Its low wooden walls and high-peaked thatch roof enclosed a single dim and spacious room. On the central earthen

Overwhelmed by tear gas, a girl is carried to aid as a protest erupts at a Mass said by Pope John Paul II in Santiago last year. Rightist and leftist factions exchanged blame. Two dozen political groups splinter Chile. The Communist Party is banned; others exist under constraints.

hearth Machi Gerardo heated water for our maté, a green tealike brew made from holly leaves, while in the light of the low doorway his sister wove from memory a rug of intricate red-and-black pattern. Sacks of potatoes and corn lay heaped along the walls; from smoke-blackened rafters dangled yellow onions, scarlet peppers, and strings of garlic.

How could Machi Gerardo divine and combat a witch? "My vision is different from yours," he said after a pull at his maté through a silver straw. "This gift was revealed to me in a dream when I was eight. I was consecrated at 11. With passing years I have gained strength from the spirits above and from the earth, in which I root like a tree."

Some days as many as 60 Mapuche seek him out—to cure an ill, rescue a harvest, or pray for them at his *rewe*, an altar log incised with steps that symbolize a machi's power to elevate petitions to the land of the gods.

As I was leaving, he swayed before it in a trancelike prayer for my safety in Chile, lofting a singsong chant on the hypnotic thump and rattle of a pebble-filled drum. Possibly it made all the difference.

SANTIAGO NO ES CHILE—Santiago isn't Chile. Time and again you hear that disclaimer. And who's to scorn Valparaíso, two hours away? In its crescent harbor ships anchor at the foot of hills as plumb as San Francisco's, slopes that spill men down to stevedore in a major Pacific port. Homeward bound, they ride high in canting elevators, winched upward to shanties clinging to steep, twisting streets.

If Valparaíso, with its docks and shipping offices, is workaday, neighboring Viña del Mar is all play. Viña's glittering white casino and beaches lined with hotels and condominium towers draw summer throngs from Argentina and Uruguay as well as Chile.

Yet in several ways you must concede Santiago a special place in the sun. In a clear dawn it awakes suffused in gold, handmaid of the regal Andes soaring snow-crowned virtually at the city's eastern edge. As far south of the Equator as San Diego, California, is to the north, Santiago basks much of the year in similar bright warmth and dry breezes—and gasps each winter in a pall of smog. Despite driving restrictions and an expanding subway system, brown clouds continue to pour from 8,000 diesel buses jockeying with half the nation's private cars.

Where traffic congregates so heavily, so must money and people. Santiago has the most of both. Its stock market is hot, barely cooled by huge losses late last year on major international exchanges. Land values are up—especially in the *barrios altos*, uptown districts with pricey boutiques, fine homes, seemingly every BMW and Mercedes-Benz made this decade, and the only suburban shopping megamall in Chile.

Multilevel, air-conditioned Parque Arauco rivals for sophistication any U. S. fantasyland of consumerism. Goods dazzle in their variety and origin: designer jeans and sunglasses, furs and jogging suits, Swedish crystal, French perfumes, Persian carpets, Japanese computers. Shoppers exhibit uniform, well-to-do casualness and tribal habits. Teenagers, hanging out, laughing, trading secrets, ogling, dating, compose with their parents the richest fifth of *santiaguinos*.

I dined one evening in Bellavista, Santiago's nearest equivalent of New York's Greenwich Village, with the general manager of Chile's largest steel company, formerly owned by the government. Bankrupt under Allende,

it now exports to Europe, Japan, and Canada.

"Never before have so many Chileans owned a television set, a car, or their own home," Roberto de Andraca told me. Thousands of Chileans now hold shares in private companies, giving them a stake in the country's greater economic liberty.

Yet as recently as six years ago bankers and investors sang a doleful tune. Government free-market policies, pursued with keener ideological than economic vision, had reversed increasing state intervention in Chile's economy but also had inflated a speculative

Skylarking on a field of sand, Indian children play in the far-north Atacama. Here precipitation is a memory. "Utterly desert," Charles Darwin called it. The exploitation of nitrates in these sands in the 1830s sparked a boom later curtailed by the invention of synthetics. Other finds followed, including the immensely rich El Indio gold mine. To the west, where desert defers to the Pacific, teeming currents place Chile fourth among the world's fishing nations.

Sometimes tucked into urns for burial, mummified Indians like this one dating from A.D. 1000 were preserved by the Atacama's dry air. Ancestors of a Mapuche machi, or healer (below), may also have buried their dead thus. The Mapuche were never conquered by the Inca, nor by the Spanish who followed. Intermarriage has diluted their numbers; flight to the cities and pressure to divide communal land have undermined traditions.

bubble that was rudely pricked by global recession in 1982. Joblessness rose to 20 percent and 200,000 Chileans were flung into make-work programs. Industrial production plummeted to depression levels; collapsing banks and businesses thrust debt and stock back into the government's hands. A decade into Pinochet's rule, Chile had higher unemployment, a lower gross national product, nearly as much state control of the economy, and three times more foreign debt than under Allende.

In the face of massive demonstrations, Pinochet applied police and military might in 1983, a state of siege in 1984-85. Only in mid-1986, with the economy reviving, did the protest falter, opposition leaders and a general strike failing to turn out Pinochet.

Chile has regained much economic ground. Investments and loans flow strongly to a debt-or with one of Latin America's highest credit ratings as well as a relatively low rate of inflation—22 percent in 1987. (Mexico, in contrast, suffered 144 percent, Brazil 338 percent.) Prompt to pay interest and to heed spending guidelines imposed by lender banks, Chile wins new aid or refinancing, even with a 19-billion-dollar foreign debt—one of the developing world's heaviest per person. Also helping are "debt-equity swaps." With much sought dollars paid to the Central Bank,

investors buy at deep discount foreign loans owed by Chilean companies, gaining a share in them and realizing a profit pledged to be spent in Chile. Critics point out that Chilean firms are thereby unduly exposed to foreign control and that purely financial deals, such as investments in banks and insurance companies, produce no jobs.

Stock sales to foreigners and Chileans have helped privatize all but a handful of the 479 enterprises once controlled by the state. At the helm of many of these firms are business executives of a new breed. Cosmopolitan, versed in the latest management techniques, they are the pride of a regime intent on modernizing not only roads and industries but also the mentality of Chile's people. This new entrepreneurial class relaxes on farms and vineyards outside Santiago or flaunts other status symbols: long vacations skiing the glistening Andean slopes at Portillo, a world-class resort, or sunning poolside at coastal villas at Zapallar.

WEALTH IN SANTIAGO may concentrate in deep, exclusive pools, but the city's human tide laps ever more broadly at the foot of the Andes, fed by migrants seeking work. In three generations santiaguinos have multiplied 18-fold, to four and a half million, despite Chile's having one of Latin America's

lowest birthrates. Santiago may not be Chile, but more than one-third of all Chileans choose to live there.

Poverty and its kin, political discontent, root most deeply in Santiago's *poblaciones*, shantytowns sprung up like mushrooms around the main city. Perhaps a million and a half *pobladores* crowd there, many of them newly arrived migrants sardined into the tiny houses of friends or relatives, eating and sleeping in shifts.

"When we're all together—30 of us—it's pandemonium," one householder, Norma, told me. "When we sleep . . . well, it's as if we're hanging from hat hooks." In the población of Conchalí I learned how Santiago's poor organize against despair.

Foremost you need solidarity. That was the only abundant ingredient at a community kitchen—half of an unpainted two-room wooden house—where I watched six children barely big enough to sit at table spoon their one meal of the day from bowls. Fifteen families, 94 people, had pooled noodles, vegetables, and other basics into hot soup.

"Everyone here is hopelessly behind on mortgage, light, and water bills," said Francisca, the soup-kitchen president. (Although the electricity was disconnected when her payments were past due, she secretly tapped back into the local power line like many neighbors.)

As in 40 other soup kitchens in Conchalí and 500 across Santiago, children and mothers came and went, filling pots to carry home. I saw but one man, who told me, "Men are ashamed to visit or help at soup kitchens, or can't because they're out hunting work."

Those men who do appear at the kitchens are often organizers from the Vicariate of Solidarity, the Roman Catholic Church's human-rights agency in Chile. The church is the primary counterweight to the government's power in Chilean society, enjoying some measure of immunity in its support for the political opposition, and its Vicariate volunteers help pobladores cope with growing social problems: alcoholism, depression, broken marriages, delinquency, prostitution.

Officially unemployment now hovers at around 8 percent nationwide, well down since the 1982 crisis. But slipping through the mesh of government statistics is a vaster group of Chileans in unstable, self-invented jobs. These "marginal ones," *los marginados*, work the fringes of the economy as hawkers of

Heels over head, a girl at play enlivens a barrio in Valparaíso. Chilean society

sandwiches a middle class that includes more than a third of the population between a small, wealthy elite and a predominantly mestizo low-income group.

cheap wares, self-appointed parking attendants, or *carboneros*—rag and paper pickers who push tricycle carts from end to end of the city in odysseys for recyclable bottles, boxes, and newspapers. Perhaps partly because it has so many poor, Santiago is one of the world's cleanest capitals.

A REDUCED ROLE in health, education, and welfare is another article of official economic faith in Chile. Commercial pension plans now substitute for a largely dismantled social security system; private universities have opened as tuitions rise and budgets fall at state schools; beyond basic pulse-taking, state health care is increasingly pay-as-you-go.

Even so, Minister of Health Juan Giaconi Gandolfo advised me, "Infant mortality has been halved since 1977. We've more than halved maternal deaths, and 97 percent of babies are hospital born—the best indexes in Latin America, after Costa Rica and Cuba."

Ill myself in Santiago, I entered Clínica Alemana, typical of for-profit hospitals outfitted with high technology. On exit I encountered a Pinochet-endorsed freedom of choice: "How do you wish to pay? We accept Diners Club, Visa, MasterCard, and American Express, if you have no insurance."

Most Chileans haven't, and go to National Health Service hospitals, such as Hospital Salvador in Santiago.

Pulling on doctor's whites, I made rounds with a "taxi doctor." Only the fees he earns half days at a private clinic enable him and other shuttling physicians to staff state hospitals squeezed by budget cuts and guidelines directing that they be self-supporting while serving mainly those who cannot pay.

"It is difficult these days to separate public health and politics," he said. "You won't use my name?"

I shook my head.

"*Entonces vamos*—then let's go."

We elbowed our way across a jammed admissions hall. "They're here at 7 a.m. for admission slips, then wait hours to see you."

Down an overflowing corridor we slipped into a room partitioned by threadbare green sheets into examination cubicles. Pulling out an X ray, the doctor held it high beneath his only light, a fluorescent ceiling fixture.

A middle-aged woman with shy eyes and worn hands laid a dog-eared rectangle of paper on the metal desk: her medical record urging a gallbladder operation. Dismay clouded her face at questions about work and income.

"I'm a maid, with four children. My husband left, ashamed at no work. For nine-hour days I earn 8,500 pesos a month." The price of bread and bus fare crossed my mind: 100 pesos a kilo, 50 or 60 pesos a ride.

The doctor sighed, signed a second paper. She'd have her operation, at state expense. "Check back in a month to see when." The woman whispered thanks and left.

"Some patients must wait a year, we're so short of equipment and supplies," said the doctor. "We bring what we can from the private hospitals: antibiotics, X-ray film—even sutures. Today, if my own mother needed surgery, I'd never put her in Hospital Salvador."

His final visitor was another woman, elderly and bent, but erect of spirit. She said nothing of the cancer consuming her bladder, hardly admitted to the constant headaches and nausea.

Aside, the doctor said to me: "She requires food as much as anything, but I can't prescribe a decent diet on her 3,000 pesos a month." To her he pronounced:

"I'm prescribing you an analgesic."

Between doctor and patient there ran a momentary current, dignity from the woman, compassion from the man. On both sides, it was all that was left.

In copper country near Chuquicamata, a smelter worker wears a mask to filter fumes. Chile holds one-fifth of the world's reserves. Once totally dependent on copper, the economy has diversified, but the metal remains its premier export.

IT WAS APRIL in Chile—autumn in the Southern Hemisphere—and beneath shady arbors of a vineyard on the outskirts of Santiago, pickers reached up to cut emerald bunches of table grapes. Last year 40 million boxes went overseas; nearly three-quarters of the grapes imported by the U. S. come from Chile.

Fruit, lumber, pulp, and fish meal are leading an export surge that has made Chile more competitive in world trade and less susceptible to foreign financial shocks and economic control. No longer does the world's largest copper producer depend dangerously on the erratic market value of the metal Salvador Allende called "the wage of Chile."

The greatest open-pit copper mine on the globe yawns two kilometers wide and twice as long in Chile's arid north, outside the oasis city of Calama. The surrounding Atacama Desert is mineral rich and incredibly dry: Rain has never been recorded in parts of this stony wasteland, sere and shriveled as the moon.

North of the Atacama, along Chile's border with Peru, aridity has preserved mummified Indians buried 3,000 years before Egyptians embalmed their pharaohs. Hundreds of other mummies recovered in the Atacama itself probably include ancient copper miners. Their nicks in the earth have been effaced by Chuquicamata, the mine all Chile knows as "Chuqui."

Chuqui's scale stuns both eye and ear. I winced at the diesel roar of mammoth ore trucks charging by from pit to crushing plant, their tires alone dwarfing me. Yet seen from the lip, the same vehicles, 500 meters below on the mine floor, appeared no more than creeping green-and-yellow beetles, even their thunder swallowed in the enormous gulf.

In 1986, 1.4 million metric tons of copper poured from smelters at Chuqui and other mines—Chile's largest export by volume but ringing up only 40 percent of export earnings. On a broadening base of exports, Chile enjoys more economic independence than many developing nations.

That wasn't the case just before World War I, when European chemists created from nitrogen in the air a synthetic substitute for nitrate, another Atacama mineral. This collapsed a 40-year boom during which nearly all Chile's revenue had flowed from a virtual world monopoly on natural nitrate needed for fertilizers and explosives. Recovery from disastrous overspecialization took decades.

Memories of nitrate millions still linger in mineowners' mansions more than a thousand kilometers north of Santiago, in the port of Iquique. There in the Palacio Astoreca I found the main hall resplendent beneath an art nouveau stained-glass ceiling.

In contrast, nitrate miners led dogs' lives. Dynamiting and jackhammering desert crust, they were paid in scrip, swindled at company stores, so exploited that the sterile Atacama became a forcing ground in 1922 for the birth of Chile's Communist Party.

When a ban in 1948 for a time outlawed the party, some miners shared internal exile among nearly 500 leftists in a prison camp near Iquique. It's unlikely they've forgotten the army captain who served as camp commandant—Augusto Pinochet.

At eight o'clock one morning in La Moneda, the presidential palace in Santiago, I had the opportunity to interview Pinochet. Early exchanges brought us to a delicate juncture:

"Is there some limit, moral perhaps, to action against subversive activity?" I asked.

"The only moral constraint is to teach people what Marxism is. Many say poverty makes communists. Not so. Millionaire boys have turned communist, not out of poverty but because they've taken it into their heads that the world must be changed—changed in favor of the Russians."

I thought of a dilemma facing the U. S.: Whether if Pinochet were not supported, Chile might again see Marxists in power. Or whether if not pressured to democratize, he would make more communists. The president broke into my very thought:

"What does the U. S. have to teach me about Marxism, never having won a war against it, as we have? Look at a map of Europe in 1940 and at one for 1945; look in whose hands Eastern Europe remains, and North Korea. Look who won Cuba, won Vietnam—look who's winning Nicaragua. What are Americans going to teach me about democracy?"—in whose tolerance for dissent he sees the seeds of its own destruction.

IN AUGUST 1986 Chileans reacted with shock and disbelief to news that 80 tons of arms and ammunition had been uncovered in old mines near the town of Vallenar in the nation's north. Landed from Cuban trawlers? Cached by urban guerrillas of the Manuel Rodriguez

By heft and by deftness, workers harvested 812 million dollars in crops last year. A woodsman heaves a log cut for pulp in south-central Chile, where land planted in timber has increased sevenfold since 1973. Central Valley grapes go straight from vine to crate to minimize bruising. Opposite seasons enable Chile to supply the U. S. with 70 percent of its imported grapes.

Patriotic Front, or FPMR? More weapons turned up later in Santiago itself.

I inspected the captured arms at a Santiago arsenal. Soviet-made grenades and rocket launchers shared space with U. S. rifles abandoned in Vietnam. Machine guns flanked mortar shells, dynamite, and plastic explosives; bayonets, millions of rounds of ammunition, and North Vietnamese rifle slings lay heaped about.

I hefted a submachine gun, its clip spent, and shouldered the scorched firing tube of an antitank rocket. In September 1986, FPMR guerrillas had used these and other arms to ambush President Pinochet's motorcade en route to Santiago from a weekend in the country. Three cars were rocketed; five bodyguards died; only a bullet-pocked Mercedes-Benz sped away. Inside, shielding his ten-year-old grandson, Pinochet kept low behind a window whose bullet cracks seemed to him to compose an image of Our Lady of Perpetual Help.

Politically, the attempt to kill him was a godsend for Pinochet. Moderate opponents were alienated by the FPMR's audacity. Thousands of supporters rallied for him in Santiago. A state of siege was again clamped on the city, making it easier to ferret out FPMR cells, to stifle critics, and to continue to abduct, torture, and execute leftists.

Though the siege was lifted early in 1987, the list of freedoms denied remains long. A state-of-emergency decree, periodically renewed without lapse since 1973, curbs freedom of assembly and speech. Chileans may be arrested without warrant and detained without charge for as long as 20 days, then tried in military tribunals for purely political offenses. Overwhelming majorities in the United Nations have censured Chile for such human-rights abuses.

In the past two years Chileans have begun to experience the paradox of more breathing room amidst continuing terror. Banishment—abroad or within Chile—is today rarely invoked, and the number of exiles has dwindled from thousands to hundreds, most of them permitted to return. Red Cross visits to political prisoners are now allowed. Non-communist political parties may reorganize but have limited access to television and exist in the absence of elections.

"Now we speak our minds, by and large, criticizing the regime mostly at the risk of harassment or a beating," said José Zalaquett, a former Allende official and later a human-rights activist, who returned from exile in 1986. "That's still abhorrent, but it certainly makes a difference."

Some Chileans act as though public intimidation didn't exist. Fleeing club-swinging police and a water cannon's powerful swiveling blast during a demonstration in Santiago's central plaza, I glimpsed people seated on benches, chatting on, eyes watering, in clouds

Reined to a screeching halt, a cowboy's mount kicks up dust during branding roundup on a ranch southeast of Santiago. To the south dairy cattle graze pastures in the Lake District. Near the regional capital, Puerto Montt, a dairyman stands in front of a German-style church he helped build (right). The area was settled largely by Germans recruited by the government in the mid-1800s.

A rabbit springs a surprise on Sergio Zapata, grandson of Spanish settlers, and his daughter Juanita (facing page). Resident of a población, or shantytown, outside Santiago, he lives catch-as-catch-can, picking grapes in season, fixing bikes or collecting bottles in other months. Perhaps 40 percent of the labor force lack fixed jobs and make do with menial work. Under Allende's socialism, Chile bloated with runaway inflation, the rate at times as high as 500 percent a year. Pinochet muscled the country back to capitalism, brought inflation in hand, and restored economic equilibrium. But wages remain depressed, and the gap between rich and poor has widened.

of tear gas. Kiosk vendors hastily draped plastic sheeting over magazines and newspapers with anti-Pinochet headlines.

WHAT LIES AHEAD if honestly or by fraud Pinochet wins the coming plebiscite, extending his rule until 1997? Forecasts range from sanguine to sanguinary—but mostly pessimistic prophecies of worsening social conflict, even civil war.

"If Pinochet remains beyond 1989—and that's most probable—there'll be increasing turmoil here," Orlando Sáenz Rojas told me. Onetime conspirator against Allende, early economic adviser to Pinochet, and now biting critic of the regime's human-rights record, Sáenz resembles many moderate Chileans. He is prepared to make many concessions—even to accepting a center-left president—to avoid either a continuation of military dictatorship or a collapse into anarchy. "It's like flying a plane with fuel tanks on empty," he told me. "I'll consider any landing place that will spare me destruction and save my passengers."

It was with similar loving anxiety that an exile had once spoken to me of Chile as "that tiny little poor country." The phrase is typical of *apocamiento*, the Chileans' disarming penchant for diminutives, by which they reduce things—their hopes and fears, even their nation—to an ingratiating scale.

The exile longed for Chile; indeed, I never met a Chilean, in whatever circumstances, who wished to leave: a unanimous act of faith in their country. Moved at my recollection, I stepped into the Basilica of Our Lady of Perpetual Help and offered that prayer of Augusto Pinochet—but now on behalf of all Chileans: "*Gracias Madre Mia, Ayudame Siempre*—Thank You My Mother, Help Me Always." □

In the embrace of faith and family, Chileans find their own peace. A procession on Chiloé Island celebrates the feast of the Immaculate Conception; a hug celebrates the bond between father and daughter. So too the bond between Chileans and Chile is cherished and prayed for. "My country take care of your light!" wrote Pablo Neruda. "Hold up your stiff straw of hope."

When the Moors

By THOMAS J. ABERCROMBIE
NATIONAL GEOGRAPHIC SENIOR WRITER

Photographs by BRUNO BARBEY MAGNUM

Ruled Spain

الغرب

LEAVING THEIR MARK in every land they conquered, Muslim Arabs surged out of the Middle East into North Africa in the seventh century A.D., crossing the Strait of Gibraltar into the Iberian Peninsula. Known as Moors, they ruled in Spain for almost 800 years—until 1492, when they were ousted by Their Catholic Majesties Ferdinand and Isabella. The Moors left behind a cultural legacy still evident in both Spain and Morocco, where palm prints decorate a wall in the harbor town of Essaouira.

ARABIC CALLIGRAPHY DEPICTS AL-MAGHRIB (NORTHWEST AFRICA).

THROUGH PARTING CURTAINS OF DRIZZLE the lights of Africa dissolved into the widening gray dawn. Climbing back on deck with course corrections and hot coffee, I watched the last ghosts of lightning dance off the flanks of Morocco's Jabal Musa just astern. To the east a fine day was building; already the first breezes stiffened our sails and, gently heeling, our small chartered sloop *Nejmah*—Arabic for "star"—started to gallop.

"Perfect weather for a morning's sail—or an intercontinental passage," said my Spanish shipmate, Rafa, beaming from behind the wheel. Here the narrow Gibraltar Strait is one of the few places a sailor can combine the two. The radio forecast confirmed our optimism, and as Rafa eased our bow to 015° magnetic to allow for the tide, I switched the dial back to Spain's Radio Flamenco. We scanned the rising mists ahead for our landfall, snapping fingers to a Gypsy guitar.

Suddenly our destination raised its sheer silhouette above the haze ahead: Gibraltar.

"*¡Olé, que bonita!*" Rafa exclaimed. "Wow, what a beaut!"

A beacon for mariners since the dawn of seafaring, the famous Rock was one of the Pillars of Hercules (Jabal Musa, twice as high behind us, formed the other). For the ancients they marked the boundary of the known world. To the occupying British, strategic "Gib" with its history of heroic sieges remains a monument to empire. Spain vociferously claims the tiny peninsula, a natural extension of its own soil.

Rafa—Rafael de Tramontana y Gayangos, the Marquis of Guadacorte—measured the scene with his own thoughts. Before Spain lost Gibraltar to England in 1713, the Guadacortes ruled hereabouts. A grandson of Dr. Pascual Gayangos, Spain's first modern Arabist, Rafa now presides over the Fundación Gayangos, a Madrid-based institute to promote cultural exchange between Spain and its Muslim neighbors. For me the stronghold marked the first stop on a journey into a neglected corner of Europe's history, a distant time when Muslims ruled Spain, and Islam visited its mind on the West.

The creed of Islam had been revealed to the seventh-century prophet-statesman Muhammad in distant Arabia. It spread swiftly, embracing the entire desert peninsula by the time of his death in 632. Six years later Syria and Palestine fell to the zealots. From their new capital in Damascus, Muslim armies fanned eastward through Mesopotamia to India and Central Asia, westward to the Nile and across North Africa. A century after the birth of Islam, its call to prayer rang from minarets all the way from the Atlantic to the outskirts of China, an empire larger than Rome's at its zenith.

History named these Muslim conquerors of Spain "Moors," probably because they arrived by way of Morocco. The Moors themselves never used the term. They were Arabs, from Damascus and Medina, leading armies of North African Berber converts. Most married into Spanish and Visigoth families or took fair-skinned Galician slaves to wife; soldiers all, they brought no women with them. From this heady mix of race and culture sprang the Moorish civilization, an adventure that would last 900 years, one that would change the face—and the soul—of Spain forever.

Rafa and I were bobbing in the wake of Tariq ibn Ziyad, a Muslim general. With soldiers and horses in four borrowed boats, he crossed from Ceuta on the African side—as did we—and set up his beachhead on the narrow ledge below the Rock where the town of Gibraltar

TWO-INCH BRONZE HAND OF FATIMA IS PRESERVED IN THE MUSEO ARQUEOLÓGICO, GRANADA, SPAIN. NATIONAL GEOGRAPHIC PHOTOGRAPHER VICTOR R. BOSWELL, JR.

GLORIOUS TESTAMENT to Moorish Spain, the Great Mosque of Córdoba (opposite) rose in A.D. 786. During the Reconquest of Spain a cathedral was erected within the mosque. These hooded penitentes pass soaring Moorish arches during Holy Week. In its heyday under the Moors the city of Córdoba boasted half a million inhabitants, 500 mosques, and 300 public baths, and was rivaled only by Constantinople and Baghdad.

A popular Muslim symbol, the hand of Fatima (above) pays tribute to the daughter of the Prophet Muhammad. The motif appears frequently in Moorish art.

الأندلس

AL-ANDALUS (SPAIN)

A PILLAR OF HERCULES, *Morocco's Jabal Musa rises beyond the narrow Strait of Gibraltar that separates the tip of*

Spain from Africa by just nine miles. From here, Tariq ibn Ziyad set sail to conquer Spain, landing at the Rock of Gibraltar —the other pillar—in 711. (Gibraltar comes from the Arabic jabal Tariq—"Tariq's mountain.") After defeating King Roderic's Visigoth army at the battle of Río Barbate, Tariq's troops subdued most of Spain within a year.

huddles today, then dispatched the tiny fleet back to ferry the rest of his army.

In the spring of 711, Tariq marched northward from Gibraltar with 12,000 Muslims. At the Río Barbate, south of Cádiz, the invaders met the hastily gathered forces of Spain's Visigoth king, Roderic.

"Before us is the enemy; behind us, the sea," shouted Tariq, drawing his scimitar. "We have only one choice: to win!"

For an already faltering Visigoth rule, the battle of Barbate proved the mortal wound. King Roderic was slain; his body was never recovered. Whole battalions deserted, and the Christian army crumbled. The Islamic conquest of Spain was thus set in motion.

"Only recently have the Spanish begun to approach their Islamic past," Rafa said. "We take pride in our *sangre pura*, pure blood. No Catholic wants to face the thought of Moors on the family tree.

"But we are finding that much of what we think of as 'pure Spanish,' our architecture, our temperament, our poetry and music—even our language—is a blend from a long Arabic heritage." In the weeks ahead I would find even more marks of the Moors on the face and heart of Spain.

ONLY TWO HOURS from the African coast we sailed *Nejmah* past Europa Point Light and into the lee of the Rock to tie up at Marina Bay, just below the lofty Moorish castle built by Tariq's successors. Shops, warehouses, traffic-clogged streets, quays, and dockyards now cover any traces of the first Arab conquerors, all except one: The name Gibraltar descends from *jabal Tariq*, Arabic for "Tariq's mountain."

I visited the hillside Arab fortress with a knowledgeable Gibraltar friend, Richard Garcia, a former schoolteacher with a passion for the history that crowds his town. Along the way Richard showed me Moorish walls, traces of an Arab gate, the domed baths now housing Gibraltar's small museum. Narrow lanes and steep stone steps led us up a block of modern high rises that today fills the large castle yard to the 80-foot-high tower that dominates the town and its harbor.

"Abu al-Hasan, a Moroccan king, refurbished the tower in 1333, and he built it to last," Richard said, pointing out small starburst patterns that pocked the ramparts. "Cannonballs barely scratched the ten-foot-thick walls.

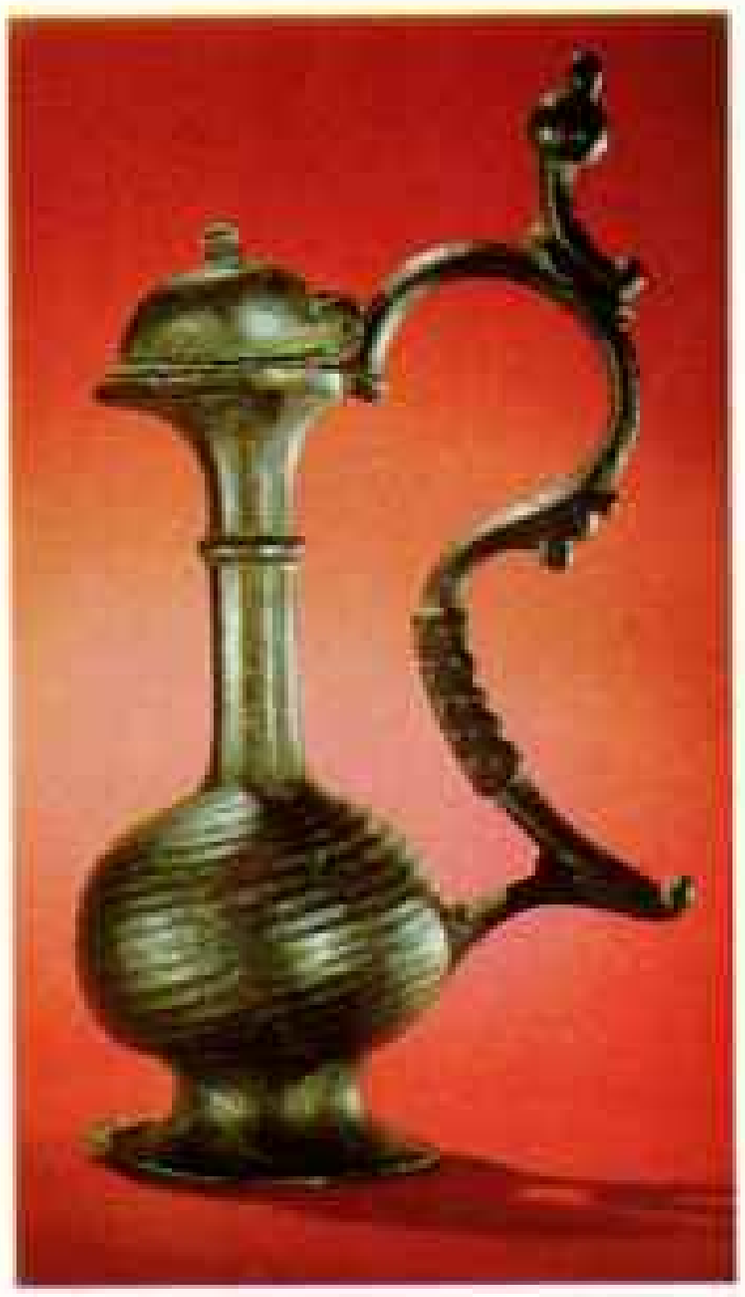
"The tower suffered 14 major sieges," he said. "Several times its defenders were starved out, but no army ever took it by force."

I was surprised to find the fortress still inhabited. The high-walled keep, just below the tower, serves as Gibraltar's lockup. Douglas Gaetto, an officer at the jail, showed me its newly painted cell blocks and what must be the world's smallest soccer field, squeezed into the prison yard. In cellars below we prowled rows of dungeons used for solitary confinement until the turn of the century. They faced on to a gallows courtyard and a lime pit once used to reduce corpses of the condemned.

"We have only eight 'guests' at the moment, small-time smugglers mostly. All short-termers," Officer Gaetto said.

"We are looking forward to newer, larger quarters. Money will surely be appropriated. The problem is—as always on this tight little island—where to build it?"

Gibraltar's claustrophobia was aggravated during Spain's 16-year-long closure of its narrow land border, a ban lifted only in 1985. At his



SMALL BRONZE PITCHER IN THE MOORISH STYLE, 8 INCHES HIGH, WAS POSSIBLY USED FOR DISPENSING OLIVE OIL. MUSEO ARQUEOLÓGICO, GRANADA.

office I talked about the isolation with Jon Searle, then editor of the Gibraltar *Chronicle*.

"We are 29,000 people perched together on two and a half square miles of cliffs and beaches," Searle said. "The blockage deepened our siege mentality. We developed more ties with Tangier across the strait."

And of Spain's oft voiced claims to the Rock?

"The British Empire is history now. In the age of the missile, Gibraltar's strategic value has dropped," Searle said. "Britain just might be happy to let Spain have it. But how can it, really? We Gibraltarians are bilingual, our culture tied to both Spain and England. But we prefer to remain under the Union Jack. In a recent referendum only 44 voters cast their lot with Spain."

STILL MARVELING at the vagaries of history, I followed the conquering footsteps of Tariq ibn Ziyad northward. After the victory at the Río Barbate he had moved swiftly. One by one the Spanish cities fell to him, often betrayed by their own citizens long chafing under the Visigoths. Early in 712, after a perfunctory siege, his Muslims galloped through the gates of the Visigoth capital, Toledo. The Christian armies, those left, were pinned in the northernmost mountains of Spain.

Hemmed by walls, moated by a loop of the Río Tajo, Toledo remained for nearly 400 years a stronghold of the Moors, who spun its tangled web of steep streets and narrow plazas. Its role as a border fortress is today recalled by the huge military school that sits atop an adjoining bluff.

In 1085 Alfonso VI of Castile and León wrested the city from the Moors; the *Reconquista*, or Reconquest of Spain by the Christians, had begun in earnest. But for several centuries after Toledo's recapture, the city remained bilingual, tolerant. Alfonso X patronized an important 13th-century translation school where Christian, Muslim, and Jewish scholars collaborated to render Arabic manuscripts into Latin—masterpieces like the commentaries on Aristotle by Ibn Rushd (Averroës); works on algebra and mathematics by al-Khwarizmi (from whose name comes our term "logarithm"); and the Canon of Ibn Sina (Avicenna), which remained Europe's standard medical textbook for 500 years.

Christians raised a cathedral befitting a capital of Castile and dozens of churches and convents. Toledo remains the country's religious capital; its archbishop still reigns as primate of Spain. Today synagogues and mosques have been restored and splendid palaces opened to the public—museums to display Toledo's abundant heritage. The whole city has been officially declared a national monument.

Artists and artisans, plying old Moorish crafts, still prosper. On Calle Santo Tomé a shopwindow sparkling with gold drew me inside to the friendly workbench of master craftsman Modesto Aguado-Martin. With a jeweler's hammer and steel point he deftly laid 24-carat thread into delicate patterns scored on a black iron platter.

"We turn out Madonnas, Bible scenes, and Star of David motifs, all popular with tourists who day-trip down from Madrid," Señor Aguado said, tapping away. "But, as you see, we specialize in arabesque designs.

"The art of damascene, as its name implies, came here from Damascus," he continued, the tiny hammer never missing a beat. "This

STYLIZED 9-INCH-HIGH BRONZE STAG. MUSEO ARQUEOLÓGICO, CÓRDOBA, SPAIN. BOTH BY VICTOR R. BOSWELL, JR.

MOORISH SPAIN

A LIGHT SLOWLY FADES

IN A MERE hundred years, the Prophet Muhammad's followers spread the word of Islam westward from Mecca through North Africa to Spain and France, where their advance was halted in 732 (map, top right). It took seven centuries for the Christians to reconquer their territory. The first major city reclaimed was Toledo, taken in 1085 by Alfonso VI of Castile and León. Under his tolerant rule Moors, Jews, and Christians flourished, and the city became a renowned intellectual forum. In 1236 prosperous Córdoba, seat of the

CALENDAR OF EVENTS

711 Tariq ibn Ziyad leads Arab-Berber invasion of Spain; southern Spain rapidly overrun.

732 Arabs defeated near Poitiers, France, by Charles Martel, stemming Arab advance into Europe.

778 Charlemagne tries unsuccessfully to invade Spain.

800 Charlemagne crowned Holy Roman Emperor by Pope Leo III in an attempt to unite Christian Europe.

822 Al-Hakam I dies after ruling Spain for 26 years. His reign put down rebellious Arab factions in Toledo and Córdoba.

900 Height of Moors in Spain; Christians continue the Reconquest. Córdoba becomes seat of Arab learning.

929 Abd-al-Rahman III the first to take title of caliph in Spain.

1066 Norman conquest of England complete with Battle of Hastings, and William the Conqueror becomes king.

1094 El Cid takes Valencia. Moors recapture it eight years later.

1095 Start of the First Crusade.

1118 Muslim city of Zaragoza taken by Alfonso I of Aragon.

1147 Almohad faction of Berbers captures Seville from the Almoravids.

1170 Thomas à Becket, the Archbishop of Canterbury, is murdered in Canterbury Cathedral during reign of Henry II.

1172 Almohads capture Murcia and unite Moorish Spain and Morocco, with capitals at Seville and Marrakech.

1215 King John signs Magna Carta at Runnymede.

1236 Córdoba taken by Christians.

1248 Seville taken by Christians as Moors are pushed farther and farther south. Work on Alhambra begins in Granada.

1275 The Marinids, Berbers from Fez, invade Spain and defeat Christian Castile.

1321 Dante completes his *Divine Comedy*.

1340 Christians defeat the Marinids in Spain at Salado, and the long history of Moroccan invasions of the peninsula comes to an end.

1347-1352 Black Death devastates Europe killing approximately 25 million people.

1415 Prince Henry the Navigator establishes school of navigation and cartography at Sagres in Portugal.

1428 Joan of Arc leads French armies against the English.

1453 End of Hundred Years' War between England and France. Johann Gutenberg uses first movable type to print Bible.

1469 Ferdinand of Aragon weds Isabella of Castile.

1492 Ferdinand and Isabella enter the Alhambra in Granada, crushing the last stronghold of the Moors. They finance the voyage of Christopher Columbus to the New World later in the year.

SPAIN'S LAST MOORISH RULER, MUHAMMAD ABU-ABDULLAH—KNOWN TO SPANIARDS AS BOABDIL—WORE THIS SWORD AND LEATHER SCABBARD. MUSEO DEL EJÉRCITO, MADRID

is an authentic Toledo design; it could have come from the dome of a tenth-century mosque. Pure Arabic."

A local sculptor, Máximo Revenga, took me to a Toledo museum he helped restore, the Taller del Moro, literally, the "Moor's workshop," although it never served as such. It was built during the 14th century as a palace in Mudejar style, a lavish blend of Arab and Gothic architecture that graces many Spanish monuments. Its high salons, arches, and alcoves were worked in *yeso*, an art the Arabs mastered, carving plaster walls with breathtaking patterns of flowers, geometrics, and calligraphy.

"Yeso is a demanding medium, requiring patience to master and speed to execute; the carving is intricate and must be finished before the plaster hardens.

"I studied the technique here at Toledo's School of Applied Arts," Revenga said. "Now I'm teaching it here. We must preserve this art; Toledo has dozens more Arab-style buildings—throughout Spain there must be hundreds—that need loving care."

The darker side of Toledo's past chilled my last afternoon in the city—an exhibit of old torture implements at the Hermandad gallery across from the cathedral. It included a rack, branding irons, skull squashers, thumbscrews, an iron maiden. The grisly display was assembled, according to the city's Council of Culture, to remind us that even today "human beings are victims of physical and psychological torture in many parts of the world. . . ."

I retreated back into Toledo's quiet gray streets dogged by ghosts. It was here, long after Alfonso VI, that the first victims of a growing Christian bigotry perished at the stake. In 1469 Prince Ferdinand of Aragon wed Princess Isabella of Castile; the marriage would unite Christian Spain under their rule. While waging war against Moorish potentates to the south, they would view as a threat Muslims and Jews in their own lands. In 1480 they established the Spanish Inquisition. Before it was over, three centuries later, thousands of Muslims and Jews had died; an estimated three million people were driven into exile. Shorn of its leading businessmen, artists, agriculturists, and scientists, Spain would soon find itself victim of its own cruelty.

A TRAIN RIDE SOUTH through sun-swept Andalusia brightened my mood. Here, across the warm, undulating landscape that nurtures rows of grape vines and olive and citrus trees, Islamic culture sank its deepest roots. Small wonder. Mediterranean Spain is a mirror of Morocco, a close cousin of the Levant. Here the Arabs felt at home. Indeed to a desert Arab, Andalusia—from the Arab *al-Andalus*—competed with descriptions of heaven in the Holy Koran: "gardens dark green . . . springs pouring forth . . . fruits and dates and pomegranates. . . ." In 756 Prince Abd-al-Rahman, who had escaped massacre when his dynasty was overthrown in Syria, planted his capital at Córdoba on the fertile banks of the Guadalquivir (from the Arabic *al-wadi al-kabir*, great river) in Andalusia's heartland.

Under Abd-al-Rahman III and his successors, 150 years later, Córdoba blossomed into a metropolis of half a million with, according to contemporary chroniclers, 21 suburbs, 500 mosques, 300 public baths, 70 libraries, and miles of paved, lamp-lighted streets. The largest city in western Europe, Córdoba stood with Baghdad and Constantinople as one of the great cultural centers of the world.

Córdoba's pride today is its venerable Mezquita, or mosque, which in 1986 celebrated its 1,200th anniversary. Begun by the first Abd-al-Rahman, it was enlarged and embellished to become what is considered today the epitome of Moorish architecture.

From its quiet Patio of the Orange Trees, past fountains where the faithful once performed their ablutions, I entered the 600-by-450-foot shrine, rivaling in size Islam's holiest in Mecca. As my eyes grew accustomed to the darkness, I wandered through the forest of jasper, marble, and porphyry columns, some 850, that support the tracery of double-tiered Moorish arches. Nineteen doorways, before they were walled up, let in light and air and extended the theme of the columns to the rows of orange trees in the courtyard.

My footsteps led me to the mosque's domed *mihrab*, or prayer niche. From behind its scalloped marble arches, amid the splendid mosaics designed by Byzantine craftsmen, Córdoba's rulers once led Friday prayers. Flowing Arabic calligraphy adorning the walls exalted Córdoba: ". . . praise to Allah who led us to this place. . . ."

In the dim vastness I hardly noticed the cathedral. After the Christian Reconquest, Catholics reconsecrated the Mezquita as a church and for 300 years held services there. Then the clergy persuaded Emperor Charles V to raise a cathedral in its midst, despite strong protests from city leaders. Later, inspecting the baroque incursion, Charles confessed disappointment: "By installing something that is commonplace, you have destroyed what was once unique."

From smaller parish churches issue the spirit and spectacle of Córdoba's Semana Santa, or Holy Week. Thousands of Cordobans line narrow streets and wrought-iron balconies to watch the processions. Their religious intensity reflects the passion that drove medieval Christians to oust their Moorish occupiers.

Twenty churches participate, circulating about 50 *pasos*, or platforms, set with ornate statuary. "Different scenes each day recall the Madonna, the Last Supper, the Crucifixion, the Burial," explained a Cordoban friend, Luis-Eduardo Prieto Rico. We finished our fried squid and garlic shrimp at El Triunfo, a small restaurant near the Mezquita, then wedged into the throng at the Plaza de las Tendillas to witness one of the processions.

To the beat of distant drums, the solemn escort arrived: files of 200 or more *penitentes*, ghostlike in long robes cinched with ropes and tall pointed hoods. Most carried long flickering tapers or swung smoking silver censers; others bent under heavy oaken crosses. Behind marched women of the parish veiled in black lace mantillas. The drums grew louder as the paso appeared from around the corner, in a blaze of light, swaying with the measured footsteps of some 30 bearers straining beneath it. The life-size Virgin sat draped in lace and rich brocades above banks of fresh white roses that perfumed the air. A hundred enormous candles set her silver halo aglitter and caught the sparkle of tears on her radiant face.

The drums stopped, the paso paused, and suddenly a woman in the crowd broke into song, a passionate *saeta*, the flamenco hymn for which Andalusia is famous. The words were Spanish, but the mournful melody echoed Arab and Gypsy origins:

Like the precious stones of a jeweler,
The tears that flood your lovely eyes. . . .

The stunning solo had its effect; throughout the applauding crowd

INTRICATE CARVING DECORATES AN IVORY BOX, 7 INCHES HIGH, MUSEO ARQUEOLÓGICO NACIONAL, MADRID. BOTH BY VICTOR R. BOSWELL, JR.

ELEGANT EQUESTRIANS in felt sombreros join the festivities at Seville's colorful April fair. Thousands flock to the annual feria, notable for its dazzling displays of horsemanship. Riders parade their skills on the spirited Andalusian, descended from a breed imported into Spain by the Moors. Mounted on light, fast horses, the Moors crouched over iron stirrups (facing page) still in use. A treatise on animal husbandry is preserved in a 14th-century manuscript.

around me I saw many eyes moisten as drums took up the beat and the paso moved on into the night.

THE QUIET COOL OF MORNING is the time to stroll Córdoba. After a strong, black *café solo* at the Bar Mezquita, I followed one of the twisting cobblestone lanes that fan outward from the mosque through the medieval Muslim quarter, some so narrow that a stretched handkerchief spans their walls. They lead to small plazas, some holding statues of Córdoba's famous sons: the Roman Seneca; Arab philosophers Ibn Hazm and Ibn Rushd; Maimonides, major Jewish scholar of the Middle Ages; the 15th-century general, Gonzalo Fernández de Córdoba, "El Gran Capitán"; Manolete, greatest of bullfighters.

Potted geraniums and carnations splash color on the tidy whitewashed houses that line the lanes. On many of the massive wooden doors, as on those in Fez or Damascus, hang heavy iron knockers in

EL ESCORIAL, MADRID (ABOVE); MUSEO ARQUEOLÓGICO, GRANADA (BELOW). BOTH BY VICTOR R. BOSWELL, JR.

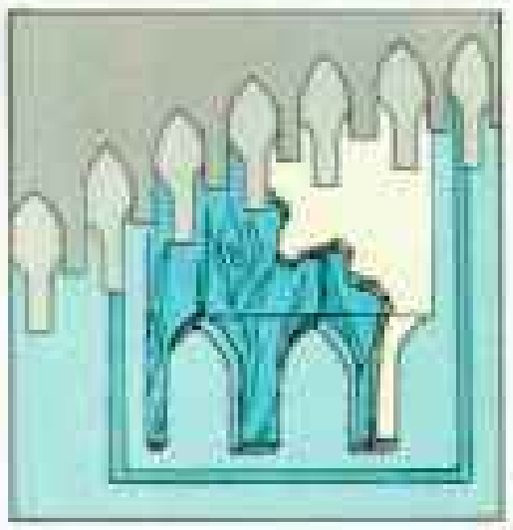
the form of a hand—the hand of the Prophet's daughter, Fatima, according to one legend; another says the fingers recall the Five Pillars of Islam: the creed, prayers, alms, fasting, and the pilgrimage to Mecca.

As in Muslim cities, a Córdoba house acknowledges the outside world only begrudgingly through small windows, iron-grilled and shuttered, turning its attention inward to the center of family life, the patio. At Number 8, Pozo de Cueto, near the river, I got out my key and let myself in.

"I cannot imagine a house without a patio," said my landlady, Señora Antonia Ortiz de Marín, bringing coffee and small glasses of amontillado, the local dry sherry. Now that the children were grown, she and her husband, a retired policeman, rent rooms during crowded Holy Week.

"How else, in such a small space, could we have had a private garden in the city?" she said. "A safe place for the children to play?"

Our patio was typical. Entered through a Moorish arch, it was



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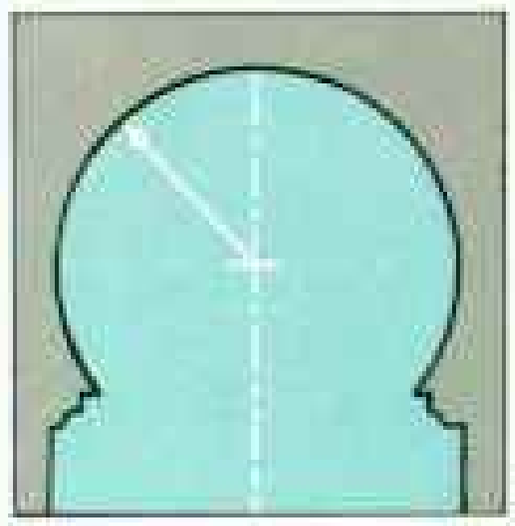

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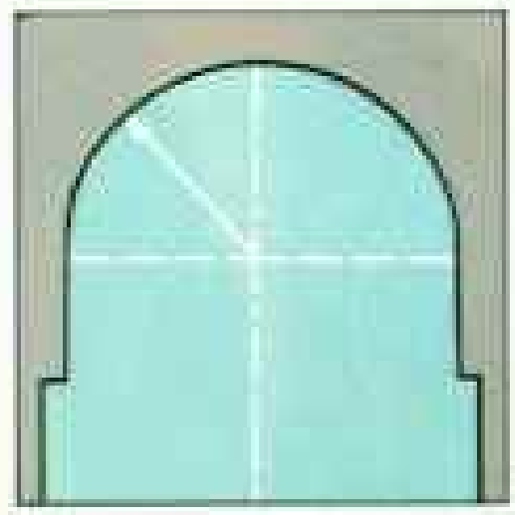

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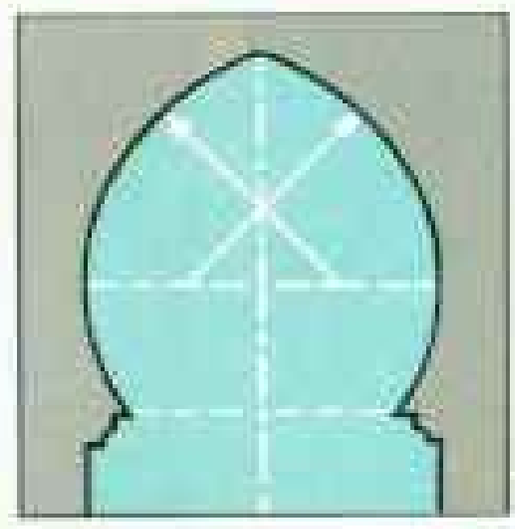

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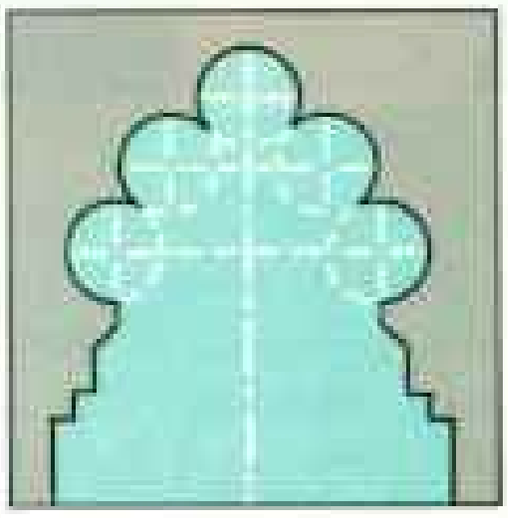

5

ART OF THE MOORS

MASTERPIECE of Moorish architecture, the 14th-century Alhambra palace-fortress in Granada reflects the Moors' love for ornate decoration and mathematical symmetry. The Court of the Lions (above), graced by fountains, conjures images of a cool oasis, thus becoming a symbolic refuge from the parched deserts of the Moors' ancestors.

Filigreed arabesques and curving arches delight the eye in a style of architecture that places more emphasis on decoration than on structural function. Admonished by Islam not to represent human or animal forms, the Moors drew their inspiration largely from flowers and vines.

National Geographic, July 1988

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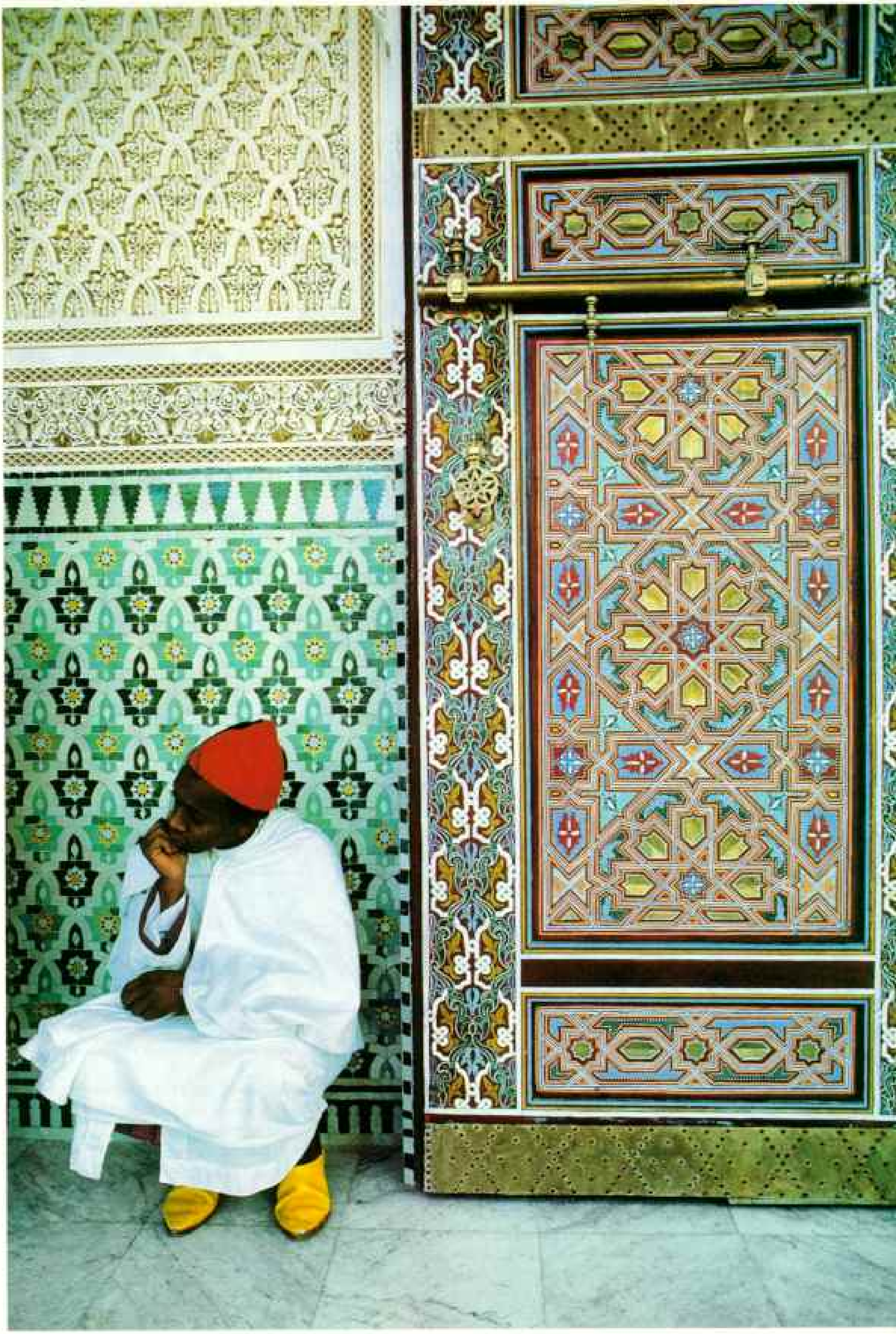
DIAGRAMS BY SUSAN SANFORD AND BETH COLLINS

Delicately sculptured stalactites, or muqarnas (1), of wood and plaster festoon the vaults of the Alhambra, whose walls and ceilings bear heavy loads of ornamental carving.

Four distinct types of arches were favored by the Moors: horseshoe (2), Roman (3), pointed (4) and the complex many-lobed arch (5). Calligraphy played a major decorative role: The formal Kufic script (6 and 7) may be seen in the collars over the arches, while graceful Maghribi script (8) lyrically proclaims Islamic truths on the walls.

Sinuous, intertwined vines and leaves shape arabesques (9), while mathematically arranged folds and plaits of strapwork (10) evoke the packing straps of the nomads.

With only the most basic of tools—a compass, straightedge, and a tile-cutting hammer—the Moors used geometry to incorporate both simple and complicated patterns into their dramatic tile work (11).



paved with arabesque tile work and softened by flowers, an herb garden, and orange trees set in pots around a fountain. I recalled that one of the Arabic words for home was *muskin*, from the same root as *sakun*, peace. Even in the heart of the city, my room looked down on a tranquil world of its own, under a private square of blue sky.

Of the extensive royal architecture that once crowded Muslim Córdoba, little survives. By far the grandest palace, a Versailles of its time, was built by Abd-al-Rahman III five miles northwest of the city at the foot of the Sierra Morena. For 25 years, until its completion in 961, he lavished on it a third of the royal budget, naming it Madinat al-Zahra, the City of Zahra, after a favorite concubine. Under his son and successor, al-Hakam II, it grew into a small city; double walls, each as thick as 15 feet, enclosed half a square mile. According to one account Hakam's family, his generals and viziers, scribes and translators, workmen and shopkeepers gave it a population of 20,000. The royal bodyguard added 12,000; the harem, 6,000 more.

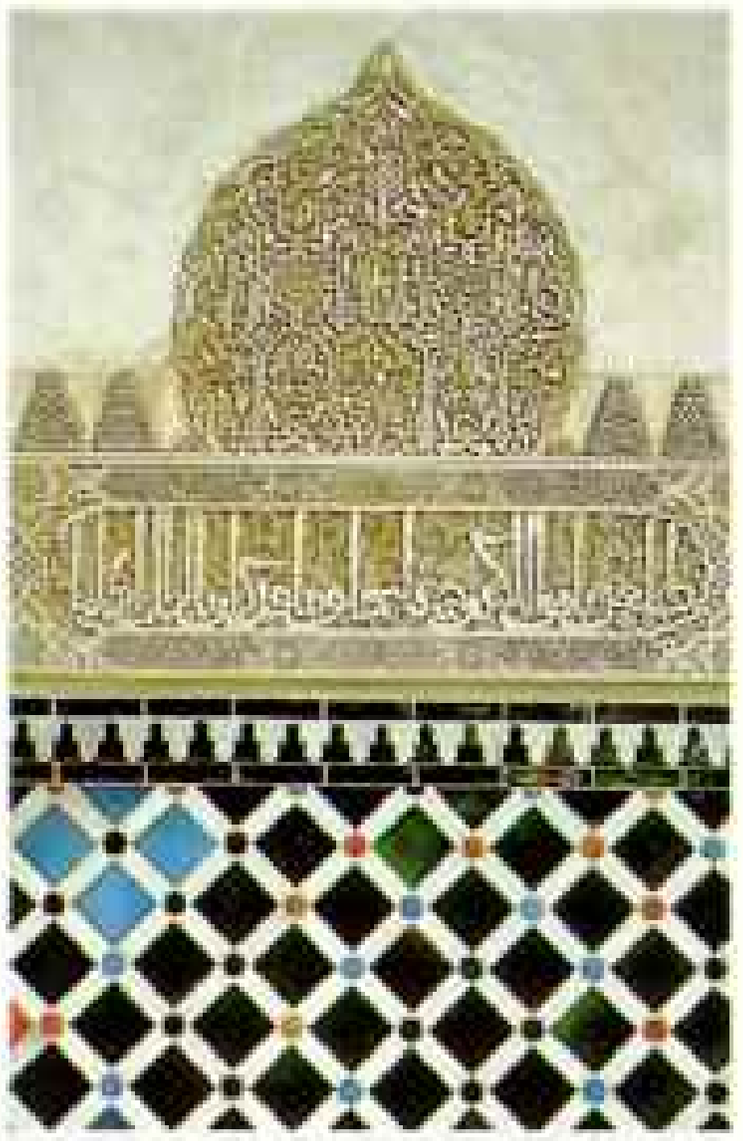
"There was nothing visible when archaeologists arrived in 1910," said Antonio Vallejo, director of excavations, when we walked together down the terraced palace grounds. There were cypress and olive trees, a litter of fallen columns and capitals.

"Foundations outline the caliph's mansion, the mosque, 400 houses, the ancient market, aqueducts, formal gardens, pools—even a zoo," Vallejo said. "We have restored one of the buildings, the magnificent audience hall."

Amid its tattered splendors, where Hakam once received embassies from Europe and the East, I conjured up scenes from the *Arabian Nights* of turbaned notables and veiled dancing girls. Suddenly my daydreaming was interrupted by a vision coming through an archway, a tall Moor in white robes and pointed black beard.

"*Salaam Alaykum!*" he bowed. "I am Hakam II—of course, just for today." Francisco Bernal García, an actor from a local troupe, smiled. We were soon joined by a dozen of his colleagues, taking their places on thick cushions set on sumptuous carpets in the center of the marble floor. While a television crew arranged its lighting, several hundred ten-year-olds filed noisily into the chamber, girls costumed in makeshift veils and slippers, the boys sporting burnt-cork goatees and cardboard scimitars.

"We are reenacting Caliph Hakam's reception for emissaries of King Ordoño IV of León in 961," Francisco explained. "It is part of a program to bring history to life for Córdoba's schoolchildren."



ARTFUL ARABESQUES and vivid tile work adorn the Alhambra in Spain (above) and the king's palace in Fez, Morocco (facing page). The technique of carving plaster walls with intricate, geometric patterns was widely used by Moorish architects and is still practiced today by craftsmen restoring buildings in Toledo and Granada.

BUT MADINAT AL-ZAHRA underscores another of history's lessons: Even great powers are mortal.

Barely 50 years after its completion, the great palace lay sacked and leveled, as the caliphate dissolved into a score of bickering city-states. Amid the chaos that followed, many Muslim rulers became clients of northern Christian princes, and religious boundaries often became obscured. The famous Christian knight El Cid (his nickname derives from the Arabic *al-sayyid*, lord) changed his allegiance with the gusty political winds, now to fight for the emir of Zaragoza, now to help a Christian king, now to rule over Muslim Valencia.

The fall of Toledo drove Spanish Muslims to desperation. They sent for armies of the Berber fundamentalists, the Almoravids, who poured in from Morocco to stem the Christian advance. But they soon

HAVEN *for Moors escaping the Spanish Reconquista, the village of Chechaouene, high in the Rif*

المغرب

AL-MAGHRIB

mountains of northern Morocco, remains largely unchanged after five centuries. Although formidably remote, it was fortified in 1480 by its founder, Arab prince Ali ibn Rachid, against Portuguese and Spanish attack. Andalusian refugees built mosques, baths, and tiled courtyards, planted fruit trees and flower gardens, and declared Chechaouene a sacred city.

seized power for themselves to unite Muslim Spain with North Africa, which they ruled from their capital in Marrakech. Gradually these desert warriors succumbed to Moorish luxury, and half a century later another wave of North African puritans, the Almohads, crossed the strait to supplant them. In 1170 the Almohad ruler, Yaqub Yusuf, moved the Spanish capital to Seville.

Sweeping views of Seville can still be enjoyed from Sultan Yaqub's minaret, one of three sister towers he commissioned. Two others survive in Rabat and Marrakech. From 20 stories up the eye pans from the red-tiled roofs of Seville's medieval hub to the distant rim of modern apartment blocks and factories and beyond to the glowing countryside that nurtures Andalusia's largest city.

When Christians destroyed Yaqub's mosque, they spared his minaret and topped it with a belfry and the giant bronze weathervane, or *giralda*, that gives it its popular name. Today La Giralda serves as the steeple for the largest Gothic cathedral in Europe.

Seville, in one word, defines Spain. That is the reason why Bizet chose it as the setting for his opera *Carmen*. And why romantics like myself are drawn back—to the spectacle of the bullfight at the Plaza de la Maestranza, where glittering matadors perfect their cruel ballet of bravery and death. Or to clap our hands to the rhythms of guitars and staccato heels during a Gypsy lament:

A woman is like your shadow.
Pursued, it runs away,
Ignored, it follows you. . . .

Or even join the sweater-and-jeans set at a noisy *café flamenco* in Triana to whirl through a *sevillanas*, the folk dance popular now all over Spain. Or just relax by the whispering fountains under the peach trees in the gardens of the Alcázar.

BRASS ASTROLABE, DATED 1067, WAS USED BY THE MOORS IN THEIR STUDY OF ASTRONOMY AND GEOGRAPHY. MUSEO ARQUEOLÓGICO NACIONAL, MADRID. BY VICTOR R. BOSWELL, JR.

Within its high walls the Christian king Pedro the Cruel erected in the 1350s his own palace. He imported Muslim architects from Granada, whose designs reflect the cultural overlap of the times. Escutcheons on the walls of the royal bedchamber feature the lion rampant of León and the towered castle of Castile emblazoned with Arabic script:

Glory to our sultan Don Pedro.
Allah aid and protect him.

"Seville's Alcázar is the finest example of Mudejar architecture in Spain," curator Dr. Rafael Manzano said. "But it is more than just a museum. It is the royal residence whenever the King visits Seville."

Dr. Manzano recounted the legend of the Alcázar's peach trees. "A romantic 11th-century ruler, al-Mutamid, also famed as a poet, married a northern beauty. Although happy as queen, she pined for the snows of her native hills. So al-Mutamid, it is told, ordered the gardens of the Alcázar planted with wild peach trees. Each spring, to this day, they bank the gardens with snow-white blossoms."

Against a backdrop of the Sierra Nevada's eternal snows, the drama of the Moors was to play itself out. When Córdoba fell to the Christian Reconquista in 1236 and Seville 12 years later, Muslim lands shrank to a 200-mile-long bastion in Spain's rugged southeast, curving from Gibraltar to past Almería. Here sultans of the Nasrid dynasty ruled from their stronghold at Granada. From 1248 to 1354 they raised their masterpiece, a palace-fortress, the Alhambra.

Today from its high hill, Sabika, the clay-red Alhambra (from

the Arabic *al-hamra*, the red one) looks down on two Granadas. One is the sloping Albaicín quarter—austere, labyrinthine, Moorish. The second is the newer city—noisy, businesslike, baroque—that sweeps along broad boulevards out onto the Vega plain. From the rooftop of his restored Moorish house in the heart of the Albaicín, Professor Miguel José Hagerty and I enjoyed a sweeping view of the Alhambra. Born in Chicago to Irish parents with Gypsy roots, Professor Hagerty graduated from Notre Dame, where he majored in Islamic Studies. He now teaches Arabic and lectures on Arabic poetry at the University of Granada.

"Arab Spain nurtured scores of poets. Many of its rulers—al-Mutamid and Abd-al-Rahman I, for instance—were poets in their own right," Professor Hagerty said. "Strict Islamic tradition discourages the making of 'graven images,' so painting and sculpture never flourished among the Moors. Instead they channeled creative energy into language. With its wealth of vocabulary, its sonorous sounds, its flowing calligraphy, Arabic is well suited to the task.

"Little has been translated," he said, but he recalled lines that survived the journey into Spanish and English. From Ibn al-Sabuni:

I present you a precious mirror,
Behold there the beauty that consumes me
O furtive love, your reflection is more yielding
And better keeps its promises. . . .

Then he countered those lines with a stanza by another Sevillian romantic, Ibn Ammar:

Slaves in the realm of love
Are the only truly free men.

Professor Hagerty and I climbed to the Alhambra. The lofty

SERENADING A STATUE during Holy Week in Osuna, Spain, onlookers break into a passionate saeta—a spontaneous, flamenco lament reminiscent of the muezzin's call to prayer. The lifelike, ornately decorated figures are borne on platforms through the streets in a religious pageant echoed in cities all over Spain.

المغرب

AL-MAGHRIB

CHASTE BEAUTY, captured in the gaze of this villager in Rissani, Morocco, was a perennial source of inspiration to the great

Arab poets of Muslim Spain. Under the Moors, Spain enjoyed a degree of cultural achievement unsurpassed in the rest of Europe. Music, literature, philosophy, mathematics, and medicine flourished in the main cities. In Toledo scholars from around the world gathered to translate into Latin the works—long-since lost in the original—of Aristotle, Euclid, and Ptolemy.

FIERY FLAMENCO music inspires whirlwind dancing at Seville's annual fair. Considered quintessentially Spanish, Gypsy flamenco echoes the mood and rhythm of medieval ballads sung by Muslim minstrels. Similar melodies, still played in Morocco today, accompany celebrations such as the feast in Marrakech (facing page) to honor the wedding of King Hassan II's daughter. The occasion brought Berber tribesmen down from the Atlas Mountains; their ancestors, recruited and converted to Islam by the Moors, helped conquer Spain.

mansions of the Nasrid sultans make up the most visited site in Spain. It is a miracle that they survived the centuries. They were defiled by squatters, eroded by neglect, brutalized by Charles V's massive Renaissance addition—a brick among lace pillows—and confounded by misbegotten restorations. Nevertheless the Alhambra endures, a sublime Oriental meld of artifact and nature.

Here the walls themselves speak—if you know Arabic. We traced out poems in the supple calligraphy of the friezes, archways, and fountains. In the upper gardens we found a couplet by Ibn al-Yayyab that praised Allah for providing the sparkling palace with

. . . its light of virtue
And the peace of its shadows. . . .

A marble fountain bragged,

No greater mansions I see than mine
No equal in East or West.

I had to agree. Even in the oil-rich Arab countries of today architects with unlimited budgets have yet to match the Alhambra.

ARABIC POETRY was crafted, above all, for recital and song. Its lyric forms, *zajal* and *muwashshah*, some say, inspired the first ballads of the European troubadors. The soul-stirring adagios of *cante jondo*, the deep song of Gypsy flamenco, still trace moods and rhythms to this lost age.

Jaime Heredia, a local flamenco singer, told me: "A Moroccan orchestra recently came to Granada to join us in concert. It was *fantástico*. We were up half the night playing encores."

I had missed that concert, but in Fez and Tetuán I had heard that music, the same melodies that once entertained courtiers in the Alhambra, played and sung by the descendants of Spanish Muslims expelled during the Inquisition centuries ago. They still convene regularly to keep alive their *musiqa al-andalusiyyah*.

"We had language problems, of course," Jaime said. "But we agreed on one thing: Musically we were brothers."

Throughout Spain today the art of flamenco is being threatened

by its commercialization in floor shows called *tablaos;* these count on dramatic lighting, amplifiers, and curvaceous dancers to attract larger audiences. Sacrificed in the process is flamenco's hallmark, its *duende:* soul. But a night owl can still sample *flamenco puro* when Gypsies gather at Jaime Heredia's bar, La Fuente, in Granada's Albaicín for a *misa de doce,* literally a "midnight mass," slang for a flamenco bash.

Well after midnight young Bautista arrived with his guitar, the sign for Jaime to close up shop and aficionados to gather. A small, broad-shouldered man in sweater and jeans, Heredia didn't look "flamenco." Where was the flat hat, the bolero jacket, the high-heeled boots? No matter. The guitar starts to ripple. Snapping fingers pick up the beat of a *fandanguillo,* and Jaime's voice lights up the darkness:

A chorus of children's laughter
Flows past an unseen river
Bittersweet strains recall a former love.

The guitar fires another fusillade of minor chords, stopping everyone in mid-drink. Jaime presses his hands together. Sweat gathers on his brow, veins on his neck bulge, and the powerful voice again stabs the room, a "deep song" of Gypsy anguish. The words, stylized, blurred, are lost to my untrained ear, but closing my eyes, I hear an Egyptian chanting from his minaret.

What about the lyrics? I pressed Jaime when the session finally broke up. It was daylight now, and regular breakfast customers were already demanding their coffee and brandy.

"Not easy, señor," Jaime apologized. "The song is about love and death and God—ah, but no one could understand who was not suckled at a Gypsy mother's breast."

الأندلس

AL-ANDALUS

LAST BASTION of the Moors, the remote Alpujarras region in the mountains of southeastern Spain proved a refuge for more

than a century to Spanish Muslims fleeing religious persecution after the recapture of Granada in 1492. Keeping to their isolated sanctuary, those Moors who had refused to accept Christianity endured until the early 1600s, when the long arm of the Spanish Inquisition finally drove them into exile. Like earlier refugees, most settled in the coastal cities of North Africa.

PATIENCE may bring a customer to a goat seller on market day in a village near Tetuán, Morocco. Not far away, high in Spain's Alpujarras region, villagers in Capileira singe the hair from a pig that will provide delicacies taboo in Moorish times under Islamic law. After the Moors were driven out in 1609, the area was repopulated. Today, town names still reflect its Arab heritage.

THE REMOTE VILLAGES of the Alpujarras, halfway up the southern flank of Mulhacén, Spain's highest peak, were the last domains of the Moors in Spain. Many towns like Benfnar, Almócita, Bubión, and Mecina Alfahar still wear their Arabic names, as does Mount Mulhacén—and the Alpujarras itself.

The marriage of Ferdinand and Isabella sealed the fate of the faltering Granada sultans. Catholic Spain, finally united, continued to force the Muslims toward the sea, town by town. In 1492, the same year they launched Christopher Columbus on his historic voyage, Their Catholic Majesties rode into Granada to preside over the abdication of the last Moorish ruler, Muhammad Abu-Abdulliah—Boabdil, as the Spanish call him.

On the way to the Alpujarras, I paused above Granada at the pass called Suspiro del Moro, the Sigh of the Moor. It was here Boabdil stopped to look back and shed a tear over his lost kingdom. According to legend his domineering mother, Aisha, berated him: "Fitting you cry like a woman over what you could not defend like a man." For a century more, Muslims held the Alpujarras's rocky folds and raided into the Christian lowlands, often igniting rebellions, until the last of the Moors were driven into exile in 1609.

The autumn day breaks late over the valley's brim at mile-high Bubión, waking the village slowly. I rubbed my hands together against the chill as I left my small *pensión*. The first wisps of smoke drifted from conical chimneys atop slab roofs that staircase down the hillside toward the church square.

From nearby Capileira I set off on horseback with a farmer, Antonio Jiménez Estévez. We rode upward over narrow terraces through the last warm colors of autumn—orchards of red-leafed cherry trees and golden chestnut, bordered by yellow poplars and evergreen. For a while we followed the gravel way, Europe's highest motor road, that leads to 11,000-foot Pico de Veleta; then we turned off along a medieval *acequia*, or irrigation canal. It brought us, after a mile or so, to a stone reservoir called, in Spanish, an *alberca*. The old watering system—and its Arabic-derived nomenclature—was still in use.

"This is one of three canals on this side of the Poqueira Valley built by the Moors," Antonio said. "Twenty years ago, when I was a boy, we still ran water mills on this one." Now there was also a modern dam, a small hydroelectric plant, a larger canal.

We crossed a stream and walked our horses to the top of a rocky bluff. Beneath a sweeping snowscape, we came to the stone hut that serves as summer camp for the Jiménez family's upper fields. We sat under a walnut tree on the edge of the threshing circle while Antonio's young nephew, José Luis, hitched a team of mules to a wooden plow. Fall plowing would be the last chore before closing camp for the winter. A cousin waved a loud *"¡Hola!"* as he set off walking, in a cloud of dust and tinkling of bells, toward Mulhacén with the family's 400 sheep. Antonio's uncle Juan brought us local white wine, slices of the air-dried ham for which the Alpujarras is renowned, and a bowl of pears.

"Our terraces are small, the soil grudging, the season short," Antonio said. "Most of the men leave the Alpujarras to make their fortunes. I spent seven years in the orange groves of Valencia.

"But I am back now to stay. Life is too hectic, too crowded on the plains. This is home."

THE QUIET CRAGS of the Alpujarras look down on another world, lying only a dozen crow-flight miles away. An hour of hairpin turns dropped me from an eagle's nest—alpine, traditional, and poor—to the Mediterranean—tropical, cosmopolitan, and booming. If the Alpujarras speaks of the past, the Costa del Sol plays the Spain of tomorrow.

At his office at the Costa del Sol Tourist Board, promotion manager Diego Franco said, "Historically, our two greatest enemies were the sun and the sea. One cursed us with a blistering climate; the other brought pirates." I had noticed that *atalayas*, or watchtowers, still

الأندلس

AL-ANDALUS

RELIVING PAST BATTLES, the townspeople of Villena, in eastern Spain, don period costumes to reenact the Spanish

Reconquista during their annual Festival of the Christians and Moors. Toward the end of the festivities a "Moor," in the foreground, falls to his knees in symbolic surrender before a Roman Catholic procession. The more flamboyant costumes of the Moors attract willing volunteers to play their roles, with the result that they often disproportionately outnumber Christians.

VICTOR R. BOSWELL, JR. (ABOVE)

ONCE A YEAR the Moors come to life again in Spain, as locals in towns like Villena (facing page) re-create the fight for supremacy. In the Cathedral of Toledo, a 500-year-old carved choir bench depicts the Moors' surrender in Marbella, a city that today boasts once more a large Arab population—this time of wealthy summer vacationers from the oil-rich states of the Middle East.

guard every jut of land along the coast and that the older towns stood well into the cooler, protected foothills.

"Today, sun and sea are our stock-in-trade," he said. "Last year 50 million visitors came to Spain, one for every Spaniard and then some. It's an invasion—but a peaceful one."

The coast from Torremolinos to Estepona has crystallized into a 45-mile-long tourist metropolis: hotels, condominiums, restaurants, cafés, discos, amusement parks, casinos, boutiques. Many foreigners who come for a holiday decide to stay. An estimated one million pensioners from Great Britain alone have bought a piece of the Spanish sun.

At the other end of the scale stands Marbella. I checked in at the trendy Puente Romano Hotel, hoping for some cultural exchange with its jet-set regulars—the Countess Gunilla von Bismarck, perhaps, or Barbra Streisand, Stevie Wonder, Sean Connery, Christina Onassis. Now, during the low season, I found tranquillity instead—in an Arabian setting. My whitewashed stucco villa opened on a beachfront oasis, where a burbling stream flowed under olive and lemon trees past stands of bamboo and camellias, all shaded by palms that dropped ripe dates on my balcony.

"*Allah akbar! Allah akbar!*" The familiar call to prayer drifted in from the mosque across the street, Mezquita del Rey Abdul Aziz, built by Saudis who play or invest here and dedicated to their founding king.

All over Marbella and nearby Puerto Banús are other signals that modern-day Moors have joined the "peaceful invasion"; signs in flowing Arabic script point you to the Lebanese Delicatessen, the Banco Saudi-Español, the Near East Insurance Agency, to Arab doctors, a Muslim cemetery.

At Puerto Banús, Syrian-born Ahmed Mahayni, sales manager for Gray d'Albion, showed me the company's domed and turreted condominiums—a half-mile-long complex finished in marble and gold-tinted tile and commanding a view of the harbor's gleaming pleasure flotilla. I leaned toward Unit 507, a multi-level, four-bath, two-pool, hanging-garden extravaganza. But I had to admit that, at 1.5 million dollars, it was too tall for my purse.

"We have smaller apartments, some for as little as $270,000," Mr. Mahayni said.

Near the Andalucía Plaza Casino, I sipped coffee with Mokhles "George" El-Khoury, a Christian Arab who moved to Puerto Banús from Beirut to run a building-management firm.

"Andalusia reminds me of Lebanon—without the wars and politics," George said. "You have the mountains, the sea, the fine climate of olives and palm trees. The Spanish are a warm people, not stiff and formal like many Europeans. The food is much like ours, so is the shape of the houses and the towns. To an Arab—well, Andalusia feels like home."

NOWHERE IS THIS MORE TRUE than in the old Muslim capital of Córdoba, where I spent my last Spanish days. I was awakened there early one morning by the clatter of workmen at the Mezquita across the street. From my window I watched a burly stonemason score a half-ton block with his screeching power saw, while another drove wedges into the kerf to split it off square. On wooden rollers they sweated it into a gap in the timeworn wall. Thus, for more than a thousand years, have Córdobans furbished their beloved Mezquita, first as mosque, then as cathedral.

No other artifact more richly evokes the golden age of the Moors, a stormy millennium that dovetailed two faiths, two cultures, two continents. Throughout, while king and sultan fought bitterly for the hand of Spain, ordinary life prospered as Arab, Visigoth, Castilian, and Berber worked together to forge the brilliant civilization that helped lead Europe out of the Dark Ages.

Ultimately the cross replaced the crescent. The Moors themselves faded into history, leaving behind their scattered dreams. But Spain and the West stand forever in their debt. □

Withered remnants of a once graceful coconut palm scar a beach on Mexico's Caribbean coast.

What's Killing

By RANDOLPH E. McCOY

A disease known as lethal yellowing is wiping out vast stands of palms in the Western Hemisphere.

the Palm Trees?

Photographs by GUILLERMO ALDANA E.

NOW YOU SEE THEM, now you don't. Coconut palms flourishing along the waterfront at Cozumel, Mexico, in 1984 (top) have completely vanished two years later (bottom). Lethal yellowing (LY) mainly attacks a widely cultivated variety known as Jamaica Tall, valued not only for its tropical beauty but also for the millions of dollars it yields annually in products such as copra (dried coconut meat), coconut oil for soaps and detergents, and even coconut-shell charcoal used in air-purification systems.

The disease is caused by deadly microbes known as mycoplasma-like organisms, or MLOs (page 126). These organisms are borne from tree to tree by insects called planthoppers. When the planthoppers feed on palm leaves, they inject MLOs into the tree's food-carrying veins, much as a mosquito injects malaria-causing parasites into a human victim.

Lethal yellowing was first reported in Jamaica in the late 1800s, though the cause and means of transmission were unknown at the time. The disease spread to other areas of the Caribbean, Florida, Texas, and the Bahamas (map, page 125). In 1982, at the request of the Mexican government, I inspected diseased palms at Cancún and Isla Mujeres off the Yucatán Peninsula. The conclusion was inescapable: LY had invaded Mexico.

Author RANDOLPH E. MCCOY is a plant pathologist and expert on palm diseases in the Western Hemisphere. Photographer GUILLERMO ALDANA E. contributed to the May 1986 article on the Mexican earthquake.

TROPICAL vanishing act: Within the space of two and a half years, coconut palms all but disappeared from Isla Mujeres. In November 1984 houses on the island were cooled by the shade of palms (above), but by the summer of 1987 residents were sweltering in the sun. Today the resort area's Caribbean coastline is almost totally barren of the mature coconut palms that have enchanted tourists over the years.

Lethal yellowing generally kills a tree within five months after symptoms appear. First the immature coconuts begin to drop, then the flower buds wither, the leaves turn yellow, and the tree's crown falls to earth. The barren trunk stands like a warped telephone pole until it too rots and collapses.

The catastrophic toll extends far beyond the coconut industry. In 1955 the disease invaded Florida's Key West. After devastating the island's stands of coconut palms, it spread north to the mainland. By the early 1970s lethal yellowing appeared in a small section of Miami, and within four years it had spread throughout the city, eradicating more than 90 percent of its coconut palms.

The disease spread north along Florida's Atlantic coast to Palm Beach, whose very name derives from the city's fabled groves of coconut palms. For a time local residents joked that they might have to change Palm Beach's name, and while attempting to find a way to curb the disease, they made a major effort to replace the dead palms with LY-resistant varieties.

In 1978 lethal yellowing appeared across the Gulf of Mexico in the lower Rio Grande Valley of southern Texas, where it ravaged that area's ornamental date palms. By 1982 it had arrived in the Yucatán Peninsula. Clearly the devastation of Mexico's coconut industry had begun.

So far lethal yellowing has not spread to Mexico's Pacific coast, where coconuts are also a vital crop. But I believe it is only a matter of time before the disease affects the entire Gulf coast of Mexico, with incalculable damage to the coconut industry.

In Florida, meanwhile, a new outbreak of LY has occurred along the state's west coast. It was in Florida in 1971 that I had begun my study of palm diseases as a plant pathologist at the University of Florida's Agricultural Research Center in Fort Lauderdale. Work on LY-resistant palms is now being carried out in Latin America, Florida, and Jamaica. In addition, researchers in Africa are investigating the outbreak of a disease that appears to be similar to lethal yellowing.

The epidemic spreads

Island-hopping across the northern Caribbean and the Gulf of Mexico, lethal yellowing appears undeterred by such natural barriers as open seas and prevailing winds. Though the disease was first reported in Jamaica, evidence now suggests that LY may have struck earlier in the Cayman Islands and perhaps Cuba. Scientists calculate that on land the disease spreads as fast as 1.3 miles a month.

COCONUT MEAT

COCONUT OIL

CHARCOAL

HUSK

Husks are burned to fire building brick.

THATCH

LUMBER

SHADE

for crops and cattle

Planthopper feeds on infected leaflet and picks up MLOs (mycoplasma-like organisms).

PLANTHOPPER about 1/4 inch in length

Salivary glands infected by MLOs a few weeks after feeding

MLO: passed to healthy leaflet

MLOs multiply in nutrient passages

DESTROYING THE TREES IN THREE STAGES.

1 MONTH PRE-YELLOWING *All coconuts drop. Flower buds die in pods*

3 MONTHS YELLOWING *Leaves yellow and die*

5 MONTHS DEATH *Leaves fall; dead trunk remains.*

PAINTING BY JACK DAMON (FACING PAGE); P. W. HOWARD, UNIVERSITY OF FLORIDA (ABOVE)

"TREES OF LIFE," as coconut palms are often called, provide food, livelihood, and welcome shade for millions of people in tropical areas around the world. Indonesia and the Philippines are the world's largest producers of coconuts, but in the Western Hemisphere Mexico is the leader and thus stands to lose the most from the spread of lethal yellowing.

Early outbreaks of the disease inspired international research efforts to focus on its cause and possible ways to control it. Researchers in Jamaica and New York made the first breakthrough by identifying the MLOs. Subsequent research targeted the planthopper *Myndus crudus* as the carrier, and coconut growers began to look for the minute insects that appear as telltale specks on the underside of palm leaflets (above).

Infection takes place via the planthopper's saliva, which contains the MLOs and introduces them into the tree. Researchers have found that infected palms can be treated, though not permanently cured, by injecting an antibiotic of the tetracycline family directly into a diseased tree. This can be done as simply as boring a hole in the trunk (right) and funneling the liquid inside (below).

We have found that regular applications of tetracycline at four-month intervals can suppress the symptoms of lethal yellowing indefinitely. But as soon as the treatment is discontinued, the symptoms recur, and the tree eventually dies. Such treatment is practical only for small stands of palms, not for plantations numbering in the tens of thousands of trees. For these the only workable solution is replanting with varieties of palms known to be resistant to the disease.

RAVAGED BATTLE ZONE, a small coconut plantation near Boca Paila on the Caribbean coast of Quintana Roo shows only a handful of survivors among hundreds of palms struck down by lethal yellowing. Even the few remaining trees will eventually succumb to the disease. A giant killer, LY attacks the taller and healthier palms first, then moves on to attack the smaller ones.

As in all wars, human misery is the final product. The faces of a plantation worker (left) and those of his children (far right) reflect their loss. Lethal yellowing struck in 1984, and, two years later, the children stand surrounded by the last crop to be harvested from the farm. After coconuts have been split open (right), they are set out in the sun to dry, the moist meat turning to copra, permitting its oil to be extracted.

National Geographic, July 1988

SEARING SUN beats down on vacationers at a beach on Isla Mujeres where majestic Jamaica Tall palms once stood. Unfortunately, the dead trees were initially replaced with the same Jamaica Tall variety, three of whose seedlings—the larger ones pictured here—survive for now but will almost surely die with the rest. The smaller seedlings, planted later, are of the Malayan Dwarf variety, a strain highly resistant to the disease.

Widespread replacement with Malayan Dwarf palms has been carried out in Jamaica and Florida, and Mexican authorities are following suit. One of the advantages of Malayan Dwarf palms is that they mature rapidly. In three to four years the seedlings on this beach will bear fruit. Despite their name, the trees eventually will reach a height of 50 to 60 feet and be almost as tall and graceful as their predecessors.

Mexico has so far lost more than a quarter of a million coconut palms to LY. Replanting efforts have concentrated on resort areas, but efforts are now being made to restore stricken plantations. Malayan Dwarf seeds and seedlings from the Pacific coast are being offered free or at cost to farmers in coconut-producing areas.

Meanwhile, LY continues to spread beyond replanted regions, and additional Malayan Dwarf seeds are needed. For the immediate future, prospects are bleak: Despite extreme measures such as quarantines and felling of threatened trees, millions of producing coconut palms will die before the epidemic runs its course.

The Mexican government has established experimental gardens to evaluate other varieties of palms that may one day prove useful. Resistant varieties are the only hope for the future. □

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IF THESE foreign publications look familiar, there's a very good reason. They're international versions of our own books and magazines.

Vie del Mondo, a monthly journal that takes more than half its editorial content from TRAVELER, celebrates its first anniversary this month. Published by the Touring Club Italiano in Milan, a nonprofit membership organization founded in 1894, it offers translations of our TRAVELER articles as well as stories created specifically for Italian readers.

The children's magazine *Unga Upptäckares Värld*, which debuts next month in Sweden, is the first international partner of WORLD. Published by Bra Böcker, it will be distributed in Swedish schools as well as by direct mail and in bookstores.

These and other publications, produced with our cooperation, are part of an expanding Society effort to increase and diffuse geographic knowledge to a broad international readership.

We work closely with foreign publishers to ensure the quality of their products. Under the direction of Senior Vice President Robert L. Breeden, assisted by William R. Gray, we approve translations, inspect color proofs before publication, and even review stories written specially for foreign versions.

We are pleased with the response, so much so that we expect Spanish and German versions of TRAVELER in the near future; Japanese and Swedish publishers are also interested. WORLD may soon be published in French and Italian.

Society books now appear in French, German, Italian, and Japanese, while Swedish, Finnish, Spanish, and Hebrew editions will appear this year. The Swedish edition of *The Incredible Machine* alone will number 110,000 copies. Italian, Spanish, Portuguese, Danish, Serbo-Croatian, and Norwegian versions are being considered as well. *Our World's Heritage* was the first Society publication to be translated into Chinese.

Our award-winning TV Specials and EXPLORER episodes, such as "Land of the Tiger," "Save the Panda," and "Secrets of the Titanic," are broadcast internationally in several languages on network television and cable, as well as being distributed on videos. Spanish videos are also available in the United States.

Why are we journeying up these new avenues? As our world shrinks with the revolution in communications, it grows ever more important to increase international understanding and cooperation, for the problems nations face are often shared; we live in a global village where understanding our neighbors is crucial. Yet time and again I am struck by how little we know about one another, materially and spiritually. I am especially concerned that so many of the popular films and publications sent abroad by Americans give a distorted impression of our nation as one dominated by sex and violence, and I believe we can help offer an alternative to such sensationalism.

Our new partnerships with international publishers are small steps in this direction, sharing the educational resources of the Society with more of our neighbors —by speaking their language.

Gilbert M. Grosvenor

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THE *Heartbeat*

OF AMERICA TODAY'S CHEVY TRUCK

Members Forum

Anchorage

"Hello Anchorage, Good-Bye Dream" (March 1988) detailed many concerns of the city fairly accurately. However, the author failed to mention a situation of international significance — the University of Alaska-Siberia Medical Research Program. It studies adaptation to Arctic environments, including daylight-darkness exposure and depression, nutrition (native versus white diets), alcoholism, and rural health-care delivery. Two Soviet delegations have journeyed to Alaska for conferences; the most recent included Canadians. The research has potential for all circumpolar nations.

NICHOLAS YAHOLKOVSKY
Anchorage, Alaska

I wish the city luck in its bid for the 1994 Winter Olympics (page 389). What a boost to their economy. But will they be two years late for the 1992 games or two years early for the 1996 games?

JENNIFER COWARDIN
Twentynine Palms, California

The International Olympic Committee voted to alternate summer and winter games on even-numbered years but had to start the new schedule somewhere. The next Winter Olympics is set for 1992 (Albertville, France), then 1994 (site to be announced in September), 1998, and 2002. Summer games will be held in 1992, 1996, and 2000.

All that Mr. King said was true. There is smog occasionally, but most lower 48 cities will never see a sky the color of blue that can be seen here. Or the midnight fantasy of the northern lights. Yes, everyone owns a truck, boat, or camper, but this is a very large state. And people keep dogs . . . well, they have to have something to put in the back of their pickups. Mr. King wanted to fall in love with a sophisticated lady. He found a gutsy adolescent with a zest for life and a wonderful ability to laugh at herself. It isn't for everyone, but if you do fall in love, it's for keeps.

DIANE LEHNER
Solon, Ohio

Larry King admits he is not an outdoorsman; you might as well send someone who does not love art to write about the Louvre.

KEN ZAFREN
Anchorage

As cross-country skiers and hikers, we felt slighted by the comment that "nobody walks save a few backpackers and winos." If Mr. King had spent time in our city parks, he would have encountered hundreds of year-round users running, cycling, walking, swimming, sailing, skiing, playing sports, viewing wildlife, or enjoying a picnic. And how many other cities can be approached on a highway not cluttered by billboards and where in the summer military personnel or correctional-facility workers pick up refuse? I encourage people to come and view Anchorage for themselves.

LESLIE VANDERHOFF
Eagle River, Alaska

Thank you for that fantastic article on Anchorage. Most articles deal only with the natives or the pipeline. That's a very important part of Alaska, but so are the everyday people.

SHARI BATTY
Lilburn, Georgia

China Railroads

Congratulations on the outstanding piece by Paul Theroux and Bruce Dale (March 1988). I would guess many readers might like to take portions of this trip. How did Mr. Theroux obtain a visa for that long a period? I am in and out of China and find it very hard to obtain permission to travel for any length of time on my own. Does Mr. Theroux speak Chinese? Are there enough Chinese who speak English to make a trip comfortable?

ROBERT FOY
Kirkland, Washington

Mr. Theroux is not fluent in Chinese but found many English-speaking travelers. A Chinese plan called Foreign Independent Travel accommodates individuals. An itinerary and visa can be requested through specialized travel agencies or the U. S.-China Peoples Friendship Association (202-296-4147 or 800-368-5883).

Regarding the "duck" being butchered (page 324), it doesn't look like a duck, and with legs that long it couldn't have walked like a duck, and I'll bet it didn't sound like a duck. It probably sounded more like "cock-a-doodle-do."

NORMAN V. SMITH
Lancaster, South Carolina

We ran afoul of fact; it was chicken for dinner.

The article would have been enhanced with a description of the Erhlien [Erenhot] station on the Mongolian border where railroad cars are hoisted on huge jacks while young women remove the rolling stock of the Soviet-Mongolian gauge and replace it with that of Chinese gauge; it is one of the most unusual things I have ever seen.

HARVEY W. OSHRIN
San Bernardino, California

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If all those Roman Catholic churches are open for business, why are Roman Catholic priests and bishops still in jail after 30 years? Has the Peoples Republic of China (PRC) created a new Catholic clergy?

JACK OSMAR
Charlotte, North Carolina

Yes. The PRC does not recognize the authority of the Vatican.

Bruce Dale assembled the most powerful rail photographs seen in the GEOGRAPHIC in decades.

DICK GRUBER
Richmond, Vermont

Our Forgotten Century

"Between Columbus and Jamestown" (March 1988) underscored the importance of pursuing a regional approach to the reconstruction of America's colonial histories. The full story is broader and more dynamic than just the history of the development of the American government.

PAUL NEWFIELD III
Metairie, Louisiana

It is worth adding that, according to historian Peter H. Wood in *Black Majority: Negroes in Colonial South Carolina from 1670 to the Stono Rebellion*, several black slaves brought by Lucas Vásquez de Ayllón in 1526 may have escaped during the violence into the hinterlands. If so,

those Africans could have been the first non-Indians to reside permanently in North America.

WILLIAM C. HINE
South Carolina State College
Orangeburg

With new data on the Spanish expansion process, perhaps historians will give it the significance it deserves. As a teacher of Spanish language, culture, and civilization and an avid reader of the Spanish conquests, my sincere thanks for encouraging such scholarship.

STEVEN STRANGE
Rocky Hill, Connecticut

Considerable debate surrounds the reconstruction of routes traveled by Hernando de Soto and Juan Pardo and the correlation of their observations of native American settlements with archaeological sites. Not all researchers are as enthusiastic about the interpretations of Charles Hudson and his colleagues as you suggest.

GERALD F. SCHROEDL
University of Tennessee
Knoxville
C. CLIFFORD BOYD, JR.
Radford University, Virginia

May the efforts to commemorate the voyages of Columbus produce more such articles. My only quibble is the claim that Ayllón sent Pedro de Quexo in 1525 to discover new lands, goaded by

hopes of finding another "golden Mexico, another silver Peru." Another Mexico surely. But Peru was but a glimmer in the adventurous eye of Francisco Pizarro. He was two exploratory probes and seven years away from his first major entry into the heart of the Inca Empire.

LAWRENCE A. CLAYTON
University of Alabama
Tuscaloosa

The article contained rather cursory mention of the native Indians who occupied the land that the white people struggled over. Our histories do not mention the cheating, lying, stealing, rape, and killing that were involved in pushing the Indians out of the way. We should be aware that we now enjoy our life in bountiful America because of the immoral and unethical acts of our predecessors.

H. E. FORREST
Canton, Ohio

Falklands

As a minister who has lived in Argentina for years, I find that your well-done article on the Falklands (March 1988) does not truly reflect the nature of the conflict with Argentina over sovereignty. The fact that the British Empire occupied the islands, removing Argentine settlers and their governor in 1832, does not constitute rightful ownership. The United Nations has repeatedly passed resolutions urging the U.K. to discuss with Argentina the future of the Falklands, or Malvinas, but with little success.

REV. DAVID SEDACA
Hingham, Massachusetts

Few Argentines support military governments. They all support Argentina's sovereignty of the islands. Argentina will prevail. The location of the islands, and time, is on her side.

KNUD LAURUND
San Rafael, California

Members Forum

I differ with F. K. Mitchell's view in March. Space for the Forum should be doubled or trebled. Letters show that topics are usually extremely well researched, that there is frequently more than one viewpoint about facts in history or geography, and that readers are well above the intellectual average. Voicing your opinion to an editor is part of a proud tradition of freedom.

KARL G. BOGENSCHNEIDER
Halstenbek, West Germany

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

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**Based on manufacturers' suggested retail prices. *Kelley Blue Book New Car Price Manual*, 4th Edition, 1988.

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On Assignment

PRECOCIOUS and versatile as a child, he was fascinated by Roman emperors. At Dartmouth he played guitar with a rock band called Sphinx. It seemed inevitable that DAVID SOREN (right) would become an archaeologist and fulfill a teenage ambition—fueled by fantasy movies—"to find a lost city."

"It's the day-to-day living that interests me," he says of the earthquake-entombed community he discovered at Kourion, Cyprus (page 30). "I want to know what the place looked like and how it was experienced by its citizens."

Chairman of the Department of Classics and Classical Archaeology at the University of Arizona, Soren has excavated in England, Italy, Portugal, Tunisia, and Turkey, as well as Cyprus. An award-winning documentary filmmaker, he also teaches the history of cinema. To relax, he tends rare cactuses in his Tucson garden, noting that "if you try to think of anything else, they bring you sharply back to the task at hand."

PHOTOGRAPHS BY MARTHA COOPER (TOP RIGHT) AND MIGUEL LUIS FAIRBANKS

THE PASSION Chileans feel for Chile pervades that land, from a central valley vineyard, where ALLEN BORAIKO (left) interviews a picker, to entrepreneurial Santiago. "Whatever their politics, rich and poor alike want what's best for their country," Boraiko reports. Chile was a kettle under pressure, but Boraiko moved about freely, though occasionally dodging water cannon and tear gas. He became so intrigued by the country's "tough and tender" people that he has moved to Chile, after 12 years on the GEOGRAPHIC staff.

Capturing magical moments is a goal of photographer DAVID ALAN HARVEY (left), who befriends a rancher's daughter in Patagonia. "I live with families to build up rapport; when people find out you're interested in their lives, they welcome you," he says. In 15 years for the GEOGRAPHIC, the ever exuberant Harvey has found similarities among his subjects—from Virginia to Kampuchea, Honduras to Vietnam.