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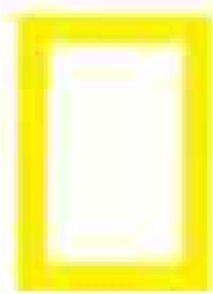

NATIONAL GEOGRAPHIC

SEPTEMBER 1994

Ireland on Fast-Forward

By Richard Conniff
Photographs by Sam Abell

On emerald pastures, livestock grazes in the shadow of factories. Manufacturing now surpasses farming in the island nation, where hopes for the future crowd out dreams of a romantic past.

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By Priit J. Vesilind
Photographs by Joanna B. Pinneo

This parched realm of cactuses and pronghorns that straddles California, Arizona, and Mexico faces increasing development. A double map supplement highlights Mexico's cultural heritage.

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Resort for tsars and commissars and headquarters of the Soviets' Black Sea Fleet, the historic peninsula is the prize in today's tug-of-war between Russia and Ukraine.

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Fantasy Coffins of Ghana

Article and photographs by Carol Beckwith and Angela Fisher

With a new funerary tradition—brightly painted coffins shaped like animals, airplanes, and luxury autos—Ghanaians honor the dead and celebrate their lives.

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COVER: *Irish youths negotiate city traffic on their way home from a horse fair in downtown Dublin. Photograph by Sam Abell.*

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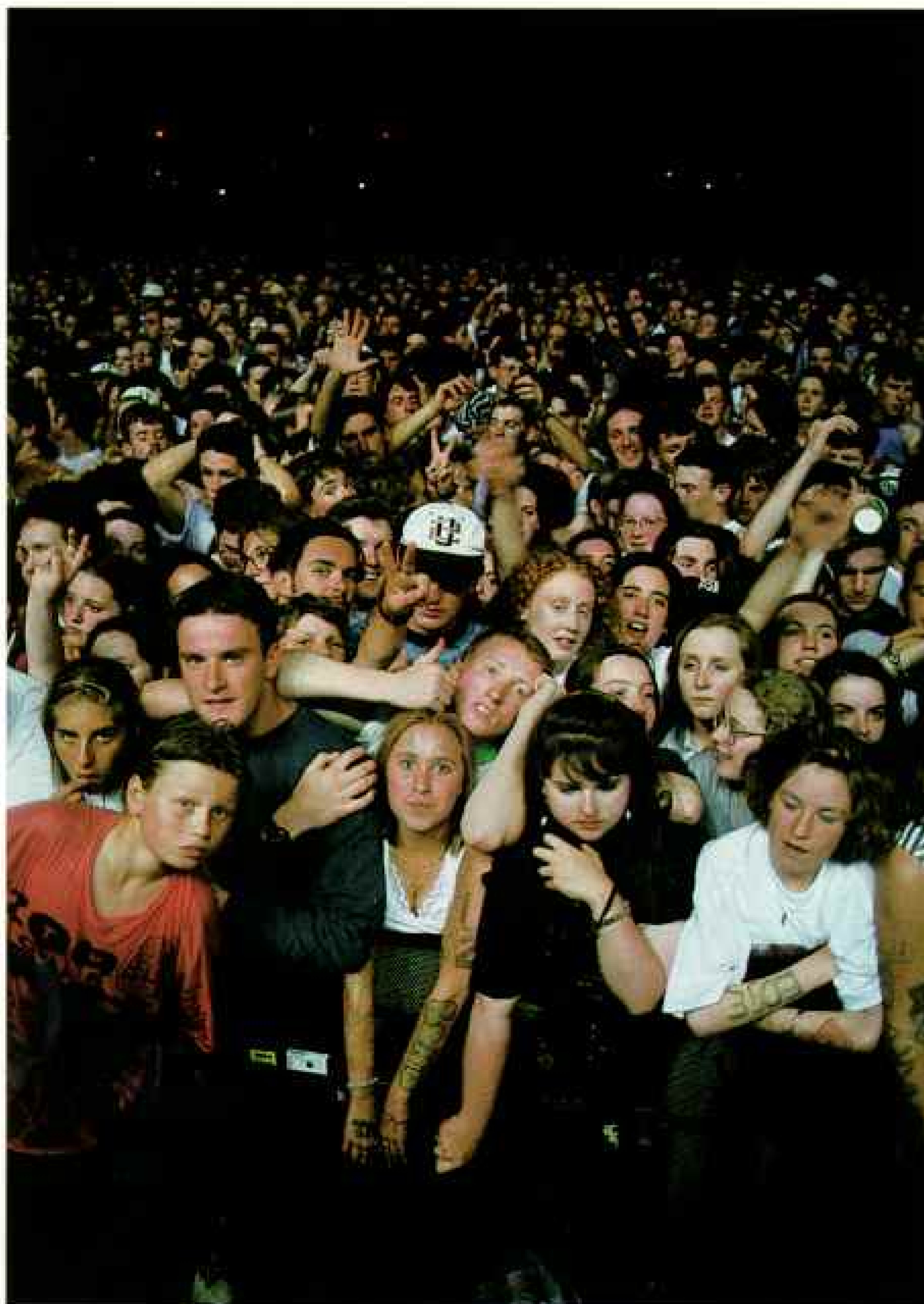
IRELAND ON FAST-FORWARD

Shifting moral values and global economics drive Ireland—for better or worse—toward modernity. Even the once adamantine authority of the Roman Catholic Church is challenged. At remote Slea Head a motorist streaks by religious statuary worn by moody weather.

By RICHARD CONNIFF   Photographs by SAM ABELL
NATIONAL GEOGRAPHIC STAFF

KINDRED HEADLANDS called The Three Sisters look to sea near Smerwick on the Dingle Peninsula. For the ambitious, country lanes lead past sheep paddocks to cities already bursting with job seekers.



"I'M LIKE A PREACHER stealing hearts at a travelling show," thunders Bono, lead singer of U2, the enormously successful Dublin-based rock group as likely to champion social justice as celebrate erotic themes. At this hometown concert Bono preached to the converted. The stage set for the band's Zoo TV Tour was a satirical pastiche—a trio of Trabant automobiles from the former East Germany hung above scenes from the royal wedding of Charles and Di. It was typically sardonic Irish commentary by a group in the vanguard of Ireland's artistic ferment. The band earns applause for supporting other artists and investing in projects that bolster their country's economy.

"By 'real Ireland' the Irish usually mean postcard Ireland, even mythic Ireland, a not-too-distant past for which they suffer pangs of longing—and also embarrassment."

THE LIGHT IN IRELAND is such a fickle blessing: The way, out of a bruised and sodden sky, a single beam bright as platinum feels its way across a green hillside; or, in early evening, the smudged sky breaks and the sun is suddenly incandescent on every white farmhouse and every blade of wet grass. The light finds its way mysteriously around the clouds. It comes in from the sides. It lifts up off a white horse or a beach and scatters through the moist air with a numinous glow. It rises from earth toward the heavens. Then it's gone.

RICHARD CONNIFF is a frequent contributor to NATIONAL GEOGRAPHIC. Many of his ancestors immigrated to America from the north and west of Ireland in the mid-19th century.

It was that kind of afternoon even in the dreary Dublin neighborhood called Ballymun. It was raining and the sun was shining. In front of a high-rise the children had knotted a faded rope from the crook of a streetlamp for a swing. A girl sat in a loop at the bottom and a boy sent her whirling, till the rope wrapped itself around the lamppost like a ribbon around a Maypole. Then she came swinging

back the other way, in a widening gyre, golden hair spread out in the sun.

A flock of small children played in a gutted delivery van nearby. "Are you from the police?" a boy asked, sticking his head through the blown-out rear window. Assured that I wasn't, he said, "Somebody stole it and left it over there. We took the wheels off so the police wouldn't take it away."

The van was their playhouse, Ballymun having been built without adequate shops, playgrounds, or other basic facilities. Such public-housing estates sprang up all over urban Ireland in the 1960s and '70s, often on the isolated fringes of big cities, like shelf space for the unemployed and the unwanted. "People hear Ballymun and they think you're a junkie or a thief or a suicidal case," a local man told me. "But the majority of people are decent." He looked at the dingy row of high-rise buildings. "The gray, gray towers of home."

In the van the boy proudly showed me how he and his friends had stripped the rubber liners from around the doors and slung them from holes poked in the roof to make trapezes, on which two youngsters went careening from one side of the van to the other. Another group of children began pelting the van with dirt bombs. "My name is Stephen McNevin, my name is," the boy was saying. But the din, plus the bawling of his three-year-old niece, plus the possibility that the real Stephen McNevin might show up from the building next door to reclaim his name, all drove him to distraction. He thrust his head back out the rear window and roared, "Hold yer flippin' fire; there's a child in here!"

The words "real Ireland" came to mind. It's a phrase the Irish use to describe any place other than where they are right now. By "real Ireland" the Irish usually mean postcard Ireland, even mythic Ireland, a not-too-distant past for which they suffer pangs of longing—and also embarrassment: A smart city type in a recent play by Brian Friel peers around a rural landscape and with a shudder declares, "Bloody Indian territory!"

Real Ireland is an urban nation now. A quarter of the population lives in metropolitan Dublin alone, and manufacturing, not farming, is the engine of the Irish economy, mostly under the control of multinational companies. It is the youngest country in Europe, with almost half the population under 25. It has also lately realized that half its population is female: The Irish Constitution still says a woman's place is in the home, but women now constitute a third of the workforce, and they've become a dynamic element in public life, most visibly with the election of Mary Robinson as Ireland's first female president.

The light in Ireland now is often neon. Scruffy neighborhoods like Ballymun have inspired a string of eccentric hit movies, among them *My Left Foot, The Crying Game,* and *The Commitments,* in which pale-faced jackeens (the slang term for Dubliners) growled "I'm

ELEGANT AD on a tour bus promotes visits to Dublin's Georgian-style Custom House. Merrion Square row houses share the design tradition. Elsewhere vintage buildings fall to new construction, raising the ire of preservationists who decry the razing of the nation's architectural patrimony.

SURF WASHES THE TURF at the Laytown Strand Races, where punters, or bettors, crowd close to urge on their picks. An infatuation with fast horses dates from the arrival of Celtic warriors from the Continent about

500 B.C. with their hell-for-leather chariot racing. Endowed with emerald pastures rich in bone-building calcium, Ireland remains, in the view of an Irish National Stud official, the "European nursery" for horses.

Nine counties made up the ancient province of Ulster. Three now lie in the republic; the other six, divided into 26 administrative districts, define the boundaries of Northern Ireland, often referred to as, simply, Ulster.

Northern Ireland district boundary
Ireland county boundary
Airport
MILES
NGS CARTOGRAPHIC DIVISION

Only a day's drive across, Ireland hardly seems large enough to contain its clamorous history. A succession of invaders—Celts, Vikings, Normans—created an Irish stew of peoples that seethed during 700 years of English domination. Waves of outmigration were set in motion by high birthrates, the practice of farmers bestowing property only upon the first-born son, and the 19th-century potato famine.

Contention over territory will remain as long as forces for and against uniting British-controlled Northern Ireland with the Republic of Ireland, independent since 1922, stay locked in their murderous stalemate.

black and I'm proud" while endeavoring belatedly to bring soul music to Ireland. U2, often dubbed the world's most successful rock band, originated just down the road from Ballymun and has invested its wealth to make Dublin a center of the international music industry. Glitterati prowl the streets, Mick Jagger often among them. At times it feels as if the entire nation is hurtling into a honky-tonk future with the rag ends of its discarded peasant culture still fluttering wildly in its wake.

Ireland has become prosperous, partly because the spirit of enterprise has revived after long stagnation—and also because the European Union has handed over almost 30 billion dollars for modernization and farm subsidies since Ireland became a member in 1973. Where once all cars were Fords, and even they were scarce, it's common now to see BMWs in the streets. Where displays of sophistication once incurred withering disapproval, everyone seems to vacation in the Canary Islands now, and, for those who don't, every town has "turbo sunbed" tanning. But at the same time, joblessness has soared, to nearly 20 percent (and more than 60 percent in places like Ballymun). Headlines tell of tourists mugged at needle-point by heroin addicts and police pelted with stones in the housing projects of Dublin and Galway. Along with freedom and promise, there is a sense that the Irish have come adrift from their old social anchors in the land, the church, and the family.

The old vision of Ireland, of Roman Catholic families living in "frugal comfort" on small farms and of "comely maidens" dancing at the crossroads—the dreamy rural myth, celebrated by Eamon de Valera, independent Ireland's most towering political figure—had already faded by the 1970s.

FIRST WOMAN PRESIDENT Mary Robinson greets Jason Prendergast on a visit to the island of Inishbofin with her husband, Nicholas Robinson, at right. As a legislator in 1974 she shocked voters by calling for the legal sale of contraceptives. She's now widely admired as a progressive: Family planning is finally taking hold in Ireland, where nearly half the population is under 25.

But it has been smashed to bits in recent years by a series of painfully public events—notably the "X" case, in which a 14-year-old girl was raped by a friend's father and the government tried to stop her from traveling abroad for an abortion. (Having voted overwhelmingly to ban abortion in the 1980s, many Irish suddenly found themselves in the agonizing position of identifying the victim with their own daughters. An abortion-rights activist recalls that instead of spitting, people started "shaking our hands and taking pamphlets.") Soon after, the news broke that one of the country's most popular religious figures, Bishop Eamonn Casey, had conducted an affair with an American and refused, at first, to acknowledge his own son.

The old vision of Ireland has also suffered because of the squalid conflict between Catholic and Protestant over Northern Ireland, the six Ulster counties that remain part of the United Kingdom. Before the Irish Republic won its independence in 1922, the English dominated Ireland for more than 700 years, and a lingering colonial mind-set still colors Irish thinking.

Any conversation can turn, with a fresh sense of injury, to those times when Catholics were forbidden to buy land, speak Irish, or freely practice their religion. The 900,000 Protestants of Northern Ireland recite with equal passion a fear of yielding power to Catholics. In the republic the constitution and the leading political parties have long stood for a united Ireland governed from Dublin. But 25 years of sectarian murders have made the old rhetoric unpalatable. "We know very well," a Dublin columnist recently wrote, "why any expression of Irish nationalism has come to be regarded almost as an embarrassment."

"HE'S QUIET and easy to catch," says Lee Johnson, at left, of his pony Gypsy. Lee tends his charge in a stable behind his home in the Clondalkin district of Dublin, a metropolis where cars still dodge horse-drawn carts hauling vegetables to market.

I've visited Ireland nine times over the past 16 years, taking in the pace of change at intervals. I go back partly because I was reared in 1950s America as an Irish Catholic, and the state of mind is familiar: the delight in words paired with a facility mainly for expressing one emotion (isn't irony an emotion?), the sensual nature constricted by the fear of hell, the longing for faith muted by resentment of the church, the liberal social outlook dragged down by intolerance. When I hear the Irish talk with love and bitterness about their own culture, and when I feel the tension between old and new there, something still resonates within me, however distantly.

I go back because I love Ireland, largely for what has stayed the same. Even Dublin remains relaxed by foreign standards, and people mostly act as if other people still matter. I like to wake up to the morning sun on the green copper domes and yellow chimney pots, the smell of toasted brown bread with strong tea, and the latest exchange on the letters-to-the-editor page: On Monday, a correspondent asks how a driver can signal her apologies when she makes a mistake on the road. On Thursday—eureka!—a reader replies that he strikes his breast with a profound "mea culpa." I get up from the table determined to commit egregious errors on the road and hand-signal the lovely sense of sharing, however unworthily, in a community.

I go to Ireland because it is still possible to pick up existential philosophy from the telephone operator and come away wondering what more efficient societies do with the time they are so busy saving. One day I dialed to get the number for a fishing lodge named Delphi in County Mayo. "Delphi," the operator mused. "Like the oracle." He leafed through his directory. "And when you go for the fish in Mayo, they are just as mysterious and elusive." The Irish have held on so far to the knowledge that God didn't put us on this earth solely to catch the fish or get the number. That's sometimes easy to forget, especially when the subject at hand is modernization.

"NOEL C WAS A GOOD HORSEMAN in those days," a farmer named Tom Meaney told me, over tea and black-currant jam, one day in the town of Millstreet, County Cork. "He was a tough man in a tight finish." The racetrack memory rose before his eyes and shifted him to the front of his chair. "Driving finishes, *oh yes, oh yes, oh yes!* Giving out left and right with the whip, and they wouldn't all be going to the horse. Of course, he was taking them too."

The neighbor under discussion, Noel C. Duggan, is 60 now and hasn't mellowed much with age. He drives through town in a silver Mercedes, with the visor down. He is a small, enthusiastic man with a mobile phone on his belt and clear blue eyes fixed on big dreams. One knee bounces, and his fingers drum if he is restrained from moving toward those dreams

for more than five minutes at a time. Noel C, as he is known everywhere, has become the uncrowned king of Millstreet, celebrated as a symbol of what is ambitious and healthy about modern Ireland.

Millstreet today is a handsome rural town of about 1,500 people, little more than a single street of freshly painted pubs and traditional wood-fronted shops with nasturtiums spilling out of window boxes. It rises on a hillside in a landscape of high, dark mountains and rolling green fields. But when Noel C got his start, it was a dying backwater, bypassed by the Cork-Killarney road and the automotive age.

As the eldest son among 11 children, Noel C quit school at age 13, on his father's death. His neighbors believed his attempt to revive his grandfather's hardware business was doomed to failure, like Millstreet and Ireland itself. "They laughed and they scoffed and they mocked and they talked at the corner," he recalls, voice tightening. The memory is commonplace in Ireland: A sense of inferiority, of having no future, was one of the most pervasive effects of Ireland's long colonial history, and so was begrudgery, the use of the sharp put-down to discourage anyone else from taking too big a piece of a meager pie.

But Noel C prospered, expanding into the structural-steel business. He kept his car visor down then, he says, because "I had the attitude that if I must drive through the town, then the less people I saw, the better. I got all my business out of town."

No single event or flowering of brotherly love seems to have transformed Noel C into Millstreet's most energetic civic booster. But in the late 1970s a small group of local leaders

began to meet at his house to find ways of putting Millstreet back on the map. The result is that the town now has nearly 500 high-technology jobs, hardly any unemployment, and a reputation for white magic. Millstreet hosts an international horse show that rivals the world-renowned Royal Dublin Society show. Last year, when the "Dublinization" of Ireland was otherwise advancing unchecked, Millstreet displaced the capital as host for the Eurovision Song Contest, a major European entertainment event.

Noel C has made the revival of Millstreet his holy mission, for what seemed to me a benevolent but also a dark and intriguingly Irish motive, a motive that is on the rise in modern Ireland: It is the pendulum opposite of begrudgery, a determination to prove everyone else wrong, to reverse the fate of his grandfather, who died "a disappointed man in a dilapidated community," even to undo centuries of colonial backwardness in a generation. It can be an indomitable force, especially paired with clever execution. Thus Noel C offered the Eurovision contest free use of his six-million-dollar horse-show complex, built largely with European Union grants. But he made sure that participants from 25 nations would each begin with the same greeting, "Good evening, Millstreet!"—a promotional mantra going out from his backwater to 300 million television viewers worldwide.

The community seems to animate Noel C's every thought now. The visor stays down out of habit, but as he drives, he exchanges greetings with almost everyone. To enlist the town's support, he put away the whip and learned to listen to his neighbors.

Noel C turns the car into the driveway of Drishane Castle, one of the great estates that once constricted Millstreet under the old colonial system of landlord ownership. All four surviving estates now belong to Noel C. "These were all no-go territories when I was a child," he says, his voice brimming close to satisfaction. "You can be sure that I was chased out of them. Now that I own them, they're open to the whole world." The castle will become Millstreet's first hotel, and the plan inspires him: "I'm talking about a health-regeneration center, together with a sports-rehabilitation facility!" He is exultant. "I was the chosen one to do something to make the town busy again. I love doing it. I'll die a happy man." But not too soon. Noel C glances under the car visor at the green hillsides and, like a vista, his agenda for Millstreet opens before his mind's blinkered eye. "I haven't even begun yet," he says.

But it would be misleading—and maybe a little terrifying—to suggest that Ireland has become a nation of Noel C. Duggans. On the contrary, I often felt in my travels as though the rest of Ireland were still waiting to be born, and, unlike Millstreet, not much looking forward to the prospect. "I don't think we've come into the world yet," a Dublin man hedged. "We're still in the embryo." Everywhere, I encountered a sense that traditional Irish values have failed or been corrupted. But while here and there a Noel C pursued his new vision, most people seemed more interested in griping about the old way of life, in fixing blame for what they'd lost, or in picking over their whole shattered mythology for a laugh.

"There used to be a dairy there," said Betty Cashin, a grandmother with ruddy cheeks and blond curls gone to platinum. We were walking down Summerhill, a street on the north side of Dublin where she'd raised her children. "You'd go and ask for maybe a half pint of milk and pay two pence for it. They had it in a big wooden bucket on the counter with a cloth over the top, and they'd scoop it out with a glass for you. There was a grocery next door, with fresh butter. Ah, it was the best thing you could taste. God bless the days, when they were good!"

Those days were also often desperately poor. Even into mid-century, some Dublin families still shared a single room without plumbing, and children sometimes went barefoot in winter. But what lingers with the older generation is the lost sense of neighborhood. People may not have had money to buy meat, but they remember when a neighbor was more fortunate—and passed along the cooking water from her boiled bacon and cabbage so the cabbage of the family next door could have at least the flavor of meat.

"You had neighbors and they were grand," said Mary Corbally, who lived around the corner from Betty Cashin. "I loved standing at the door. That was me life. I had a brick to hold it open so the kids could run in and out. I used to love it when it was raining, because all the kids would sit in the hall roaring and screaming. I miss it. It's too quiet now."

The shops and the old Georgian tenements

END OF THE ROAD for Ireland's poor, Dublin's O'Connell Street Bridge serves as a grim sanctuary for panhandlers like this destitute boy. Ireland suffers from nearly 20 percent unemployment despite white-collar jobs created by infusions of capital from foreign companies churning out such goods as pharmaceuticals and computer equipment.

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are gone from Summerhill, replaced by public housing in the 1980s. "I tell you what sticks in my mind," said Corbally. "It took 'em longer to knock the old ones down than it did to put up the new ones. They were solid stone. They're only cardboard now."

In the 1980s people began to recognize that the essential character of the city was disappearing along with its fanlights and wooden window sashes and brass-knobbed painted doors. Preservation of Dublin's celebrated Georgian architecture became a fashionable cause. New buildings with neo-Georgian details began to appear everywhere.

Oddly, though, the destruction of Georgian neighborhoods didn't stop. Every time I went back to visit, another street of brick row houses and pubs had fallen to make room for a shopping mall or a commuter roadway. The attitude among urban developers seemed to be that saving Georgian streetscapes was a nice idea but too costly and inconvenient. It also flew in the face of the deeply felt Irish urge to be as modern as any other nation.

On Summerhill, Betty Cashin was walking past a row of new apartment houses with railings and moats out front, as if with the purpose of cutting off any possibility of street life. "There used to be houses from the corner up to the flats," she said. "Big, big houses, and really lovely families living in them. When they were moved out to Ballyfermot and Finglas and the like," she said, listing new housing estates, "they died of broken hearts."

What had been left behind was a thoroughfare. As a gesture to the old neighborhood, the streetlamps echoed the traditional Dublin style, their tops bowed over like the crook of a bishop's crosier. But the corner was depopulated, given over to abandoned buildings and a

CURIOUS PALS: Fungie the dolphin and Jock the terrier jump into ecstasy when they meet in Dingle Bay. A yapping Jock is restrained from bounding out of owner John Doyle's boat. Fungie sometimes responds to

Jock by leaping over the bow. Since he was first seen in 1984, the dolphin has attracted swarms of human admirers and has become a living symbol for those seeking to raise Ireland's environmental awareness.

A PAGAN HEART *and a Christian soul feed the roots of the Irish nature. The Macnas theater group celebrates pre-Christian culture during a festival in Athenry. But Roman Catholicism is decidedly paramount, especially in western precincts like Dingle, where girls step from St. Mary's Church into a blustery Sunday in May following their first Communion.*

parking lot. The road had been widened for commuter traffic. "They've made it better for cars, more so than people," said Cashin. "Very sad, when you think back on it."

The old Dublin had been purged almost systematically, as a blight. At each end of Summerhill billboards advertised an Irish whiskey in the cosmopolitan language of the suburban motorists whipping through. "*Moelleux!*" said one billboard. "The French are great lovers of its smoothness!" "*Vellutato!*" said the other. "Italians are quite vocal about its smoothness!" The whiskey called itself the "Spirit of Ireland," but the billboards were like fancy bookends on an empty shelf.

ONE SUNDAY IN JULY, I joined the long line of pilgrims working their way up Croagh Patrick, the penitentially steep and rocky west-coast mountain from which St. Patrick himself once prayed for the Irish. It was a rugged climb, with our backs to the pewter surface of Clew Bay. Rescue teams edged down through the crowd bearing the injured, whose scalps were bloodied by falls; they used trailing ropes to brake the stretchers on their descent. The rocks rumbled under the tramping of our feet, and a pilgrim sang, "Rollin', rollin', rollin', keep them doggies rollin'!"

Featherweight soda cans clattered across the stones in a wash of candy wrappers. But in the dark clouds at the top, we passed back into a former age. Voices muttering their prayers rose above the wind. The faithful paced around a cairn in a tight circle, each as keen and focused as a tooth on a gear, many also ticking off the smaller gear of the rosary in one hand, a fierce clockwork of prayer.

On the climb down, I fell in with Tom Collins, a bus driver. He leaned heavily on his cane to ease the burden on his unshod feet, which were bruised and clammy with cold. "Why barefoot?" I asked.

AD HOC VILLAGE of caravans, or trailer homes, houses vacationers on the Burren, a karst in County Clare. Fearing harm to the area's fragile vegetation, environmentalists have gone to court to block construction of an interpretive center at nearby Mullagh More.

"Penance," he said. "Because I cannot forgive people. And deep faith." Collins wanted the old Ireland back: "It's changing for the worse. All the modern conveniences we have, the 'mod cons,' they're not good. It's like when Satan appeared to Jesus and said, I'll give you anything in the world you want.

"We're turning away from God," he added. "My views embarrass people. They embarrass my brother, and he's a priest." We passed another barefoot pilgrim. "Oh, you're doing very well," Collins called out. "Pick the flat ones and take your time."

For a moment he watched the sunlight moving across a hillside. The bay below was dotted with islands and bright spits of sand. The opposite shore was a patchwork of green and gold fields. "I love looking at the grass," Collins said. "Because I remember that not a blade of grass nor a hair on your head goes uncounted by God. And when you think that a dark-haired fellow like yourself has 100,000 hairs, God is very close, very personal."

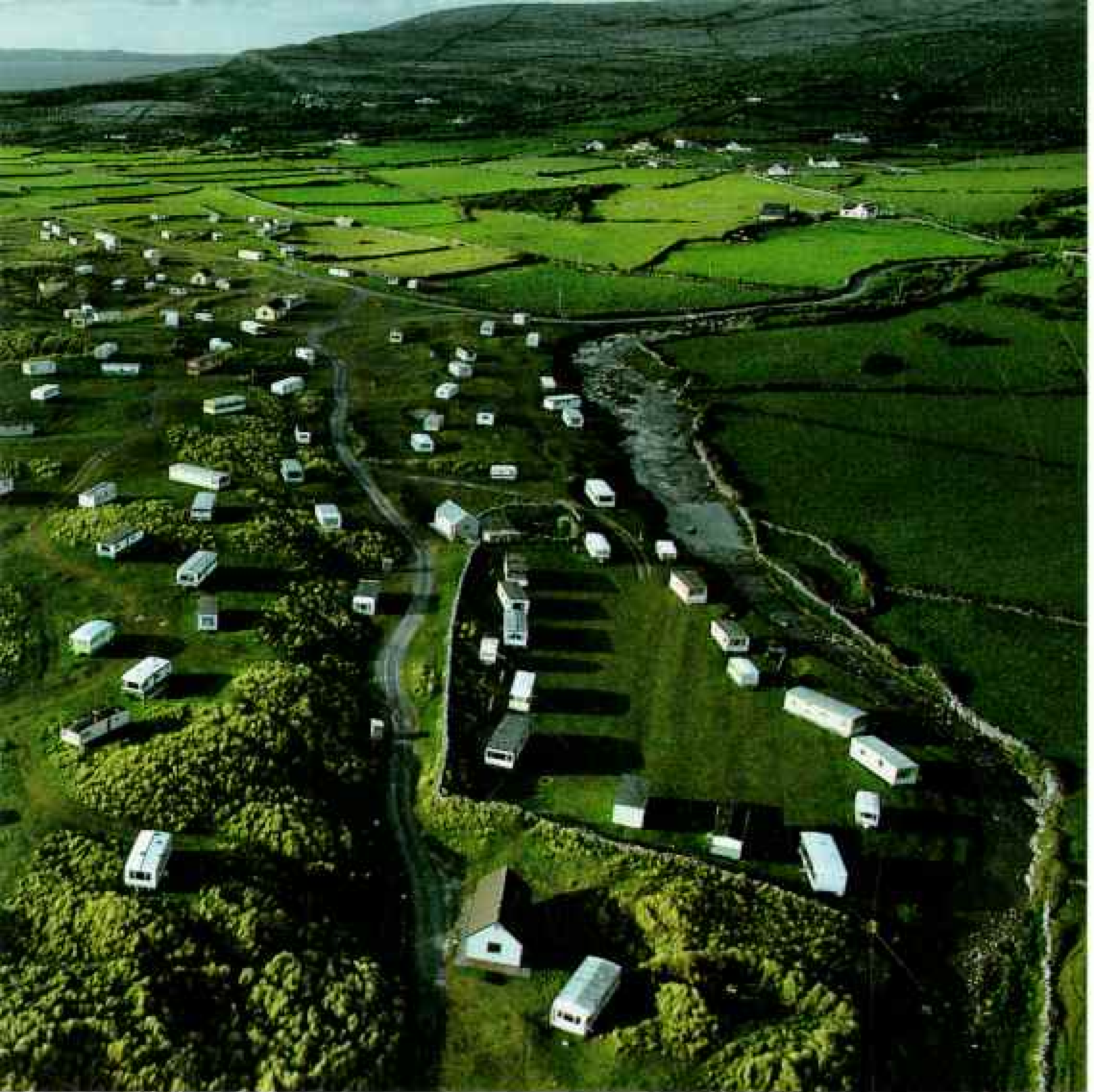
We said good-bye, but I thought about Collins all the way back to level ground. His words impressed on me how powerful the force of deep faith remains in Irish life.

FOR BETTER AND FOR WORSE, the Catholic religion has long been the backbone of Irish Celtic identity. Under the British the parish priest was often the only figure of authority to fight for ordinary people. Sunday Mass, the one event attended by almost everyone, helped keep alive the Celtic sense of community. Through pulpit and confessional, the priest presided over local life well into this century. A boy's forelock, Mary Corbally told me, was his "God bless you, Father," to be tugged deferentially in the streets. Until recently bishops could dictate national law. Even now the church controls almost all state-funded primary and secondary education.

What has disappeared, for the most part, is the use of religion as an instrument for counting the hairs on other people's heads. In the old Ireland, people were quick to note even the smallest deviation from approved form. "It was the valley of the squinting windows," a Dublin man told me, using a figure of speech that lingers vividly in people's memories.

The consequences could be painful, particularly because the windows squinted most ferociously on matters of romance. Courtship was "an occasion of sin" for confession, and a boy and girl who strolled hand in hand were risking the eternal perils of "pernicious night walking." "The worst thing," a woman told me, "was when you said you'd been keeping company. The priest would always ask, 'And what did you do?' "

The obsession with sex often translated into an obsession with the purity—or impurity—of women. A tough, cigarette-smoking Dublin woman I met recollected a religious custom



surrounding her mother's 13 childbirths: "When you gave birth to a child, you'd committed the sin of Adam, so you weren't allowed to carry the child to the church. The godparents carried the child, and you'd go in a little side door, and on the side altar you were blessed by the priest with oil and holy water. I suppose it was like a form of exorcism."

She herself went on to marry in complete ignorance of human reproduction. The year was 1971; the woman was my age, a postwar baby at the height of the sexual revolution. "I didn't know what marriage was," she said. Her husband abandoned her, an "Irish divorce," when she was pregnant with their sixth child. That old sexual repression is gone now.

No single life reflects how Irish attitudes have changed more visibly than that of Mary Robinson. As a young senator in the 1970s, Robinson introduced the first bill to legalize the sale of birth-control devices, and she was widely vilified as "Contraceptive Mary." Today, at 50, President Robinson is often revered as "Our Mary."

Her election was, on one level, a fluke. A constitutional lawyer and a feminist who fought for free access to abortion information, among other issues, Robinson was nominated in 1990 by the also-ran Labour Party. In one unguarded campaign interview, she denounced "the whole patriarchal male-dominated presence of the Catholic Church" for oppressing Irish women. Robinson's image-makers rushed to emphasize her conventional private life as wife and mother of three. But she won election primarily because Ireland's dominant political party collapsed in a wave of GUBU, the gleeful acronym

for "grotesque, unbelievable, bizarre, and unprecedented" scandals. Robinson alone seemed to stand for independence and integrity. Having astonished themselves by electing her, the Irish went on to embrace her as a symbol of their own newfound tolerance.

When I talked with Robinson in the eerie stillness of Áras an Uchtaráin—"the president's home"—in Dublin's Phoenix Park, it struck me that the Irish have also ensured that she will be little more than a symbol. The position is largely ceremonial, and Robinson's own personality also inclines her toward academic and lawyerly reserve. She describes herself now as a practicing Catholic. But our conversation suggested a thoroughly modern Irish faith, deep with tangled crosscurrents.

We talked about the rural town where Robinson grew up. In the old Ireland the worst fear was to be "read from the altar" by the priest. During the contraception fight, Robinson's devoutly Catholic parents sat in their pew and heard their daughter's efforts denounced in a letter from the archbishop as "a curse upon our country." The memory still brought a note of suppressed emotion to Robinson's voice 20 years later. "The worst thing," she told me, "was the pain it caused my parents."

LIKE ROBINSON, 92 percent of people in Ireland describe themselves as Catholic, but church teachings on romantic matters have become, for many people, a quaint memory. One night I attended a play recalling an Irish mother of the 1950s who sewed rosary beads onto her daughter's underwear, to protect her from sin. Soon after, I heard about a 1990s mother sending her 16-year-old son off to the Continent. She sewed small pockets for condoms into his clothing to protect him from AIDS.

The sale of contraceptives has been legal in Ireland since 1979, and the birthrate has plummeted almost to the level of other European nations. As part of a broad program of liberalization, the government last year decriminalized homosexuality. Irish voters also recently approved the right to abortion information

A NET CAST IN HOMAGE marks an Inishmore grave on the windy Aran Islands, covering a water-filled sphere and its saintly figurine. Hikers risk joining the departed by braving the dark crags of the southern Dingle coastline, where foolhardy rock climbers and anglers seeking a better fishing spot are sometimes washed out to sea.

SCORE! Red-jerseyed hurlers from County Cork tangle with the lads from Wexford in the league title match. Players use their sticks to whip a hard leather-covered ball toward the goal in hurling, akin to field hockey and Ireland's national sport for more than 2,000 years.

and to travel abroad for an abortion but retained the constitutional ban at home. In a referendum expected to take place next year, they will vote on whether to legalize divorce.

Sex, having been the obsessive subject of all private morality in the old Ireland, has become the obsessive subject of almost all public debate now, at times to the exclusion of weightier subjects. Reading the newspaper letters page, I sometimes felt that people were more concerned about whether girls should be allowed as altar servers at Mass than about children being murdered in Northern Ireland. For all the talk, what has replaced the old morality is a treacherous void.

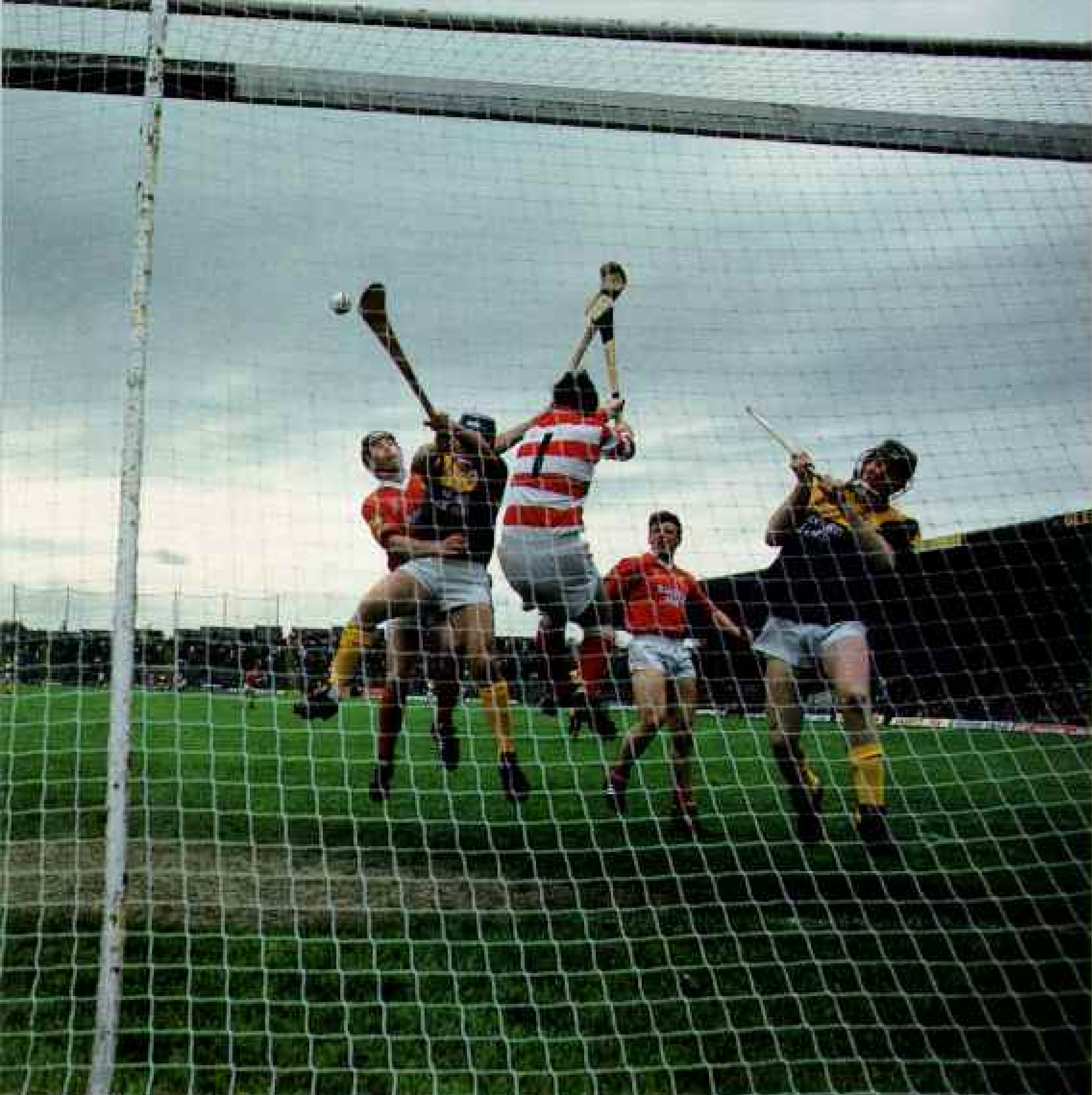
"I remember when I was a kid swinging around the lamppost," said Tommy Phelan, an affable grandfather, with a one-sided grin and bandaged eyeglasses set on a broad pink nose. He leaned with his fists set apart on the kitchen table of his house in Ballyfermot, on the outskirts of Dublin. "There was this girl, and I wouldn't give her a swing. She said, 'My mammy says you don't have a daddy.' I told my mother, and she cried her eyes out. I never asked her after that. I never knew my father."

Phelan grew up in the 1930s in one of Dublin's poorest neighborhoods. An urban-renewal scheme eventually relocated him to Ballyfermot, but he has not died of a broken heart. On the contrary, Phelan's life still has the qualities of warmth and familial attachment that have always been among the most appealing traits of the Irish. To my mind, these are the very traits that might keep the Irish from being shattered to smithereens on their plunge into the brave new future.

But the family is prominent on the list of institutions that have fallen out of fashion in modern Ireland. "Marriage has been a disaster for Ireland," a nun told me, and she could cite innumerable cases of abuse, alcoholism, sexual misunderstanding, and emotional deprivation, the bumper harvest of Ireland's peculiar history. "I've heard marriages that were hell for the women depicted by their sons on the altar as models of Christian love."

A feminist argued that, for some women, community groups were replacing the family as the basic social unit. I suggested that this was a recipe for social disaster, and that Ireland of all places ought to be working to reform, not replace, the family. But young people I spoke with said that current laws on social-welfare benefits make it smarter for them to stay single: "You lose everything when you marry." Thus one in every five births now is to an unwed mother, often a teenager, and hardly anyone feels comfortable saying this is wrong.

The grandparents often end up taking care of the new baby, evidence that the Irish family remains strong in fact, if not in reputation. Sooner or later these elders note that pregnancy outside marriage is hardly new to Ireland. They recall a sister who went to England and gave up her child for adoption, a neighbor



who "went into Lourdes convent and never came out," or a rare mother, like Tommy Phelan's, with the strength to rear her child alone. All this colors their perspective.

"My daughter got a letter from her doctor that said she was pregnant," Tommy Phelan was saying. "She was 17. John, my son, you know, is a great diplomat. He came up to the house, and he said, 'Terri's pregnant.' I was just shocked. 'Mammy's in a terrible state,' he said. 'She thinks you'll blow.' He went off, and I was left to think about the pros and cons. So I thought, 'Terri's dependent on me. She's my daughter. There's a home for her here.' She came in that night, and we put our arms around each other. And I said, 'We've had problems before; we'll work this one out.' If you don't have problems, you haven't lived."

His daughter and granddaughter Claire, a sly, bright-eyed five-year-old, were both at home still. "She's very interested in books," he said. "She can hold a conversation.

"A friend asked her, 'Have you a daddy?' " Phelan added. " 'No,' she said, 'I have a granda. I prefer grandas because they play with you.' "

I CAME AWAY FROM IRELAND feeling a familiar pessimism. The Irish are a very unfair people; they never say anything good about one another. They still do not believe in themselves, despite the evidence of the Tommy Phelans, the Noel C. Duggans, the Mary Robinsons, and all of Ireland's current celebrated crop of moviemakers, musicians, and poets. If the old vision has failed, no new vision seems likely to replace it.

Historic mistrust of British authority has

become a national mind-set, and segued too easily into cynicism about their own democracy. "Everyone's entitled now to be on the fiddle," Tommy Phelan complained. "Stealing is acceptable, at least off the government," a neighbor agreed. Cheating on welfare, living off the black market, and the giving or getting of "backhanders," or illegal payments, were so commonplace that they seemed at times like the new national pastimes. Laws, a priest told me, "are for the guidance of the wise and the observance of the fools." There didn't seem to be many fools in Ireland.

"Everyone loves to pull one over on the boss; everyone hates authority," said Cian O'Tighearnaigh, an animated talker who heads the Irish Society for the Prevention of Cruelty to Children. "The Irish have extremely low self-esteem and an incredibly angry view of society," he said. "Aren't they the traits that mark out the child that is dependent, that has been treated in a degrading way?" He ticked off the familiar objects of Irish anger: their colonial past, the church, alcoholic parents, abusive teachers, Protestant or Catholic countrymen who'd become each other's sectarian rivals—a portrait of the nation as dysfunctional family.

IRISH POLKAS and Kerry slides spring from the fiddle of Francis O'Halloran, who draws tourists and locals to Day's pub on Inishbofin. Irish brewers are tapping new markets abroad by franchising the complete Irish pub—lock, stock, and stout.

"I used to hear people say, 'That Christian Brother who beat me, if I could get him now, I'd kill him.' And I'd think, 'There's the pity in it, he's won.' If we could only say, 'That sorry lonely man. . . .' " It would take more than mere forgiveness to fix what troubled Ireland, but forgiveness would be at least a first step, a way to unlock the incapacitating grip of the past and move forward. "We have to do the same thing with our colonial history," O'Tighearnaigh said. "Until Ireland forgives the British and moves on," he added, "we will never be free."

But for once the Irish seemed to lack the necessary language. Instead of moving toward new beliefs, people were preoccupied grabbing their piece of the modern world, or finding scapegoats for the failure of the old. Thus in Ennis, where he was first elected to public

office, I found de Valera's memorial statue vandalized with a swastika on one arm, a pointy Lenin beard on his chin, and on his greatcoat the words "Nasty Boys." It was like the toppled statue of some communist ideologue in a breakaway Baltic republic.

I MADE ONE FINAL PILGRIMAGE, to an island off the west coast where white cottages are set in the flanks of a green mountain and gray stone walls mark the field boundaries, the sort of place that used to epitomize the rural Irish ideal. On my first visit in the 1970s I'd met a misanthropic old farmer there, who'd come down from the field where he'd been picking mushrooms and greeted me with the single word, "Tourists!" It was his idea that tourists, especially Americans, were a plague. They were fit, he suggested, only to be cooked, cut up, and served under glass.

I saw that he was baiting me, audacious speech being a favorite Irish sport, and I told him it sounded like the idea in Jonathan Swift's "A Modest Proposal" that the Irish solve their economic problems by dining on their babies.

"Aye," he replied, "savage indignation lacerates this heart too." The phrase was from Swift's epitaph in Dublin. So the farmer and I became friends and passed that afternoon in the traditional Irish activities of drinking too much and reciting poetry. He was the sort of character only the old Ireland could produce. He cared nothing for material comfort. His cottage had no electricity then, and his old socks hung drying on a rope slung across the smoky hearth. But words were the great love of his life, and he seemed to know every poem written in English in the past 300 years. We talked through a dinner of boiled potatoes and butter. His dog ate potato skins in a bowl of milk and seemed to be listening in, as if he knew the poems too.

When I returned this time, the island had changed. A tourist ferry had replaced the battered old postal boat from the mainland, and farming seemed to have lost its value. It was cheaper to buy potatoes from the big, mechanized farms of the midlands than to grow them here (in truth, the potatoes in Ireland often come from Cyprus now). It was easier to get store-bought butter and bottled milk by way of the ferry.

Money and sheep seemed to be everywhere on the island, and they turned out to be the same thing. Government grants had become the way of life, and the European Union pays a substantial subsidy per ewe, as a way of preserving farms in marginal areas. In places the sheep had chewed the heather down to stubble, and the slopes were beginning to erode. Beneath the sagging fretwork of sheep trails, like a palimpsest, I could still make out the corrugations of the abandoned potato beds that once made this island self-sufficient.

My friend had died since my last visit. He'd left the farm to a young American woman who'd lived with him the last years of his life and immersed herself in the old island culture. On the mantle, like artifacts in a shrine, were his old sheep shears, still sharpened, along with his photograph, and on the side of the hearth a pair of his worn boots.

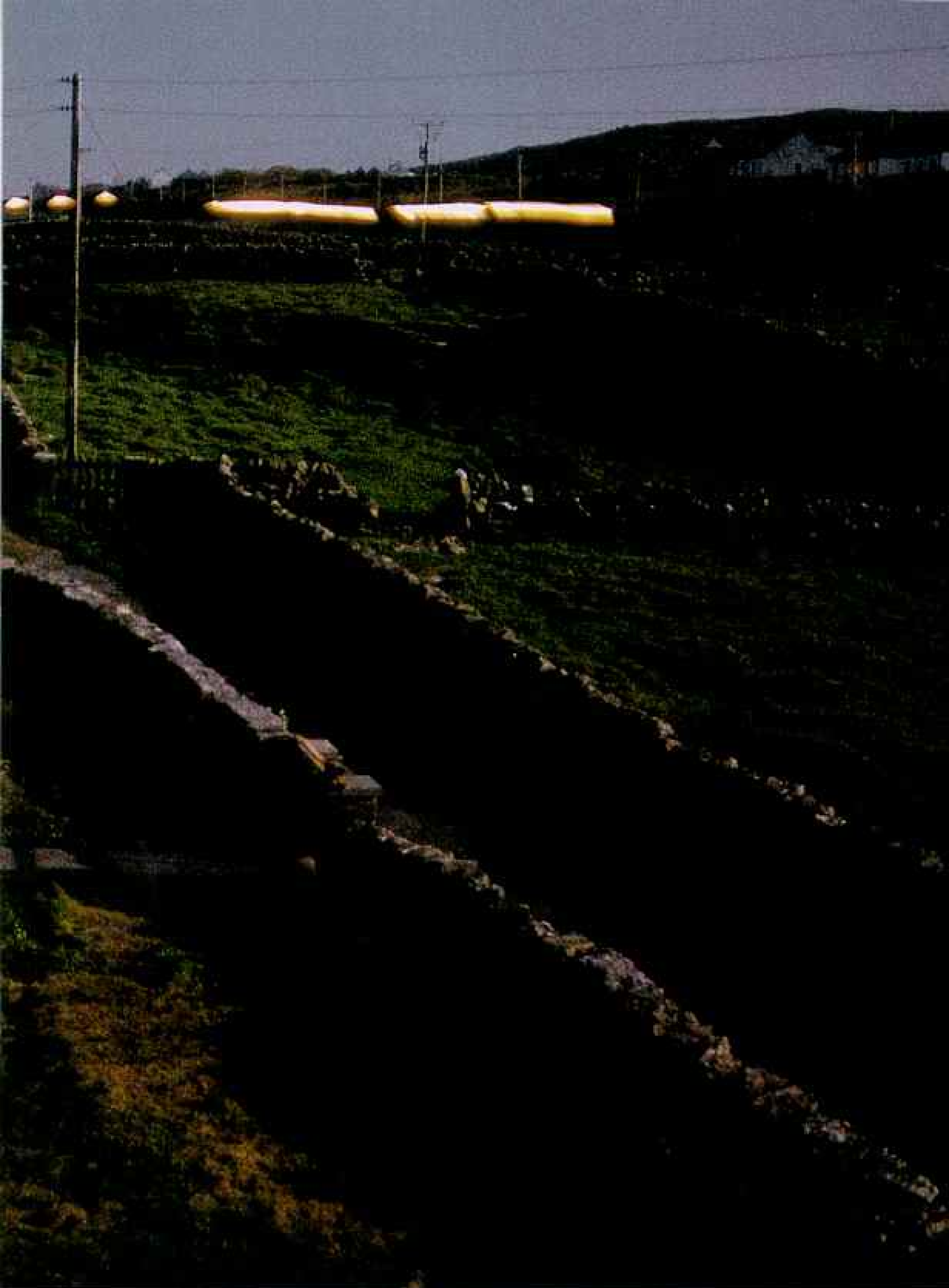
But times had changed. There was a surplus of lamb, and the woman was hoping she could get the European Union to pay her a subsidy not to grow sheep. The buzzword everywhere was "agritourism," which meant making the rural landscape pay by attracting tourists with horse treks and golf courses. The woman had just applied for a grant to turn the farmhouse into a bed-and-breakfast. Ireland was to become the playground of the world.

"I suppose he must be turning in his grave," she said. She was embarrassed, so I wished her luck and said good-bye.

She'd buried him well, on a high saddle of land in back of the house, in an old potato ridge. I stood there for a while and took in the view across the water, waiting for the light to brighten. It was one thing you could count on in Ireland. I thought about a line the farmer had recited that day we first met, from a poem by William Butler Yeats: "For nothing can be sole or whole / That has not been rent." Maybe nations, too, needed to rip themselves apart before they could become complete. Having shattered their old mythology, maybe the Irish would yet pick up the best pieces and reshape them into something strong and new, not an image they could retail to tourists but an identity with which they could live. I took a stone and added it to the small pile on the grave, in honor of everything I had liked about the farmer and Ireland itself.

But the sky remained sodden and the surface of the bay stayed dull as lead, and I went down to the ferry with the dismal feeling that, for now, Ireland was in danger of making itself look like everyplace else in the world.

BURNISHED BY THE MOON, *a horse dozes at fisherman Martin Dirrane's Oatquarter Cottage on Inishmore. Forebears of the islanders appeared in the 1934 documentary film Man of Aran. Aromas redolent of the curragh,*



the islands' traditional boat—leather, tar, wood, and the sea—have been distilled into a cologne called Man of Aran, another attempt to bottle Irishness—and make it pay.

NORTHERN IRELAND

After 25 years of bloodshed, Northern Ireland's "Troubles" operate with the slickness of business as usual. The former "hard men" have become gray and respectable. They wear argyle socks. They are careful to deny any personal role in the killing—and also to let on that they are "not, if you like, without influence." A former gunman reaching inside his zippered leather jacket now draws out . . . an electronic appointment book. "When you have been elevated into the leadership of a paramilitary organization, it has an aura within society," says one, with catlike self-content. "Whether it's fear or respect, who can say?"

More than 3,000 people have been killed—enough to remind the outside world that this is a serious fight, but not enough to force an end to the slow-motion civil war over whether the six counties of Ulster that make up Northern Ireland should remain part of the United Kingdom (the unionist, or loyalist, stance, identified with the 900,000 Protestants) or join the Irish Republic (the nationalist position, identified with the 600,000 Catholics).

For one bright moment last winter, the possibility of peace opened when Britain and Ireland jointly acknowledged Ulster's right to decide its own future. Thus far the belligerents have responded to the so-called Downing Street Declaration with characteristic mistrust. Changing attitudes in London and Dublin may still yield peace—but slowly. The real change must come from Ulster, where the most popular lie still begins, "I'm against violence, but. . . ."

Will It Ever Find Peace?

ALAN LEWIS, KATZ PICTURES

Mourners follow hearses carrying three members of a single family, 1993 victims of an Irish Republican Army bomb. It exploded in a Belfast shop, where the Protestant paramilitary Ulster Freedom Fighters maintained an upstairs office.

The violence cost Sally McCartan's family its first victim in 1972, Sally's brother-in-law—killed for going to a wedding in the wrong Belfast neighborhood. She pulls on a cigarette and dryly recounts the details: "They had hung him from a ceiling in a club, and they beat him with a starter handle from a car. Every one of his fingers was broken. We couldn't join his hands to put rosary beads in."

Since then, she and her husband, Sean, have seen ten members of their extended family killed, some by nationalists, some by loyalists. They are Catholics, but last year their son was shot in both legs by the Irish Republican Army for refusing to surrender his new taxi. Sean recalls when a brother, who "was a bit slow," was killed, and a Protestant brother-in-law publicly mocked loyalist "heroes" who murder the mentally disabled. The next weekend he was murdered too. Belfast is small enough that victims often know their attackers. "The very dogs know who's who," says Sally. They also know not to bark.

But Sally McCartan now works with a group called Families Against Intimidation and Terror (FAIT), to shame the killers. FAIT was founded by Nancy Gracey, a suburban Catholic housewife whose son was also kneecapped by the IRA. With

Fed up with violence, Nancy Gracey, at left, founded FAIT—Families Against Intimidation and Terror. With fellow organizer Sally McCartan, she hopes to shame terrorists into ceasing their killing and maiming.

their cropped and permed blond hair, their gold hoop earrings, and their cigarettes, Gracey and McCartan look like bowling-league matrons. But in a world of euphemism and innuendo, they speak plainly. When Gerry Adams, who heads the IRA's political wing, Sinn Fein, returned from his triumphant visit to the United States early this year, the two women assembled a group of IRA victims to confront him at the airport. One young man held up a sign: "My Wife was murdered by the IRA." Adams, who served as a pallbearer for her killer, made a run for the exit.

Gracey argues that politics have become a pretext for mob-style rackets: "The IRA are torturing their own people, and the loyalists are torturing their people, and they're making a lot of money off it."

The political realities in Northern Ireland have changed profoundly over the past 25 years. Gerrymandering to minimize Catholic voting power is gone, as is blatant discrimination in housing. In Belfast's most divided neighborhoods, the British soldiers now nervously patrol past handsome new public housing. The brick row houses, with lace curtains in the parlors and small gardens out front, would be the envy of any inner-city neighborhood in the U. S. The fair-employment laws are among the toughest in Europe, and the Anglo-Irish Agreement of 1985 allows Dublin officials to lobby for strict enforcement.

Catholics are still twice as likely as Protestants to be unemployed, but the reasons are complex, including an underclass mentality produced by past inequality. Middle-class Catholics have entered the civil service and

the professions in large numbers. But Catholics risk assassination by the IRA if they enter Northern Ireland's fastest growing job sector: police and security work.

It is the Protestants who feel alienated now. The violence has discouraged business investment, and many Protestants face chronic unemployment for the first time. They blame Catholics for taking all the jobs.

"You see that pub there?" a veteran of the loyalist Ulster Defense Association told me. "It's full of UDA men. If I went in there now and told them I could give them Gerry Adams or the head of the Fair Employment Commission, they would take the Fair Employment man."

Having prided themselves on their British nationality, Protestants also nurse a deeply wounded sense that Britain is engaged in "a creeping withdrawal" from Northern Ireland, while the Irish Republic steadily advances. British taxpayers now pay 5.2 billion dollars a year to subsidize Ulster and have grown impatient with the IRA bombing campaign on the mainland. Ulster Protestants are acutely aware that the Irish Constitution still flatly asserts jurisdiction over Ulster as part of a united Ireland, and that the Irish Republic remains a Catholic state.

The perceived threat has caused a revival in loyalist paramilitary groups, which have killed more people than the IRA over the past three years. The loyalists have also learned the IRA's deft brand of double-speak. One afternoon I met with a member of the UDA's inner council, a dapper man in tinted glasses, a dark turtleneck, and a double-breasted blazer. When I suggested that his group seemed to have committed itself to a campaign of bombings and shootings, he held up both hands as if to wave off such crassness. "We have become proactive," he explained. Later, he pointed a forefinger at me like a gun. There was a star of David on his gold pinkie ring. "We can't just bow down like the Jews did in Nazi Germany."

NORTHERN IRELAND'S best hope for peace now may be the bittersweet reality that neither London nor Dublin wants it as badly as past rhetoric might suggest. In the Downing Street Declaration, the Irish government acknowledged that it would be folly to drag Protestants into the republic against their will. Britain, for its part, declared that it would not stand in the way should a majority of the people in Northern Ireland someday choose a united Ireland.

At the same time, even nationalists worry that they might be worse off in the republic, where taxpayers seem to be unwilling to pay for Ulster's higher standard of social services. Civil rights in the republic also generally lag behind: Divorce, for instance, remains illegal, at least until a referendum expected to take place sometime next year. Over a pint in a club near the Falls Road, a former IRA man who went to jail for murdering a British soldier said, "I wouldn't want to be part of a united Ireland in the present context."

"The Catholics in Northern Ireland have very little in common with the Catholics of the republic," said another former IRA man, a convicted kneecapper who now works with FAIT. "The Protestants of Northern Ireland have very little in common with the people in England. We have to realize that we have a country: It's called Northern Ireland. People have to grow up and share responsibility."

It will be difficult. The widespread perception is that violence gets results, while normal political institutions have been stripped of even the most trivial responsibility because of past discrimination. People joke that the mayor of Belfast cannot get a streetlight fixed without asking a British civil servant.

But the hope is that if the outside powers lose patience with the violence and back away, the two sides will have to talk about shared responsibility. Ulster may also benefit from the growing influence of the European Union, which is making it less important whether people call themselves Irish or British, Catholic or Protestant. If nothing else, the new European bureaucracy may give the people of Ulster a common adversary. As one man put it, not unhappily, "We're all under bloody Brussels now." □

Anything but Empty

THE Sonoran Desert

Hot, parched, and sprouting with life, from giant saguaros to booming cities in the U. S. and Mexico, the Sonoran opens its arms to the hardy, including riders in Arizona's Superstition Mountains.

By PRIIT J. VESILIND
NATIONAL GEOGRAPHIC SENIOR WRITER

Photographs by JOANNA B. PINNEO

"Never say die" is a rallying cry for 79-year-old Foofie Harlan, performing a headstand with the Sun City Poms, a dance team from a retirement community outside of Phoenix. Since the advent of air-conditioning in the 1950s, the Sonoran has seen a land rush of retirees, drawn to golf, sun, and a life without winter.

The pinacate beetle is black and scabrous. And nasty. If threatened, it hoists up its backside and stinks. It gave its name to an equally black, scabrous, and nasty landscape—the volcanic field of cinder cones and lava debris called the Pinacate—the dark heart of the Sonoran Desert.

Summer heat nears 200°F at ground level here. Redeeming rains arrive in monsoon thunderheads that crackle with electricity. And the desert is thick with things that stink, prick, bite, hook, or flagellate—things armed and dangerous: cactuses, rattlesnakes, scorpions. Sun. Rock and earth. The air, its ferocious clarity defining all things in razor edges like a comic strip.

The Sonoran spreads evenly between Mexico and the United States. It yokes the Gulf of California at the delta of the Colorado River and spills down the bonelike peninsula of Baja California.* It covers parts of California and Arizona, including Yuma, Phoenix, and Tucson, as well as the Mexican state of Sonora and its rawboned boomtown capital, Hermosillo (map, page 45).

The desert has always been a place to avoid, or to overcome. Humans have left their layers like river sediments: ancient canal builders, nomadic Indians, Spanish missionaries, Yankee cattlemen and imperialists, cold warriors, cactus huggers, snowbirds. Many of them, too, were prickly, armed, and dangerous.

I spent six weeks traveling across this often bizarre landscape, seeing how the desert absorbed those layers and wondering how it would respond to the next. With population growth pushing land-use and water issues and with the passage of the North American Free Trade Agreement (NAFTA), the desert will change, and soon.

"This region is going to be either formally protected or commercially developed," says Luther Propst, director of the Sonoran Institute, a conservation and land-protection group in Tucson. "Isolation and aridity are not going to protect it for the future."

It is one of four North American deserts, along with the Great Basin, the Mojave, and the Chihuahuan, and for the most part the Sonoran still seems vast and untrampled. One of the largest intact arid ecosystems in the world, it shelters endangered animals such as

*The Baja Peninsula was the subject of an article in the December 1989 NATIONAL GEOGRAPHIC.

Watering it with the sweat of his brow, landscaper Bob Johnson transplants a saguaro to a Phoenix subdivision. The cactus carries a certification that he obtained it legally, a necessity in a place where cactus rustlers are thrown in jail.

the Sonoran pronghorn and the lesser long-nosed bat. And because it has rainy seasons in both summer and winter, the Sonoran is the world's most botanically diverse desert, with more than 2,500 species of plants. It is not, as Wendy Laird of the Sonoran Institute sputtered indignantly, "just cat litter!"

Among a menagerie of plants that seems straight from Dr. Seuss, the star of the desert is the saguaro cactus, the enduring symbol of Arizona that reaches heights of 50 feet, weighs tons, and lives as long as 200 years. The saguaro grows only in the Sonoran; its forests march up mountain slopes like brave soldiers.

The saguaro is so personable, with its chubby arms often set in a "hands up" look, that desert Indians say it's another type of human being. I saw one that seemed to cradle a baby, its arms wrapped around another little stem. Like man, the saguaro has an internal skeleton covered with pulpy flesh. When a saguaro arm is chopped off, it seems like an amputation.

The cactuses' humanity must be why urban cowboys from Phoenix and Tucson drive into the desert and use them for target practice.

"These guys like to shoot at the closest to animate thing they think is legal to kill," Larry Hammond of the desert landscaping firm of Cactus-R-Us had told me back in Mesa, near Phoenix. "Imagine standing there for 200 years in magnificent growth, just to have some punk come along and riddle you with bullet holes. And you're rooted to the ground. Can't do anything about it."

Saguaro rustling is lucrative, for each one can be sold for around $800. A legally taken

Aliens from planet Hollywood, extras take five while making the sci-fi film *Stargate,* filmed on movie-friendly sand dunes west of Yuma, Arizona. Special effects will turn background stick figures into a cast of thousands.

12

Anywhere, U.S.A., describes Tucson's Speedway Boulevard, growing wider to accommodate thickening traffic. A city of 40,000 in 1940, Tucson, with an influx of light industry and defense plants, is now at 430,000 and climbing.

saguaro sold by landscapers must be registered and licensed, but delivery is tricky; there is too much weight for the delicacy of the pulp. It must be handled like a corpse.

SOMETIMES the fragile balance of life and death in the desert seems irrelevant in Phoenix, where I began my trip. The city grandly ignores the lesson of the plants, that living things cannot clump together on land with little water. But when the skeletal remains of 800 Hohokam people were unearthed during construction of a freeway in 1991, it was a reminder of past hubris.

The Hohokam lived between A.D. 300 and 1450 in the river valleys where Phoenix and Tucson lie today and engineered the most complex system of irrigation canals in pre-European North America. They traded in salt, seashells, and rare minerals. They built temples and ceremonial ball courts.

When modern Phoenix rose, it rose from the ashes of the Hohokam.

"There were tumbledown ruins as far as the eye could see when the first white men came," said archaeologist Steve Lekson of the Crow Canyon Archaeological Center of Cortez, Colorado. "You can't put a sewer line or a highway in this town without running into some Hohokam archaeology."

The Hohokam were masters of desert living, but they vanished abruptly from the area around present-day Phoenix, not driven out

Photographer JOANNA PINNEO's most recent work for the GEOGRAPHIC was on European immigration in May 1993. She lives in Washington, D. C.

Sonoran Desert
National Park System
National wildlife refuge
Biosphere reserve
Indian reservation
Military land

0 100 MILES

NGS CARTOGRAPHIC DIVISION

by thirst but probably scoured from the valleys by powerful floods in 1353. The torrents must have been like the ones in the spring of 1993, when the Gila River spilled over Painted Rock Dam west of Phoenix after a season of heavy snows—trashing the floodplain, temporarily washing 3,000 people from their homes, and undercutting bridges.

Phoenix lies in the valley of the Salt River, in a natural desert cycle of drought and flood, but in the late 1800s Anglo pioneers lobbied the government to build a dam on the Salt to stabilize the water supply for farming and industry; the Theodore Roosevelt Dam was finished in 1911 and is scheduled for expansion.

Now, as more people pour into the Sunbelt, 30 percent of the water in central and southern Arizona is imported through the Central Arizona Project (CAP), a diversion of the Colorado River. Phoenix continues to mutate into something like southern California, an artificial land of green lawns and shade trees.

SONORAN DESERT

"Kingdom of sun-fire," wrote desert bard John C. Van Dyke of the Sonoran, its cactus badlands spreading 120,000 square miles across southern Arizona to California, the Colorado River Delta, and deep into the Mexican state of Sonora and the peninsula of Baja California. Native Americans survived here gathering plants and hunting deer and bighorn sheep. In the late 1600s Father Eusebio Kino, a Jesuit missionary, introduced a new god and a new crop—wheat. This century irrigation projects have allowed cities to bloom.

"The blob that ate Arizona," the late and acerbic environmental writer Edward Abbey called Phoenix. Yet the city fulfills a raw kind of American dream, creating something out of nothing. For many in Phoenix this is their source of pride, not shame. Making the desert bloom, they say, is not a crime . . . yet.

Arizona's other urban pillar, Tucson, seems more in tune with the desert and proudly uses local trees and plants to landscape yards and parks. But Tucson also relies on CAP water, and both cities are rapidly turning desert into suburban tracts and golf courses. CAP was perceived several decades ago as a farmers' dream, but urban demands for water have since skyrocketed. Now farmers can afford neither CAP water nor the cost of pumping from dwindling aquifers. Tens of thousands of agricultural acres have been abandoned or have grown saline from over-irrigation.

"The cities here are like lunar colonies," writer and desert rat Chuck Bowden told me over enchiladas one night in Tucson. "They are incredibly urbanized regions because there are no small towns out there. It's almost as if they were floating on the land."

I PULLED OUT OF TUCSON one spring morning in a four-wheel-drive jeep, heading for the empty hinterland. About 60 miles west, where the Coyote Mountains rise from the scrubland of mesquite, Kitt Peak National Observatory looks heavenward, and Route 86 enters the Papago Indian Reservation—2.5 million acres flattened against the Mexican border. This is home to some 6,000 Papago, or Tohono O'odham, the "desert people."

For centuries after the Hohokam scattered, five Indian nations dominated the desert. Apache wandered in the mountains to the east, Pima lived in the river valleys of today's Arizona. Seri fished and hunted sea turtles on the Gulf of California, and Yaqui farmed the river deltas in Sonora.

A few good men clean up live ordnance in California's Chocolate Mountain Aerial Gunnery Range. One Marine (foreground) carries an explosive from a cluster bomb. U. S. fighter pilots were schooled for the Persian Gulf war on ranges that cover more than 12,000 square miles of the Sonoran.

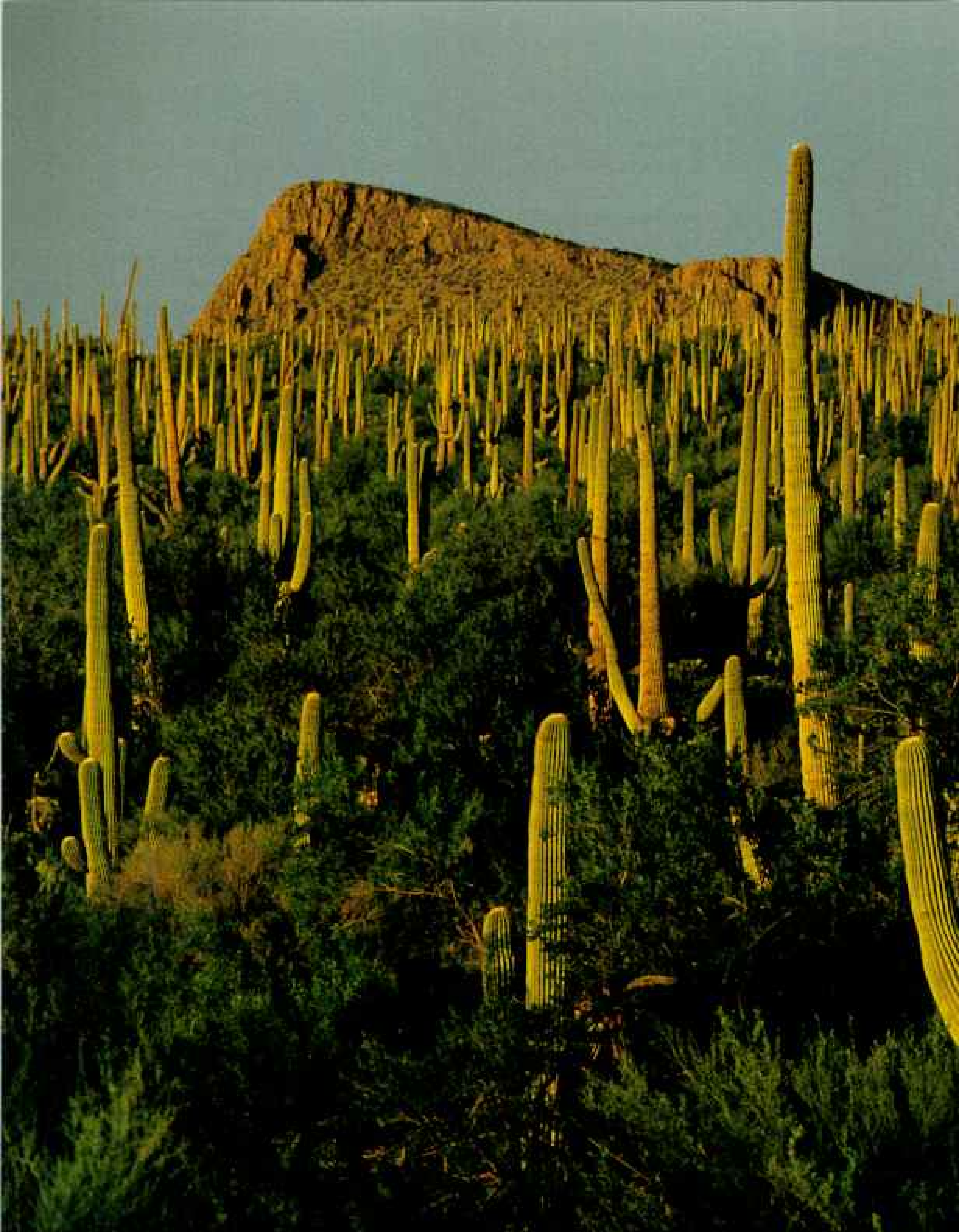
Retired B-52 bombers (below) and 4,000 other planes, used for parts and foreign sales, park at Davis-Monthan Air Force Base in Tucson.

The Tohono O'odham and their related bands lived in the desert heart. Each winter they migrated to villages in the desert foothills. In summer they returned to the lowlands, where flash floods filled the arroyos and watered the fields, to farm corn, tepary beans, and squash. They hunted and gathered desert food—cholla buds, mesquite pods, prickly pear cactus pads, saguaro. They too were masters of desert living, but when the summer rains failed, they sometimes starved.

The division between Mexico and the United States in 1854 split the Tohono O'odham, and the U. S. reservation that was established in 1916 ended their migratory life. Water came from wells, not from the heavens. Food came in cans. Most of the Tohono O'odham in Mexico, which has no reservations, gradually filtered north to reap health and welfare benefits. About 200 remain in Sonora state.

The reservation is the country's second largest, next to the Navajo, but is only the shrunken core of the ancestral homeland. Sells, the administrative center, is a cluster of cement block houses, federal agencies, and unpaved streets surrounded by fallow land. The Tohono O'odham no longer farm, and only some have been successful at cattle ranching.

The transition emasculated the O'odham, as it did indigenous people throughout the Americas. But I never saw it quite so starkly as when Lorraine Eiler, a nurse in Phoenix and a



Unique to the Sonoran, a forest of saguaros rises in foothills of Arizona's Tucson Mountains. Lowest and hottest of the continent's four deserts, the Sonoran, because of its winter and summer rains, is the richest biologically, with 300 types of cactus.

leader of a band of O'odham known as the "sand people," showed me an 1896 photograph taken by a white man of her great-grandparents.

They stand in front of their brush home. Beside them a small dog is scratching its ear. Their heads are bowed, and they are barefoot, with their toes spread wide on the desert sand. The woman wears a borrowed gingham dress with puffy sleeves, the man a white shirt, buttoned at the collar, that hangs on his arms as if it were burning him.

"There were two photographs taken," Lorraine said evenly, looking to see what was in my eyes. "In the other picture they were told to be naked."

"Nobody has ever figured out a nice way, a proper way, to take somebody's land away from him," said retired University of Arizona anthropologist Bernard Fontana, who accompanied me to Sells. "This will be on the national conscience forever."

Most O'odham have lost their intimacy with the desert, and thus with its food. They have embraced hamburgers and ice cream like most Americans. Obesity and diabetes are now serious health problems, because the metabolism of these desert Native Americans is still tuned to the feast-or-famine cycles of their forefathers; it turns calories from sugar too efficiently into fat.

A Piman woman, Gina Thomas, told me, "If a white man had a blood sugar count like mine, he'd be in a coma, or he'd be dead."

Now a movement to bring back desert food has gained momentum through medical programs in schools and health clinics. A desert diet combined with more exercise has already controlled diabetes in several patients.

Angelo Joaquin, Jr., who heads the Native Seeds diabetes project, told me that the substances that help desert plants retain water also help slow the release of sugar in the blood. "This food will help both our health and spirit," he added. "By eating from the desert, we pay honor to our ancestors."

Danny Lopez, a 55-year-old Sells schoolteacher, tries to pass on the tribe's rapidly disappearing oral tradition. "Too many things are changing here," he told me. "Our kids want to be like the kids in Tucson—they want to wear black clothes and Los Angeles Raiders caps. And some of them are into drugs. The old songs and stories can teach us how to live in this modern world."

When I visited Danny at his home, a clump of low adobe buildings, Danny's sister, Madeline, was patting dough into thin tortillas over a mesquite fire. Florence, his wife, dropped dough into a sizzling cast-iron skillet to make Indian fry bread. The walls of their kitchen

His hands a terrain of life's hard work, rancher and medicine man Joseph Andrews holds snakeweed, a traditional remedy for arthritis. Andrews lives on the Papago Reservation in Arizona, where 6,000 inhabitants call themselves Tohono O'odham, the "desert people." Tracks (opposite) tell of dune buggies in the Imperial Sand Dunes.

were rows of live ocotillos, a desert shrub whose thin branches are planted close together to form a compact fence.

We wrapped tortillas around beef basted in chili sauce and ate them with salad and frijoles. Florence put out a jar of cholla cactus buds. "We like the old foods," said Madeline cheerfully. "I grew up on jackrabbit."

After lunch Danny took me to the traditional Tohono O'odham rain house he had built, the *olas ki*, a moundlike hut of brush built for ceremonies. "The essence of living was in bringing down the clouds," he said.

Tohono O'odham believe that rain clouds are stirred up each summer by the saguaro harvest, when gatherers reach high to the tops of the cactus with crosslike sticks to nip off the buds of fruit. During a ceremony each June the men of the village sip saguaro wine from a common cup and reaffirm their ties.

"My brother," the leader says. "My brother," each repeats. Then they sing the old songs and drink the wine until they vomit, and so return the water from the clouds back into the soil. In the old days, Danny said, "They would paint the bottoms of their feet red, to look pretty when they passed out."

Year by year the ceremony has deteriorated on the reservation, until Danny's rain house is the only one left. "Today the ceremonies don't have much to do with religion," he said with flat sadness, "and mostly to do with getting drunk. People bring beer.

"But we will have the ceremony again this year," he added, his voice growing stronger. "We'll pull it off. We'll sing about the clouds, the frog, the turtle, the ocean fog. And in the mornings we'll sing about the morning star."

BEFORE THE SPANISH KING sent Jesuit missionaries to the New World, his court debated whether Indians were real human beings with souls or just a type of animal and if they should be converted. Spain,

The fire below created the lonely landmark of half-mile-wide Cerro Colorado, one of a dozen craters in the Pinacate wilderness of Mexico's northern Sonora. Baddest of the badlands, the Pinacate covers 750 square miles of iron-hard lava ridges and scorching cinder plains, leftovers from eruptions that began 1.2 million years ago.

Though the area is protected, no ranger guards it. With future funding, the Pinacate and Colorado River Delta will form an expanded biosphere reserve.

emerging in 1492 from the Moorish occupation, had little money. The missionaries wanted not only to save souls but also to turn natives into pants-wearing, tax-paying Spaniards.

Under this mandate the durable Jesuit Father Eusebio Kino established some 25 missions, including Tucson, in the desert between 1687 and 1711. The missionaries and other Europeans introduced livestock, horses, figs, barley, and fruit trees. They brought cold-tolerant wheat to provide a winter crop for northern Mexico, ending springtimes of starvation among the Indians. But they did not make new Spaniards, and they left behind mestizos, those of mixed Spanish-Indian blood, a people still unsettled in their own identity.

Sonora today is a rugged livestock culture of cattle ranches, horse races, straw hats, and brass belt buckles. The proud *norteños*, the people of the north, often sneer at their cousins from the south, whom they consider effete. Now many southern Mexicans, from Chiapas and other less affluent states, have moved to Sonora for jobs in farming and in foreign-owned industrial plants. They bring a different culture: Southerners play soccer; norteños play baseball. Southerners eat corn tortillas; norteños eat wheat.

Land use here was shaped by the Mexican Revolution earlier this century, when large landholdings were limited and the excess was divided into cooperatives of peasants called *comunidades* and *ejidos*. A controversial new policy allows ejido members to sell their share of the land for the first time.

Sonora state has been overgrazed for centuries. To compensate, cattlemen have planted buffel grass, an African species that more than triples the yield from rangeland but overwhelms native grasses and subverts the ecosystem. For environmentalists buffel grass is a loathsome invader. For Mexican ranchers it has revitalized the industry.

But when I arrived in Cucurpé, an isolated village on the San Miguel River, I found mestizo farmer-ranchers living almost as they did 200 years ago, in a tough but graceful self-subsistence. In the comunidades they raise cattle cooperatively, plant corn and beans in the dry arroyos to catch the summer rains, and water their fields with ancient canals.

Cucurpé farmer Adalberto Cruz, a phlegmatic and leathery man in his 60s, called his life "*una lucha*—a battle. You must fight the floods because the land belongs to the river. If you don't fight, you don't have anything."

Lemon, mulberry, and orange trees, a rabbit hutch, and a pigpen are packed into "Beto" Cruz's backyard. The wall of his adobe house, where he lives with his wife, rises straight from a quiet village street. Five of their eight children have migrated to Tucson to find work. "I see them often," Beto told me lightly, letting hang the unspoken worry that none might return to this quiet life.

Beto sells an occasional feeder calf across the border for cash and farms 20 acres—growing fodder and his family's food.

A simple wisdom survives here: Arid lands have limitations. In other parts of the desert modern agriculturists have severely depleted rivers and aquifers. The San Miguel flows when other rivers have dried up in Sonora.

In the evening Beto Cruz took me for a barbecue of *carne asada*, grilled beef, by the river, where friends and relatives gathered—the men in straw hats, jeans, and cigarettes

Blurring the lines between traditional and Christian rites, a Yaqui Indian enacts an ancient deer dance in the midst of feast day celebrations for St. Francis in the Mexican town of Magdalena. On October 4 pilgrims from across the state of Sonora gather to kiss the saint's image and pray for cures.

pinched between callused fingers, the women tending the grill. One young man wore spurs on his Reeboks. Beto entertained us with his guitar, singing norteño ballads, or *corridos*, songs of horses owned and races won.

We danced the western two-step. Six-packs of Tecate beer disappeared as the day slid across the ravine. A dog flopped its tail without getting up, sending small plumes of dust shining gold into the last sunlight.

SOUTHERN ARIZONA was still a part of Mexico, and Spanish-speaking ranchers were long established, when the tidal wave of westward expansion deposited Yankee farmers, cattlemen, and prospectors there in the 1850s.

In one violent decade Mexico lost its northern holdings to the expanding United States, including nearly 30,000 square miles taken in the Gadsden Purchase of 1854, a U. S. act of diplomatic hostility.

It was a time when the Sonoran government offered bounties for Apache scalps, and American gangs made a grisly enterprise of collecting Mexican scalps, which were easier to gather and with their long, black hair often resembled those of the Apache.

As tourist director Francisco Manzo Taylor told me in Hermosillo, "The first people who wanted to build a wall between the countries were the Mexicans in the 1800s."

By the 1880s American cattle had already overgrazed the river valleys, and the border bristled with ruffians and desperadoes, chased by gun-totin' sheriffs across the saguaro deserts of a thousand Western movies to come.

Today illegal immigrants and drug smugglers push north across the border, fearing the law; tourists sally south, fearing *banditos* and the drinking water. Thousands of undocumented workers filter across from Mexico each week, most of them through Tijuana, west of the desert, and Nogales, to the east. Only a few struggle through the passes of the Gila Mountains and across the 40-mile stretch of border in the desert, where they are apt to stumble into the likes of Glen Payne, agent in charge of the U. S. Border Patrol in Wellton, Arizona.

Payne has the slow, minimalist manner of the western lawman—not given to enthusiasm. He tests you with his eyes, wants to see what kind of man you are. The cigarette, the squint, invite you to go ahead, make his day.

"If we catch a Mexican, usually he's all worn out," Glen told me. "He won't be back the next day, like in San Diego. It's easy for this sun to fool you. You think you're doing OK, then all of a sudden your lights are out. You don't realize you're in trouble until it's too late."

Everything seems possible to young lovers as the lights of Hermosillo, Sonora's capital, unroll at their feet. "It's a different world here from the States," says store manager Marcela Bayón, at left. "People work so many hours there, don't eat with their children or see their parents. I can't understand that."

With a Ford assembly plant and a large wheat-farming industry, Hermosillo, population 450,000, is a magnet for Sonora's workers.

I rode with Glen one morning, our four-wheel drive spinning through the soft sand. Even in spring the desert heat tingled. The ocotillo was in bloom, its scarlet flowers like Bunsen burners scalding the air. A nesting red-tailed hawk eyed us from a giant saguaro.

Many Mexicans—including some women in high heels and some young children—have been tragically ill-equipped for the 45-mile trek. Most have underestimated the water needed, about five gallons each. In the 1980s the Wellton border patrol plucked 217 people from the desert furnace; 52 others perished from dehydration.

Jobs in the Gila Valley have dried up because of the Immigration Reform and Control

Act of 1986, which penalizes employers for hiring undocumented aliens. No one had come through this part of the desert for three months before my visit. But Glen set about "cutting sign," checking for signs of "walkers" and scanning "drags"—dirt roads smoothed over like blank pages—for footprints.

"You know," he mused, "if I were a poor Mexican citizen, I'd probably do the same thing. I'd try it. Everybody wants a better life for himself, for his children. . . ."

Suddenly a tinny radio voice: "There's a single that came through the wash. I'm tracking him." A single. A footprint. A person. And then we were flying through the desert, lizards leaping, radios crackling.

The footprint was a flat shoe, not a boot, possibly a dress shoe. The electronic sensor at the mountain pass, the wash, went off at 8:30, and it was already 11. Too late? Somewhere in the wilderness around us a lone man was trudging, in his dress shoes, over the killer rocks, a man too poor to buy a pair of boots.

We drove into the wash, climbing over boulders, where agent Jerry Scott had found the footprint. But nothing else seemed to lead from it. The sensors, Glen said finally, can be triggered by animals or even the wind.

"Same old stuff," said Jerry. "Another false alarm." He had been with the station since February and felt like a Maytag repairman—equipped for the job but nothing to fix. They had yet to catch an alien.

A sonic boom thundered overhead and blew the words to the wind. A Marine Corps Harrier jet rolled in the thin air.

MUCH OF THE SONORAN DESERT in Arizona still belongs to the Great White Father in Washington; private lands here are islands in a federal ocean. In 1941 the Sonoran was considered such a wasteland that the government set aside a huge slab just for the clear skies above. It

seemed the ideal spot to train military pilots.

Today this 2.7-million-acre reserve, the Barry M. Goldwater Air Force Range, provides the military an immense sandbox for training. Nearly 200 missions a day fly over the area, targeting fake enemy villages, railroads made of old dairy-delivery trucks, and mock-ups of former Soviet SAM missile sites.

Much of the training is confined to computerized simulations of real bombing, in sort of a gigantic video game. But five percent of the missions from Luke Air Force Base near Phoenix use live ammunition, and the Marine Corps Air Station in Yuma bombs the Chocolate Mountains to the northwest.

By agreement between federal agencies, training missions also use the air space over Cabeza Prieta National Wildlife Refuge, a protected environment for Sonoran pronghorn and bighorn sheep. At Luke, I asked F-16 pilot Capt. Chip Thompson if he ever saw animals from the air.

"Only one time," he answered. "I saw horses . . . in the infrared imager." The horses were running, running.

"Everyone was shocked," said Captain Thompson. The pilots, he added, aborted the bombing pass.

The irony is that military stewardship has probably preserved the desert better than others might have, by severely limiting access for the public, and most defenders of the desert fear businessmen more than colonels. An international consortium has already proposed to build a four-lane highway from Gila Bend to Hermosillo. Kentucky Fried Chicken has invaded Hermosillo, and a Ford plant there generates about 2,700 jobs. In the border towns of Sonoyta and San Luis Río Colorado, plans for industrial parks have stirred both environmental and social opposition.

By last summer 40 foreign-owned mining companies had registered to explore for gold in the Sonoran region. The Mexicans are industry friendly, they say, and put miners through far fewer environmental hoops than the U. S. government would.

One enterprise already whittling down desert habitat is charcoal making. More than 250 privately owned pits smolder in Mexico, to satisfy the U. S. market's hunger for trendy mesquite-grilled steaks and burgers. Along with mesquite trees, coalers have corralled

For six dollars a day Mayo Indians pick chili peppers in the Yaqui River Delta. Scarves protect them from the itchy plant flesh. Clouds of smoke and ash mark pits near Magdalena where laborers turn mesquite trees into charcoal, destined for grills north of the border.

thousands of ironwood trees, which Tucson ethnobiologist Gary Nabhan calls "the keystone species of the Sonoran Desert."

Nabhan has campaigned to save the ironwood, which acts as a nurse tree for fragile, slow-growing saguaro and more than a hundred other desert species by sheltering the seedlings. Mexican law now forbids harvesting live ironwoods, but such well-meaning edicts carry few teeth in remote areas.

Ironwood harvesting has also hurt the Seri, a remnant band of 600 Indians who live on the Gulf of California northwest of Hermosillo. Perhaps the last true hunter-gatherers remaining in North America, the Seri have learned to hand-carve birds and sea creatures out of dead ironwood, a dark wood so dense that it seems more like marble.

Now non-Indian Mexicans have flooded the market with cheaper, machine-made imitations of the graceful Seri carvings, undercutting the Seri and depleting the ironwood stock even more.

For the past two years the Sonoran Institute has cosponsored meetings of the International Sonoran Desert Alliance, in which delegates from three cultures—American, Mexican, and Indian—discuss strategies for protecting the natural and economic resources of the region and keeping them in balance. Some suggest that a fourth—the federal culture—should have separate representation.

I GASSED UP MY JEEP in the inexplicably named town of Why, an island of shops selling groceries and Mexican auto insurance. I bought a "bullburger" from a grill built into a ten-foot-tall concrete steer whose eyes light up electric red.

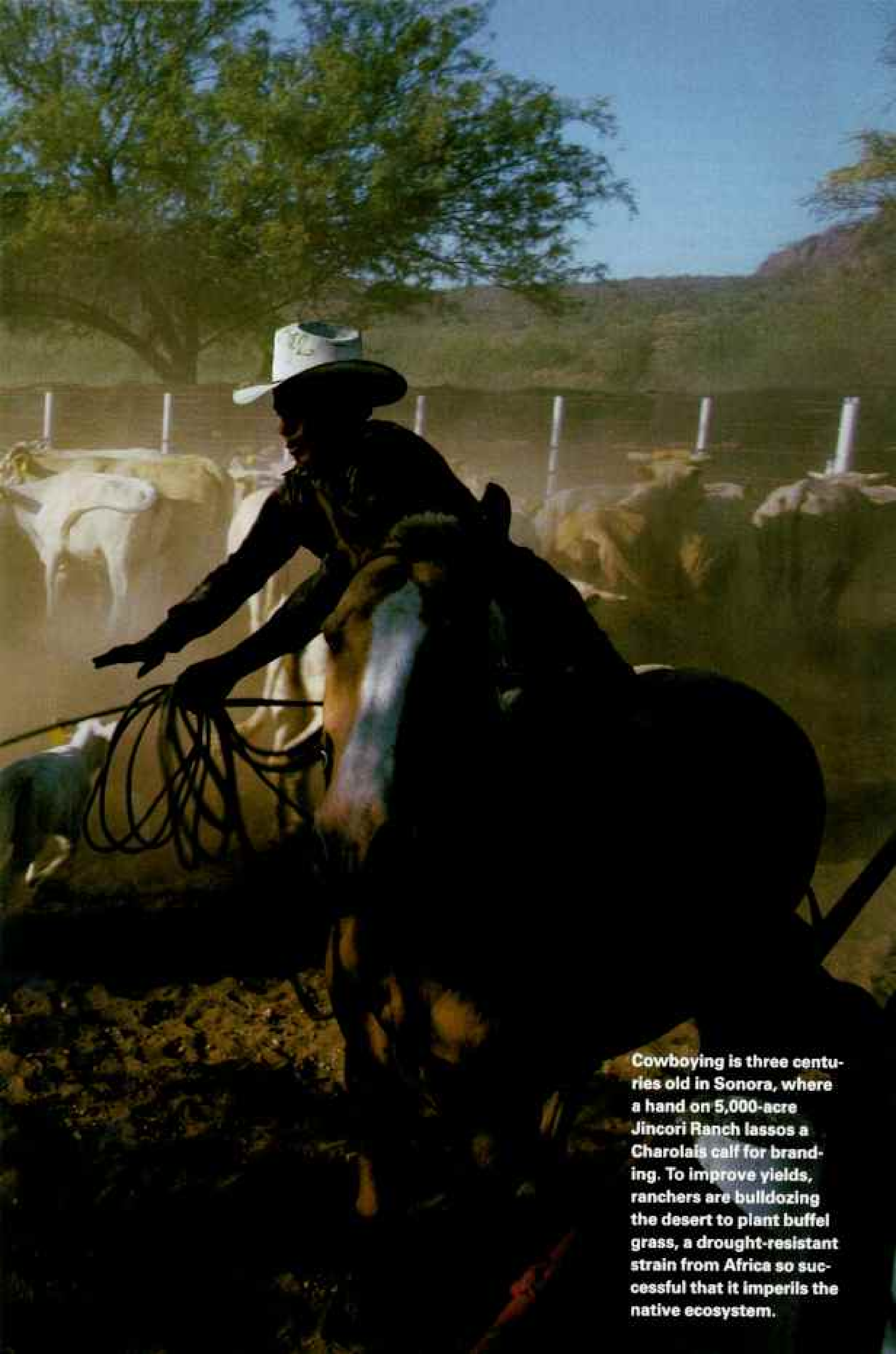
Through the border town of Lukeville, also known as Gringo Pass, I crossed to Sonoyta, a honky-tonk of dusty saloons and shops full of crucifixes and strings of pungent local garlic. But Mexican Route 8 soon broke free into the clean-edged desert and a dark layer of mountains to the west. This was the desolate Pinacate, where NASA astronauts once trained for their mission to the moon.

Two of Mexico's most effective environmentalists, biologist Alberto Búrquez and Sonoran state environmental director María Elena Barajas, had flown from Hermosillo to guide me. Together we rattled by jeep over a desert covered by black ash and past fierce lava ridges that hung frozen in the fiery act of creation begun 1.2 million years ago.

We hiked to the rim of the two-mile-wide El Elegante crater, and as we sat on its edge to absorb the residue of energy from past cataclysms, the soft wind and the sun slowly caressed us into a sense of embryonic fullness. A sense of submission.

"I feel like I'm at the center of the earth," said María Elena, as I was thinking just that.

Nominally a Mexican national park, El



Cowboying is three centuries old in Sonora, where a hand on 5,000-acre Jincori Ranch lassos a Charolais calf for branding. To improve yields, ranchers are bulldozing the desert to plant buffel grass, a drought-resistant strain from Africa so successful that it imperils the native ecosystem.

Pinacate has been protected only by its isolation. No one lives here; no rangers control access or enforce rules. Only a few poor mestizos by the entrance road wait for rich gringos to guide, and quick-profit artists illegally haul out truckloads of *morusa,* volcanic cinder, for landscaping. But unregulated four-wheel-drive and recreation vehicles, said Alberto, could quickly devastate the landscape. The windblown layer of black ash is so thin that tires scatter it and expose the earth beneath, leaving tan stripes that look as if they were painted on the desert floor.

Next day we flew in a small plane over the Pinacate and to the west, to see how the dark volcanic shield melded into the Desierto de Altar, or Gran Desierto, North America's largest expanse of sand dunes, and how the dunes yielded to the wetlands of the Colorado River Delta, known as the Cienega de Santa Clara, a vast shimmer of primordial muck.

"The Colorado is like the Nile," Alberto shouted above the engine roar. "It used to bring nutrients with the water when it was free running. Now, with high dams upstream, these wetlands are dying."

Mexican President Carlos Salinas de Gortari put government muscle behind the parks in June of 1993. He declared the Pinacate and the nearby Colorado River Delta federal "biosphere reserves" and promised funding to protect four million acres, including a large buffer zone for each reserve.

Environmentalists on both sides of the border hope to eventually combine the Mexican park with Organ Pipe Cactus National Monument and Cabeza Prieta National Wildlife Refuge in the U. S. It would then be an international biosphere reserve, part of a system of protected land that includes a controlled human population and some sustainable-resource industry, sponsored by UNESCO.

"The Americans are jealous of our upcoming park," Alberto said with some mischief in his voice when we parted. "We have the unique landscape. One of a kind."

Old amigos connect in Magdalena at the magical moment when the sun falls, cooling the world. It is the eve of the feast day of St. Francis, Sonora's patron saint, when the town rouses itself for a week-long fiesta. Tortillas and leather saddles scent the market; mariachi bands make a lilting sound in the Plaza Monumental, where Father Kino's bones are displayed. Slowly the town fills with true Sonorans, those, as the saying goes, "with the cactus in their faces."

THE ROAD BACK to Arizona cut north through Gringo Pass and Why and bogged down in the former mining town of Ajo, now a growing retirement community. When Phelps-Dodge closed its copper mine here in 1984, it sold company houses for a little more than $20,000 each. As a billboard advertising the homes proclaims, they offer "retirement living at 1950's prices."

"There were 900 of them on the market," proprietor Rose Boney told me at Ajo's Marine Motel. "Now only 40 are left."

Rose and her husband, Larry, are originally from Vancouver, British Columbia. Why are they here? "Larry fell in love with the desert," she said simply. "Every morning he gets up and says, 'How about that? Another warm day!' And he leaps from bed and putters around. Me, I keep waiting for the rain."

The desert is an adult destination: It has no Disneyland, no Six Flags over Arizona. And in summer, when families with children travel most often, the desert is too hot. But the warm, sunny winter lures thousands of snowbirds, mostly retirees. Twenty-six retirement communities and 650 trailer parks moat Phoenix and Tucson, their signs warning, "Adults Only" and "No children." More than a hundred golf courses suck up water from the desert aquifers.

Respiratory patients once flocked here, but that's history. At the Phoenix visitors bureau, Tony Alba admitted, "We have a lot of new vegetation that's put pollen in the air. Like olive trees. Adults who have lived here all their lives are now coming down with allergies."

But enthusiasm for the good life runs deep at Sun City, a planned retirement town of 46,000 northwest of Phoenix and a self-contained world of quiet streets, gardens, and lakes heavy with algae and Canada geese. There are 11 golf courses and 26 churches, boccie courts, a club for pompom "girls," racquetball, hiking, needlepoint classes, and no kids. Sun City thins out each year in May, when the snowbirds return home.

"This is really an oasis," said Byron Smith of Edina, Minnesota, who bought a house here in 1986. "When I come back in October and drive through the entrance, I feel so at ease and so at peace. We don't need to go out into the desert. We stay here—in the promised land."

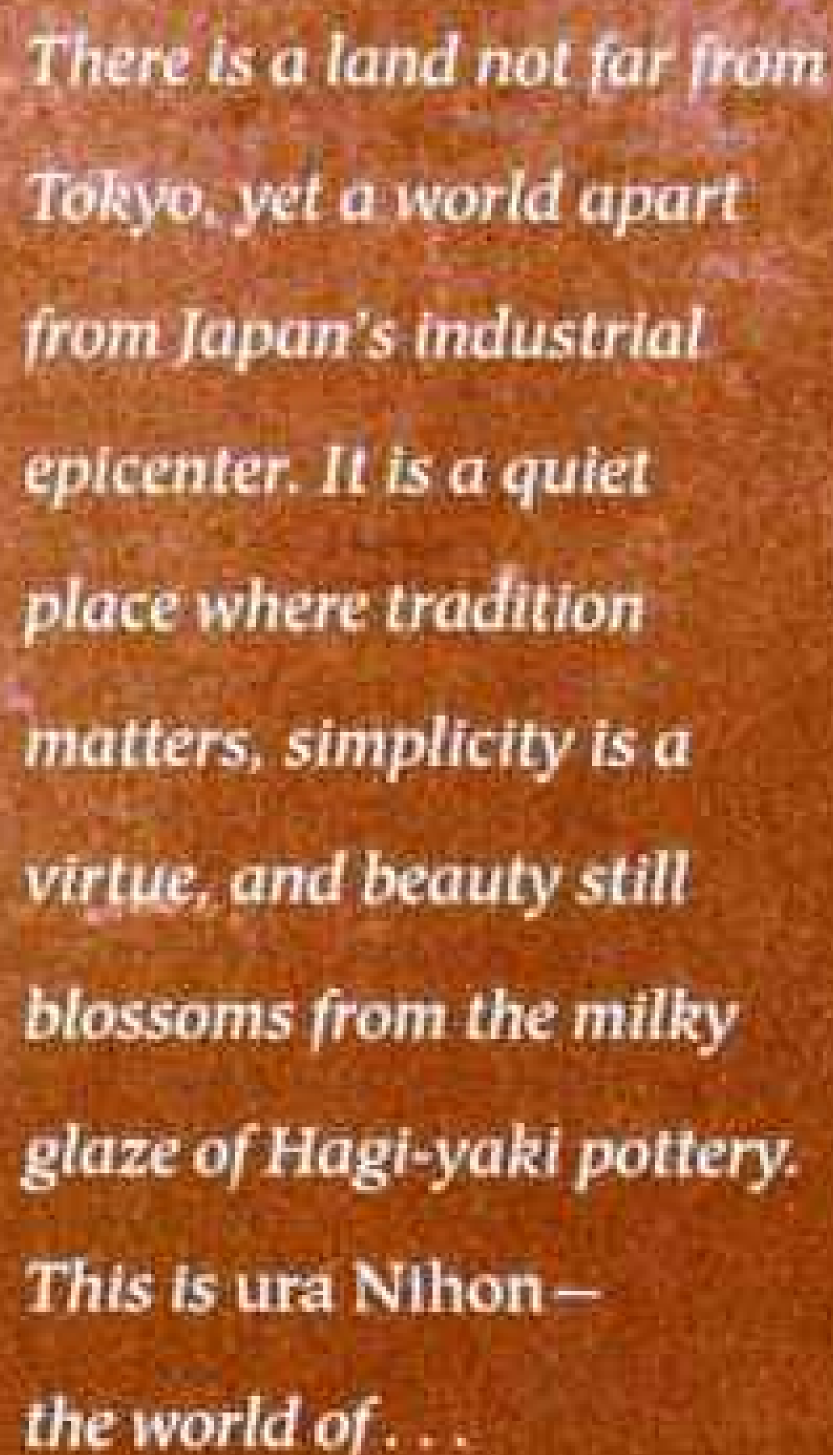
In the torrid summers, everything folds up. Leaves shrivel. Tortoises join Gila monsters underground. "In a weird way," Chuck Bowden told me, "living things in the desert are things that have learned to evade the desert."

If that is true for tortoises and pensioners, then the Sonoran is safe. And I can rest easy by the pool in the manicured Phoenix suburb of Scottsdale, insulated from the things that stink and prick and bite and scratch.

But man still sees the desert as a challenge to overcome. For the Sonoran to survive the latest layer of development, it will need the wisdom and goodwill of two nations and at least three cultures.

Perhaps, for a starter, everyone could drink saguaro wine from a common cup, as the Tohono O'odham do, and say to one another, "My brother." □

National Geographic EXPLORER will air a film featuring the Sonoran Desert on September 25, at 9 p.m. ET on TBS Superstation.



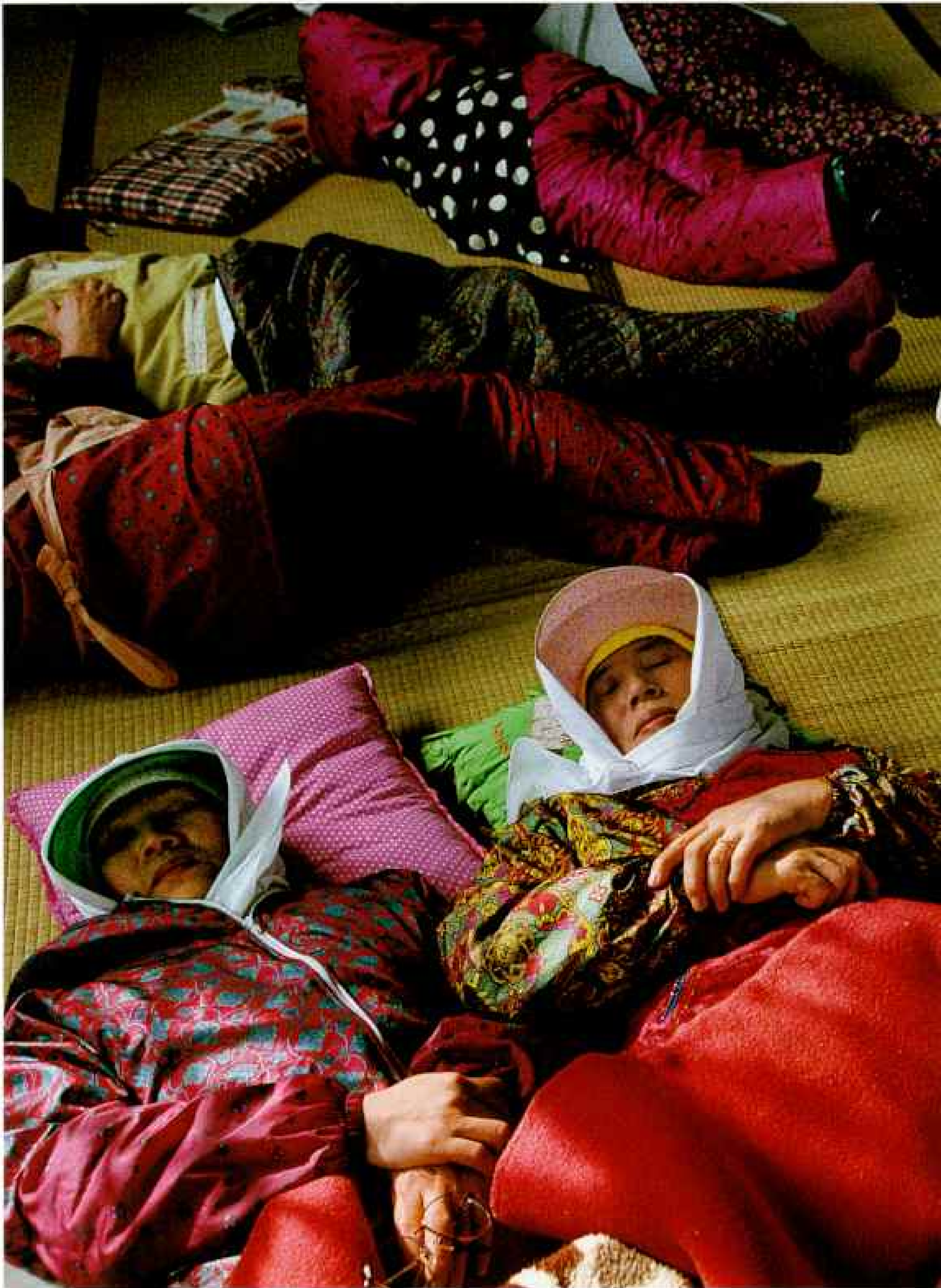
There is a land not far from Tokyo, yet a world apart from Japan's industrial epicenter. It is a quiet place where tradition matters, simplicity is a virtue, and beauty still blossoms from the milky glaze of Hagi-yaki pottery. This is ura Nihon*—the world of . . .*

Inner Japan

By PATRICK SMITH
Photographs by PETER ESSICK

Clean and pristine, the northern tip of Honshu resonates with the words of Bashō,

master of the haiku: "As the sea darkens / the cries of the mallards / grow faintly white."



Napping during the lunch hour, women at the Goshogawara Farmers Cooperative

cozy up beside a space heater before returning to work packing apples.

My train has climbed gradually for two hours

Life slows to a crawl beside a paddy in Miyama, where rush hour is just a rumor, and where seven-year-old Takehiro Ono and a turtle discover the freedom of the open road.

when it reaches the Daishimizu Tunnel. Behind me

lies the Kanto Plain, across which factories, farms, and suburban rooftops jostle for precious space. Disappearing in the haze is the sprawl of Tokyo. Then we enter the darkness of the 14-mile-long tunnel. The sun returns with a sharp glare when we emerge, and we are suddenly high in the mountains that bisect the country. I am about to descend into another Japan.

The thousand miles of western coastline I will soon encounter seem just the opposite of the congested world I've left behind: a broad, temperate plain rolled out between the mountains and the surf (map, page 73). To the Japanese the land ahead is a hidden reflection of their own faces, and it's this I've come to find.

To cross Honshu, the largest of Japan's four main islands, is a journey of the mind and spirit. The Pacific coast—moneyed, neoned, economically mighty—is what the Japanese are proudest to display. They sometimes call it *omote Nihon*, "the front of Japan," and it's the image most of us know. But they call the region along the Sea of Japan *ura Nihon*, which means "the back of Japan" or, more subtly, "inner Japan." In its towns and villages, its slopes and shadowed valleys, its rough seacoast and hushed rivers, and its patchwork expanses of rich rice terraces resides an accumulation of traditions, a set of values, that all Japanese guard closely—particularly if they move away.

When the urban Japanese talks about "my hometown," he means more than a cluster of weathered wooden houses down a one-lane road. Most of all he means the way of life that unfolds there. This is the world of *ninjo*, humaneness, or human feelings. Personal ties, fading in the anonymity of the teeming cities, still count above all on this side of Honshu, and the hold of village life endures. *Giri*, the old code of mutual obligations, continues to define local life. Here the traditional crafts are kept alive, and nature is never far.

In a village called Torigoe I stood on the bank of a wet rice field one summer evening listening to full-throated frogs discuss my arrival. As the sun went down, the clear water reflected a circle of treetops against a violet sky smudged by a single cloud. These places will never change, I thought, and as I inhaled the plain perfume of summer grasses, I wasn't sure they should.

Behind me stood a long, ramshackle farmhouse and a few aging outbuildings in a state of contented decay. No one was home. I started counting the clutter of muddy boots outside the screen door, but I had to give up after eight pairs: Shingo Miyamoto had arrived.

PATRICK SMITH has been a correspondent in Asia for 14 years, most recently for the *New Yorker*. He is currently writing a book about Japan. This is his first article for NATIONAL GEOGRAPHIC. PETER ESSICK is a frequent contributor; his photographs appeared last in the Special Edition on Water (November 1993).

Shingo, a fresh-faced youth of 28, led me into a dimly lit living-dining-work room filled with plants, books, loose piles of vegetables, baskets of eggs, and messy stacks of papers. On one wall hung a blackboard with a monthly crop schedule; up another, a narrow staircase ran to a sleeping loft. The Miyamotos, it turned out, had given up their conventional lives in Osaka to begin an alternative community in Torigoe. The house where we sat was a restoration project: Among the Japanese, one often finds the search for the new begins with a retrieval of the past.

"My father wanted to find a new way of life," Shingo explained. "He ended up farming—I don't mean just planting and harvesting but agriculture, a way of life. The center of life is agriculture. Everything else revolves around it."

Many Japanese, for all their urban habits, feel the same way. The roads are meticulously kept on this side of Japan, the irrigation ditches neatly concreted. But there hasn't been much progress. Subsidies from Tokyo are the region's lifeblood. Rice farmers depend on price supports. It's as if the back-coast people were figurines living under a bell jar.

Reversal of fortune

A thousand years ago Japan's western side was also the nation's front door to the world. In this land between the Japan Alps and the Sea of Japan, which includes Kurobe and Uozu (above), the Japanese absorbed culture and

commerce from China through Korea. In the late 1800s, eager to industrialize, they promoted development on the Pacific side of the island, closer to the West. Today, the Tokyo-Kobe corridor contains half of Japan's population and most of its jobs—lopsided growth that has siphoned people away from the countryside. But some boosters say that as Asia's economy expands, Japan's back will again be its front.

Hot needles of water puncture the pain at the Sukayu Hot Spring Hotel, where the

highly acidic mineral waters are considered good therapy for aching joints and muscles.

Yet you see change in the middle distance everywhere. Many villages stand as still as the rice field in front of the Miyamotos' house, but cities like Niigata and Kanazawa are already little Tokyos. Money flows into countless construction projects. I often drove past rice terraces bordered by a factory and a parking lot, then more terraces, then another factory.

These changes provoke plenty of conflicting emotions. Mention ura Nihon today in any town along the Sea of Japan, and it will earn a smile or an occasional scowl. Some people here think the old term belies their newer ambitions, their changing idea of themselves. While they admit that they missed much of the postwar economic miracle—as young people left for the cities, and villages accumulated abandoned houses and closed shops—they feel the phrase is out of date, even demeaning. NHK, the national broadcasting network, stopped using it some years ago.

Now the towns and villages want to grow and draw people back from the Pacific coast cities. But they also want to redefine affluence to protect their way of life from the frantic consumerism, urban sprawl, and pollution that are the price that much of Japan has paid for its success.

"We've been known as ura Nihon in the past," a young woman named Etsuko Yoshida said to me one spring afternoon in Niigata. "This will be omote Nihon—the front of Japan—once again."

OVER TIME she may be right—it has been the nation's gateway before. The Sea of Japan brought the Japanese the most enduring elements of their culture. Religion, Eastern medicine, a writing system, the Confucian ethic—all this made its way from China through Korea more than a thousand years ago.

I was surprised, though, to see how clearly China's influence survives, a part of daily life unobscured by the trappings of modernity. It's visible in the architecture—the elaborate Chinese detail, the pagoda-like rooflines. Religion, a mix of imported Buddhism and indigenous Shinto, is more than a matter of occasional observance, as it sometimes is in modern cities.

But everything Japan imports soon assumes a local complexion—everything from baseball to Buddhism. I learned this basic lesson in the hills of Fukui Prefecture, where the Eiheiji Zen Buddhist Monastery crouches in a ravine shaded by towering cedars more than 600 years old.

The monastery, founded in 1244, is a vast network of rooms. Urged to take part in Eiheiji's routines, I ate an austere dinner of rice and fresh, cold vegetables. Under the watchful eye of a youthful priest-trainee, I spent 30 minutes at *zazen* meditation that evening. Before I could begin, it took him half that time to get my position just right—legs properly crossed, hands correctly placed, head at the desired angle. Then I was to follow my thoughts wherever they led. I slept on a tatami mat on the floor that night to the sound of wind in the cedars and a distant waterfall that the spring thaw swelled to a roar.

At 3:30 the next morning I was awakened and led to a room where row upon row of priests, kneeling on a vast spread of tatami, were softly chanting a Buddhist sutra. So the monastery

Less work, more play—that's the credo of Japan's younger generation—married couples as well as the single, free-thinking shinjinrui, *or new breed of human beings. No longer willing to let their jobs consume their lives, they take two-day weekends and escape to quiet places like this beach in Tsuruoka. In some rural areas local*

officials have tried to bolster anemic economies by offering cheap housing to harried city dwellers, but these promotions have met with limited success: While some urbanites fondly refer to the countryside as furusato *(my hometown), others dismissively call it* inaka *(the boonies).*

began its day. It was cold, and breakfast (as austere as dinner) was hours away; hunger gnawed at my attention, and my eyes wandered across the old plaster walls and the heavy ceiling beams, darkened by the smoke of countless sticks of incense.

Zen is predicated on a few simple principles. Sacred texts are secondary; there are no divine images. Enlightenment springs directly from the mind; it can't be taught.

WHAT I LEARNED at Eiheiji changed my travels around the back coast. It is not in monuments or texts that tradition is carried among the Japanese but in their minds and imaginations, in how they do things. The back coast, inner Japan, would reveal itself in the way people live.

I noticed this again a few days later in Sakata, a small port at the mouth of the Mogami River. Sakata prospered in the feudal era, when farmers shipped rice down the Mogami and coastal traders carried it along the coast of Honshu to Osaka and Tokyo. By the 18th century the greatest of its merchant families, the Honmas, was known throughout Japan for its wealth.

Sakata today is as inelegant as most Japanese cities, apart from

an old pleasure quarter whose narrow lanes have retained their charm. There I dined in traditional Japanese opulence at a restaurant called Kamezaki, or Scent of Plum Blossoms. Beyond the sliding doors of my room was a garden of streams, bridges, and bamboo groves—all in miniature. My host was Hiromi Ikeda, a cheerful, stylishly dressed woman whose family has run Kamezaki in the same house of finely worn wood for all its 150 years.

"Sakata changes, but we value the continuity of our lives," Hiromi told me. Four years ago a chain of Honma discount stores went bankrupt, a victim of tightening credit. But the Honma family is still there. There is the Honma Main House, a Honma museum, and numerous Honma-owned warehouses.

"Do you ever get to Tokyo?" I asked.

Hiromi laughed. "I just returned today from a conference of restaurant owners in Tokyo. I like to go a few times a year—I like the shops, and there are friends to see. But I'd never move there. We don't think about it too much over here."

In the garden the windows threw a soft amber light toward us as Hiromi pointed to a plum tree that gave the restaurant both its name and the wine that started every meal. "That tree was here," she told me proudly, "when Takashi Hara, a prime minister early in the century, came over the mountains from Tokyo to dine at Kamezaki." There was no Daishimizu Tunnel, so he traveled in a ricksha pulled by two men, she said.

Then she took me into the house again to show me a superb Zen ink drawing and two prized calligraphy scrolls that hung in one of the dining rooms. But Hiromi seemed to treasure above all an elusive quality summed up in a single word: *yutakasa*. It translates as "having high value" but implies a value beyond material wealth. Everyone knows the concept, but it's now being rediscovered in a country given over so completely to production and profit.

Over dinner I told Hiromi that I had climbed Mount Haguro, one of three sacred peaks in the Dewa Mountains. Her eyes lit up. She knew the mountain well, having taken her children there. Then she began to tell me about the *sansai*, mountain vegetables, that can be found along Haguro's paths.

"What are they like?" I asked her.

At that Hiromi pointed to several stalks and leaves in the clear soup before me. It was an exquisite dish, and she smiled as I savored it. This was yutakasa. It can be so subtle you can miss it as easily as I almost missed the meaning of Hiromi's favored vegetables.

THE OLD CRAFTS PRACTICED in Japan are as valued along the back coast as Hiromi Ikeda's greens. The products of these traditional industries can bring high prices, and not only for their beauty. They are treasured also for the skill and devotion they evoke—as references to the life cherished on this side of Japan.

The Meboso family in Kanazawa has lived by its skills for 418 years on the same street: Meboso Avenue. Nineteen generations ago they started out making sewing needles and were good enough at it to earn a surname, an unusual honor for merchants in pre-modern Japan. The family, whose name comes from

Bold is beautiful in a brave new world—above a Yuzawa ski resort and amid the neon hum of Niigata. The cacophony of colors contrasts sharply with the aesthetic ideal described in Junichiro Tanizaki's 1933 book In Praise of Shadows: *"We find it hard to be really at home with things that shine and glitter."*

プロミス
AIFUL
ディック
武富士
NEW

meboso-bari, meaning "narrow-eyed needle," went on to produce fishhooks for the local samurai. When fishing for *ayu*, a kind of river fish, became popular in the 1700s, Meboso family members turned their hands to bamboo fishing rods—exquisite pieces of lacquered craftsmanship that can take as long as two years to produce.

Enko Kambara, the rod builder of the family, is a tiny man with wisps of gray hair and an animated grin. He works as he always has, cross-legged on a tatami, bent over a small brazier he uses to heat and shape sections of bamboo. Nearby, stacks of uncut stalks lean against the walls of his tiny workshop. "When I work," he says, "I feel like I have eyes at the tips of my fingers."

His skill is extraordinary, honed over more than 60 years. But Kambara-san is 82, and while he still selects bamboo himself from groves on the Noto Peninsula, he can no longer fish. Until recently his most serious concern was finding someone to whom he could pass on his knowledge.

THAT PROBLEM WAS SOLVED with the arrival of Tadayoshi Meboso, a cousin of Hachirobe Meboso, the current head of the clan. At 49, Tadayoshi is a try-anything-once sort who recently left Japan Airlines after 23 years as a flight steward. I couldn't name a place he hadn't fished for trout or salmon: New Zealand, Wyoming, Scandinavia, Scotland. But Tadayoshi felt the pull of duty to his family as its members aged. Now he's not only learning the craft of rod building, he's also wanting to market new designs in Europe and America.

"We already have the old man's craftsmanship, and I have a modern sense of the sport," Tadayoshi said over green tea in the back of the shop. Hachirobe listened carefully and then interrupted: "We have to add new elements to keep the tradition alive. Otherwise, you're making antiques."

Crafts once thrived in this part of Japan, from lacquerware and hand-painted silk textiles to pottery and gold foil. Many of those crafts that survive are considered endangered species: There are simply not enough people interested in learning the techniques. Too many young people move away, and too few Tadayoshi Mebosos come home.

Almost 200 crafts are officially recognized as national traditional industries, and many who work them are as dependent on subsidies as rice farmers. Yet unused crafts ultimately die out. There are living national treasures, too, in Japan—those designated Holders of Important Intangible Cultural Properties, meaning those who bear forward the knowledge and spirit of the old traditions. But these are few and growing fewer.

In Hagi, a coastal city noted for its preserved samurai neighborhoods and its distinctive white-and-amber ceramics, I met a 42-year-old potter named Toru Sanuki. A friendly but intent man with dried clay up to his elbows, Sanuki had worked for a plastics and cement company, but having a piece of the postwar miracle had left him dissatisfied. At 31 he took up potting, trading in his company uniform for jeans and a longish haircut.

I waited several minutes for him to look up from his wheel. Then I asked him about the future of his craft.

"Hagi-yaki, as our pottery is called, takes a lot of patience,

Dried squid will make a delicious summertime snack on the quiet sands of Nezugaseki. While this port is home to a handful of commercial fishermen who run small trawlers out to the Sea of Japan, other coastal communities, like Nanao, harbor bigger ambitions. By building new wharves

and dredging deeper channels to handle cargo ships, they hope to profit from expanding trade with Asia. The problem is, creating new outlets for economic growth may destroy one of the region's most cherished resources—its natural beauty.

and patience is hard to find these days," he said with a sigh. "No one wants to take the time anymore."

Sanuki worked his wheel in a shed behind a large shop along a commercial street. Inside the shop, called Hagi-yaki Kaikan, his bowls and cups were stocked by the dozen. A small one costs about $220. Next to Sanuki's work were two one-of-a-kind vases the size of plump pumpkins: They were priced at $6,800 each.

Crafts are an expression of the simpler life the back coast represents, another piece of the Japanese soul. For Sanuki to become a potter was to embrace that life, however much it is evolving. "I'm paid a salary. That's how the tradition is changing. People used to make handicrafts on their own and be satisfied to earn a little money. Now it's a business. But Hagi-yaki will survive. As long as there's earth, the tradition will last."

NOT EVERY COMMUNITY along the back coast has crafts on which to live, or a local industry. More common is the lot of Inokuchi, an ordinary farming village on a fertile plain just beneath the foothills of the Japan Alps. A sign of the times greeted me: BRING THE BULLET TRAIN SOON! read a hand-lettered billboard on the main street. And on

Braving the blast of a jifubuki, or ground blizzard, travelers in Goshogawara follow

red-and-white guideposts to stay on course when the world becomes one.

the other side of the billboard: OPEN UP THE FUTURE OF HOKURIKU, referring to the surrounding region.

Inokuchi is a traditional village made up of settlements spread over a large area of land. Its solid homes and black ceramic rooftops announce a prosperous community. Rice fields are everywhere. It was spring when I visited, so the paddies were flooded up to front doors and the edges of driveways.

But most of Inokuchi's young people have long since gone to small cities nearby or to the bigger magnets on the Pacific side of the island. The village school, a concrete complex much in need of plaster and paint, was testament enough to this. Built for 300 or 400 students, it serves 98 grammar schoolers and 55 in junior high; when children enter high school, they commute by bus to a larger town nearby.

Down a narrow dirt lane, hard by an old but well-tended Shinto shrine, I saw a small cinderblock factory, one story high, that manufactured street signs; there were two or three other plants of similar size scattered around the village.

But Inokuchi offers few opportunities apart from farming. The village gets back in subsidies several times what it sends Tokyo in taxes. The government, indeed, is generous, but public largesse discourages initiative. In effect, Inokuchi is a well-dressed welfare case. Like many villages, its population has dropped over the past four decades, from 1,825 to 1,400.

"Let's just say we don't seem to be losing anymore," said a sunburned 68-year-old farmer named Yoshio Kobayashi when I met him at the edge of his field. He had been spraying pesticides from a tank strapped to his back and was pleasantly unfazed to find a foreigner near his tractor when he finished. He had a small but sturdy frame, and a lifetime in the paddies had left him slightly stooped, as it has many of his generation along the back coast. His wife worked quietly nearby.

Everything Kobayashi owned was there in front of us: a hectare of land (2.47 acres), all of it under rice, a small house set back from the road. He had three children, but only the eldest, a son who taught school, remained to help him; the others had jobs in the cities.

Farmers who live solely off the land become scarcer every year in Japan. Most, like Kobayashi, rely partly on the outside jobs of one or more family members. But farming means more than a good rice crop, some marketable melons, or perfect vegetables. Only the larger, mechanized farmers can plant and harvest rice fields alone; Kobayashi depends on neighbors to help in spring and autumn, as he always has. Growing rice means sharing dawns and sunsets in the fields, managing water flows together, and knowing that neighbors, too, are weeding diligently

Nothingness matters to priests in training at Eiheiji, Japan's head temple of Soto Zen Buddhism. This sect, brought to Japan from China in the 13th century, teaches zazen, or sitting meditation, in which students assume the lotus position

and cast their eyes downward. As the mind grows quiet and thoughts fall away, the back may ache, but if the head droops . . . whack! *comes the trainer's stick: Concentrate!*

under the summer sky. Rice means community to many Japanese—it's the frame on which hang the back coast's customs. That's why Kobayashi-san holds on. "I wouldn't trade this life for any other," the old man groused when I asked why he'd given his life to farming in the village where he was born.

"Making a living?" Kobayashi laughed when I inquired about that. "No. I'd need 10 to 20 hectares nowadays to live well. My son and his wife help me out now. But this is where I was born, after all. Where you know, you love—that goes for you too. It's my village, my home, my land. It came from my parents, so I have to protect it."

MANY VILLAGES, facing eventual death, keep hoping that a few years of bright lights, high prices, and anonymity will disillusion prodigal sons and daughters. Nationwide, this is just beginning to occur; it's known as the U-turn, adopted from English, after the path people might take from the country to the city and back. Or the J-turn, if you started in one region, passed through Tokyo,

and ended up elsewhere. Or the I-turn, if you came right home after college.

Some towns have even begun actively trying to lure people back. Inokuchi started by planting hundreds of camellias around the village and launching an annual flower festival. Two years ago it held a nationwide songwriting contest to draw attention to itself and adopted a ditty—written by a professional author in Tokyo, it must be admitted—called "Inokuchi Diary" ("Inokuchi is/Inokuchi is/the hometown of the heart").

Less lyrically, the town held a lottery in 1992 through which it gave away three plots of well-watered land to outsiders who agreed to build on them within three years and live on them for 20 more. Inokuchi is also erecting ten town houses intended for newcomers at rents of only 40,000 yen a month—about $400, a fine bargain anywhere in Japan. Those finished, a half dozen so far, are already occupied.

A number of communities around Japan now offer similar schemes. But it's too soon to tell how successful they will be. They're new, and even local officials admit they're a crapshoot. Most of the families in Inokuchi's new town houses have simply moved from other villages in the area. "It'll all make a difference," Kobayashi-san sighed as he eased his crop sprayer off his back. "But who knows how much of one?"

I FOUND THE MOST INTRIGUING ATTEMPT to revive village life in Okura, a community not far from the Mogami River in Yamagata Prefecture. Okura was dozing in the sun the day I visited, a typical village that modern Japan has left much to its own devices. Encouraged by the new assembly lines and low-level office jobs that the "miracle" economy has opened

Brushing on another layer of lacquer, Enko Kambara teaches his apprentice and nephew, Tadayoshi Meboso, the dying art of making bamboo fishing rods.

Learning "to stretch my hands, not like a robot but with more spirit and class," Kazue Fujima follows in the footsteps of her mother, Kansuzu, who grew up in one of Japan's most famous dance families.

up, many of Okura's women have exchanged work in the paddies for city life. The drain has been gradual, but Okura now bulges with bachelors.

Brideless towns are common along the back coast, and some seem resigned to atrophy. But Okura has faced the issue head on. A few years ago it sent a local contingent to the Philippines to recruit wives for some of the scores of young farmers without spouses. Okura's recruiters had a straightforward approach: They promised the simple life of a farmer's wife in newly affluent Japan. They returned with 10 Filipinas, and there are 12 now.

But villagers are sensitive about the problems the enterprise caused. Although basic communication seemed an obvious obstacle, nobody prepared for it; language training had started only a little while before I arrived. (Okura now has two language schools.) There is still no Christian church to accommodate the new residents.

"We're not so keen anymore," a young (and unmarried) farmer told me with evident chagrin. "This village had little experience with foreigners, and care for the Filipino ladies, I have to admit, was not so good."

Along the quiet streets, the Filipinas were nowhere to be seen. Officials had gently but firmly rebuffed all my requests to meet the ladies. This was clearly not considered Okura's finest hour. I

had even heard that some of the brides had taken to living apart from their husbands, but no one would discuss it beyond polite expressions of concern. Apparently the code of mutual obligations does not fully extend to newcomers—not yet, anyway.

Along the back coast, "outsiders" can mean other Japanese as much as it means *gaijin*, or "outside people," as foreigners are known. Isolated for so much of history, each prefecture guards a sense of its own identity that is almost impenetrable. Newcomers might be formally welcomed, but it's a long time before they can count themselves locals.

Traveling in Akita, I once asked a taxi driver, a weathered old man named Takeji Yagura, where he was from.

"I'm not from Akita," he replied, eyes upon me in his rear-view mirror. "My family moved north from Osaka."

"When was that?" I asked.

Yagura-san thought for a moment. "About 200 years ago," he finally responded.

THE VILLAGES OF THE BACK COAST struck me as fragile antiques—valued but not especially practical. The Japanese may know this, but to many of them letting go of the village means letting their notions of mutual obligations and humaneness wear away like old plaster.

How viable is the old way of life if the people at the heart of it can no longer sustain themselves? Are the Japanese ready for the complexities that contacts with outsiders inevitably bring? Can they live with outsiders in their midst? The experience of the Filipinas isn't very promising. On the other hand, there is Niigata.

Niigata is the back coast's largest city. One bright Sunday afternoon I noticed a sailors' training ship, a big three-master, tied up at a concrete dock. As I walked past the stern, I saw that its home port was Vladivostok. No surprise there. I had already spotted a sign at the entrance to the crowded, bustling harbor: WELCOME TO NIIGATA, it read—first in Russian, then in Korean, then in Chinese, and only last in English.

Cold War tension kept traffic across the Sea of Japan, Niigata's natural trading basin, to a trickle for most of the postwar period. But the Soviet Union's collapse and China's turn toward economic reform have made commerce with these unexplored markets the talk of the city. Clues to the city's ambition are plentiful on land. Niigata has already posted a few street signs in Cyrillic script, and a new luxury hotel has added Russian spires to welcome guests. "When we see a foreigner walking along the sidewalk," a friendly resident told me in a local restaurant, "we assume he's Russian before we think American."

Seen from a distance, Niigata's glass-and-concrete towers rise from the surrounding plain and glint in the sun. Niigata is rich. In its crowded streets imported cars are no longer uncommon, and its shops display fashions from Paris and New York as well as Tokyo. On any Friday evening the bars and clubs in Niigata's entertainment district are as jammed with salarymen—and about as expensive—as Tokyo's Ginza.

You don't even have to enter the city to understand why. The bullet train reached Niigata in 1982, putting it a little more than two hours from Tokyo. There is also an expressway. Niigata's

Stretching wet linen across the snow, Sarashiba and Masao Kotoh give dyed kimono cloth a finishing touch in Muikamachi. After exposing the linen to sunlight, which bleaches the white cloth and gives the patterns added dimension, they send the material to other craftsmen, who iron each 39-foot piece before it is

sewn into a kimono. Labor costs have inflated the price of kimonos, and a yen for ties and T-shirts has depressed demand, leaving only a handful of people still working as traditional linen finishers. To them, the process is as important as the product: Linen is their link to the past.

high-speed links with the "front of Japan" are a godsend, almost literally. Both were gifts to the area from Kakuei Tanaka, one of postwar Japan's most powerful political godfathers. Tanaka lavished subsidies on his home turf, and these have served Niigata well. The city has sophisticated, diverse industry, and its foreign trade is unrivaled along the western coast.

But Niigata is big and busy enough to engender much of the ambivalence the Japanese feel toward large Pacific coast cities. Yoshinobu Shimbo, a thin, hardworking man of 38, used to manage a coffeehouse there. Then he decided to give up the city and took his wife and five-year-old daughter to the village where I'd listened to the frogs in springtime: Torigoe.

"I had a steady income, not too many financial worries," Shimbo recalled as he rested by the side of an onion field. "My life now is tiring, but psychologically it does me good. The pace is very slow. I see more things clearly. I ride my bike an hour and a half to work in the morning, and I can pay attention to the value of nature." Shimbo paused, surveying the onion rows still to be harvested. "And it's the best environment for my child," he added. "It's important for our daughter to grow up in this kind of place instead of a big city."

Memories burn bright for Fumio Saito, who monitors the bonfire at a Shinzan Shinto shrine winter festival in Oga. Traditionally the celebration includes a visit by the namahage, *or demon (a man in a fierce mask), who goes door to door to discipline lazy, disobedient children. But parents usually intervene, assuaging the demon with rice cakes.*

"When I was a boy, I was very scared of the namahage," recalls Fumio. "I wouldn't ever tell my parents where I was going to hide."

Shimbo's choice was unusual in one respect: He joined a curious little community—a commune, really—started in the early 1980s by a former salaryman at Matsushita, the electronics giant. Jugo Miyamoto, a contagiously energetic man in his late 50s, calls his fields and farmhouses the Peasants' Republic of Torigoe, half in jest, half to signify the separateness he feels from the life he and his family have left behind.

The Peasants' Republic consisted of 19 men, women, and children when I visited, all of whom worked in the fields if they weren't in school. But Miyamoto has ambitions.

"A small but growing minority of Japanese would like to unplug themselves from the giant economic machine and the conformist social system behind it," he told me under a hot June sun, "if only they had the support of others to do so." With this in view, he expects the community to expand to 400 souls by the end of the century.

"The way Japan has gone, into fast industrialization and consumerism, has created too many problems," Miyamoto went on. "I used to call the Matsushita employees 'industrial refugees'—people who suffered a lot and weren't doing what they wanted. Money? I'm broke. But money has no value. To live is the value. I eat what I grow. You can live without money—I'm proving it."

I wondered whether Miyamoto was talking about preserving tradition or about some daydream of a postindustrial Japan. I concluded that his object, though less than scientifically defined, took in a bit of both—that the Peasants' Republic was his version of yutakasa, affluence beyond material wealth. "Yes, I want to protect traditions," Miyamoto told me, "if they're right."

THE TRADITIONS likely to survive become apparent only over time—not only in villages but also in the towns and cities. Izumo is a prosperous city of 85,000 in one of Japan's least prosperous prefectures, Shimane. Yet Izumo holds out the promise of turning its sentiments into something sustainable; yutakasa is becoming part of the community's larger design for living.

Driving through Izumo's streets, I see nothing that immediately distinguishes it from urban centers on either coast. Izumo's buildings are the usual Japanese mishmash; there are too many billboards and too many neon signs. Wherever you are, you're never far from a gaudy pachinko parlor. Forests of concrete poles support dense tangles of electric wires.

But life in Izumo slowly reveals a subtle balance not often found in modern Japan. I feel it in exchanges as simple as the giving and taking of street directions or in an optician's shop where I stop to get my sunglasses fixed—gracefully and gratis. There are no smokestacks on the skyline, none of the grime and rush and anxiety of most Japanese cities.

"There are three industrial chimneys in Izumo," said Mayor Tetsundo Iwakuni, a clear-faced, kinetically busy man, when I told him I'd seen none. "We could bring in 50 new factories if we wanted to, but we're selective."

Izumo is as dependent on subsidies from Tokyo as any other city along the back coast. But it is taking that money and going its own way. For example, there are vineyards at the edge of

town—more than a thousand acres of them, for wine making is among the city's newest industries. The long rows of vines lend Izumo the slightly odd feel of an old European manor, self-contained, orderly, busy with itself.

There is also a new sports dome, one of many practical yet symbolic projects launched by Iwakuni. Constructed entirely of wood imported from North America, it is intended to stand for both international harmony and the validity of Japanese tradition

in today's world. "Wood is to our culture what steel and concrete are to yours," Iwakuni explained.

Most important, there is Izumo Taisha, one of Japan's oldest Shinto shrines. It figures prominently in the mythology of the birth of the Japanese islands and is a symbol of the nation's deepest past, yet it lives easily among the city's modern buildings.

It is always crowded but always quiet within the shrine's graveled and gardened grounds. On a typical morning in early summer, the pines that line the walkways are dense with white strips of paper, prayers or fortunes dedicated to a Shinto deity and tied to a branch, giving the effect of Christmas trees in rows. Inside the prayer halls, the two soft handclaps that conclude the prayers are sounded often, and coins echo as they are dropped into wooden chests set out for offerings.

I counted 11 gates, walls, entry roads, moats, and courtyards between the outer *torii,* or gate, and Izumo Taisha's innermost shrine. This is a classically Japanese arrangement of space, for to

The keeper of the flames makes his rounds at the Kamakura festival in Yokote. Tiny

igloos are mini-shrines to suijin, *gods of water, who bring a bountiful rice harvest.*

To immerse himself in the ways of the yamabushi *– Japan's mountain ascetics – Hiroyuki Yabuki joined 50 other tourists on a three-day trek into the sacred Dewa Mountains. They hiked, meditated,*

distinguish between outside and inside, the profane and sacred, is among Japan's most basic impulses. Izumo Taisha is made mostly of wood bleached pale by time, the sun, and the rain. It is the same wood you find in any back-coast village, as if to suggest that all of ura Nihon is best understood as the interior of a larger arrangement in space called Japan.

A native son, Iwakuni left Izumo as a young man and spent 30 years as a banker in the world's financial capitals. I first met him a few years ago, shortly after he decided to leave a senior management job at Merrill Lynch in New York City to return home and run for mayor.

"What I found after three decades abroad was that my town is not part of an advanced country," Iwakuni told me. "My town is typical of what you find in the developing world."

Iwakuni is now known nationally as an advocate of balanced growth and a better deal for the countryside, and the results are evident. Not long ago a Tokyo business monthly, *Toyo Keizai*, chose Izumo as Japan's most livable city.

"Our average income is 55 percent of Tokyo's, but we're not

poor," the mayor says. "We've got clean air, clean water, and fresh, cheap vegetables. We have no subway system, but we wouldn't use one if we did. My apartment is a few blocks away. I go home and have lunch with my wife."

MOST COMMUNITIES, however, don't yet know how to balance the sometimes opposing goals of growth and the preservation of tradition. At bottom, the concerns are about identity and about a way of understanding themselves and their lives. And the back coast has something to lose on both counts. While the idea of giri, mutual obligations, is sometimes severely tested in Japanese cities, the word comes up often in conversations along the coast. Giri is a web binding the Japanese—a sense of community—nowhere more so than in the countryside. To imagine life without it is to stare into the chaos in which all others seem to live.

"We have more human relations than in the big cities," says Sumiyoshi Ohta, a young planning official in Kanazawa. "We still use the phrase 'three houses across the street, one on either side.' Neighbors are important. That is how we live."

I had come to think of this region as Japan's spiritual preserve. At the end of my travels it reminded me of the *kura*, the thick-walled storehouses where farming families keep inherited treasures. The back coast may be cutting new windows, I thought, but the walls of mud and straw remain strong.

One evening in Kanazawa, I went to dinner with Tadayoshi Meboso, the Kanazawa rod builder, in a small restaurant behind a fish shop at the edge of a river. The old wooden skiffs that brought in the day's catch bobbed along the bank across a narrow road from where we sat. It was a clattery, informal place; the sake came in dented tin pitchers, filled to the brim.

Tadayoshi had promised the best sushi and sashimi I had ever tasted, and he was right. Our dinner was served almost immediately after it was caught, cleaned, and scaled out front, he explained. No middlemen, no wholesalers or distributors. When it came to raw fish, the decisive factor was speed. It would be hard to find anything so fresh in Tokyo.

We talked about the difference between life along the back coast and in the capital, where Meboso had lived until a few months earlier. Born in Kanazawa, he had spent most of his adult years in that other Japan, and his worldliness showed. But now he was back, and he missed the big city's hectic pace not at all. He was beginning again, 49 years young.

"Everything goes a little slower on this side of Japan," Tadayoshi said with his ready laugh. "Even time." □

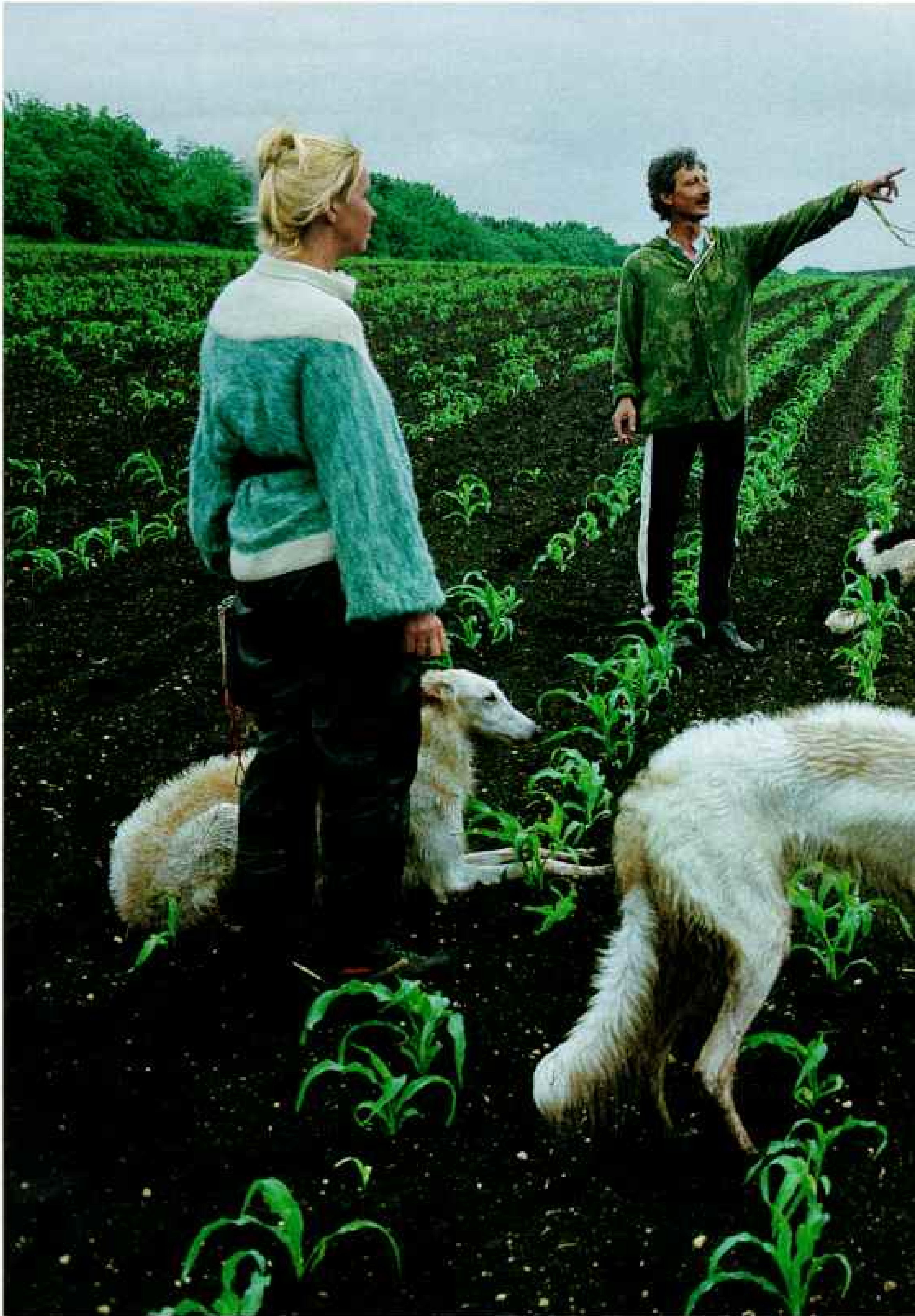
ate very little, and purified themselves in the frigid waters of Mount Yudono. "I felt nothingness, and that was valuable," says Yabuki, "but I would not go back to the yamabushi life. There was no newspaper, no TV. Fasting I can tolerate, but no information makes me restless."

On the waterfront at Yalta, Russians and Ukrainians imbibe the air of a stormy Black Sea, unconcerned for the moment about which flag should fly over the disputed peninsula playground.

CRIMEA:

Pearl of a Fallen Empire

By PETER T. WHITE   Photographs by ED KASHI



Favorites of the old Russian nobility who once summered here, sleek borzoi, also known as Russian wolfhounds, hunt rabbits for their

breeders near Simferopol. A Soviet retreat for decades, sunny Crimea contemplates life as a reborn Slavic Riviera.

CATHERINE THE GREAT, Empress of Russia, smiles at me and says she *loves* the Crimea. "In good hands it could be the most wonderful place in Eden."

Oh all right, this impressive lady in jeweled silk and velvet, with a crimson sash across her ample bosom, is in fact an actress, costumed as the empress for a pageant to commemorate the 1783 founding of the port city of Sevastopol (pronounced Seh-vas-TOE-pol). But her feeling is close to what the historical Catherine felt two centuries ago. She called the Crimea the finest pearl in her crown.

What's so remarkable about this Vermont-size peninsula jutting down from mainland Ukraine into the Black Sea?

Priroda, for one thing. Meaning "nature." The Crimean Mountains, stretching for 90 miles along the southern coast, provide a shield against the chilling winds from the north, so that a two- to eight-mile-wide strip between the water and picturesque limestone cliffs enjoys a Mediterranean climate: warm, dry summer and mild winter, with some 250 sunny days a year.

No wonder that over the decades privileged Russians have come here for relaxation—tsars and aristocrats, then Communist Party bosses and meritorious workers, and now the post-*perestroika* profiteers and whoever else can swing it.

They fill former palaces and more recently built health resorts, all set amid pretty parks with trees and shrubs from around the world—cedars, cypresses, sequoias, Chinese palms. The fragrance of native Crimean pines, I'm told, is good for your lungs. Sit in a grove of junipers, breathe deeply, and all sorts of undesirable bacteria will be gone from your system. People here firmly believe this, and they don't like it questioned.

I've come in late spring, when in the endlessly flat Crimean interior the fields of wheat and barley shine bright green with scarlet dots of poppies. The roads are lined with wildflowers, and as you drive along, you're as likely to smell honeysuckle or jasmine as the exhaust fumes of a tourist bus. The birds are singing at 4:15 in the morning almost as loudly as did the vodka drinkers three hours earlier in the room next to mine in the 2,500-bed Yalta Hotel. By 4:30 it's daylight, and there below my balcony beckons the blue bay of Yalta, spectacularly backed by walls of silvery limestone overtopped by the jagged tooth of 4,331-foot Ay Petri, or St. Peter.

But I mustn't let myself be carried away; this Crimean paradise is awash in trouble.

Tourism is down by more than a third. Before Mikhail Gorbachev began initiating reforms in 1987 ("the year everything began to break down," a Yalta councilman tells me), nearly 7.5 million visitors came annually to Crimea's 600 sanatoriums, hotels, guesthouses, and tourist camps. For many the vacations were subsidized with vouchers provided by trade unions, factories, and organizations such as the Young Communist League, which sent children to camps here for free or practically so.

Such perks all but vanished after the dissolution of the Union of Soviet Socialist Republics in 1991. A stay at a trade-union-subsidized sanatorium might have once cost a worker only 10 percent of his monthly salary; now it's twice his monthly salary, and if he brings his wife and two children it will be eight times as much. "So he won't buy anything extra to eat, or even a hat," laments a Yalta merchant.

Even the numbers of the so-called wild tourists, those who bring tents or look for cheap accommodations on their own, have fallen. Why? Inflation. It's higher in Ukraine than in any other country of the former U.S.S.R. During my stay a kilo of bread went overnight from 48 to 100, gasoline from 750 to 1,300 a liter—if you could find any.

Those figures are in *karbovanets*, commonly called *kupons*, or coupons—the temporary currency of Ukraine. When I arrived, the largest note was 10,000 kupons. Soon 20,000-kupon notes appeared, and 50,000s and 100,000s were being printed. The U. S. dollar had traded at 120 kupons a year before, and now it was 3,100. By that reckoning, a common monthly salary of 16,000 kupons would be down from $130 to $5. "How can I feed my family," a woman exclaimed, "when a kilo of sausage is 4,000 kupons?"

The breakup of the U.S.S.R. dealt Crimea another problem. Ukraine, asserting sovereignty, laid claim to the Black Sea Fleet based at Sevastopol. The parliament of

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Crimea

When Nikita Khrushchev honored 300 years of Russo-Ukrainian union by "giving" Crimea to Ukraine in 1954, it was largely a symbolic act, since Soviet masters ruled all. Today many Russians want the gift annulled. For Ukrainians, control over the peninsula has become a test of their own new sovereignty.

Russia, however, had proclaimed Sevastopol a Russian city and the fleet Russian property.

Administratively Crimea was part of the Russian Republic until 1954, when it was transferred to the Ukrainian Republic at the instigation of Nikita Khrushchev. That was all within the U.S.S.R., of course, so it didn't matter that much then.

Ukrainian officials charge that Russian politicians are plotting to get back not just Sevastopol but all of Crimea, by having it first become independent and then ask to join Russia. "They want to provoke the Russian population in Crimea," I'm told. And that's the majority of the 2.7 million Crimeans—63 percent; Ukrainians are 25 percent.

Nine percent are Crimean Tatars, a reminder of who was here before the Russians and Ukrainians, and it's a long list. First Cimmerians and the mysterious Tauri, who sacrificed shipwrecked sailors to their virgin goddess. Then warlike horsemen from the east—Scythians, Sarmatians—and Greeks from the south, planting vineyards and exporting wheat to Athens and Alexandria. Next, legionnaires of imperial Rome and from the north, Goths. In the Middle Ages, Turks settled inland and Byzantines and Genoese built trading posts and fortresses on the coast.

In the mid-13th century, the armies of Batu Khan and the Golden Horde made Tatars masters of the whole peninsula, and by the 1500s the Crimean Khanate, allied with Turkey, was staging slave-hunting raids as far north as Moscow. As Russia strengthened, it expanded southward and in 1783 annexed Crimea. Its name in Russian, Krym, derives from the Turkic language of the Tatars—from *kirim*, meaning "fortress."

One night during World War II, on orders from Stalin, all Crimean Tatars—some 250,000—were rounded up and sent off eastward to Central Asia, mostly to Uzbekistan. He accused them of collaboration with the German occupation troops. Nearly half are said to have died en route and in the early days of resettlement. They never lost hope of returning, and since the late 1980s they've been doing so. Their struggle now is not only

On the far south coast, Foros Church clings to a rocky perch in the Crimean Mountains. Tucked into equal isolation are nearby luxury

resorts where Soviet elites spent their summers, as well as the dacha where Mikhail Gorbachev enjoyed his last holiday as president.

Caught in a custody battle between Russia and Ukraine, sailors do calisthenics in Sevastopol, headquarters of the Black Sea Fleet. Aboard the Viktor Kotelnikov, *one of 300 or so aging ships in the fleet, a latecomer rushes to lunch. Control of Crimea's valuable port facilities, more than the ships, is at the heart of the dispute.*

against ethnic discrimination but also against the economic chaos that grips all Ukraine.

But problems are what tourists come to Crimea to forget, and a good place to start is Yalta. Distractions abound along the seaside esplanade—still called the Lenin Embankment—lined with palms and roses. Strollers pass ice-cream stands and kiosks selling souvenirs; artists offer paintings, photographers wait to snap your picture. Excursion boats take passengers for sightseeing trips along the coastline of Greater Yalta, encompassing a dozen communities on a 50-mile stretch. Today's economic woes may cloud the sense of luxury a bit (my hotel room was evidently sublet for a party one night while I was away), but Yalta remains the most famous resort area in the former Soviet Union.

At the turn of the century Anton Chekhov kept a house in Yalta, where he wrote *The Cherry Orchard* and *The Three Sisters* and noted of visitors that "the middle-aged women dressed as if they were still young girls and there was a great number of generals."

Today he'd find young women in the tightest of miniskirts wearing the brightest of scarlet lipstick and quite a few affluent *biznesmeny*. A good spot to observe certain dynamic elements of post-communist society is the enormous saltwater pool at the Yalta Hotel. A Ukrainian entrepreneur, who now lives in Canada but often comes here, explains to me who's who. I'll call him Sasha.

The tall muscular man over there, in a group of thick-necked fellows with close-cropped hair—he controls the mafia in Minsk. That lady with two children—her husband is a big businessman in Moscow, he'll come for the weekend, maybe he just made another million dollars. . . .

How? "Selling oil or metals or chemicals abroad. You buy cheaply from government sources and, of course, you need a license, so you pay under the table." Isn't that illegal? "Yes, but anything can be done if you have money and the right connections."

Sasha says lots of newly rich Russians could afford the Riviera or Mallorca or Miami but wouldn't feel comfortable there—here they can speak their own language and feel at home. He adds that in Moscow if you're rich somebody might kill you—a competitor or someone jealous, it happens nearly every day—so you have to have bodyguards. In Yalta you needn't be so afraid, but some people have bodyguards here too.

I see these muscle men with their drinks on the terrace at the hotel entrance—crew cuts, exercise suits, the latest American athletic shoes. Here, too, pretty miniskirters seek to become friendly with foreign males presumed to carry hard currency. (At the table next to mine: She, "One hundred dollar." He, "Let's go.")

And here I meet a visiting Bavarian farmer, a German Army veteran with a poignant story. During World War II he was a prisoner of war near Yalta, cutting wood in the mountains. When a guard nearly beat him to death, the lady forester in charge saved him. He returned 23 years later and found this lady, then in need, and supported her. He's been back many times, bringing groups of German tourists. The lady forester is dead now, but he'll go up to some forlorn old woman sitting in front of a church and hand her kupons amounting to several months' pension. "These women are so poor," he says. "One told me she hadn't been able to buy a decent piece of meat in two years."

A DACHA, in the Russian language, means a country place, and that can be just a shack with a little garden or a mansion on an elaborate estate like those the top communist leaders favored on the Crimean south coast.

The dacha near Yalta used by Nikita Khrushchev has indoor and outdoor movie theaters, ponds and murmuring fountains, and a bomb shelter 250 feet below. Occasionally an outsider is admitted to sightsee, and I am shown an album with photos of Khrushchev's guests—Indira Gandhi, Tito, Ho Chi Minh.

His successor, Leonid Brezhnev, added a swimming pool with a roof and sliding-glass walls and a cozy bar, where he entertained distinguished foreigners such as President Nixon. Gorbachev stayed here too, but then he had an extensive compound constructed farther down the coast, at Foros. It's closed

Instant photo op for the artless tourist, a plastic palm tree and phony drinks await takers on the Yalta seafront. At about the same latitude as Nice, Yalta enjoys a subtropical climate, thanks largely to the mountains that shield Crimea's southern coast from winds sweeping down from the steppes.

now, but I got a look from a boat offshore: a three-story residence with an escalator to the beach, a separate recreation building, quarters for guests, doctors, guards. Here, in August 1991, plotters put Gorbachev under house arrest; their coup collapsed three days later, but in four months he'd be out of a job too.

THE HEALTHIEST THING about the southern coast of Crimea, I'm told as I visit a few of its scores of sanatoriums, is simply the combination of sun, sea air, and fragrance from the parks. But treatments are offered for specific problems: Massages, acupuncture, soft music for reduction of stress.

Some I find hard to believe. Application of electromagnets for varicose veins? Even the pebbles on the beaches, I'm assured, can be therapeutic. Depending on where a pebble presses on your sole, nerve paths to different organs will transmit beneficial stimulation. But nowadays, says a sanatorium director, most clients come just to relax.

Tied to the Lenin Embankment in Yalta, a white ship called *Professor Zubov* reflected other new realities. She belongs to a Russian scientific institute but no longer makes research voyages, because the institute is broke. She's under charter to a private company and once a week takes a hundred or more passengers across the Black Sea to Istanbul, where they buy Turkish goods cheaply, with dollars—clothes, chocolate—to bring back and sell here. It's a quick way to double your money, and it's called *kupil-prodal*—literally "buy-sell," meaning trade.

In the Kirov Sanatorium, a dozen men and women sit in a windowless room. The air pumped in is full of superfine salt particles. Good for bronchitis, asthma, sinus problems, says the attendant—200 kupons a visit (seven cents at the time). That's also a response to new necessities. The sanatorium, no longer state supported and needing money to keep going, rents this room to one of its doctors, who has created a private firm to supplement his inadequate salary. He hasn't made much money yet, he says; the best thing these days is kupil-prodal.

There's been change too at Yalta's prime tourist spot, the great white palace a few miles down the road at Livadia. It was the summer residence of Nicholas II, last of the tsars. The guides say that in the past they could hardly mention him. What they stressed was that in the banquet hall Stalin, Churchill, and Roosevelt met in 1945 for the Yalta Conference, which shaped the map of postwar Europe. But now what intrigues visitors most are all the newly hung photographs of the imperial family—having tea in the

park, playing tennis, splashing in the surf. Outside, a tourist brochure bought for 200 kupons at a city-owned kiosk 300 feet away is sold for 2,000—kupil-prodal in full flower.

THE COASTAL ROAD from Yalta leads west to Sevastopol, the stately naval town that went through hell twice. First during the 1854-56 Crimean War. A full decade afterward, Mark Twain, on a European tour, saw what 349 days of siege and bombardment by the British, French, Italians, and Turks had done in that war to check Russian expansion. Pompeii, Twain said, was in comparatively good condition. "In whatsoever direction you please," he wrote, "your eye encounters scarcely anything but ruin, ruin, ruin!"

On the outskirts of Sevastopol, amid a vast vineyard of the Golden Valley state farm, rises a white obelisk with an inscription in English: "In memory of those who fell in the Battle of Balaklava 25 Oct. 1854." That day Russians were dragging off some captured British cannon, and the British commander ordered his own lancers and dragoons to give chase; his instructions were misinterpreted, directing them down a path that would expose them to Russian artillery fire from hills on both flanks and in front. The 670 men of the Light Brigade obeyed. It was the charge into the Valley of Death celebrated in the

poem by Alfred, Lord Tennyson. Only 195 came back.

The place where the charge ended is now the little village of Khmelnitske. As I read the sign on one of the buildings—Primary School No. 36—I hear a thunderous *b-o-o-m!*

What on earth was that? I get a reassuring explanation. In World War II, Sevastopol and its surroundings were destroyed once more by a 248-day German siege. Unexploded mines and shells are still found today and set off so they'll do no harm.

Painstakingly rebuilt again, Sevastopol now floats in political limbo, full of apprehensive officers and citizens.

I'm impressed by the warships in the harbor—the helicopter carrier *Moskva,* a dozen missile cruisers and antisubmarine frigates. But a captain tells me they're old tubs really, and the crews are losing their skills because the ships—an estimated 200 combat vessels plus 130 auxiliaries—don't go out much. No fuel, no money.

I climb down into a diesel submarine, vintage 1965. She needs replacement parts from St. Petersburg, says a lieutenant, but Russia isn't sending them and Ukraine doesn't have any. "So we make repairs as best we can. Anyway, nobody knows what to do with us, do we belong to Russia or to Ukraine?"

Russian President Boris Yeltsin and Ukrainian President Leonid Kravchuk have met repeatedly and promised to divide the fleet 50-50, but nothing happens. Officers vent their frustrations at meetings. So do civilians

who gather at demonstrations in a city square, many of them pensioners squeezed by inflation. I hear speakers shout angrily. "This is a city of Russian glory!" "They want to tell us we're not Russian. They want to force our kids to speak Ukrainian!" "Down with Ukraine—we want to be with Russia!"

A Ukrainian captain in the crowd shudders. Russian propaganda is working here, he whispers—"People think they were better off before. They don't remember the bad things." A meeting organizer tells me he's confident that all the fleet and Sevastopol will go to Russia, eventually all Crimea. "The fleet and the police are on our side." Does he foresee armed clashes? "Only if the Ukrainians start shooting. Then we will too."

On working vacations, members of a new Slavic mafia, dominated by Russians, stalk the boardwalk in Yalta, where restaurants are filled with the nouveaux riches. To exploit Crimea's huge economic potential, racketeers have moved quickly to acquire properties and concessions all along the coast.

THE WORLD'S LONGEST trolleybus line runs 50 miles from Yalta over a 2,470-foot mountain pass to the Crimean capital, Simferopol (pronounced Sim-feh-ROE-pol).

The massive building that was headquarters of the Crimean Communist Party is now the Supreme Soviet, or parliament, of the Republic of Crimea. Inside sat the man who was Crimea's most powerful politician,

For every ailment, a cure: Most involve Crimea's abundance of sun, sea, and minerals. In Yalta guests at Kirov Sanatorium inhale air laden with salt, confident their lungs will be revitalized. At the Burdenko Sanatorium in Saky, a young patient enjoys a therapeutic bath in a pool of Black Sea water.

Nikolai Vasiliyevich Bagrov, once the party's first secretary and subsequently chairman, or speaker, of parliament. He told me he'd changed a lot.

"Before, there was only one opinion, and it wouldn't be questioned. But I have learned to be patient, to control myself and listen to the opinions of others. Sometimes the opinions are not sound, not constructive, and then it is very hard to listen and look for the grain of truth. It gives me a headache."

Since my visit there's been a big change. Last January Bagrov ran for election to the new post of President of Crimea and got 23 percent of the vote. The winner, with 73 percent, was Yuri Aleksandrovich Meshkov, who'd promised to split Crimea away from Ukraine and join it to Russia.

Meshkov has since modified his position: True autonomy would be enough, he says now, if it included a free hand in determining economic policies and the right to make treaties with foreign nations. And he stands by his campaign pledge to make the Russian ruble legal tender in Crimea once more.

No wonder—by January the Ukrainian kupon had sunk to 40,000 to the dollar, and it has kept on sinking.

ON THE HILLS AROUND SIMFEROPOL makeshift villages are reminders of the bitter fate of the Crimean Tatars, now returning after decades of exile to the land they ruled for more than 300 years.

For many, I find, the new life here isn't easy. Electricity isn't provided, and water comes by truck and must be carried home in plastic pails. A lot of the tiny houses are unfinished—the money brought from Uzbekistan has been losing value and won't buy enough cinder blocks and lumber.

At least the bits of land they're on are now theirs; in the old Soviet state the police might have run them off. All grow fruits and vegetables. "If you have a twentieth of a hectare," an old man tells me—that's about 60 by 90 feet—"you'll never go hungry." But you

Kids still reign at the Artek International Children's Center near Yalta. Their parents would have attended courtesy of the state as Young Pioneers. Now mom and dad have to cough up cash, and lots of it. Though most of Crimea's resorts and health spas are still in the hands of government ministries, they are run now for profit, not as public services.

might freeze in winter, coal is so expensive. Many tell me they were better off in Uzbekistan, but all say they're happy to be here in their homeland.

The elected leader of the Crimean Tatars' national council, Mustafa Jemilev, now 50, was six months old when deported and later spent 15 years in prison for agitating for his people's right to return. "About 250,000 are now back," he tells me, "and they keep coming." No, they don't expect to get their former houses back but do demand representation in the Crimean parliament, with veto power in Tatar matters.

I mention that I was surprised to see a Tatar lady who's blonde, blue-eyed, and pink-faced. Mustafa Jemilev smiles. That goes back to the formation of our nation, he says. In the steppe were those with Mongolian features; in the south, some Greeks, Goths, and Genoese who accepted Islam and adopted the Tatar language and so became Tatars. The steppe Tatars and the coast Tatars mixed, so now there's no such thing as a typical Crimean Tatar face.

He adds that among his people knowledge of the Tatar language is weak—for a long time there've been no Tatar schools; everyone's been educated in Russian. "We hope to change that slowly, to train teachers and get textbooks."

South of Simferopol, in Bakhchysaray—the last capital of the Crimean Tatars—the 18th-century palace of the khans is under renovation. More than a hundred fountains are said to have played here. I pass the Holy Paradise Fountain, the Fountain of Life, the Lullaby Fountain. They're all dry, except for the one the tourists flock to see, the Fountain of Tears. It's famous because of a poem by Alexander Pushkin, about a fierce ruler's grief over the death of a beautiful Polish princess in his harem.

Nearby, a few Tatars in white skullcaps file into the palace mosque for Friday prayers with a visiting imam from Turkey.

WHAT'S ALONG THE WEST COAST of Crimea? The little town of Saky, offering black-mud treatments for rheumatism, and the big industrial town of Yevpatoriya, with dozens of sanatoriums for children. Along the roadside, grazing cattle and sheep alternate with wheat fields and orchards of cherries, apples, peaches.

On a gentle hill near Novoozerne, I see skinny steel legs 60 feet tall, with 28-foot blades revolving on top—three windmills. "Protected by U. S. Patent 4,426,192," says a sign. It's the pilot project of a joint venture: hardware made in Ukraine, technology from a firm in San Francisco that created a

successful wind-energy system in central California. There's always a wind in this region, and planners envision 5,000 wind turbines with a capacity of 500 megawatts. It would be one of the biggest wind-power plants in the world. But will it ever be completed?

Near the peninsula's northwest corner I watch tugs towing barges from the port of Chornomorske to service offshore rigs drilling for gas. Here a fishing collective called Tavrida has been catching herring and flounder and canning shark-liver paste. Now fishing is down, because of overfishing and pollution, and the collective seeks new ways to make money: raising nutria for fur and tending 750 acres of lavender and wormwood to make oil for cosmetics. The chairman tells me that he signed up for a joint venture with an aftershave company from Corpus Christi, Texas, a year earlier. "And we've sent them oil samples," he says, "but so far, nothing's happened."

SUMMER'S HERE, it's getting hot—time for a refreshing day in the mountains, in the Crimean State Nature Preserve. Its 85,000 acres were once the hunting grounds of the tsars. Vladimir Lupsha, who was in charge here for 29 years, takes me up a narrow road through successive zones of oaks, beeches, and then pines.

At 4,000 feet there's a great meadow with spots of white and pale pink—daisies and tiny wild roses. A white-headed eagle circles overhead.

On the way we'd stopped to picnic along a stream—a favorite spot of Leonid Brezhnev, who came until he was so decrepit he had to lean on a tree to shoot. Around here, Lupsha says, are boars, gazelles, mountain sheep. And a thousand Crimean deer; one of those majestic stags can measure eight feet to the top of his antlers. But since 1987, no hunting. No hiking either; it disturbs the animals. But outside the preserve, in the rest of the Crimean Mountains, there's 20 times as much space for hiking and camping. The adventurous might climb a steep thousand feet down into the Bolshoy Kanyon, the Grand Canyon of Crimea. And then jump into an icy pool down there, known as the fountain of youth.

That night the full moon cast a shimmering path of silver across a truly black Black Sea.

FOR GLIMPSES of the rest of Crimea I drive northeast from Yalta on the coast road that winds and winds, like a snake without end, now high, now low, between green vineyards and gray, pebbly beaches along the turquoise and emerald sea. At Sudak, a five-tower Genoese fortress looms from a seaside hill. At Feodosiya, the old fortifications are Byzantine. This is the end of the Crimean Mountains; from now on it's ripening wheat and cattle pastures all the way to the Kerch Strait, which connects the Black Sea to the Sea of Azov.

Kerch, a rail terminus and Crimea's major commercial port, has become a transshipment point for exports from much of the new Commonwealth of Independent States since opening to foreigners two years ago. "In 1992 we had 186 ships," says a city official. In 1993 they came at twice that rate, loading coal for Italy, steel wire for China.

Kerch is also home port for factory ships catching fish in the Atlantic and Indian

Replanting roots that date back to the 13th century, a family of Tatars settles into a makeshift home outside Yalta. Since the late 1980s a quarter of a million Tatars have returned from Stalin-imposed exile. Korean farmers, whose parents moved here in the 1930s, harvest watermelons on Crimea's northern steppe.

In a field of poppies a young Tatar lays the groundwork for a home of limestone, found in thick sheets beneath the soil. Heirs to the

Crimean Khanate, longtime nemesis of the Russian tsars, Tatars now seek a share of political power.

Oceans, canning it, and selling it for hard currencies abroad. And the Zaliv Shipyard —it built the first Soviet nuclear-powered freighter—now turns out double-hulled tankers in a joint venture with Pepsi-Cola; in the future, perhaps, prefabricated Pizza Huts.

And Kerch is a treasury of wealth past. "Wherever you stick a shovel around here, you'll find something historical," says the director of the Kerch History and Culture Museum. He mentions hundreds of burial mounds in the vicinity, some as old as 2,500 years. They've yielded treasures of Greek colonists and their Bosporan kingdom, also the finest Scythian gold jewelry now in the Hermitage in St. Petersburg. Some of the mounds have not yet been opened, and I'm told that archaeologists are expected from Montreal and Brigham Young University in Utah. Is it surprising that grave robbers come too, by Mercedes, with machine guns, when a single coin found here might bring $25,000?

I DRIVE WESTWARD, into the flat, dry, fertile steppe that constitutes nearly two-thirds of Crimea and follow a concrete-lined canal north as far as the city of Dzhankoy, to Pumping Station No. 1. Water flows in from the Dnieper River, via the Isthmus of Perekop, which connects the peninsula to the Ukrainian mainland. Down

Crimeans first, Russians second, Vasily and Olga Karezin celebrate their golden wedding anniversary in Sevastopol, home to a large population of Russian pensioners. Though some of their friends favor reunification with Russia, many, like the Karezins, would prefer that Crimea remain autonomous, with the loosest possible ties to its parent nations.

to here it flows by gravity, says the station manager. His pumps raise it some 30 feet so it'll move on into a vast network of canals and pipes that from April to November irrigates 1,500 square miles of wheat and barley, orchards, vineyards, and fields of sunflowers. This is the lifeblood of Crimean agriculture. Before, until the 1950s, "it was like a desert here," I'm told. "People had camels."

But water isn't everything. At a collective farm where five combines are harvesting wheat, I hear that the yield is good but two-thirds of the earnings will go for fuel. The Mir flower farm at Yantarne used to send a million tulips to Moscow and Kiev early in the year, but its acres of hothouses will be shut down for lack of heating oil.

And so, while mainland Ukraine sustains Crimea with plenty of water, it cannot supply nearly enough gasoline and oil, because that must come from Russia, and Ukraine doesn't have the money.

In fact, Ukraine is far behind in its payments—reportedly to the equivalent of 2.5 billion dollars, or more—and from time to time Russia threatens to cut off fuel supplies altogether. In September 1993, Presidents Kravchuk and Yeltsin met yet again, in a grand duke's former palace near Yalta, and announced another agreement: In payment for some of its debt, Ukraine will cede to Russia its share of the Black Sea Fleet!

But when Kravchuk returned to his capital, deputies in the Ukrainian parliament proclaimed they'd never ratify such a deal. Since then there's been yet another agreement: Ukraine to get 15 percent of the fleet and credit for 35 percent; the Sevastopol naval base to be leased to Russia. But still ratification is in doubt. And so again the big economic and political questions remain unresolved, and the Ukrainian kupon keeps falling to new lows. The outlook is grim, uncertain.

BUT CRIMEA holds that commodity for which, it seems, there will always be customers: nature—priroda. A spring that coaxes fields of poppies when snow is falling in Moscow. A summer of Black Sea beaches and healing forest airs, when the temperature of the sea and the air are the same. And an autumn that enchants the southern coast, when the atmosphere is clear as crystal and the colors of the sea and the sky are extra bright. The deciduous trees among the evergreens turn yellow, maroon, and red; vineyards blaze purple and gold. People say the soft breezes caress you—you feel you're floating. They call it *barkhatnyy sezon*, the velvet season.

That's what Crimea has to look forward to, no matter what. □

To Heaven by Land, Sea, or Air

Fantasy Coffins

of Ghana

Article and photographs by
CAROL BECKWITH and ANGELA FISHER

Pop the hood, and a wooden Mercedes-Benz makes a final resting place for a man who drove the real thing around Ghana, where coffins that mimic ordinary objects are becoming a tradition.

The fish bobbed toward us, as if borne on a dark and glistening wave. It seemed to nod a symbolic farewell to each house in the fishing village of Oshien. Anointed with sheep's blood and schnapps and hoisted by the sweat-streaked arms of the deceased's male friends and relatives (right), the wooden fish held the remains of Dede Tse Nunu, a fishing chief.

Outside Ghana's capital city of Accra, a handful of woodcarvers create coffins modeled on objects of special importance to the departed.

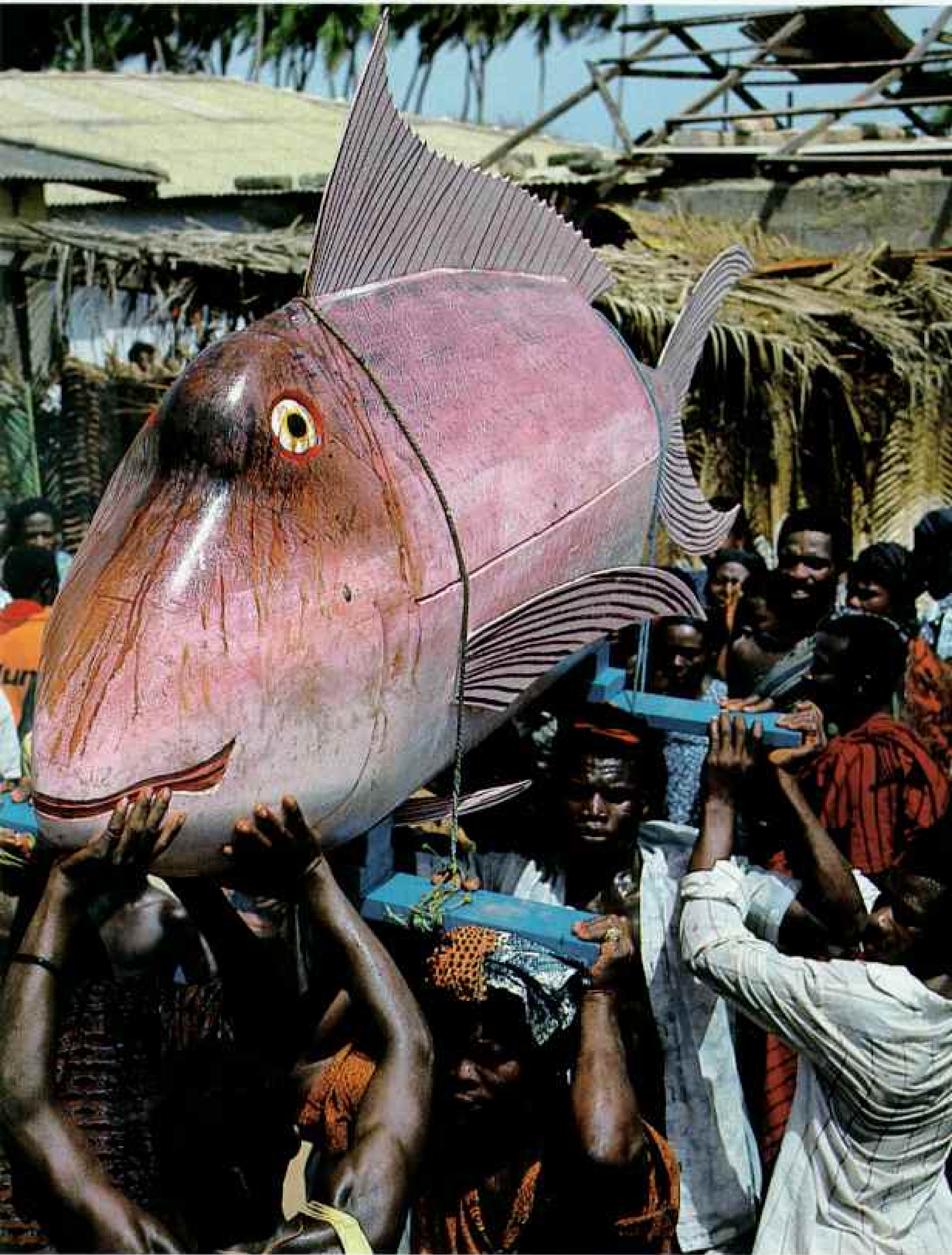
Commissioned by rich and poor among the Ga coastal people as well as others in neighboring countries, the coffins celebrate the lives of loved ones and reflect their status. At Nunu's funeral more than 2,000 guests attended a ceremony at once sad and jubilant.

A few days before, in the nearby town of Nungua, Joseph Tetteh Ashong—known as Paa Joe—put the finishing touches on the fish (below), a *tsɛlé* much like those Nunu once netted off Ghana's coast. Paa Joe learned his craft in 1961 as an apprentice to his uncle, Seth Kane Kwei, who had started carving the coffins about five years before and continued making them until his death in 1992. Today Paa Joe's shop turns out about ten coffins a year to house the deceased—who may be kept in mortuaries for a month or more while funerals are planned.

"Do you find it difficult seeing your beautiful works of art disappearing into the ground?" we asked Paa Joe. "I wish some would be on display for people to appreciate," he said. "But once one has been used, it has served its purpose. The ground is where it belongs."

The memorials are expensive for most Ghanaians. A fantasy coffin costs about $400 U. S.—the average yearly income in Ghana—depending on the design, wood type, and length of advance notice given to the carver. People routinely spend everything they have on funerals. One friend told us, "The hardest struggle in life is to make enough income to support the funeral celebration."

Fantasy coffins of Ghana will be featured in the authors' book *African Ceremonies and Rituals*, to be published by Harry N. Abrams, Inc., in 1997.



A pilot from Togo chose a KLM jet. Some carvers accept commissions from Europe and the United States, where coffins are displayed in museums and galleries.

A lobster will bear the body of a fisherman who made his living trapping the crustaceans along the West African coast.

Going in Style

When a dying person has not arranged for a coffin, families look to carvers to help make a choice. "Knowing the deceased person's profession and interests helps us narrow it down," says Ben Sowah of Kane Kwei Carpentry Works.

Repairing outboard motors in life, a mechanic chose to be buried in a Yamaha 40—the same kind of motor he used on his own boat.

The family of a goldsmith selected a coffin shaped like a crab, symbol of his clan.

The crew of a fishing fleet captain came from Cameroon to attend his funeral in Ghana, where he was buried in this model of one of his boats.

A farmer chose a green onion coffin.

A cattle herder's family buried him in a bull.

The eagle coffin is reserved for people of prominence, such as a paramount chief.

Transport to the Afterworld

Blending Christian and traditional beliefs, the Ga pour libations over the coffin to ask blessings from the deceased, now among the ranks of honored ancestors. Families bury the dead with the comforts and adornments of life—handwoven cloth, jewelry, and money.

Painted scales and a pink satin interior add detail to a *tselé* fish coffin.

A stylized leopard will carry the remains of a hunter.

"I try not to rush a job," says carver Paa Joe (above). "Everything must be right before I let a coffin go."

As we watched, he circled the wood form of a truck destined for a man who hauled coal. Paa Joe pulled out his spokeshave and went to work, shaping a piece of wood beneath the front grille into a bumper.

On the day of the truck driver's wake we returned to Paa Joe's shop and found the family waiting to collect the replica of their loved one's coal truck. Many details had been added: Gas and brake pedals were in place, red reflectors glowed in the back, glass mirrors had been installed, and the driver's favorite saying was displayed over the windshield.

Yet, to our surprise and the family's dismay, the coffin was not quite ready. Every apprentice in the shop was busy painting chunks of wooden coal carved into the bed of the truck. Anxious moments passed. Finally a sign painter arrived and lettered the truck's make on the hood (below). Several more strokes and the job was done.

A few hours remained before the wake as the family loaded the still-wet coffin into their truck and headed off, happy with the carver's work. We wondered if Paa Joe, calm through it all, had kept to the motto on the deceased's truck: that God's time—which cannot be rushed—is the best. □

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THE PRESIDENT'S REPORT ON THE

Education Foundation

At Long Last, New Geography Standards

They're teaching our kids garbage in schools now—and it's a great way to turn them on to geography.

As part of the National Geographic Kids Network program, students root through classroom trash and analyze how much of it is recyclable. Then, using a computer link, they compare their findings with those of youngsters in schools around the nation and the world.

It's a chance for students at Layton Hall Elementary School in Fairfax, Virginia (right), to share an ecology lesson with kids like those at Siler City Elementary School in North Carolina (below).

Projects like these help students explore the many aspects of geography. And I'm very excited about the next step: To help teachers pull those elements together, new geography education standards are to be announced next month.

ANNIE GRIFFITHS BELT

FRITZ HOFFMAN, JB PICTURES

Last March, President Clinton signed into law the Goals 2000 education act, aimed at improving student performance in eight subjects, including geography. Across the country more than 2,000 people have worked on the geography standards, drawing up a blueprint of basic knowledge and skills that students should possess by the fourth, eighth, and twelfth grades.

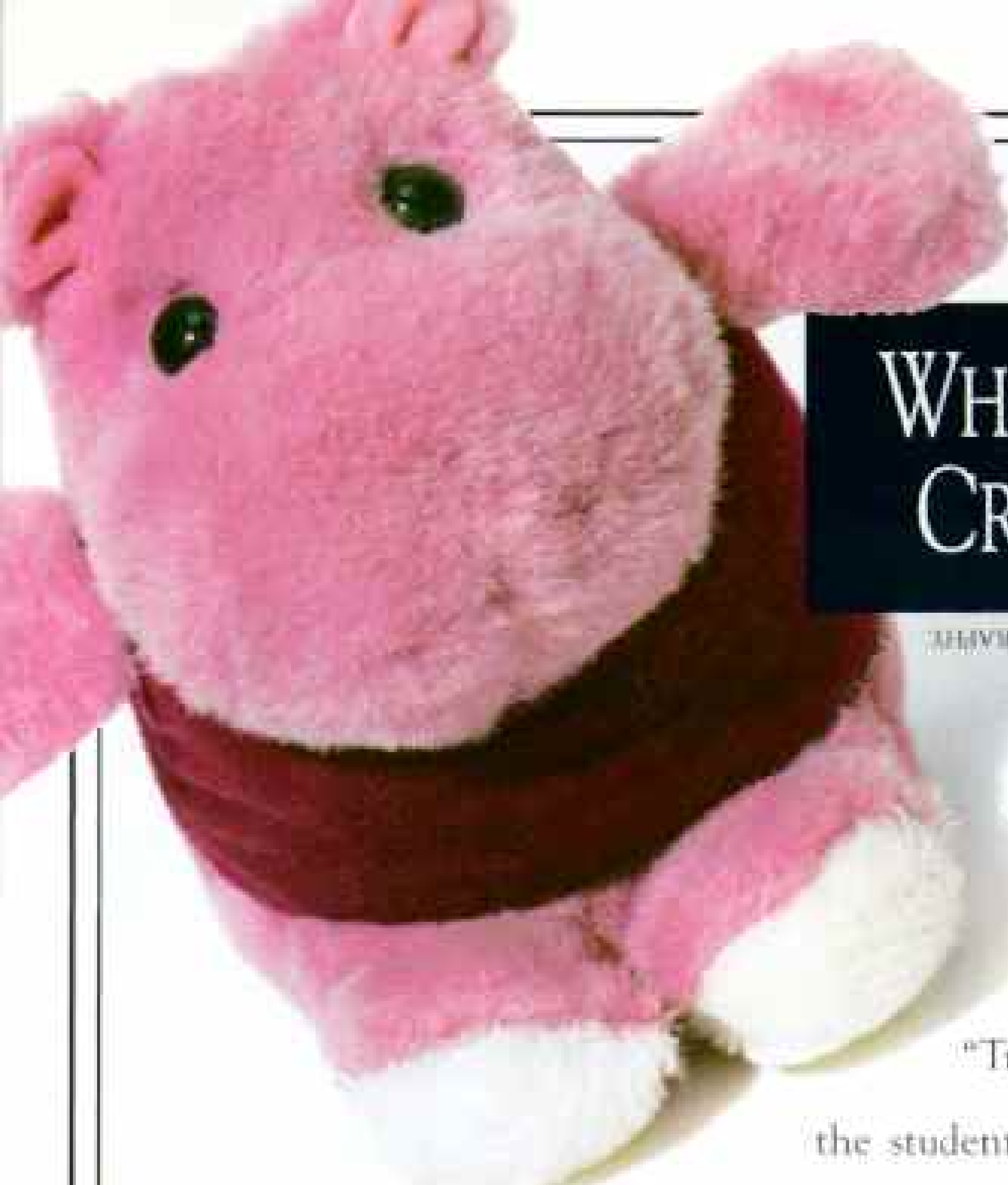
For example, fourth-grade teachers will now know that students should, among other things, be able to make a cardboard or clay model of a region showing landforms, drainage systems, and vegetation.

Anthony R. de Souza, editor of the Society's RESEARCH & EXPLORATION journal, is executive director of the geography-standards effort.

"This could be a golden era for geography," says de Souza. "The standards will be voluntary, but—for our children's sake—I hope schools seize the opportunity."

Gilbert M. Grosvenor

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



WHY DID THE HIPPO CROSS THE ROAD?

TO HELP STUDENTS BECOME MORE AWARE OF GEOGRAPHY

To help them appreciate geography, Barbara McLean's kindergarten through fifth grade students participate in a unique program called "Traveling Pals." It involves research, the students' own travel experiences, and some interesting traveling companions.

Whether they're going on a day trip or a weeklong vacation, the students get to sign out one of six different stuffed animals. They keep a record of their trip, take photographs with their "Pals," send postcards, and collect artifacts along the way.

The pictures and mementos are displayed on a school bulletin board where everyone can share the students' adventures.

For her creative approach to teaching geography, State Farm is proud to present Barbara McLean, Library/Media Specialist, with the Good Neighbor Award and donate $5,000 to Joshua Eaton Elementary School in Reading, Massachusetts.

GOOD NEIGHBOR AWARD

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The Good Neighbor Award was developed in cooperation with the National Council for Geographic Education.

Asiatic Lion **Genus:** *Panthera* **Species:** *leo* **Subspecies:** *persica* **Adult size:** *Head and body length (male), 170–250 cm; tail, 90–105 cm; females are smaller.* **Adult weight:** *Male, 150–250 kg; female, 120–182 kg.* **Habitat:** *Gir Forest in northwestern India.* **Surviving number:** *Estimated at 250* *Photographed by Joanna Van Gruisen*

WILDLIFE AS CANON SEES IT

In the golden glow of an Indian sunset, a young male Asiatic lion stares intently into the darkening forest. Great numbers of these majestic lions once ranged from the Middle East to India, but by 1913 the big cats had been exterminated in every country, save for just 20 in the Gir Forest. Today, the survival of the species depends on one population living in a fragment of protected forest. To save endangered species, it is vital to protect their habitats and understand the role of each species within the earth's ecosystems. As a global corporation committed to social and environmental concerns, we hope to foster a greater awareness of our common obligation to ensure that the earth's life-sustaining ecology survives intact for future generations.

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Geographica

BROOKS WALKER

Ancient Forest Rises From Italian Clay

Workers were digging for clay to supply a tile factory in Italy's Umbria region when they struck wood—old tree trunks, in fact. Upright but listing like Pisa's tower, they looked, felt, and even smelled like living trees.

But these relatives of modern sequoias and bald cypresses are about two million years old. Buried by an ancient earthquake, they were preserved by the moist clay. Sixty trees, some of them five feet in diameter and 26 feet high, have been exposed on a 25-acre site near Perugia; the tops of three dozen more break the surface. No sequoias, or anything that resembles them in the family called Taxodiaceae, live in Italy today, suggesting that the climate used to be far damper.

Exposure to air has led to some decay of the trees. "The primary object is to find a way to preserve them," says the site director, Sergio Vergoni of Umbria's archaeological superintendency. His team has erected roofs over the trunks to provide protection from the elements and is monitoring their status.

Analysis of the trees revealed that some lived for a thousand years. "They are not petrified," Vergoni says. "They are wood; they still could be burned."

Mummy's DNA Proves TB Preceded Columbus

A thousand-year-old female mummy, lifted from a grave in southern Peru, has cleared European colonizers of the charge that they introduced tuberculosis to the New World.

During an autopsy, lesions typical of modern TB were found on this six-inch-long piece of lung tissue (right). But because fungus infections also can produce such lesions, scientists—led by Dr. Arthur C. Aufderheide, a pathologist at the University of Minnesota at Duluth—could not be sure of the cause. They isolated a scrap of DNA, so tiny it is invisible even under an electron microscope, from what they believed was a TB bacillus in the lesions. Then they multiplied the DNA molecule with an enzyme, using a revolutionary technique called polymerase chain reaction (PCR), until the sample was large enough to be compared with DNA from present-day TB bacteria. The two matched almost perfectly, proving the disease was present in South America centuries before Europeans arrived.

The woman was a member of the Chiribaya people. Her lesions had healed, showing that she fought off TB, but she died at about 45 of an unknown cause. Hers was one of 140 mummified bodies found in the remote desert cemetery.

ARTHUR C. AUFDERHEIDE

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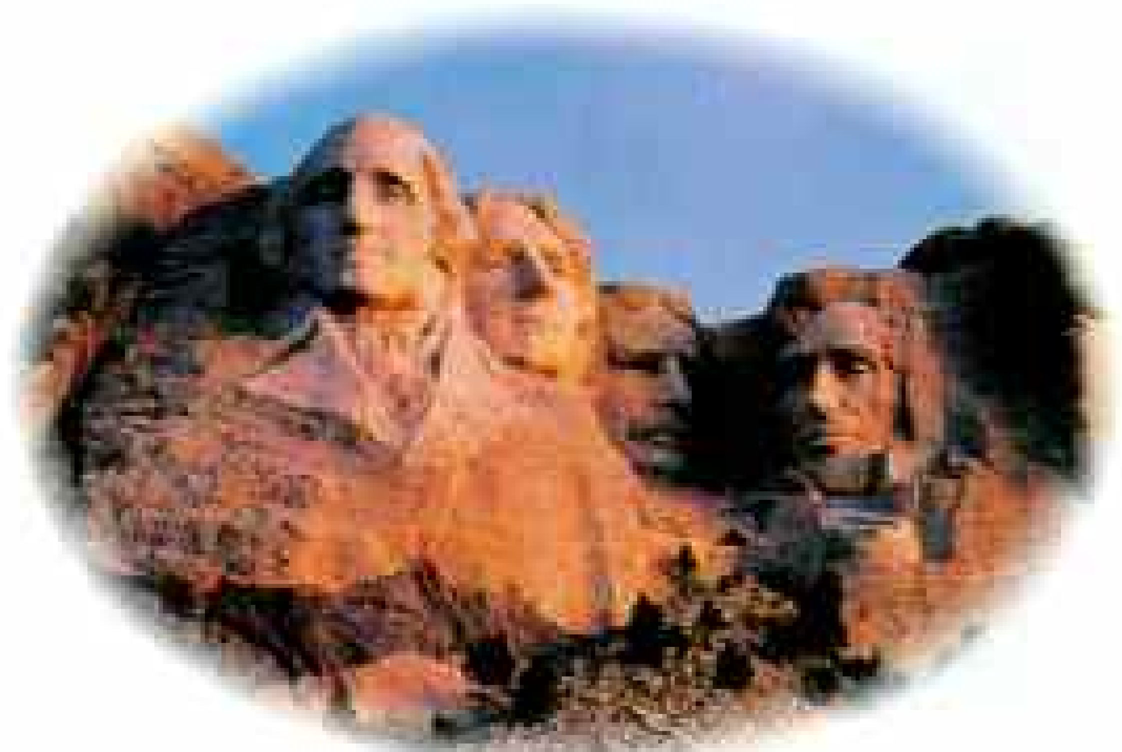

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FORD CONTOUR

MERCURY MYSTIQUE

Geographica

Ground-Tracking With a Forked Tongue

Scientists since Aristotle's day have wondered why the tongues of snakes—and many lizards—are forked, a trait that dates from at least the Cretaceous, more than 65 million years ago.

Now Kurt Schwenk, a University of Connecticut evolutionary biologist, thinks he knows the answer. "It gives them the ability to follow a chemical trail in 'stereo,'" he says. "The spread tines of the forked tongue detect the edges of a trail with a single flick."

Some lizards have only a tiny split at the tip of the tongue, while in snakes the separation of the tines extends much farther back. But all species use the fork in the same way, Schwenk says. With flicking tongues, snakes such as this anaconda can follow chemical "footprints" left on the ground by potential prey. Males can locate mates by detecting secretions from the skin of a passing female. Mothers can lead their young back to their den. "The world snakes live in is textured by chemical nuances," says Schwenk. "We can't imagine how important this sense is to them; it guides them in the most basic aspects of living."

KENNETH GARRETT; DAVID LIITTSCHWAGER AND SUSAN MIDDLETON © WALT DISNEY CO. (BELOW LEFT)

The Alpine Iceman: Hunter, Toolmaker, Cook

A detailed picture of the prehistoric man whose well-preserved remains were found high in the Alps has emerged from 70 hours of microscopic study of his tools. In his last days 5,000 years ago the Iceman (GEOGRAPHIC, June 1993) butchered meat with this flint knife found with its grass sheath (above). He worked at reseating his copper ax head into its handle. He retrieved his spent arrows and began to refashion them for later use. And he heated a starchy food, possibly for porridge.

Thomas Loy of the Australian National University, who found traces of animal hair, blood, and tissue all over the tool surfaces, concludes that the Iceman was no klutz, as some have charged: "He was a skilled hunter, a mountain man who knew the ropes."

"Gene-ography": Mapping Early Migration

About 9,000 years ago, soon after agriculture began in the Fertile Crescent, people poured out of the Middle East, migrating in all directions. Their movement through Europe skirted the mountainous Basque region of the Iberian Peninsula, where an established people apparently resisted intermingling with the newcomers.

That migratory pattern is just one of the ancient narratives written in the genes of modern Europeans, says Luigi Luca Cavalli-Sforza of Stanford University. Using genetic data collected from modern peoples, he is tracking past migrations and mapping his conclusions.

For instance, one genetic trait, Rh-negative, turns up in more than a quarter of the population of the Basque country—the highest ratio of Rh-negative in the world. The trait is found in ever decreasing frequency the closer populations are to the Fertile Crescent (map). Had those early travelers merged more successfully with forebears of present-day Basques, Rh-negative would have been diluted among them as well. A separate migration may account for the low ratio of Rh-negative documented in far northern Europe.

Several scientific teams have used genes to trace the movement of peoples. In *The History and Geography of Human Genes*, Cavalli-Sforza and his colleagues present an atlas of 500 maps depicting worldwide migration.

Percentage of Rh-negative individuals in population

	More than 25		10-15
	20-25		5-10
	15-20		Less than 5

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

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

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

KLAUS GULDBRANDSEN

A Mutation That Wards Off Heart Disease?

Rina Segala is one of the lucky ones. She, along with her three sons and some 40 other residents of the northern Italian town of Limone, apparently carries inherited protection against heart disease. Segala's husband, Giacomo, does not.

When one of the Limone natives visited a Milan doctor for a checkup two decades ago, tests found high levels of LDL, or "bad" cholesterol, while HDL, "good" cholesterol, barely registered, implying high risk of heart disease. Yet the man's health was excellent. Later studies turned up a mutation in a lipid-carrying protein in his blood and that of 5 percent of Limone's 1,000 residents. Says Dr. Cesare Sirtori of the University of Milan: "These people have great arteries." He has traced the protective gene to a child born in 1780. Researchers hope to develop a synthetic version of the protein to treat or even prevent heart disease.

Baring the Secret Life of Katydids

At night katydids of Peru create a riot of noise with infinitely varied songs. But they seem to vanish at dawn, hidden from preying birds, monkeys, lizards, spiders, and snakes.

Thus though they are among the rain forest's most ubiquitous residents, little was known about them until David Nickle of the U. S. Department of Agriculture began studying them in 1986. He has identified 370 species in an area of northeastern Peru the size of Washington, D. C.; the entire U. S. has only about 110 species.

"Every katydid species has its own story," Nickle says. "Each has its own song."

Cousins of crickets, katydids "sing" by rubbing their wings together and listen with receptors located on their front legs. Males call females, some of which sing back.

With the help of Earthwatch volunteers, Nickle and his colleague, James Castner of the University of Florida, have found that by day some katydids pose as sticks, dead leaves, or pieces of bark to foil predators. One species chews a notch out of a twig, then fills the void with its own body.

Music, Life, and Death in a Chinese Court

In the grand sweep of Chinese history, the Marquis Yi plays a minor role. But the tomb of the fifth-century B.C. ruler of the state of Zeng sheds brilliant light on the music, technology, and customs of the period.

When the marquis died, he was buried with the luxurious trappings of his life, including 21 teenage female attendants and some astounding musical instruments. This three-ton set of 64 bronze dual-pitch bells, nine feet high, is the most complex assembly of bells ever found.

KENNETH J. DEWOSKIN (ABOVE); PANACANTHUS CUSPIDATUS, TWO TIMES LIFE-SIZE, BY JAMES L. CASTNER

The marquis's tomb also held bronze figures, stone chimes, pan pipes, and bronze braziers and cauldrons, now in the Hubei Provincial Museum in Wuhan. Kenneth J. DeWoskin, a University of Michigan specialist in Chinese history, believes the buried women were court performers sacrificed to entertain him in the afterlife.

—Boris Weintraub

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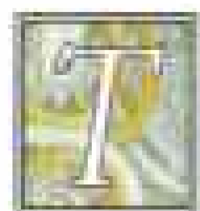

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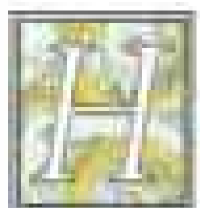

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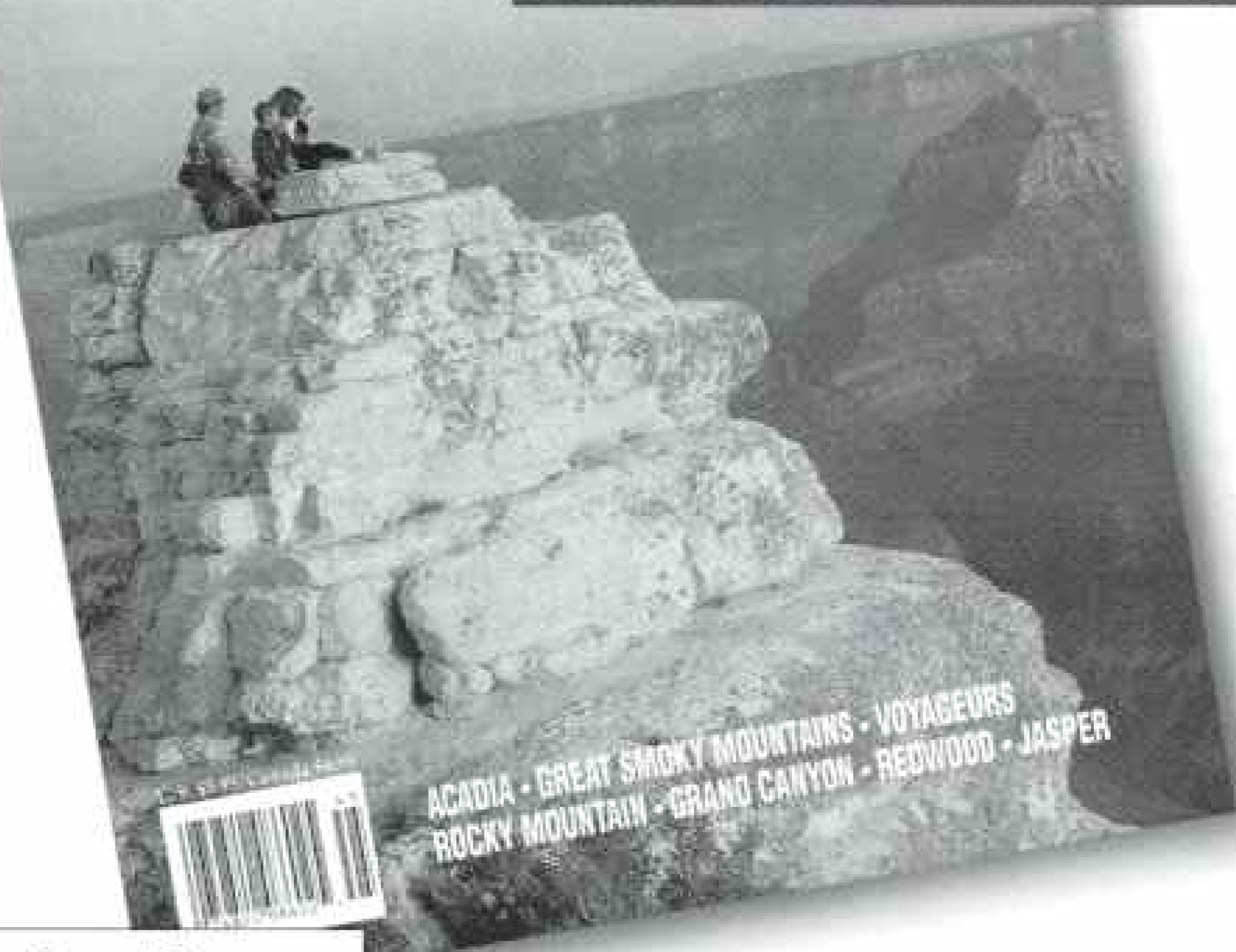

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Traveler

Forum

Turkey

Compliments to author Thomas B. Allen and photographer Reza for the fine feature on Turkey in your May 1994 issue. In the eyes of this nine-time visitor, such a fair depiction is rare.

JANE CROSBY
Yaphank, New York

In my 3,300-kilometer tour of Turkey, I saw many scenes of contrast and change, but the black-veiled fundamentalist figure in the photograph on page 8 was seldom seen. A typical street included a mix of traditional kerchiefed women and Western-skirted women. While the cover photograph of a dervish is beautiful, it has little to do with modern Turkey. The Mevlana Monastery of the dervishes in Konya is now a museum. More typical are scenes of horse-drawn carts loaded with vegetables moving alongside automobiles or mud-brick houses equipped with antennas and solar panels.

Mass-housing projects are going up in every city to house the inflow of villagers. These projects are funded in part by a hefty cigarette tax, with home buyers' payments subsidized so they are no more than 30 percent of family income.

MICHELE ALTHERR
Jemez Springs, New Mexico

To give the impression that racial and religious respect toward non-Turks exists in Turkey is an insult to certain minorities—people who have been robbed of their heritage, culture, and dignity. As an Armenian living in Erzurum, I had to turkize my name to carry on day-to-day business. I was scared to speak my language in public and as a second-class citizen had no rights or protection.

When I left the country, all my belongings were thoroughly inspected by the customs police; icons and other items of value that had been in my decimated family for generations were removed. This is the Turkey that lies behind the glass high-rises and neon lights of Istanbul.

AZAD NAKASHYAN
Toronto, Ontario

As an ex-resident of Turkey I salute this valiant nation and express my gratitude to it for giving shelter to my ancestors—the Sephardic Jews—who were expelled from Spain in 1492 and received asylum in the territories of the Ottoman Empire.

HAIM ASHBELL
Petah Tikva, Israel

As a Turkish-American, I felt that the article gave an accurate picture of today's Turkey and the political and economic progress made. Additionally, as a woman, I was moved by the writer's sensitivity and interest in women's issues. Today's Turkish woman believes that she is a first-class citizen and will quietly continue to fight for her rights.

CANAN F. GREGG
Kettering, Ohio

Rice

I expected to find some mention in Peter White's well-written article of Salmon "Sol" Lusk Wright, the developer of the famous Blue Rose rice. By 1907, through painstaking selection, grain by grain, he developed this superior variety, which revitalized the rice industry in Louisiana and eventually the U. S. During his lifetime this variety accounted for most of the U. S. rice harvest. The Blue Rose Museum southwest of Crowley, Louisiana, memorializes his contributions.

WALTER W. BALLARD
Moline, Illinois

Rice has the power to save lives. It nourishes and helps a person's gut to heal. Few people are allergic to it. Rice, powdered or ground for oral rehydration therapy (ORT), prevents dehydration, a serious symptom of many illnesses. It can help the elderly, AIDS patients, or anyone suffering from diarrhea.

CHARLENE B. DALE
Child Health Foundation
Columbia, Maryland

Michelangelo's Last Judgment

Meg Walsh's article was a stunning testimonial to the mortal creator of this masterpiece. I have often heard that the physical accuracy of his works was the result of medically precise dissections of cadavers. Less obvious is the argument that the works of this forefather of modern anatomical science can also be used as a basis for modern psychology. The expressions on the faces and depths of the eyes appear as windows into incredibly human minds.

JAMES T. GARSIK
North Palm Beach, Florida

Instead of "an apparent oversight by Michelangelo" (page 121), perhaps he meant the flesh-colored hand to show that this demon was once human, like the tormented soul being dragged to Hell.

MARY MCGOVERN VASEY
Webster, New York

Your story on Michelangelo's "Last Judgment" is beautiful art and puts to rest the myth that dark overlying shadows were the artist's intent. What we see is too glorious ever to have been covered up by its creator.

RICHARD A. SWANEY
Gold Hill, Oregon

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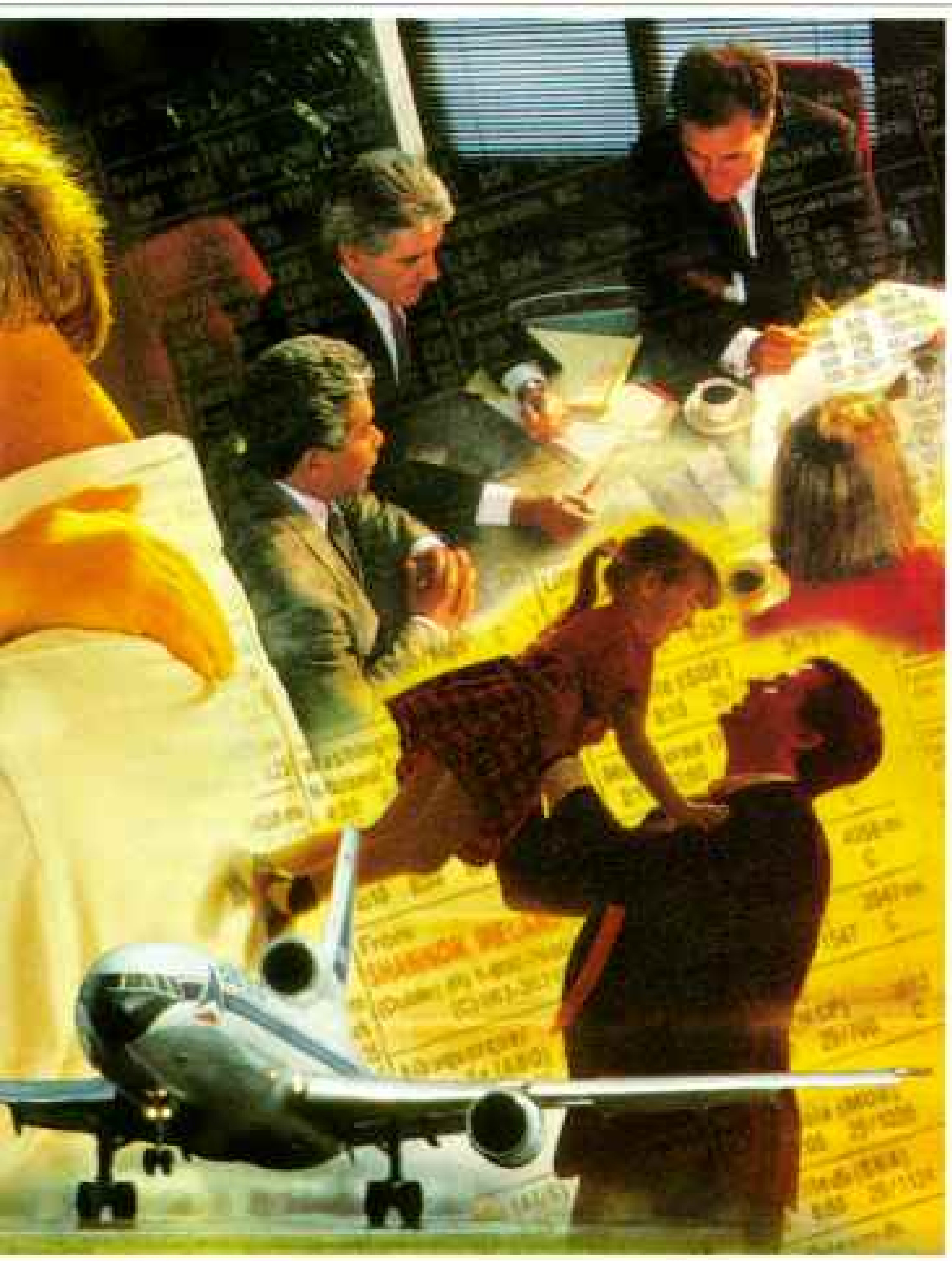

English Channel Tunnel

A forerunner of the laser system to align tunnel construction was used for the Frejus Tunnel between Bardonecchia, Italy, and Modane, France, opened on the Turin-Paris railroad line in 1871. Near Modane a niche still exists across the Arc Valley just opposite the original entrance of the tunnel. During construction a lamp was kept burning in this niche to keep the advancing hole aligned. Really, nothing new under the sun!

GIANGUIDO CASTAGNO
Trieste, Italy

Don't contemporary Englishmen realize that the Chunnel is but an expansion of sea and air links binding England inextricably to the rest of the world? The voluminous cultural, commercial, scientific, and material flow through those links is what affects Britain and not the particular branch through which it arrives. This is not to slight a marvelous engineering feat, which makes life so much nicer for humanity.

JACK ELIEZER
Raanana, Israel

For every "Euro-skeptic" there are thousands of us who hold out our hands to the rest of Europe. The Chunnel is a lasting symbol of our unity and joint future.

ALISTAIR BURTENSHAW
Hove, England

Wrangell-St. Elias

In "Alaska's Sky-High Wilderness" we are told that the National Park Service is there "to maintain a natural system." In doing so, they have banned hunting in the park. Humans have been hunting in Alaska for thousands of years. To ban hunting is akin to removing a predator, upsetting the ecological balance. I do not argue that the area has not been overhunted in the past century. But hunting, perhaps on a controlled basis, is necessary to maintain a natural system.

JONATHAN JOHNSON
Rainier, Oregon

Some subsistence hunting by rural residents is permitted.

Exactly 40 years ago seven of us—the University Peak Expedition Alaska 1954—spent a good part of the summer in this area. To say it is rugged and wild is an understatement. We flew in to the river flats near the Hawkins Glacier, hiked up the glacier to our base camp, and lived on the ice for a while. We got partway up the mountain but didn't reach the summit. However, I was able to realize a lifelong ambition to walk on the face of the earth where no human being had been before. I think there are still many areas in the new park that can satisfy such an ambition.

ROBERT W. CROMER
Antigo, Wisconsin

The caption on page 91 reads, " 'Graybeards and striplings and women' joined Alaska's gold rush, wrote Robert W. Service." With all due respect, Service never wrote about the gold rush in Alaska. The quotation comes from his poem "The Trail of Ninety-Eight," which describes the human tide that swarmed through Skagway, Alaska, over the Chilkoot Pass, and farther north to Dawson, Yukon Territory. This use of poetic license is to some extent a slap in the face to Yukoner history.

GUY BULLER
Whitehorse, Yukon

Alaska Map

Kudos to the Cartographic Division for the utterly superb map supplement of Alaska. A six-hour university geography class could easily be constructed using this map as text.

JASPER D. SKINNER
Lincoln, Nebraska

The text beneath the panorama of Prince William Sound says the tanker *Exxon Valdez* spilled "11 million barrels" of crude oil. The amount spilled was 11 million gallons, one forty-second the amount. The devastation was bad enough without embellishment or inaccuracy.

GEORGE C. SILIDES
Kenai, Alaska

Long before I moved to Alaska in 1985, a Geographic map of the state hung on the wall of my Chicago apartment, a reminder of my dream to one day head north. I am now employed in Barrow by the North Slope Borough, which includes among its eight communities the village of Nuiqsut. You have misplaced it in the western Colville River Delta on the Beaufort Sea. The village is, in fact, 15 miles inland on the Colville River. Nuiqsut celebrated its 20th anniversary in grand fashion last year.

TOM LOHMAN
Barrow, Alaska

As a glacial geologist and "landformist," I appreciate the artistry displayed in the relief map. However, an interesting glacier-recession feature is missing. There is now a 15-mile fjord extending north from Icy Bay, formed by the rapid retreat of Tyndall Glacier in recent decades. In 1946 we had a hike of 18 miles up the glacier from Icy Bay to Mount St. Elias's base at 3,000 feet, but today it is less than three miles.

DEE MOLENAAR
Molenaar Landform Maps
Burley, Washington

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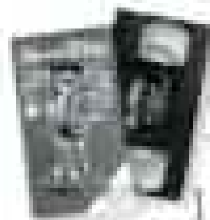

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On Television

What Every Naturalist Under Five Should Know

Stories gently told acquaint young children with the natural world in National Geographic's new home video series, *GeoKids*. Planned especially for preschoolers, the videos put the emphasis on facts conveyed through music, poetry, and puppetry.

"We saw a void in video programming available for very young children," says Society President Gil Grosvenor. "*GeoKids* reaches children at an early stage and communicates a value the Society has always stood for—respect for nature through increased awareness."

Three characters help children develop a sense of kinship with wild animals. Sunny Honeypossum, far right, Bobby Bushbaby, and their wise uncle figure, Balzac de Chameleon, touch children's need for companionship.

GROVE PASHLEY

"I searched for creatures that would be both unfamiliar and charming to children," says creator Hank Saroyan.

The three puppet friends live in a magical forest of plants from all over the world. With the help of an animated, sneezy flamingo named Francisco—he's allergic to feathers—Sunny, Bobby, and Balzac introduce children to many forms of life, from scurrying leaf-cutting ants to wobbly infant zebras.

Making use of the Geographic's extensive live-action-film library, the videos show adult animals caring for their babies, young hippos learning to walk, and beavers building dams. The first three videos are "Flying, Trying, and Honking Around," "Bear Cubs, Baby Ducks, and Kooky Kookaburras," and "Cool Cats, Raindrops, and Things That Live in Holes."

Andrew Wilk, vice president of programming, says, "We've packed in an enormous amount of information. Like *Really Wild Animals*—videos for children five through ten—*GeoKids* can be watched over and over, with something new understood each time."

***GeoKids** is available through National Geographic Home Video and in video stores nationwide.*

The Family That Preys Together

JOHN H. HOFFMAN/BRUCE COLEMAN

A fledgling Harris' hawk practices flying in and out of the nest (left), which is cradled in the giant arms of a saguaro cactus. Soon the youngster will join other family members as they gather each winter morning in the Sonoran Desert of the American Southwest, divide into hunting parties, and search for prey like jackrabbits or rats.

"They hunt together much like a wolf pack," says University of Arizona ornithologist James Dawson. Dawson served as a consultant to wildlife cinematographer Michael Richards, who produced EXPLORER's "Wolves of the Air."

This first full-length program to focus on Harris' hawks reveals the highly developed social organization of this bird of prey—a rare phenomenon in the avian world.

With a repertoire of tactics such as relay chase, flush and ambush, and encirclement, Harris' hawks take the combination of raptor hunting skills and teamwork to new levels.

EXPLORER's "Wolves of the Air" broadcasts Sunday, September 25, at 9 p.m. ET on TBS Superstation.

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ceptible shifts of an electronically controlled, 4-speed automatic quickly replace the din of idle conversation. Where what was once a long half-hour commute suddenly seems to be almost too fleeting. Still, maybe you should think about giving someone else a turn... then again, maybe not.

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Celebrating Wilderness: 30-Year-Old System Embraces California Desert

"Where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." That poignant definition of wilderness was coined by Howard Zahniser, a former director of the Wilderness Society, who authored the Wilderness Act of 1964. Thirty years ago this month, President Lyndon Baines Johnson signed it into law.

Thus was born the National Wilderness Preservation System. It tied together fragments of U. S. Forest Service wilderness and added other federal lands to create a package of nine million acres, which has since grown 11-fold. Hikers, horseback riders, and canoeists are welcome. Roads, power lines, dams, resorts, and loggers are not.

Sometimes called the flagship of the 1964 system, the million-acre Bob Marshall Wilderness in Montana blooms with bear grass in July (right). Marshall, a feisty conservationist, thought a wilderness ought to be big enough for a traveler to spend "a week or two . . . without crossing his own tracks." He would have loved the system's newest addition—a third of the California desert—the result of an eight-year battle. Pending final congressional approval of the California Desert Protection Act, some eight million acres will be added, pushing the nation's wilderness total to more than a hundred million acres. Death Valley National Monument, with its wind-sculpted dunescapes (above), will be expanded and designated a national park, as will Joshua Tree National Monument. And a new Mojave National Park may be established. In these seemingly barren landscapes the new act will safeguard 2,600 species of plants and animals and 100,000 archaeological sites. Hunting and off-road vehicles will be prohibited on the Park Service land. Mining without an existing claim will not be permitted.

"These areas are right next to Las Vegas, one of the fastest growing areas of the country," says Norbert Riedy, Jr., of the Wilderness Society. "More and more visitors are coming to the desert. Without protection, these wonderful resources will be overrun."

CRAIG AURNESS (TOP), CARR CLIFTON

With Llamas on Guard, Sheep May Safely Graze

Coyotes love to eat lamb. So do stray dogs. Together they cost U. S. sheep farmers more than 20 million dollars in 1990 alone. Many farmers use trained dogs as guards, but accidents reduce their average life span to just a few years. And they must be fed. As an alternative, a number of sheep producers have chosen a sheep-guarding animal that lives 15 to 25 years, eats grass, and hates coyotes—the llama.

Imported from the Andes, some 70,000 llamas are now raised in North America as pack animals, for wool, and as pets. During the 1980s ranchers began using them to guard their sheep, including these in western Montana (above right).

"Llamas have evolved a natural antagonism toward all members of the dog family, because foxes attack their young in the Andes," says Bill Franklin, professor of animal ecology at Iowa State University, who studies guard llamas with colleague Kelly Powell. "When they see a coyote, they often give an alarm call. They chase it and kick it if they can."

Llamas are not the sheep's only new-found friends. Wild burros also guard sheep; about 4,300 burros, most to be used as guard animals, have been rounded up by the Bureau of Land Management and adopted by ranchers since 1988.

WILLIAM L. FRANKLIN

Parking-Meter Change Stems Nature's Violation

You won't get a ticket if you don't feed these conservation parking meters, but if you do spare some change, you'll be helping save the rain forest.

The meters have nothing to do with parking your car—they're like wishing wells. About 160 have been installed at U. S. and Canadian aquariums, stores, and zoos, including this one in the San Francisco Zoo adorned by a live green-cheeked Amazon parrot. The project is sponsored by the Center for Ecosystem Survival in cooperation with Rotary Clubs, the Nature Conservancy, and other nonprofit organizations. The proceeds fund conservation efforts in Latin America, where a quarter buys 90 square feet of rain forest. With the meters, the partners hope to raise two million dollars—about 26 square miles' worth.

P. F. BENTLEY, BLACK STAR

Locust Phobia: "Is There a Fungus Among Us?"

In drought-stricken African countries, rain is both a blessing and a curse. "When the rains come, so do desert locusts, in unimaginable numbers," says Chris Prior of the International Institute of Biological Control in England. Breeding in moist soil, a hundred billion voracious locusts can swarm through Ethiopia or Sudan in the course of a year, laying waste to corn, rice, millet, and other crops.

Roughly 3.5 million gallons of pesticides were used during the last locust plague, from 1986 to 1989. But Prior and researchers elsewhere have an environmentally friendly weapon—a lethal fungus. When the fungus is sprayed, its spores land on the insects, germinate, and penetrate their bodies. The fungus grows and completely fills the locust's body, killing it in five to ten days. Field tests have been promising in Benin, Niger, Mauritania, and South Africa.

STEPHEN DALTON, NHPA

—John L. Eliot

On Assignment

LEON LAZAROFF

"It's not that easy to shoot from the back of a horse," says freelancer JOANNA PINNEO (above, on foot), who got her share of saddle time while photographing the Sonoran Desert article. Riding desert trails for hours at a stretch, "I really felt like an old-time cowboy," she says, "with the reins in one hand and my camera, instead of a gun, in the other."

Meeting the people of the Sonoran—such as these cattle ranchers near Hermosillo, Mexico—was the best part of the story for the photographer. "I loved learning about how they make their lives in the desert."

Joanna makes her life in Washington, D. C. Raised in Richmond, Virginia, she graduated from Mary Washington College with majors in psychology and art. She says both disciplines have proved useful in her career behind the camera, including a GEOGRAPHIC article on the Palestinians: "I like making photographs that cause you to ask questions."

Etiquette at Japan's ubiquitous karaoke bars dictates that everyone in the establishment must perform to taped music. When freelance photographer PETER ESSICK's turn came at a bar in Kanazawa, Japan, he instead found a guitar and accompanied himself, singing Bob Dylan's "Knockin' on Heaven's Door"—much to the delight of the local crowd.

"I like to immerse myself in different cultures," says Essick, a Burbank, California, native who has documented ways of life from Botswana to Brooklyn.

Working in Japan for this issue, he developed an affinity for the writings of the well-traveled poet Matsuo Bashō. In the 1600s Bashō wrote: "Every day is a journey, and the journey itself is home."

Says the peripatetic photographer, "That's a pretty good description of my life on the road today."

KUNIO KADOWAKI

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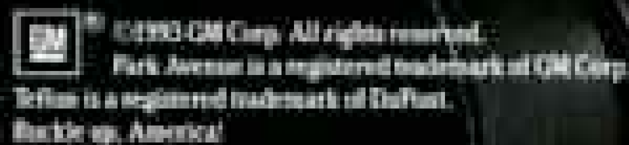

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