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NATIONAL GEOGRAPHIC

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The Shakers' Brief Eternity 302

At their 19th-century crest, the Shakers numbered 4,000 believers who lived a communal life devoted to achieving spiritual perfection. Though fewer than a dozen members remain, the purity of their faith and the simple beauty of their workmanship endure. Cathy Newman and photographer Sam Abell capture their spirit.

PATRIARCH DIMITRIOS

Retracing the First Crusade 326

Heeding the call of Pope Urban II to reclaim the sacred places of Christendom from "infidels," Godfrey of Bouillon and thousands of followers set out from northern Europe in 1096. Tim Severin travels more than 3,000 miles by horseback along their route—gaining new insights into the crusaders' quest. Photographs by Peter Essick.

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A metal-sheathed box of family memorabilia relating to the centennial of George Washington's first inauguration is opened after a hundred years, revealing contents that prove the accuracy of a preliminary high-tech see-through. Robert M. Poole reports.

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Paul Theroux returns to the scene of his Peace Corps service to find octogenarian president-for-life Dr. Hastings Kamuzu Banda keeping his African nation from the political turmoil and economic desperation that afflict its neighbors. Photographs by Eli Reed.

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Amid the breathtaking beauty of Nepal, an innovative nature preserve safeguards the fragile environment. Involving the local people is the key to its success, says author-photographer Galen Rowell.

APHID AND OFFSPRING

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Within a placid and unobtrusive insect group, some aphid species of the Orient produce an aggressive soldier caste to defend the colony or die trying. Their horned helmet-like heads remind zoologist Mark W. Moffett of ancient Japanese warriors.

COVER: *Lost in prayer, a Yugoslav villager shows the same faith that sent crusaders across her homeland on their way to Jerusalem nine centuries ago. Photograph by Peter Essick.*

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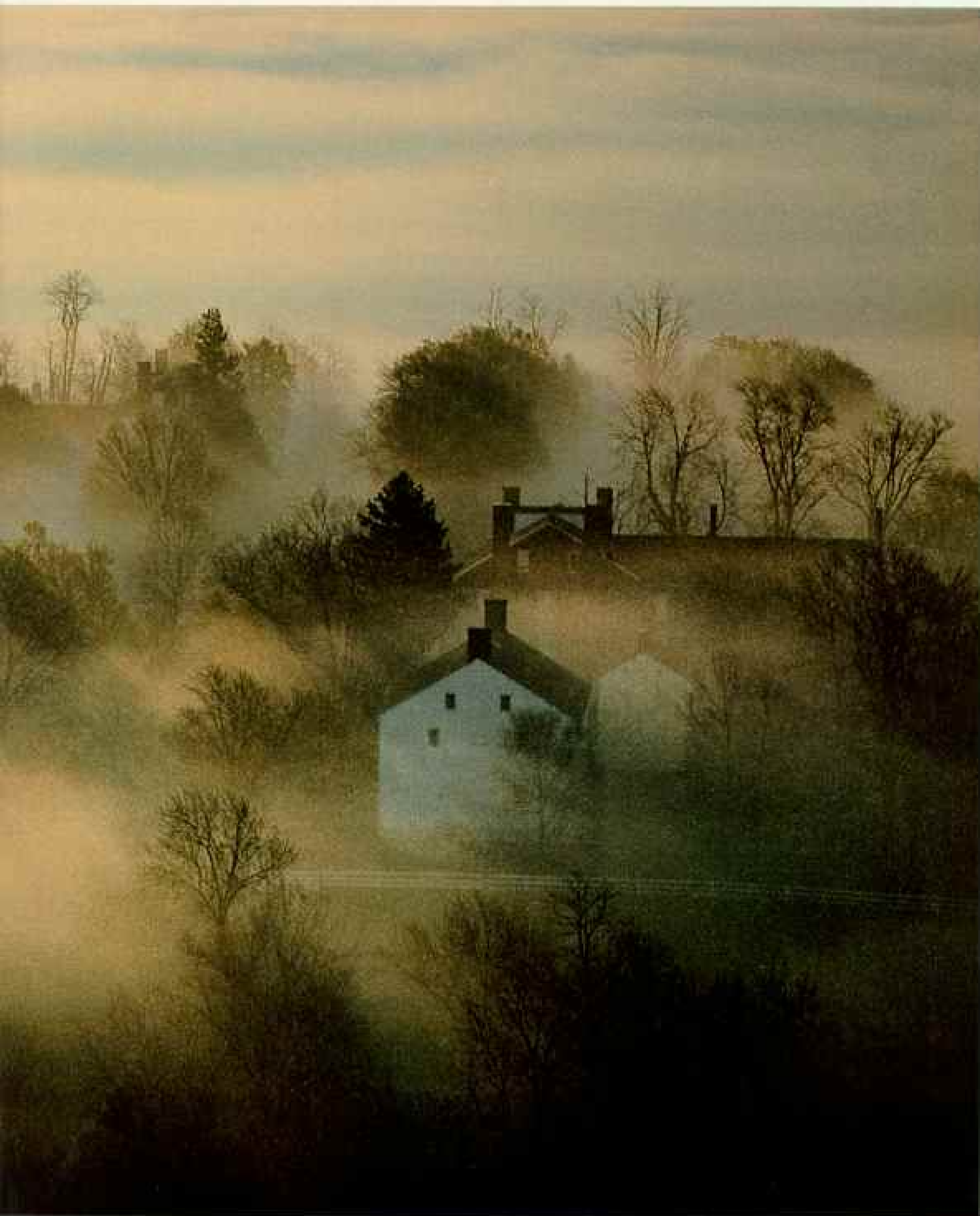
The boundary between heaven and earth blurs under a veil of mist that

The Shakers'

By CATHY NEWMAN NATIONAL GEOGRAPHIC SENIOR STAFF



rests on the restored Shaker Village of Pleasant Hil·, Kentucky.

Brief Eternity

Photographs by SAM ABELL

SISTER MILDRED BARKER, 92, of Sabbathday Lake, Maine, tells the story with an exasperation born of suffering too many fools.

The man, she recalls, whisked through the small museum at the Shaker village, admiring the spare, elegant furniture.

"Too bad no Shakers are left," he clucked.

"*I'm* left," she snapped.

She is tiny, gray, fierce, with dark, piercing eyes behind wire-rimmed glasses. She endures, with fewer than a dozen others in Maine and New Hampshire, as steward of a religious society founded some two centuries ago. In 1845 Shaker membership totaled nearly 4,000 in 18 communities from Maine to Kentucky.

The final amen has yet to be murmured; those left remind us that they are not dead yet. But nostalgia intrudes. We see them as if looking through a stereopticon from an attic trunk.

The reality is granite tough. Shakerism is religion, demanding, uncompromising. As a tenet of faith, Shakers are celibate; their life, communal. Who would accept such sacrifice? Those who had heard the trumpets of salvation. "I found perfect heaven," wrote one convert.

In a glorious, if impossible, quest the Shakers committed themselves to perfection. Like other utopians, they wanted to create heaven on earth. But the dream dangled just beyond reach, a reminder that, like all mankind, they were only human.

"In the spring of 1780, I heard of a strange people living above Albany, who said they served God day and night and did not commit sin. . . ." So a contemporary named Thankful Barce wrote of her first encounter with the people known as Shakers, so-called because they trembled from head to foot in religious transports. Their leader was Mother Ann Lee.

"Her countenance appeared bright and shining, like an angel of glory," Thankful Barce wrote. "As I sat by the side of her, one of her hands, while in motion, frequently touched my arm; and at every touch . . . I instantly felt the power of God. . . ."

A blacksmith's daughter born in Manchester, England, in 1736, one of eight children, Ann Lee could neither read nor write. She married a blacksmith, bore and lost four children. Tormented, she swung from despair to visions of glory. Joining a sect of religious reformers known as the Shaking Quakers, later to be known as Shakers, she became their leader.

In her 30s she had a vision of Adam and Eve in intercourse. To her this was the original sin. To be saved, humans must be celibate, recapture innocence, and emulate Christ's humble life. Only then could each soul experience its own Second Coming.

Widely persecuted, she and eight believers set sail in 1774 for America and settled at Niskayuna, which they also called Watervliet, eight miles northwest of Albany, New York.

Mother Ann believed she represented the second appearance of the Christ spirit; the sect's formal title is the United Society of Believers in Christ's Second Appearing. Holy Mother Wisdom was the female nature of God. The idea of a deity with dual aspects, male and female, placed women on equal footing with men.

With her flock she combed the spiritual pastures of New

"SHE IS THE MOST PERFECT Shaker I have known," Sister Frances Carr, standing, says of Sister Mildred Barker, seated. The two belong to the last working Shaker community at Sabbathday Lake, Maine. In 1774 Shakerism's founder, Mother Ann Lee, leader of a splinter group of English Protestants, fled persecution and sailed to America with eight followers. Settling at Niskayuna, New York, she traveled around New England, preaching that salvation was open to all. If the reward was great, so was the cost. Shaker belief demanded a morally perfect life patterned after Christ, including celibacy, obedience to elders, and confession of sins. Says Sister Mildred: "All the Shaker does is done in the eye of eternity."

Photographer SAM ABELL has contributed to a dozen GEOGRAPHIC articles, including "The World of Tolstoy" and another on wild rivers.

SHAKER ROOMS reflect Shaker values of symmetry, order, and function. At Pleasant Hill women entered the dining room of the Centre Family dwelling house through the left, men through the right; they sat at separate tables. Pegboards enabled chairs to be

hung out of the way so a room could be swept. Pleasant Hill, founded in 1806, was part of an expansion prophesied by Mother Ann and carried out by three followers who walked a thousand miles to spread the gospel in what was then the American West.

England, harvesting converts. But she died in 1784, without ever seeing a Shaker village established. In the following decades Shakers made the step from scattered converts to settled communities. By 1800, 11 communities had formed. Soon after, the Shakers pushed west, founding two communities in Kentucky, four in Ohio, and one in Indiana. The gospel was spreading.

A plain marble stone marks Mother Ann's grave. The Watervliet Shaker Cemetery abuts a baseball stadium, built several years ago over protests from surviving Shakers. Now the crack of ball against bat punctuates summer nights.

"I don't suppose the ball field does anyone any harm," Martha Hulings sighed, looking at the ranks of headstones. Martha, now a teacher in Kingsport, Tennessee, spent her childhood with the Watervliet Shakers. "I felt more secure here than anywhere else," she said. "It's probably the only love I've known."

She is 74. Nearly 69 years have passed since the couple who had adopted her, but couldn't cope, left her with the Shakers. We

THE OVAL BOX with its delicate swallowtail joints has become practically emblematic of Shaker design. These belong to Pleasant Hill. The carefully aligned tacks are made of copper, not iron that might rust and mar the wood. Also the work of Shaker hands and heart, a song in the spirit of faith sold for $450 at auction. So too a fine Shaker chair, with its slim, spare lines, may be worth tens of thousands of dollars—to the dismay of living Shakers, who resent the focus on the material at the expense of the spiritual. "People don't see the chair as a consecration," said Sister Mildred.

Thomas Merton, priest and writer, was one who did. "The peculiar grace of a Shaker chair is due to the fact that it was made by someone capable of believing that an angel might come and sit on it."

crossed the road to the South Family property where she grew up.

Suddenly she was a child. "That was my room on the third floor," she pointed. "I remember staring out that window when I was sent to bed early."

When the Watervliet Shaker community closed in 1938, the South Family property was sold and the clapboard dwelling house cut up into apartments by the new owner.

The woman who lives in Martha's old room invited us in.

"Ever see any Shaker ghosts?" I asked.

"They say a white spirit lives here," she replied.

Martha paled. "Oh, my goodness, that must be Pauline."

The grapevine that hugged the side of the trustees' house was uprooted years ago, but she remembers.

"I picked a bunch of grapes for Pauline, the woman who cared for me," she said. "I ran to lay them in her lap.

" 'Don't you know these are not ours?' Pauline frowned. 'They're the family's. To take them is to steal.'

"Hands to work, and hearts to God"

WITH THE FOUNDING OF New Lebanon, New York, in 1787, Shaker belief took form in communities where members could work and pray. Believers were organized into groups known as families. Membership crested in 1845 at 4,000 or so, then declined as fewer joined. Apostasies also pared down numbers. After nearly a decade of contemplating Shaker life, Thomas Brown could not accept doctrine: "As I heard one of the brethren say, not long since: 'The gospel is just like a tunnel; the farther in, the narrower it grows.' " Others, unable to conform, were pushed out. From a Pleasant Hill journal: "Lucy Lemon was kindly invited to go to the world. She went!" Today fewer than a dozen Shakers remain in two villages.

Mother Rebecca Jackson, one of several black Shakers, led a small group of followers in Philadelphia during the second half of the 19th century.

SHAKER COMMUNITIES

■ Existing Community ■ Restored buildings or museum ■ Former Community

1. NEW LEBANON, NEW YORK (1787-1947)
2. WATERVLIET, NEW YORK (1787-1938)
3. ENFIELD, CONNECTICUT (1790-1917)
4. HANCOCK, MASSACHUSETTS (1790-1960)
5. HARVARD, MASSACHUSETTS (1791-1918)
6. CANTERBURY, NEW HAMPSHIRE (1792-PRESENT)
7. TYRINGHAM, MASSACHUSETTS (1792-1875)
8. ALFRED, MAINE (1793-1931)
9. ENFIELD, NEW HAMPSHIRE (1793-1923)
10. SHIRLEY, MASSACHUSETTS (1793-1908)
11. SABBATHDAY LAKE, MAINE (1794-PRESENT)
12. PLEASANT HILL, KENTUCKY (1806-1910)
13. UNION VILLAGE, OHIO (1806-1912)
14. WATERVLIET, OHIO (1806-1901)
15. SOUTH UNION, KENTUCKY (1807-1922)
16. GORHAM, MAINE (1808-1819)
17. WEST UNION, INDIANA (1810-1827)
18. SAVOY, MASSACHUSETTS (1817-1825)
19. NORTH UNION, OHIO (1822-1889)
20. WHITEWATER, OHIO (1824-1907)
21. SODUS BAY, NEW YORK (1826-1836)
22. GROVELAND, NEW YORK (1836-1892)

Not shown:

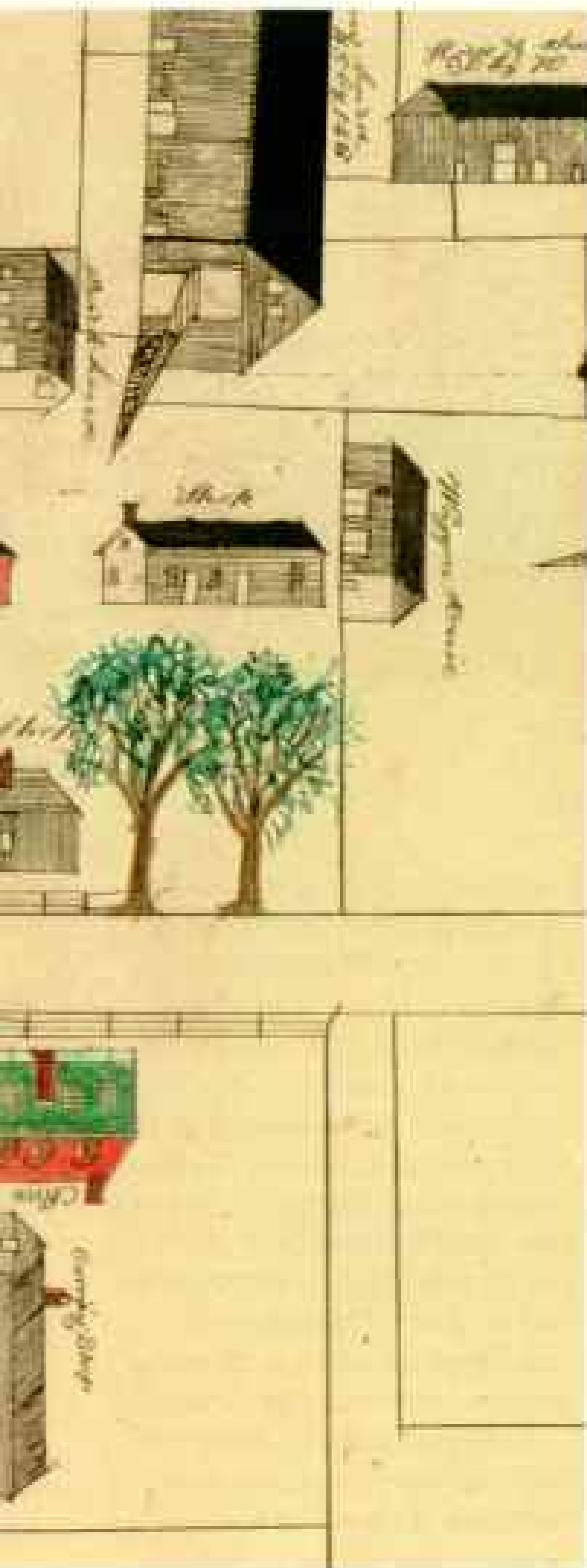
- NARCOOSSEE, FLORIDA (1896-1911)
- WHITE OAK, GEORGIA (1898-1902)

SHAKER DANCE had its origins in transports of ecstasy, the trembling that gave the sect its name. Dancing evolved into marches, which died out by the 1930s. The 1848 engraving "The Whirling Gift" (right) dates from a revival of spiritualism, when members received divinely inspired "gifts" of dance, song, or drawings.

Shakers took in children, orphaned or from broken homes, such as boys cared for in the late 19th century by Brother Nehemiah White of Watervliet (above). Most left before signing the covenant. Elder Shakers accepted this—saddened, but resigned.

CANTERBURY SHAKER MUSEUM COLLECTION (ABOVE); FROM *TWO YEARS' EXPERIENCE AMONG THE SHAKERS*, COURTESY HANCOCK SHAKER VILLAGE (BELOW)

LIBRARY OF CONGRESS (ABOVE)



VILLAGE MAPS were drawn as a matter of pictorial record keeping, such as this detail showing the Church Family property at Alfred, Maine, done in 1845 by Brother Joshua Bussell. The 1826 round barn at Hancock (left) could house more than 50 head of dairy cattle. More like a fine piece of machinery than a barn, it was efficient and modern for its time. Ten wagons at a time could cart hay up a ramp to the top level, then exit without backing up. The cattle occupied stalls ringing the middle level. Trapdoors behind stalls allowed easy removal of manure, stored in a pit below ground level and used to fertilize fields.

" 'I didn't mean to steal. I just wanted to bring them to you.'

" 'That may be, but now you must sit on your chair and eat them all. So you won't forget.'

"I obeyed," Martha recalled. "Each was harder to swallow than the one before."

It was a harsh lesson, given by love. Hadn't Mother Ann said, "The reproof of a friend, is better than the kiss of an enemy"?

CHRIST SAID "Be ye therefore perfect"; the Shakers accepted the challenge of bringing heaven down to earth. In the otherworldly air of a Shaker village, the responsive soul found safe harbor. "I came up on vacation at 16," said the late Sister Lillian Phelps of Canterbury, New Hampshire. "I felt I was in the company of angels. When it came time to go back to Boston, I said I wasn't going."

But the fence around a Shaker village could not exclude human failing. A sister, now in her 90s, wide-eyed behind glasses, wearing pink-flowered slippers three sizes too large, recalls: "Nothing worse than a group of women. Such jealousies! They would tattle on each other to the eldress. They complained about me looking in the mirror. The eldress called me in, sat me down, and said: 'I don't know why you spend so much time looking in the mirror. There's nothing about you to admire.' "

The challenge lay in excising imperfection. Community welfare dictated the pruning of individual vanity. If the individual couldn't, leaders would.

To tend body and soul, the village was divided into several families of as many as 100 members. Each had its own house and shops. Two elders and two eldresses in each family monitored spiritual and behavioral issues. Trustees handled business dealings with the outside world. Ultimate jurisdiction rested with the parent ministry at New Lebanon (later renamed Mount Lebanon) in New York.

Families were named for their geographic relation to the central Church Family, where the meetinghouse stood. There was typically a North, South, East, and West Family. New members entered a gathering order, progressing to the church order, where they signed the covenant. Because the community was celibate, but included men, women, and children, the dwelling house was divided. Men and women entered separate doorways, used separate stairs, sat on opposite sides of the meeting room.

IN SPRING'S TENDER GREEN I journeyed to Canterbury, on a ribbon of road that unfurls past New Hampshire's maple groves and apple orchards. Shaker sisters live here, but it is more a museum now, a still life in white and green: meetinghouse encircled by a picket fence, manicured herb garden, trim white shops and dwellings, clean-swept stone walks. "There is no dirt in heaven," Mother Ann said.

How beguiling this orderly blueprint of how to live. Many found the life congenial. Said Brother Robert Wilcox in 1849, "I am perfectly content. I have enough to eat and drink . . . good clothes to wear, a warm bed to sleep in, and just as much work as I like and no more." Small wonder the villages attracted "winter Shakers," who joined with the first snow and left with spring thaw. That drop-ins were tolerated is a measure of Shaker charity.

It extended beyond village boundaries. In 1846, during the

potato famine in Ireland, Shakers of Ohio's Union Village sent a thousand bushels of corn. Years later, Shakers of Pleasant Hill in Kentucky sent money to victims of the great Chicago fire.

After the 1820s, members came from the ranks of those attracted by Shaker services or from those who landed on Shaker doorsteps: orphans, widows, families fallen on hard times. Thus Shakers attracted believers into the 20th century. A Canterbury sister explained her arrival: "My mother died. My father remarried, and my stepmother didn't like me."

After 1845 membership began to decline. To their dismay the Shakers couldn't ensure that even a small proportion of the children they reared would sign the covenant. "We gather in many children, but when they come to act for themselves, a large portion of them choose the flowery path of nature rather than the cross," fretted Brother Isaac Youngs in the 1850s. Of the 197 children raised at Mount Lebanon from 1861 to 1900, only one joined, says Priscilla Brewer, a historian of 19th-century Shaker communities.

"THE DAY I SIGNED the covenant was the most beautiful one of my life," says Eldress Bertha Lindsay of Canterbury, New Hampshire. In the mid-1960s the parent ministry at Canterbury closed the covenant, in effect ruling that no new Shakers could join. Canterbury contends the world has changed; there are no elders left to train potential brothers. "It makes me sad," says the eldress. "But the decision was made by others."

Sabbathday Lake demurred and continues to accept new members. Two of the younger Sabbathday Shakers, Brother Arnold Hadd and Brother Wayne Smith (left), embody their community's commitment to renewal of the faith.

The complex dispute, a clash between strong personalities on each side—and their lawyers—has left a residue of resentment and pain, despite passing decades. "These problems would never have reached this point if people had minded their own business," a sister bristles. "There's a lot the outside world doesn't understand," says another. In truth, the world has changed. It has become more complex.

Did celibacy cause the decline? No. As Brewer points out, if that were so, the Shakers would have ended after one generation. Some did stumble. From a 19th-century Shaker journal: *Backsliding—Hananiah, alias Nahum, Davis Jun. left the Society today—thinks there is not room here for the expansion of the intellect! Suppose we should say lust!*

To a Shaker, celibacy is a given. Says Sister Frances Carr of Sabbathday Lake, Maine: "Celibacy frees us to be able to love, and I'm speaking of Gospel love—to love everyone and not be restricted by personal love."

To place community over self-interest was the more difficult task for many. "It cost something to submit your will to others," Sister Lillian Phelps said.

The bedrock of community was known as union, the spiritual bonding of brethren and sisters. To preserve it, Shakers did not vote, convinced that politics was divisive. But they did not shun social issues. They spoke out on abolition, child welfare, woman suffrage, compulsory education, labor rights.

Equality was not just a homily; it was part of Shaker life. Membership was open to all. There were blacks like Mother Rebecca

Jackson, who led a small group of Shakers in Philadelphia. Jews and American Indians were also welcomed.

Though pacifists, the Shakers, particularly those in Kentucky, could not escape the effects of the Civil War. South Union, Kentucky, suffered severe losses of crops, stock, and buildings. Trade was disrupted there and at Pleasant Hill. The Shakers cared for and fed soldiers on both sides.

Said an officer to a sister: "Madam, I fear you will kill us with good vittles."

"Better that, than with a bullet."

The Civil War was a visible sign that the nation was changing. But the stress cracks of economic and geographic expansion had surfaced even earlier. After 1836 no new communities were successfully founded. Those who might have joined the Shakers had other options.

Faced with shrinking membership, communities dwindled, then closed. Tyringham, Massachusetts, in 1875. North Union, Ohio, in 1889. Groveland, New York, in 1892. Pleasant Hill, Kentucky, in 1910. They were blotted up by a world that had bolted past to an industrial, urban age.

Perhaps the ultimate disposition of these shuttered villages says something about the nature of progress. Today two Shaker communities are state prisons, part of another lies under a municipal airport, and yet another is a housing development. Two short-lived communities—White Oak, Georgia, and Narcoossee, Florida—are totally erased.

THE LAST ELDRESS of Canterbury sat in the kitchen of the trustees' house peeling broccoli with skilled hands. She has been blind for more than five years.

"I was the only one of six girls who decided to stay. I watched as they left one by one for the world," said Bertha Lindsay, then 90.

Catching a slight hesitancy in her voice, I say something about the path not chosen.

"Oh, I loved to keep house and would have loved to marry. But I've never regretted my choice. I've been a happy woman."

She and 92-year-old Eldress Gertrude Soule, formerly of Sabbathday Lake, are the last members of the parent ministry, which moved from New Lebanon to Hancock to Canterbury. A third sister, Ethel Hudson, also in her 90s, lives across the street, sole occupant of a dwelling that once housed a hundred.

"Eldress Bertha," I ask, "it is a Shaker tenet to seek perfection. Is there anything less than perfect about you?"

"Some would say I'm too independent."

Eldress Gertrude glances up. A tiny wren in a high-collared lavender dress and Shaker net cap, she pulls herself ramrod straight. "I'll say!"

"We're not surprised how few Shakers are left," Bertha says patiently.

"Prophecy said our numbers would diminish. Still, we keep order. The hands drop off, but the work goes on."

The work falls to other hands as well. The South Family property of Mount Lebanon was purchased by a small congregation of Sufis, a religious community with Islamic roots. I visited and was directed to a building that once housed the Shaker

FLOWERS HANG in a drying attic at Sabbathday Lake, which has maintained an herb business since 1799. Shaker communities were primarily agrarian and, thanks to the care lavished on crops and livestock, exemplars of productivity. Dependence on nature nurtured a wry respect for its ways. From an 1831 village diary: "April 1: Whippoorwills—Sing this morning, spring is here at last. Fr[iday]. 8: Snow . . . Whippoorwill music frozen up." With the arrival of spring, the Sabbathday Lake Shakers move Sunday worship service from winter quarters in the brick dwelling house to the 1794 meetinghouse across the road (right).

chair-caning shop; it now serves as a business office.

"We're not unlike the Shakers in many ways," said Yaqin Aubert, a Sufi leader. "We have spiritual dancing and music, and we educate our children. But we do not," he added quickly, "believe in celibacy."

Noting a computer on a desk, I asked about its role in religious life.

"Shakers left that behind," Yaqin said.

He joked, but the Sabbathday Lake Shakers actually have three. Unlike the Amish, another religious sect with which they often are confused, Shakers have always embraced technology. They were often first to have electricity or phones.

Amy Bess Miller of Pittsfield, Massachusetts, who knew the Hancock Shakers as a young woman and who, in 1960, helped preserve that village as a museum when it closed, remembers the day Eldress Emma King of Canterbury visited in a new car.

"Get in," the eldress said, "I want to show you something."

"I thought she was going to take me for a ride," Mrs. Miller said. "Not at all. She wanted to show me the automatic windows going up and down."

A list of innovations and improvements made by the Shakers reflects ingenuity out of proportion to their numbers. They developed the flat broom, a washing machine, water-resistant fabric, a revolving oven, an efficient wood-burning stove, metal pens, an apple corer-quarterer. They were probably the first to pack seeds in paper packets.

Most Shaker inventions were not patented; a patent smacked of selfishness. To ease the way for others was reward enough.

BROTHERS AND SISTERS known as trustees dealt with the world and handled the sale of woolen cloaks and fancy goods, such as pincushions and emeries (right). Shaker communities also sold seeds, produce, buckets, baskets, textiles—and much else. In the late 19th century, as the number of brothers declined in relation to sisters, village income became increasingly dependent on women's industries. Finely turned hardwood spools (bottom right) show the care accorded even the mundane. Some of the silk kerchiefs (below) are from South Union and Pleasant Hill in Kentucky, communities that produced a limited amount of silk in the 19th century.

IN THE BRICK dwelling-house attic at the Hancock Shaker Village in Pittsfield, curator June Sprigg reached up and twisted a slim peg out of the board circumscribing the room. A Shaker emblem of order might well be such a pegboard; nearly every room had one. From it chairs and clocks hung out of the way. The peg's hand-turned threads, extra work for the craftsman, ensured it would bear the weight of a small cupboard without pulling out.

Such hidden detail marks Shaker craftsmanship. Its elegant, unstudied simplicity becomes a statement of belief. Shaker scholar Edward Deming Andrews called it *Religion in Wood.* What the eye worships is this: The chair that uses no more wood than needed, slats that could have been made straight across but gently curve, rungs that ever so slightly taper, posts that soar.

Examine the windowsills of the Centre Family dwelling in Pleasant Hill, Kentucky. Carved of stone, they would never rot and need replacing. Solidity prevails. This is the work of people who intended to be around for a long, long time.

"It's not just work," explains Ed Nickels, director of collections. "It's work with purpose." Work was scripted into the text of Shaker life. Perfection crossed from the spiritual to the temporal. "Do all your work as though you had a thousand years to live, and as you would if you knew you must die to-morrow," Mother Ann said.

Impressed by the excellence of the Shakers' goods, the world became their customer. They sold, among other things, chairs, baskets, blankets, hats, hides, seeds, apples, pickles, candies, preserves, herbs, and brooms.

The passion for perfection extended to anything their hands touched. "Even their *soil* was perfect," Amy Bess Miller remembers. "Not a rock or a pebble in it."

Work was a consecration. "Put your hands to work, and your hearts to God," Mother Ann said. But the result was not meant to be an icon. A bench was to sit on. A table to eat on. Does heaven have chairs?

BY THE TIME LOT 177 reaches the block, it is raining; the patter on the yellow-and-white tent muffles the auctioneer's staccato. "Let's start at $10,000," says Will Henry. It is his sixth Shaker auction, held at the Mount Lebanon site, which is now a school.

Henry is tall, thin, late 30s. His speech accelerates with each lot, showering adjectives like "classic, the best, incredible."

Lot 177—"Tall Revolver Chair, maple, applewood, oak, original varnish finish, South Family, New Lebanon, N.Y. c.1860"—is handsome: a high revolving chair with slender legs and spindle back, made a half mile from where it will be sold.

Henry asks for an opening bid of $10,000.

"$30,000." This comes from the front row: a young man with short hair.

The audience is stunned. There's no place to go but—

"$32,500," Henry suggests to set a pace. The high opening bid is a ploy to scare off competition. It nearly works. Henry starts to hammer down the chair when—

Bid card number 180 shoots up from the back. It belongs to Richard Klank, a University of Maryland art professor reportedly bidding for television actor Bill Cosby, an avid collector.

EVEN AFTER 150 YEARS, the drawers in the dwelling-house attic at Canterbury (above) still glide out effortlessly. The pine used is "clear," or unflawed. The Shakers did not have to take such pains in a room few would see. That they did highlights a passion for excellence inherent in their belief that work was worship, whatever the task. "A man can show his religion as much in measureing Onions as . . . in singing glory halalua," wrote a Shaker. The dwelling-house bathroom at Canterbury bespeaks communal life. The rocking chairs were placed in front of sinks perhaps on a whim by the sister who lives there.

"$35,000?" asks Henry. He looks at the first bidder, David Schorsch, who nods.

At $50,000 Henry steps up to $5,000 increments. $55,000 . . . $60,000. Bids lob back and forth. At $75,000 Klank wavers. But his card stays up.

The lull worries Henry. A break in the rhythm can kill the action. He pushes. "$80,000?"

The crowd is silent. In this part of the country that kind of money buys a small house. Henry looks at Schorsch, who quietly lifts an eyebrow in assent.

Klank? He shakes his head.

"Other bids?" Henry asks. A pause, then "Sold!"

The $80,000 chair sets a record for Shaker furniture sold at auction. The buyer, 23-year-old David Schorsch, a New York City dealer, bought it, he said, because he'd always wanted one. (The record has fallen more than once since then: Last March a candlestand sold for $140,000.)

"Think of all the people that money would feed," says Sister Frances Carr of Sabbathday Lake when told of the $80,000 Shaker chair. She shakes her head.

"I don't want to be remembered as a chair," Sister Mildred Barker grumbles when I ask her opinion. My welcome to Sabbathday Lake is grudging. I call for an interview and am told too many stories have been written already. "Frankly," says Sister Mildred, "I don't recognize us in any of it."

She'll see me anyway. Set in the lake country of southwestern Maine, Sabbathday Lake is haven to nine believers, five women ranging in age from 60 to 92 and four younger, newer members. A highway bisects the village. The rumble of trucks rudely shakes the windows of the brick dwelling house where Sister Mildred greets me.

How do you want to be remembered? I ask.

"As a Shaker . . . who tried to live by the precepts," she says.

Sister Mildred came to the Shakers 86 years ago. Her father had died. Her mother, unable to support her children, placed young Mildred in the care of the Alfred, Maine, Shakers.

"There was an older sister, Paulina Springer," Sister Mildred recalled. "I loved her. She was taken ill very suddenly. When she was dying, she asked if the children could come in." Mildred was last in line. When her turn came, the failing sister said, "Mildred, promise me something. Promise me you'll be a Shaker."

"I promised her," Sister Mildred said, "but it took me a great many years to fulfill the promise and to come to the point where I knew what that meant."

Sister Mildred does not volunteer this. It comes from an oral-history recording made two decades ago.

At morning's end, Sister Mildred gives me a light peck on the cheek. "You're in," she says. The next day she rebuffs practically all questions to show I am not really "in" after all.

Something gentle is embedded in the toughness, a quiet glow like the glimmer of a lantern at dusk. To those who know her, Sister Mildred epitomizes Shaker values: compassion, love, total dedication. No compromises here. She is rigorous, a drill sergeant of the soul.

There is bitterness too. It is the subtext in talk at Sabbathday Lake. It is directed at the world's obsession with Shaker

furniture and at the "other" living Shaker village: Canterbury.

The territory separating the two villages is a minefield of hard feelings. I had been cautioned not to mention my Canterbury visit to Sabbathday Lake and vice versa. I ignored the advice with predictable results. At Canterbury there had been a silence when I mentioned Sabbathday Lake. It was an unpleasantness to be swept under the table. At Sabbathday the rancor is blunt, the hurt palpable. "They say Sabbathday was always the least of Mother Ann's children in the East," Sister Mildred observes.

The astringency in Maine is nothing new. Departing from

THE PALE YELLOW of two outbuildings at Pleasant Hill conforms to the Millennial Laws of 1845 that decreed only meetinghouses could be painted white. Later the strictures were relaxed. On the left stands the water house, which holds a 4,400-gallon reservoir for

springwater; to the right, the brethren's bathhouse. The unyielding plainness of Shaker buildings inside and out provoked Nathaniel Hawthorne to comment, "everything so neat that it was a pain and constraint to look at it."

tradition, Mount Lebanon decided to vote in the 1928 presidential election. Sabbathday retorted that it would not vote. "We have something else to do on election day," a sister declared.

The present-day rift, a more serious matter, addresses the future. Shaker scholar Rob Emlen explained it thus: "If a ship is sinking, do you go down nobly or start bailing and sail on?"

The going-down-with-the-ship course is Canterbury's. Sometime in the mid-1960s the parent ministry closed the covenant, barring new members.

"It was thought best. It seems people were more interested in

loaves and fishes than in religious ideas," Eldress Bertha said, alluding to Shaker financial assets. As a result of Shaker societies closing and liquidating over the years, the treasury is sizable. Someone speculates it may be as high as five million dollars.

"True?" I asked a Canterbury Shaker Village board member.

"Let's just say money is no problem."

The money, invested in a trust fund, helps pay for the Shakers' expenses and maintenance of the Sabbathday and Canterbury properties—heating bills, repairs, and cemetery upkeep.

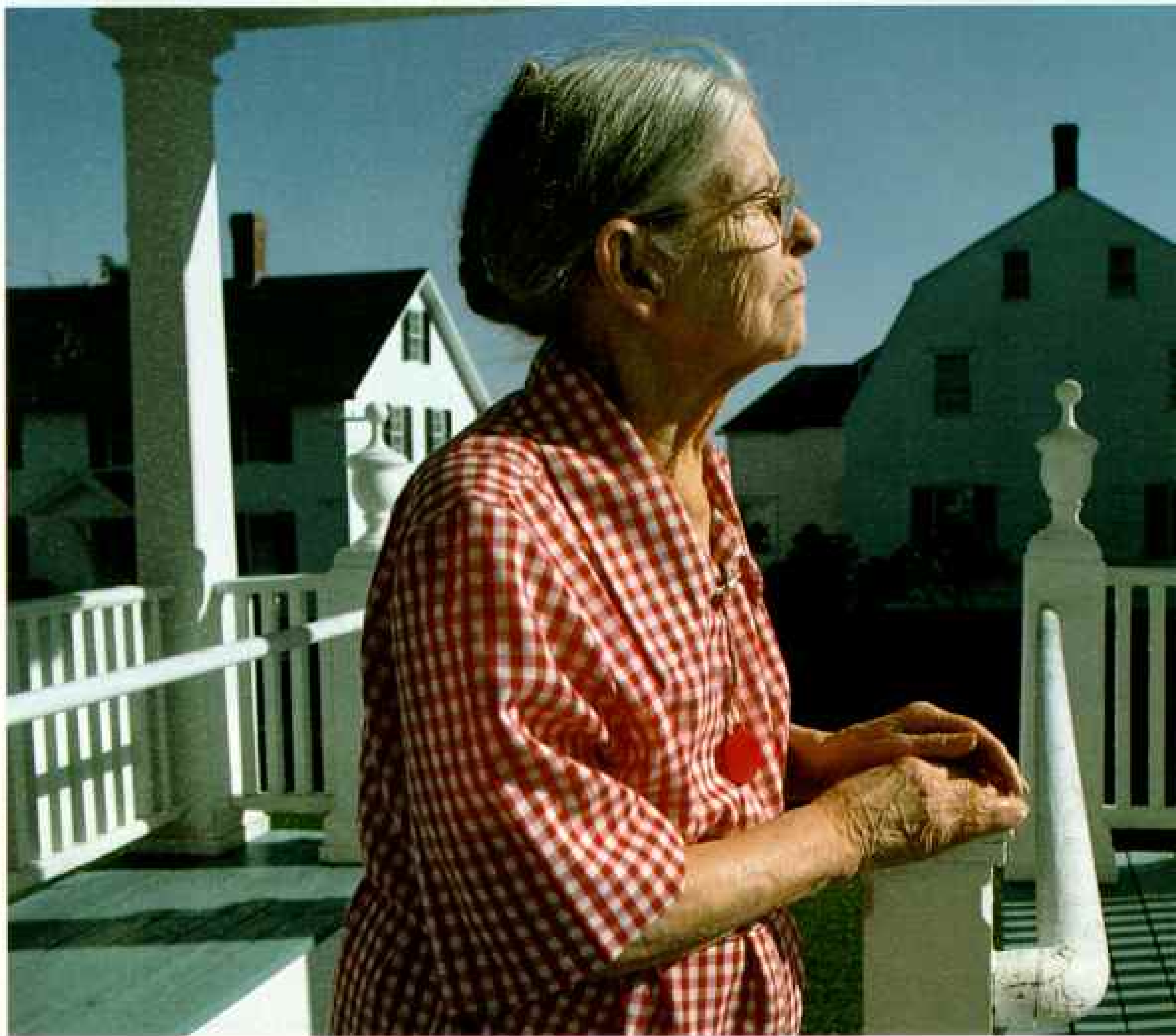
Canterbury Shakers accept the quiet ending. They believe Shaker values will endure but in different form. Canterbury slowed down decades ago.

Sabbathday Lake chooses a more energetic path. There are sheep to be tended, herbs to be dried, a fence to be mended, meals to prepare. Those seriously interested in the life are sometimes invited to try it. Some stay; some don't.

Because Canterbury considers the covenant closed, the matter of new Shakers has caused much handwringing. Canterbury's attorney, Richard Morse, opines that legally to be called Shaker,

AT THE AGE OF TEN Sister Ethel Hudson was brought to Canterbury, where she has lived since. The solitary occupant of a four-story dwelling house, she moves from room to room as the season and her inclination dictate. The lace on the door (right) was done by a sister Shaker.

"We didn't know it was all coming to an end," she sighs. If it does, the world will be colder, perhaps. Says another woman, who spent seven childhood years in a Shaker village: "Sometimes, when the world becomes too difficult, I retreat there in my mind. I was safe. I was loved."



one must have signed the now closed covenant. Noncovenanted members can live a Shaker life, he says, but the parent ministry does not particularly approve of them doing so within existing Shaker families. It is not Shaker-like to engage in authoritarian confrontation, he adds, so the ministry simply counseled Sabbathday Lake against admitting new members. Nonetheless, it continues to do so. It will not go gentle into that good night.

The dispute turned so bitter that for a time in the early 1970s Canterbury cut off Sabbathday Lake's income from the trust fund. "They hoped to bring us to our knees," a Sabbathday Lake sister said. After discussion between lawyers for both sides, the funds were reinstated. These days, the rancor may have eased, but little is forgiven. Communication remains limited.

It is a canker that will not heal, a distraction to the business of being Shaker. The peaceable kingdom is anything but.

"They're scared and fading," says an observer, "and the world acts like it's a big yard sale."

"They want everything but the cross," Sister Mildred says of a world that presumes to understand, but doesn't.

"We in the world miss a lot about what it means to be Shaker," says Hancock Village curator June Sprigg. "Perhaps it's like being color-blind. There are hues the rest of us can't see."

At Canterbury in June of last year, Eldress Gertrude quietly slips away in her sleep. "I am very tired," she sighs before climbing the stairs to retire. Will the coming year witness more such exits? A close friend of the Shakers thinks so: "It's as if everyone is holding their breath and waiting. They can relax and let go."

Several hundred attend the eldress's funeral. Brother Arnold Hadd and Sister Frances come from Sabbathday Lake . . . more out of duty than remorse. More out of thoughtlessness than spite perhaps, a mourner discomfits them with graceless words. Citing a prior commitment, Frances and Arnold leave early. There is no neutral terrain. Not even the grave.

In truth we want to believe the elders had an open line to heaven. To hear of the broken hearts between communities reminds us of our own imperfection. The varnish on the chair cracks; the perfect ending proves elusive. Yet, what must be remembered is this: Here was a joy so great the body shook in ecstasy.

ON A SPRING-BLESSED SUNDAY at Sabbathday Lake the morning hush is broken by the stuttering bleat of lambs. Soon the Shakers will walk from the dwelling house across the road to their 1794 white meetinghouse. The interior Shaker blue trim is original, unretouched since it was applied 200 years ago.

They file in, two brothers and five sisters, sitting on opposite sides of the room, joined by eight guests from the world.

Rising out of the silence, their voices—somehow transformed, all but angelic—chorus a familiar heart song. To hear "Simple Gifts" sung in this room is to touch the hem of heaven:

'Tis the gift to be simple,
'Tis the gift to be free;
'Tis the gift to come down where we ought to be;
And when we find ourselves in the place just right,
'Twill be in the valley of love and delight. . . .

Amen. □

Retracing the First

Aglow with the faith that fired the crusaders, pilgrims from all over

Crusade

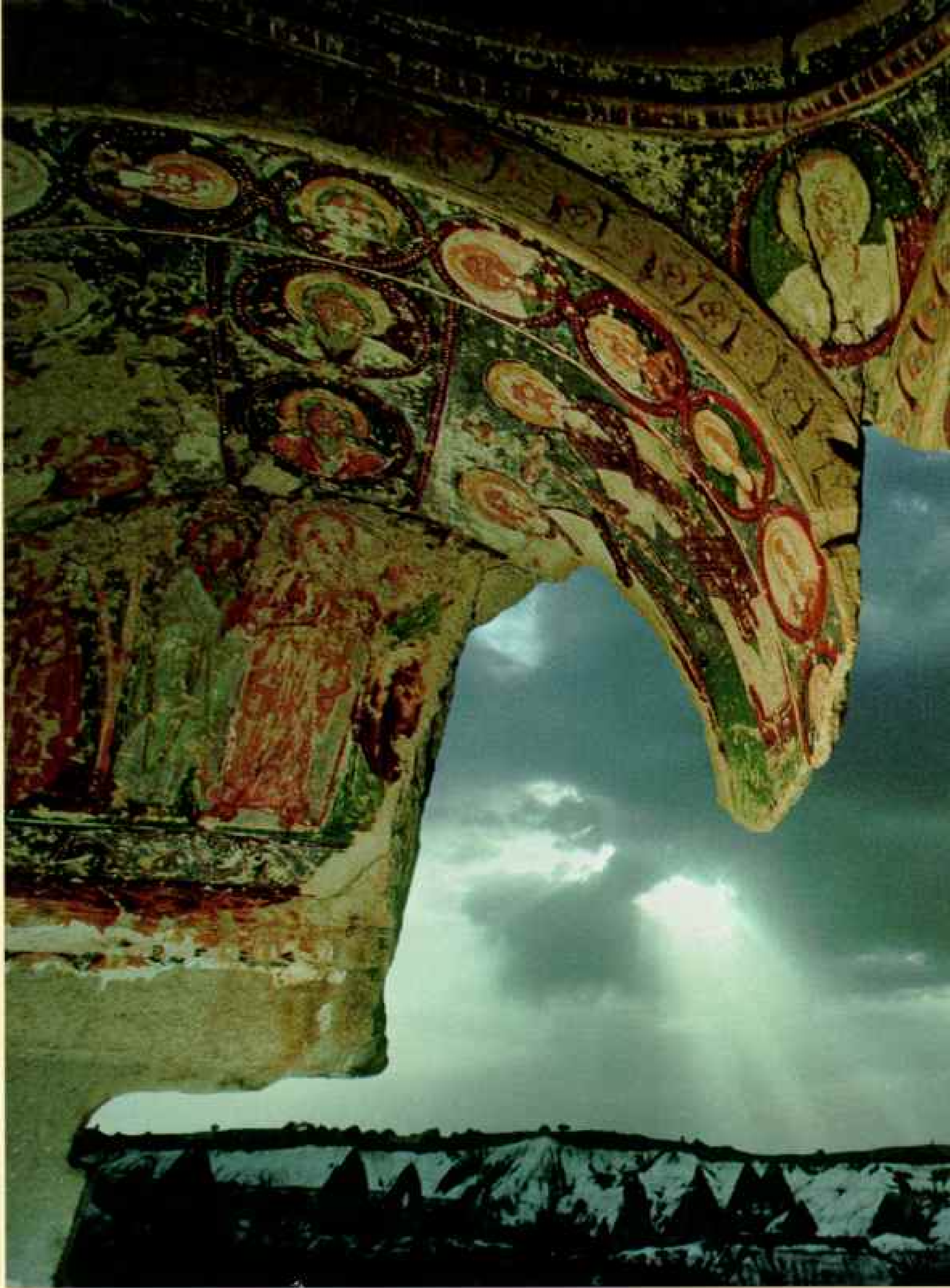
By TIM SEVERIN

Photographs by PETER ESSICK

Europe approach the shrine of Mariazell, Austria.

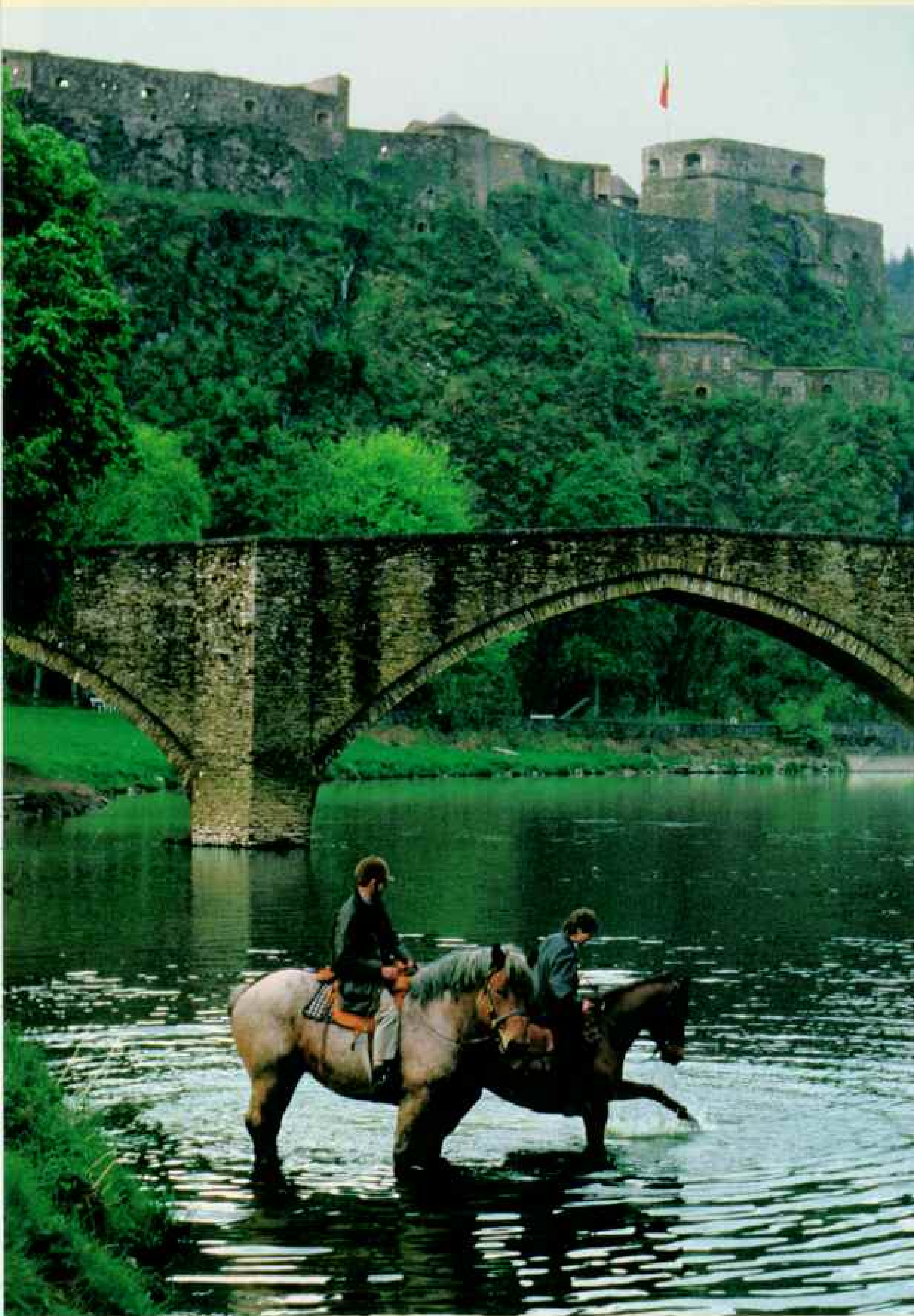
Proud csikósok, *or horsemen, dressed in the dashing style of their forefathers, graze herds on the vast Hungarian plain. Their clothing*

emblazoned with the cross, crusaders led by Godfrey of Bouillon passed this way in 1096 on their long trek to take Jerusalem.



Carved from volcanic rock by medieval Christians, El Nazar Church shelters sacred frescoes in the valley of Göreme in central Turkey. Now partly in

ruin, the church bears witness to the influence of the Byzantine Empire that preceded the pilgrims of the First Crusade.



Idealized in history as the perfect knight, Godfrey leads crusaders in a 13th-century illustration. Under the brow of Godfrey's castle in Bouillon, Belgium, the

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author, astride the heavy horse Carty, and his companion, horse expert Sarah Dormon, take up the route Godfrey followed to the Holy Land.

FIRST CRUSADE

All roads lead to Jerusalem

With a call to arms against Seljuk Turks pushing into Asia Minor, Pope Urban II launched a holy war to win back Christendom's shrines. A motley vanguard called the peasants' crusade set out in the spring of 1096 behind the firebrand preacher Peter the Hermit but met disaster in Turkey. Other groups left after the harvest. Tens of thousands of knights, foot soldiers, and pilgrims had converged on Constantinople by the next year. An engraving (above right) depicts one of the battles on the way to Jerusalem, which was captured in July 1099 and its Muslim and Jewish population put to death. Nine centuries later the author spent eight months riding the crusaders' route.

Author's route (1987–1988)
Godfrey of Bouillon (1096–1097) and Peter the Hermit (1096)
Raymond of Toulouse (1096–1097)
Robert of Normandy (1096–1097)
Bohemond of Taranto (1096–1097)
Baldwin of Boulogne (1097–1098)
Main body of crusaders (1097–1099)

Dashed line indicates uncertain route.
11th-century names in parentheses

0 — 300 km
0 — 300 mi
Chamberlin Trimetric Projection

MANSELL COLLECTION, LONDON

N A BRIGHT May morning to the sound of trumpets we rode out of the castle and took the road for Jerusalem.

There were four of us: Sarah Dormon—Irish and 22—two horses, and I. Before us lay a journey that would carry us more than 3,000 miles to the south and east across ten countries. Nine centuries earlier the same route had been followed by one of the most remarkable hosts in history—the warrior-pilgrims of the First Crusade.

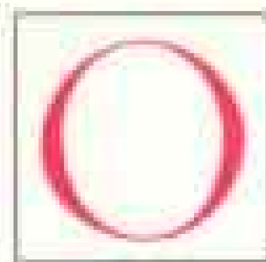
All my life I have been fascinated by those legendary knights and their followers. With the symbol of the cross stitched to their clothes, the crusaders marched until their shoes were shredded, their tents rotten, and their horses too weak to carry riders. They completed the only truly successful Crusade to the Holy Land. They endured three years of battles, starvation, and disease, and at the end they stormed the walls of Jerusalem and captured that holy city. They left an indelible mark on the history of both Europe and the Middle East.

The kingdom that the crusaders established was to last nearly a century before Saladin won it back, and in that time Europe and near Asia became locked in an embrace of cultures that has no end to this day.

At the start of the Crusade in 1096 dozens of aristocrats answered Pope Urban II's call to free the holy places from the control of the infidels of the East. The medieval bards claimed that Duke Godfrey of Bouillon was the crusader par excellence.

Their own chronicles reveal that

the crusaders were often coarse, bloodthirsty, and fanatic. Yet they risked their lives for a cause that promised only penury and suffering on earth, and a hope of redemption of their sins. Like many of them, Duke Godfrey never returned home. He died in Jerusalem and was buried near Christ's tomb in the Church of the Holy Sepulchre.



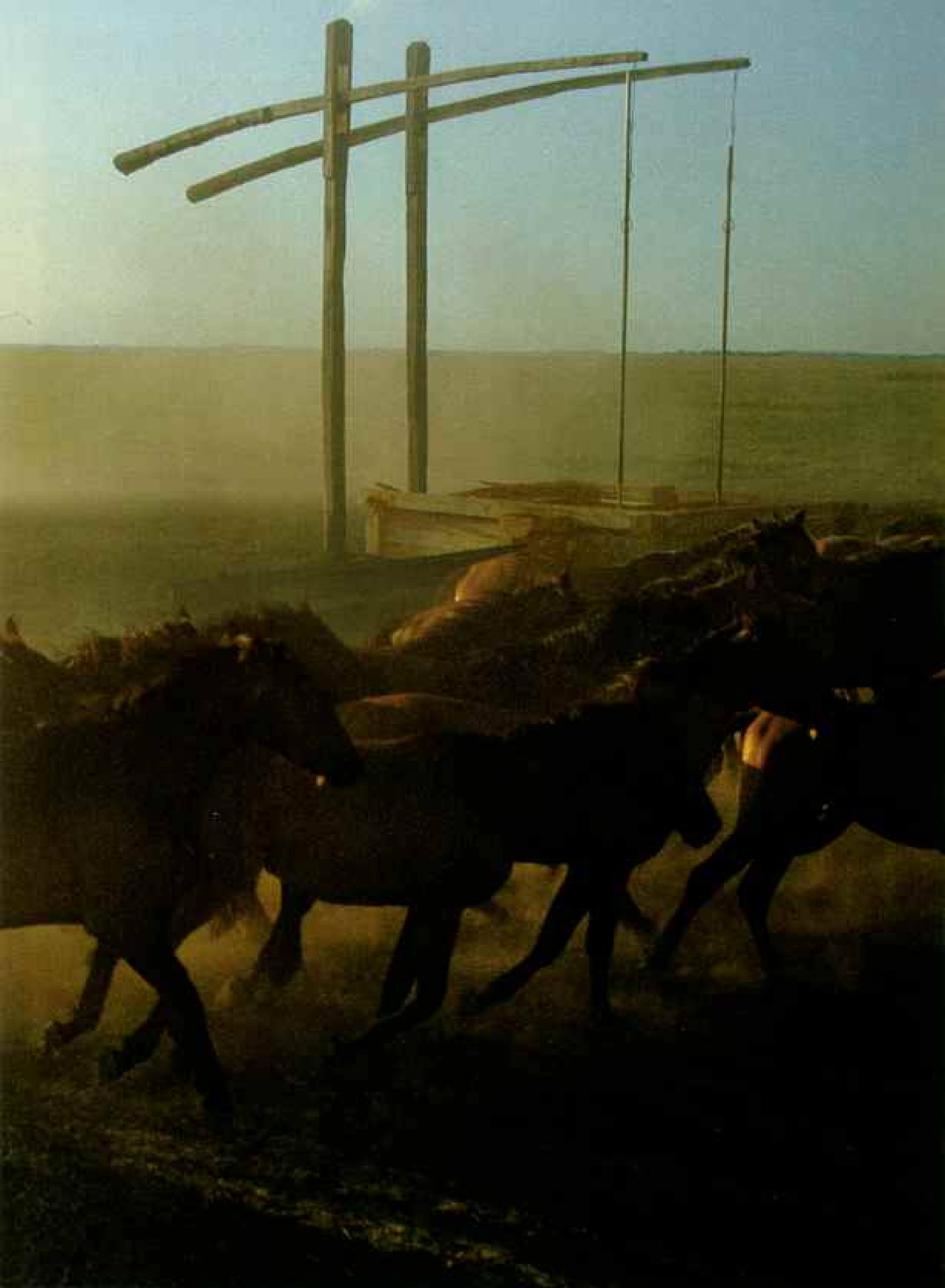
VER THE YEARS I have recreated a number of legendary travels, most of them ocean voyages. But in 1987, when I decided to follow Duke Godfrey, I needed a horse, and not just any kind of horse. It had to be an Ardennes, a breed of heavy horse native to the borderlands of France and Belgium where Duke Godfrey had his castle. In effect the heavy horse was the main battle tank of medieval warfare, a creature whose massive build and awesome appearance struck terror into the heart of any foot soldier unlucky enough to stand in the path of its earthshaking charge.

In northern France I found and bought Carty—three-quarters of a ton of immense strength and crafty amiability who was to endear himself to people all across Europe. I took Carty home to Ireland for training, a business in which I was woefully ignorant. In my village of Courtmacsherry I enlisted the help of

TIM SEVERIN has tracked Ulysses (August 1986 GEOGRAPHIC), Jason (September 1985), Sindbad (July 1982), and St. Brendan (December 1977). This is the second magazine byline for PETER ESSICK, who photographed model airplanes for the July 1986 issue.

Contesting faiths led to tragedies. Israeli Marcel Grebenau reads psalms in the Jewish cemetery of Worms, West Germany. Here, as in other cities, crusaders attacked the Jewish population. Near the crusaders' line of march in Bavaria, Maria Pfaller (above, at left) gardens with a friend. The cross attests to the area's enduring religious devotion.

Cracking their whips as they kick up dust, csikósok drive their herd across the puszta, or plain, of eastern Hungary. The sweep well, a distinctive feature of this pastureland, provides drinking water. Protected as the Hortobágy National Park,



this part of the puszta keeps alive the romance of the open range. Here in Hungary the author bought a saddle horse trained by the csikósok and relegated Carty, a descendant of a ponderous breed of horses used by the crusaders, to carrying packs.

Horseback to the Holy Land

"We've settled down to long-distance traveling," notes Tim Severin of the first day's march in Yugoslavia. While Sarah Dormon (above, at left) introduces their new Hungarian gelding, Szárcsa, to the routine, Tim rides along comfortably on the Irish mare Mystery. In the middle Carty carries a tent and sleeping bags, horse feed, veterinary supplies, spare horseshoes, hammers, and nails.

"It was impossible to find shoes big enough to fit Carty," Tim explains. "We had to take our own along." Making running repairs themselves, they found farriers to reshoe the horses every three to four weeks. In Melk, Austria, Tim helps August Faux shape a shoe.

At the start of their journey Tim and Sarah slept in inns and relied on a support vehicle for daily supplies. Veterans by their second season, they packed what they needed on the horses and often camped out. "Once we got into Turkey, we never had to buy a meal. Villagers always fed us," says Tim, finishing his morning coffee before breaking camp in the central part of the country.

Covering some 3,000 miles at a horse's pace, "we took about the same length of time on the road as Godfrey's crusaders."

Sarah Dormon, manager of a local gourmet restaurant, who had owned horses and ponies since the age when most children acquire their first bicycle. Sarah had an uncanny ability to know what a horse would think or do five minutes before the animal itself made up its mind.

Five feet two inches tall and elfin, Sarah possessed a wry sense of humor, proved able to pick up foreign languages as if through her skin, and didn't care a jot for medieval history. In Courtmacsherry she agreed to help out with Carty "just for a few weeks."

A year and a half later, as we trudged across the Middle East's Jordan Valley in searing July heat, Sarah was still muttering that it was a mistake to talk to strange customers in a restaurant.

Our ride began in the courtyard of Godfrey of Bouillon's castle in Belgium, where our departure was hailed by the local tourism office with a tape recording of the Irish national anthem, followed by a cannon shot from the battlements. The latter sent Sarah's mount, a little bay mare acquired in Ireland and named Mystery, skittering off at a panicky gallop. Splendidly fit and supremely good-natured, the little mare lacked only one attribute—brains.

Carty's superabundance of brawn was no blessing either. In the first half mile I learned what he was designed for—and it certainly wasn't riding! An animal so huge is the ideal load carrier; he can carry any amount at his ponderous and majestic pace. But Carty's shattering plod was excruciating to a rider. He slammed each massive foot down with a bone-jarring thud that I felt right up through my spine. The knights of the First Crusade had a second, lighter horse known as a palfrey for everyday travel, and they saved the heavy horse for pack carrying and for battle.

Bruised and aching, I sympathized with those original innocents who joined the Crusade with little notion of what they faced and even less of how to equip themselves. In a 12th-century chronicle Guibert of Nogent wrote: "The poor were soon inflamed with so burning a zeal that none stopped to consider the slenderness of his means, neither whether it was wise for him to leave his house, his vines and his fields. . . . Truly astonishing things were to be seen, things which could not but provoke laughter: poor people shoeing their oxen as though they were horses, harnessing them to two-wheeled carts on which they piled their scanty provisions and their small children, and which they led along behind them."

THERE was no controlling such an explosion of fervor. The great lords began to muster two armies in France, another was raised in Italy, and Duke Godfrey assembled his forces from the Low Countries and Germany. The plan was to rendezvous at Constantinople. But many bands of ordinary folk impatiently set out ahead of them. This unruly vanguard seethed across Europe, often acting no better than brigands and massacring Jews in the Rhineland.

The largest group, led by a firebrand preacher named Peter the Hermit, was scathingly dubbed the "peasants' crusade." Its advance guard was led by only eight knights. As Sarah and I soon learned, peasants marched faster than princes: Peter's motley followers averaged nearly 18 miles a day on their way across Europe, while Godfrey's army managed only 15½ miles. Sarah and I found it took us some three hours each morning to feed, groom, and inspect our horses properly, and once under way we were limited by Carty's numbingly slow gait. Even gentle Mystery was so

irritated by his ball-and-chain effect that she took an occasional nip at him to hurry him along. But Carty simply ignored her. His pain threshold was so high that I began to believe the old tales of unruffled war-horses emerging from the fray bristling with arrows like pincushions.

No one knows Duke Godfrey's precise route across modern Belgium, Luxembourg, and Germany. But at Regensburg on the banks of the Danube he and his army set foot on the Via Militaris, the ancient Roman road leading to Asia Minor. As best we could, Sarah and I followed the Roman tracks, while Carty added substance to the crusaders' reputation for destruction and pillage. The great beast proved to be a one-horse menace. He combined his huge strength with an unquenchable curiosity, and the result was daily mayhem. In a spick-and-span Bavarian village Sarah and I paused to buy a loaf of bread for lunch. Handing Carty's reins to Sarah, I dashed into the village bakery. Carty saw a metal wastebin bolted to the outside wall. Towing Sarah and Mystery behind him, he marched over and thrust his enormous head into the bin to investigate. Satisfied, he simply raised his head, whereupon the bin tore out of the wall in a cloud of broken concrete.

For a moment the bin hung like a nose bag from Carty's muzzle; then it fell to the ground with a clang, rolling down the street and spraying its contents far and wide. Shamefaced, Sarah and I rode quickly out of that once immaculate village, leaving the main street strewn with debris. I shuddered to think what would have happened when Duke Godfrey quartered several hundred heavy horses on an unsuspecting town.

Estimates of the crusaders' total numbers vary, from their own wildly exaggerated figure of hundreds of thousands to a more likely number of 4,000 or 5,000 mounted knights and squires and 30,000 foot soldiers, plus countless civilians.

Casualties en route were high, especially among the horses. Many of the heavy horses died from lack of food or from harsh conditions, particularly heat. During our trek across Germany elderly farmers would scramble down from their tractors to pat Carty and tell us of the days when they used heavy horses on their farms. But when they heard how far we intended to go with Carty, they looked skeptical. "He'll never get to Turkey," they warned.

And in the next country, Austria, a young livery-stable owner was so taken with our behemoth that he made me an offer: "If you ever need a home for him, just let me know. Wherever he is, I'll come and fetch him."

Duke Godfrey's first challenge was the kingdom of Hungary. The country was ruled by a king named Coloman, who commanded a first-rate army that

Profoundly moved, pilgrims flock to Medjugorje, Yugoslavia (above), where several villagers claim daily visits from the Virgin Mary. Similar visions inspired crusaders. In Serbia, which was crossed by Godfrey, a monk devotes himself to chores at the Ljubostinja monastery.

could block Godfrey's advance. According to György Györffy, Hungary's leading historical geographer, King Coloman was an extraordinarily advanced thinker for his day.

"In an age of superstition," Professor Györffy told me in Budapest, "Coloman issued a proclamation telling people not to waste their time persecuting witches, as there was no such thing as a witch.

"And, of course," he added, "Coloman knew just how to handle the Crusade. Concerned that Godfrey's host would pillage his realm, he insisted on taking a hostage, Count Baldwin, the duke's brother, and he escorted the pilgrim army with his own cavalry forces until they were out of Hungary."

Our own traverse of Hungary was more friendly. "It's the finest country in all Europe for cross-country riding," a friend who organizes horse tours across Europe had told me. "Don't worry about staying to bridle paths. Just take a compass course. Hungarians love horses, and you can ride in a straight line, even across their fields if need be."

We took him at his word and were delighted by our reception in the villages and cooperative farms, usually with bottles of robust Hungarian wine. Sarah admitted that when it came to understanding horses, the Hungarians could rival the Irish.

HAVING FOOLISHLY ridden Carty from Belgium as far as Budapest, I decided I had learned my medieval lesson: It was time to get a palfrey. At a horse farm outside Budapest Sarah chose a rangy 14-year-old gelding named Szárcsa that had previously been used by a *csikós*, or wrangler. Szárcsa had been

taught several tricks by the wrangler, and on command he would lie prone on the ground or walk on his knees.

"That's all we need," Sarah commented dryly, "a performing horse. With Carty's antics we were halfway to being a circus already."

Officially, at least, Yugoslavia was less welcoming than Hungary. "There are no facilities for riders in Yugoslavia" had been the curt reply to my inquiry to Belgrade. "We suggest you abandon your trip." But we persisted, and again the horses were our passports to hospitality and help. The Yugoslav countryfolk welcomed us wherever we went.

In late July, almost three months into our journey, a heat wave struck southeastern Europe, and we very nearly lost Carty. At one point he collapsed from the heat, and Sarah and I frantically poured buckets of water over him to cool him down. After six hours he rallied, but I began to suspect that he would never make it all the way to Jerusalem.

At the Bulgarian border we were greeted by a sizable reception committee organized by Theodore Troev, a Bulgarian member of my crew from the Ulysses voyage. A local historian stepped forward, flourishing a parchment. It was a modern version of the welcoming letter that Alexius Comnenus, Byzantine emperor of Constantinople, had sent to Duke Godfrey. An Eastern Christian, Alexius had set the Crusade in motion by appealing to Pope Urban II for help against the Muslim Turks.

But hunger, not history, was Mystery's priority. Our previous few days in Yugoslavia had been lean going, and the horses were famished. As the historian began his oration, Mystery spotted two Bulgarian girls in traditional costume, holding welcoming bouquets of flowers. Sidling over, she lunged for a floral snack. Not to be outdone, Carty ambled

Dangers abounded on the crusaders' campaign, cutting down many men before they reached Jerusalem. In what is now Turkey, legend says, Godfrey survived a bear attack, illustrated in a medieval manuscript (below). Near the author's route through

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the Balkan Mountains, a friendlier bear dances to a tune from a Gypsy's gadulka.

Fresh fish netted in the Sea of Marmara gave sustenance to the crusaders once they reached Constantinople (present-day Istanbul), gateway to Asia and rendezvous point for the armies of the First Crusade. Upon arrival they discovered that news of

their marauding exploits had preceded them: Alexius Comnenus, ruler of the Byzantine Empire and the man who had appealed to Pope Urban II for help against the Muslims, had barred them from entering his walled capital.

over and placed a nine-inch-diameter hoof on the luckless orator's foot. Bravely he finished his recitation, pinned to the ground and crimson with discomfort.

Thanks to Theodore, our trip across Bulgaria was worthy of Duke Godfrey's life-style. A jeep carried the horses' fodder ahead of us, policemen halted traffic for us at village intersections, and veterinarians called regularly at our campsites to check the horses. Pampered and refreshed, we finally left Bulgaria and entered Turkey, bound for Istanbul, ancient Constantinople.

"OH, WHAT A GREAT and beautiful city is Constantinople! How many churches and palaces it contains, fashioned with wonderful skill! . . . It would be too tedious to enumerate what wealth there is of every kind, of gold, of silver . . . and of holy relics."

Thus rhapsodized Fulcher of Chartres, a chaplain with the crusaders who had marched from northern France. But Constantinople was not as enthusiastic about the visiting Franks, as they were generally called. Alexius' teenage daughter, Princess Anna, would refer in her memoirs to "their unstable and mobile character." Further, she wrote, the crusaders were always "agape for money." Fearing that if the four crusading armies united in front of his city, they would sack his capital, Emperor Alexius hustled them across the Bosporus and into Asia Minor.

Once into Anatolia, the combined host was encroaching on the territory of the Seljuk Turks. Two months before Godfrey arrived in Constantinople, they had ambushed and annihilated Peter the Hermit's followers, though

Peter himself escaped the slaughter.

Beyond Istanbul and the Sea of Marmara, Sarah and I picked up the traces of the Roman road through pine-forested mountains. Now and then we encountered groups of woodcutters bringing down timber on slender but incredibly tough pack ponies, each animal a moving mound of brushwood.

It was here on a bleak day in October 1096 that Peter the Hermit's peasant army had been ambushed and butchered. An account of the battle says that the Turks followed the panic-stricken peasants back to their camp, where, "going within the tents, they destroyed with the sword whomever they found, the weak and the feeble, clerics, monks, old women, nursing children, persons of every age."

Bypassing the massacre site, the crusaders and a contingent of Alexius' forces besieged the fortified Turkish town of Nicaea, known today as İznik. Sarah and I camped for a day or two beside the city and rode around the walls, just as Godfrey must have done to scout the defenders' positions.

History recounts that during the siege a gigantic Turkish soldier raged up and down the battlements, hurling rocks at the besiegers with deadly effect. At length Godfrey himself took up a bow and with a single well-aimed arrow picked off the giant.

After 45 days Nicaea fell, but not to assault. The defenders made a secret deal with Emperor Alexius' ambassador and handed the city over to his troops, not to the crusaders. The hard-pressed pilgrims were bitterly disappointed. They needed gold and valuables to finance their continued march to Jerusalem and had counted on Nicaea's loot. Alexius bribed the leaders with lavish gifts, but the rank and file were not even allowed into the city except in small

To show respect, worshipers in Istanbul kiss the hand of the Ecumenical Patriarch of the Eastern Orthodox Church (left).

In the same city during the First Crusade, Emperor Alexius extracted an oath of fealty

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from Godfrey of Bouillon (above, kneeling), binding him to deliver lands won in battle to the Byzantine Empire.

groups. They felt basely cheated. One of their priests, Raymond of Aguilers, wrote of Alexius that "as long as they live, the people will curse him and proclaim him a traitor."

FROM IZNIK we headed inland and discovered that our path was blocked by a rockfall across a narrow ravine. Scrambling across, we found ourselves on goat tracks that zigzagged their way over loose rock scree. I wished the farmers back in Germany could have seen Carty then. The huge, seemingly clumsy animal was astonishingly agile. He delicately placed his hoofs on a path barely wider than the hoofs themselves. When the surface crumbled under his weight, he did not panic but locked his legs straight, kept his balance, and literally skied downhill in a slither of shale.

Soon afterward we called a halt to the season's travel. Turkish friends found a farm for us where we could leave the horses while we returned to Ireland for the winter. On the way to the farm, however, as Szárcsa walked along a slick tarmac road with Sarah in the saddle, he slipped and fell on his side. Sarah's left

First to fall, the Seljuk city of Nicaea (modern İznik) was walled on all sides, protected by Lake Ascanius in the rear, and defended by a fierce and skillful foe. The crusaders besieged the city, then hauled boats overland from the Sea of Marmara, launching them on the lake. Thus blockaded, the Turks surrendered.

foot was caught between Szárcsa and the tarmac, and several bones were crushed. She curled up in agony, and as I rushed to pick her up, I received clear directions on where to locate the medicinal gin in her saddlebag.

That winter we retired Carty with full honors from our crusade. He had done superbly to walk the 2,000 miles as far as Turkey, but I did not want him to suffer the same fate as his forebears that had died of heat and exhaustion in Turkey's desert steppes. True to his promise, our Austrian friend collected Carty and took him back to the Vienna Woods, where he was proudly displayed as "the horse that went on the crusade."

Carty's replacement was a mountain pack pony named Zippy, who was about a third Carty's size. Zippy wore a perpetual put-upon look that would have won him an Oscar among pack ponies. He could give the impression that he was overworked, overloaded, and underfed, just at the moment he was contemplating making a run for it at a sizzling sprint that would leave Szárcsa and Mystery flat-footed. At the end of a long hard day Zippy would lie flat on the ground and kick his legs in spasms. This was, Sarah told me, the classic symptom of a dying horse. Zippy, it seemed, had read the veterinarian's handbook.

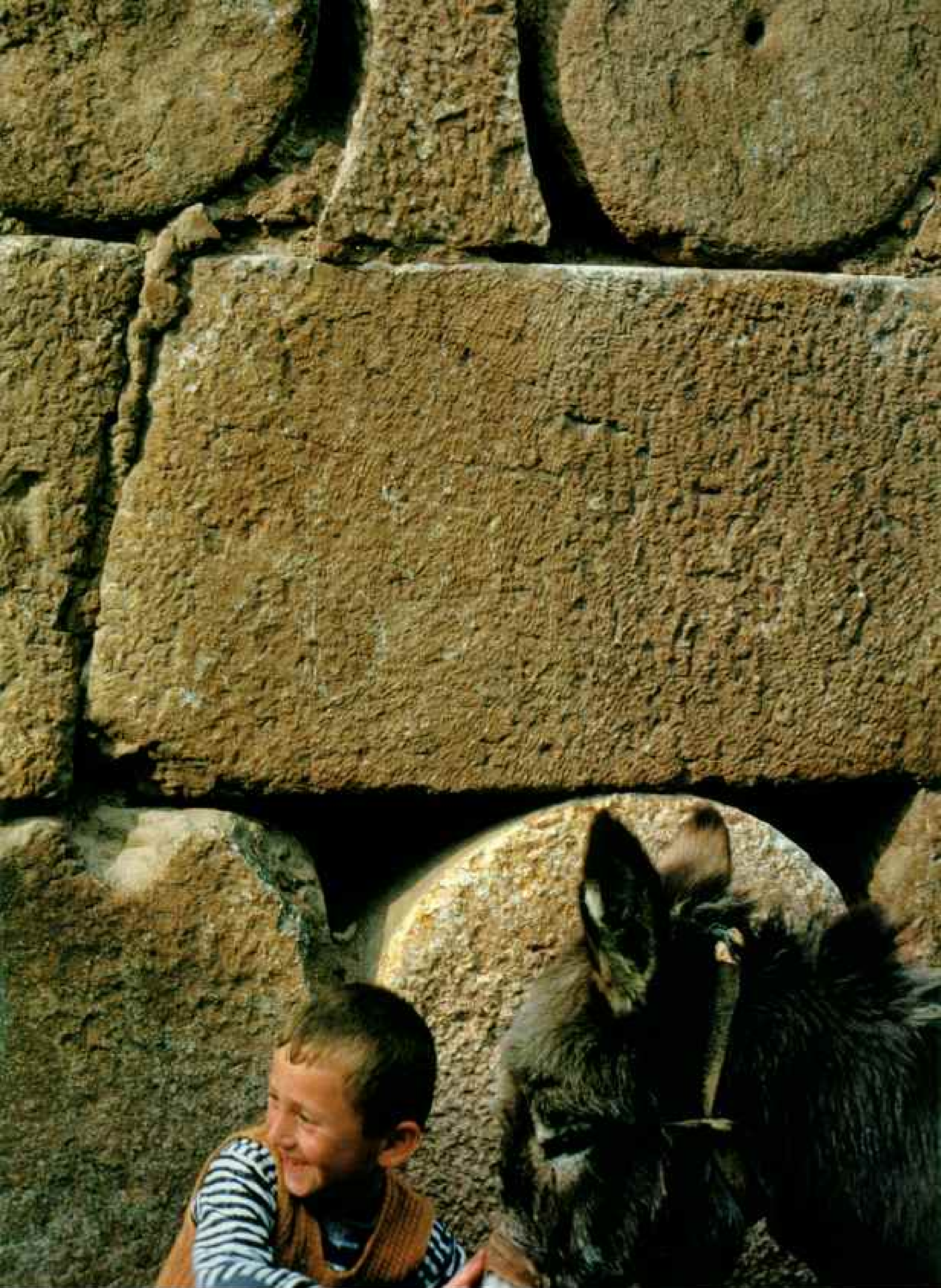
Sarah and the three horses and I set off again in April across Anatolia, after the snowmelt but before the summer heat. We passed near the ancient site of Dorylaeum, where the crusaders fought a crucial and nearly fatal battle. The Turks pinned the advance group against a marsh and attacked with waves of mounted archers.

"All of us," wrote Fulcher of Chartres, "huddled together like sheep in a fold, trembling and terrified. . . ."

A messenger was sent to Godfrey, whose army was nearby. He and his fellow knights spurred to the rescue, leaving their infantry behind.

The mass of Frankish cavalry caught the Turks head on. "Suddenly," wrote a vastly relieved Fulcher, "we saw the backs of the Turks as they turned in flight." From that moment onward no

Early Christians left their mark on Nicaea. Ancient walls guarded Christianity's first ecumenical council, which in A.D. *325 produced the Nicene Creed still recited in churches today. Ironically these fortifications held off the crusaders even after*



their battle was won. The Nicaeans surrendered to Alexius—on condition that the crusaders, who had terrorized the inhabitants by catapulting heads of slain defenders over the walls, be forbidden from sacking the city.

Playing at war, elders of central Turkey preserve the game of cirit, a galloping exchange of blunt lances enjoyed by the Seljuks around the time of the Crusades.

In a village near Kayseri, a tearful six-year-old boy is showered with lira and words of encouragement to prepare him for the Muslim rite of circumcision.

opponent, whether Turk or Arab, ever willingly faced the shattering charge of the crusaders' heavy cavalry.

But the crusaders' real foe was the desolate, hostile expanse of the Turkish hinterland. As the Turks fell back, they blocked wells and destroyed crops. The host found itself marching through a wasteland in the heat of summer.

"We suffered greatly from hunger and thirst," recorded one knight, "and found nothing at all to eat except prickly plants which we gathered and rubbed between our hands. On such food we survived wretchedly enough, but we lost most of our horses, so that many of our knights had to go on as foot soldiers. . . ."

Irrigation has converted much of Turkey's desert regions to rolling wheat fields, and Sarah and I found the Turkish code of hospitality flourishing in every village. Our horses were always fed and watered, and we were invariably quartered in the headman's own home or the village guesthouse.

"Why are you making such a difficult journey?" was the standard question. Our answer was easy for Muslim villagers to grasp: "We are making a hajj to the holy city of Jerusalem."

Just beyond the town of Kayseri we turned southeast to cross the Anti-Taurus Mountains.

The crusaders passed this way in autumn 1097. Winter was coming on, and after more than a year on the road there was no immediate prospect of reaching Jerusalem. What drove them onward? Greed for plunder, as many have charged? Dream of empire? Neither had much relevance in those raw mountains. What kept the crusaders going, planting one foot wearily in front of the other, had to be faith.

FRIDAY, JUNE 17, brought the lowest ebb of our journey; on that day we lost Mystery. For nearly the entire journey from Belgium she had led the way, and now, outside the Turkish city of Antakya—the Antioch of old—she developed a virulent and unidentified ailment that

killed her within 12 hours. Sarah and I were devastated.

Mystery's replacement was Yabancı—"foreigner" in Turkish—a palomino mare we found hauling baskets of coal in the bazaar at Antakya. She had been most cruelly used and was unkempt and terrified, a mass of oozing sores from a badly fitting harness. We bought her on the spot, bathed and medicated her, and within days she was a different horse.

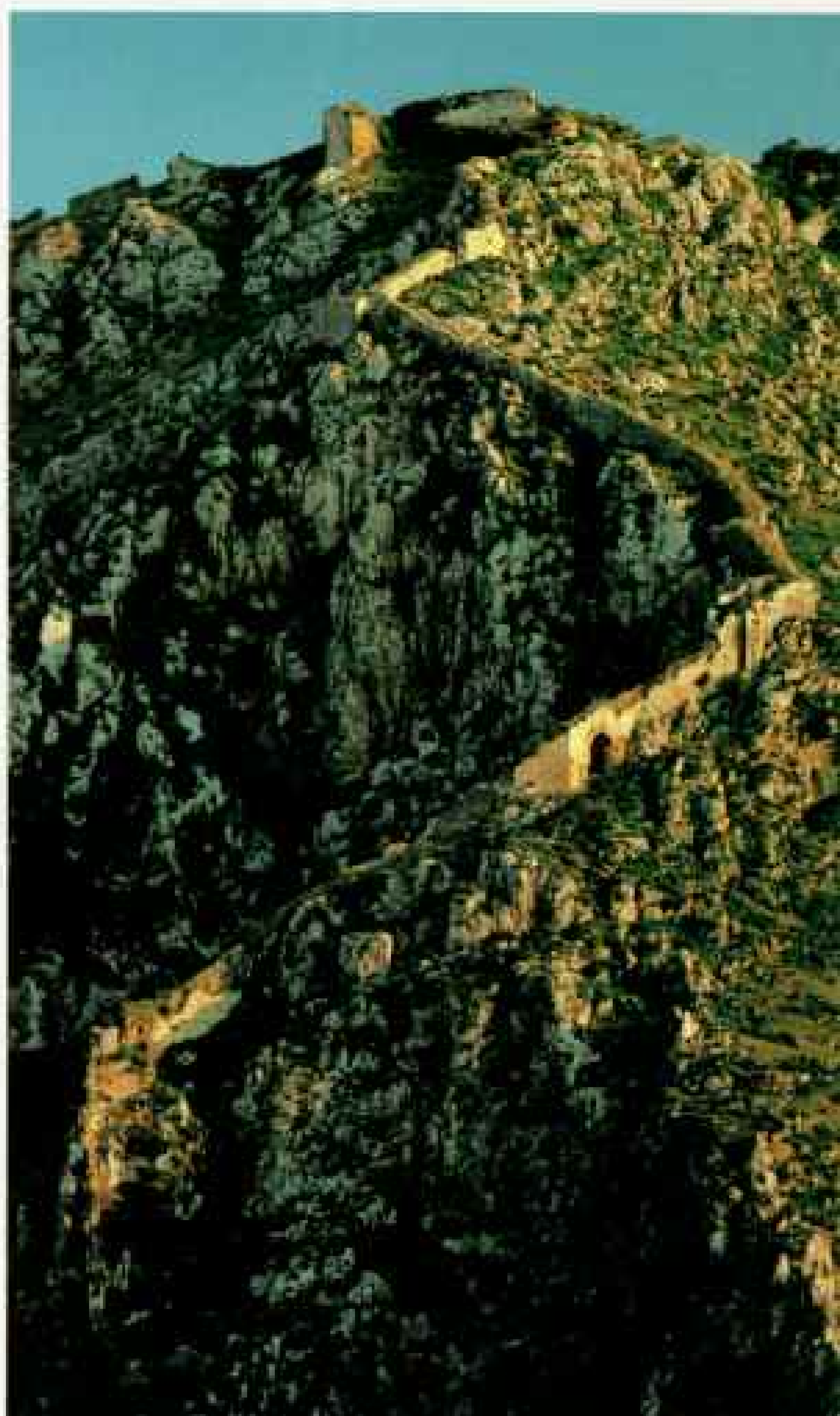
The crusaders delayed more than a year at Antioch. They laid siege to the city, but the fortifications proved impregnable. Food ran out, not for the Turks inside but for the Christians outside. The poorest pilgrims were reduced to eating undigested seeds picked from animal dung, and pestilence ravaged their camp.

Finally the commander of one of Antioch's wall towers was bribed into treacherously allowing a handful of knights to scramble up the ramparts, enter the city, and open the gates. The crusaders poured in and put the entire city to the sword. They were besieged in turn by a Turkish army that suddenly arrived, just too late, to relieve Antioch.

Morale among the Christians slumped to such depths that the exhausted men

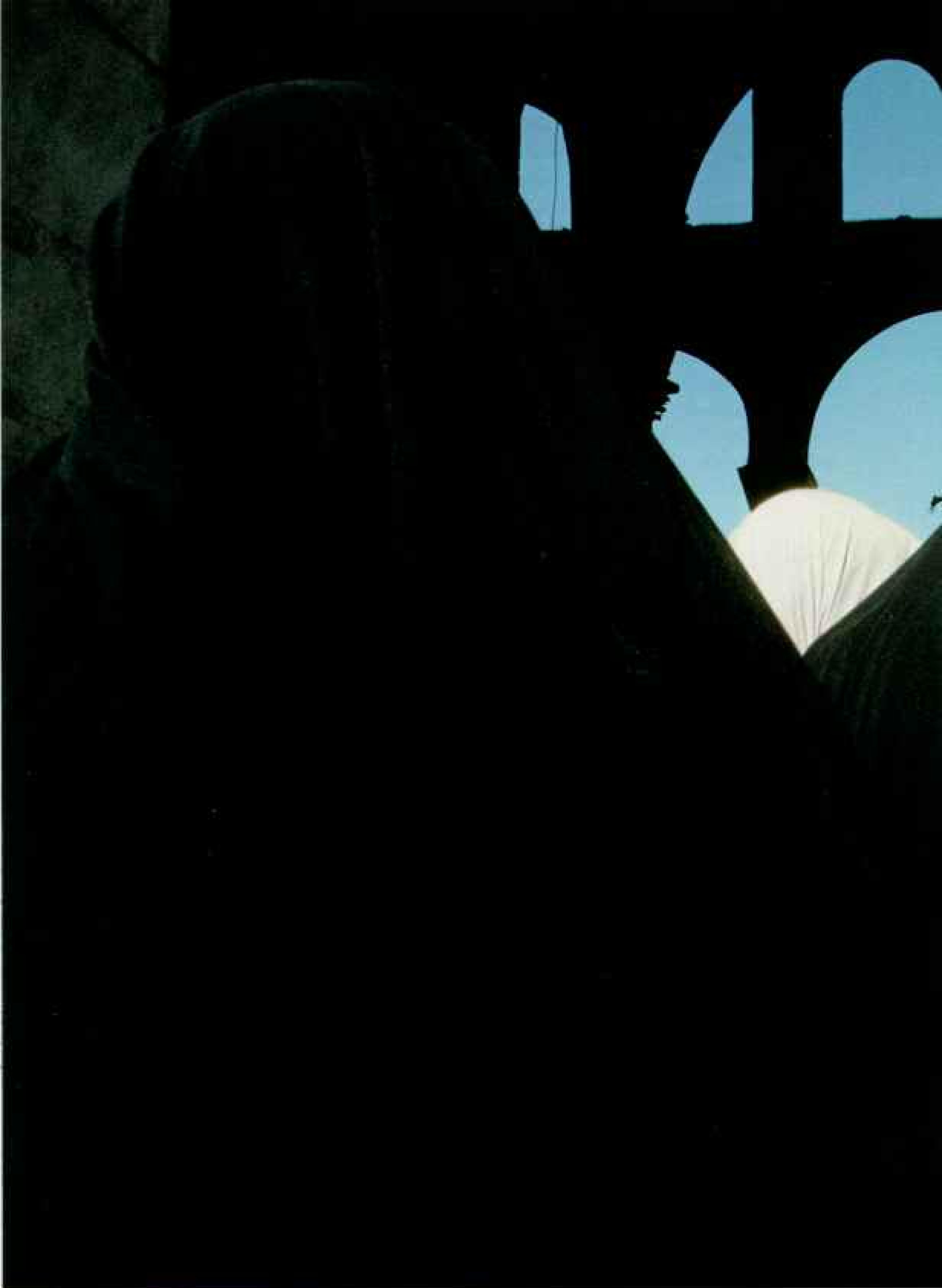
refused to do guard duty on the walls. Then one of the pilgrims claimed he had a vision that the holy lance—the weapon that pierced Christ's side on the Cross—could be found buried beneath a church floor in the city. The "lance" was dug up, the crusaders carried it into a last desperate attack on the Turkish army, and the siege was broken.

Now, with only 400 miles between them and Jerusalem, the crusaders' leaders did indeed seem more intent on seizing towns and booty than in reaching the Holy City. But at length the common pilgrims threatened to mutiny, forcing their leaders to continue the march.



It took a miracle to save the crusaders at Antioch, a Seljuk stronghold near the Turkish coast. The city had resisted for months, even after the crusaders defeated reinforcements sent from Aleppo along the old Roman road (left). A Muslim traitor turned the tables, letting the crusaders slip over the wall one night. Only a hilltop citadel next to the town (above) held out.

Within days a huge Turkish relief army arrived and surrounded the crusaders, now trapped inside Antioch without supplies. As hopes grew dim, one crusader claimed to have seen St. Andrew, who showed him where the lance used to pierce Christ's side was buried. A digging party was assembled, a lance was found. Thus inspired, the crusaders threw themselves upon the Turkish enemy—and prevailed.



Kindred spirits meet at the Umayyad Mosque in downtown Damascus, as Syrian worshipers greet foreign pilgrims veiled in black. The mosque dates from the eighth century, when the Umayyad dynasty, which ruled the Muslim world from Damascus,

converted it from a Christian church to one of the holiest shrines in Islam. The city's role as an enemy supply center undoubtedly made Damascus a tempting target for the crusaders, but it was well fortified, and they passed it by.

The final sector of the crusaders' route from Antioch to Jerusalem followed the Mediterranean coast road through Syria. There, in the shadow of a crusader castle that once guarded the strategic highway, I asked a Syrian schoolteacher what he told his pupils about such vestiges of foreign presence.

"I tell them it was just another form of colonialism," he replied.

"But how do you yourself feel?" I pressed him, and he merely shrugged. "As you would about the castles left in Spain by the Moors," he answered deftly. "History moves on, and leaves its monuments behind."

Unwilling to risk war-torn Lebanon, I decided to turn inland and approach Jerusalem by the old caravan route through Jordan. There we encountered the conditions the crusaders had endured: 107°F in the shade – though there was no shade on the open road. Fodder was desperately scarce. Sarah and I did not ride the flagging horses but walked beside them.

The Jordanians and Israelis had both given us special permission to cross the Jordan River via the historic Allenby Bridge. From our camp the last night we could see the lights of Jerusalem glittering on the hills of Judaea opposite us.

The next morning was stiflingly hot as we led the horses past groups of soldiers, a series of checkpoints, and the minefield and antitank ditch guarding the Israeli forward positions. It was not so different, I thought, from the moats and watchtowers that the crusaders had encountered.

When the pilgrims sighted the walls of Jerusalem on the seventh of June, 1099, they must have been half crazed by the immense exertion of reaching their goal. Some stood with tears running down their faces, others knelt and kissed the dusty road. Their zeal was great enough to launch the assault against the infidels immediately—only the equipment was lacking. A hermit on the Mount of Olives exhorted them to attack without delay.

"God is all powerful," the hermit declared. "If He wills, He will storm the walls even with one ladder." On June 13 the crusaders flung themselves into the battle so heedlessly that they would have swept aside the defenders—Fatamid Egyptians who themselves had captured the city only the year before—but for a crucial shortage of scaling ladders. The leading Christian knight fell back, his hand severed from his arm.

FOR MORE THAN THREE WEEKS the host waited while two giant siege towers were constructed. Duke Godfrey himself initiated the successful breakthrough. On July 15 the siege tower in which he rode was levered and pushed to the weakest point of Jerusalem's wall. Beams were run out at rampart height to make a bridge, and the first knights charged across.

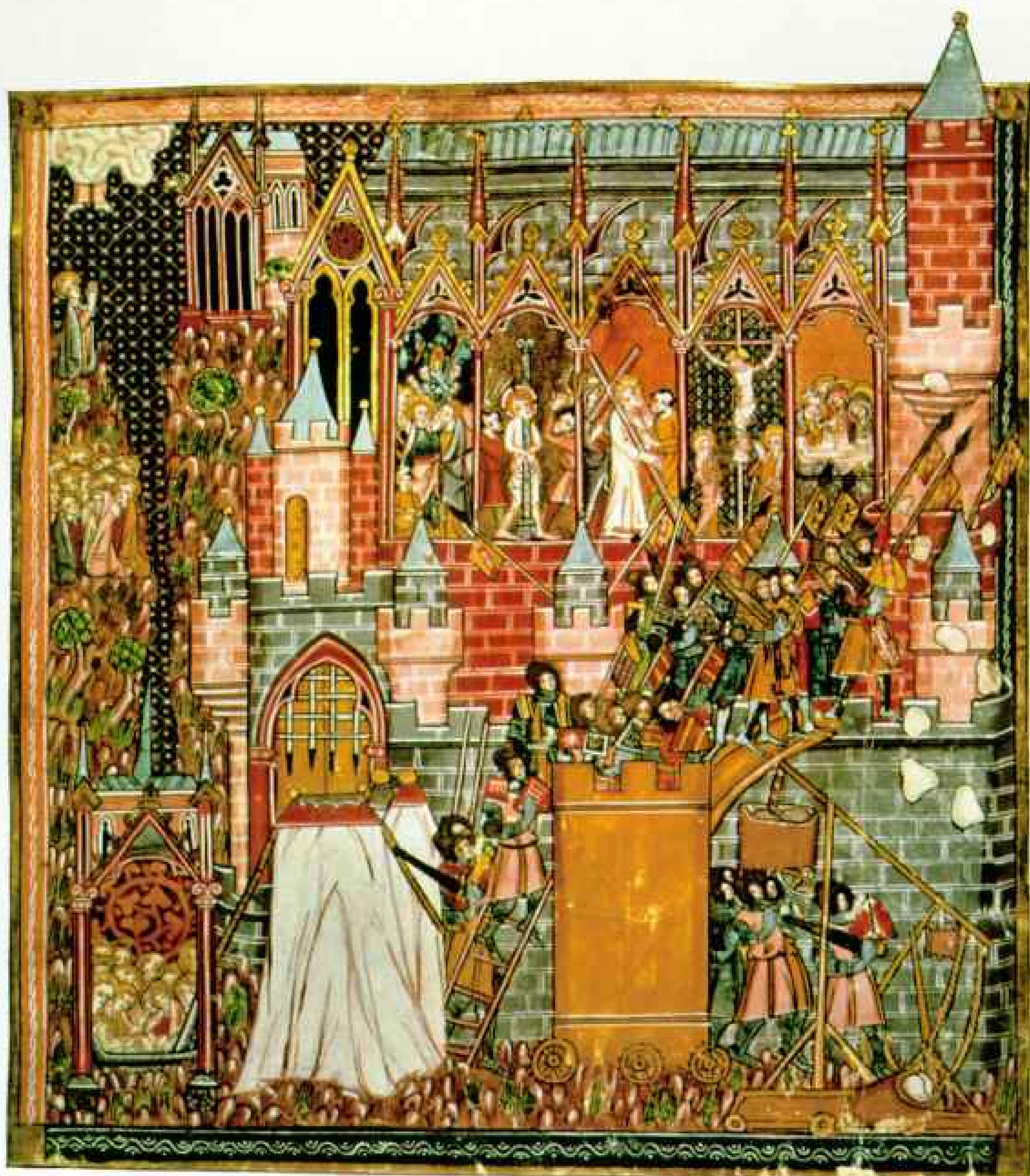
Even their hard-bitten contemporaries were shocked by the terrible massacre that followed as the maddened crusaders rampaged through the city in a bloody catharsis for that appalling, three-year journey.

"No one has ever seen or heard of such a slaughter of pagans," recalled one knight grimly. "Almost the whole city was full of their dead bodies." The temple where the Muslims made their last-ditch stand, he said, was "streaming with their blood."

Uprooted by this century's clash over the Holy Land, children of Palestinian refugees huddle next to their family's camel-hair tent in a camp outside Amman, Jordan. Their homeland, sacred to Muslims, Christians, and Jews, has long been history's battlefield.

Thoughts of John the Baptist sustained crusaders as they made trips for water from Jerusalem through the wilderness to the Jordan River, where the prophet conducted his ministry. Severin and Dormon, above, reached the Holy Land in summer—as did

the crusaders, slowed by bickering among their leaders and detours to plunder the countryside. Drawing near Jerusalem, they rededicated themselves to their mission, and on June 7, 1099, a five-week siege of the walled city began.



BIBLIOTHÈQUE NATIONALE

The siege ended when Godfrey and his knights overran the ramparts from a tower and stormed the city. The defenders and their wives and children were massacred with such ferocity that the victors "waded in blood up to their ankles."

A plaque in Jerusalem's Old City wall marks the spot where Godfrey's knights cracked the Saracen defenses. Nearby is Herod's Gate, and 889 years later Sarah and I walked through it, leading the horses. We threaded the city's narrow lanes, past the hucksters and the rows of small stalls. Surely the medieval pilgrims would have recognized the souvenir sellers hawking their wares and services to passersby.

We headed for the Church of the Holy Sepulchre, Duke Godfrey's last resting-place. When elected ruler of the conquered city, he had chosen the simple title of Defender of the Holy Sepulchre. He died of a fever in the Holy City a year later, fatally weakened by the exertions of the great journey.

Much of the Church of the Holy Sepulchre was destroyed in a fire in 1808, and Godfrey's tomb was lost. The epitaph engraved on his tomb had identified him as "renowned Godfrey of Bouillon, who won all this land for the Christian faith."

The previous summer, as Sarah and I had ridden through a small village in Bulgaria, an old woman dressed in black had hobbled from a doorway into the street. She had pressed three small coins into my hand. "Place these by Christ's grave," she asked.

And so, many months later, I stooped to enter the small chapel of the Holy Sepulchre and dropped the coins into the offertory box. Sarah's and my journey was done at last.

AS DUKE GODFREY lay dying in Jerusalem, so the story goes, he summoned one of his knights and gave him a small casket. The duke instructed him to take it back to Château Bouillon in Belgium and there to open it.

The knight did as he was asked. Standing on the castle ramparts, he opened the casket and found a collection of seeds inside. The wind blew them away, and they fell into the castle courtyard below, lodging among the cracks between the great stones.

Every June the seeds bloom as small wild pinks, kindred flowers to the pale, delicate blossoms that flourish far away in Jerusalem itself. □

"Weeping for joy," the crusaders secured the shrine of the Holy Sepulchre (below), thought to be the tomb of Jesus Christ. Christendom hailed their triumph, even as Muslims plotted to reconquer the Holy Land. Although the Christian Kingdom of Jerusalem lasted a century, later crusades were ultimately unable to hold what the first had won.

A Bygone Century Comes to Light

By ROBERT M. POOLE ASSISTANT EDITOR

THE MYSTERY came to an end as Benjamin P. Field V lifted the saw and opened the box that his family had kept since 1889. Sealed a century ago by his great-great-grandfather in Babylon, New York, the box commemorated the centennial of George Washington's Inauguration Day on April 30, 1789.

"This celebration," wrote Ben Field II, "was the grandest event of the kind which has ever taken place in this country . . . . And all consider it well worthy to be remembered."

To protect that remembrance, Field packed a collection of memorabilia in a metal box, encased it in wood, sheathed that with another layer of metal, and left the package for his descendants to open this year. Even before the box was opened, X-ray scans commissioned by NATIONAL GEOGRAPHIC established the nature of the collection and even identified one of the 19th-century medals sealed inside.*

There were a few surprises. The box yielded not only newspapers, magazines, and programs but also family photographs, hymn books, and a journal. Seeing one of Ben II's notes, Ben V's mother, Nancy, recognized the bold, looping script and touched her son's arm: "Ben," she said, "he had the same writing as you."

* See "U. S. History in a Box," in the May 1989 GEOGRAPHIC.

TO UNCOVER A FAMILY LEGACY, Benjamin P. Field V cuts into a box of mementos packed by a 19th-century ancestor. Looking on are former Chief Justice Warren E. Burger, Mr. and Mrs. Benjamin P. Field IV, and machinist Lawrence B. Maurer.

COTTON COULSON (LEFT); JOSEPH D. LAVENBURG AND JON SCHNEEBERGER, BOTH NATIONAL GEOGRAPHIC STAFF

ONE OF TWO 19TH-
CENTURY HYMNALS IN THE BOX
RECALLS BEN FIELD II'S ROLE AS BASS SINGER
AND LEADER OF A CHURCH CHOIR.

A HATCHET MEDAL, FASHIONED
FOR THE 1889 CENTENNIAL,
IS ONE OF MORE THAN A
DOZEN MEDALLIONS THAT
BEN FIELD II COLLECTED FOR
HIS DESCENDANTS. "I WENT
TO GREAT PAINS TO SECURE
THESE CENTENNIAL MEDALS,"
HE WROTE. "I HOPE THEY
ARE APPRECIATED."

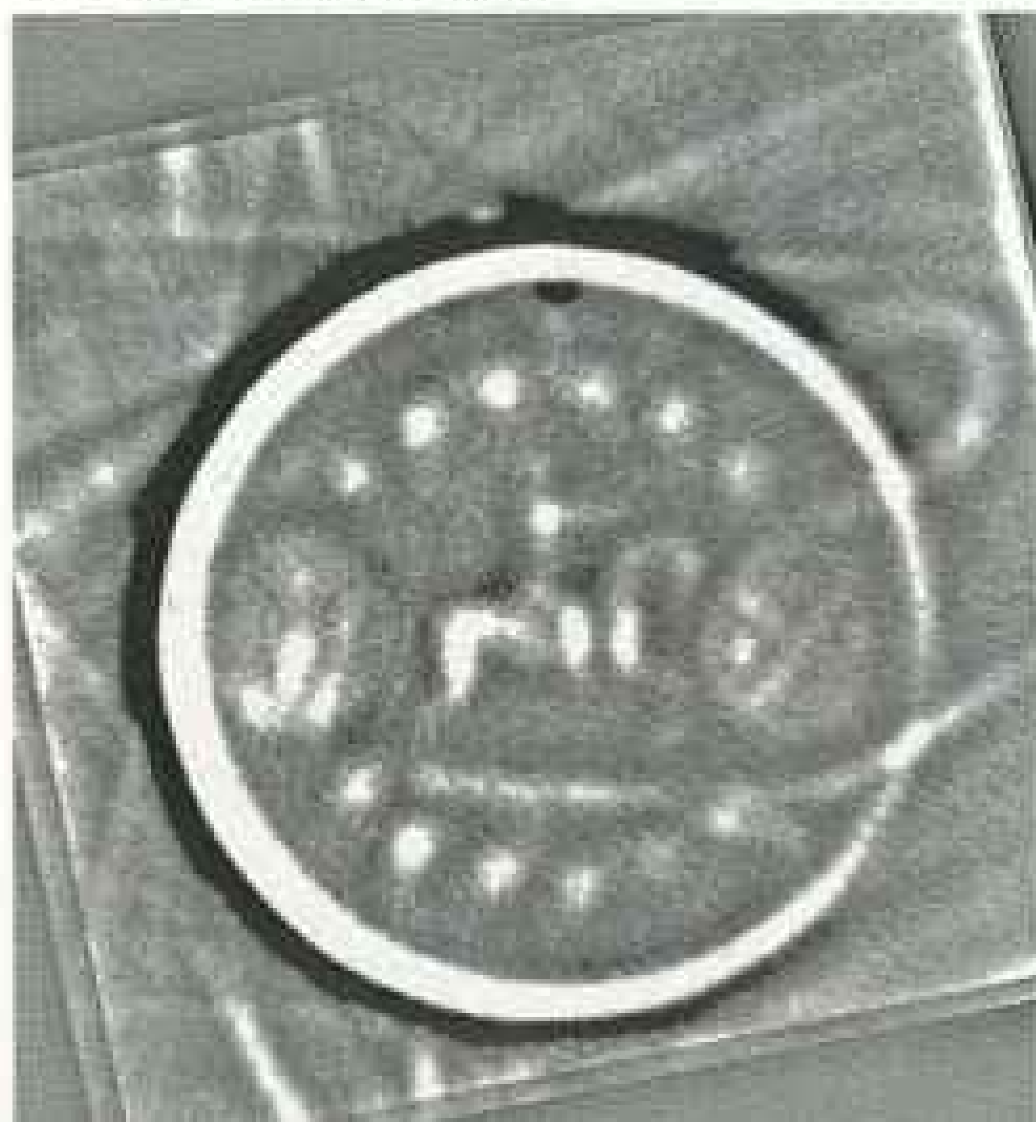
STEVE ADAMS

IMAGE FROM THE ANALYTIC SCIENCES CORPORATION; DATA FROM NASA,
MARSHALL SPACE FLIGHT CENTER

FOR A PREVIEW OF THE BOX,
ENHANCED X-RAY SCANS
REVEALED GHOSTLY LETTERING
THROUGH TWO LAYERS OF
METAL AND AN INCH OF WOOD:
"SLETTINER LAMBERT & CO.,"
THE LOGO SEEMED TO READ
(RIGHT). IN THE LIGHT OF DAY
(ABOVE), THE WORDING ON A
CALENDAR ACTUALLY READS
"STETTINER, LAMBERT & CO."

SOUVENIRS FROM 1889
(ABOVE) DEPICT NEW
YORK'S FEDERAL HALL,
SITE OF THE FIRST
INAUGURAL, AND THE
BROOKLYN BRIDGE,
HAILED AS THE EIGHTH
WONDER OF THE WORLD
UPON ITS COMPLETION
IN 1883.

ANOTHER ENHANCEMENT (BELOW) SHOWED A HORSEMAN WITH ARM
EXTENDED SURROUNDED BY WHAT APPEARED TO BE STARS. INSTEAD
THEY TURNED OUT TO BE LEAVES ON A MEDAL ISSUED FOR NEW
YORK'S 1889 CEREMONY (FACING PAGE). JUST BEHIND THE HORSE'S
TAIL, THE NEW YORK STATE SEAL APPEARS; IN FRONT, THE CITY SHIELD.
THE ANALYTIC SCIENCES CORPORATION



NEWLY SWORN IN as the first President, George Washington (above) bows to a crowd at Federal Hall in 1789. A century later Washington appeared on a centennial medal with then President Benjamin Harrison (below). Harrison's visit to New York City and the celebration of 1889 inspired the Field family collection. For bicentennial festivities this year, actor William Sommerfield of Philadelphia took Washington's part. Accompanied by an entourage in period costume, he retraced parts of the President's eight-day journey from Mount Vernon to New York, finishing with a reenactment of the oath of office at Federal Hall (right) and a parade (above right). □

CULVER PICTURES, INC. (TOP LEFT); IRA BLOCK (TOP RIGHT AND ABOVE)

ALL MEDALS AND HYMNAL BY JOSEPH D. LAVENBURG

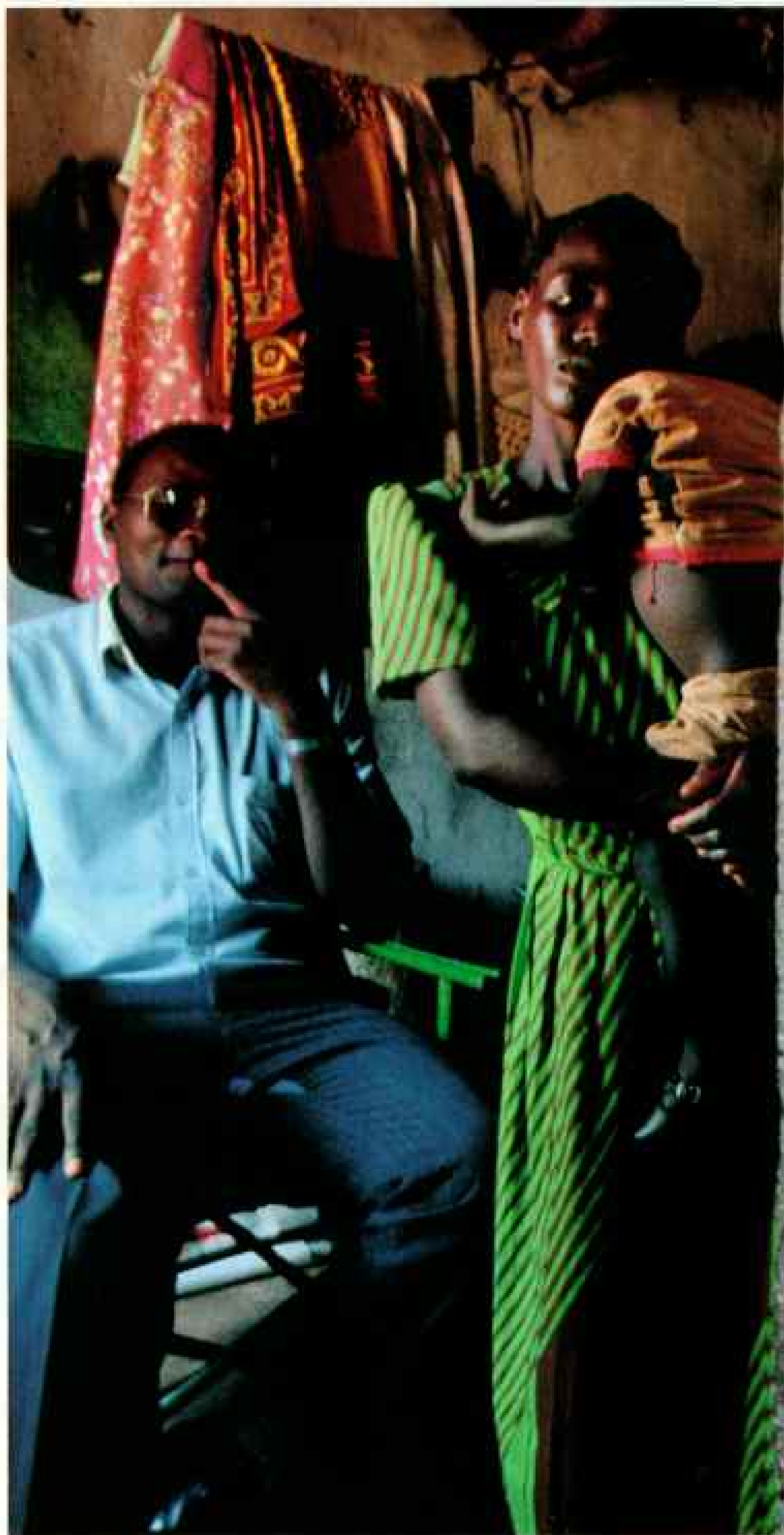
SMARTLY TURNED OUT in straw boaters, students observe the seventh anniversary of Kamuzu Academy in the African nation of Malawi. The prestigious high school was built near the birthplace of President Hastings Kamuzu Banda, sole leader of this former British protectorate since it gained independence in 1964. Educated in the U. S. and Great Britain, Dr. Banda has steered an unusual course by establishing diplomatic relations with white-ruled South Africa. Long self-sufficient in food, Malawi has been burdened by multitudes of refugees fleeing civil strife in neighboring Mozambique.

MALAWI: FACES OF A QUIET LAND

By PAUL THEROUX

Photographs by

ELI REED MAGNUM



A SILENT TOUCH to the lips signals shyness and respect among Malawians. In the capital city of Lilongwe, hotel doorman Marton Kacheche and his family sleep on mats in this one-room concrete house that has neither electricity nor indoor cooking facilities.

Kacheche's small salary barely covers the cost of rent, clothing, school fees, four buckets of water a day, and cornmeal for porridge. At age 41, he is only six years shy of the average life expectancy in Malawi, among the world's poorest nations.

WHEN the Life President of Malawi, Dr. Hastings Kamuzu Banda, enters Kamuzu Stadium (on Kamuzu Highway) under the huge sign "Long Live Kamuzu," he does so like a conquering hero. In fact one of his titles—and the name by which he is known in all the villages—is Ngwazi, Conqueror. His grand entrance is always a procession of one, and then he is mobbed by a thousand women dancers, dressed alike in Kamuzu-print cloth, who bear him forward along his lap of honor, while 60,000 Malawians in the stands look on in respectful silence.

It is as though he has come from the last century in his formal black suit with a waistcoat and a watch chain, a homburg hat, and—the one African accessory—a swirling fly whisk, which he flourishes like a whip. His style has not changed since Malawi's independence 25 years ago. He is 83 years old, and one of the longest-serving heads of state in the world.

His beliefs too are as old-fashioned and uncompromising as his clothes. He is puritanical in matters of national dress—he sent out a decree that all hemlines in Malawi must come below the knees and that long hair on men is an aberration. A staunch Presbyterian, he is an elder of the Church of Scotland. Although the dates are hazy, the events in Banda's life are unusual, and in Malawi they have acquired an epic quality—how at the age of 13 he walked a thousand miles to South Africa for an education (working his way south as a menial in a hospital and a laborer and interpreter in a mine). Banda used the money he had saved to buy a ticket on a freighter to the United States, where he earned the degree of doctor of medicine from Meharry Medical College in Nashville, Tennessee. But that was not the end of his medical studies. He crossed the Atlantic to Scotland and enrolled at Edinburgh University, and with his British qualification he practiced medicine—a family doctor greatly esteemed by his patients—first in the north of England and in the 1940s in London.

WEARING THE IMAGE of their leader, women dance around Banda during a Mother's Day celebration. A ceremonial fly whisk proclaims the absolute authority of the diminutive octogenarian.

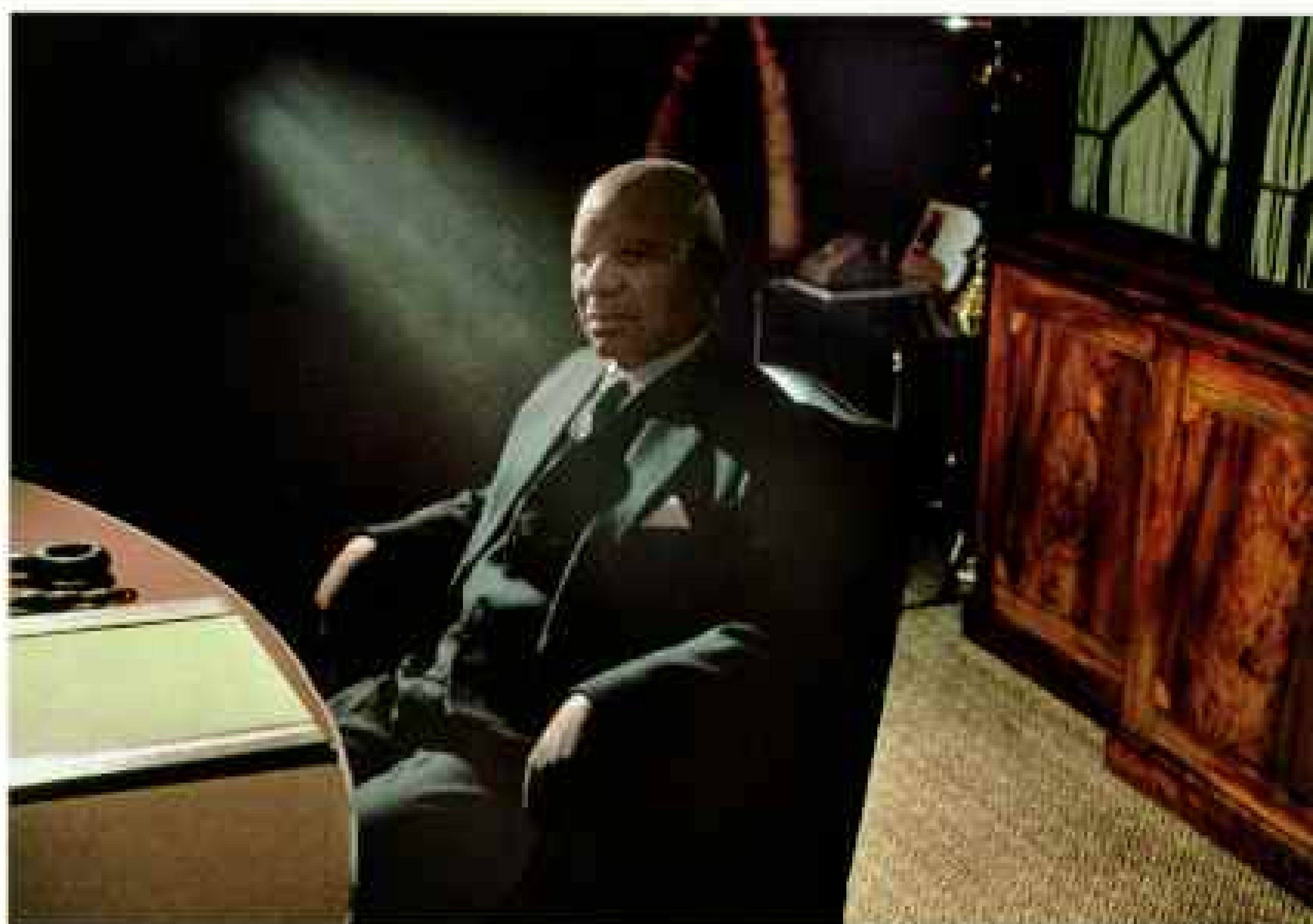
He is also a classicist. "No man is truly educated who has not studied the ancient Greeks and Romans," he has said. When he discovered that no school in Malawi was capable of teaching Latin and Greek, he founded Kamuzu Academy, known as "the Eton of Africa," where such subjects are required. He is described as "Founder and Proprietor" of the academy. Along with Ngwazi and Life President, another appropriate title for this tenacious autocrat would be "Founder and Proprietor of Malawi."

PAUL THEROUX, an American novelist and travel writer based in London, has written about rail journeys across China and the Indian subcontinent for the GEOGRAPHIC. This is prize-winning photographer ELI REED's debut in the magazine.

I first set eyes on Dr. Banda in January 1964, when Malawi was still Nyasaland and I was a 22-year-old Peace Corps teacher at a little school outside Limbe. He made a speech, standing on a little wooden stage that had been erected on the floor of a valley, and I listened with the crowd of Africans on the hillside above him. He was dressed like a mortician. I was surprised by his formality, his political dogmatism (his has always been the let's-do-it-my-way philosophy of the doctor who knows best), and the terror he inspired in the cabinet ministers who attended him.

A faulty microphone made Dr. Banda incandescent with rage, but what was most memorable was that he gave his speech in English—he had lived away from his country for so long that perhaps his mother tongue was rusty. A translator stood next to him and shrieked in Chichewa each time Banda paused. He was an autocrat of a kind I had only read about—no one was allowed to question or oppose him. When he was headed somewhere in his Rolls-Royce, the police cleared the roads of traffic and pedestrians: Make way for the Conqueror. In those early days the party newspapers always called him the "Messiah."

And indeed he struck me as being more a religious figure than a mere political leader. He required that you believe in him, and if you didn't, he seemed domineering and pompous, something of a joke. Certainly he had a vision of what he wanted Malawi to become, but to me such a vision seemed unattainable without another revolution—this was, after all, the 1960s. I left Malawi in October 1965, feeling that Dr. Banda's days were numbered, that he would pass into obsolescence and be replaced by someone younger.



PRESIDENT FOR LIFE, Banda works at his desk at Sanjika Palace in Blantyre. While pursuing university studies in the U. S. in the 1930s, he pledged to return to Malawi, citing his "fanatical sense of duty to my people."

It didn't happen. And when I returned to Malawi 23 years later, I realized that Dr. Banda was still the same but that I had changed, and so, in some ways, had Malawi. I saw how his paternalism was based less on personal vanity than on a constructive use of power and was offered in a spirit of public service. His hard work and close contact with Malawians had been an inspiration. His political pragmatism and sound economic management had produced a balanced budget.

In my youth I had misread the mood of the Malawians. It had taken me all that time to see that they are essentially conservative and quiet-minded and somewhat puritanical. The last thing they want is radical change.

WHEN I WAS TOLD in 1964 that I had been chosen to go to this soon-to-be-independent British protectorate, I had to go to an atlas to find out where it was. I discovered it to be a small, narrow country next to finger-shaped Lake Nyasa (now Lake Malawi) in southeastern Africa. It had only one paved road, a handful of doctors, no university, and no industry. It was a textbook

example of an underdeveloped country, blighted (as Dr. Banda repeatedly said in his speeches) with "poverty, ignorance, and disease."

That was not hyperbole. Malawi had one of the lowest annual per capita incomes in the world ($30), one of the highest rates of infant mortality, very few schools, and just 33 university graduates out of four million people. Only five Malawians were medical doctors; one of those was Dr. Banda.

With a climate that could produce floods, droughts, and frost, and people afflicted with leprosy, hookworm, sleeping sickness, and malaria, Malawi ought to have seemed uninhabitable and hopeless. But it was not. Its people were among the happiest, friendliest, most patient and optimistic I had ever met.

Because of its poverty and its dependence on the outside world, Dr. Banda never involved Malawi in power politics—it was not one of the so-called frontline states that its neighbors would become. Far from it. Malawi's problems came first, and in the 1960s a repeated assertion in Banda's speeches was his saying "I would go to the devil himself to help my people." Some say he did just that. Malawi was the first African country to establish diplomatic relations with South Africa, and it became a recipient of South African economic aid—apparently without political strings attached.

Heading home at sundown, a couple walks a road lined with ripening corn, the country's chief staple. Spurred by Banda's directives, agriculture dominates the economy of this Pennsylvania-size nation (facing page).

For my two Peace Corps years I taught English in a school of about 200 students. The school was in the forest behind the large town of Limbe, and the students were nearly as old as I was. There were only a few secondary schools in existence at the time, and these students had made their way from every part of the country and represented all six major tribes of Malawi.

Although they lived in mud huts and shanties, with no running water, no electricity, and hardly a table or chair, their homework was always on time, and they came to school clean and eager, wearing the simple school uniform—gray shorts and a white shirt for the boys, a gray skirt and white blouse for the girls.

I thanked my lucky stars that I had been sent to Malawi, and I have always considered that period one of the most formative of my life.

Afterward, in the way that you think of your childhood home, I thought of Malawi—its low, rounded hills and high plateaus, its thick forests and tall elephant grass, its roads of red mud, and the way the dry-season grass burning gave Malawi its name—the "land of fire." October, so hot it was called by British settlers the suicide month, was also the month of fires because of the slash-and-burn method of clearing land and preparing it for cultivation that is practiced throughout southern Africa.

The fires gave a smoky haze to the daylight hours, but at night they were particularly dramatic: Whole ranges of hills would be alight, and snakes of flame wriggled

sideways to the summits. I thought of my students—of the great distances they walked barefoot to school; of their mud huts, and the way they studied at night by the light of greasy candles or oil lamps. I thought of their laughter, and the day we planted a little *mbawa* tree in the school yard.

What had happened to it all—to the students, to the trees and roads, to the school itself? What of Dr. Banda? What happens, anyway, to developing countries years later? In Africa it often seemed as though more of them disintegrated than developed. I wished Malawi well, and I never stopped wondering about it. The wonder was itself a sort of hope.

IT SEEMED TO ME on my return that Malawians were better dressed but that the woods were more ragged—the hills showed the effects of serious deforestation. There were more people in evidence: They crowded the roads, they jammed the buses, they had plowed and planted most of the visible hillsides. Malawi was no longer a country of cyclists; it was a wilderness of pedestrians. The population had doubled. It now stood at more than eight million, not including some 650,000 refugees from the guerrilla war in Mozambique. Per capita income had increased to $160, but buying power was about the same, or less. More people wore shoes.

Some aspects of Malawi seemed eternal. The market traders still sold love potions and smoked fish and fried locusts, as well as elegant baskets and sturdy sandals made from rubber tires. Malawi's cash crops—peanuts, tea, coffee, sugarcane, and tobacco—were unchanged, though their value on the world market continued to fluctuate.

The aroma of woodsmoke still hung over the countryside, and except for the people in the few main towns, Malawians still lived in mud huts with grass roofs and worked as subsistence farmers. The tractor was still not common in Malawi, nor was the television set. Censorship was fairly brisk and forbade the propagandistic *China Reconstructs* as well as the erotic *Kama Sutra* and the novels of Émile Zola and Vladimir Nabokov. The telephone directory for the entire country was not much thicker than this copy of NATIONAL GEOGRAPHIC.

After arriving as the liberator of Malawi, Dr. Banda was still president. These days in his speeches he stresses the need for what he calls "the three essentials"—food, decent clothing, and a house with a roof that doesn't leak. It seems a modest proposal for a political program.

Great importance is given in Malawi to respectability—to looking decent and behaving politely. Four signs on the heights of Kamuzu Stadium are lettered Unity, Loyalty, Discipline, and Obedience. It is very much a churchgoing country, with practically every religion and sect represented, from Islam, Roman Catholicism, and Hinduism, to Methodism, the Assemblies of God, and Jimmy Swaggart Ministries. The Jehovah's Witnesses were banned by the government and persecuted by the Malawi Young Pioneers, a paramilitary unit of Dr. Banda's Malawi Congress Party, for their refusal to join the ruling party. There is only one party. Dr. Banda is

LIGHT CATCHES the face of a woman visiting her father-in-law, Brighton Chikanga, near Rumphi. Chikanga's visitors are usually sick or in distress, seeking relief from headaches, sores, broken arms—even broken marriages. Using herbs, animal skins, and incantations, he seeks to heal by driving spirits from his patients. Like other traditional healers, Chikanga practices near a hospital, where he sometimes gets aspirin for patients. Among conventional doctors, concern grows over the high incidence of AIDS.

president for life, and parliament, for all its English wigs and knee breeches, is little more than a rubber stamp for his policies and programs.

"They call me a dictator," Banda has said. "But if so, then I am a dictator by the people, for the people, and of the people." When I first heard that saying 23 years ago, I thought it was a joke. It has proved to be a political credo, and it seems to have worked. Even with all of Malawi's disadvantages of being landlocked, with little industry or raw materials and an essentially agricultural economy, the country has remained stable and orderly and good-tempered.

PRESIDENT BANDA's background as a physician has given him insights into the medical problems that face the country. Leprosy has been just about eliminated, and what malnutrition exists is chiefly due to misunderstanding—Malawi is able to feed itself. There is a large teaching hospital in Lilongwe called, unsurprisingly, Kamuzu Central Hospital—where on Banda's initiative a scheme for training paramedics was started.

MORNING SHAVE refreshes a fisherman at Lake Malawi. Part of the Great Rift Valley system, Africa's third largest lake generates tourism and supplies aquariums around the world with unique species of tropical fish.

One of these clinical officers, as they are called, is Ben Kadzola, who received his secondary school education from Peace Corps volunteers in the 1960s and went on to complete a four-year course at Kamuzu Central.

"I can pull teeth," he says, "I can do appendectomies, I can clean and stitch wounds, I can deliver babies and do many other medical jobs." He runs a health center in Limbe, where venereal diseases are a problem: "Fifty cases a day—and there are five other health centers in town."

AIDS has been recognized as a serious problem in Malawi and is currently being studied by the World Health Organization (WHO), which recently tested a 20 percent sample of blood transfusions from high-risk patients and discovered one in five to be infected with the HIV virus. In February 1988 South Africa deported a thousand black migrant workers who were carrying the AIDS virus: The majority of these men were Malawians. At that time Malawi had not yet admitted the problem. Now there are AIDS posters in most public places, saying, "Have a Safe Journey—Don't Come Back with AIDS" and "Despite the Pleasure AIDS is a Killer."

I asked Kadzola about AIDS. He told me he got two or three suspected AIDS cases a month, but that he did not treat them—he referred them to the main Queen Elizabeth Hospital. The symptoms he looked for were similar in some ways to those associated with tuberculosis—sudden weight loss, continuous fever, general malaise, and enlarged lymph glands, but without the chest pains and the cough.

Ben Kadzola was typical of many former students of the Peace Corps I met on my return visit. He considered that he'd had a good education, he was serious about his

job, he spoke English well, and he remembered the full name of every American who had taught him. He did not regard his Peace Corps teachers as an aspect of American foreign policy—they were people who came to Malawi to work, to get the Malawi school system under way, and to prepare the students for the crucial examinations. Kadzola was typical in another way: He had a very large family—nine children—and, as he remarked to me, his wife is "still of childbearing age."

Population growth is one of Malawi's most serious problems, but the pride in large families has kept the birthrate at more than 3 percent a year. A statistic that no one can entirely explain is Malawi's infant-mortality rate, which is 150 per 1,000 births—compared with 77 per 1,000 for Zimbabwe and 75 per 1,000 for blacks in South Africa.

So far only modest efforts have been made to convince Malawians that they might be more prosperous with fewer children.

"We do have a high birthrate in Malawi," said U. S.-trained Hetherwick Ntaba, chief medical officer in the Ministry of Health. "We would like to reduce it by spacing births or by limiting them."

It was Dr. Ntaba who told me of the victory over leprosy, but he said that both tuberculosis and malaria continue to be serious threats. Screening for tuberculosis is being carried out, and malaria is being studied systematically by a multinational team of experts.

"One of the great things about this country," says U. S. Ambassador George Trail III, "is that people don't deny their problems, they don't hide them. They face them and try to devise solutions."

YOUNG SALESMEN: Danger Charula and his companions spend a Saturday near the northern village of Bondela hawking roasted termites, a protein-rich food that supplements the starch-heavy diets of upland peoples.

After many years as a diplomat in Africa, Ambassador Trail says that his experience in Malawi is the most satisfying of his career: "Malawians are grateful for the aid they get [some 25 million dollars from the U. S. annually]. They don't waste it, they put it to good use, and that's why it keeps coming."

Aid has never been more necessary than now. The guerrilla war in Mozambique has closed Malawi's traditional trade route to the sea, quadrupling shipping costs. And refugees from the war are streaming in. Another country might have been swamped and turned xenophobic or antagonistic. Not Malawi. The refugees have been housed in numbered huts at resettlement centers or have been integrated into existing villages. A census is taken regularly, and refugees receive food and medical attention. And for this orderliness and hospitality Malawi has received substantial grants from the United Nations and aid-giving countries.

On the main road just south of Lilongwe the traveler is in the unusual position of being on the border between Malawi and Mozambique—all the land to the west of

the road is a foreign country. It is on this road, near the town of Ncheu, that one of the large settlement areas is situated—hill after hill of newly daubed mud huts.

"I will go home when it is safe to do so," one Mozambican said to me. He was holding his small daughter. He said his wife and two other children had been killed by the antigovernment guerrillas, allegedly supported by South Africa.

He did not deny that there were many refugees who still had vegetable gardens across the border and that they entered Mozambique to tend them, returning to Malawi to receive the flour and beans that are stacked in bags nearby—gifts of the United States and West Germany.

The refugee settlement near Ncheu did not have the temporary look I expected. It seemed like a poor, but not deprived, village. Several refugees complained that they were being confined there—that Malawi policemen rounded them up when they tried to leave to seek work.

Officer Patrick Mzungu (in Chichewa his name means "white man") of the Malawi police told me that there was a ten o'clock curfew in most of Malawi's towns, though it was not strictly enforced. As for the refugees, Mzungu said, "If we didn't keep them in the camps, these people would travel throughout the country, taking jobs and staying forever."

ALONE ON THE WATCH, a youngster wards off the chill of dusk before heading home with his family's cattle. For most Malawians, childhood is the onset of a life of work, providing little chance to attend school.

Walking through the Ncheu area, I marveled at the organization that ensured that these thousands of refugees were fed, clothed, housed, and even taught. The food distribution was less impressive to me than the sight of about 70 youngsters crouched inside a large metal-roofed hut one sweltering day, all writing carefully on scraps of paper. It was an arithmetic lesson, but the class was as attentive and reverential as at a church service.

"The refugees have been a blessing in disguise," an old student of mine, Wyse Mambo, told me. "Malawi was brought to the attention of the world and was seen as having a helpful and responsible attitude."

MALAWI was my first experience of the world outside America—but nothing in Malawi was related to home. It was not just the tea planters and the tobacco farmers, living on remote estates, or the mostly white clubs with their cricket pitches and billiard rooms and afternoon tea.

Most of all it was the Africans. I had never seen people with so few possessions and such high hopes. My classes were made up of skinny barefoot children who wanted to be doctors or lawyers. They had impressive audacity and ambition—they seemed to come from nowhere, like waifs through the mist on cold Malawi mornings, and they were claiming their place in the world.

The homework in their copybooks always smelled of woodsmoke and the midnight oil of the lamps in their huts. They had beautiful handwriting—it was one of the legacies of the mission school system. They remained good-humored and attentive all day—it was very rare to have discipline problems. Their English was fine, and it improved and became Americanized in the two years that I taught them. They were studious and hopeful. The very nature of Dr. Banda's rule meant that they did not harbor any political ambitions, and, because of that, teaching them was a joy. It was a country in which people were afflicted by tropical diseases and had a life expectancy of 38 years. I wanted my students to live long and healthy lives, and for them to be happy.

I had first met them in the rainy season of 1964, when they were barefoot children in their mid-teens. Boys and girls alike tended to shave their heads, for the simplicity of baldness and because of lice. What a pleasure it was for me 23 years later to see that they were still alive, still well and happy, and that they had families and jobs.

Little spindly legged William Bvumbwe was now a heavyset man of 40, a purchasing officer with a Blantyre oil company and the father of three. Wyse Mambo worked for Portland Cement. Pretty Chrissie Nzumwa was a community-development officer with four children, Norah Malinki had become a teacher, Golden Makata made orthopedic shoes, solemn Matthias Kaunjika worked in the Department of Information, and math whiz Frank Kunje was in the Department of Income Tax. It was all good news. None of them had struck it rich, but they were all doing well. Yet I wanted to hear it from them.

SWEET OFFERING of corn passes from child to mother as they wait to see a traditional healer. In a nation proud of large families, disease and malnutrition take the lives of 15 of every 100 children during infancy.

William Bvumbwe spoke for them: "We are better off than at the time of independence. Malawi is unified and peaceful."

I was gladdened but not surprised to learn that one of my former teaching colleagues, Sam Kakhobwe, had risen to the top, and after senior posts in the treasury and as ambassador to Zambia, Ethiopia, and West Germany he had become the highest civil servant in the country, secretary to the president and the cabinet.

"When I was 12 years old," Sam said in his Blantyre office, "I used to stand outside the tennis courts at the Blantyre Sports Club over there"—he pointed out of the window. "I used to throw the balls back when they went over the fence, and I always hoped at the end of the day that I would find one to play with at home. Some days I watched rugby at Limbe, looking through the fence."

He could have spoken with bitterness, because these were white clubs, white teams in a British protectorate controlled and dominated by a handful of white farmers and bureaucrats; instead, he was smiling out the window, with a fondness for the innocence of the happy memory.

MAKING A DISPLAY of affection rarely seen among couples in public, Ferig Deary embraces her husband, Pambuka, in a village near Blantyre. Behind them is stored a year's supply of corn. Her weary face speaks of the role of women, who do most of the field labor in Malawi. Although the nation has begun small industrialization efforts, nine in every ten persons remain subsistence farmers, often using slash-and-burn methods. The average per capita income stands at just $160 a year.

DRIVING NORTH some days later, I could not help noticing again how bereft of trees Malawi was: empty hills, plowed valleys and plains. Some fruit trees remained, as did the groves of hardwoods that were always left around burying grounds.

What happened to the trees? They are cut down for two reasons: for fuel and to make room for more planting of corn (cornmeal flour is the staple ingredient in the Malawi diet). The effect is dramatic—it seems as though the entire southern region of the country, where more than half the people live, has been deforested. Where once there were woods and forests, there are cornfields. Roads that used to have rows of trees running at the margins have nothing but dusty shoulders, and even on the enormous slopes of Mount Mulanje, a great plateau 9,850 feet high, there are sluices and rocky ravines and eroded gullies instead of its former forests.

James Phiri, a farmer, pointed to a hill outside Blantyre on which there was still a slope of trees remaining, and he said, "If the Forestry Department hadn't stopped them, the people would have taken those too."

CRADLING HIS DAUGHTER, a man recounts the death of his wife, five-year-old child, and mother-in-law, shot while fleeing Mozambique. Refugees have added some 650,000 to Malawi's population of eight million.

There is no oil in Malawi, and there is so little coal (a few seams in the northern region) that it is seldom seen in the markets. The only way a Malawian can cook his food is over a wood fire.

There is a program to plant trees, and laws have been passed to protect the native trees of Malawi, the hardwoods, cedars, and acacias. A person without a special permit can be fined for felling trees or for possessing logs or charcoal from freshly cut trees.

One of the more ambitious schemes prior to independence was the planting by the Forestry Department of a vast tract of trees in the Vipya Plateau in the north, so that the country would be a rich source of pulpwood. But after the trees matured and were ready to be harvested, such an enormous capital outlay for papermaking was required that the scheme was put on hold by the government.

Today in the Vipya Plateau, in what is now called Vipya Plantations, an ingenious use has been devised for the trees that are felled as the forest is regularly thinned out and pruned: They are made into charcoal. The Malawi Charcoal Project manages six sites across the region.

"A single site produces a thousand tons of charcoal a year," a staff member told me, as the smoke swirled around us from the beehive-shaped charcoal ovens. It is an old grubby business, the making of charcoal, but the result is a surprisingly useful slow-burning fuel, needed by tobacco growers for curing tobacco as well as by the average Malawian who merely wants to cook food or keep warm; it can be very cold in Malawi.

The staff said that even though the project now turns out 6,000 tons of charcoal a

year, they cannot keep up with demand. The intention is to increase production to 15,000 tons a year by next year. It is sold with only the narrowest margin of profit, 80 kwacha ($30) a ton.

The workers were dressed in rags, plodding back and forth with logs or charcoal. I was told they earned the basic wage for manual workers in Malawi—18 kwacha a month, with bonuses that brought it to 30 kwacha.

Hotel workers I spoke with earned about 45 kwacha, and this was near the average monthly salary for people in the service industries. My former students earned a bit more than that, but even so, for a family of four, which is small by Malawian standards, 60 kwacha is barely enough to make ends meet.

ON THIS TRIP to the north I traveled through the Lifupa Game Camp in Kasungu National Park, past herds of elephant and zebra and bushbuck and fretful little families of warthogs. (Malawi is a leader in wildlife conservation.) Some 30 miles east of the game camp is Mtunthama, the birthplace of Kamuzu Banda and now the site of what is perhaps Africa's best high school, Kamuzu Academy.

A PLACE FOR REFLECTION: Kamuzu Dam, built in 1968, increased the water supply of Lilongwe, which replaced Zomba as the capital in 1975. Poor in fossil fuels, Malawi has begun tapping its enormous hydropower potential.

The academy looks like a new English boarding school or a Christian seminary—the chapel is prominent on the campus. At Dr. Banda's suggestion, Romanesque arches have been incorporated into the redbrick buildings. And the founder and proprietor determined how the dining hall should be designed, that there would be two students in every bedroom, that the school should have an atmosphere of cloistered calm, and that it should aim at being self-sufficient in food—with gardens and workshops and even tailor shops for the making of school uniforms. They make everything except the straw boaters the students wear on Founder's Day. The cornerstone was laid in 1978, and the first students were admitted in 1981.

The selection process for the academy is unashamedly elitist, with two boys and one girl chosen on the basis of a competitive examination each year from each of Malawi's 28 districts. The student body is not large at 360, and with a teaching staff of 37 the students are well looked after. They also have the largest swimming pool in the country, a wonderful library, sports facilities, and an abundance of goodwill. The staff quarters are like a little English suburb of pretty villas, with a staff club that has its own pool and grounds.

"This is the wrong place for the pure scientist," Dr. Banda has said. "The emphasis or bias here is on classical education, not scientific." Still, exam marks in the sciences are high, and 115 Kamuzu Academy graduates have gone abroad to study medicine in Zimbabwe, forestry in Wales, and engineering in London. The success

of this unusual school is undeniable—it has produced demonstrable results in the form of intelligent and highly motivated graduates.

In a sense the school accurately reflects Malawi itself, for it is worthy, puritanical, and highly subsidized. No one I spoke to at Kamuzu Academy could say exactly how much it cost to run, but everyone agreed that the figure was very high—teachers' salaries alone account for more than half a million dollars a year. This amount would be greatly reduced if the teachers were African and earned the usual Malawi wage. But when this idea was proposed to Dr. Banda, he replied, "They [African teachers] are not ready yet."

In great contrast to Kamuzu Academy is Soche Hill Secondary School outside Limbe, where I spent my Peace Corps years. The school operates with only the barest facilities. There are now 500 students and about a score of teachers. I saw just a handful of books in the library, and much of the equipment in the carpentry and machine shop was lying idle because of a lack of spare parts. If Kamuzu Academy is Athenian in its outlook and curriculum, Soche Hill is Spartan. And yet each place charges nearly the same tuition fee—about 200 kwacha ($70) for boarders.

CARRYING HER STUDIES WITH EASE, Doreen Makeba heads for class at Kamuzu Academy. Modeled after England's public schools, the academy teaches Latin and Greek to an elite group of 360 students.

In spite of scarcities morale is high at Soche Hill, and since I was first there, they have added several new classrooms, the workshops, and a dining hall that doubles as an auditorium. The school is clearly hard-pressed for money, but I found it orderly and the students good-natured and conscientious.

The school bulletin board was a good indicator of the school's concerns—the dress code was clearly spelled out (no miniskirts, no bangles, no bell-bottom trousers, no hats), AIDS warnings were given ("Avoid Easy Partners"), and there were long lists of students who were involved in the school's clubs and activities, as well as the new verses of the school song praising Dr. Banda. Chorus:

> *We thank you very much, Ngwazi*
> *For building schools, and bases*
> *And for improving our lives,*
> *Because of your leadership.*

"We are now a self-help school," Miss Mwafulirwa, the home economics teacher, told me, indicating that very little financial assistance was available from the government. Headmaster Blair Khonje said the school had no problems that could not be overcome by hard work on the part of students, but I felt he was putting on a brave face. His stoicism was characteristically Malawian.

I was encouraged not so much by what had been built but by what had remained intact—the old classrooms had survived the harsh climate, the place was tidy, and flowering shrubs had been planted along the school paths. Such lovely bushes are free in Malawi, and the soil is still very fertile.

The students, no longer barefoot, are better fed and physically bigger than students in my day. Many more of them will go on to further studies, and their confidence in the future is heartening. Perhaps this confidence is a result of the country's apparent stability—Dr. Banda is the only leader they have ever known, and to them he must seem immortal and emblematic.

It is not possible to be in Malawi and not feel isolated, but it is this very isolation that has made the Malawian self-reliant and frugal. I found it oddly encouraging that Malawi had changed so little after all these years. How sad it would have been if I had found the wastefulness or fashion-conscious modernity that seems to afflict so much of the rest of Africa. And changelessness does not mean indifference or complacency—it may be a respect for tradition. I was glad to see that the little mbawa tree we had planted in 1964 at the school was now 30 feet high and still growing.

EYES THAT CANNOT SEE find the light of loving care at the Montfort school for blind and deaf children near Blantyre. As it shares its meager resources with others, Malawi still manages to help its own.

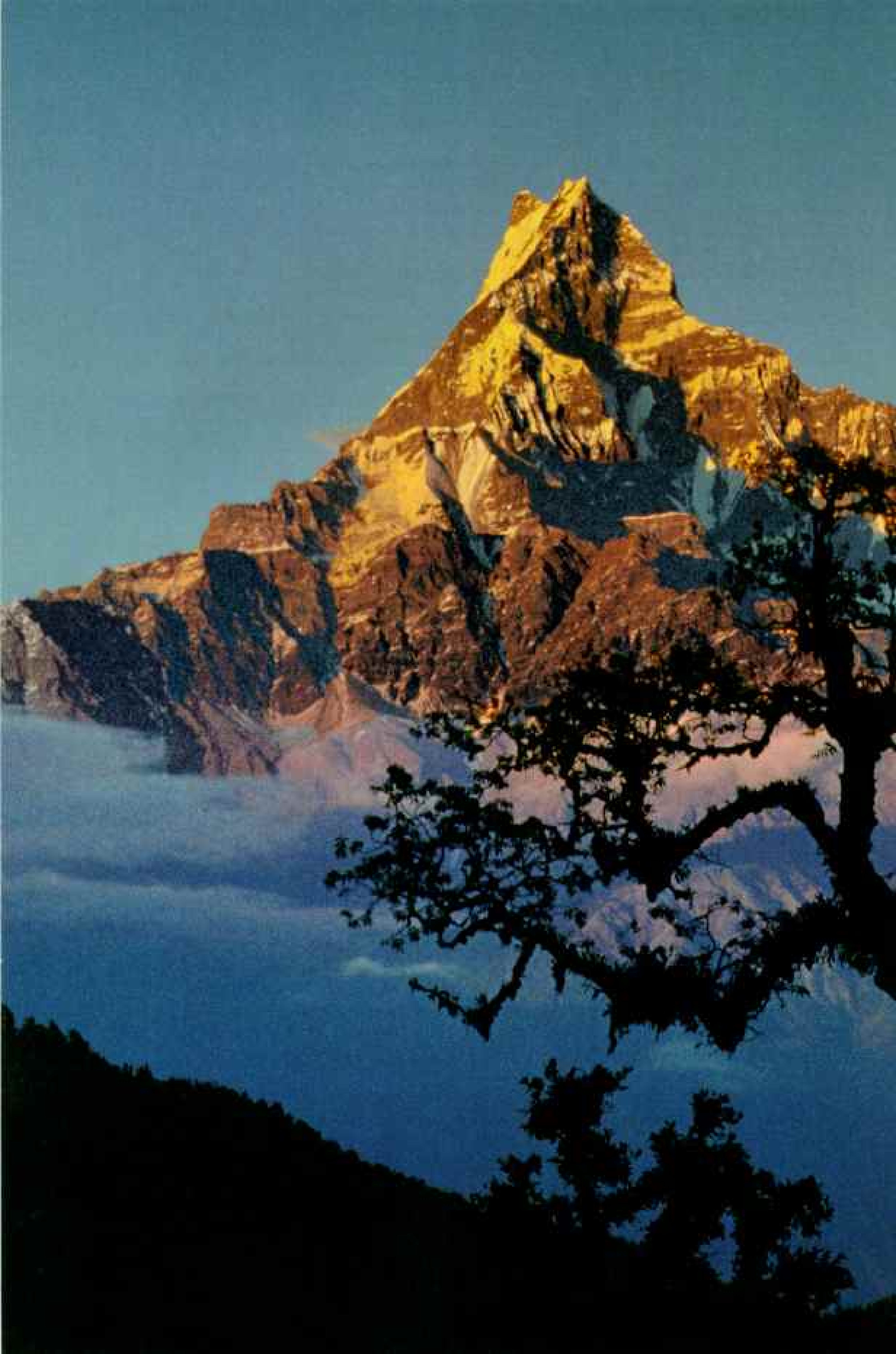
BEFORE I left Malawi, I climbed the Mulanje plateau. It is a bleak and remote place. I was surprised when a thin perspiring man came panting down the track carrying several seven-foot planks slung across his back. He told me that he had cut them by hand from a eucalyptus log, and now he was lugging them down the hill to his home some four miles away in order to make a good door for his hut. This exhausting job undertaken on a steep track in the heart of Africa seemed highly civilized and humane.

That man and others I met inspired a simple thought—one that has stayed with me. In my Peace Corps years I had regarded Malawians as people who lived a fragile existence: They were victims of floods and droughts, of bad harvests, of world inflation. Over more than two decades I thought about them, always in a vaguely anxious way.

I was surprised on my return to find them living roughly the same lives they had been living all those years ago. Yet the people I spoke with told me that their lives were better now, though it was still very hard trying to make ends meet. Malawi remains a subsistence economy, its people living hand to mouth. It is both a worry and a marvel to me that they are still there, still at it, existing very lightly on the earth.

"Go well, father," I said in my rusty Chichewa to the man with his load of planks on the Mulanje plateau.

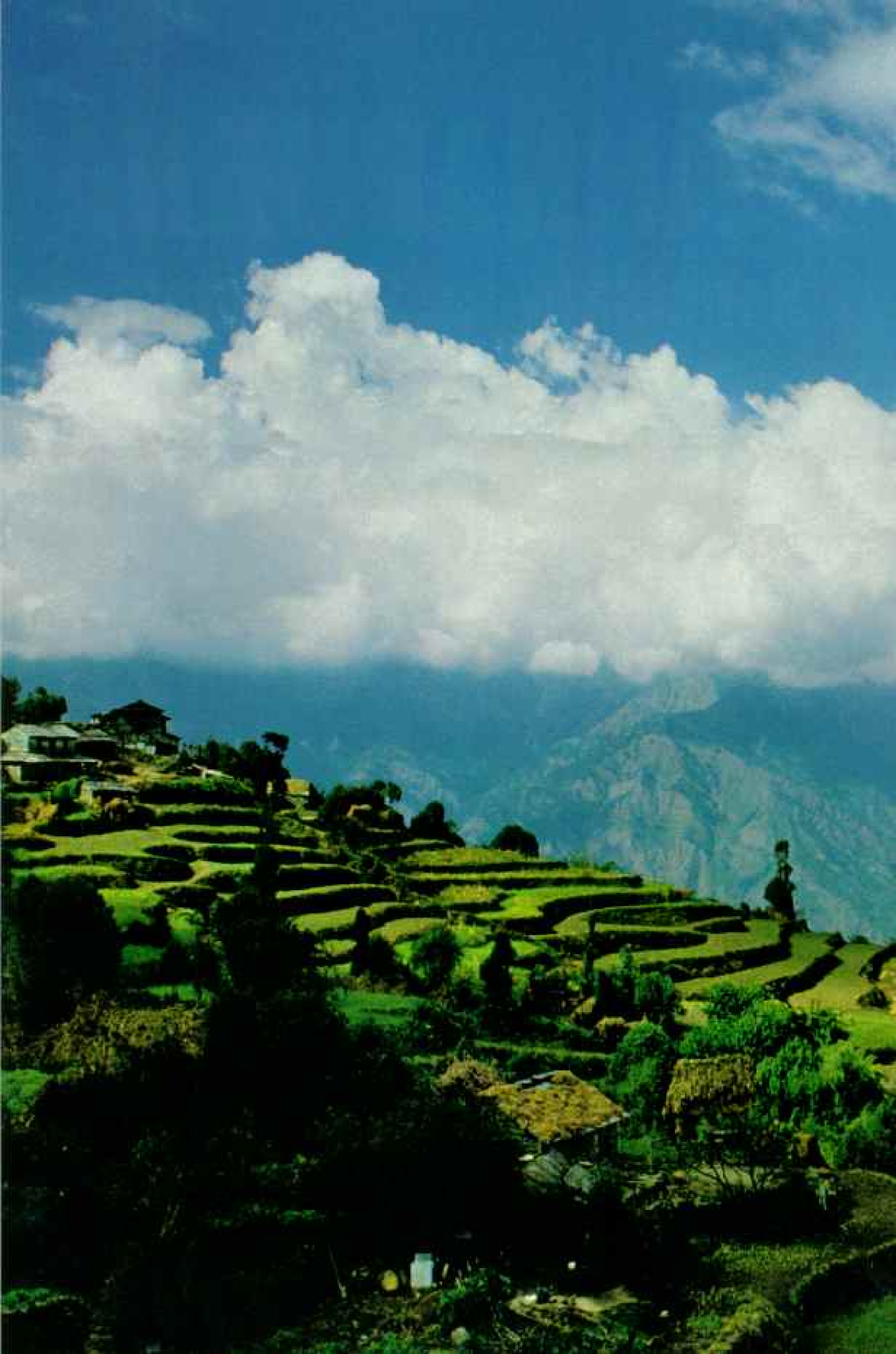
He replied, "Stay well, father." □



ANNAPURNA
Sanctuary for the Himalaya

ARTICLE AND PHOTOGRAPHS BY GALEN ROWELL

Sacred summit, off-limits to climbers, Machapuchare thrusts its mighty shoulders high above the lush valleys of an innovative nature preserve in Nepal.



Sculptured fields of millet and corn drape the high slopes above the Kali Gandaki valley, which forms the western boundary of the new conservation area. One of the deepest valleys in the world, the Kali Gandaki lies between Dhaulagiri, the world's seventh highest mountain (background, at right) and Annapurna I, the tenth highest.

NOVEMBER 11, 1987. It is 9:30 in the morning. I have been climbing since well before dawn, and now I am alone at 17,000 feet, on my way to the summit of a peak called Tharpu Chuli, or "tent peak," because of its angular shape. Around me in a vast arc stand the snowy crests of the majestic Annapurna Range. The day is cloudless, not a breath of wind.

The solitary splendor is dazzling—until I glance down at my feet. There, frozen into the ice cap of Tharpu Chuli, lies a miniature garbage dump: discarded candy wrappers, film cartons, plastic bags, wads of tissue, and half-empty food cans, all of it left by foreign climbing groups.

It is a familiar and sickening sight to old Himalaya hands—the growing pollution of a priceless heritage.

As I continue on to the summit, my grim mood is gradually lightened by thoughts of a recent development in Nepal that may help protect the Himalaya and serve as a model

for conservation efforts worldwide. It is an ambitious, thousand-square-mile experiment known as the Annapurna Conservation Area Project, or ACAP, based on a revolutionary idea that fees paid by trekkers in the ACAP go directly to local inhabitants to manage the preserve.

In the past the government used park funds for other purposes, and little money trickled down to the local level. Now, with ACAP, local residents not only share in the profits their lands are earning but also share

With its grandstand view of the snow-capped Annapurna Range to the north and the subtropical Pokhara Valley to the south, the meadow known as the Austrian Camp is a favorite stop for large groups hiking the 200-mile trail through the conservation area. A connecting trail leads to the Annapurna Sanctuary, which lies in the shadow of Machapuchare, at center, and Annapurna South, at left.

MINGMA NORBU SHERPA

"Cleanliness is healthiness" proclaims the banner as a group of children from Ghandruk show support for the Annapurna conservation project, which has brought a keen awareness of health and environmental issues to their region.

in protecting those lands. They are learning the dollars-and-cents value of conservation: the perils of cutting trees for firewood, the use of alternative energy sources, and the hazards of erosion.

AT THE TIME I climbed Tharpu Chuli, ACAP was only in its formative stage. Since then it has become a reality, thanks in large part to two dedicated conservationists—my friend Bruce Bunting, director of the Asia/Pacific program of the World Wildlife Fund, and Hemanta Raj Mishra, director of Nepal's King Mahendra Trust for Nature Conservation. In 1985 the two sat down with a map of Nepal in a hotel room in Kathmandu, the capital, and drew a circle around the Annapurna Range (right). This was to be the approximate boundary of the Annapurna park. Then they drew a smaller circle inside the first one. Within a year this 310-square-mile area was established as the core of the Annapurna project, including the villages of Ghandruk and Chomrong and the area called the Sanctuary.

The creation of the park came none too soon. Even on my first trek around the Annapurna Range in 1977 the destruction of its fragile beauty seemed as certain as the coming of the summer monsoon. Until that year much of the region had been closed to foreigners, and I was among the first trekkers allowed in. I had expected to find untouched wilderness and was surprised to discover that below the snow line this part of the Himalaya was far less wild than most U. S. mountain national parks. Every valley floor near a trail was not only inhabited but planted or grazed as well. Hillsides had been stripped of trees and terraced for crops. Struck by the obvious

GALEN ROWELL is a frequent contributor to the magazine. His new book, *The Art of Adventure*, will be published this fall.

Model for Conservation

RISING ABRUPTLY from verdant forests of rhododendron, bougainvillea, and bamboo, the Annapurna Range forms a magnificent arc of snow-mantled peaks, five bearing the name Annapurna. By tradition the Nepalese believe these mountains are the home of the gods.

For centuries both Buddhist and Hindu faithful have made the pilgrimage to the sacred shrines at Muktinath. Today pilgrims of a different stripe are flocking to this area for trekking adventures: a three-to-four-week hike along the circuit trail around the range or an 8,500-foot climb up the Modi Khola valley into the Annapurna Sanctuary.

Much more than a park, the thousand-square-mile Annapurna Conservation Area Project (ACAP)—established in September 1986—incorporates some of the latest thinking in environmental management. Recognizing that there can be no meaningful conservation without the active involvement of the local population, ACAP's founders vested villagers with control over the natural resources of the region. Nearly all its 40,000 inhabitants live within the intensive-use zone, where forest cover has been severely stripped in the last two decades. There the people are encouraged to use alternative energy sources and other conservation techniques to safeguard the environment for wildlife, for visitors, and, most important, for themselves.

threat to the region, I later wrote a book, *Many People Come, Looking, Looking,* outlining the dangers that trekking and modernization pose to Himalayan cultures.

Today the situation is potentially far worse. The native population of the Annapurna region is 40,000, and trekkers number a whopping 25,000 a year—more than in any other Himalayan region.

"There's a great deal at stake," declares World Wildlife's Bunting. "Not many parks in the world can match Annapurna for diversity. It has the 26,545-foot summit of Annapurna I, plus one of the world's deepest valleys, the Kali Gandaki. Jungles slope toward the plain of the Ganges to the south, and barren steppes merge into Tibet to the north."

At first many Annapurna villagers, farmers, and herders strongly opposed the idea of a national park. They had heard of whole villages being moved to make other Nepalese parks wild enough and of families that died of tropical diseases after forced relocation.

Moreover, few residents ever saw any tourist money. A local leader ridiculed trekkers: "They look at our mountains, eat our food, sit by our fires, but they don't see our problems. They just go home and show their friends the pretty pictures."

The King Mahendra Trust and World Wildlife Fund listened hard. They aimed not to create a typical national park—virgin lands, no residents—but to follow the lead of Prince Gyanendra Bir Bikram Shah, chairman of the trust, who declared: "If conservation is to have any meaning in the developing world, it must involve and benefit the local people."

The residents' negative reaction turned out to be a blessing. In 1986 the ACAP was officially established, with a dedicated Nepalese, Mingma Norbu Sherpa, as director. Today the park is operated by the local people, assisted by the King Mahendra Trust. It is financed by World Wildlife Fund and other private donors until entrance fees—set at 200 rupees (eight dollars) per visitor—can make the park and the inhabitants self-supporting.

ON A CRISP, clear November morning in 1987 I entered the Annapurna Sanctuary and sat on a rock to look at the most popular trekking area in Nepal. Here the Himalaya pause and step back to expose an oval amphitheater three miles

Trekker and tourist, Robert Cushman of Alpine Meadows, California, strolls the narrow streets of Bhulbhule, one of scores of villages whose inhabitants are learning to live with a flood of foreign intruders. While relations between the visitors and the visited are normally amicable, locals often complain of insensitivity to their traditions. In the Buddhist village of Pisang, the caretaker (far left) of the local monastery is upset to discover that a sacred Buddha figure is missing, soon after a group of European trekkers left the premises.

Astride a rushing stream near Bagarchap, an outdoor latrine (far left) has helped curb trailside waste but befouls the local water. More effective conservation efforts are the new self-composting privies sprouting along the trails.

At Ghandruk, ACAP employee Devi Prasad Gurung (below) paints signs to remind trekkers of their responsibilities.

wide. Rising directly from its walls are nine peaks over 21,000 feet high, each draped in a shattered cascade of glacial ice. Far below the eternal snows, meadows and streams roll across the undulating floor of the Sanctuary.

The trail was clean, but I suspected the worst just ahead. Smoke poured through the thatch roofs of several crude teahouses crammed with trekkers and porters. Barbara, my wife, and her brother, Robert Cushman, a first-time visitor to Asia, were not far behind me, and I wanted them to see the Sanctuary surrounded by beauty, not trash.

But incredibly, as we walked the last hundred feet into Machapuchare Base Camp, the entryway into the Sanctuary, we found the trail spotless. A sign proclaimed "Cleanup 1987." We later learned that two groups, one sponsored by the King Mahendra Trust and the ACAP, the other organized by the village of Ghandruk, had removed tons of garbage left by residents and foreign trekkers alike.

A decade ago only two teahouse-lodges existed beyond Chomrong, the highest village on the final stretch into the Sanctuary. Now I found 24 lodges, some even with electric lights. Increasing numbers of visitors carry light day packs and eat and sleep in the lodges for just a few dollars a day. We were part of the minority who hire Sherpa crews to carry our food and gear, cook meals, and set up camp. Each of our porters was paid about two dollars a day.

At Chomrong we met Katsuyuki Hayashi, a 43-year-old Japanese truck driver who is a legend in Nepal. The Nepalese know him as Bijuli Japani—the Japanese Electricity Man.

Nine years ago while trekking in Nepal, Hayashi encountered a woman on the verge of death from a severe respiratory condition. "I could not help her," Hayashi recalled sadly. "Afterward I wondered what I might have done, and it occurred to me that with

Squeezing maximum energy from her firewood, a lodge owner in Ghandruk (right) cooks on an ingenious hearth. Across town a worker installs a similar system (top left), which transports water heated at the hearth to a storage drum for use in bathing and cleaning. At ACAP headquarters a solar hot-water heater demonstrates another energy source that Annapurna residents are tapping.

An early October snow makes the going rough for porters of a trekking party as they approach Thorung La, a 17,769-foot pass that poses the most difficult challenge along the Annapurna trail.

electricity and the proper equipment we could have given her extra oxygen."

The next year Hayashi returned and installed a small wind-powered electric generator in the Annapurna region. But it was useless.

"Not enough wind," he told us with a sheepish grin. "So the next year I built a water-powered generator." He swept a hand toward the majestic peaks around us. "Plenty of running water in Nepal."

Hayashi's generators—initially supplied with his own money and later by donors—now power three lodges near the Sanctuary. But the King Mahendra Trust directed Hayashi to reroute an unsightly network of electric lines that spoiled what many regard as the world's most spectacular view.

Certainly that view is breathtaking from Chomrong. Here, where Himalayan life zones join abruptly, Machapuchare's icy spire (pages 390-91) rises out of subtropical jungle with bamboo, fern, rhododendron, and more than a hundred species of orchids.

According to Capt. Thaman Gurung, Chomrong's village chairman and owner of its biggest lodge, ACAP has brought a new spirit of cooperation among the villagers. "We now have nurseries to grow wood for fuel and a kerosene depot so that we can prohibit the use of firewood in and around the Sanctuary. ACAP is helping us train forest guards, repair and clean trails, build latrines, and use electricity, not wood, for cooking and lighting wherever possible.

"Last July," the captain continued, "ACAP's director, Mingma Norbu Sherpa, came here to help train lodge owners from the area. We learned about keeping customers healthy and happy—proper food preparation, sanitation, and the basic comforts. Happy people," he added, grinning, "spend more money."

"Are other villages as committed to the project?" I asked.

"Go to Ghandruk and see for yourself."

Ghandruk is one of the largest villages in the area. When Mingma Norbu Sherpa came to speak, 600 people turned out. They adopted rules similar to the ones in Chomrong and accepted ACAP's offer to contribute two rupees to every local rupee spent on community projects.

In this pleasant hill town it was all too easy to forget the wildness of the surrounding

On the beaten track to the Annapurna Sanctuary, the village of Chomrong has become the focus of intense efforts to rehabilitate the environment. Kerosene stoves, tree nurseries, and a prohibition on wood burning in and around the Sanctuary are key elements in the master plan—one that is working because the local people want it to work.

lands. As Barbara, Robert, and I set off on the final leg of our 25-day trek in T-shirts under a hot sun, I recalled crossing the 17,769-foot-high pass known as Thorung La 17 days earlier. An unseasonable storm had dumped five feet of snow on the area, killing two porters and turning back hundreds of unprepared trekkers. Now the danger of the heights was behind us as we pitched our last camp in a quiet forest clearing.

Suddenly a group of some 50 grim-looking villagers emerged from the forest, and for a moment we thought we might be robbed. But the leader explained their mission. The night before, he said, on this very hill, a woman had been killed by a leopard as she returned home. A few weeks earlier the leopard had snatched a child from its mother's arms and devoured it. Now the villagers were determined to find the leopard and kill it.

To me the situation was profoundly disturbing. How can we expect local people to conserve rare wild animals that attack and kill women and children? Later I told Mingma about the incident. He merely shook his head.

"I doubt that any law would have stopped them from going after that cat," he said.

I had to agree with Mingma's oft stated thesis that a Western-style national park system is not feasible in an undeveloped country like Nepal. Whether the decision to kill a man-eating animal is made by park authorities or by a village committee, the result is the same. But the villagers would be breaking the law, while the authorities would be upholding it.

The ACAP is a grand experiment in teaching local people to make their own decisions regarding their future. Often those decisions are difficult ones, balancing short-term benefits against long-term gains. The future of the ACAP depends on how the Nepalese people handle those decisions. Knowing them as I do, I'd say the project is in good hands. □

Samurai Aphids

SURVIVAL UNDER SIEGE

ARTICLE AND PHOTOGRAPHS BY
MARK W. MOFFETT

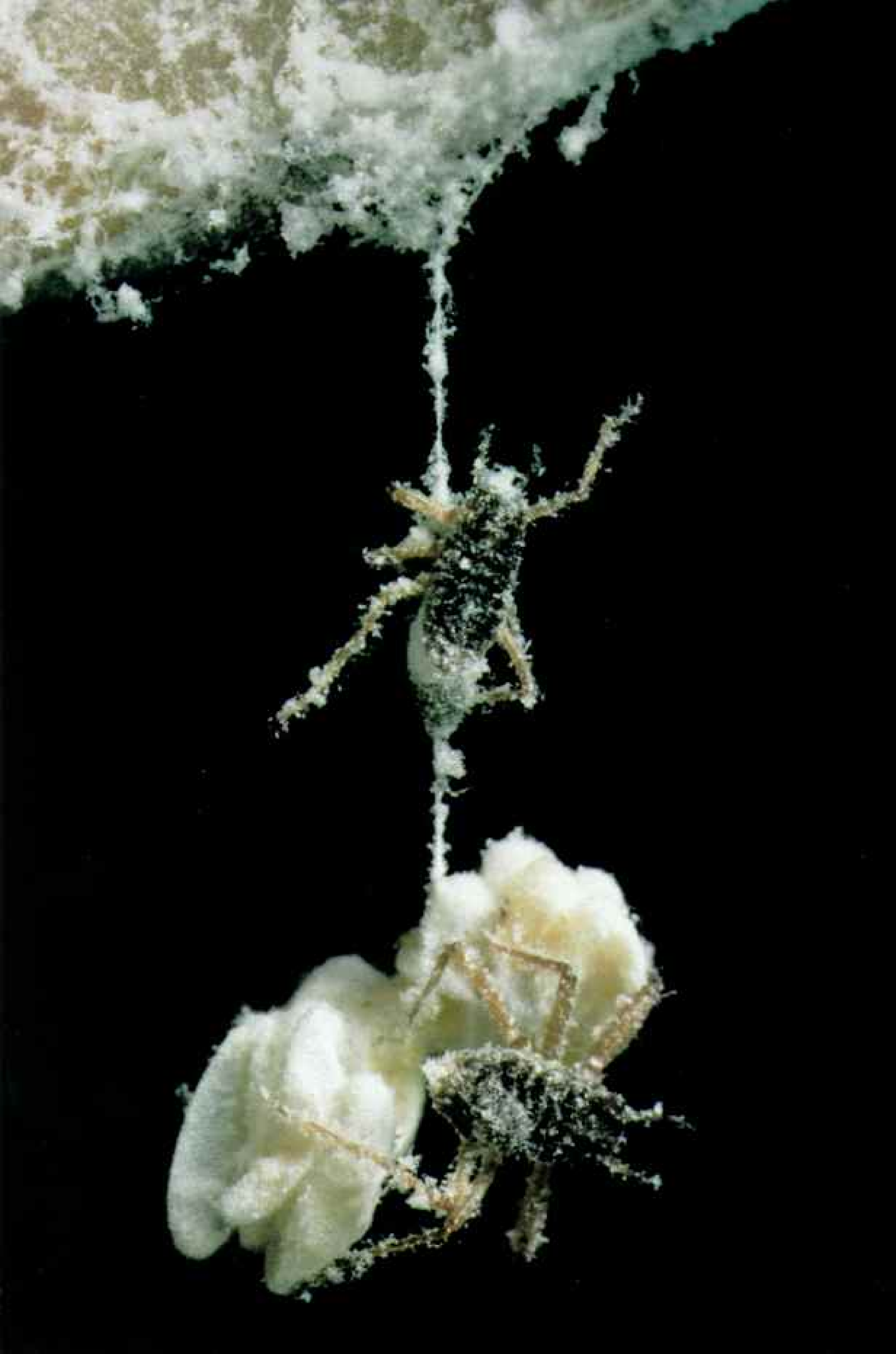
Clambering about on a dangling white mass of Asian flowerfly eggs, two aphids crush one egg after another between their powerful forelegs. One begins the return climb to the bamboo above (facing page), where the rest of the aphid colony lies just out of view. Suddenly the wind whips the thread, setting the eggs into a spin so swift that the aphids become a blur. For a few seconds the climbing aphid clings precariously to the thread before being flung five feet—about a thousand times the insect's length—to the ground below. Lost from her colony, the fallen aphid is doomed.

This drama unfolds within a clattering clump of bamboo on a forested hill near Kagoshima, Japan. I had been watching the tiny silk strand (half a centimeter long) for several days and had seen this incident repeated half a dozen times.

Why do these *Pseudoregma bambucicola* aphids hang their fate on such a slender thread? Because they are the exclusive food of this flowerfly's larvae, and killing the eggs may reduce the depredation of the aphid colony.

Indeed, the egg-crushing aphids are soldiers—sterile females that go out of their way to defend the reproductive members of the society. Using enlarged forelegs and armored heads reminiscent of the helmets of ancient Japanese samurai warriors, *Pseudoregma* soldiers fight off a battery of predators that assault the colony.

Of some 4,000 aphid species only about 20—most from the Orient—are known to breed soldiers. Those of *Ceratoglyphina bambusae* even attack people; their bite causes an intense itch. Researcher Utako Kurosu (left) extends a pole tipped with clippers into a tree to collect the large white galls that house this species of samurai aphid.



Aphid soldiers were a revelation when first described by Japanese scientist Shigeyuki Aoki in 1977. He and his wife, Kurosu, are among the few scientists forging the way in aphid-soldier research.

Pseudoregma aphids were one of the first samurai species Aoki discovered. Here members of a colony cluster on a freshly sprouted bamboo shoot (left), extracting plant sap through elongated mouthparts in much the same way a mosquito sucks blood. Exuding a snowy dusting of wax, they belong to a group known as woolly aphids.

Scattered among plump winged and wingless aphids are soldiers. These slender females are actually nymphs (immature aphids) of unusual appearance. Compared with other nymphs in the colony, which grow to adulthood after molting several times, aphid soldiers grow little if at all. Trapped in juvenile bodies, they cannot reproduce.

Although aphids are gregarious, colony members in most species show no social behavior. However, samurai species are comparable to termites, ants, and some wasps and bees—there is a division of labor, with some individuals devoting their lives to protecting the colony. Scientists believe this cooperative behavior may be the result of close family ties within the group. The soldiers' altruism ranks samurai aphids among the most social of animals.

ACTUAL SIZE OF APHID CLUSTER AT LEFT

Confronted by predators, aphids of other species try to flee—or they may kick an enemy or smear it with sticky secretions. Many predators larger than the aphids are not deterred by such feeble actions.

Perhaps the best line of defense for most aphids is reproduction—generating individuals so quickly that colonies grow and spread to new places, and predators simply cannot keep pace. Without soldiers the huge colonies of *Pseudoregma* would be extremely attractive to predators. Piled one on top of the other in dense mats of tens of thousands, the aphids could be devoured at will. Yet the soldiers successfully defend the colony from many predators.

Defense among samurai aphids is aggressive. I pluck a maggot, or larva, of the *Allograpta* flowerfly from a non-samurai colony of aphids and transfer it to a *Pseudoregma* colony. These maggots are ordinarily able to move unhindered among their aphid prey, but they are unprepared for soldiers. Two climb onto the maggot—more than ten times their length—and grasp it near its head with their forelegs. The soldiers butt it with their heads, puncturing its body with their needle-sharp horns (above). They jam in their horns again and again while rocking back and forth. The bleeding larva gyrates frantically, then plummets from the bamboo, still in the soldiers' tenacious grip.

Because they are masters at combating soldiers, a few insects successfully prey on samurai aphids. Fortunately for these predators, soldier defenses often are inept compared with the bites and stings of termites and ants.

Zoologist MARK W. MOFFETT's "Life in a Nutshell" appeared in the June 1989 magazine.

Life cycle of the woolly aphids

The life cycle of the samurai aphids is poorly known, but it is probably complex, like that of most woolly aphids. Typically an egg is laid in autumn on a primary host—a tree or shrub (1). Hatching in the spring, the founder (2) of a new colony seeks a good feeding site and begins to reproduce wingless aphids (3)—which in some species produce more of the same (4). These aphids, such as *Ceratoglyphina bambusae* (inset above), make their home inside a gall on the host, gradually formed when the insects inject saliva into the plant, altering its growth pattern. In spring or summer the colony produces winged "migrants" (5), which fly to a secondary host plant, such as grass or herbs. Here a migrant gives birth (6) to wingless aphids (7), which in turn may reproduce themselves (8) as the colony grows on the plant's surface. In rare instances more migrants may be produced (9) to spread the colony to other secondary host plants. *Pseudoregma* aphids (inset left), however, depend on wingless newborns, which are light enough to be carried by the wind; if one happens to land on bamboo, she may start a new colony. In autumn winged migrants (10) return to the primary hosts and give birth (11) to dwarf males and females (12). They mate, and the females each lay a single egg. They soon die and the cycle begins again.

PAINTING BY JOHN DAWSON. SOURCES: DR. SHIGEYUKI AOKI, LABORATORY OF BIOLOGY, RISSHO UNIVERSITY, SAITAMA, JAPAN; DR. MANYA B. STOETZEL, U. S. DEPARTMENT OF AGRICULTURE.

Almost all aphids are females that reproduce by parthenogenesis—without sex. This results in offspring genetically identical to their mothers. Aphids lack the larval and pupal stages of many insects, and for most of the year they also skip the egg stage. Thus live birth is a common sight in an aphid colony.

Emerging from her mother, a *Pseudoregma* soldier reaches down with her legs to pull herself free (top). Moments later the mother seems to cradle her offspring (middle), but in fact she provides no parental care. Her next birth may be either a normal aphid or another soldier; how an offspring's caste is determined is not known. In fact, the non-soldier embryos inside her body already contain her developing grandchildren. This is one reason why aphids reproduce so rapidly.

Different types of soldiers are found on primary and secondary host plants. The primary host soldiers of *Ceratoglyphina bambusae* lack horns—they bite their enemies rather than pierce them. These soldiers develop from nymphs who have molted once. *Pseudoregma* typify most secondary host soldiers, armed at birth with pronounced horns and massive forelegs.

Scientists believe that the behavior of the Taiwanese aphid *Astegopteryx bambucifoliae* provides clues to the evolution of soldiers. This species—a relative of samurai aphids—lacks a distinct soldier caste. However, all of these aphids possess some warrior characteristics, such as diminutive horns that are too small to be lethal. Fighting over a feeding site, a hungry *Astegopteryx* aphid uses her horns to butt another drinking plant sap. The aggressor is shoved back by her colony mate, who swings at her with her body (right).

Ceratovacuna lanigera represents a more advanced stage in samurai aphid evolution. This species also lacks soldiers, yet any newborn can use its horns to crush a predator's eggs.

By developing specialized soldiers, samurai aphids have taken on a far more dangerous function: killing large and aggressive predators. Still, even samurai aphids sometimes use their horns for their original function—contests over food. Biting soldiers have evolved along a different pathway.

In subtropical and tropical areas many species—including samurai aphids—have colonies that last for more than a season. For example, *Pseudoregma* aphids are found on bamboo year-round. Yet Japanese biologists Seiki Yamane and Tsukasa Sunose have discovered the percentage of soldiers in a colony varies; it is nearly 20 percent in late autumn, when soldiers can protect the growing brood of winged migrants.

Attack of the samurai aphids

Scanning a tree with binoculars, Kurosu detects a white bell-shaped gall several centimeters wide on a branch high in the canopy. Galls of the *Ceratoglyphina bambusae* aphid are found only in *Styrax suberifolia*, commonly called snowbell trees.

To gain a closer perspective, Kurosu cuts down a large gall (bottom far right). She handles it cautiously—at its current size its powdery surface is guarded by thousands of soldiers. Slicing into the soft cauliflower-like growth reveals a labyrinth of tiny channels where the colony resides (top right).

Kurosu has found that galls can last for more than a year. A single gall may hold in excess of 200,000 aphids, of which about half are soldiers. A young gall (right), shown here at twice its actual size, is patrolled by just a few pale guardians.

Disturbing these galls is unpleasant business. Only about half a millimeter long, the soldiers are too small to be seen as they rain down and bite anyone disrupting their colony. While not actually dangerous, they do a pretty good job at dissuading visitors.

Taking on someone two billion times their size, the soldiers bite my knee as if they were drilling into a plant (above). Each leaves a minute bloody spot, where a welt later forms that itches for two or three days. One particularly heavy attack leaves me with a rash on my leg that rages for three weeks.

Although people are often victims of the *Ceratoglyphina* soldiers' bite, squirrels and monkeys, which find galls appetizing, may also meet with the soldiers' wrath. Soldiers also ward off caterpillars and other insects that invade galls.

Commonly mistaken for bees, flowerflies are harmless and feed on nectar. Their larvae, however, are fierce predators.

When ready to lay her eggs, the Asian flowerfly *Metasyrphus confrater* seeks out clumps of bamboo. Starting near the top, she glides along a stalk in search of a colony of *Pseudoregma* aphids, sole prey of this fly's larvae in Japan. When she finds a colony, her fanning wings arouse the aphids like a breath of air. The bamboo surface shimmers as hundreds of aphids lift their hind legs and wave them about, as if to keep the fly at bay.

However, the fly avoids the aphids, homing instead on silk threads near the colony that were abandoned by ubiquitous wandering spiders. Maneuvering along a strand, the fly apparently finds it acceptable if she can trace an uninterrupted path from thread to bamboo. She then alights on the silk and deposits her eggs (top).

Eggs from other flowerflies often accumulate on a single thread, as is the case here. Perhaps the presence of previously laid eggs signals other females that the site is safe.

Days later a hatched larva emerges from an egg and struggles along the silk line to the aphid colony, using other eggs as stepping-stones when available (above).

Growing to a length of 1.5 centimeters, the legless maggots tower over the aphids. They move like leeches through the colony each night, often feasting in groups.

At the edge of one colony a maggot lifts its meal high in the air (right) so that the aphid's struggle to grasp the ground and free herself is in vain. Mouth hooks slice into the aphid's body, and the maggot drinks its fill of insect blood (lower left). The small orange spot on the eyeless maggot's head is a spiracle, or breathing hole. The empty carcass will be tossed away, and the maggot will ravenously seize its next victim.

Soldiers that fight back are unable to pierce the maggot's tough body and are only a minor irritant to this ultimate aphid-killing machine. In fact, any soldiers even attempting to attack invariably fall dead within minutes—apparently from poisons in the maggot's skin.

Japanese entomologist Kenji Ôhara discovered that the soldiers can successfully attack only newly hatched larvae so small that soldiers can throw them from the bamboo.

The safety usually afforded Asian flowerfly eggs by the fragile silk thread has its price: The journey a young maggot is forced to make to reach the aphid colony is extremely dangerous. It is perhaps for this reason that the egg-laying habits of the fly change with temperature.

In the autumn virtually all eggs are bound to silk, which is impossible for soldiers to traverse unless it becomes coated with enough aphid wax to offer better footing. During the cool winter days typical of southern Japan, the soldiers become sluggish or completely immobilized.

With the colonies left undefended, the flies shift to depositing their eggs at less precarious sites—on other objects near the bamboo, on the bamboo itself, or even directly on a hapless aphid such as this winged migrant (bottom right, at top). The maggots can now begin feeding almost immediately after hatching.

During a November visit to Kagoshima I saw favored egg sites change as the temperature fluctuated. Surprisingly, after one chilly afternoon of aphid-watching I discovered I had been holding myself so still that several flies had attached eggs to my shoelaces!

Another predator, *Dipha aphidivora*, has a simpler solution for preserving her eggs. This dull brown moth flutters around bamboo at night, laying eggs in or near a colony. But the eggs are too flat for the aphids to grip and so are left unmolested (bottom, far right).

Small *Pseudoregma* colonies often attract ants like *Crematogaster osakensis*, which pluck droplets of honeydew from the aphids (top). This is the same sweet libation that lures ants to aphid colonies around the world, which explains why

aphids are commonly called ant cows.

Honeydew is plant sap that has passed through an aphid's body after needed nutrients are absorbed. If ants don't take a droplet, the aphid flicks her hind legs to shake it loose, and it drops from the plant. Fallen honeydew of aphids and their relatives—the "manna" of the Old Testament—was once a human delicacy in various parts of the globe.

In return for this "candy," most ants protect the aphids. For example, when an ant locates fly eggs, she releases a tiny droplet from the tip of her stinger (right). It apparently contains a pheromone that diffuses and alarms her colony mates. Worker ants responding to her call tear up the eggs or carry them away. The ants even build protective walls of soil around small aphid colonies.

If ants can ward off predators, why are soldiers necessary? Perhaps a *Pseudoregma* colony grows so large that it produces more honeydew than the ants can deal with. Most of it falls to the ground, where ants can drink their fill without helping the aphids. Larger colonies thus depend on their own soldiers for protection.

Unlike ordinary caterpillars with a taste for leaves, pale green carnivores hungry for aphids hatch from the eggs of the *Dipha aphidivora* moth. Highly skilled predators, they weave tunnels of silk on the bamboo, extending them directly through aphid colonies. Such nests provide a safe haven from soldiers, which can't tear through the tough fiber. A tunnel may contain several caterpillars; when two meet in a passageway, the walls shake briefly as they appear to fight.

Catching these predators in the act is difficult. Eventually, I resort to a marathon stakeout of a nest. During a 27-hour watch at one swampy spot in Okinawa, I document six kills from start to finish.

A hungry caterpillar cuts a slit in the tunnel or uses gaps already present in the silk. At first it peers out as if to consider its best target (top left), then it lunges forward to grab an aphid (top right).

While the aphid is dragged toward the lair, black droplets ooze from two glands near the back of her body (bottom left). In some species this fluid repels enemies or warns other aphids of danger. Here I suspect it attracts soldiers when caterpillars are slow at retrieving meals.

An attacked caterpillar drops from the bamboo on a silk line and swiftly weaves it around the soldiers (below). After tying them up, it plucks them off and climbs the silk to its nest. If the soldiers' attack forces it to fall to the ground, it will die.

Most often a caterpillar moves swiftly enough to avoid soldiers. Once safely hidden within its tunnel, it can feed in peace. When finished, it leaves the carcass outside its lair among the remains of past prey.

The dwarf ladybug is common at *Pseudoregma* colonies in Taiwan. Though its body is black, its pale hairs pick up aphid wax until the whole insect turns aphid gray.

Watching one of these *Pseudoscymnus amplus* ladybugs magnified by a camera's lens, I see an awesome form rise from the background (above). It lumbers toward the dwarf beetle until, at the last moment, the 3.5-millimeter ladybug waves a foreleg upward and smacks it in the face. Instantly the mammoth creature draws back, retracting its head and legs like a frightened turtle.

It's a brave act for this shy little ladybug, which normally drops from an aphid colony at the slightest disturbance. However, this insect face-off is with another, much larger species

of ladybug, *Synonycha grandis*.

Both compete for *Pseudoregma* aphid prey, but they adopt almost opposite methods of pursuit. The dwarf adult and its larvae spend most of their time within the aphid colony. Dully colored, they blend in so well with the aphids that they wander freely among their prey and are difficult to detect by the human eye. Why they should mimic the appearance of the aphids is unclear. It seems unlikely that the latter could be fooled, since they depend more on smell than vision. In any event their camouflage appears to work; inserting themselves among the aphids, the dwarf larvae devour them freely, ignored by soldiers. Perhaps the ladybugs even fool their own predators.

In contrast, the larger species of ladybug is brilliantly colored and about 13 millimeters long. It usually stays near the edges of the colony, where it looms conspicuously.

A giant ladybug consumes hundreds of aphids every day. A female munches insatiably on one aphid after another during hours of mating, while her partner can only look on (lower left). Although soldiers cling to the female's legs, they are ineffective against her tanklike body. Occasionally she pauses to groom her forelegs, swallowing soldiers in the process.

The spiny larva of the giant ladybug is black with yellow splotches (above), resembling ladybug larvae commonly found in backyards. The larvae prey on aphids but have trouble consuming their meals because they are regularly attacked by soldiers. This ambushed larva forces blood from its joints, then beats a quick retreat. The blood's adhesive quality may slow the soldiers' attack.

A giant ladybug lays egg clusters beneath leaves far enough from the colony to be safe from patrolling soldiers. Another ladybug species goes to greater extremes to protect her eggs—she disguises them with a layer of her feces.

Ladybug hatchlings must find food fast to ensure their survival; the first larvae to emerge often cannibalize neighboring eggs before heading off in search of an aphid feast.

New samurai aphid predators are still being discovered. In Taiwan I found brown lacewing larvae emerging at night from a bamboo leaf joint, using their tails like a fifth leg to aid rapid scurrying. When they approach one another, they slap their tails like fighting reptiles.

Compared with the chewing mandibles of most aphid predators, a lacewing's sickle-like pincers are unique (above). After puncturing an aphid with its pincers, the larva injects her with paralyzing fluid. The hollow pincers then work like straws to drain her body, leaving only a shell behind.

Under constant siege by maggots, caterpillars, ladybugs, and lacewings, whole *Pseudoregma* colonies are eventually destroyed. After sighting one vigorous colony, I return a week later to find that almost nothing

remains (left). The few surviving flowerfly maggots have almost no food. By the next day even these have starved, their corpses scattered at the base of the bamboo.

The aphids and their enemies show us ecology in a microcosm. Tranquil at first glance, this community is in fact caught in a delicate balance between life and death. On the one hand predators are in a race to eat and reproduce before food runs out; on the other the aphids must survive long enough for some to disperse to new sites. There the race begins anew.

This is a battle played out with aphids everywhere. Large *Pseudoregma* colonies, tempting targets for predators, differ only in the intensity of the struggle. Although soldiers may seem ineffective, they slow down enemies enough for the species to survive. □

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ANNIE GRIFFITHS BELT (LEFT) AND BARON HUGO VAN LAWICK

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As Chairman of the Society's Committee for Research and Exploration for the past 14 years, he has guided 50 million dollars in grants to more than 2,500 scientists. Under his leadership the committee's annual budget has grown to more than five million dollars.

He has served the Society both as President (1967-1976) and Chairman of the Board of Trustees (1976-1987) and has left a legacy of competence and integrity on all our activities. Now, after 57 years of dedicated service, Dr. Melvin M. Payne has stepped down as the research committee's chairman.

"When I first met Mel in 1963, I stood very much in awe of this man," said Jane Goodall (with Payne, above left, in 1989), whose study of wild chimpanzees was launched by a Society grant in 1961. "I didn't begin to appreciate the twinkle in his eyes until he spent a few days with me watching the chimpanzees" (above right, with Leonard C. Carmichael, left, and T. Dale Stewart, right, both members of the research committee).

Mel's enthusiasm for research began early in his career. In 1934 and 1935 he helped organize the field camps outside Rapid City, South Dakota, for the historic balloon flights of *Explorer I* and *Explorer II*.

"Our reputation as a grant-making organization in science has grown tremendously since that time," he explained. "Now, more than ever, the Society is putting great emphasis on environmental matters. This, it seems to me, calls for new blood, new energy. We'll get that from our new chairman."

Dr. Barry C. Bishop, I am pleased to say, has agreed to accept this role. A geographer who has conducted research in the Arctic, the Antarctic, and the Himalaya, where he scaled Mount Everest, Barry has served as vice chairman of the committee since 1984. Last year he organized the highly successful symposium "Earth '88: Changing Geographic Perspectives."

Barry, I know, will bring the same dedication and inspiration to his work that Mel demonstrated so well. And Mel, as the board's chairman emeritus, will continue to give us the benefit of his valuable insights. We're going to need all the wisdom and courage we can muster in the challenging years ahead.

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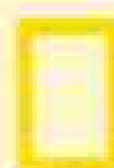

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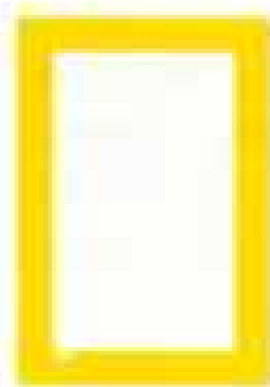

Members Forum

Gravity

Of particular interest in your outstanding discussion of a very difficult subject (May 1989) was gravity's impact on spaceflight. The opportunity I had to talk with the author and photographer during their flight on the NASA KC-135 added to my enjoyment of the final product. As many observant readers have probably noted, the picture on page 583 shows me struggling with toothpaste, not jumping rope. This photograph captures the exhilaration of being free of the earth's pull as well as the difficulties that come with this freedom.

KEN REIGHTLER, NASA
Johnson Space Center
Houston, Texas

Yes, dozens of alert readers caught our slip. To answer one who asked what happened afterward, the toothpaste, once squeezed, kept coming and when normal gravity resumed fell to the floor in a mess.

Page 581 says that "gravity's pull is particularly strong" over the "Indian Ocean anomaly," causing satellites to drop. Page 583 says "gravity is . . . noticeably weaker in . . . the Indian Ocean." Can this be explained more clearly?

CHERYL SUE GATLING
Syracuse, New York

Gravity is generally weak in the Indian Ocean, but north of Madagascar it is stronger, hence an anomaly, illustrating earth's varying densities.

The article overemphasized the possibility of a new fifth force. It should be stated clearly that independent research groups have not been able to reproduce precisely the results attributed to the existence of a fifth force. Moreover, the experiments that have reported positive fifth-force (sixth-force) results appear to disagree with each other. It is difficult to understand why the article would say the null results obtained in the Galileo experiment of Niebauer and Faller and the torsion balance experiments of Adelberger and Stubbs, both of which have been reproduced, are "disappointing" or "empty." Quite the contrary, these results place interesting limits on Einstein's general theory of relativity even if the fifth-force conjecture fades.

DR. T. M. NIEBAUER
Max Planck Institute
Garching, West Germany

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You again demonstrate the ability to explain a boring and difficult subject with enthusiasm and clarity. But I must point out an error. Boslough wrote: "The deeper [into the mine shaft Frank] Stacey went, the stronger the pull of gravity became, simply because they were getting nearer to the earth's center of mass. Stacey expected this." As anyone who took freshman physics could tell you, Stacey should have expected to find the pull of gravity decreasing. The amount of mass above his head was being increased, pulling him up.

PAUL A. DELANEY
Beltsville, Maryland

The formula taught in physics presumes a uniform sphere. But earth's density is not uniform; we know gravity actually increases with depth in the upper layers. Stacey's experiments suggest that this increase is smaller than predicted by theory, which may be evidence for a fifth force.

Venezuela's Tepuis

I know the tepuis well (May 1989). I was a beginning pilot for Pan American Airways in 1939. The U. S. was short of rubber and organized the Rubber Development Corporation, which contracted Pan Am to fly daily from Miami to Manaus, Brazil, carrying personnel down and bales of raw rubber out. There were no maps of the area from Maracaibo to Manaus. We made our own, flying the Sikorsky S-42 Clipper that would not operate over 10,000 feet. Flying around those

tremendous plateaus during the rainy season, we could not see the surface half the time, and some of those plateaus were almost 10,000 feet.

A. L. TERWILLEGER
Panama City, Florida

We are encouraged by Uwe George's tepuis article that there are still places on the planet unchanged by the hand of man. Who cannot be overjoyed to learn that there are many species as yet undiscovered, as yet unharmed. That is why I found the photograph on page 556 disturbing: the bodies of dead birds apparently killed by investigators in the name of science.

JOSEPH A. OAKES
Los Altos, California

Unfortunately, the physical specimens were needed to identify the species.

The information about the discovery of Angel Falls (page 549) implies that Jimmy Angel, an American bush pilot, discovered it in 1935; actually his was a rediscovery. The world's highest waterfall was, in fact, discovered by Venezuelan explorer Ernesto Sanchez la Cruz in 1910, a fact told to me by my mother, Ernesto's niece, Isabel Sanchez Story.

AGNES M. STORY SANCHEZ
Naples, Florida

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BUCKLE UP FOR SAFETY

Although author-photographer Uwe George may not have recognized the screams he heard in the labyrinth, I am sure he encountered the source. It practically ran over him. Mountain lions emit one of the most hair-raising screams I have ever heard. Their scream and the echo resonating off the large wet rocks would sound like a lion in a bathtub. So sleep better, Mr. George, and continue producing timeless masterpieces featured by my favorite source of information and enlightenment.

JEFFREY RYAN MCCARTHY
Snowmass Village, Colorado

The Explorers Club of Pittsburgh conducted expeditions to Auyan-tepui in 1968, 1971, and 1972. A 60-page report was published, including an original map of 100 square miles of the top of Auyan-tepui. The area is indeed wonderfully exciting; I would enjoy returning with the men involved in our expeditions.

DR. IVAN L. JIRAK
Pittsburgh, Pennsylvania

Baltic

As a Latvian American I thank you for your sensitive, insightful article on the Baltic region. In choosing a journalist of Estonian origin with a good understanding of the area's historical background, you gave a depth missing from much current press coverage of ethnic unrest. I wonder myself if the Soviet loss to the *mujahidin* [Afghanistan] was not an inspiration and a catalyst to the many diverse ethnic groups now under Russian political domination who also do not feel historical ties with the Soviet Union.

DAGMARA E. BASTIKS
Alamogordo, New Mexico

Seven countries and three annexed states is a lot to handle in one story. No wonder the "secretive oblast of the Russian Republic" could not be discussed. Yet this area deserves some mention. It was German for 700 years from Pomerania to East Prussia. Millions of Germans lived there, flourished, built cities like Stettin, Kolberg, Danzig, and Koenigsberg. Their culture and agriculture were the envy of the Baltic States. The area was not, as the article put it, "trampled by some form of Germans on their way east."

Today the fate of these Germans, dictated by Yalta and Potsdam, is virtually unknown in this country. They were all forced to leave in 1945-46. Poland was moved west into their land while Russia took over the larger part of East Prussia. Millions died in this forced evacuation, and the rest of these disinherited refugees now live in East and West Germany. In bitterness they would read your article, which did not mention the former Baltic province of East Prussia with its capital Koenigsberg, where the philosopher Immanuel Kant taught the categorical imperative and its proud message for a better world.

KLAUS HECK
Aberdeen, New Jersey

Thank you for pointing out that the Poles are historically the most recent additions to the Baltic shoreline. The area was Germanic until after World War II. But the name Baltic is derived from the Lithuanian *baltas*, or white.

DONATAS Ž. ČERNIUS
London, Canada

Swiss Deforestation

The report about the Swiss forest peril is synthesized very well. You only missed writing about the many ski resorts that still want to cut down more trees just to create new ski runs.

ANDREAS AMREIN
Minusio, Switzerland

The painting on pages 640-41 is excellent. What other magazine would include a couple of low-flying fighter jets, with ground shadows (lower left), to show realism. Keep up the good work.

MICHAEL WELSH
Santa Clara, California

Braving the Northwest Passage

"Braving the Northwest Passage" is an example of sheer madness. The trip had no practical purpose. Anything they did had been better done before. I realize people have a right to destroy themselves if they wish, but I can imagine the call for help to the Coast Guard of Canada or any other rescue agency from friends or relatives of the two so-called explorers. There seem to be so many worthy causes to spend this kind of money on. This letter may sound like heresy to some readers, but I think it is time to speak out.

CHARLES F. SMALL
Carver, Massachusetts

To have successfully navigated the Northwest Passage under windpower alone deserves more acclaim than these men probably received. More important, they achieved a rare experience innately sought by all of us. They confronted the brutal reality and magnificent beauty of nature on a simple, meaningful level. I imagine their voyage was one in which they came closer to discovering the truth about their human selves.

HENRY C. LEWIS
Chalfont, Pennsylvania

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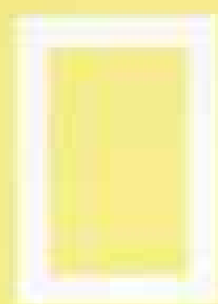

SEPTEMBER 1989

GEOGRAPHICA

NATIONAL GEOGRAPHIC MAGAZINE

Halting the Importation of Bolivian Textiles

The export and sale of beautiful but important artifacts from past societies has become a recurrent problem for scholars (NATIONAL GEOGRAPHIC, August 1981, July 1984, April 1986, October 1988, March 1989). No less a problem is the sale of items from a culture that still exists.

The U.S. government has banned imports from one such age-old culture, the Aymara of the Bolivian Andes. Acting on a request from the Bolivian government, U.S. officials barred the importation, unless approved by Bolivian authorities, of antique textiles woven in the Aymara community of Coroma (right). The U.S. Information Agency's Cultural Property Advisory Committee ruled that continued importation—which had grown enormously in the past decade—was a threat to the historical record of the Aymara culture (GEOGRAPHIC, February 1927) and thus constituted an emergency under the 1983 Cultural Property Implementation Act.

Coroma's textiles—ponchos, capes, shawls, and tunics woven from alpaca or vicuña hair—date back as far as the 15th century. Only in recent years have anthropologists learned that these textiles, preserved in sacred bundles, play a key role in Coroma's political, social, economic, and religious life.

Nearly half of Coroma's textiles have made their way to the U.S. collectors market.

GOVERNMENT OF BOLIVIA

No Square Corners on a Round World

You can't fit a round peg into a square hole, and you can't fit a round world onto a rectangular map. In fact you shouldn't even try.

So say seven major geographic organizations, including the National Geographic Society, who have adopted a resolution urging publishers, the media, and government agencies to stop using rectangular world maps, such as those drawn on the familiar Mercator projection.

Since the earth is round, with a coordinate system composed entirely of circles, flattening the globe surface to produce a rectangular map severely distorts large portions of the world, especially near the Poles. Such a map's straight edges and sharp corners promote erroneous impressions, notes the resolution, which originated in the American Cartographic Association committee on map projections.

The National Geographic Society recently switched from one nonrectangular projection to another. As Chief Cartographer John Garver explained (GEOGRAPHIC, December 1988), the new projection, by cartographer Arthur H. Robinson, gives "a different and more realistic view of the world."

ROBINSON

MERCATOR

NGS CARTOGRAPHIC DIVISION

Rebuilding a Monastery on the World's Roof

Local Buddhist leaders and international groups plan to join in rebuilding the main temple of Nepal's Thyangboche Monastery, destroyed by a fire in January. The monastery, on a 12,700-foot-high ridge in Sagarmatha National Park en route to a base camp of Mount Everest, is well-known to Himalayan trekkers; many agree that it is one of the most beautiful places in the world.

An electric heater was blamed for setting the temple afire when most of Thyangboche's monks were in Kathmandu, the Nepalese capital, attending a funeral for a lama. The monastery had only recently obtained electric power, through a project to provide an alternative to cutting trees for firewood (GEOGRAPHIC, November 1988). Fortunately, many of the building's religious artifacts were saved.

The original Thyangboche Monastery was built in 1919. Destroyed by an earthquake in 1934, it was soon rebuilt and has become a major religious center. It is famed for its annual Mani Rimdu festival (GEOGRAPHIC, June 1982) depicting the glory of Buddhism.

Sir Edmund Hillary is raising funds for the rebuilding through a Himalayan Trust/Thyangboche Monastery account at Nepal Grindlays Bank in Kathmandu.

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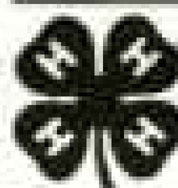

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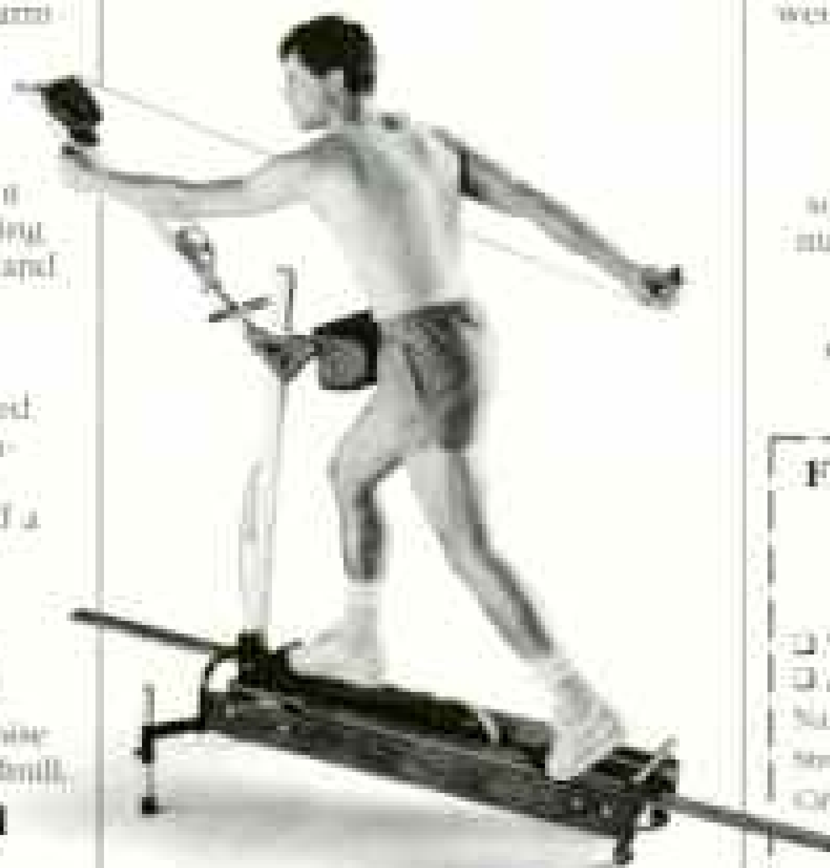

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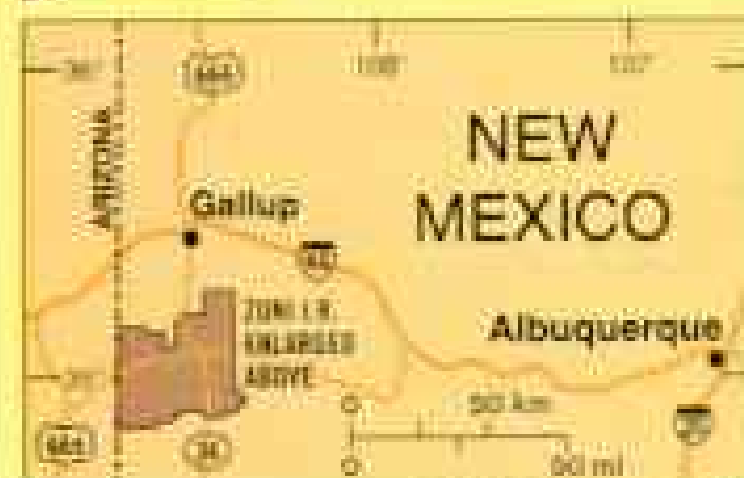
MICHAEL S. YAMASHITA

Mini-explosion in White Tiger Births

Among the most beautiful of all animals, the white tiger has become a favorite of Americans since the first one to arrive in this country—Mohini, or Enchantress—settled in Washington's National Zoo (GEOGRAPHIC, May 1961). A mutant strain of the Bengal tiger, white tigers are very rare. Before 1951, when the Maharaja of Rewa captured a white male cub—Mohini's father—and began to breed them, only nine had been sighted in India's jungles in 50 years.

Mohini mothered several white cubs, starting with Rewati (GEOGRAPHIC, April 1970). The most prominent collection of white tigers outside India belongs to illusionists Siegfried and Roy, who use the animals in their show. Their menagerie grew last December when a female white tiger named Sitarra gave birth to three white male cubs (above). The entertainers now own 14 of the world's 100 to 120 white tigers.



NGS CARTOGRAPHIC DIVISION

A Zuni National Park: 1,600 Years of History

When the Spanish explorer Coronado reached the village of Hawikuh, in what is now New Mexico, in 1540, he was one of the first Europeans to make contact with the natives of the American Southwest. In his quest for a treasure-filled land called Cíbola, he found instead the thriving agricultural society of the Zuni, with major urban centers and great ruins suggesting a significant history. Today's Zuni are descendants of a succession of peoples who have lived in the area since A.D. 400.

That historical continuum will be the focus of the new Zuni-Cibola National Historical Park being created on Zuni-owned land in New Mexico under a law passed by Congress in 1988. Instead of taking land from its Indian owners, the National Park Service will lease it for at least 99 years, rent free, from the Zuni tribe and will train Zuni to operate the park and interpret the region's history for visitors and Zuni alike.

Local and federal officials and the Zuni tribe—which has sought such a park for more than 20 years—are now in what a Park Service spokesman calls the "heavy planning stage." Among other things, they will determine the park's boundaries. The park will almost certainly include such sites as Hawikuh, the Village of the Great Kivas, Yellow House, and Kechipbowa, where the Zuni and their ancestors—the Mogollon and Anasazi (GEOGRAPHIC, November 1982)—created a rich cultural tradition.

A Role for the Male in (Fish) Childbirth

The yellowhead jawfish is a shy creature, tending its burrow on the sandy bottom off the Cayman Islands. During the mating season a male jawfish becomes even more retiring: He's busy incubating the female's fertilized eggs—in his mouth.

J. Michael Kelly, who spent two months photographing a pair of jawfish, reports that the female spawned several successive egg masses. Each time, the male then took the eggs, alternating between keeping them in his mouth and storing them in the safety of his burrow. Early in the four-to-five-day incubation period the male took the eggs into his mouth for just a few minutes each hour, holding them in his open jaws and letting the current wash over them. Often he spat the eggs into the current, then rapidly sucked them back in. Each day brought more of this activity until, by the end of the incubation period, the male spent most of the day outside his burrow, rolling the eggs into the current every three or four minutes.

J. MICHAEL KELLY

The female showed no interest in any of this. Kelly says that by the end of the mating season the male looked "haggard and gaunt."

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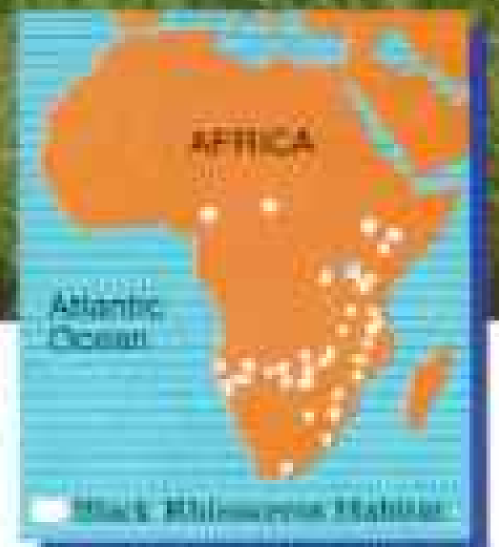
Black Rhinoceros **Genus:** *Diceros* **Species:** *bicornis* **Adult size:** Body length, 286-305cm; tail, 60cm; shoulder height, 143-160cm **Adult weight:** 950-1,300kg **Habitat:** Grasslands and open forests in Africa; only small scattered populations remain, nearly all in wildlife sanctuaries **Surviving number:** Estimated at less than 3,700 Photographed by Reinhard Künkel



Wildlife as Canon sees it

Massive and powerful, the black rhinoceros may appear invincible, but against poachers armed with machine guns, it is helpless. A demand for rhino horn is sending the black rhino hurtling towards extinction. Hundreds of thousands once roamed most of Africa south of the Sahara, but by 1980 their numbers had declined to 15,000. Today, just nine years later, the black rhino can be found only in scattered populations that number no more than 3,700. If future generations are to know this magnificent beast in the wild, conservationists believe it is urgent that poaching for rhino trophies be immediately stopped, and the international treaty banning trade in endangered species strictly enforced.

To save endangered species, it is vital to recognize the threats they face. Expressive color images, with their unique ability to reach people, can help promote a greater awareness and understanding of the black rhino and the reasons that are pushing it to extinction.

And understanding is perhaps the single most important factor in saving the black rhino and all of wildlife.

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Will today's hi-rises be the low-rises of tomorrow? That remains to be seen. But Samsung audio products will surely be high on everyone's list.

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PERHAPS NO GREATER EXTREMES exist in the tableau of Christianity than those found in the two groups we present in this issue. One expressed itself in violence; the other sought peace. One has had a significant impact on the world we know today. The other leaves virtually no political mark but gave the world a simple taste in furniture and architecture widely copied and much admired.

Despite the differences, there are parallels. A zealous knight helped lead one group out of Europe to the Holy Land—never to return. The other group, led out of Europe by a woman seeking a different "promised land," never returned.

The First Crusade, whose leaders included Godfrey of Bouillon, set out in 1096 to wrest Christian shrines from unbelievers. The pilgrims at times became a vengeful mob as they crossed Europe and the Middle East—inflicting destruction akin to the biblical plagues and climaxing their Crusade by a most unchristian wholesale slaughter of Muslims and Jews in Jerusalem.

Seven centuries later a simple English woman, Ann Lee, with a vision of living the perfect life, led a persecuted religious sect called Shaking Quakers from England to a more tolerant land. In America they founded communal villages where they grew and prospered. As pacific as the crusaders were warlike, these Shakers sought only to conquer their own personal devils.

Both groups found what they sought. At least they reaped what they sowed. The First Crusade led to others—perhaps 12 or more. In their zeal crusaders killed and were killed by the tens of thousands, contributing to a legacy of violence in the Holy Land that seems destined never to end. Their conquests in the name of religion set the pattern of justification for much of the European colonial expansion in the centuries that followed.

In contrast the tolerance preached by the Shakers made them reluctant to proselytize, a practice that may ultimately lead to their own end.

Author Tim Severin followed in the footsteps of a warrior predecessor, Godfrey of Bouillon, to tell us about the First Crusade and the people he met. He experienced some of the hardships of such a journey, but, coming in peace, he was received in peace along his 3,000-mile odyssey.

Staff writer Cathy Newman brings us the story of the Shakers, a fascinating group she has long admired for their sense of values and tasteful ways. She came in peace but didn't always find it. Though the Shakers created a life-style of quiet simplicity, Cathy encountered a tension as they realize that their own future is very much in question.

Wilbur E. Garrett

EDITOR

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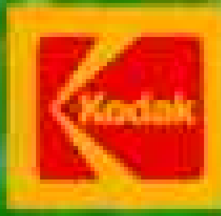

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Ray Hammond, Credit Union Member.
"When I joined the credit union, I didn't have any money saved. Didn't have any credit. But my bed had broken and I needed a new one."

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On Assignment

A MYSTERIOUS but willing subject—intrigued by the photographer's rental car—posed for ELI REED's camera in the African village of Kalongo near Salima, Malawi. "I came across the man and other dancers dressed for a festival," said Reed. "With no invitation, they just took over the car. But they wouldn't say a word."

PHOTOGRAPHS BY KENNETH FRED MHANGO (ABOVE) AND ELI REED

Reed had a more alarming encounter when his camera was mistaken for a gun by people living near Malawi's border with Mozambique, a country wrenched by civil war. Reed could sympathize. He himself has ducked bullets in El Salvador and been abducted while working in Lebanon.

"But I'm more a documenter of society than a combat photographer," says Reed, winner of an Overseas Press Club award in 1983. His color images are featured in his most recent book, *Beirut, City of Regrets*, published by W. W. Norton in 1988. Black-and-white pictures showing the effects of poverty on American children illustrate a National Council of Churches television documentary released this year.

Reed found his calling at the age of ten, photographing his mother beside the Christmas tree in their Perth Amboy, New Jersey, home. After art school he pushed himself through a five-year regimen that allowed little sleep: photographer by day, hospital orderly by night.

Few in his boyhood neighborhood would now tangle with Reed, an imposing six feet two. But this student of aikido and judo also writes poetry.

For novelist and travel writer PAUL THEROUX, going to Malawi for his third NATIONAL GEOGRAPHIC article was a sort of homecoming. In Lilongwe he visits with a traditional doctor (above), one of many who still practice their art in the capital city's central market.

Born in Massachusetts, Theroux served for two years in the Peace Corps in Malawi, witnessing the birth of that nation in 1964. In those days, he recalls, the Peace Corps did little more than "train us brilliantly and send us into the bush. It was not a bad way of running things."

Theroux's 26 books include *Riding the Iron Rooster*, which was based on journeys he took by train—his preferred mode of travel—for his March 1988 article, "China Passage." His latest novel, *My Secret History*, was published in June.

When not on the road, he divides his time between London and Cape Cod. "My idea of hell is having to stay in one place for a long time," says Theroux. "My idea of a holiday is going home."

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