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NATIONAL GEOGRAPHIC

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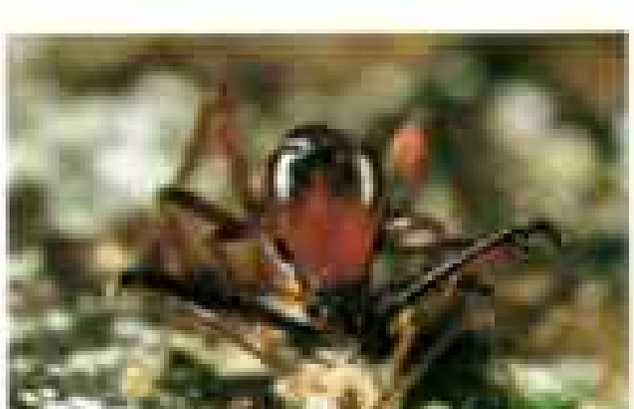

TRAP-JAW ANT CARRYING A LARVA

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Harvard zoologist Mark W. Moffett journeys to the rain forests of Costa Rica and Trinidad to study elusive ants whose specially adapted hair-trigger jaws can snap up hyperactive springtails, their sole prey.

COVER: *Evoking the tragic figure from William Faulkner's noted short story "A Rose for Emily," University of Mississippi senior Alexis Cassidy Burdine poses at Isom Place, an antebellum mansion in Oxford. Photograph by William Albert Allard.*

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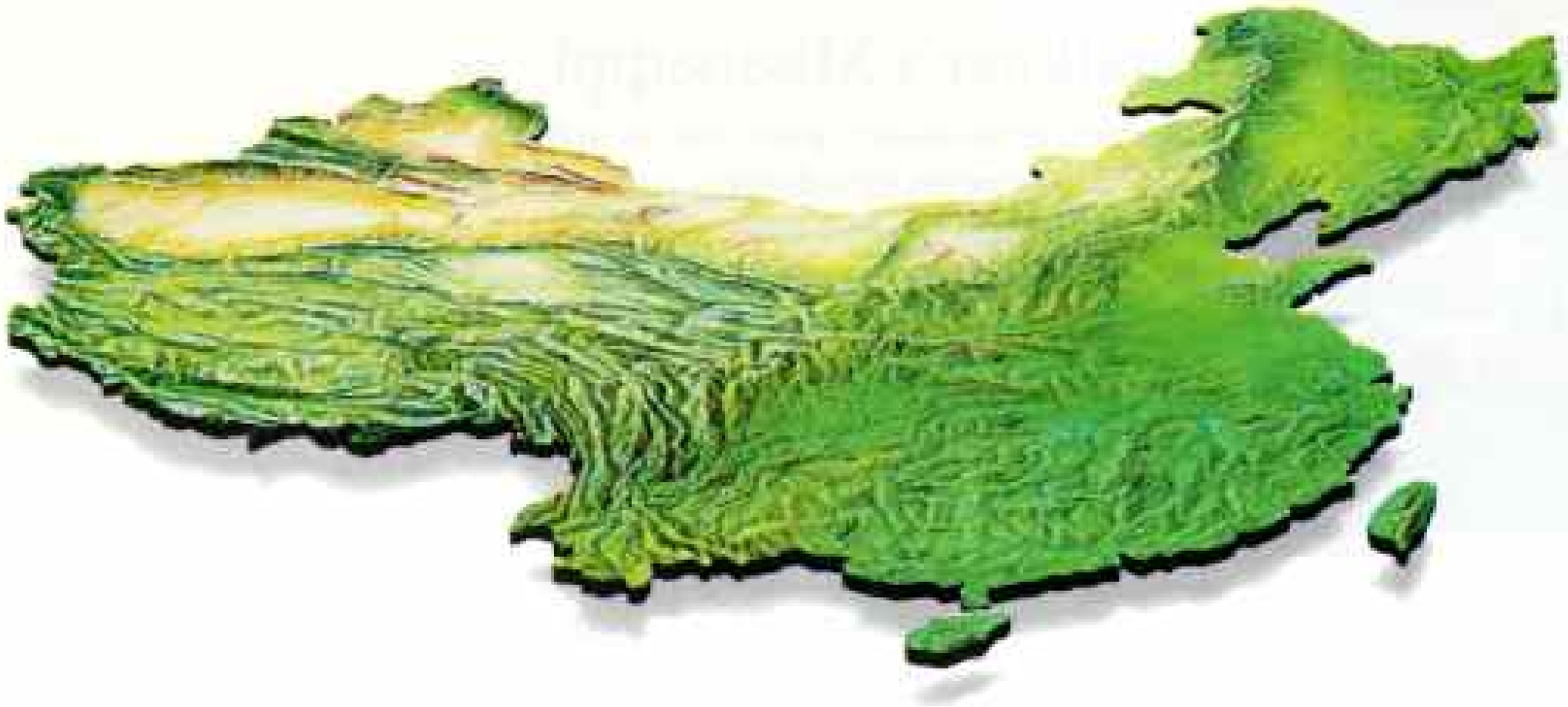
ABOVE CHINA



Photographs by GEORG GERSTER

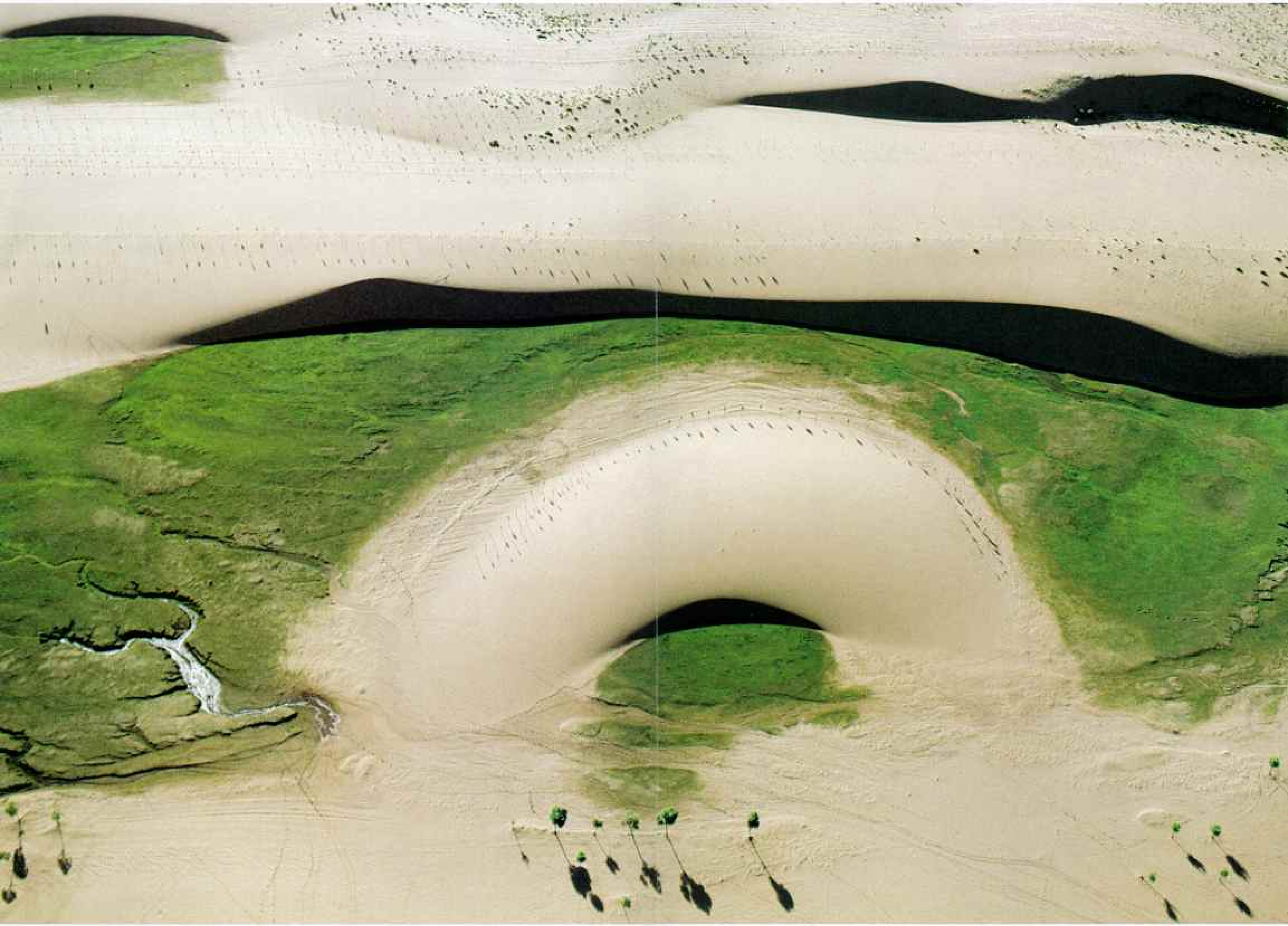
Text by LARRY KOHL

SENIOR EDITORIAL STAFF

SHIELDED FROM FOREIGN EYES for most of its history by xenophobic rulers, the interior of the world's third largest country was for centuries terra incognita to the Western world. Now one of the world's foremost aerial photographers, Georg Gerster, gives us a view of China as few have seen it. Recognizing his artistry, the Chinese government gave him and a team of photographers unprecedented access and assistance, providing aircraft from the People's Liberation Army for a monumental overview of this kaleidoscopic land—to capture not only the patterns of nature's grand design but also the human imprint of the oldest continuous civilization on earth. "Each day out," Gerster says, "a tapestry of toil and triumph would unfold before me. It was almost like witnessing the eighth day of creation."

In the north the Chinese are engaged in a massive tree-planting program in an attempt to stem the encroachment of desert sand from the vast Gobi. A few saplings from this "great green wall," which extends 4,000 miles from east to west, bravely confront a wayward sand dune (right) near the southern border of Inner Mongolia.

OPPOSITE PAGE FOLDS OUT >



"WE USE every inch of the land," Chinese say, to explain how a nation only slightly larger than the United States can feed 1.1 billion people: a population some four times that of the U. S. In provinces like Sichuan, with its 100 million people, and Jiangsu, with more than 60 million, the boast may indeed be true.

Situated in the mid-latitudes, much of China enjoys a temperate climate and ample monsoon rainfall. However, in the far northeastern province of Heilongjiang winters are long and bitterly cold. There, laden with silt after a summer rain, the Songhua River (preceding fold-out) meanders through wheat fields that were blanketed with trees a century ago. Traditional home of the Manchus, who ruled China for 267 years until their Qing dynasty was overthrown in 1911, the province has been viewed in this century as a great unexploited breadbasket. Today, despite the short growing season of 120 days, Heilongjiang communes are producing some of China's most bountiful harvests of corn and soybeans from the rich, black soil.

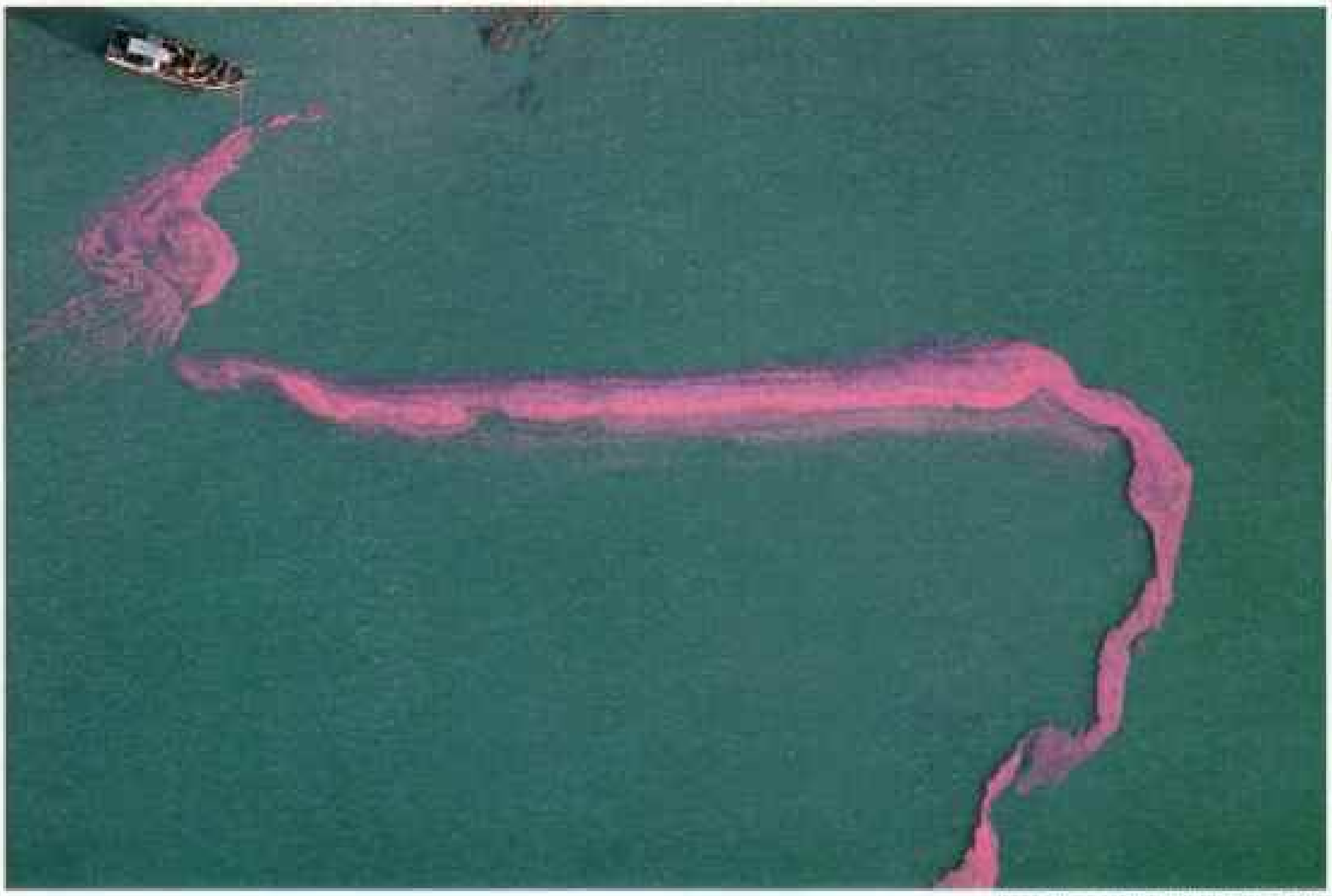
Cradle of Chinese civilization, the Yellow River (Huang He) watershed has supported an agricultural society for more than 7,000 years, longer perhaps than any other place on earth. This amazing endurance is due to the fertility of the Loess Plateau, which embraces some 115,000 square miles of loamy beige soil. On the plateau's northeastern perimeter, in Hebei Province (above), a single terraced ridge probably supports several hundred millet farmers and their families.

Occupying little more than one percent of China's total territory, Jiangsu is the most densely populated province. Its southern half is on the broad alluvial plains of the Yangtze River (Chang Jiang), which for millennia has been discharging great loads of silt, extending China's landmass out into the East China Sea. There, near Shanghai, recently harvested fields (right) surround a village built, as is the custom, on the banks of a canal. Part of a dense network of waterways criss-crossing the Yangtze Delta, such canals have provided transportation and irrigation for area inhabitants for more than 3,000 years. In the small plots behind their homes, farmers grow vegetables for sale in China's now thriving private-market sector.

WU SHOUZHUANG (FOLLOWING PAGES)

GOUGED by ravines and gullies, the northern reaches of the Loess Plateau each year contribute a share of the sediments that give the Yellow River its name. Seen during an August dry spell, a terraced basin near Datong in Shanxi Province (left) is threaded with watercourses that feed the Yongding River, also known as the Small Yellow River. Composed mainly of silts dating back to the late Pleistocene epoch, the loess deposits that cover the plateau are an average of 200 feet deep. Prevailing winter winds sweeping over the great bend of the Yellow River deposit the loess in successively smaller granules from northwest to southeast, with the finest soils accumulating around the ancient Wei River Valley in central Shaanxi Province. Each year an average of 1.6 billion tons of this soil wash into the river. Three-quarters of that amount reaches the Yellow Sea. The balance builds up in the riverbed, causing the channel to rise continuously. Through the centuries it has risen between 15 and 40 feet above the surrounding plain. The river is contained by dikes, built higher each year. Over the past 25 centuries broken dikes have wreaked floods on the countryside with devastating regularity. One of the worst in history occurred in 1938 after Chiang Kai-shek's Kuomintang troops breached the dikes to check the southward march of Japanese troops during the Sino-Japanese War. The tactic cost the lives of perhaps a million peasants, displacing millions more.

While the government has been encouraging agricultural settlement of northern plateau regions since 1949, many Chinese geographers believe that destruction of soil-holding grasses in the once pastured uplands carries a price too high for the environment. Marginal agriculture in areas like the badlands of the Ordos Plateau (above), they say, exacerbates the process of desertification, which in recent centuries has spawned whole new deserts both north and south of the Great Wall. Recognizing the problem but slow to curb new agriculture, the government has been waging a relentless struggle to anchor the soil by planting grasses and millions of trees. In the denuded hills of central Gansu Province (following pages) narrow catchment basins, called "fish scale pits," have been dug to capture the rain to nourish young trees.



JERRY YOUNG (ABOVE AND FOLLOWING PAGES)

A PLUME of industrial waste (above) befouls the harbor of Shantou, a port city in Guangdong Province. Each year Chinese industries discharge millions of tons of raw sewage and thousands of tons of toxic wastes into their country's rivers and offshore waters. Even before the economic reforms launched in 1982 to speed the nation's development, all of China's major rivers were seriously polluted—a situation that has now gone from bad to worse. Acknowledging the severity of the problem, the government has passed a number of laws to curb it, scoring a notable success with petroleum wastes. Incidents of toxic dumping, however, continue. In 1987, for example, the country suffered its worst chemical disaster in history when a fertilizer factory dumped toxic material into the Nanzhang River near the city of Changzhi, resulting in illness for some 15,000 people.

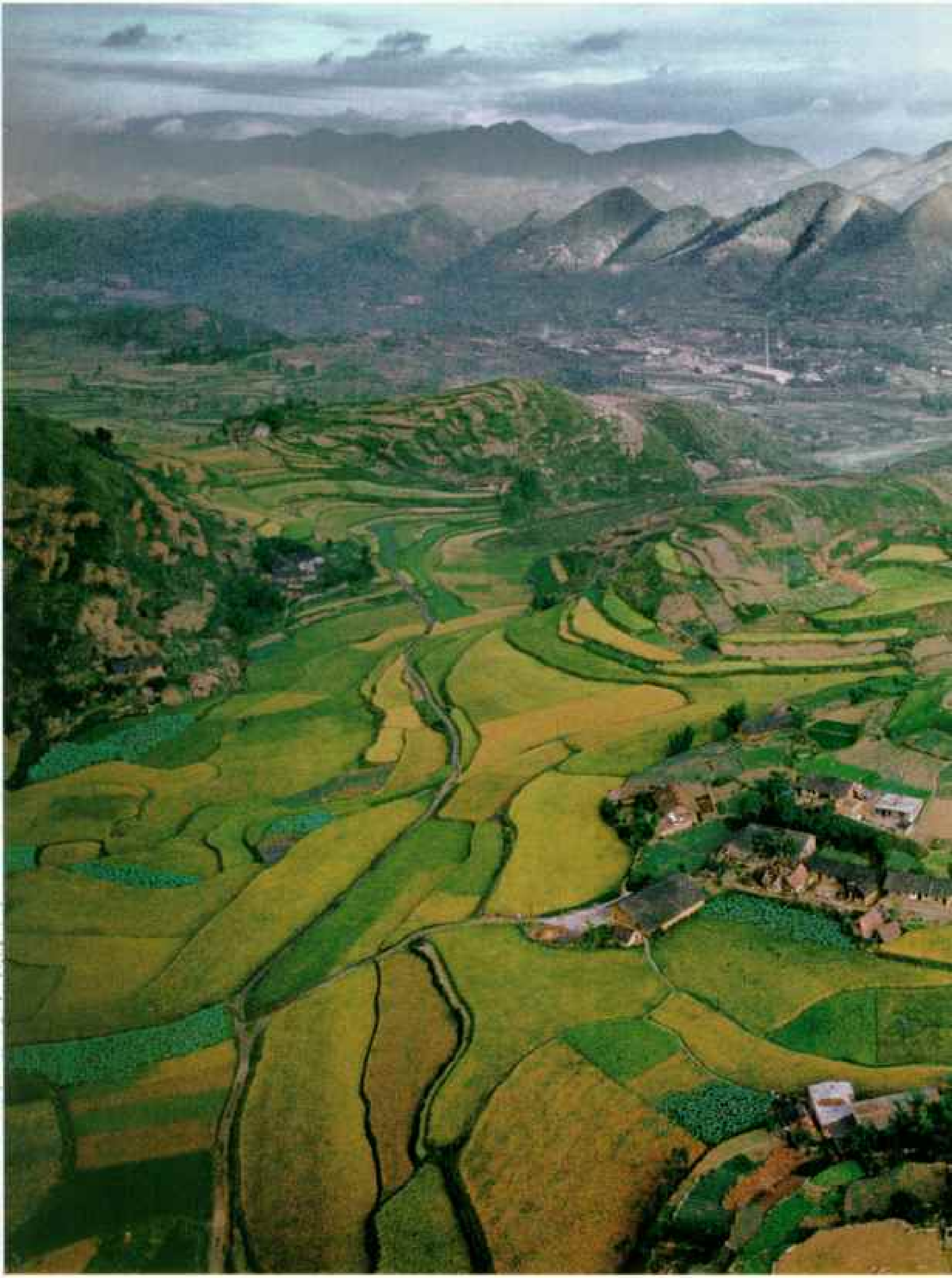
Air pollution has also risen to alarming levels in most major cities, with the air quality in Beijing often reported to be 16 times worse than in New York City. One way the government hopes to combat the problem is to continue locating new industries in thinly populated, resource-rich regions like Heilongjiang. There, near Harbin, the provincial capital, a brick factory (left)—a common sight throughout China—burns coal, taking advantage of the province's most important mineral resource. Though cement factories are working overtime to keep up with the nation's rapid urban development, bricks are still the primary building material for China's multitudes—400 million of whom live along the Pacific shore.

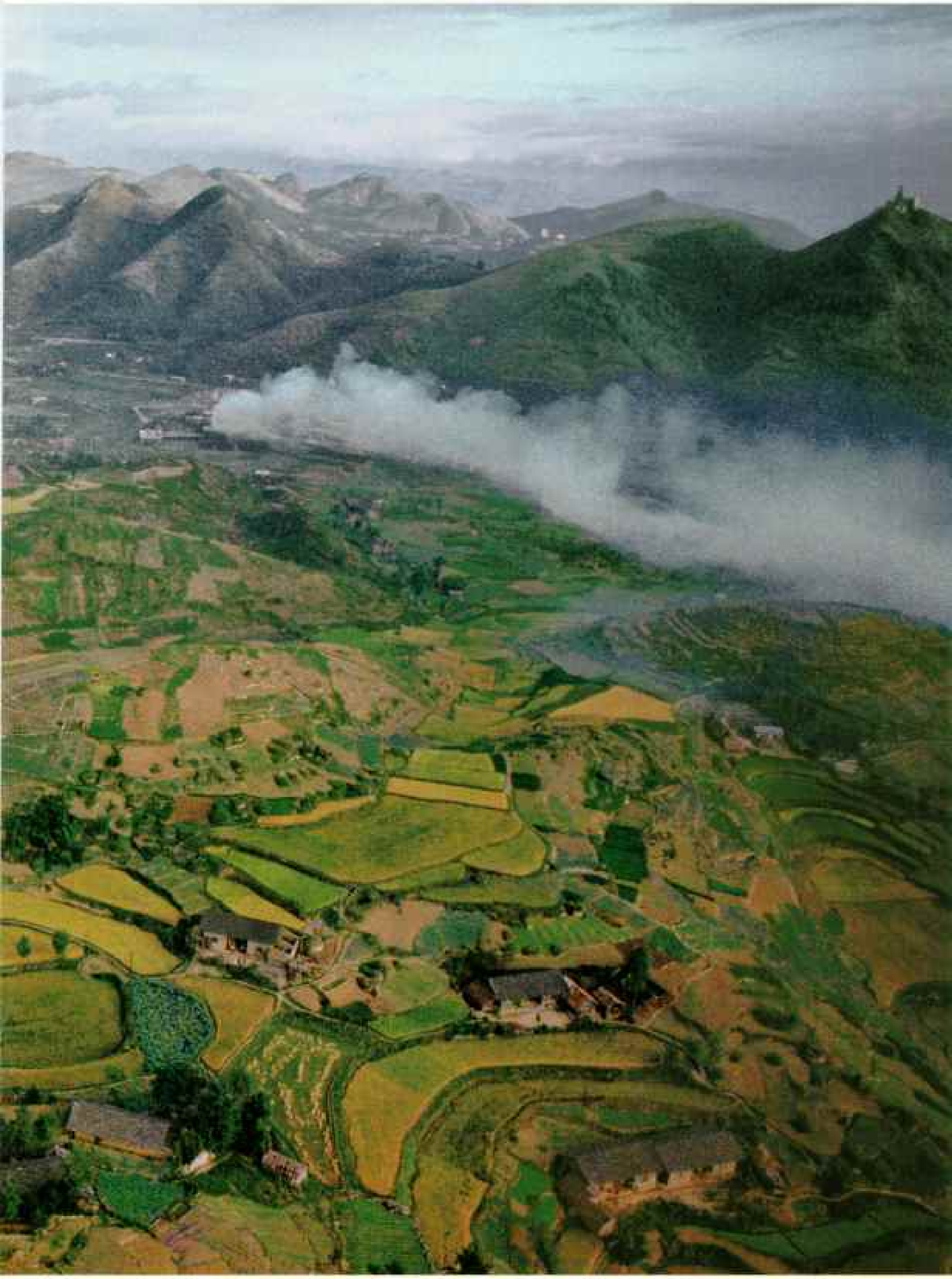
Near the city of Guangzhou (Canton) the tightly packed homes of a river-bound village (following pages) illustrate the density of settlement. When the Chinese took their last census in 1982, an army of 5.1 million canvassers found the nation's population to be 1,008,175,288, an increase of more than 300 million since the previous census in 1964. While the country's efforts to reduce population growth have proved an outstanding success, the nation continues to grow by nearly 15 million people a year.

LONG KNOWN as the Land of Rice and Fish, the Chinese equivalent of paradise, the lower Yangtze region produces a quarter of China's annual rice crop. Fed by adjacent canals, flooded rice fields in southern Jiangsu Province fulfill their fabled promise by sometimes serving as fishponds during periods when they are submerged. Planted with sugarcane and mulberries, even the earthen dikes perform double duty, while the fields can yield three harvests a year—two of rice and one of wheat. When asked how China, with only 7 percent of the world's farmland, is able to support more than 20 percent of the world's population, geographer Zhao Songqiao of the Chinese Academy of Sciences points to the Yangtze Delta, claiming, "This is probably the best ecological system in the world. With the constant creation of new paddy soil, it is actually improving."

Near the city of Suzhou, a procession of barges snakes along the ancient Grand Canal (left). Begun perhaps as early as the fourth century B.C., the waterway has been built and rebuilt over the ages. The greater part was constructed during the Sui dynasty at the turn of the sixth century A.D., when 5.5 million laborers are said to have completed 1,500 miles of canal in six years. Kublai Khan, who established the Mongol, or Yuan, dynasty in 1279, oversaw the rebuilding of the canal to transport grain from the delta to his capital city of Dadu, later called Beijing. Today the canal serves mainly local commerce, though the government is considering plans to equip it with a system of locks and pumps as part of a massive water-diversion project to alleviate shortages in north China.

Thanks in part to the delta's extreme fertility and the ease with which its flat topography can be tilled, Jiangsu has become one of China's most prosperous provinces. In contrast, hilly Guizhou is among the nation's poorest. Near the town of Zunyi smoke from a cement factory drifts over one of the gently rolling intermontane basins (following pages) of the rugged Guizhou Plateau. It was at Zunyi in 1935, during the Red Army's famous Long March, that Mao Zedong began to consolidate his power within the Chinese Communist Party.



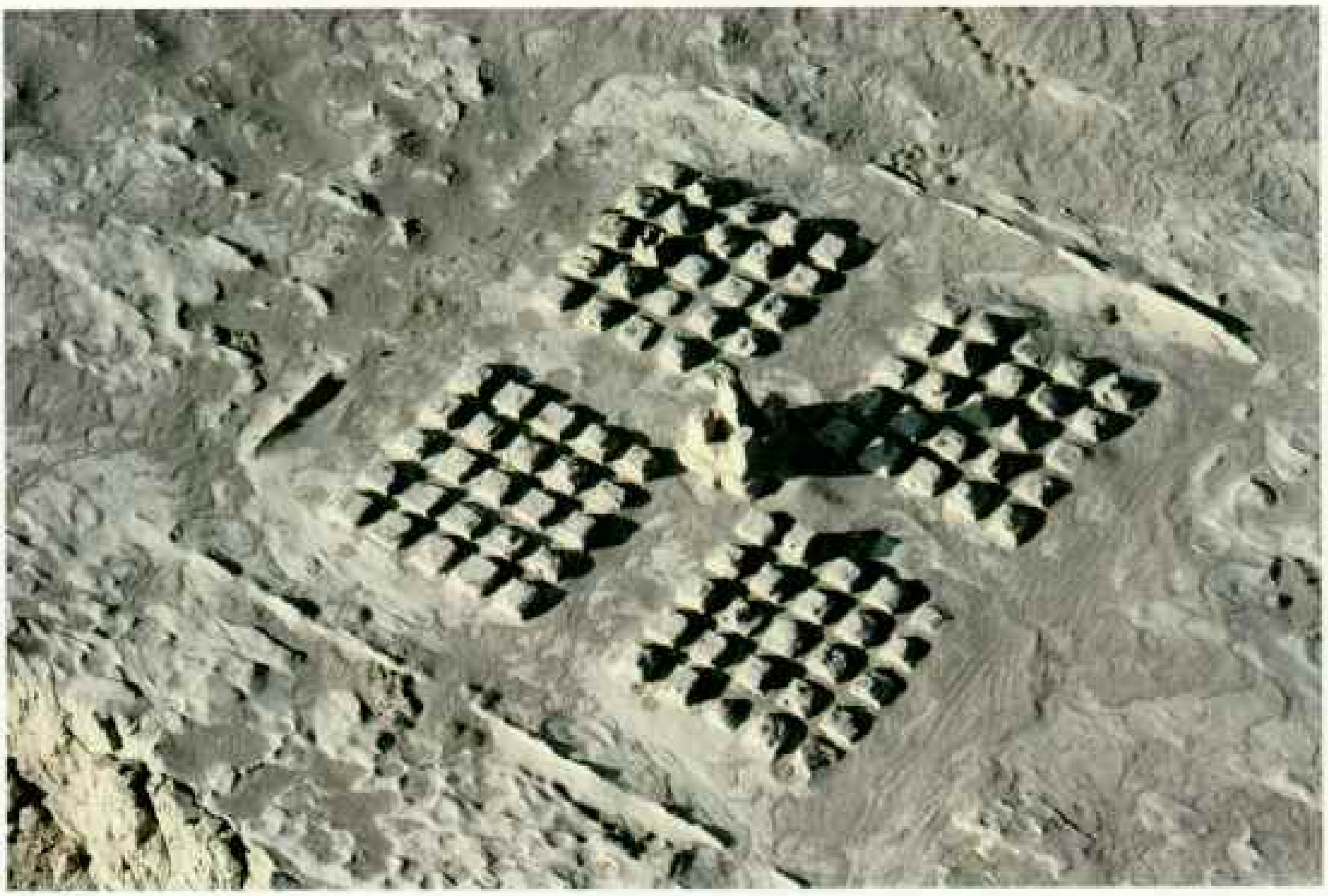


BEACON OF LIFE amid the arid and tortured landscape of the Turpan Depression, an oasis of ripening grapes mocks the shimmering heat in China's Land of Fire. One of a thousand or so green islands that rim the deserts of Xinjiang Uygur Autonomous Region, the oasis receives much of its water through a system of shafts and subterranean aqueducts called *karez*. Tracing the course of the underground canals, what appear to be gopher holes (right) represent the backbreaking labor of workers who are lowered in donkey-tethered baskets through vertical shafts to clear the channels of dirt and rubble. An answer to the high evaporation rate of surface water in the desert, the karez carry snow and glacier melt from the nearby Tian Shan to appointed oases through a network whose total length has been estimated at 1,900 miles. Karez, sometimes known as *qanats*, are thought by most scholars to have originated in Persia more than 2,000 years ago.

Extending some 60 miles across the northern part of the Turpan Depression, site of the earth's second lowest surface point, after the Dead Sea, the crenellated flanks of the Flaming Mountains (following pages) routinely boast China's highest recorded temperatures. Actually a low-lying ridge of heavily eroded sandstone, the mountains are well-known to all Chinese from the 16th-century novel *Journey to the West*, which traces the pilgrimage of a Chinese monk and his human-like companion, Monkey Sun Wukong, across the sands of Xinjiang to India in search of the source of Chinese Buddhism. Along the way, at the

Flaming Mountains, Monkey defeated the wicked princess Iron Fan in a great battle, which in subsequent centuries would become a favorite subject of Chinese opera.

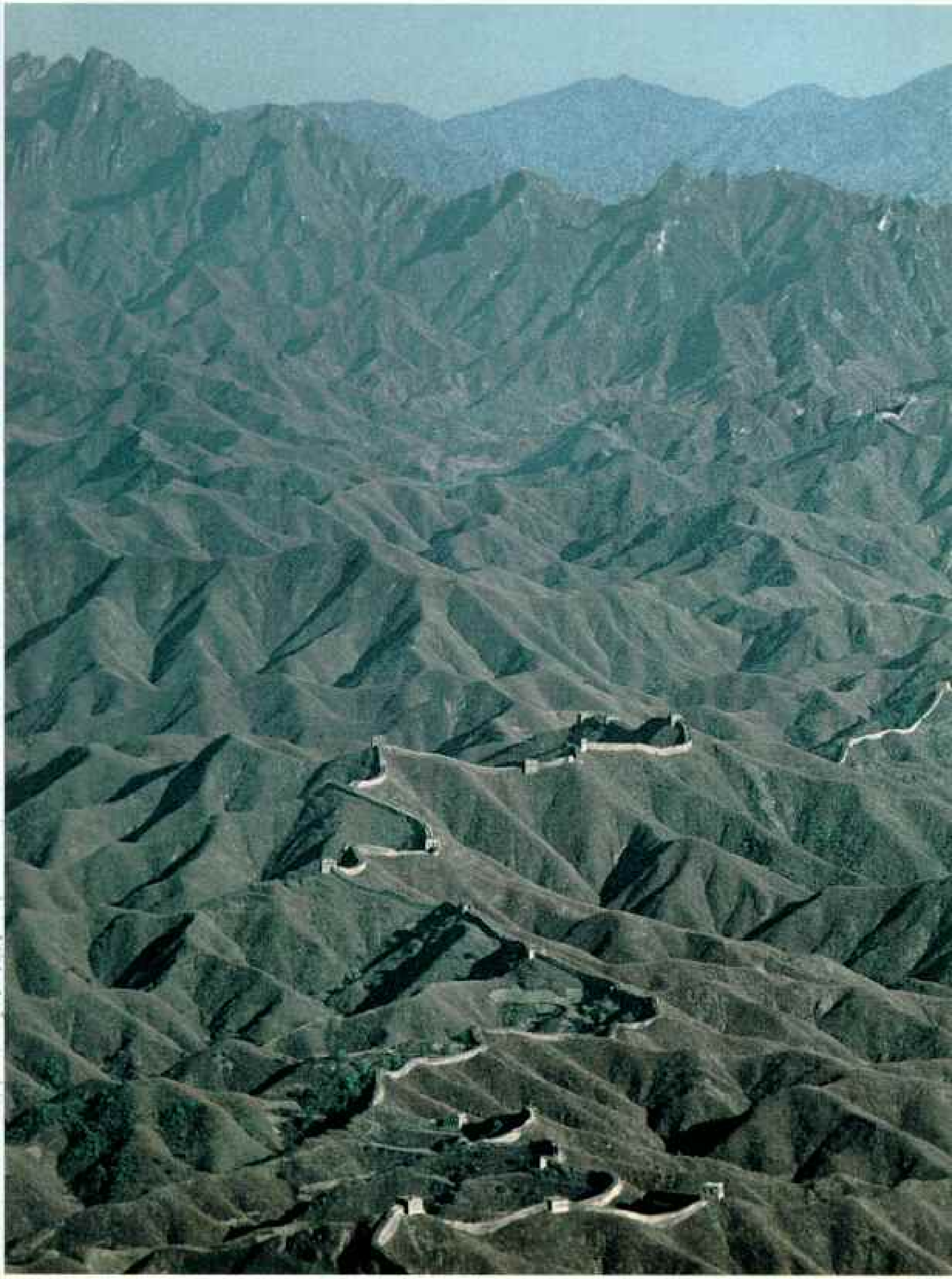
With its blistering heat and scant rainfall, the climate of the Turpan area has helped preserve the ruins of many ancient cities that rose, flourished, and fell along the caravan route known as the Silk Road. South of Turpan, an unknown number of similar cities are thought to lie buried under the sands of the great Taklimakan Desert.

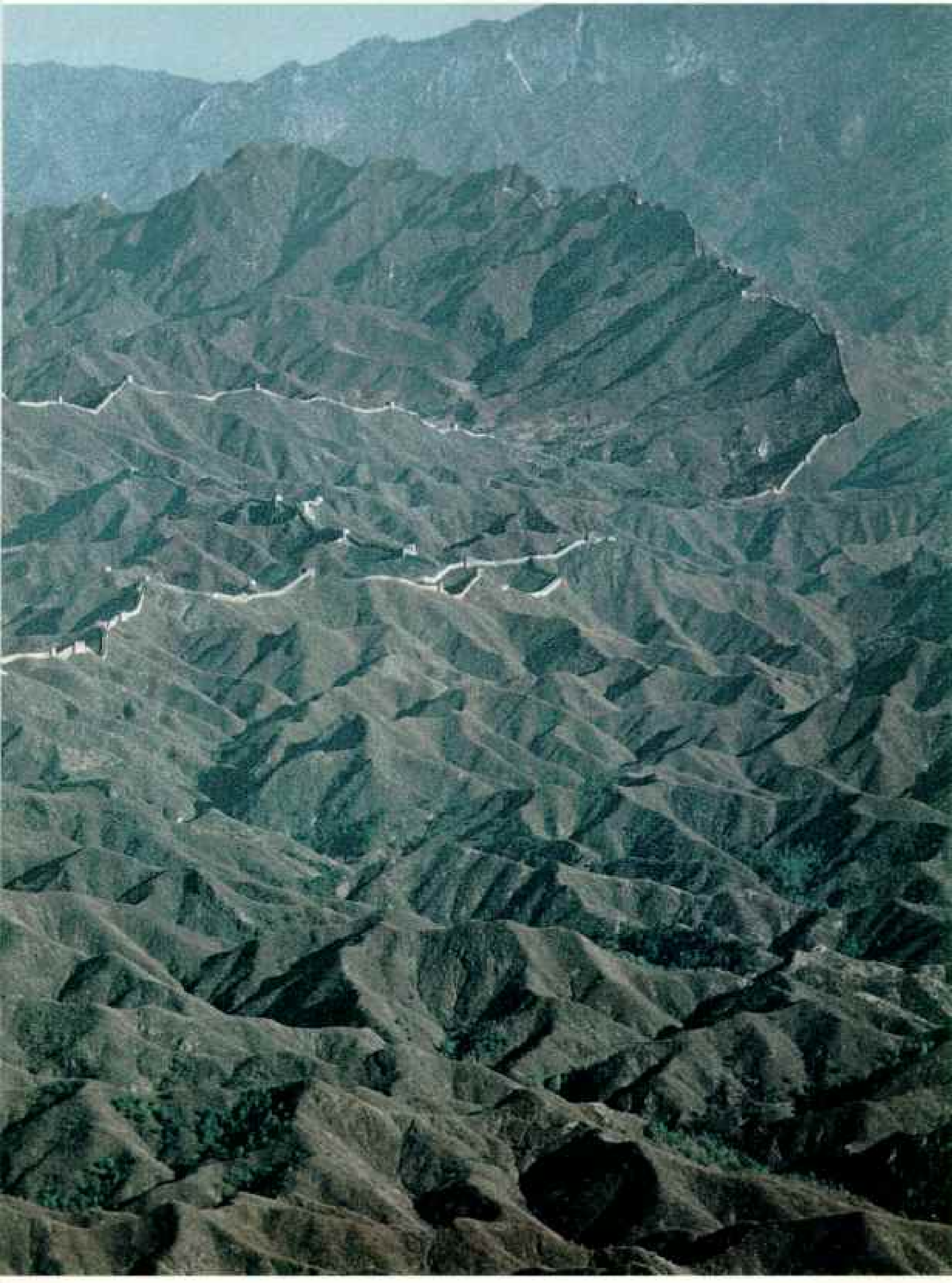


HIGH ABOVE its river-fed oasis in the Turpan Depression, the ruins of Jiaohe recall the centuries of religious and political turmoil that engulfed the Xinjiang region before the city's decline in the 13th century A.D. Though its original inhabitants are unknown, it had become a center of commerce for the Han dynasty, when its name, which means "the intersection of two rivers," first appeared in court records. It was during that dynasty (206 B.C.–A.D. 220) that camel caravans laden with Chinese goods began traversing the 4,000-mile trade route later called the Silk Road. Along this route in the centuries to follow, Buddhist missionaries from India carried their faith to the desert kingdoms of Xinjiang and the heart of China itself. Jiaohe apparently became a bastion of the new religion, as the remains of its monasteries, temples, and a cluster of a hundred small shrines (above) seem to testify. Unlike many other desert cities of its time, Jiaohe needed no walls, since its elevation some hundred feet above the riverbeds provided protection. Archaeologists believe the city was inhabited mainly by landlords and priests, while farmers lived in the surrounding lowland. By the tenth century a second great religion had found its way east along the Silk Road, and the tribal kingdoms of Xinjiang began to convert to Islam—a process marked by bloodshed and religious violence. At Jiaohe and throughout Xinjiang, Buddhist art and statuary were defaced by Islamic iconoclasts, as Xinjiang became the Muslim stronghold that it still is today.

Older than the Silk Road, parts of China's Great Wall date back to at least the fourth century B.C., when a number of

individual walls were built by northern kingdoms as a defense against nomadic tribes of the area. When Qin Shi Huangdi unified these kingdoms under his rule (221–210 B.C.), he joined their walls into a single line of fortification. At watchtowers along the way soldiers kept a wary eye against the feared marauders of the steppes. Seen here at Gubeikou Pass north of Beijing (following pages), the wall extended more than 3,000 miles from an arm of the Yellow Sea to a point on the Silk Road in northern Gansu Province.





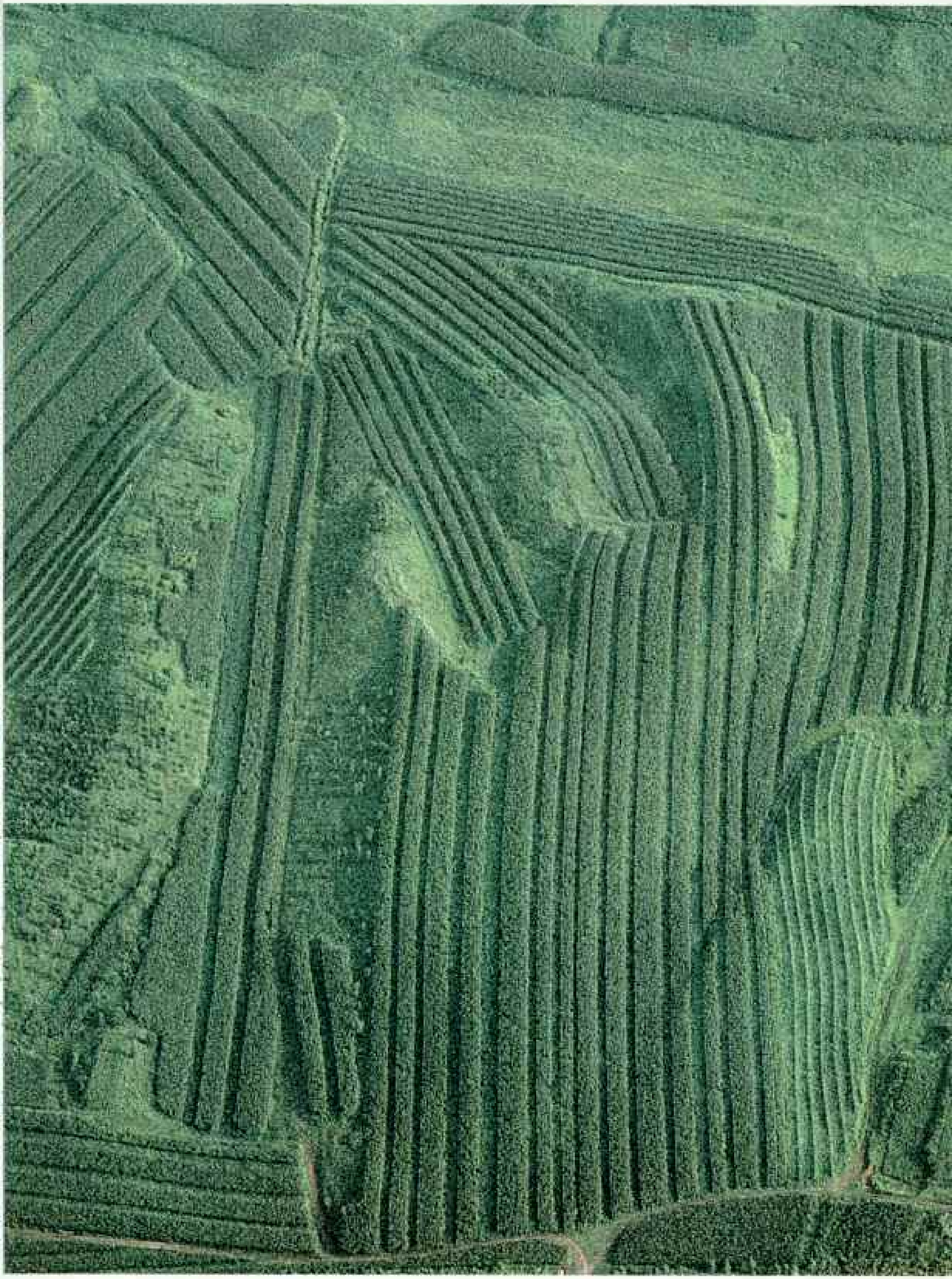
ONCE AN OCEAN GULF, now a freshwater lake teeming with fish and crustaceans, Tai Lake occupies the center of the southern part of the Yangtze Delta—a tongue of silted land that has built up over the past millennium or two. For centuries Chinese tourists have flocked to the parks that still line much of the lake's shore. In recent years land reclamation for fishponds (above) and rice fields has encroached upon the 900-square-mile lake.

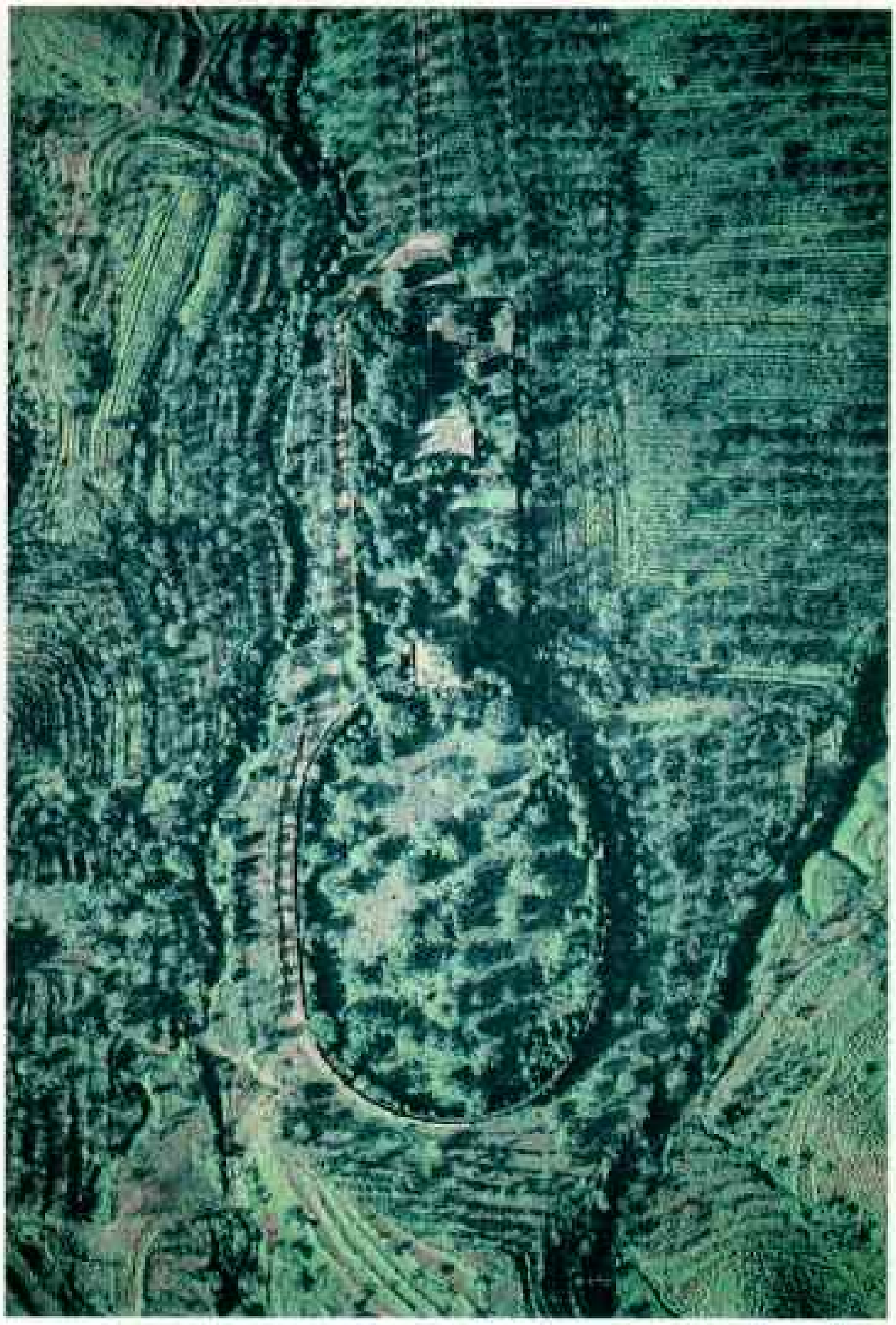
Home to about 30 million people, including the 12 million inhabitants of the municipality of Shanghai, the Yangtze Delta is a showcase for China's new "responsibility system" of agriculture, which has made a good portion of the country's so-called peasants the most highly paid members of the economy. A radical modification of the commune system instituted in the 1950s, the new scheme encourages individual initiative by linking remuneration with output. Officials assert, however, that this represents a fine tuning, not an abrogation, of socialist principles. While individual households are being charged with the responsibility of managing their own contracted plots in intensely populated provinces like Jiangsu, the state still owns the land. And communal work brigades remain the rule in less populated regions such as Guizhou (right), where harvested paddies are stacked with rice stalks that will be used for fuel and compost.

Though only 12 percent of Missouri-size Guizhou is used for agriculture, farmers here are able to obtain two crops a year from their fields. Like the other provinces of eastern China, this region receives

abundant precipitation from the monsoons that sweep across the country from April through October.

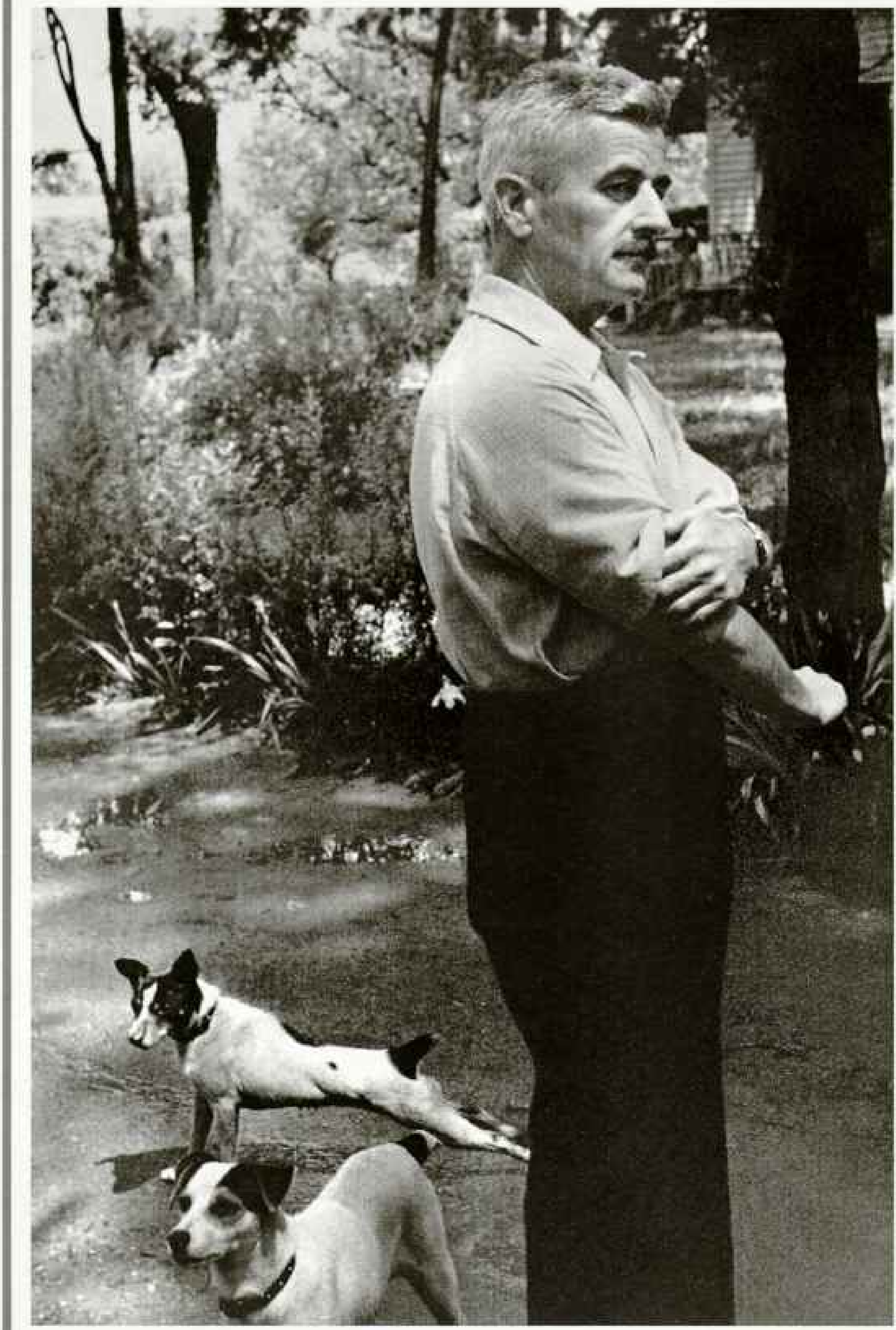
In the northern reaches of the North China Plain, where a crazy quilt of tractor-tilled cornfields (following pages) yields to the lay of the land, mechanized farming is increasingly the norm. These fields in Liaoning Province probably represent the collective labor of one agricultural commune that normally cultivates 100,000 *mu*, the traditional Chinese land unit, equal to one-sixth of an acre.





PLANNED and plotted by the arcane laws of *feng shui*—seeking harmony with nature—the tomb of Yung-lo (right), third emperor of the Ming dynasty, resides in a tranquil valley northwest of Beijing, protected by mountains from the evil spirits known to ride the northern winds. Nearby the mounded tombs of 12 other emperors attest to the glory of China's last native-Chinese dynasty—whose 276-year reign was one of the longest and most prosperous. In 1368 the Ming surged from rebel strongholds in eastern China to drive the hated Mongols and their Yuan dynasty from power and to establish their own capital in Nanjing. In 1420 Yung-lo returned the capital to Beijing, after choosing the site at which 13 of the last 14 Ming emperors would be buried in their respective tombs. Of these, only one, that of Wan-li, has been excavated. Ruling from 1572 to 1620, his was the longest reign in the dynasty. When his tomb was opened in 1956, his body was found in a wooden coffin. Alongside were those of the empress and his chief concubine. Exposed to the air, the three coffins and their remains rapidly disintegrated, which is one reason that Chinese archaeologists are reluctant to open the remaining tombs.

Today millions of Chinese tourists visit the tombs each year to honor the dynasty that restored China's position as Asia's dominant power after centuries of decline. Before the Ming were usurped in 1644 by another band of foreigners from the north, the Manchus, they had extended their rule or influence through most of what is now modern China, including the Muslim kingdoms of Xinjiang. There, on the outskirts of the regional capital of Urumqi, the widely spaced grave sites of Han Chinese encroach on the burial mounds of a traditional Muslim graveyard (facing page), demonstrating in death what has happened in life to the Muslim minorities in China's western regions. Now including about half of Xinjiang's 12 million people, the Han are intent upon settling the sparsely populated, mineral-rich autonomous regions. Putting people in proximity with resources—of which, in China, land itself is the most precious—is all part of a master plan to propel the nation into the 21st century with a momentum that will carry it to full development and prosperity. □



HENRI CARTIER-BRESSON, MAGNUM

FAULKNER'S MISSISSIPPI

At home with his dogs in Oxford, Mississippi, William Cuthbert Faulkner in 1947 was only three years away from winning the Nobel Prize in Literature. An intensely private man, he was driven by the demons of his creativity to transform his corner of the South into a seamless fictional world.

By WILLIE MORRIS

Photographs by
WILLIAM ALBERT ALLARD

HIS SPIRIT is still here, of course: in the woodsmoke of November from the forlorn country shacks, in the fireflies in driftless random in the town in June, in the summer wisteria on the greenswards and the odor of verbena, in the ruined old mansions in the Yocona bottoms, in the echoes of an ax on wood and of dogs barking far away, in the languid human commerce on the courthouse square, in the aged whites and blacks bantering on the brick wall beside the jail. His niece, Dean Faulkner Wells, says that late one night in the house on South Lamar she awakened suddenly to the smell of his pipe. She knew his ghost was there.

William Faulkner's imaginative, intuitive cosmos—Yoknapatawpha County—was one of the most convincing ever conceived by a writer. His own "little postage stamp of native soil," as he called it, was a spiritual kingdom that he transmuted into a microcosm not only of the South but also of the human race. More than any other major American novelist, with the possible exception of

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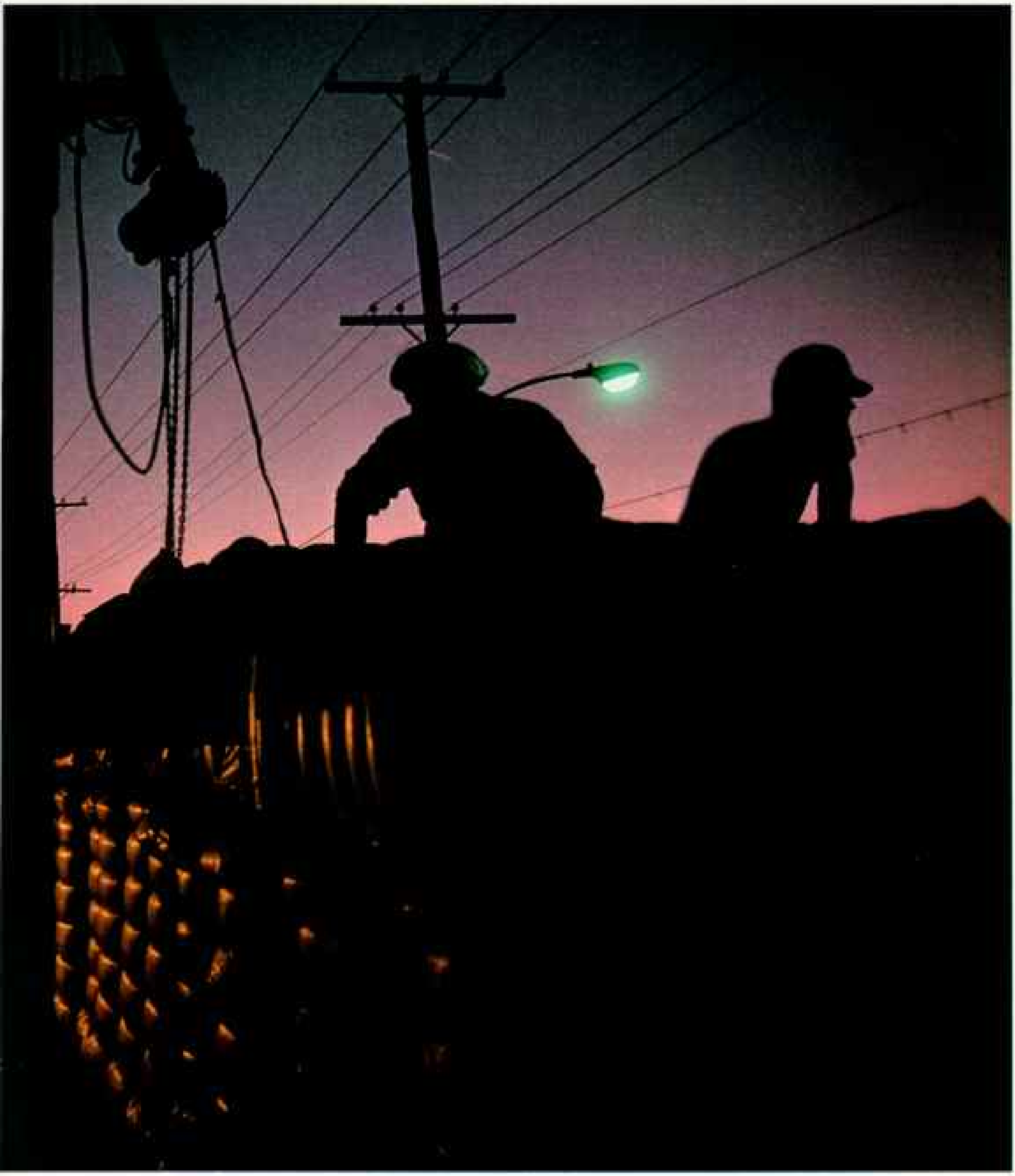
WILLIE MORRIS, a former editor of *Harper's* magazine, lives, writes, and teaches in Oxford, Mississippi. His most recent novel, *Taps*, will be published by Doubleday later this year. WILLIAM ALBERT ALLARD photographed his first article for NATIONAL GEOGRAPHIC in 1964; this is his 18th.

Marking the end of a harvest, laborers load bales onto a flatbed trailer truck at a cotton gin in Shaw, Mississippi. Cotton sets the pace of life in Faulkner's mythical Yoknapatawpha County, whose seat, Jefferson, is the fictional counterpart of Oxford. Finding all the materials he needed in his "little postage stamp of native soil," Faulkner used the triumphs and failures of Yoknapatawpha residents to explore truths of the human heart.



Hawthorne, he stayed close to home. In his youth, there were a few months in the East, in New Orleans, in Europe, but in the 1920s something turned in him; he began to realize the advantages of using the place where he had been reared as the setting for much of his fiction. Despite his later sojourns in Hollywood and in Charlottesville, Virginia, his physical and emotional fidelity to Oxford and to Mississippi, to the land and the people that shaped him, was at the core of his being, so that today Oxford and the real county—Lafayette—are the most tangibly, palpably connected to one writer's soul of any locale in America.

In the beginning it was virgin—to the west, along the Big River, the alluvial swamps threaded by black, almost motionless bayous and impenetrable with cane and buckvine and cypress and ash and oak and gum. . . . Words like these first drew me to Faulkner when I was a homesick Mississippi boy at the University of Texas in the 1950s. At first I was awestruck, mesmerized, then saturated. His world of Sartorises and Snopeses, Compsons and Varners, Beauchamps and Gibsons, dogs and mules and woodlands and swamp bottoms was my world too. My own Yazoo City was only 120 miles from his fictional Jefferson.

Then, after a while, I became frightened, a fear that seeped deep into my blood and left me nearly breathless with doubt. I thought I wanted to be a writer. How could one ever be as good as this man?

Finally I made my private truce with Mr. Bill. I never met him. There were too many years between us. But I know him. After a long time in the East, I now live in his town.

WILLIAM FAULKNER was a small man, about five feet six, but his facial expression and the set of his head and neck and shoulders, especially in his later years, gave the impression of greater size. His voice was soft and whispery but had carrying power, and he spoke fast. His laugh was a chuckle, almost a snort. "He seemed to belong outdoors," Dean Faulkner Wells remembers. "His skin was weathered, tan, slightly wrinkled, and he smelled of horses and leather, cedars and sunshine, pipe tobacco and bourbon."

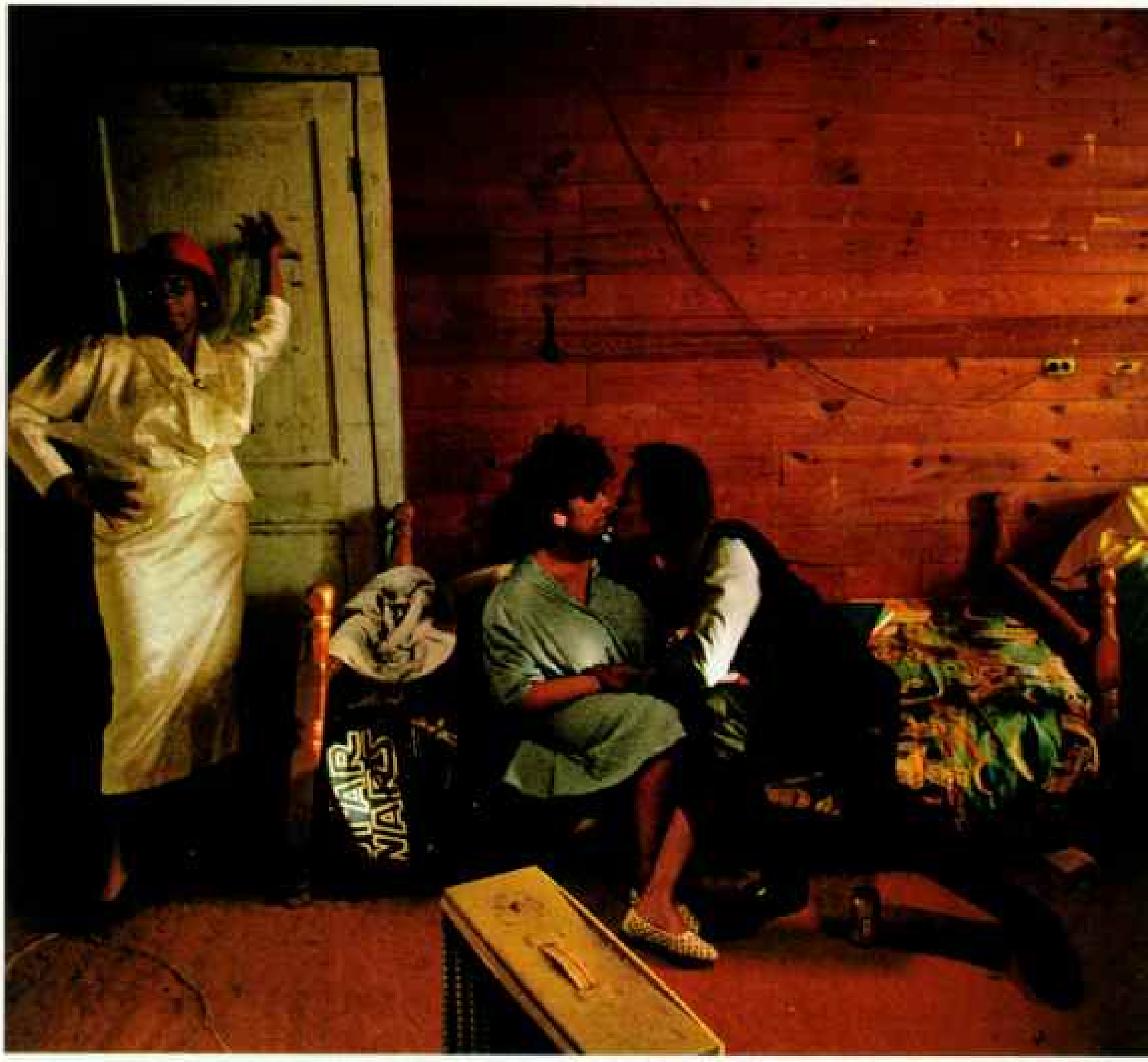
His father owned a livery stable, then a hardware store, and later was the secretary and business manager of the University of Mississippi—Ole Miss. His playmates were his brothers and cousins and neighborhood children and the black children of the servants. The old black retainer, Mammy Caroline Barr, was a second mother. Billy's relationship to her was very close, a love that deepened when he was grown and that in later life was almost worshipful.

Although he read a great deal in his youth, he was not considered a bookworm. He was impatient with school. He played quarterback for Oxford High School, where he broke his nose. He was an erratic pitcher in pickup baseball games. All his life he loved to ride horses, which were always throwing him, and as a grown man he owned a sailboat and took pride in being a sailor. He was good at golf and tennis and handy with tools. He adored, of course, to hunt in the big, vanishing woods, but he was not a particularly good

"Come up, boys," the Texan says in Faulkner's story "Spotted Horses." "You're just in time to buy a good gentle horse cheap."

Such words fall on skeptical ears at an auction barn near Pontotoc, where shrewd farmers from the hills gather to bid on horses and tack.

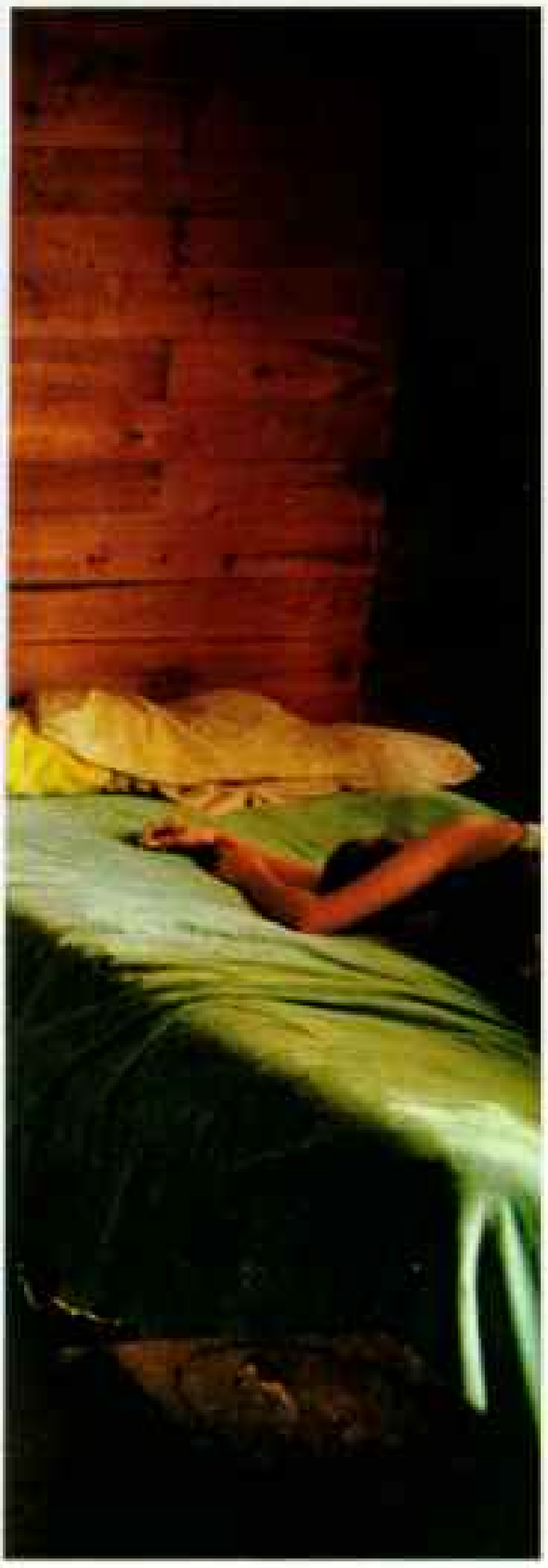
In his Yoknapatawpha saga Faulkner contrasts the wariness of such farmers with the decadence of fallen aristocrats and the rapacious greed of poor whites.



Frozen for a moment like characters in a drama, friends and relatives of blues musician Junior Kimbrough relax at his home outside Holly Springs late on a Sunday afternoon.

"That's all any story is," Faulkner said. "You catch this fluidity which is human life and you focus a light on it and you stop it long enough for people to be able to see it. . . ."

Faulkner wrote movingly about blacks and was deeply concerned about race relations in the South. But he was acutely aware of the invisible barrier between blacks and whites.



shot. In Virginia years later he rode to the hounds. He loved dogs and understood them as much as he did mules.

He admired the girls of his youth but was habitually shy, then and later. Long before he became a writer, he was in love with his future wife, Estelle, a fragile, popular beauty one and a half years his senior. But her parents considered him undeserving and without promise, and she married someone else, bore two children, then eventually was divorced and married him.

He enjoyed the company of children. He relished conversational games: Who were the 12 Caesars? If you were a vegetable, which would you prefer to be, and why?

He could be curt and rude and cutting, even among his family. He had no patience with cruel buffoons in any locale. I am certain he considered himself a Sartoris, an aristocrat, a fallen patrician, striving to regain the grandeur of his great-grandfather W. C. Falkner. (W. C. had dropped the *u* from the surname, and William reinserted it.) But to him, I sense, manners had nothing to do with class or color but with the way people behaved—their quintessential character. When he went to the University of Virginia in his declining years, he said, with considerable irony, that he admired Virginians because they were snobs, bound by manners, tradition, reserve, and, of course, superiority.

He was a master of reverse snobbery. He deplored the radio and telephone and did not own a television. For years he drove an ancient convertible with rusted floorboards. Things kept falling out: books, shirts, toys, fishhooks, swimming suits. When he had money, he bought fine things. He took good care of his family. He was intensely loyal to those he loved.

He went on horrific binges. He could be a cruel drunk, or a totally silent one, and later contrite. Those who knew him say he would almost consciously decide: I'm going to get drunk today—and he would. His bouts of heavy drinking followed not only failures but also successes—such as the one shortly after he was told that he had won the Nobel Prize. It is likely that he drank less than is popularly rumored, but he was often treated in Memphis or at a sanitarium in Byhalia, 35 miles north of Oxford, and that is where he died.

He wrote and told monumental tales of being a pilot and a warrior. Sometimes you have to lie to tell the truth. When, at 21, he came home from Canada after World War I, he wore around town the uniform of a British officer, complete with pips, wings of the Royal Flying Corps, Sam Browne belt, cane, and swagger stick. He affected a limp and claimed to have a silver plate in his head from a plane crash. The truth was he had not completed flight training and had never left Canada.

People began calling him Count No 'Count. He wrote poetry and worked as a painter and carpenter. He enrolled briefly at Ole Miss, only a few blocks west of the courthouse square.

He made a D in English. One of the Ole Miss literary societies refused him membership. For a time he ran the university post office. "He was the damnedest postmaster the world has ever seen," a friend said. A professor filed a bill of complaint that the only way

people could get their mail was to dig it out of the trash can at the back door. The postmaster delayed delivery of magazines until he had read them himself. He and his comrades played cards in the back and closed down the post office early to go play golf. When he resigned under pressure, he declared that he never again would be at the beck and call of "every S.O.B. who's got two cents for the price of a stamp." He was later dismissed as the scoutmaster of the Oxford troop when a preacher complained about his drinking.

He was frequently broke then. It was not easy. He took the odd jobs around the university and help from his mother; he painted steeples and worked in the power plant. His early books were financial failures. From 1929 to 1932, in the most extraordinarily productive period of any American writer in history, he published *Sartoris*, *The Sound and the Fury*, *As I Lay Dying*, *Sanctuary*, and *Light in August*—all written while he was almost totally neglected. Not until *Sanctuary* in 1931, which the townspeople called his "corncob book," did his work attract attention, and even then, owing to the publisher's bankruptcy, he made no money to speak of on the book. Off and on over the years Faulkner claimed that he had written *Sanctuary* only for the money, which may or may not be true but which detracts gratuitously from this powerful book.

SOME PEOPLE in town stood by him, foremost the lawyer Phil Stone, one of his early mentors, and his mother, Miss Maud. Stone was four years older than he, an honors graduate of both Ole Miss and Yale, a garrulous man who advised and encouraged the fledgling poet and writer. He had some of the earlier manuscripts typed in his law office and peddled them to editors.

Miss Maud was a tiny wisp of a woman of immense tenacity and pride. "Bill would have had very little," his brother Jack often

MARTIN J. DAIN, MAGNUM

Paying tribute to a fellow southern writer, distinguished critic Cleanth Brooks and Pulitzer Prize-winning novelist Eudora Welty came to Oxford in 1987 to celebrate the issue of a William Faulkner commemorative postage stamp.

"I don't know any literary people," Faulkner told inquiring scholars, pipe clenched in teeth. "The people I know are other farmers and horse people and hunters, and we talk about horses and dogs and guns and what to do about this hay crop or this cotton crop, not about literature." And that was the role he played at home in Oxford (above) in 1962.

In truth, he was extraordinarily well-read, finding in Conrad, Melville, Mann, Balzac, Joyce, and others the inspiration to perform dazzling experiments in style.

Chilling his listeners shortly before Halloween, curator Howard Bahr reads Faulkner's macabre story "A Rose for Emily" on the east veranda of Rowan Oak, the novelist's home and refuge for 32 years. Built in the 1840s in a secluded grove of oak and cedar trees, the stately house had no running water or electricity when Faulkner bought it in 1930. Purchased by the University of Mississippi in 1973, Rowan Oak has been restored and is open to the public.

heard her say, "had he depended on the people of our county for it." During her weekly rubber of bridge with other ladies of the town, one of them disparagingly mentioned the corncob book. "My Billy writes what he has to," Miss Maud said. She finished the rubber of bridge in silence, departed, and never played with them again.

He later called himself a farmer and seldom discussed his writing. Shelby Foote recalls driving into town as an aspiring young writer in the late 1930s to keep an appointment with him. He parked his car at the courthouse and asked a man sitting on a bench for directions to William Faulkner's house. The man looked at him, then turned his head and spit on the ground in disgust. Even when they did not read them, people naturally wondered if they were characters in his books.

There were rumors around town that he did not write the books (bringing to mind the old saw that Shakespeare did not write the plays, just some fellow with the same name). For years one personage of the town argued before anyone who cared to hear that the books were written by an erudite farmer who preferred not to sign his name, and that Bill Faulkner did not know the meaning of all the big words.

Even as recently as the early 1950s, when Evans Harrington, later the chairman of the Ole Miss English Department, was teaching English in the local high school, his students exchanged snickers

and knowing glances when he assigned them "A Rose for Emily." He asked them to explain their reactions. "We know about him," one of them said. "He's just an old drunk." They told Harrington of the delivery boy who went to Faulkner's house and saw him naked in a cedar tree.

Shortly before he won the 1949 Nobel Prize in Literature, his brother John reported, the Ole Miss faculty considered awarding him an honorary degree, but the proposal was voted down. After he got the Nobel, the professors who previously voted against him brought him up again. The others said, "For shame. We can't afford to give him one now. It's too late."

Here was a man, the writer Elizabeth Spencer says, "one of us, right over here at Oxford, shocking us and exposing us to people elsewhere with story after story, drawn from the South's own private skeleton closet . . . the hushed-up family secret, the nice girl who wound up in the Memphis whorehouse, the suicides, the idiot brother kept at home, the miserable poverty and ignorance of the poor whites . . . the revenge shootings, the occasional lynchings, the real life of the blacks. What was this man trying to do?"

Faulkner was born September 1897, died July 1962. In the years since his death, there has been in his hometown the inevitable softening, a singular amalgam of emotions involving pride, puzzlement, fear, mystery, forgiveness, and—in some quarters—a most begrudging acceptance. Some in the town say that Oxford did not

Returning to Rowan Oak for the first time in many years, Faulkner's only child, Jill Faulkner Summers, climbs the stairway to her old bedroom.

"Pappy could be most difficult with adults," she says, "but he had a world of patience with children."

Strapped for money during her childhood years, her father spent months at a time writing scripts in Hollywood, often miserably homesick. He later recounted the story—another fiction—that he had once told them at the studio he was going home to work, and they mistook him to mean Beverly Hills.

An enthusiastic outdoorsman, Faulkner savored the crisp air, camaraderie, and drama of the hunt, "the ancient and unremitting contest according to the ancient and immitigable rules which voided all regrets and brooked no quarter. . . ."

Hanging inside the screened porch of a hunting club near Clarksdale, a freshly killed buck symbolizes the prize of such a contest in what was once the "big woods" of northern Mississippi.

In Go Down, Moses, *young Ike McCaslin undergoes a rite of passage in this wilderness when Sam Fathers marks his face with the hot blood of the deer the boy has just killed.*

really begin to look upon him seriously until MGM arrived in 1949 to film *Intruder in the Dust*, affording the local citizens the multifold titillations of Hollywood, bit parts for homegrown characters, and outside money. The Nobel Prize, with the films and photographs of Count No 'Count beside the King of Sweden, must have had almost as salubrious an effect. "The vast majority today realize he's the biggest drawing card this town's got, even if they've only read a book or two," Evans Harrington surmises.

Prominently inscribed today on an outside wall of the Ole Miss library are the words from his Nobel Prize address: "I decline to accept the end of man. . . . I believe that man will not merely endure: he will prevail." In August 1987 there was a ceremony in Oxford to celebrate the U. S. Postal Service's issuing a commemorative Faulkner stamp. There was considerable irony in this too.

YET one can still perceive an old, smoldering animosity, the remembrance of a long-ago slight from him, a buried enmity, a pent-up bitterness never reconciled: You could walk by him on the square and say hello, and he would look right through you, although the next day he might stop for an amiable conversation. He doctored his book manuscripts at the last moment, changed his words and characters in afterthought to make as much money as possible, lied and cheated for money. Had not his own daughter said in a television documentary that he once told her in his drunkenness that no one ever remembered Shakespeare's child? Who did he think he *was?* One aged town father still says William Faulkner did not like him because he thought him a Snopes. "Well," he says, across the years, "I didn't like *him* either."

Oxford is a serene and lovely town of about 11,000 people—roughly one-fifth of them black—and were it not for Ole Miss, with its student population almost as large as the town's, it would be a more or less typically isolated northern Mississippi county seat. Faulkner himself purposefully did not place the University in his fictional Jefferson. He put it in "Oxford," 40 miles away. He did not wish to complicate his pristine southern town with a university.

This is the Deep South. The milieu is a world's, or perhaps a civilization's, remove from, let one say, Hannibal, Missouri, which has so commercialized Mark Twain. There is no Faulkner Boulevard in Oxford, although there *is* a murky little passageway named Faulkner Alley, which cuts inauspiciously between the Shine Morgan Furniture & Appliance Company and Promises & Praise Christian Book Store on the square. His portrait is on display in the local McDonald's; when the restaurant first opened, two Faulkner relatives asked that the painting be removed, and for a short while it was.

Mayor John Leslie, elected in 1973, the same year as the beer referendum (he beat beer by 24 votes), says, "The town is deliberately low-keyed on Mr. Bill, because he was an intensely private man, and we know he'd prefer it this way. Also this is the desire of the family," meaning Jill Faulkner Summers, Faulkner's only child,

In the finest spirit of Yoknapatawpha's leading families—the Sartorises, de Spains, and Compsons—a jovial group of friends rides an old cotton wagon to an elegant dove hunt near Hollandale in the delta.

Faulkner relished the role of country squire—one of many personas he assumed—and had a dramatic flair for costumes. But in his novels a sense of doom hangs over some descendants of the county's old, established families, who express their moral decay through madness, alcoholism, and hatred.

who lives in Charlottesville; Dean Faulkner Wells, the only niece; and Jimmy Faulkner and Chooky Falkner (spelled without the *u*), the nephews, who live in Oxford.

Richard Howorth, the owner of Square Books across from the courthouse, agrees with the mayor about the town's subdued treatment of its most famous citizen. "The mystique shouldn't be exploited," he feels, "because then it wouldn't be a mystique."

The Faulkner visitors are a fairly sophisticated crowd. A man from the Netherlands discovered Faulkner through a lecture by the distinguished Peruvian writer Mario Vargas Llosa. The Dutchman learned that Faulkner was Vargas Llosa's favorite writer, so he came to Oxford. He went to Faulkner's house, Rowan Oak, and signed the guest register. He noticed the name directly above his—Mario Vargas Llosa. And there Vargas Llosa was in the next room.

People would drift into Mayor Leslie's drugstore on the square. "My wife, Elizabeth, gets to talking with them when she hears Yankee or foreign accents. Not too long ago one woman came in from Yugoslavia. She translates Faulkner's books. Just a few seconds later another lady came in who'd produced and directed *Requiem for a Nun* in Paris."

EVERY SUMMER Ole Miss sponsors a week-long Faulkner conference, which usually comes right after the Ole Miss cheerleaders clinic and draws a large group of Americans and foreigners. The cultural hazards for visiting scholars can be unusual.

A Frenchman engaged in a monograph on Christian existentialist symbolism in the later works was taken on a tour of the countryside. "I am fascinated by your peasants!" he exclaimed. Years ago an Italian woman who had known Hemingway was taken to the old Carter-Tate house, a ruined unpainted shell with broken windows and vines ensnarling the porch. "Such marvelous decadence!" she said. "If you just had a *preservative* for all this decadence!"

One recent summer I myself was having a literary talk at a cocktail party with an obliging Russian gentleman. I asked if there were many Snopeses in the Soviet Union. "There are none," he replied sharply. "Under the Soviet system it is impossible to have Snopeses."

Dean Faulkner Wells and her husband, Larry, live in Miss Maud's house, a block south of the square. Her father, Dean, was the youngest of the four brothers. He was an avid hunter and fisherman and played second base and outfield for Ole Miss. The bond between William and Dean was exceptionally close. William let him use his airplane, a Waco cabin cruiser, and paid for his flying lessons. When all four brothers were flying, their mother would laugh and say, "I don't have a son on earth."

At 28, shortly before his daughter Dean was born, Dean died in a crash in an adjoining county. William wrote the inscription for his tombstone in the old Falkner plot in St. Peter's Cemetery, the same words as on Lieut. John Sartoris's stone in *Sartoris:* "I bare him on

Eagles' Wings and brought him unto me." In his horrendous grief he moved for a time into his mother's house to help look after Dean's young widow, Louise, who was five months pregnant. During this painful time he wrote part of *Absalom, Absalom!* on the dining room table, around which some of the Faulkner family and I often gather for holiday feasts. He took care of young Dean, who was less a niece than a daughter.

Mayor Leslie would deliver a package of medicine from his drugstore to Faulkner's mother's house and find him sitting in a green glider on the front porch. "Mr. Leslie, if you have a few minutes, let's pass the time," he would say, and they would talk about what was going on in town, which interested him considerably.

He would say to Louise, "Always have $50 in the bank. You can meet any situation." Dean remembers the ghost stories he told the children of the family and the neighborhood, particularly the one about the doomed Judith, who he claimed threw herself to her death off the balcony of the Sheegog-Bailey house (which he bought and named Rowan Oak) after having been jilted by her Yankee beau. He would take his niece to the Charlie Chan movies at the Lyric Theater on Saturday nights, and as they walked home he would ask her, "Dean, did you like what Number One Son did?" and they would discuss the action in earnest detail. No one was to interrupt him when he was writing, but Dean burst in one afternoon and shouted: "Pappy, I've got the best news! An Ole Miss girl has just been named Miss America!" He pulled himself up from his table, took his pipe from his mouth, and said: "Well, Missy, at last somebody's put Mississippi on the map."

He loved the playfulness of life—sipping bourbon in the chilled twilights in the big woods, playing the host in ceremonial moments. He had a profound regard for tradition. He cherished Christmas and the Fourth of July. He gave Dean's daughter Diane an American flag shortly before her second birthday. On New Year's Eves at Rowan Oak he invited the young people his daughter Jill's age, where before a roaring fire, as the chimes of the courthouse sounded midnight, he served them champagne and gave the toast: "Here's to the younger generation. May you profit." He enjoyed the spontaneity of the young and felt deeply the vulnerability of children; people should believe in their progeny. The women he loved the best were either very young or very old. He was not an especially good husband and had a number of affairs, often with much younger women, later chronicled by either the women, or third parties, or both.

HIS FIRSTBORN CHILD, a little girl named Alabama after his Aunt 'Bama, died when she was nine days old. He carried the tiny casket on his lap to St. Peter's Cemetery and put her in her grave.

"The cedar-bemused cemetery," as he described the one in Jefferson, is only a few blocks from the square: the stones "whiter than white itself in the warm October sun against the bright yellow and red and dark red hickories and sumacs and gums

Wearing a T-shirt given to him by an "adopted" college friend, Ricky Murphree plays during a picnic at the North Mississippi Retardation Center in Oxford.

"No one individual can look at truth. It blinds you," Faulkner believed. For that reason he sometimes told stories from different points of view, each revealing a new perception of the truth. In his favorite novel, The Sound and the Fury, *the story begins inside the mind of Benjy, a mentally retarded character.*

OVERLEAF >
Under the watchful eye of a mounted guard, convicts at the state penitentiary at Parchman tend the prison's 340-acre cotton farm. Unlike the tall convict of The Wild Palms, *who was a farmer at heart, most inmates today come from urban areas.*

"People love my catfish," says Mary Hudson, owner of the small grocery store and restaurant in rural Taylor, where members of her family chat on a quiet afternoon.

Such a store in Faulkner's novel The Hamlet *is taken over by the conniving Snopes clan, who insinuate themselves into the life of village and town and multiply like mice.*

"You can't find the real Snopeses in stores like that any more," said one Oxford resident. "Today they live in big houses with white columns."

and oaks like splashes of fire itself among the dark green cedars." The living and the fictitious are not strangers here. There are surnames on the stones here that are the same as his fictional characters, giving to this terrain a poetic, unearthly ambience.

Walking among the stones, as I often do, it is not difficult to imagine the idiot Benjy on his weekly visits in *The Sound and the Fury*. The inscription from Proverbs under the marble face of Eula Varner Snopes, wife of Flem Snopes, atop one of the grandest stones in the Jefferson cemetery, is nearly the same as that to Faulkner's grandmother on an equally formidable monument in the old Falkner plot: "Her Children Rise and Call Her Blessed." In the black section, which borders upon the white and mingles here and there with it, lies the grave of Mammy Caroline Barr, the indomitable woman who raised the Falkner boys. He wrote the inscription on her tombstone: "Her white children bless her."

His own stone is a rather simple one. He lies next to his wife, Estelle, under some oaks at the foot of a hill. Bill Appleton, the former supervisor of St. Peter's, has found strange objects left here by visitors: flowers, candy kisses, pints of bourbon, and once a soggy volume of the collected poems of William Butler Yeats. Many times he has seen literary pilgrims at the grave after midnight with flashlights.

Masaru Inoue, a 41-year-old professor from Yokohama, came to Yoknapatawpha on a year's sabbatical. He discovered *The Sound*

and the Fury 20 years ago in Japan. He reread it ten times. He saw parallels between Faulkner's characters and his own ancestors.

Inoue came into the town for the first time on a bus from Memphis. "We crossed South Lamar. I saw the white building with the clock above it. I moved my eyes and there was the Confederate soldier. On the other side of the courthouse was the First National Bank, which William Faulkner's grandfather established. I saw the water tower. 'Oh, this is it! This is it!' I thought."

The convergence of fact and fiction from the Faulkner corpus is often eerie, but titillating. The Oxford telephone directory, for instance, lists 13 Varners—even including a Jody Varner—2 Hippses, 8 Ratliffs (one of them on Old Highway 6 in the mythical Frenchman's Bend vicinity), 9 Littlejohns, 2 Bundrens, 13 Carotherses, and 23 Houstons (Mink Snopes killed the intolerable Jack Houston).

The real-life Lowe twins, Ed and Eph, played the Gowrie twin brothers in the movie *Intruder in the Dust*, and one can see them to this day, older yet even more uncannily identical at 66, dressed precisely alike as they stride in exact step toward Smitty's restaurant on South Lamar, or with binoculars wordlessly looking down together from a second-floor window upon the courthouse square.

There is an aging black man here—he once served a stretch in Parchman for murder—who has sporadically and unsuccessfully been digging for gold (said to have been buried when Grant came

"Just wastin' time" on a porch beside the Taylor store, Nicky Hewlett waits for friends to drop by to "talk the situation over."

Sitting on similar porches throughout Yoknapatawpha County, Faulkner's characters sometimes amazed him with their independent ways.

Once they come to life, he explained, "they take off and so the writer is going at a dead run behind them trying to put down what they say and do in time."

through the county on his Vicksburg campaign) in and about the ruined plantation houses in the countryside, just as various Yoknapatawpha entrepreneurs did around the Old Frenchman's place. A couple of years ago 11-year-old Cap Henry's Uncle C. E. took him on a deer hunt, where he killed his first buck and had his face ritualistically bloodied, like young Ike McCaslin's in *Go Down, Moses.*

"Where is Temple Drake?" photographer Bill Allard kept asking himself, and me, in our peregrinations about the town, the campus, the county, the state. Temple Drake was the University coed who ended up one day with some highly disreputable characters at the ruin of the Old Frenchman's place in *Sanctuary* and got in serious trouble.

The observant eye of the photographer searched everywhere for her modern equivalent. He knew, as did I, something about her: her "taut, toothed coquetry," "her high delicate head and her bold painted mouth and soft chin, her eyes blankly right and left looking, cool, predatory, and discreet." But where was she now?

THE MISSISSIPPI DELTA begins 30 miles west of Oxford; Faulkner was obsessed by it and by the violent, majestic Big River at its western edge. Some of his finest writing is set there: *This land which man has deswamped and denuded and derivered in two generations so that white men can own plantations and commute every night to Memphis and black men own plantations and ride in Jim Crow cars to Chicago to live in millionaire's mansions on Lake Shore Drive; where white men rent farms and live like niggers and niggers crop on shares and live like animals; where cotton is planted and grows man-tall in the very cracks of the sidewalks, and usury and mortgage and bankruptcy and measureless wealth, Chinese and African and Aryan and Jew, all breed and spawn together. . . .*

Nearer home, the recognizable landmarks from the fiction still abound. The bronze plaque set in the white facade of the courthouse itself bears the words from *Requiem for a Nun:* "But above all, the courthouse: the center, the focus, the hub; sitting looming in the center of the county's circumference like a single cloud in its ring of horizon. . . ."

A block north of the courthouse was the jail, which quartered the murderers, thieves, and moonshiners from the fiction, replaced in the year of his death by a bland green-and-white concrete structure. Only a few blocks west toward the university is the old railroad depot, deserted and unused now, scene of so much feverish activity in the books. A quarter of a mile or so from this place of ghosts is the black section called Freedman Town, the unpaved roads and flimsy shacks of which have now yielded to concrete streets, federal housing projects, Martin Luther King Jr. Drive, and the town's integrated junior high school. Here, at the civic park and athletic complex, are the integrated baseball and basketball games and tennis matches. Then, back toward the square again, on the unhurried, shady streets with their antebellum houses set on broad private lawns, there will be *The Sound and the*

Faulkner dreamed of raising mules as appealing as these on sale in New Albany, and he bought a farm outside Oxford in 1938. His younger brother, John, ran the farm, but Faulkner spent as much time there as he could afford.

"Some Homer of the cotton fields should sing the saga of the mule and of his place in the South," he wrote in his novel Sartoris. *"He it was, more than any other one creature or thing, who . . . won the prone South from beneath the iron heel of Reconstruction . . . by sheer and vindictive patience."*

Recalling the gentility of plantation days, Angela Ligon of the University of Mississippi takes a stroll during the Old South Lawn Party, held by a chapter of the Kappa Alpha Order, a fraternity dedicated to chivalry.

Faulkner admired the old "cavalier spirit" even while detesting the legacy of intolerance and injustice left by slavery. "It's my country, my native land and I love it," he said of the South. "You don't love because: you love despite; not for the virtues, but despite the faults."

Fury house, surrounded by magnolias, bereft now of the iron fence behind which a retarded young man similar to Benjy Compson once walked up and down, and beyond that the Neilson-Culley home, which some claim as Miss Emily Grierson's in "A Rose for Emily," and where my friend Patty Lewis, who now lives there, says she sits on the back terrace under the magnolias with a tall drink at dusk and imagines Miss Emily and Homer Barron together in the cool dark of the upstairs in the days before Miss Emily went to the store to buy the arsenic.

It is the countryside, however, even more than the town, that is the most powerful testament to the lingering fable. At the old College Hill Presbyterian Church, where William and Estelle were married in 1929 and where Sherman encamped 30,000 troops before he and Grant moved on Vicksburg, there is a solitary stone obelisk in the graveyard with the inscription "The Dead." Out at the other end of the county is the village of Taylor with its post office and galleried stores.

"Nicky, Snake, Al, and the boys," says an artist friend from the delta who bought her old farmhouse here, "hang around in front of Mary's general store and catfish place telling tales and lies at the very spot where Temple Drake stepped off the train and into trouble." Along the narrow winding roads with gullies and ravines and patchy hills of cotton and corn and soybeans and the ubiquitous kudzu vines on all sides are the little tin-roofed houses and

unpainted cabins, their dusty yards full of chickens and dogs and junk and clothes drying on fences and lines.

"Dark House" was the working title for *Light in August*, and the haunted countryside around Oxford is dotted with crumbling houses darkly resonating the past and the vanished people who once lived in them. In the nearby dying community of Tula, across the river south of the Frenchman's Bend area, is a derelict old building that tilts at an angle. Surely this had to have been Varner's store! Just up the hill is a neat two-story house. Could this have been Mrs. Littlejohn's hotel? I paused at the rotted window of the store, looking into the dank shadows. I did not have to close my eyes to imagine Jody Varner and Flem Snopes holding forth there on just precisely how best to make money.

All prettied up for visitors, children romp in a bedroom of Wakefield, the restored 1858 home of Rook and Marie Moore of Holly Springs, one of the antebellum houses shown off during the town's annual house tour. More than 70 residences escaped destruction by Union troops, who occupied Holly Springs in 1862. In a twist Faulkner would have appreciated, a Yankee commander garrisoned at Wakefield fell in love with its widow owner and married her.

RACISM AND POVERTY had forever been his native state's twin burdens, and in his deepest soul he knew them both. In the heart of his fiction over the years it was the Snopeses and their friends who exerted the most ruinous influence on the society; it was the blacks who, through their quiet courage and dignity, endured.

In the 1950s he began speaking out publicly against racial injustice in his state: on the 1954 U. S. Supreme Court decision, the Emmett Till murder, and other things. "To live anywhere in the world of A.D. 1955," he said, "and be against equality because of race or

Her reflection in the mirror suggesting a life of patience and wisdom, Gearlena Kimbrough awaits guests at her home near Holly Springs.

The capacity to endure, Faulkner said, was a fundamental virtue of humanity: "to endure well grief and misfortune and injustice and then endure again."

Underappreciated and underpaid for years, struggling with alcoholism and the loss of loved ones, Faulkner knew something of endurance, as well as honor, pity, consideration, and truth. These were the true subjects of his fiction, he said, the only things ever worth writing about, "worth the agony and the sweat."

color, is like living in Alaska and being against snow." In those trying times he was a pariah in his native land more than Count No 'Count had ever been. He would be gratified, I believe, by the remarkable racial strides in recent years in Mississippi and by the civilized public dialogue on race.

Perhaps it has finally come full circle. Unless I am mistaken, the young people of his beloved Mississippi are reading him. David Sansing, an Ole Miss professor, assigns at least one of his books to students in his Mississippi history courses. They invariably say they want to read more. "They're awed," he tells me, "that he takes a locale, places, white and black people they know and raises them to the level of great literature. It really does something for them. It enhances their own self-esteem. He shows them that a Mississippi sharecropper or a poor black can face the same choices and mysteries as great leaders of state. He makes them aware for the first time that his people have to wrestle with the same complexities, the same inconsistencies that they do in their own lives. For the first time they realize, whether they'll be a lawyer in a small town, a doctor, a schoolteacher, a coach, that they too are in a life-and-death struggle. They tell me they're better equipped to deal with these things after reading him."

A young black woman, a Mississippian, in one of Sansing's classes had such an emotional reaction to *Absalom, Absalom!* that she was unable to write her report. Her grandfather, she told him, was white and still lived in her town. They never talked to one another. When she read about Thomas Sutpen, she said, he reminded her of her grandfather and of how evil man can be. "If Mississippians had read him 35 or 40 years ago," Sansing says, "we wouldn't have had the problems we had."

IN THE SWEEP OF HIS WORK his sense of the tragedy and dishonor of even the worst of human beings gradually softened, to be replaced by compassion and pity. "Man aint really evil," the sewing machine agent V. K. Ratliff says, "he jest aint got any sense." Running through Faulkner's work is a profound recognition of the awful brevity of life, that people are only temporary tenants of the earth and at its mercy in the end.

"It was the land itself which owned them," Mink Snopes acknowledges, "and not just from a planting to its harvest but in perpetuity. . . ." We are all in it together, I believe he is saying to me, and we are all in for a difficult time: "Memory believes before knowing remembers. Believes longer than recollects, longer than knowing even wonders."

As I sit in deep orange February twilights at the kitchen table in his mother's house listening with my friends to the Ole Miss games, I hear everlastingly the chimes of the hour from the courthouse down the way. They reverberate through the town, pervading his landmarks and his people with an almost palpable transience. They curiously suffuse me with the bravery and vision and majesty of his genius. They remind me: "The past is never dead. It's not even past." He was right about this, as he was about most things. □

Wildlife Quest to the Icy Seas of South Georgia

BEN OSBORNE

By SALLY PONCET

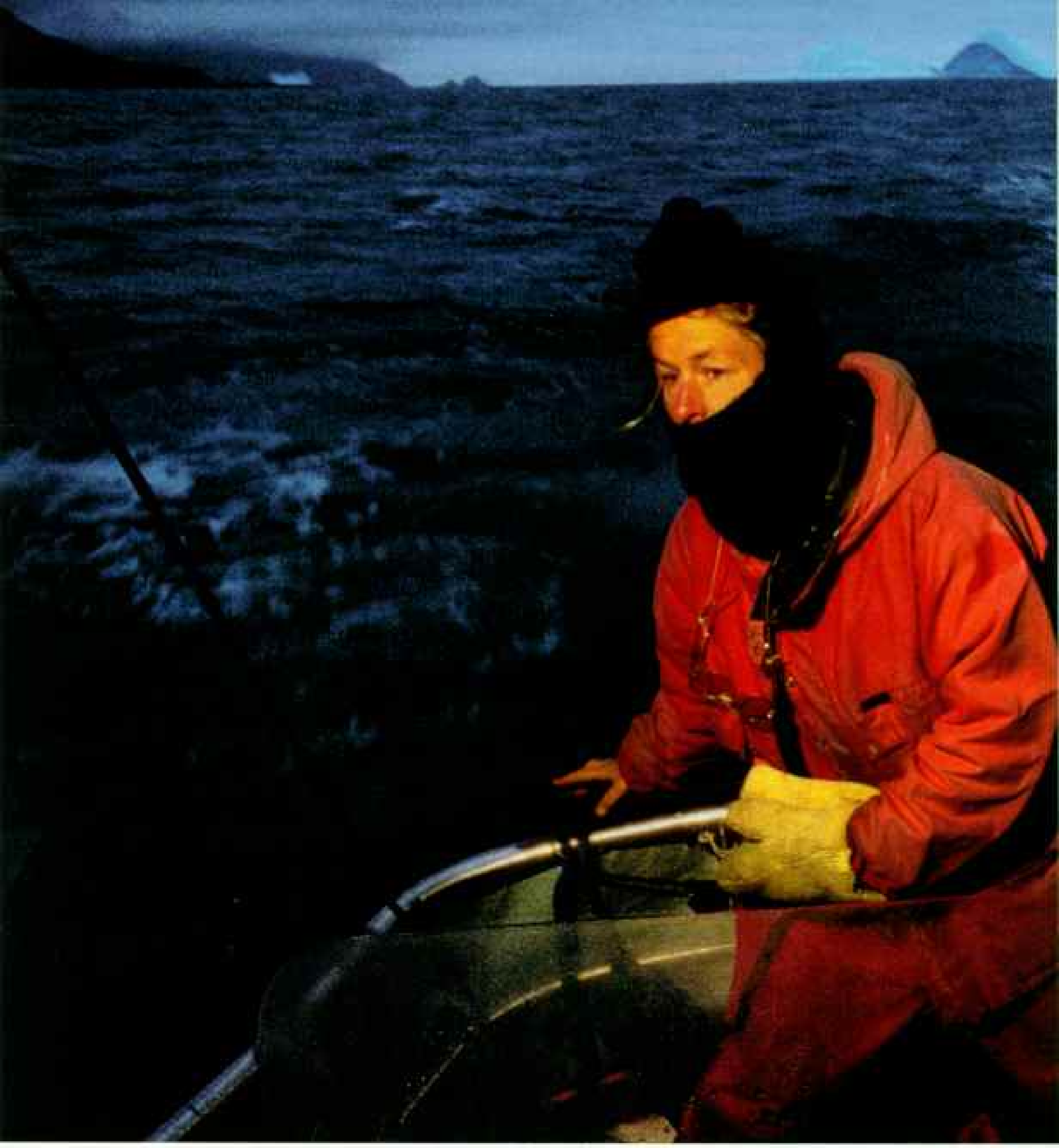
Photographs by FRANS LANTING

DAWN IS STILL AN HOUR AWAY. The darkest moments of the brief Antarctic summer night linger on, abetted by great clouds racing in from the west. Accomplices to a short violent squall, they stream past, engulfing the schooner in a deluge of wind and snow, whipping at the mainsail and freezing my fingers.

Alone on deck, I keep a firm grip on the wheel, making sure we maintain our position—hove to just half a mile off the north coast of the island of South Georgia in the South Atlantic (map, pages 346-7). Under reefed mainsail only and engine ticking over, *Damien II* tacks slowly back and forth as I wait for dawn.

Another hour or so before I'll wake my husband, Jérôme, and get under way. Shelter is just around the corner, a snug anchorage that Jérôme and I first visited 11 years ago on *Damien II*'s maiden voyage to South Georgia.

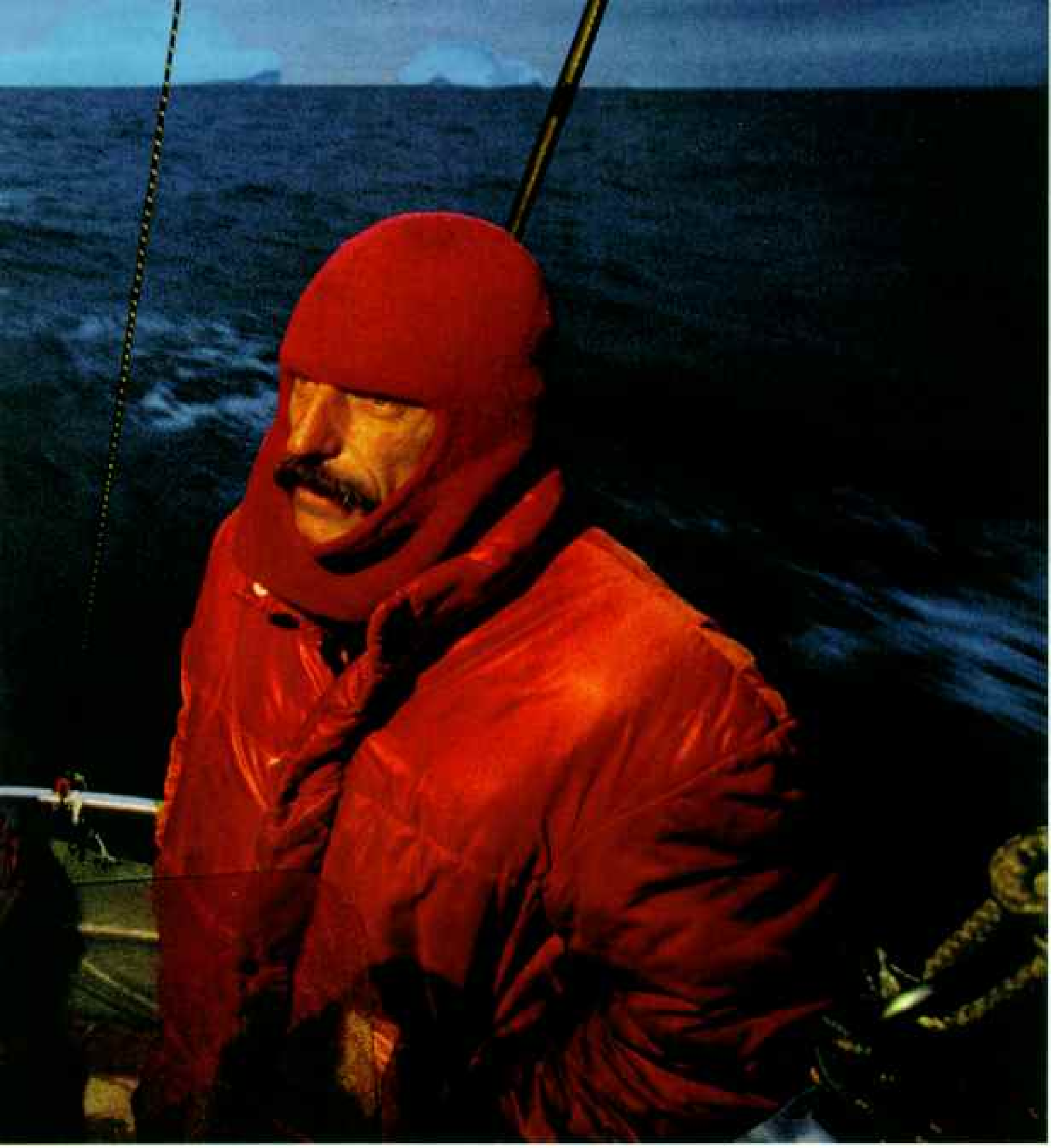
AN ICY MONOLITH towers over the author's yacht, Damien II, as it plies the South Atlantic. Her son Leiv perches on the bowsprit. For the past 11 years Sally and Jérôme Poncet, with their three children, have explored a remote and frigid world, home to a large wildlife population.



TEAMED UP for a challenging life, Sally and Jérôme brave the cold aboard Damien II, far from their winter home in the Falkland Islands. Often working with the British Antarctic Survey (BAS), they strive to increase the body of knowledge about South Georgia's animal life.

Since then we've been back to South Georgia several times, in winter and in summer, for as long as four months each time. *Damien II*'s wanderings into the southern ocean have taken us from the Falkland Islands to the Antarctic Peninsula, the South Orkney Islands, and South Georgia. These cruises began as most cruises do—out of sheer joy of discovery, of meeting people, of learning about the world around us.

With each successive visit our knowledge of these regions, and particularly their wildlife, increased. Anecdotal descriptions of a penguin colony, or perhaps a passing reference to a patch of moss, evolved into systematic records of the distribution of seabirds and vegetation. Each summer cruise to the Antarctic resulted in



notebooks of figures and maps, now published as scientific papers.

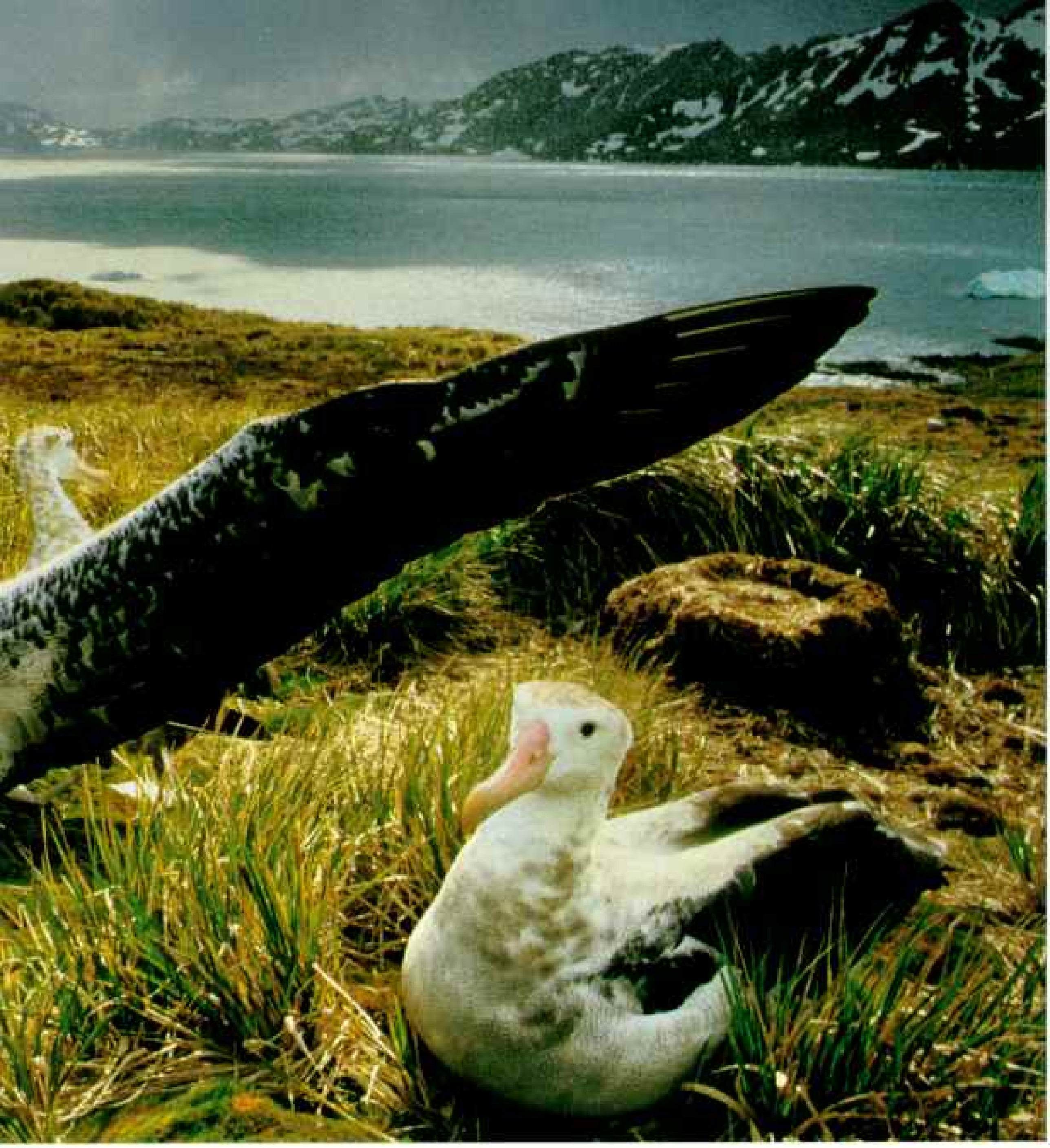
Although I'd always been interested in natural history, my interest in seabirds really began aboard *Domien II*. Our closest companions during southern ocean passages—from the great wandering albatross to the tiny Wilson's storm petrel—accompany us 24 hours a day. And what could be more fulfilling than to follow them to their breeding grounds, to be able to reach out gently and stroke the snow-white plumage of a wanderer on its nest?

Jérôme's interest grew with mine as we realized the marvelous opportunity before us: Unhindered by deadlines, answerable only to ourselves, we could contribute significantly to the knowledge of Antarctic seabird colonies.

PROCLAIMING HIS ARDOR, a wandering albatross attempts to lure a mate with a ritual display on Albatross Island, off the coast of South Georgia, in background. With wingspans often exceeding ten feet, the wandering albatross and its cousin the royal albatross are the world's largest seabirds.

More recently some of our survey work has been done in collaboration with an official governmental organization, the British Antarctic Survey. Now, we will be completing a seabird survey of South Georgia, commenced four years ago with BAS.

THE WORST of the squall blows over; there's time now for a quick warm-up below before the next one arrives and while there's no sea ice around. I lash the wheel securely, take the engine out of gear, then cautiously cross the deck to the safety of the spray screen, hands searching for familiar holds, feet wary of the icy surface. Once there, it's only a matter of seconds before I'm inside, the hatch



reclosed tightly, hat and gloves drying above the potbellied stove.

The wind's clamor is hushed to a dull murmur; the gentle rocking movement belies the steepness of waves outside.

A quick glance at the radar screen confirms our position, South Georgia's coastline shining luminescent green in the darkness of the cabin.

I prepare hot tea, sipped with an eye on the radar and an ear alert for the first signs of the next squall. Jérôme sleeps on, recuperating after a round-the-clock vigil that began five days ago when we left Port Stanley in the Falkland Islands. Christian de Marliave—better known as Criquet, and our crew for this summer—sleeps too. He joined the boat in Stanley just before sailing. An experienced

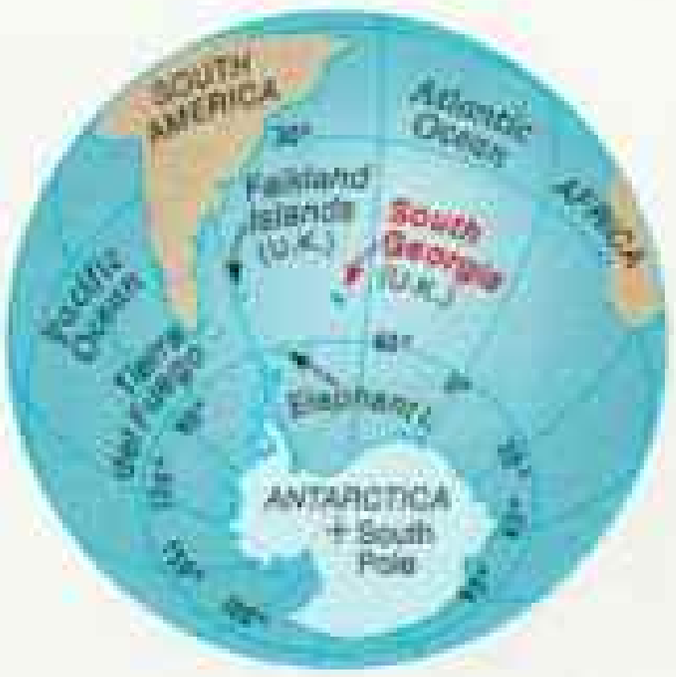
South Georgia

"The wild rocks raised their lofty summits till they were lost in the Clouds," wrote Captain James Cook, who claimed South Georgia for Britain in 1775. Soon after Cook's discovery of this rugged, 106-mile-long finger of land, his reports of massive seal populations led to commercial hunting so extensive that their survival in the area was in jeopardy.

The demand for oil led to the creation of whaling stations in 1904. Although seals have rebounded, whale populations were so drastically reduced that the whaling industry was abandoned there in 1966.

The whalers further altered the environment through the introduction of reindeer for sport hunting and food. Sealing and whaling ships inadvertently introduced brown rats, whose descendants thrive on nutritious tussock grass and prey on the island's burrowing bird population, especially on the northern coast.

Great Britain still controls South Georgia, classified as a dependent territory like the Falkland Islands. The British Antarctic Survey's contingent, seldom numbering more than 20 persons, researches and monitors the seal and seabird populations in this environmentally fragile area. A small garrison of British troops maintains a vigil against any moves by Argentina, which continues to claim both the Falklands and South Georgia. Fewer than a thousand tourists visit South Georgia annually and most go ashore for only a few hours, but their numbers are growing.



Permanent snow covers most of treeless South Georgia; much of the rest of the island is bare rock. The cold southern waters hold vast amounts of nutrient-rich phytoplankton, base of the marine food chain.

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mountaineer, ski instructor, and sailor, he'd forsaken the slopes of Chamonix for a chance at climbing South Georgia's peaks, in between hauling up anchors and baby-sitting.

Three young children can be quite a handful, particularly in the confined space of a 50-foot schooner. Although Jérôme and I, with our three sons, Dion, nine, Leiv, seven, and Diti, four, cruise these southern latitudes as a family for most of the year, there are times when an extra hand is appreciated.

Gentle snores come from the children's bunk; three hotly pink faces, blond hair disheveled amid a pile of tangled bedclothes.

"*Ça va?*" Jérôme mumbles in French, half-awake now. "How are things on deck?"

"There's another squall on the way, from the sounds of it," I reply as the boat heels over ten degrees. "It's OK; it'll be light soon." I'm halfway out the hatch now, my last words snatched away in the wind.

DARKNESS AGAIN; cold, disorienting chaos. Clambering to the relative protection of the small cockpit, I unlash the wheel and put the engine into gear, then pull the boat around until the compass points south once again.

I can sense the proximity of land, an invisible mass of sheer 500-foot-high cliffs just a few hundred yards away. These are the north cliffs of Bird Island, our first landfall, off South Georgia's northwestern tip.

We're in familiar waters here. Jérôme knows the area well, having first visited the island 18 years ago aboard a 33-foot wooden cutter, *Damien*. In 1969 he and school friend Gérard Janichon had set out from France on a five-year circumnavigation that was to take them to the ice of both hemispheres: Spitsbergen and Iceland, Tierra del Fuego and South Georgia, and the subantarctic islands of the Indian Ocean.

In 1972 *Damien* sailed into Hobart, my hometown in Tasmania. A chance meeting with Jérôme on the local yacht-club jetty, and two years later we were married, in La Rochelle, France. But not before *Damien* had attained her final goal—Antarctica's ice-filled cruising grounds.

Back in France *Damien* was replaced by two new steel boats, one for Gérard and his wife and the other for Jérôme and me. They were vessels designed specifically for sailing polar regions, named *Damien II* and *Damien III*.

But there's no more time for reverie. The impacts of small lumps of brash ice rattle against the hull as we traverse a field of debris to leeward of a large berg.

A flicker of light below, and a few minutes later Jérôme is on deck. "Much ice around?" he inquires.

"Well, just what you heard then. It's getting lighter by the minute, so there shouldn't be any problem."

Ahead, a somber mass creeps from the shadows: Bird Island materializes in the gray dawn, white breakers rising from the darkness as water meets rock at the foot of the sea cliffs, upper heights obscured by leaden mist.

Little more than half a mile away on the south side of the island lies the anchorage, a tiny bay encircled by hills of green tussock

grass, nesting albatrosses, beaches alive with fur seals. After time spent at sea, exposed to the vagaries of wind and wave, one accepts with gratitude such a gift of security and repose.

And we are assured of a warm welcome from the team of six British scientists who live on Bird Island. Most of them are known to us from previous seasons. Some remain on the island for two and a half years, monitoring seabird colonies as part of BAS's research program. Others return every summer season for six months of fieldwork on individual projects.

Four years ago, in 1985, one such project involved a census of the elephant seal population of South Georgia. For two months the two BAS scientists responsible for the project lived aboard with us and our three sons. With them we surveyed the entire coastline of South Georgia, in and out of every bay, rarely more than a hundred feet offshore. *Damien II*'s steel hull and retractable keel, which when fully raised reduces the boat's draft from 11 feet to 3 feet, made this survey possible.

It was hard work in often difficult conditions: motoring up South Georgia's exposed south coast in 30-foot swells; entering unfamiliar bays through a barrage of breakers; dark nights at anchor with 80-knot gusts clawing at the rigging, with the two anchors dragging reluctantly but surely through a bed of kelp.

Yet what a way to discover South Georgia in all her moods, from so many different angles—miniature coves in azure, white, and green; wild, surf-beaten bights where only penguins and seals dare venture; sheer blue cliffs of glacier ice spilling into a milky sea, as sediment-laden fresh water meets the crystal-clear waters of the South Atlantic.

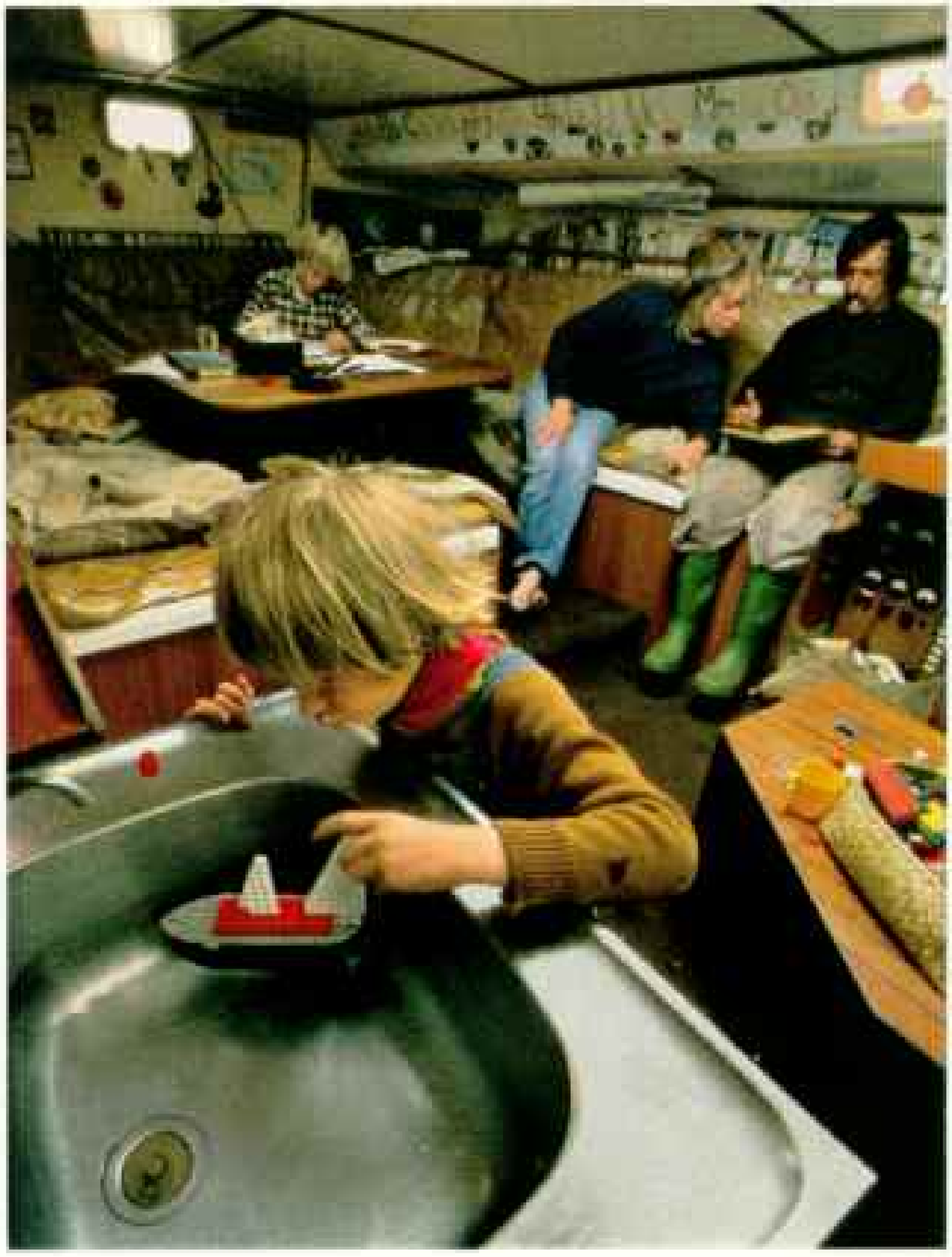
There are windless afternoons when the elephant seals shimmer in the heat haze, and the beach spurts fountains of black sand, flippered up by the seals in an attempt to cool off.

We learned a lot about South Georgia that summer of 1985. Although much hydrographic work has been done around the island, charts available today remain somewhat inaccurate. Navigation here is done with one eye on the depth sounder, the other on the water ahead, and a hand on the throttle. It is possible to accept this element of the unknown, somewhat fatalistically perhaps, as Jérôme does—with a Gallic shrug of the shoulders and an unshakable confidence in the strength and versatility of his boat.

Personally I lack the Gallic shrug; instead I endure moments of intense inquietude, continually anticipating bumps when we're close to shore in uncertain waters. Jérôme usually accepts my rock neurosis with resignation and occasionally a touch of humor.

"I'm surprised Bird Island's still visible on the radar," he quips. "Thought you'd be at least 20 miles off by now. Well, we might as well head in, though Bird Sound may be a little rough if the tide's against this wind."

"WE WERE BITING OUR NAILS as we went out," says BAS biologist Peter Prince of the savage winds encountered on a trip aboard Damien II (facing page) from Bird Island to Cumberland Bay. During a calmer voyage, the family relaxes in the boat's main cabin and galley. "The children get restless in bad weather," says Sally. "By the second day, you know that you've just got to get them outside."



"But we'll arrive in time for breakfast," I reply, "and that'll please the children. Warm toast and lots of people to talk to."

As we enter Bird Sound—a narrow, rock-strewn stretch of water separating Bird Island from South Georgia—gentoo penguins surface in a flash of white, orange, and black, while along the shores swim hundreds of fur seals, in and out among the kelp, under and over pieces of ice.

From the deck of our boat, bobbing about on the waves in the cold light of dawn, we look up to a sky of birds—giant petrels, albatrosses, prions, storm petrels. A cape pigeon hovers persistently a few feet from the stern. Cormorants, necks outstretched, barely make headway against the stiff breeze. In terms of variety and number of seabirds and seals, there are few places to equal South Georgia. About a million fur seals; 360,000 elephant seals, more than 200,000 king penguins, well over six million macaroni penguins, tens of thousands of mollymawk albatrosses, and smaller petrels by the millions breed here.

The hatch opens and a small face appears. Diti's up, ready to come on deck in his normal attire of T-shirt and nothing else.

"Hello. You'd better come inside my coat if you want to stay out here like that." Curled up in a ball on my lap, he catches his first glimpse of land, delighting in the fur seals' antics as they dart across our wake, sprinting out from under the bow, as happy as Diti to be in South Georgia.

Down below, Criquet is awake. The kettle's boiling on the kerosene stove, hissing as the blue flame turns orange.

"Cup of tea, Sally? And a hot chocolate for Diti, I suppose," Criquet offers. I'm surprised to see the children up so early this morning. But upon being greeted with cries of "Are we nearly there? I want to go outside too. Will there be any fur seals on the beach?" I realize that they're as excited as we are.

"Jérôme wants to get the sails down and prepare the inflatable before we go in, so I'll take over down here if you like, Criquet."

Good-natured as ever, Criquet finishes his coffee, then slips into his boots and goes up to give Jérôme a hand.

While I sip my tea, the children dress themselves: T-shirt, thermal undershirt, sweater, long johns and jeans, socks and rubber boots. Plus an oilskin on deck or an anorak if it's not too wet. Our usual garb down here.

At sea level summer temperatures are generally just above freezing but can rise to 70°F. And although summer lows rarely descend below 25°, the risk of exposure is considerable when the wind gets up, as it can do at any time. Conditions are extremely local: It can be blowing 50 knots in one bay, yet just around the headland the waters may be glassy calm.

IMAGINATIONS RUN FREE around the abandoned whaling station at Prince Olav Harbor, where nine-year-old Dion plays telephone by yelling through a rusty pipe at Leiv, who listens at the other end. But it's not all play for the Poncets' two older boys, whose chores include keeping Damien II's decks clear of snow.

The Poncets especially relish visits to the abandoned station at Leith Harbor, where they can stretch their legs and take a bath by heating water obtained from a reservoir of glacial runoff.

JÉRÔME PONCET

HIGH-TECH LOOKOUT protected Sally and infant Dion in 1979 (above) as Damien II rounded Cape Horn. Made of strong plastic, the dome provides welcome shelter during watches for icebergs and ships.

The Poncets have made numerous visits to South Georgia for as long as four months at a time, adapting well to the pressures of proximity among a family of five within the confines of a 50-foot yacht.

The children are all ready to go on deck when Criquet opens the hatch. "Nearly there now," he announces. "Jérôme says, 'Can you lift up the keel?' "

"OK," I reply. "Keep an eye on Diti, will you?"

Diti's never had an accident yet, despite his comical and unpredictable nature. Leiv, as a toddler, fell off jetties and out of dinghies once or twice. Nothing serious, since we rarely let them out of our sight at that age anyway. While sailing, I'd rather have a firm grip on their hands than trust a safety harness. Besides, the moments are rare in these latitudes when you can take a stroll on deck. Ten minutes in the cockpit is usually more than enough to satisfy everyone before fingers go numb.

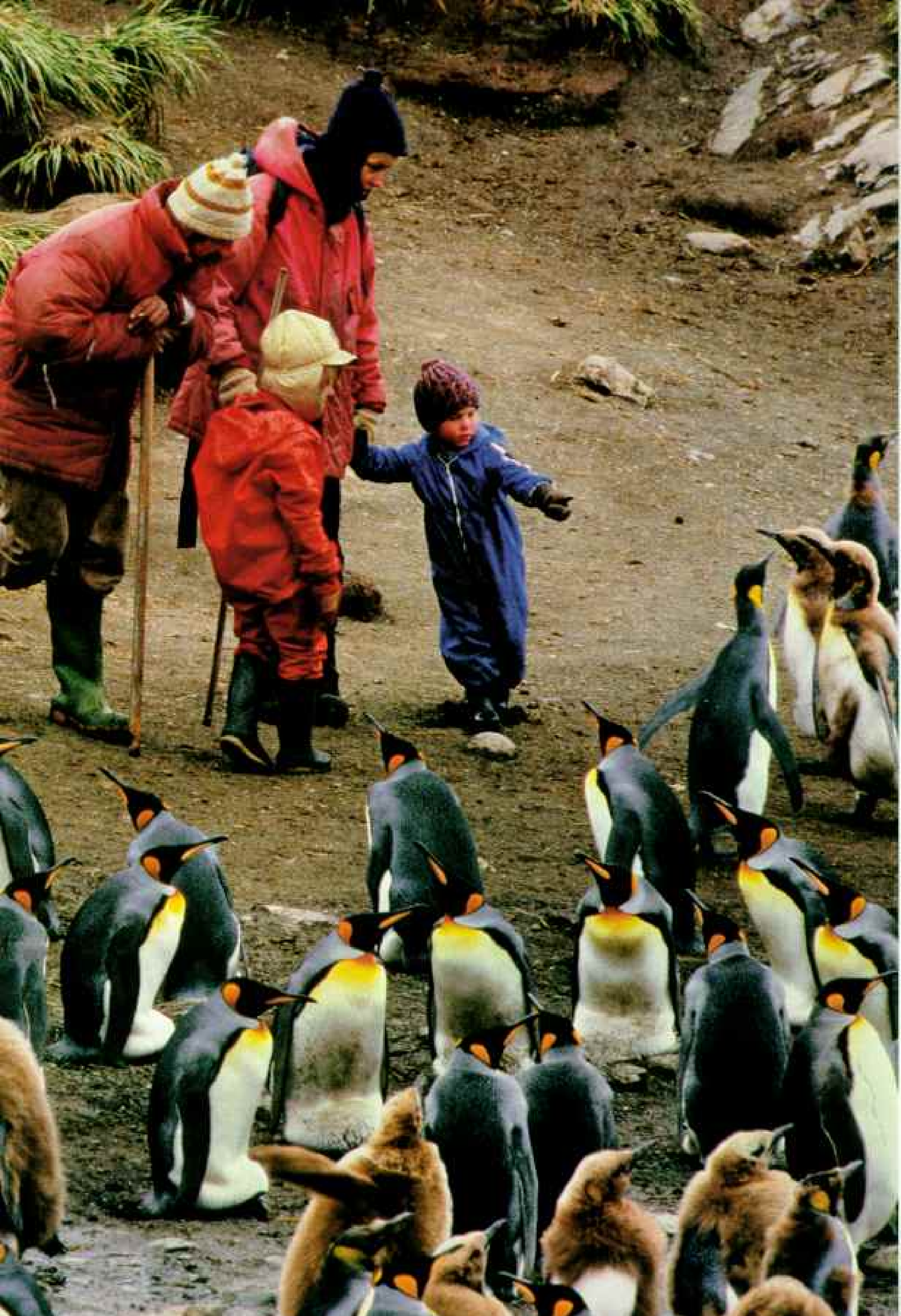
I CLOSE THE HATCH after Diti and set about lifting the five-ton keel. With the help of an electric winch *Damien II* is transformed within minutes from an oceangoing, deep-keeled schooner to a shallow-draft motor cruiser.

Outside, Diti is sitting tight in the cockpit next to Leiv. "OK, Dion, you can head in now, but keep an eye on the kelp," Jérôme says, still furling the sail and watching as Dion steers toward the entrance.

"You take her now, Jérôme," says Dion, calling his father by his first name, as all three children do with us. The kelp thickens, and white water to port reveals black rocks.

THREE-LEVEL PARKING by fur seal pups confronts researcher Mick Jones at the BAS field station on Bird Island. "They are not shy," the author says of the young seals, who disdain mud. "If you leave the door open, they come right in." The emblem of the British brewery Greene King provides a nostalgic reminder of home.

Mixing with the natives, the Poncets visit a king penguin colony at Right Whale Bay. One-year-old chicks will lose their fuzzy brown coats before taking to the sea.



Relieved of the wheel, Dion joins his brothers. Cries of excitement go up as they glimpse the bay with its small jetty. There is the familiar green building, the pungent odor of fur seals packed tighter than sardines on the beaches, and the old blue buoy that marks our mooring.

We scarcely have time to take up the mooring lines before the children are ready in the dinghy, telling us to hurry up. "Hang on a minute, I've got to get the mailbag," I plead.

For the six men here, mail is as welcome as a new face. Since Bird Island is classified as a site of special scientific interest, unauthorized visits are discouraged. It's not often that a ship calls in—a BAS vessel twice a year, the occasional British warship, and us.

FRIENDLY INTRUDER Peter Prince prepares to capture a member of a black-browed albatross colony for banding. A renowned expert on South Atlantic birds, Prince has studied the population dynamics of the species for the past 13 years. A gray-headed albatross (facing page) protects its three-week-old chick from such predators as skuas and giant petrels. Damien II navigates a narrow inlet below.

OVER THE PAST SIX YEARS we've been in and out of Bird Island often enough for it to seem like a homecoming each time, particularly for the children. Some of their best friends live at Bird Island.

"Look, there's Callan!" shouts Leiv exuberantly, and then stops, silenced by sudden timidity as we all clamber onto the jetty.

"Good to see you little fellows back again," says Callan Duck, here for his final season studying fur seals. He immediately takes charge of the children while we exchange greetings with everyone.

"Come on up to the base," invites Peter Prince, who has been in charge of the Bird Island station since its inception 17 years ago. "The stream finally unfroze last week, so there's plenty of water for showers, not to mention cups of tea."

Pete's an old friend of ours and a great upholder of traditional British hospitality. Since 1972 he has returned to South Georgia 12 times, continuing the scientific research that has put him and his colleagues at BAS to the fore in knowledge of Antarctic seabird ecology and energetics. Few can claim Pete's field experience. He introduced us to Bird Island and encouraged our growing interest in seabirds, recognizing the potential of a small vessel like *Damien II* for certain survey work.

Four years ago Pete was able to charter *Damien II* through BAS for a survey of the albatross and penguin colonies in the Bird Island area. This was the beginning of the South Georgia Seabird Survey, now in its fourth season. This year Pete and his assistant, Mick Jones, will be coming on board for two months, and we will retrace our route once more around the island.

At the table in the small dining area of the base, we discuss this season's program while Leiv and Dion, their initial shyness overcome, chat away with Callan. Diti, uncharacteristically quiet, is discreetly going through the kitchen cupboards, checking out the "goodies," no doubt.

"Well," says Jérôme, who is eager to get going, "if we get all the gear on board as soon as possible, we could leave any time tomorrow—depending on the weather, of course. That would give

us five days to get to Grytviken and meet *Society Explorer.*"

The latter is an Antarctic cruise ship on which free-lance photographer Frans Lanting is coming to join us on our two-month survey. Grytviken was a British scientific station and now, since the 1982 Falkland Islands war with Argentina, it is the headquarters for British forces on South Georgia.

"But I don't want to go," protests a voice.

These are difficult moments for children, forever following their parents' whims. "We'll be back here soon, Leiv, for Christmas, and besides, it's Leith Harbor we're going to."

The magic of Leith Harbor, one of South Georgia's five deserted whaling stations, still holds, with memories of past summers' ramblings through the abandoned debris of a once thriving community of 700 men. Leith Harbor is a treasure hunt without end. Leiv's smile returns, and he's off to tell Dion the good news, forgetting the bad.

Personally I feel a twinge of regret that this year we shall not be sailing south into the Antarctic ice. Eleven years ago, the very first time *Damien II* went south, she sailed from this same spot. Jérôme and I had left France in late 1976 and spent a year in South America en route to our ultimate destination, the Antarctic Peninsula. There, on Avian Island in Marguerite Bay, with *Damien II* frozen in the ice at 67° S, we wintered over.

We passed those winter months of 1978 man-hauling our sledge around the bay, returning home to *Damien II* as the first of many thousands of birds arrived at their breeding grounds on Avian Island. We spent the Antarctic summer among the penguins; then in early March of 1979 we followed them through the pack ice to the open sea.

It was with sadness that we headed north to South Georgia. But there was joy also, for I was expecting our first child. Dion was born in Leith Harbor on South Georgia in April 1979. Jérôme's first-aid training, common sense, and a very complete medical kit helped us through that first delivery. The same combination has since seen us through all medical cases on board, none of which has been serious.

WILLING PARTNER in a BAS study, a three-week-old gray-headed albatross chick on Bird Island weighs in at 1.5 kilograms as Peter Prince takes notes. Such measurements help correlate meal size with growth rates. If handled at an early age, a young bird will spare humans from the customary defense against encroachment by predators: the regurgitation of an oily, foul-smelling liquid. Other studies found that adults spend as long as 18 hours a day in flight, searching for food.

< OVERLEAF

IN SPLENDID ISOLATION, a hiker treads an icy slope below the Allardyce Range. Over this rugged land British polar explorer Ernest Shackleton made a grueling trek to safety at Stromness Bay after his ship sank near the Antarctic Peninsula in 1915.

THE NEXT MORNING we leave Bird Island with Peter and Mick on board and within a day have reached Leith Harbor.

"Shall we go to the guano shed first, or the laboratory?" debates Dion. As we round the last headland, Leith Harbor's rusted roofs and crumbling jetties appear, increasing the children's eagerness to get ashore. Their playground—a maze of empty buildings, contents scattered from attic to ground floor and out into the lanes—awaits them.

"Come with us to the laboratory?" asks Leiv. The lab is situated at the other end of the station, so I'm not surprised they need company. Such eerie loneliness emanates from these derelict buildings, and no more so than when the evening light begins to fail.

"Come on, then," I reply. "Let's go before it gets dark." And we set off along the lane, content to walk there and back, simply taking in each building, remembering and storing each one for tomorrow's voyage of rediscovery.

Doors swing, creaking in the imperceptible evening breeze; building interiors are somber, fathomless. Soon the children agree that it's time to return to the warmth and security of *Damien II*.

"Oh, there's Jérôme," squeals Diti, reassured by the sight of the familiar figure.

"The dandelions are perfect," declares Jérôme, swinging a bag of full-leafed green herbage. "What a salad we'll have tonight!"

Our evening meal is complete: Falkland pepper beef steaks, dandelion salad, and freshly baked whole-meal bread, one of our favorite South Georgian menus.

It's almost dark as Criquet comes in from checking the mooring lines: "The barograph's fallen off the bottom of the paper," he announces. Overhead, in the fading light, the clouds are beginning to move. "Must be more than 40 knots outside," Jérôme acknowledges. "It's amazing how sheltered it can be in here until the katabatics begin." He's referring to severe winds that frequently howl down the slopes of Antarctic mountains onto the surface of the sea. Jérôme turns to Criquet. "Better double the lines in case it blows any harder."

That night we talk for hours. Diti has fallen asleep, Leiv and Dion follow soon after. Outside, a light breath of wind gently pushes us against the huge truck tires that line the jetty as fenders. An hour later, it's gusting 60 knots. Jérôme and Criquet, between the gusts, manage to tighten the lines.

Three in the morning. The wind's blowing stronger than ever, and I awake with a start. Jérôme's already up, sitting at the chart table, mesmerized by the digital readout of the anemometer. "Sixty, eighty, ninety, ninety, forty, ten," he calls out softly as the wind speed figures change every few seconds. The pattern repeats itself, the anemometer regularly reaching its maximum of 90 knots.

"It must be blowing over a hundred out there in those gusts," Jérôme says. I hold on tightly as the next katabatic gust hits us, and the boat heels over 20 degrees. A cup rolls off the table. I tuck an extra cushion under Diti and return to bed—not to sleep, but to lie there and listen to the frenzied shrieks and vibrations.

At breakfast time it's still blowing, but the bowls and cups now inch their way across the table rather than roll. No downtown strolls in Leith Harbor this morning. The risk of being struck by

A GENTLE NUDGE from BAS biologist Tony Williams reveals the egg clutch of a gentoo penguin. For his study of brood survival, Williams labels the eggs in the order in which they are laid. If a food shortage exists, the chick from the second egg nearly always outlives that from the first, though the reason is unclear. "Gentoos are the friendliest of penguins," claims ornithologist David F. Parmelee. They are also one of the most widely distributed, using virtually every cove and bay as breeding grounds.

airborne roofing iron is enough to keep us, reluctantly, at home.

Dion and Leiv realize that it's not much fun out there and settle down to their favorite occupation, drawing. They can bring a scene to life on paper, tell themselves a story, invent fantastic machines, look at the world from a cloud, redesign Leith Harbor complete with bus service and supermarket. Drawing is their entertainment, their equivalent of television. Along with reading, it replaces regular schooling during these hectic summer months when time is the scarcest of commodities.

Each year the children return to traditional school lessons at the end of summer. Being based in the Falklands for the winter months means they can follow the local education program, organized by the Falkland Islands government. Schooling for young children in the remote areas of the islands is basically the parents' responsibility. A daily lesson with the Radio School in Stanley, the capital, and a two-week-long visit from a traveling teacher every six weeks provide a good standard of education.

IN THE MEANTIME there's a lot to learn right here in South Georgia. Although the subject matter doesn't figure in any school curriculum, the children are learning, and so far that's been more important, more rewarding, and more informative than passing grades.

I often wonder what they will decide to do. Jérôme and I chose this way of life many years ago. In the beginning these waters—this triangle of the Falklands, *(Continued on page 364)*

JUMBLED SCENE of life and death in a fur seal colony confronts members of the BAS team as they escort the Poncet children from Damien II *after it docked at Bird Island. Long sticks called bodgers are kept handy to fend off attacks by aggressive bull seals. Amid the smaller cows and pups, the bulls rise up on their front flippers as they proclaim dominance over their territories. Already weakened by fasting during the mating season, some have succumbed to injuries suffered in fighting over the cows. Skuas and giant petrels are quick to reduce the carcasses to mere bones.*

As the seals move about over the land, they trample and destroy tussock grass, a plant that furnishes important habitat for nesting birds. Biologist Callan Duck (right) used fencing to determine how fast the grass regenerates in the absence of seals.

OVERLEAF >

MASSIVE COLONY of macaroni penguins covers a hillside on Willis Island, where Sally takes Diti along during a survey of penguin and albatross populations in 1985. Though the study is not complete, preliminary estimates place the penguin population there at well over a million.

JÉRÔME PONCET

TERROR-STRICKEN face of an elephant seal pup stares out from a mud wallow. Adult seals create the depressions during molting season when they roll in the mud seeking relief from skin irritation.

Trapped in the deep wallows, pups face almost certain death from starvation. Named for their size and the trunk-like proboscis of the adult male, elephant seals are the largest of the world's pinnipeds. Males can reach nearly 20 feet and weigh four tons.

South Georgia, and Antarctica—were for us an unknown wilderness. We equipped ourselves for discovery, blazing trails, felling myths, gathering grains of knowledge that today bear fruit—faint pistes in the wilderness that always lead homeward.

And what do the children think of that? Since they have grown up on a boat, it's only natural that up to a certain age they accept life as it is, as all children do, unquestioningly. Home, no matter where we are, is always warm, unchanging, with two parents who each spend 24 hours a day on the job.

Seasoned travelers, the children are no strangers to a crowded highway, the noise of a thousand people on a city street, life on the 20th floor of a high rise. But they are far more familiar with South Georgia's silent towns, her beaches crowded with jostling seals, vociferous penguins. They know the ice of the south and the hospitality of Antarctic stations.

Between the two extremes lie the Falkland Islands, our point of departure and return no matter where we sail. Beaver Island, a small outpost 150 miles west of Stanley, has become our pivot. There we manage a sheep farm, which, with charter fees from *Damien II*, provides our main income.

This is the option we offer the children. Jérôme's and my preferred way of life may not be theirs. Beaver Island offers an alternative, and *Damien II* retains her identity.

For now, though, the wind is dropping, and tomorrow should be fine. We'll continue on to Grytviken, where we'll meet photographer Frans Lanting. There are eight weeks of work ahead—mapping and bird censusing that will cover hundreds of miles. We'll have our share of bad weather, sleepless nights, engine problems. The bread won't rise, the children will quarrel, and we'll wish everyone would go home.

But there'll also be sunlit days, picnics on the beach. Jérôme will discover another inshore passage between the rocks, with the satisfaction of seeing *Damien II* safely anchored at the end of the day.

Next morning the wind had become a regular breeze, and we motored to Grytviken. The small scientific station of 20 souls has given way to a modest military post, with an influx of tourists to South Georgia estimated at nearly a thousand a year.

Since Captain James Cook first took possession of South Georgia in 1775, man has never left the island alone. Sealers and whalers crowded the waters and beaches by the hundreds, committing monumental errors of environmental judgment. Fur seals were hunted to near extinction in the 19th century, then whales. Burrowing petrels in inestimable numbers have been eliminated by man's introduction of the brown rat, which arrived in Antarctica with the sealing ships.

Now new ecological balances are being attained. The fur seals are again as abundant as they were in Cook's day, though it's too early to tell for the whales, and probably too late for the birds. Yet man persists in his errors, this time attacking the lower end of the food chain—krill, fish, and squid. The question is: What effect will this have on South Georgia wildlife?

We still don't know. BAS research into the food, feeding, and number of seabirds on Bird Island and elsewhere in South Georgia will provide baseline information for future monitoring studies. We are happy to share in this vital project.

Frans Lanting was at Grytviken waiting for us. We were curious as to how he would adapt to living on board, but the question didn't bother Frans.

"So long as there's a bunk and room for my cameras, I'll be OK," he announced.

KING-SIZE MEAL awaits two South Georgia pintail ducks, who feed on this bull fur seal carcass. Mortality rates for bulls are highest following breeding season, as wounds sustained while fighting for control of harems become infected. The recovery of the fur seal population, devastated by hunting, has progressed rapidly since the 1960s, when seals began to repopulate South Georgia beaches.

FROM GRYTVIKEN we headed southeast, a full complement of nine on board—the five of us, Frans, Criquet, Pete Prince, and his assistant, Mick Jones.

Our first main work area was in Royal Bay, 35 miles down the coast. Pete wanted to spend several days there searching for evidence of burrowing petrel colonies, which have been depleted by rats. Frans and Criquet decided to spend that time in nearby St. Andrews Bay. Here the Heaney Glacier gently dwindles to sea level, its streams meandering among 35,000 king penguins, the largest colony in South Georgia.

Inland, the glacier rises between rock ridges and snowfields, enticing the eye skyward up to the crystal-cut peaks of the Allardyce Range. One afternoon Criquet took his bivouac bag and crampons and, with a "see you later," headed upward. He reached the 7,725-foot summit of Nordenskjöld Peak the following morning after a night on the mountain.

"Great view from up there," he told us on his return. "I'd like to give Mount Roots a go too, if conditions hold." Criquet was far more impressed with the beauty of the view than by the fact that he'd just completed the first recorded ascent of Nordenskjöld Peak, and solo at that.

Unfortunately and predictably, conditions didn't hold. A cold front from the west—a regular feature of the weather here—brought the cloud layer down to a few hundred feet. The winds

DEVOTION TO DUTY keeps a giant petrel on its nest as it incubates an egg. A mantle of snow left by an overnight storm provides welcome insulation. Snow presents a problem, however, when it covers material needed for nest construction.

Its head and neck stained with blood, a male giant petrel takes an aggressive stance (right) to ward off competitors as it feeds on a fur seal carcass. The normally quiet birds are known for abandoning all decorum while feeding. Ornithologist George E. Watson describes witnessing "nauseating retching noises, loud hissing, vicious bill snapping." Whalers recall seeing the birds gorging on so much blubber that they were unable to fly.

turned northerly, gusting 80 knots and more at our anchorage in Royal Bay.

Pete and Mick were finishing their bird work as the weather started to get nasty. "Not much fun counting petrel burrows in the rain and force eight wind," was Pete's conclusion. "The rats certainly made our job easier though—there aren't many burrows left to count!"

This was a pattern we were to find in tussock areas all the way along the north coast of South Georgia: Wherever rats were present, the cheerful songbird twittering of the only land bird here, the pipit, was absent. And because rats depend upon tussock for food and cover, the small burrowing petrels had also been eliminated, surviving only in the soil, moss, and rock habitat outside the rat-infested tussock fringe.

The next day, the weather broke. High above the peaks the sun was shining, but we saw only a pale disk filtered by what BAS scientists call mank—a dense mist that effectively obscures coastline and hinterland alike.

"We'll leave, anyway," Jérôme said. "There's no problem, using the radar."

Cooper Island, our next destination, at the south end of the main island, is the first rat-free area on the north coast, apart from a few inaccessible offshore islets. We were expecting to see a lot of birds and planned a five-day visit.

"Oh no, there're fur seals here too," complained Leiv. As aggressive as trained guard dogs, the male fur seals are highly territorial and defend their few square yards of beach with great determination. A bull is more than a match for a cautious seven-year-old boy in speed, weight, and tooth size. Leiv has never taken any chances; in fact, it's often quite a job to persuade him to run the gantlet to the relative safety of the tussock grass behind the beach.

But here too seals lurk. Head-high tussock and knee-deep mud pools don't make for quick getaways when you're four years old, so as usual I carried Diti to the drier ground above. Leiv struggled through, his seal stick, or "bodger," in one hand, and with Jérôme close by to help him over the difficult stretches. Dion meanwhile leaped ahead, brandishing his bodger with a nine-year-old's confidence.

We had reason to cherish our visit to Cooper Island: It's classed as a specially protected area, and visits are by permit only. Along with Bird Island, Annenkov Island, and the Nuñez Peninsula,

WITH REGAL INDIFFERENCE, king penguins march past Diti on their way from the sea back to their rookery, where they will feed their young regurgitated squid and fish. "King penguins certainly live up to their name," says the author. "They are very stately and aloof." With no enemies on land, adults show little fear of humans.

JÉRÔME POREE

Cooper Island is one of the largest undisturbed tussock areas in South Georgia. Greensward covers the lower slopes of its north coast in a continuous carpet, indicating a high density of seabirds, particularly the burrowing petrels. Calculating the density for each species of breeding petrel was one of the tasks that was to keep us here for five days.

Pete and Mick were out all day in the tussock, counting the number of burrows in a given area, checking on the species of bird in each burrow, and repeating the procedure all the way up the hill.

Eventually the information resulting from the survey, in addition to Pete's extensive unpublished field notes, will form the basis of a book on the birds of South Georgia.

"WE'RE HAVING A PICNIC on the beach today!" the children proclaimed. The weather was superb, one of South Georgia's sparkling summer days, perfect for traversing the island's mountain ridges, counting burrows in the tussock, or simply lying in the sun on a white pebbly beach. A colony of chinstrap penguins jabbered away nearby, their racket punctuated by the occasional snort from a group of sleepy elephant seals in the tussock behind us. The children were splashing around in the stream, floating their boats and building bridges.

Apart from the odd blow, the weather had been very good, but then the island's north coast, particularly in the Cumberland Bay area, is comparatively clement.

"Well," Jérôme said, "we'll be off tomorrow, round Cape Disappointment and northwest again up the south coast. No guarantee of good weather there, you know," he sighed. I realized that only too well from past seasons' experience. The south coast of South Georgia, which is exposed to the prevailing westerlies and battered by heavy surf, presents a complete contrast to the mild north coast.

The south coast's narrow fringe of ice, rock, and the occasional tussock knoll rises sharply to 7,000-foot peaks. The severity of the land awes us each time we pass: Nowhere else do we feel as exposed as we do here, as removed from this world. And even if by chance we pass in ideal conditions, with an easterly wind blowing off the land, that feeling of unease persists.

Thus it was as we progressed up the coast, our senses concentrated on weather changes, sea state, and depth sounder, for here, particularly, lie many uncharted rocks.

Our destination was Cape Rosa at the entrance to King Haakon Bay. The weather, though unsettled, remained fair during our three-day stay there. The sea too showed none of its usual agitation, so we rocked gently at anchor and had only to choose the right spot and the right wave when landing in the dinghy.

"To the left there, Frans, you can see Shackleton's cave." Jérôme pointed out a shallow recess in the cliff face as the dinghy idled slowly into the small bay, a narrow slice in the cliffs. A steep shingle beach lay at its head; Jérôme, Criquet, and Frans jumped out, hauled the dinghy ashore, and stood where Sir Ernest Shackleton and five companions had stood 73 years ago, after their amazing 800-mile voyage from Elephant Island in a 22-foot lifeboat.

The voyage of that open boat is a superb epic of courage and

GETTING ACQUAINTED with a new friend, Leiv watches over a fur seal pup on Bird Island. "They are very playful," notes the author, "but they do nip, so the children can't pick them up."

Pups are usually born on the beaches and suffer high mortality in the first weeks following birth, often being crushed by males moving about to defend their territories. As the young seals gain strength, they move to safer locations amid the tussock grass.

FIERCE WINDS assault a visitor to the whaling station of Grytviken, founded in 1904. A church dismantled in Norway and reassembled in 1913 has withstood the elements far better than a cinema built in 1931. During summer, the population swelled to a thousand whalers and support personnel. Some 175,000 whales were killed and rendered before the station was abandoned in 1966.

seamanship; yet it was but part of the magnificent saga of Shackleton's expedition ship, *Endurance*. Beset by ice in the Weddell Sea in January 1915, she drifted nine months before finally sinking. Shackleton and his men then sledged to open water, hauling the boats that were to carry them to Elephant Island; from there Shackleton and five others sailed north for help.

On the tussock slopes above our anchorage at Cape Rosa we sat and looked out over King Haakon Bay. From here Shackleton and two men set off over the mountainous island to the whaling station at Stromness. Within two days of his arrival there a whale catcher picked up the three men at Haakon Bay, and finally, three months later, those marooned on Elephant Island were also rescued. Not

one man died, and, more than that, their sufferings were borne with a stoicism that comes only with superlative leadership. One can feel both humbled and uplifted on the beach at Cape Rosa.

"When will we be getting back to Bird Island?" The children had been asking this question regularly and with increasing impatience as the weeks went by. Now Christmas was drawing near, and our south-coast survey was almost finished. We all agreed that it was time for a break. The next day we headed for Bird Island.

The children were delighted to be back at the base. Although work was in full swing here with long hours at the penguin, albatross, and fur seal colonies, the Bird Island "gang" still found time to play with the children. Christmas decorations were brought out,

including a Christmas tree of tussock leaves complete with lights, balloons, and noisemakers. Never before had they had such an enjoyable Christmas.

"Diti's fallen asleep in your bed, Callan," I warned, as the festivities continued into the early hours.

"That's OK; he can't make as bad a mess as that fur seal pup did yesterday!"

December is a busy time all round: Thousands of seals occupy the beach around the base, with as many pups born virtually on the front doorstep. Bulls claim the walkways and jetty as their territory. The hundred-yard walk to the beach becomes an obstacle course through a mass of fur seals. Fortunately the stream provides a natural pathway, but, even so, it's not an easy task at two in the morning to return aboard *Damien II* with three sleepy children, fur seals growling at your heels and lunging toward you in the dark.

"We'll give you a hand getting back," Callan offered. Equipped with flashlights and bodgers, relying on Callan's familiarity and confidence in moving among the seals, we once again made it back aboard, after having removed a pup from the dinghy.

THERE WERE ONLY THREE WEEKS left now in which to survey the last remaining section of coastline between Bird Island and Grytviken, and in particular the offshore islands in the Bay of Isles.

"Wind's still very strong outside. Do you think Bird Sound will be passable?" I asked, worried.

"Well, the only way to find out is to go and look," Jérôme said. "The wind should drop soon."

In fact Bird Sound was quite manageable, and the strong northwesterly wind did indeed decrease from gale to strong breeze as we were motoring out. Once in the sound we headed northeast, mainsail fully reefed and the furling jib reduced to handkerchief size; conditions were ideal for an exciting inshore passage under sail. As an overcast sky cleared, the wind turned southwest, increasing considerably in strength. Within minutes we were surfing at ten knots as 60-knot gusts hit us from astern.

"Hang on, here comes another!" Being close inshore, we were particularly susceptible to the katabatic winds, gathering momentum as they raced down the mountain sides. A wall of spray heralded the approach of each gust, giving timely warning to the helmsman. A spectacular passage even in calm weather, the hundred-foot-wide channel between two steep-sided islets—our usual route—became a breathtaking roller-coaster ride amid the frenzy of air and water. We were all on deck, exhilarated and awed by the magnitude of the wind's force.

"We'll make the Bay of Isles in record time at this rate," Jérôme said, then added, "if we don't break something first."

The Bay of Isles was an exciting area for us to work in: In contrast to most of South Georgia, it has been visited by many naturalists over the years. All have come to Albatross Island, to observe the magnificent wanderer on its breeding grounds.

One distinguished naturalist to visit there was Robert Cushman Murphy. Under the auspices of the Brooklyn Museum and the American Museum of Natural History, Murphy sailed to South Georgia in 1912 on a New Bedford sealer, the brig *Daisy*. During

UNDER A ROILING SKY king penguins amble across a snowfield near St. Andrews Bay. Kings favor such habitat because of the warmth produced by sunlight reflected from the white surface. Among the 17 penguin species, kings are second in size only to emperors. Kings weigh between 25 and 30 pounds and stand three feet high. On land the waddling gait of penguins seems ungainly. In the sea they are graceful acrobats. Reaching speeds of 15 miles an hour, kings dive as deep as 700 feet in search of fish and squid.

his four months there he made a collection of the flora and fauna and took copious notes on all aspects of the islands' natural history.

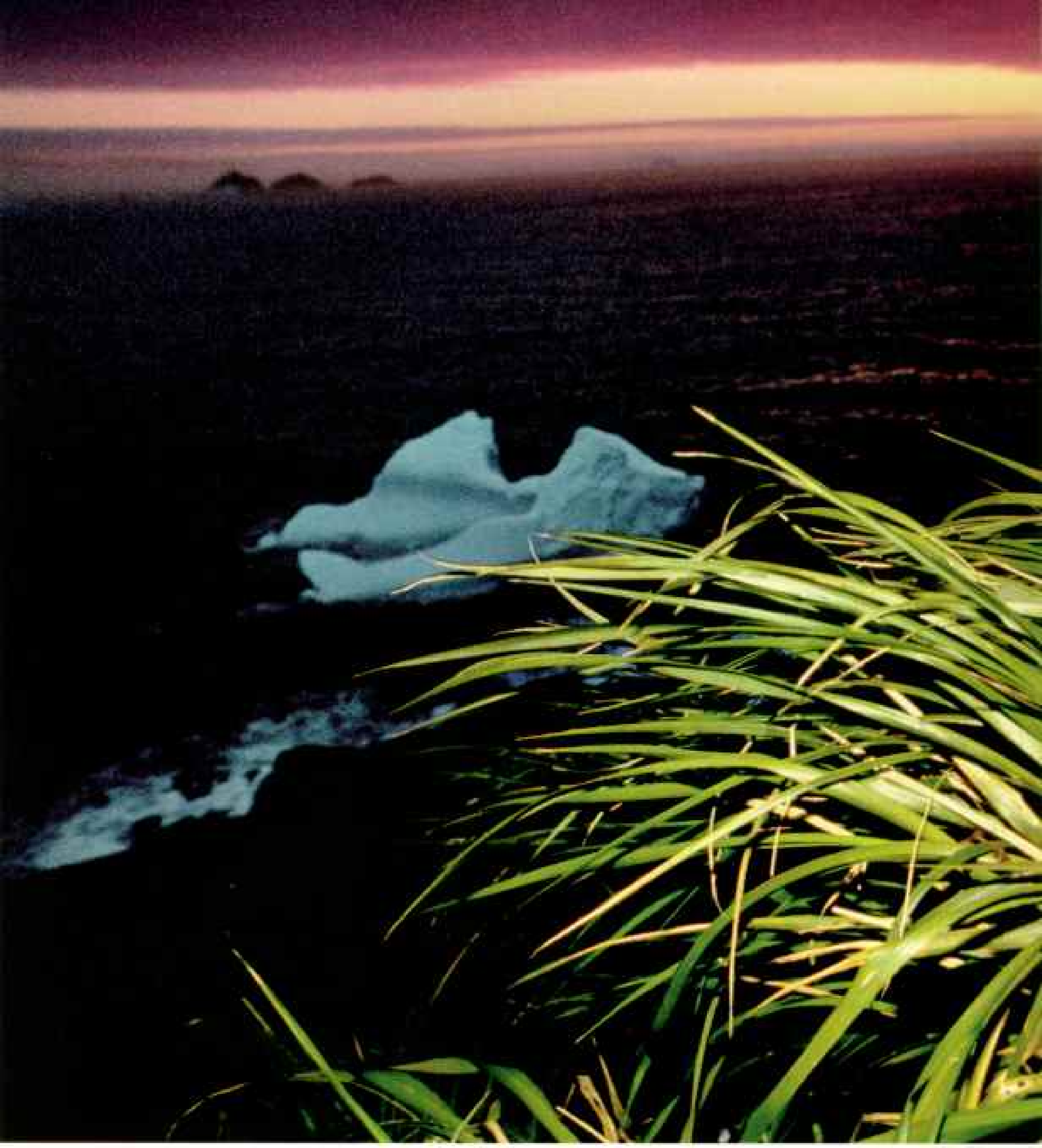
Frans, ready to go ashore with camping gear and enough food for a week, was to spend several days on the island, photographing the wandering albatross.

"Give us a call on your portable radio tonight if you need anything, Frans," Jérôme called as Criquet ferried him and his gear in the dinghy. "We'll be in the bay, within sight most of the time, surveying the other islands."

Frans erected his tent in a hollow below a tussock ridge that was dotted with wanderers. The birds were just beginning courtship: Their graceful gestures and bill clicking, necks outstretched and wings fully spread, can never fail to captivate the observer. One bird, solitary on its nest of mud and tussock stems, was all white, with only a few black feathers in its wings. From its large body size and bill and snowy plumage it was evidently a male, possibly more than 40 years old.

Pete returned aboard, jubilant after a saunter around. He'd found a colony of blue petrels, the first of this species recorded on Albatross Island. And we were confident of finding more colonies as we set off to survey the other islands.

"Look," Criquet said, "we can get in here through the kelp." We were in the dinghy, searching for a suitable landing place on South Georgia opposite Albatross.



SAFE AT SUNDOWN, a white-chinned petrel perches on a clump of tussock grass after returning from a day of feeding at sea. Soon it will enter the haven of its burrow, protected from the skuas that haunt the sky. The author and others hope that their work will promote greater understanding of South Georgia's rich assembly of wildlife as it struggles to recover from decades of man's predation.

Here in 1912 Robert Murphy had noted: "a tiny rock-rimmed cove . . . kelp that helps protect its narrow entrance . . . a tiny channel between the ledges of the cove." His description fit so perfectly that, as at Cape Rosa, we stepped ashore with reverence.

I walked along the beach and up the steep slope to the top of the tussock knoll. I stood there on the promontory above Start Point. Below, *Damien II* waited, just outside the kelp. I could see the children playing on the deck, waving up to me; Jérôme was at the wheel, scanning the nearby island through binoculars. I could almost smell the freshly baked bread, almost hear one of the children's music tapes playing.

South Georgia's peaks were tipped in thick banks of white

clouds; before me lay the bay, glittering now in the sun as a slight breeze rippled the water. A wanderer soared past on motionless wings, elephant seals snorted and puffed in the tussock nearby. A few yards away a pair of skuas eyed me nervously, wings raised in apprehension as their two chicks, fluffy light-brown balls of down, froze motionless between the moss and tussock.

How wonderful to be here in such a beautiful place. These are the moments when we feel we belong as nowhere else—moments of peace amid the forces of weather and sea, on an island that has yet to succumb to permanent human settlement. No matter what the coming years bring for us and our children, each of us will remember these moments and always dream of returning. □

More than bones were disturbed when relic hunters dug up Slack Farm in western Kentucky in late 1987, unearthing Indian grave goods like this 500-year-old human effigy pipe—reportedly bought by a collector for $4,500.

Shawnee-Delaware Indian Robert Thomas, who protests grave robbing, raises an offering of tobacco over the plundered burials. The incident spotlights a controversial question . . .

Who Owns

DAVE LUCAS, KNOXVILLE JOURNAL

Our Past?

By HARVEY ARDEN
NATIONAL GEOGRAPHIC SENIOR WRITER

Photographs by STEVE WALL

THE CRIME SCENE—a field in western Kentucky—looked for all the world as if a low-flying squadron of bombers had just swooped over on a practice run. More than 450 small craters, each edged by a mound of raw earth, pocked the surface of the unplanted field. But no air raid caused this destruction. It was the work of . . . but how to refer to them? Some call them relic collectors, pothunters, treasure seekers, even "para-archaeologists." Others, less forgiving, castigate them as looters, desecrators, even commercial grave robbers.

By whatever designation—and for whatever motives—the ten men who dug into this field in late 1987 disturbed more than bones and Indian relics. They ripped out and crumpled an irreplaceable page of our common heritage—and raised in high relief the growing controversy over the looting, sale, and exhibition of Native American remains and grave goods. The incident has prodded the nation to ask itself the emotionally charged question: "Who owns our past?"

Miles Hart, retired detective sergeant of the Kentucky State Police, recalls:

"We got a report that some relic hunters were looting an old Indian burial ground on a farm in Union County. Headquarters sent me out to check, since any discovery of human remains has to be filed with the state.

"Now, surface collecting is a popular hobby in this area. A lot of folks have relics or arrowheads. People dig 'em up in their gardens and plow 'em up in their fields. Twenty years ago I used to pick up arrowheads myself—with permission—out of that same field. Before Mrs. Slack died and the farm was sold, she talked to me about the history of the property. I'm still interested in Indian culture, but now I carve copies of peace pipes instead of looking for real ones."

When Sergeant Hart drove out to investigate, two men came to talk with him at the farm gate but refused to let him on the site. Returning with a search warrant, he found that a water tank had been rigged with a hose for softening the drought-parched earth. Countless small probe holes punctured the brown topsoil of the 40 acres overlooking the Ohio River near Uniontown, Kentucky.

"The men had told me there weren't any human bones; it was a prehistoric campsite, not a burial ground; they had rights to dig, and I had no business there since it was private land. But looking at all those craters, well . . . I knew amateurs don't destroy whole sites like that. These people were literally mining the place. It had every sign of a commercial operation."

Sergeant Hart did find bones—clearly human—strewn among the craters. "There were jawbones, leg bones, finger bones, human teeth everywhere. We got a cease and desist order until we could figure out which laws had been broken."

The men had paid the landowner $10,000 to lease digging rights between the fall harvest and spring planting. The ten were charged by the state of Kentucky with "desecration of a venerated object"—a statute applied to crimes ranging from

Leasing digging rights on Slack Farm, ten men spent two months cratering this field for Indian artifacts before being stopped and charged with "desecration of a venerated object." Kentucky, unlike many other states, prohibits the unauthorized digging of any graves.

toppling tombstones on Halloween to Ku Klux Klan cross burnings—a misdemeanor that was punishable by a maximum fine of $500 and as much as a year in jail. Four of the ten men, however, lived in Illinois or Indiana and couldn't be extradited for a misdemeanor.

Spurred by the event, the Kentucky Legislature in March 1988 unanimously revised the law, making desecration of graves a felony—which would allow extradition in future cases. Another bill narrowly missed passage in Indiana—where grave looters can be prosecuted only for trespassing, a misdemeanor carrying a fine as low as one dollar. But supporters of the bill promise to push for a stronger law this year.

AS OF THIS WRITING the criminal trial of the "Slack Farm Ten" has been delayed. A parallel civil suit filed by the state (seeking return of artifacts taken from the site, costs of documenting the looting, and punitive damages for the destruction of an archaeological resource) was dismissed in August because Kentucky failed to prove jurisdiction.

Some predict the United States Supreme Court may have to resolve the issue of the state's power to regulate archaeological excavations versus landowner's rights (a cherished Kentucky principle says a property owner's rights go "from heaven to hell").

"If the diggers are found guilty in the criminal case," points out David Wolf, forensic anthropologist of the Kentucky medical examiner's office, "the provisions of ARPA (the federal Archaeological Resources Protection Act of 1979), which only apply on private property if

Investigating the crime scene

For three months in early 1988 archaeologists and volunteers meticulously sifted mounds of earth (above left) around more than 450 holes dug by the looters. The twofold purpose: to gather evidence for the state's criminal and civil cases and to glean what archaeological data could be had from the debris.

Few artifacts were found amid what the looters had cast aside—mostly pottery sherds and shattered bones. A bear pelvis (left) shows a hole from a digger's probe. Human jawbones and teeth (above) were among the remains of at least 650 of the graves disturbed. Analysis of the remains will show much about the people's diet and health. After study at the University of Kentucky and the state medical examiner's office, the bones were given to Native Americans for ceremonial reburial.

Guardian of Indian interests, Chico Dulac camped out in a TV-equipped tepee at Slack Farm to turn away unauthorized sightseers. A loosely organized

Native American contingent also held ceremonies and built a sweat lodge to purify participants.

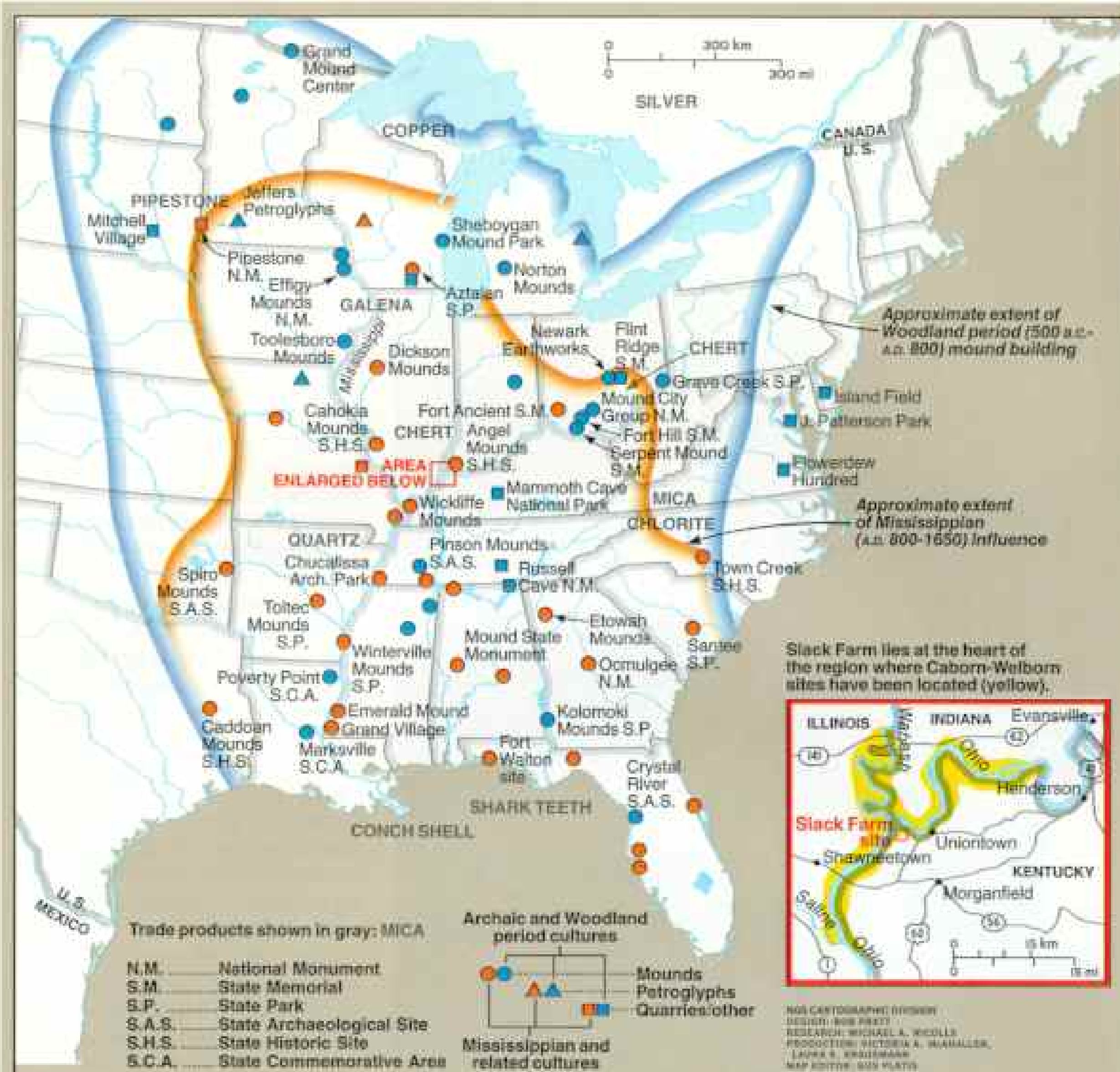
local law has been violated, would kick in. Then the FBI could go in and seize artifacts that had been illegally taken across state lines.

"Because of the scale of the Slack Farm operation and the diggers' brazen disregard for human sensibilities, we're hoping this case will spur a national burial preservation act," concludes Dr. Wolf.

Pleading not guilty, the ten defendants are backed by an influential lobby of relic collectors who see a cherished hobby (and profitable business) threatened by proposed laws and new legal precedents. Art Gerber, organizer of an annual Indian relic show in Kentucky, argues in their defense: "These guys are being made the scapegoats for what others have done for years. If it weren't for collectors, a lot of this stuff would be totally lost—plowed into pieces by farmers, washed away by floods, paved over for parking lots and housing projects. We collectors see ourselves as saving history, not destroying it."

Cheryl Ann Munson, senior archaeologist at Indiana University's Glenn A. Black Laboratory of Archaeology, counters: "It's one thing for a collector to pick up points in a field; it is entirely different to dig into archaeological sites to mine artifacts for money. The really sad thing is that we'll never know what's been taken or how it relates to what remains in the ground. Everything has been scrambled. This field is one of the prime Mississippian sites of the Ohio River Valley from the time of European contact. Now much of what we could have known is lost forever."

In February archaeologists, who had been called in by the state medical examiner's office to determine how many of the burials had been disturbed (at least 650, probably



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Cultural treasure: private or public domain?

The excavation and study of archaeological sites in the eastern United States (above) have revealed much about the Archaic, Woodland, and Mississippian periods.

Thousands of sites from millennia of occupations dot the terraces overlooking the Mississippi and Ohio Rivers—prime locations that offered good transportation, excellent hunting and fishing, and rich alluvial soil for growing corn.

Undisturbed strata at the Slack Farm site show major occupations from about 200 B.C. to about A.D. 1650. The last settlement—probably flourishing when Columbus made his New World landfall—belonged to the Caborn-Welborn phase (about 1450-1650) of the late Mississippian period. Only a handful of Caborn-Welborn village sites are known—all have been damaged by looters.

The Slack Farm looting and other incidents across the nation may lead to new legislation in many states—perhaps even a federal law—to safeguard burial sites located on private land, raising a series of yet to be resolved legal questions:

Can a landowner give or sell digging rights to relic hunters? And who should have a say in regulating the digging of burial sites: The landowner? The state? The federal government? The archaeologists and museum curators? The descendants of those whose bones and grave goods they are—specific Indian tribes or all Indians? All Americans who claim the history of their land as part

of their national legacy?

Among the few intact artifacts recovered by archaeologists at Slack Farm, two burial pots (above) show the characteristic shape and handles of the Caborn-Welborn culture. Also overlooked by the looters was a fragment of a tiny pot (below), perhaps made by a child while the mother was firing larger bowls and pots; in a hauntingly human touch, the child's centuries-old fingerprint can still be seen inside the bowl.

Whatever else may have been pirated away from the site will be all but useless for archaeology. Even if an artifact ends up on a dealer's table or in a private collection—like this red catlinite pipe (above), allegedly from Slack Farm—it will remain forever out of context, a displaced piece of the puzzle of our cultural heritage.

more), began mapping the site.

"We had hundreds of volunteers to help with the effort," said archaeologist David Pollack of the Kentucky Heritage Council, which coordinated the operation. "They were local students, businessmen, retired folk—everyone outraged by what they saw." After all the publicity some people who had dug up bones in the past turned them in to the medical examiner's office. There was even talk of turning the Slack Farm site into a park.

WHAT DO archaeologists know of this Slack Farm site? As far back as 1858, amateur archaeologist Sidney S. Lyon of nearby Jeffersonville, Indiana, donated some Indian relics he had dug up around there to the Smithsonian Institution. A decade later, Lyon—this time officially sponsored by the Smithsonian—conducted a more thorough survey, noting:

"There is a great field for investigation on both sides of the Ohio, near the mouth of the Wabash River. The people of the country have little or no exact information as to the number or location of the mounds. When a field is cleared inclosing a mound, and bones are ploughed up, the fact becomes known, but the existence of mounds in the woods or on the ridges is almost unknown; and as they are undoubtedly very numerous an explorer would find work enough to do."

Among the five mound groups mapped by Lyon was a concentration of more than 40 mounds at Slack Farm. Some he dug as best he could—with the rudimentary archaeological techniques of the time—and dutifully sent findings to the Smithsonian Institution. His report on this material helped provide clues on the dating and

nature of ancient human occupation here—and possibly led the looters of 1987 to the site.

"This was no temporary camp without burials, as the looters claimed," notes Cheryl Ann Munson, one of the archaeologists directing last spring's investigation. "It was a major village that flourished from about A.D. 1450 to 1650. Its people belonged to the Caborn-Welborn phase of the late Mississippian period—an important protohistoric era spanning the time of first contact with Europeans. Pre-Mississippian settlements here include a much older Woodland phase—we call it Crab Orchard—that dates back to about the time of Christ."

At the height of the Mississippian period (A.D. 900 to 1400) towns and villages, with flat-topped mounds serving as foundations for nobles' dwellings or temples, covered much of eastern North America. Archaeologists characterize the culture of the Mississippian people as one based on the cultivation of corn. Hence the location in rich river bottomlands of its greatest settlements: Cahokia Mounds in Illinois, near East St. Louis; Angel Mounds, near Evansville, Indiana, just 22 miles upriver from Slack Farm; and Moundville, near Tuscaloosa, Alabama.

The Slack Farm site likely drew importance from the confluence of two great rivers—the Ohio and the Wabash. In the late Mississippian, say A.D. 1500, it would have presented a scene of closely packed rectangular houses of wattle-and-daub construction, with peaked thatch roofs to handle the midwestern rains; extensive cornfields on alluvial bottomlands; and perhaps 300 to 500 people.

When they died, they were buried in cemeteries near their houses and granaries, with grave goods perhaps to assist them in the spirit world.

By drawing on data from other contemporary sites as well as analogies from the ways of the Choctaw, Creek, Shawnee, and other historical tribes, one can visualize many vignettes of Mississippian life: Men in river clearings burning great logs felled with stone axes, then hollowing them with adzes to make dugout canoes; others along the shore fishing with weighted nets; small hunting groups in the forested higher terrain away from the river, hunting white-tailed deer; children shaping play pots while their mothers built real ones; dogs yapping and cavorting; men and women making flint tools, weaving, repairing houses, carving stone pipes. And pervading the ancient settlement at Slack Farm as thoroughly as the acrid woodsmoke from the cooking fires, a deeply rooted belief system links the visible world to a supernatural universe.

Marching against desecration of burials and the buying and selling of grave goods, Indians and non-Indians join for a demonstration outside a hotel holding an annual Indian relic show in Owensboro, Kentucky. Within the hotel's exhibition hall (facing page), dealers offer buyers the scattered remains of more than 10,000 years of North American history.

Once almost universally viewed as an innocent hobby, relic collecting has come under increasing criticism as profit-driven dealers spur pothunters to ever greater depredations.

One controversial solution: a national law limiting commercial trade of such artifacts.

THAT BELIEF SYSTEM still persists in the person of Native American activists who arrived on the scene in Union County after they heard about the Slack Farm looting. Outraged at the desecration, they visited the site with Kentucky authorities and later claimed the skeletal remains under a "friend of the deceased" provision of state law.

Their claim was recognized by David Wolf of the state medical examiner's office—who played a crucial role in bringing the criminal case to prosecution. He agreed to give the Indian activists the bones for ceremonial reburial after criminal evidence had been gathered and the scientific analysis had been completed.

Among the factions of the

Spurred by the Slack Farm case, Kentucky's legislature passed a bill upgrading desecration of a burial site from a misdemeanor to a felony. While Indian supporters and state legislative champion Senator John Hall look on, Governor Wallace Wilkinson signs the bill into law. Onetime "surface hunter" Ed Hastings of Henderson, Kentucky—displaying some old finds (facing page)—has given up all collecting now. His advice to those with a yen for Indian relics: "Don't dig!"

loosely organized Indian contingent were several Shawnee from Oklahoma, who were convinced their direct ancestors had lived in this area before being driven out in the early 1800s. Others were Cherokee, Sioux, Ojibwa, Apache, even Alaska Athapaskan.

Faced with the Shawnee's contention that the Slack Farm site had been a Shawnee village, the archaeologists contacted tribal officials of the Shawnee in Oklahoma and the Miami in Indiana. Neither group claimed descent nor grave goods.

"I do not believe that the modern Shawnee descended from the people buried here," says Cheryl Ann Munson. "Only with an extensive excavation and full-fledged study of the remains can we learn more and answer the descent question."

But Native American activists counter that the archaeologists simply don't want to deal with modern Indians who might interfere with their work and make claims to the grave contents—and to many museum collections, as well.

Experts agree that the Shawnee once lived in this region. Shawneetown, Illinois, is only ten miles from Slack Farm, and this whole tri-state area—where Kentucky, Indiana, and Illinois converge—is rich in Shawnee associations. Some historians place the Shawnee farther up the Ohio River during the 1500s and 1600s, arguing that they only passed through here in the late 1700s before they were driven across the Mississippi. The authoritative *Archaeology of the Lower Ohio River Valley* (1986), by Jon Muller of Southern Illinois University, outlines a case for the Shawnee, among others, being the descendants of the Caborn-Welborn people.

And according to Dr. Helen Tanner, research associate at the Newberry Library in Chicago: "There are only so many tribes who might be identified with the Caborn-Welborn culture, and the Shawnee, in my opinion, are the most likely. It seems to me that many archaeologists have developed a block in tying together historic tribes and prehistoric cultures; in reality it is all one continuum."

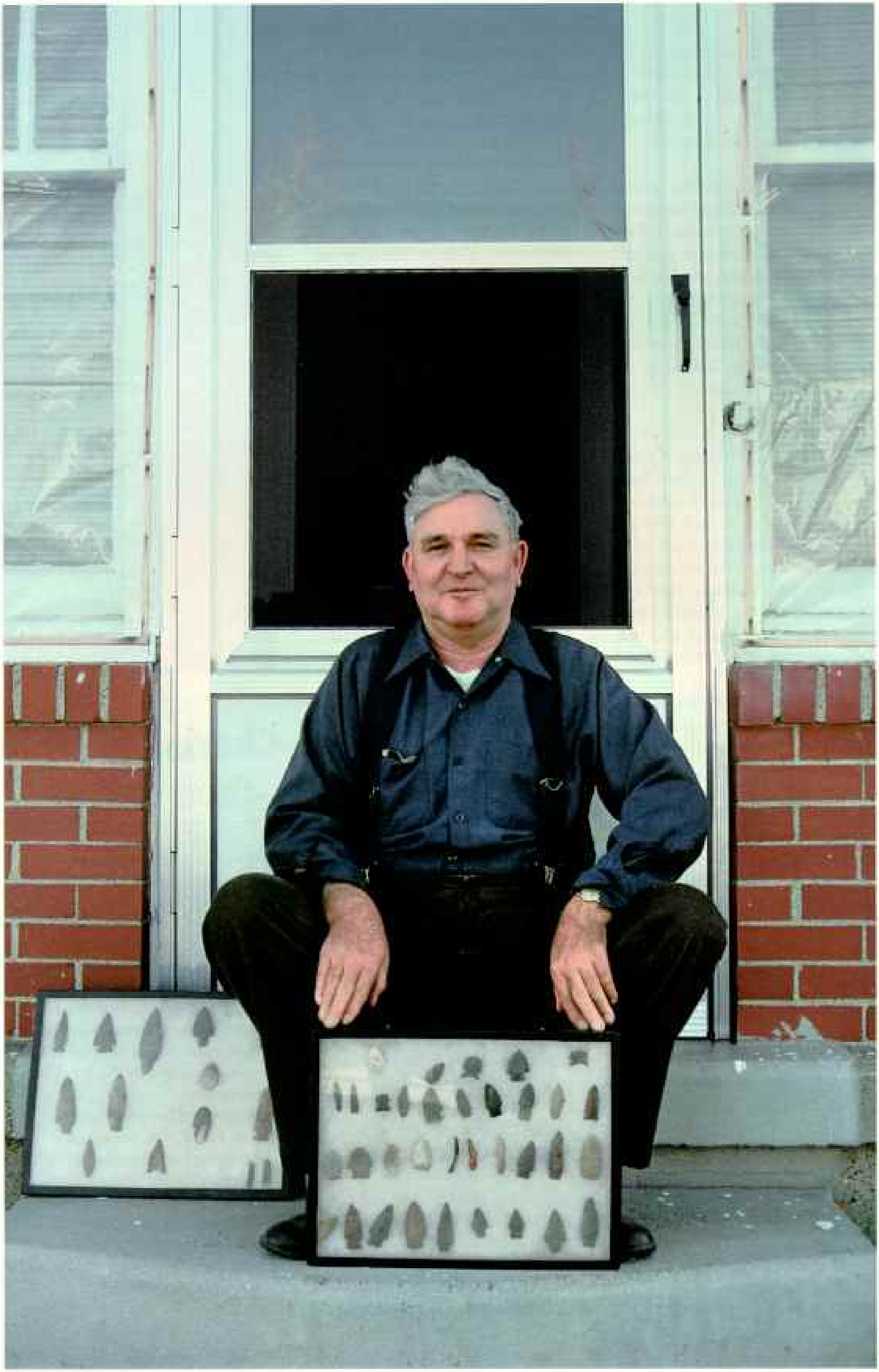
Says Dennis Banks, longtime American Indian Movement leader who came to Union County to lead the Indian contingent: "The archaeologists say nobody knows who the descendants of these people are. They say you can't tell if they were Shawnee because they're 'prehistoric.' That's their word for 'prewhite.' It seems they're saying we Indians can't have any ancestors at all. So that gives them the right to dig them up. If you ask me, they're hardly any better than grave robbers themselves; only difference is they've got a state permit. Well, we're here to tell the world that, Shawnee or not, we are all laying claim to these ancestors.

"What if this were a white cemetery that had been desecrated? Would the archaeologists be bagging the disturbed bones and grave goods to take them for study at museums and universities?

"We're not here for a confrontation. We just want to see that the Ancient Ones get a proper reburial. Those who dug up their bones just don't understand the forces they've let loose."

The Indians set up a tepee and organized a vigil near the site, held tobacco-burning ceremonies every four days, and built a sweat lodge to purify those who came to visit the disturbed graves.

A poignant public Ancestors Day ceremony was celebrated over Memorial Day weekend—possibly to become an annual event. Two weeks earlier the



first of three consignments of bones was reburied—without fanfare—by Chiefs Leon Shenandoah and Vincent Johnson of the Six Nations Iroquois Confederacy.*

A large cloud, sliding providentially across the otherwise clear sky, gave welcome relief from the hot afternoon sun as Chief Shenandoah put the cardboard boxes containing the remains of 114 Ancient Ones into holes the archaeologists had left for that purpose. In his native Onondaga language, he intoned a series of prayers.

Later he explained: "I was talking to the disturbed spirits. They can't rest until their bones are completely dust. I asked them not to harm us. I told them we are putting them back so they can start their journey to the otherworld again. And I prayed that they would forget all this ever happened and not take vengeance on those who dug them up."

At the end of the prayers the dirt that the original diggers had tossed aside so carelessly and that the archaeologists had so meticulously sifted was shoveled back to cover the boxes in their new common grave, well beneath the plow zone. Smoothing the mound, Chief Shenandoah set a lighted lantern beside it.

"To light their way to eternity," he said.

IN OWENSBORO, Kentucky, tables groaning under the weight of tens of thousands of Indian artifacts stretch away through a vast ballroom lit by chandeliers. Billed as "The Indian Relic Show of Relic Shows," this annual event is enough to give terminal depression to anyone who knew the childhood miracle of finding an arrowpoint in the backyard.

Box after box is filled with points—you can get the commonest arrowheads for 50 cents to a few dollars; a finely preserved Paleo-Indian spearpoint brings $500 or more. A glass case displays exquisite bannerstones—the stone weights used with atlatls, the spear-thrower common before the bow and arrow came into vogue some 1,200 years ago. At one table a couple examine a shell pendant, a gorget dangling from a necklace of fine shell beads: $1,200. "It's got the weeping-eye motif of the Southern Cult," urges the seller.

While most pieces bear no label other than price, some have little museum-style ID tags: "Yankeetown, A.D. 1200" . . . "Hopewell, 200 B.C.–A.D. 200."

"You won't find much of the really good stuff out in the open," one vendor confides. "That's kept in vaults. You gotta be serious before they'll show it to you. And watch out for fakes. Even the experts get fooled."

"Did you dig this piece yourself?" you ask the dealers.

Most shake their heads. "Naw, got it at an estate sale." . . . "Bought it from a guy."

"Where's it from?" you ask.

"Well, this guy said he got it down in Georgia." Or Oklahoma. Or bought it from an old lady in Ohio.

Get too specific with your questions, and you get a peeved stare. It's like asking people details of their taxes.

"Anything from Slack Farm here?" That one brings either a blank look or a guffaw. Everyone at the show knows about the recent hoopla. Many items might be from the site—but there's not a whit of legal proof that any of them are.

Photographer Steve Wall managed to track down one piece allegedly from the Slack

*The author wrote about the Iroquois Confederacy in the September 1987 NATIONAL GEOGRAPHIC.

Cherished by kin —then and now

Simple possessions are placed in a grave by loving relatives in this artist's re-creation of a Caborn-Welborn burial—set amid thatched wattle-and-daub houses overlooking the Ohio River. These goods, perhaps meant to accompany the deceased in the afterlife, would centuries later lure pothunters to desecrate such graves.

Scattered bones from the Slack Farm site, boxed in accordance with state law after examination by physical anthropologists, receive a makeshift but reverent ceremonial reburial (right) by Chief Leon Shenandoah of the Six Nations Iroquois Confederacy.

PAINTING BY NATIONAL GEOGRAPHIC ARTIST WILLIAM H. BOND

Farm dig: a four-inch carved limestone pipe (page 385). The collector knows of only two others, one also said to be from the farm and the other from a few miles away. The man who claimed he'd bought it—for $4,500—said he had confirmation of its origin from the seller. Other rare pieces have gone for hundreds of thousands of dollars. Most diggers, though, would tell you they're lucky to make the equivalent of minimum wage for their hours of shoveling in the hot sun.

"For the vast majority it's the sport and adventure of it, not the financial gain," says Art Gerber, whose show is one of scores held throughout the country each year. Yet some dealers—including Gerber himself—have collections in their vaults that would make a museum curator cry with frustration. Most of these pieces are what archaeologists call "without provenance"—no record of the physical context from which they were dug. Hence, they are nearly useless for the interpretation of history. Literally, pieces lifted from the puzzle of our common past, never to be fitted.

"WATCH OUT for copperheads!" warned Ed Hastings as he led the way up the hillock behind Slack Farm. Ed has been roaming these bluffs and terraces above the lower Ohio for more than half a century. He was a "surface hunter," making his finds on the ground, not under it. In recent years he's given up even that, becoming purely a mapper of Indian cemeteries and sites. "I've recorded more than 250 sites, some larger, some smaller than this one, all within a hundred miles of here. I guess there must be twice that many. Every so often someone will come across an old Paleo-Indian point out here dropped by a hunter maybe 10,000 years ago. Some of these ancient settlements are layered like wedding cakes, going down maybe a dozen feet.

"When those diggers dug here, they mixed up all the layers and tossed the bones around like so much sewer pipe. No respect for the dead. I've found quite a few bones, too, in my time. Once I found the whole skeleton of a mastodon. But whenever I found human bones, I reburied them with a prayer. Maybe it's because I've got a drop of Apache blood. That was the only time I dug—to put 'em back.

"The diggers say they weren't digging for bones, just pots. But look at all those probe holes among the craters—thousands of 'em. You don't make those looking for pots at random. You'd never find much that way. You make all those probes because you're looking for the soft feel of bones. If you find bones, chances are you're going to find grave goods too. That's where the money is. The only bones they usually take are the whole skulls—people buy 'em as candle holders.

"But I don't see these guys as monsters, like some people do," Hastings continued. "I know the lure. I stopped even surface huntin' because I came to realize it was wrong to take this stuff for yourself. This is everybody's history, not just yours or mine. It shouldn't be for personal profit. I'm not tellin' others to stop surface huntin' or collectin'. But I do say this:

"Don't dig—you destroy history when you do. And don't buy the stuff either. If everybody stopped buyin', these guys would do a lot less destruction. Me, I still hunt for sites but only with my eyes. Those bones down there—they're everyone's ancestors. I say let 'em rest in peace!" □

The battle to save our past

To me it is a miracle of miracles that *any* remnant of the human past has survived, for it seems that both nature and man are constantly engaged in the processes of obliteration.

That's why I was heartened recently when museum technician Susan Crawford guided me through the Smithsonian Institution's storage facility in Silver Hill, Maryland, where the copper bells, pottery, and other artifacts found at the Slack Farm site by Sidney S. Lyon more than a century ago are stored.

The experience thrust a ray of hope into the grim affair at Slack Farm. Here were artifacts that could be assigned to that place and to a particular time. They had been preserved not only for the present but also for the future because Lyon and a public institution—the then infant Smithsonian—had collaborated to save them. Such foresight is increasingly rare.

The disaster that took place at Slack Farm lies in the irrevocable destruction by a few of part of the heritage that belongs to us all. The world will never know for sure just what artifacts came out of that chaos, and the knowledge they would have afforded is lost. Therein lies the crucial difference between the "amateur archaeology" of Lyon, and the irresponsible greed of the recent looters.

Tragically, the Slack Farm case is not unique; it is not even unusual when we look at it from a wider perspective.

In 1933 a small group of men, who had hastily established themselves as the Pocola Mining Company,

thoroughly sacked the great mortuary mound that dominated the Spiro site in southeastern Oklahoma.

In New Mexico virtually every site of the Mimbres—a people of the Mogollon culture—has been wrecked by looters seeking their delicately painted black-on-white bowls. In North Carolina the strata of 7,000 years of human occupation lie in a jumble, destroyed in a matter of days by seekers of a few "collectible" stone spearpoints and scrapers.

As an archaeologist I deplore the ongoing destruction, for my profession literally depends on the excavation of in situ material—remains of the past in the precise place where they were left by those who made and used them. The artifact out of context is, for the most part, of as little use as the beached plank of a wrecked ship.

I became a collector at the age of 13. In fact, the finding of several spearheads in a plowed South Carolina field played a major part in my later desire to become an archaeologist.

It seemed quite natural that my surface collecting evolved into sporadic digging at local mound sites. It is easy, looking back, to see the destruction that this wrought. At the time, however, I was sincerely interested in the "person behind the artifact" and felt strong pride in our local prehistoric sites. In addition, South Carolina then had no professional archaeologists. When they finally did come on the scene, I freely shared both my collection and my somewhat sketchy records. I continue to believe that such cooperation between scientists and laypersons can save an enormous amount of time and duplication of effort.

Money entered the collecting picture when, in a world of increasing demand and limited supply, dealers began to assign prices to the priceless, and the market grew to depend on more and more digging for salable objects. Artifacts too often became the pawns in business games, either as investments or as lucrative tax deductions. With that the image and the innocence of collecting were severely compromised, as in the Slack Farm case. In the ongoing competition, archaeologists face an uphill battle even to save what is in the ground for future generations. In my opinion, if the unchecked looting continues

NATIONAL GEOGRAPHIC PHOTOGRAPHER VICTOR R. BOSWELL, JR.

to increase, there will be no archaeology to do by the turn of the century!

But don't archaeologists themselves destroy this ancient evidence as they excavate? Of course, but there are key differences: Archaeologists are first and foremost anthropologists, trained in the methods necessary to interpret the relationships among the buried remnants of the past and obligated to publish their findings. Moreover, the artifacts found by archaeologists as a rule end up in museums or other public repositories, available to all.

The issue of the reburial of human remains underscored by the Slack Farm episode is in a different category of concern. Many Native Americans deplore any disturbance of the grave sites of ancient Americans, demanding that archaeologists "respect our dead." This reaction should not be surprising: The remains of hundreds of thousands of North American Indians and their distant ancestors lie in museums around the nation. Until recently many laws pertinent to the exhumation of human bones applied only to whites.

Archaeologists counter with their own need to study human remains in order to reconstruct ancient diet and patterns of disease. Fortunately, important compromises are being reached.

In May 1986 the executive committee of the Society for American Archaeology—the principal professional organization for anthropological archaeologists—recognized "both scientific and traditional interest in human remains," and that "human skeletal materials must at all times be treated with dignity and respect."

Meanwhile, immediate practical solutions on the use, the treatment, and, indeed, the very ownership of the past are elusive. Antiquities laws are vague and conflicting; enforcement is costly and time-consuming. New and effective legislation against looting is difficult to enact, with the "right to collect" as the point of contention.

The best answer would seem to lie in public education, so that people can know of our rich collective past and the threats to it. Decisions and compromises affecting both the past and the rights and concerns of all parties might then be easier to effect. This may take more time than we have. The tangible roots of our past may soon vanish and join the shameful roster of all else we have destroyed on earth.

NATIONAL GEOGRAPHIC ARCHAEOLOGIST

TRAP-JAW ANTS:

Set for Prey

Death comes quickly for victims of the trap-jaw ant, one of nature's most remarkable predators. A sudden, piercing blow from giant mandibles often signals the end of battle. In the Costa Rican rain forest an *Acanthognathus* ant only a tenth of an inch long defends her nest against a pseudoscorpion. Probing with her antennae, the ant stabs at the enemy with her oversize jaws, driving it from a hollow twig.

Had the intruder been a springtail, the trap-jaw ant's only prey, it would have been killed for hungry nest mates. An ant larva wraps around just such a feast. *Acanthognathus* ranks among the most unusual of several hundred species of trap-jaw ants.

ARTICLE AND
PHOTOGRAPHS BY
MARK W. MOFFETT

DEBORAH FLITCROFT

Cracking open twig after twig, my colleague John Tobin and I (left, at right), along with zoologist Stefan Cover, scoured the rain forests of Costa Rica and, later, Trinidad. Our goal: the rarely seen *Acanthognathus teledectus* and related ants, which nest inside hollow twigs. Colonies are scarce. We found only seven after searching tens of thousands of twigs.

Those we did find were tiny, with only four to twenty adults. Most other ants nest by the hundreds or thousands and a few by the millions. Like all ant species, these ants form female societies. Males are produced as needed; after they fertilize a queen, they die.

This colony's queen walks along the inside edge of a split twig (left bottom). Her enlarged midsection alone marks her as royalty; her elaborate mandibles look like those of her offspring. These ants cannot efficiently tunnel through soil or rotting wood, as do most ants. Thus, when a new queen starts a colony, she settles into the ready-made shelter of a twig and hunts for herself. As soon as she has reared her first daughters—from eggs to voracious larvae to metamorphic pupae to worker adults—she gives up foraging. Most likely she never leaves the nest again.

Acanthognathus ants hunt alone, stalking the ubiquitous but agile springtail—the rabbit of the insect world—with jaws cocked (top right). As the ant closes in, sensitive hairs along her mandibles detect the prey, triggering the long jaws to snap forward. Pronged tips puncture the victim. Grasping the springtail (middle right), the ant then

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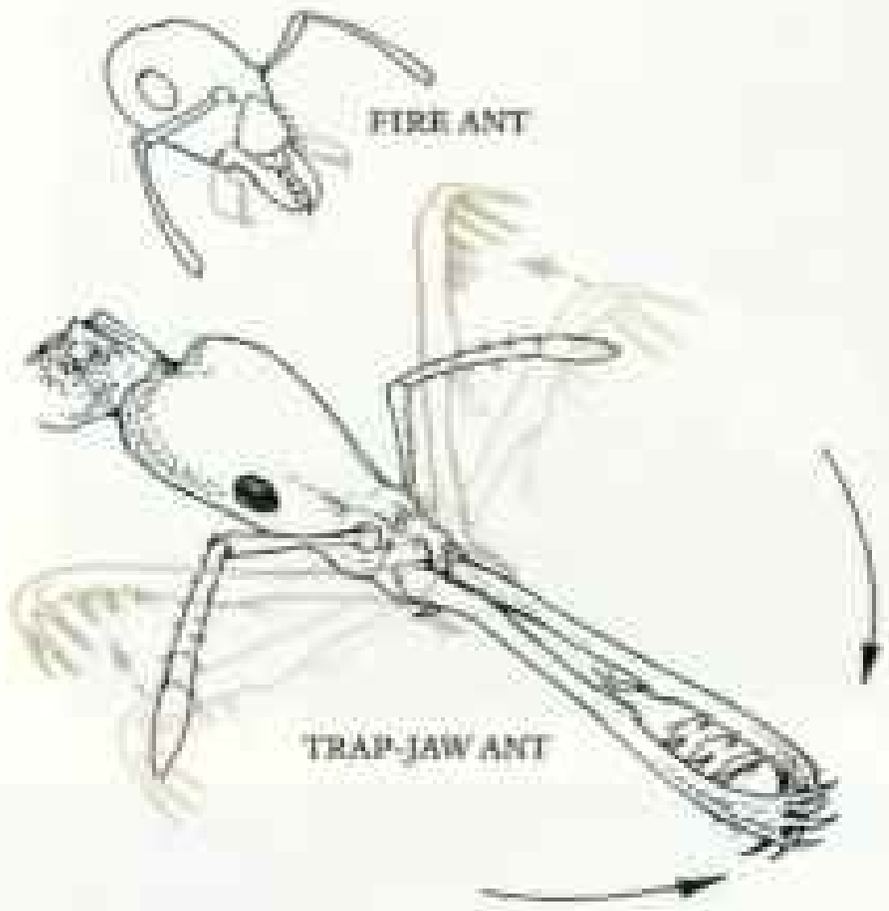
thrusts her abdomen forward and injects venom into her victim with her stinger. The springtail, stunned, hangs limply. Returning to the nest (right), the worker ant carries her booty high off the ground, ensuring that even if the springtail revives it will not free itself by flinging the ant skyward with a snap of its furcula, or "tail."

Harvard zoologist Mark W. Moffett wrote about marauder ants in the August 1986 GEOGRAPHIC.

Trap-Jaw Ants: Set for Prey



DIAGRAN BY JOHN DAWSON

WATCHING a colony move to a new nest one day, I saw an ant choose *not* to use her lethal jaws. Surprised by a larger *Leptogenys* ant, part of a looming column of aggressive foragers, the trap-jaw worker quickly dropped the larva in her care and smeared droplets of venom across the enemy's face. The dark ant recoiled (below) and tried frantically to clean herself. The worker escaped with the larva.

The same jaws that can pierce the chitinous armor of most enemies can also gently cradle soft-skinned ant young like this pupa (top right). Translucent "arms" will become mandibles.

Most ants have simple mandibles with limited mobility (diagram, left). Those of *Acanthognathus*, complete with trigger hairs and teeth, are able to snap together from roughly 180 degrees apart. They can also be swung back even wider to reveal smaller outgrowths similar to the jaws of most other ants. With these a trap-jaw worker can lift a small larva (middle right) or an egg. When doing so, the long jaws flail uselessly.

For *Acanthognathus* the short jaws also make quick work of

chewing springtails (bottom right) so they can be licked clean of body juices, a task all ants must perform since they can swallow only liquids. The ant on the right, having snared a springtail, presents it to another ant.

Feeding is much harder for *Myrmoteras*, another trap-jaw ant I've studied. This ant, lacking short jaws, must walk back far enough to tear food with her long jaws, then move forward to eat, back again to tear, and up again. The dual jaws of *Acanthognathus* cut through such complications.

Trap-Jaw Ants: Set for Prey

TRAP-JAW ANTS hold no monopoly on elaborate weaponry. That became clear to a forager (above) when she happened upon a termite soldier defending a column of its nest mates. Besides hooked jaws, the soldier sports a nozzle it can use to shoot down enemies with a gluey stream.

Among ants ornate mandibles have evolved independently in numerous species. Many of these are trap-jaw ants belonging to a group called the dacetines. We know *Acanthognathus* ants only from Latin America, but less dramatic dacetines inhabit climates as far north as New England. One of my favorites, *Daceton armigerum*, nests in the trees of South America. The workers of this species exhibit polymorphism, specialized physical castes. In a Venezuelan nest (right) a tiny, brood-tending minor rides piggyback on a major nearly half an inch long. The majors, along with intermediate-size medias, forage for prey high in the jungle canopy, their jaws powered by muscles housed in lobes at the back of their heads.

I have long admired trap-jaw ants. Studying the fragile nests of *Acanthognathus*, I was reminded why. There is simplicity behind their complex design. The colonies live on what each ant carries, unaided, to the nest. Since their prey leaps at any disturbance, they need a weapon that also serves as forklift. The answer: a set of trap jaws. □

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NATIONAL GEOGRAPHIC MAGAZINE

FROM THE PRESIDENT

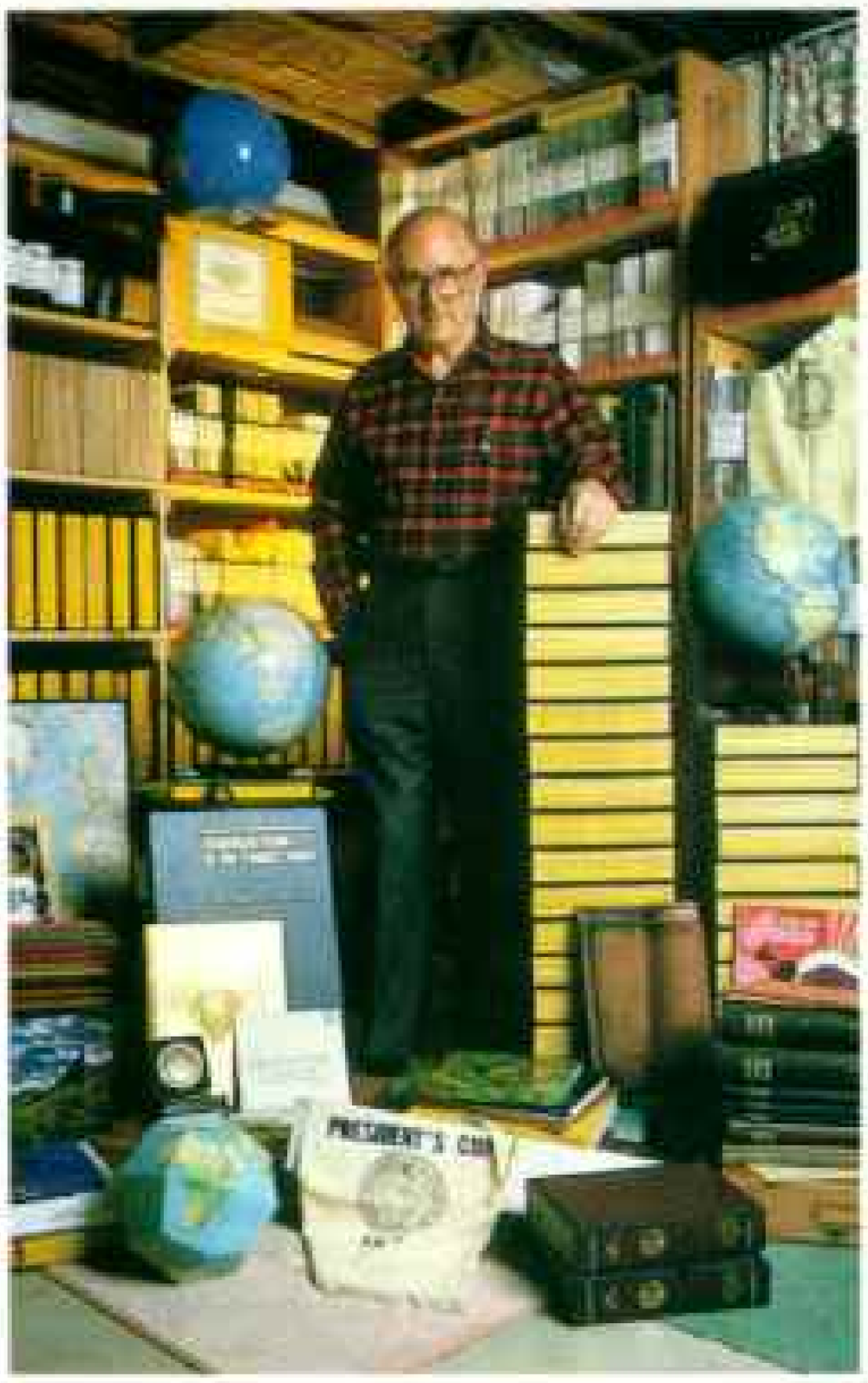
"What would you trade for an October 1917?"

THE NATIONAL GEOGRAPHIC SOCIETY

PEOPLE HAVE ALWAYS found it difficult to part with NATIONAL GEOGRAPHICS. Consider Dr. Lew Begley of Mesquite, Texas. Since he began saving the magazine in 1952, the retired physician—who has copies stored in every room of his house and three other buildings—has collected 400,000.

Dr. Begley was among a group of collectors who stopped by Society headquarters recently. Also present was Dr. Edwin C. Buxbaum of Wilmington, Delaware, whose *Collector's Guide to the National Geographic Magazine* is in its third edition. A friend to both my father and grandfather, Dr. Buxbaum is known as the dean of GEOGRAPHIC collectors.

These individuals are among hundreds of collectors who share a passion for our magazine. Belonging to no association or formal network, they trade news on the whereabouts of rare issues such as the flag number of October 1917, with its 1,197 color drawings of the world's flags, or the mushroom issue of May 1920, treasured by botanists for its detailed paintings of fungi.



COLLECTOR ROBERT NATHAN AT HIS HOME IN WOODSTOWN, NEW JERSEY. PHOTOGRAPH BY SARAH LEEN

The rarer an issue, of course, the more valuable; the hardest to find are those before 1910. Collectors almost never see these at auctions or estate sales. They rely upon contacts with rare-book dealers. No serious collector is satisfied until he has original copies of every issue since 1888.

Many do not stop there. They seek out Society books, maps, news and school bulletins, calendars, and advertising brochures. They search for membership certificates, postcards, receipts from paid dues. One collector has an invitation to a Society picnic held on May 4, 1895.

"Not a week goes by when I don't find something I've never heard of before," Dr. Buxbaum said. "And I've been collecting since 1930."

Every collector has his favorites. For Dr. Michael N. Rubenstein of Charlottesville, Virginia, it's an *Explorer II* bookmark signed by the two Army aviators who took the balloon to a record height of 72,395 feet in 1935. The bookmark, offered free to Society members in 1936, is an actual piece of the balloon.

The earliest issues, they tell me, have become rather expensive. A well-preserved copy of October 1888 (Volume One, Number One) might be worth $10,000.

I've always considered our volumes priceless, not as collector's items but as eyewitnesses to our times. Through their pages we can still experience the great blizzard of 1888, meet headhunters of the Philippines in 1912, or sorrow at the face of starving Armenia in 1919. And years from now we will be able to look back at the events of our own time and recall the feeling of life as we lived it.

Someone who clearly understands this is Sister Rita Schodzinski of Our Lady of the Pillar Elementary School in St. Louis, Missouri. Operating on a shoestring budget, the 75-year-old librarian had recently come within six issues of completing a set of GEOGRAPHICS back to 1947. Hearing of her project, a student's aunt sent her the missing issues from New York. This collection, Sister Rita says, will be a treasure of research for students in her school for years to come.

My hat's off to you, Sister Rita, and to all the other collectors of our Society's work who remind us of our place in living history.

Gilbert M. Grosvenor

Members Forum

Mission to Mars

The U. S. needs the challenge of a Mars mission (November 1988) to refocus national interest as the Apollo missions and space shuttle program have done. The Soviets have left us far behind in space-station and heavy-lift technology by having a focused program with clearly defined goals. I suggest we establish a National Space Exploration Fund to provide stable financial support, by having Americans check a separate line on their income tax forms for contributions going directly to NASA.

MARTIN L. HOWARD, JR.
Irmo, South Carolina

Why do we have to wait until late in the century for a long-dreamed-of camaraderie between us and our Soviet space allies? Why not put together a program now to test such compatibilities in our own shuttle program.

THOMAS G. FOX
Wonder Lake, Illinois

I call the expenditure of at least 100 billion dollars to let four people stroll around on Mars criminal. Wouldn't it show more decency to spend the funds to save our dying planet, rather than on searching for questionable proofs of life on an uninhabitable and dead planet?

ALBERT M. KLEIN
Amsterdam, Netherlands

If the scientific community needs something to do with its time, redirect it into finding a new energy source, creating better mass-transportation systems, and solving the housing problem right here on earth.

RICHARD L. MCPHERSON
Hazelhurst, Wisconsin

Poor Jonathan Swift must be spinning in his grave. "Mission to Mars" has put *Gulliver's Travels* in the shade. Michael Collins's statement about the technologically risky attempt to recycle solid waste recalls Gulliver's travels to the Academy of Lagado, where he met a project leader deep in solving that very problem. The academy was inhabited by visionaries absorbed in projects that had a total disregard for reality. Among the departures from reality in the Mars article were the colonizing of a planet far more hostile than our own Ellesmere Island, Tierra del Fuego, or the Gobi desert, places that are not now besieged by colonists, and the relieving of boredom of the space travelers by transmitting earth-generated television programs.

ROBERT S. HALEY
Carson City, Nevada

I am puzzled by the reference to the long-term psychological effects of isolation and sensory deprivation that a Mars mission would entail. Having served aboard Navy nuclear submarines performing deterrent patrols, I know full well these effects. So does the Navy. Many times I would have willingly traded the relative comfort and spacious area of a fleet ballistic sub for a Mars probe; it would certainly have windows, giving a sense of travel as one watched the stellar background day by day.

M. C. MILLER
Clinton, Iowa

Boy, are we an impatient race. Instead of trying to do this spectacular Mars mission, it would be better to do the foundation-building missions, such as the lunar outpost, first.

DOUGLAS MAX
Issaquah, Washington

Collins speculates that "some wastes [would] go overboard, to mystify intergalactic travelers . . . centuries later." I found the garbage shown in the Himalaya article appalling, not mystifying. A century ago Mount Everest must have seemed as expansive and unconquerable as Mars seems today. Apparently, however, we will take no more care in preserving the purity of outer space than we did with our highest mountain.

ALISON WATTS
Santa Monica, California

The Himalaya

Congratulations on your impressive November issue embracing Everest and its satellites, in particular the superlative mountain photography epitomized on page 621. Some mention should have been made, however, of the magnificent Kanchenjunga massif clearly seen in the background some 80 miles away, the world's third highest peak.

NEVILLE KELLER
St. Annes on Sea, Lancashire

In your fine articles on the Himalaya, I lost count of how many times you complain about the terrible results of deforestation. But nowhere do you suggest a solution. How about a surcharge on all those trekkers to start a reforestation program.

JURIJ STEPANIAK
Dover, Delaware

There are good reasons to promote reforestation, but I regret the false implications on page 633. Promoting retention of virgin forests seems inappropriate for resource-poor areas. Better

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Go on, we can take it. What's more, we can give as good as we receive.
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To enter, just read the rules at bottom, and send us a photo of you and your loved ones "Having Fun With Mazda Cars And Trucks." And make it a good one. Because if we're knocked out by your photo, you take home the prize.

APPLICATION RULES

1. This contest, sponsored by Mazda Motor Corporation at 3-1, Shinchi, Fuchu-cho, Aki-gun, Hiroshima, Japan, is open to any photographer, whether amateur or professional. The contest theme is "Having Fun With Mazda Cars And Trucks." Purchase of or ownership of a Mazda vehicle is not necessary to enter the contest.
2. **Entries must be 35 mm COLOR SLIDES horizontally mounted,** and the entrant's name and country must appear on the slide mount. Each entrant may submit as many entries as desired. Each entry must be accompanied by a signed Application Form (available at your nearest Mazda dealer) or a signed sheet of paper giving the following details. Please type or print clearly: (1) Name; (2) Address; (3) Age; (4) Sex; (5) Nationality; (6) Occupation; (7) Telephone number; (8) Date of photo shooting; (9) Location of photo shooting; (10) The names of everyone shown in the photo.
3. Entries should be mounted horizontally as in the diagram:

4. **Entries must be received between February 1, 1989 and June 30, 1989 inclusive, at the following address:**

Mazda Photo Contest
P.O. Box 93, Kyobashi Post Office
Tokyo, Japan

Mazda will not be responsible for the loss of or damage to entries, or for entries which are delayed or misdirected.
5. The prizes are as shown above. Prize money will be remitted either in the currency of the winner's country based on currency exchange rates then prevailing or in U.S. dollars. Only one prize will be awarded per household. Prizes are not assignable, nor exchangeable.
6. Entries will be judged by the Photo Contest '90 Committee, an independent panel of experts, based on originality, composition and photographic technique. The panel's decision will be final.
7. Winners will be notified by mail and their names will be announced in the December 1989 issue of "National Geographic" magazine.
8. Entries are accepted and prizes are awarded on the condition that the entries are original photographs, are the sole property of the entrant, and have not been submitted or accepted for publication elsewhere.
9. All entries will be retained by Mazda and will not be returned.
10. Mazda reserves the right to reproduce, publish, or exhibit any entries in connection with the Photo Contest '90 or related promotional activities, and reserves all rights to winning entries, including the right to reproduce, publish, or exhibit the photograph in Mazda's consumer advertising or elsewhere. It is the obligation of each entrant to obtain any necessary consents for these purposes from persons appearing in the photograph and for other objects appearing in the photograph. The entrant shall hold Mazda harmless and indemnify them against any claim or liability arising as a result of the publication or exhibition of his or her entry. For the foregoing purposes, all winners will be required to execute a consent form to be supplied by Mazda and to be returned to Mazda within 20 days as a condition to receiving their prizes.
11. This offer is void where prohibited by law.
12. The prize winner will be responsible for paying tax in connection with receiving a prize.
13. Any breach of the above rules will entitle Mazda to disqualify any entry.

mazda

erosion-control methods are often available. Grasses and land shaping are more effective. One example: A good grass-covered dam can withstand two-foot-deep water running over it for hours without erosion, but one with trees or brush on the slope will fail quickly because of erosion. Grasses develop good soils and are, in general, more efficient plants than trees.

JIM SCHOOF
Wichita, Kansas

Mallory and Irvine were on the same rope on Everest's Northeast Ridge in 1924. Reinhold Messner in 1980 made the top by the North Ridge, solo, without oxygen or radio. He stands, for all climbers, as the star of the Everest epic.

E. M. RICHARDSON
Rail Road Flat, California

The throwing away of human lives on ascents that have been done dozens of times is now absolutely unconscionable. And this word is stretched further when other lives are placed at risk in rescue efforts. Yet the GEOGRAPHIC goes on encouraging these macho exercises.

R. E. JOHNSTON
Seattle, Washington

Brahmaputra River

Thank you for the November article on the Brahmaputra. Unfortunately you do not comment on the impact of Christianity along the north bank of the river in Assam during recent decades. Your reference to "Tezpur, a clean and pretty town on the north bank" could have been fleshed out by reference to the remarkable conversion to Christianity of thousands of people in the surrounding areas. The Baptist hospital in Tezpur is acclaimed as one of the best in Assam.

RONALD YOUNGBLOOD
Bethel Theological Seminary
San Diego, California

Jere Van Dyk mentions that China is considering a dam at the Great Bend of the Brahmaputra River that would be the world's largest hydroelectric plant. Here indeed is a first-class geographic wonder of the world—an untapped hydroelectric site that could power the needs of Tibet, a quarter of India, the whole of Bangladesh, Nepal, and Bhutan. In the nearly 80-mile course of the Great Bend, the river drops some 5,100 feet. At the lower end, the bend reverses direction. Power-conduit water tunnels drilled through the great ridge could supply 15 powerhouses, each the size of Grand Coulee's original installations, or about 30,000 megawatts total. Dams at, above, and below the bend could provide additional power and flood control, alleviating catastrophic floods in Bangladesh. The area is contested by China and India. I wish the World Court, World Bank, and UN could help make a boundary settlement, enabling the project to proceed with worldwide financing; the aluminum corporations should be willing to provide much construction money.

CARL R. DION
Federal Way, Washington

I and probably 100,000 more American GIs served in or passed through Assam in World War II. It was the advanced supply base and staging area for operations in Burma and the airlift of supplies over the Hump to China. Kaziranga National Park area was then known as Mr. Smith's Tea Plantation or Bungalow. A few GIs were able to see the rhinoceroses from the back of his elephants. Also 90 miles downriver from Gauhati [Guwahati] was the longest underwater pipeline crossing then in the world.

KENNETH C. ANDERSON
Norman, Oklahoma

Honey Hunters of Nepal

In past issues I have learned how uneducated peoples have persisted in practices that give survival today but ruin chances of future generations. This scenario is painfully apparent in the November article about the honey hunters destroying the brood comb for wax. No wonder the harvest has dropped. As a beekeeper, I know that a colony of well-tended bees can yield 50 to 100 pounds of surplus honey a year. Whether or not *Apis laboriosa* can be domesticated I don't know, but these people are in desperate need of education and supplies (movable frame hives) for beekeeping adapted to their situation.

GERALD SACKETT
Buckingham, Virginia

Scientists studying Apis laboriosa *say that loss of forest habitat is more to blame for the bees' decline than a few hunters taking their combs. These wild bees are not cavity dwellers, hence could not be domesticated to use man-made hives.*

The lack of a successor to Mani Lal reminded me of the Gagudju elder, Kapirigi, who died before teaching his unique heritage to a younger generation, as described in "The First Australians" (February 1988). If not for articles about such people, could we urbanized North Americans perceive the plight of the world's cultures that are losing ground to technology's advances?

MARK HNATIUK
Lemoyne, Quebec

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

MARCH 1989

GEOGRAPHICA

NATIONAL GEOGRAPHIC MAGAZINE

A Plan to Preserve Madagascar's Ecology

As Alison Jolly's article on Madagascar (NATIONAL GEOGRAPHIC, February 1987) made clear, the huge island nation off Africa's southeast coast faces an ecological crisis of the first magnitude: a rapidly growing human population pitted against a unique and badly threatened environment. A long-term plan to preserve the environment while promoting economic survival has been drafted by a consortium linking the nation's government and international conservation organizations and development agencies.

Under the plan Madagascar seeks to protect and manage its diverse animal and plant life while educating all levels of society about the environment's importance. Up-to-date information would be gathered in order to create and protect wildlife preserves, devise land-use practices that preserve rather than destroy the environment, and promote tourism that is ecologically responsible.

François Falloux of the World Bank —which is leading the effort with the World Wildlife Fund, the U. S. Agency for International Development, United Nations agencies, and others— says the plan envisions a 15-to-20-year effort costing between 300 and 400 million dollars. If that seems high, says Falloux, consider that deforestation and erosion (above right) would cost the nation far more. The loss of the nation's unique animal life would exceed any monetary value.

FRANS LANTING

A New Portrait of Olmec Life . . .

Archaeologists are getting their first look at the everyday life of the Olmec, a pre-Maya people whose culture thrived between 1150 and 500 B.C. in the lowlands along the Gulf coast of Mexico.

Most studies of the Olmec have focused on the monumental heads and other stone carvings uncovered on a series of expeditions in the late 1930s and early 1940s sponsored by the National Geographic Society and the Smithsonian Institution. Scholars believed such Olmec sites as La Venta, in the state of Tabasco, were merely ceremonial centers, with inhabitants living some distance away in the uplands.

But research at La Venta by William F. Rust, a University of Pennsylvania graduate student, turned up ceramics (below), food refuse, burial sites, and the remains of houses and stoneworkers' workshops, indicating that many

WILLIAM F. RUST

people lived in the town itself. In addition, many more probably lived in surrounding villages whose remains were found by Rust along an abandoned river course from the same time period, when the environment was unlike today's swamp. "The whole picture of the community is different," says Rust. "It was a town with a complex population, and, around it, a series of villages we never knew were there."

. . . And Early Dwellings in the Andean Highlands

Meanwhile, other archaeologists have found the first evidence of dwellings in an open-air Andean highlands site from a time called the Archaic period, which ended 4,000 years ago.

The discovery by Northwestern University's Mark Aldenderfer challenges the theory that residents of the Andean highlands lived only in caves and rock-shelters during that period. Aldenderfer found stone tools as well as floors, hearths, and refuse pits in an isolated location in southern Peru called Asana, at an elevation of more than 11,200 feet. He believes the dwellings, which date from 6,000 to 7,000 years ago, probably were occupied for as much as a month at a time during the November-to-April wet season.

Besides the dwellings, other evidence suggests that the site was first occupied about 9,600 years ago and was used until 3,600 years ago. Aldenderfer says the earliest inhabitants hunted and collected wild plants. Later residents tended alpacas and llamas.

Aldenderfer also found a large rectangular structure with altar-like stones covered with ovals and circles, built 4,600 years ago. He believes it is the earliest example of ceremonial architecture ever found in the Andes.

Return of the Native: Deer Go Home to China

Cooperation between Chinese officials and Western conservationists has resulted in the return of a species of deer native to China but extinct there for nearly a century.

Herds of Père David's deer (GEOGRAPHIC, October 1982), also known as mi-lu, have been placed in two Chinese reserves. In one, near Shanghai, a breeding herd established with the assistance of the World Wildlife Fund has grown from 39 to 50 animals. North of Beijing, another herd (right) has proliferated from 20 to 55 animals. Its stock came from the deer's longtime sanctuary in England. Eventually the Chinese hope to introduce the animals into new habitats throughout their country.

Named for a European missionary who was the first Westerner to describe them, Père David's deer nearly disappeared when the last Chinese animals were slaughtered for food during the Boxer Rebellion in 1900. But a few specimens had been shipped to European zoos, and the zoos sold them to the 11th Duke of Bedford, who kept them on a 7,400-acre park at Woburn Abbey, his vast estate. From that early pool of 18 deer has grown a worldwide population of more than 1,500.

GEORGE B. SCHALLER

Flying in the Wake of Lindbergh's Tour

On July 20, 1927, barely two months after his historic solo flight across the Atlantic, Charles A. Lindbergh set off from New York's Mitchel Field on a flying tour of the United States to promote commercial aviation. During the next 95 days Lindbergh flew *Spirit of St. Louis* 22,350 miles, making at least one stop in each of the 48 states and receiving a hero's welcome everywhere he landed (GEOGRAPHIC, January 1928).

This July Capt. John T. Race, chief pilot for Project Orbis, a flying eye hospital serving the Third World, plans to duplicate Lindbergh's tour in his 1940 open-cockpit Waco biplane, capable of speeds up to 105 miles an hour. Because of the growth in aviation since Lindbergh's time and because his craft lacks sophisticated navigational gear, Race will skirt major airports and land "reasonably near" the cities Lindbergh visited. His usual altitude will be lower than 5,000 feet.

Race, a professional pilot for 45 years, calls Lindbergh "one of my heroes," and says the trip will be "my last fling at youth," as well as an attempt to attract attention and support for the Orbis project.

Lindbergh's trip was supported by the government and private funds; though Race wouldn't mind a sponsor, he is setting out on his own. Where, for example, will he sleep? "Sometimes I'll go to an inexpensive motel, some places I'll impose on the hospitality of friends, and the rest of the time I'll stay in my sleeping bag under the wing."

Singing Along with Geography

We all know "California, Here I Come," but can you hum "California as It Is"? "My Wild Irish Rose" was popular, as was "Christmas in Killarney," but how about "My Wild Irish Rose of Killarney"?

When the Library of Congress decided to rummage through its collection of sheet music for a small exhibit of popular songs with geographic names in their titles, it found plenty of material to choose from. Songs with place-names "are eminently marketable and they can give wing to the imagination: to sights, sounds, smells, recollections, and unspoken adventures that can be powerfully moving," the exhibit said.

The earliest song on display was "Rose of Lucerne, or the Swiss Toy Girl," which dates from 1826. Most recent was 1962's "The Road to Hong Kong," from the Bing Crosby/Bob Hope "Road" film series.

Some were topical songs such as World War I's "Somewhere in the Valley of the Marne." Other songs celebrated major events ("The Burning of Rome") or personal history ("Abyssinia, Where My Forefathers Died").

But others . . . well, who can account for "The Dismal Swamp Quartette"? And, do you happen to know the lyrics to the catchy "You Can Always Tell a Jaffa by Its Juice"?

Memorable Reunion for Bomber's Crew

When veterans of World War II's 43rd Bomb Group gathered for a reunion in Dayton, Ohio, last October, nine of them reminisced about the B-17F in which they flew. All served at one time or another on *Black Jack* (right), shown here in a wartime photograph.

Black Jack went down in a violent storm off a New Guinea beach after a bombing run in July 1943. The entire crew survived. That was the last time anyone saw *Black Jack* until David Doubilet's photograph of it appeared in the April 1988 GEOGRAPHIC.

Col. Harry A. Staley of Batavia, New York, who had piloted the plane on earlier missions, said one former crewman told him that when he opened the magazine, "I saw my airplane, my little baby of 45 years ago." "*Black Jack* was like a person that saved our lives, not just an airplane," Staley said.

COURTESY H. A. STALEY

Museum Highlights South American Cultures

The many peoples of South America, past and present, are featured in a new permanent exhibition hall in New York's American Museum of Natural History. The Hall of South American Peoples will contain some 2,300 objects depicting the lives and cultures of native South Americans. Among them are a cotton cloth mantle from Peru's Paracas culture, which thrived from 1000 to 100 B.C., a mold-made gold figurine from Colombia's Muisca people (A.D. 600 to 1532), and a back ornament made from bird bones by Ecuador's Jivaro Indians.

Most of the items on display were collected during museum expeditions to South America in the late 19th century and in the decade between 1929 and 1939.

Earliest Vertebrate, 470 Million Years Old

Scientists have found the fossilized remains of the oldest and most complete vertebrate yet known: a jawless fish that swam near the shores of a sea some 470 million years ago.

Gabriela Rodrigo de Walker of Bolivia's National Museum of Natural History first found mysterious fossils on the site at Sacabamba in the Rio Challaqui in 1985. Based on her discovery, a French team led by Pierre-Yves Gagnier went to the area the next year and found several more specimens. When they returned in 1987, with the support of the National Geographic Society, they collected the best preserved and most complete specimens of early vertebrates, animals with backbones, ever found. Scientists now have almost 30 complete skeletons of the ancient fish, which averages more than a foot long.

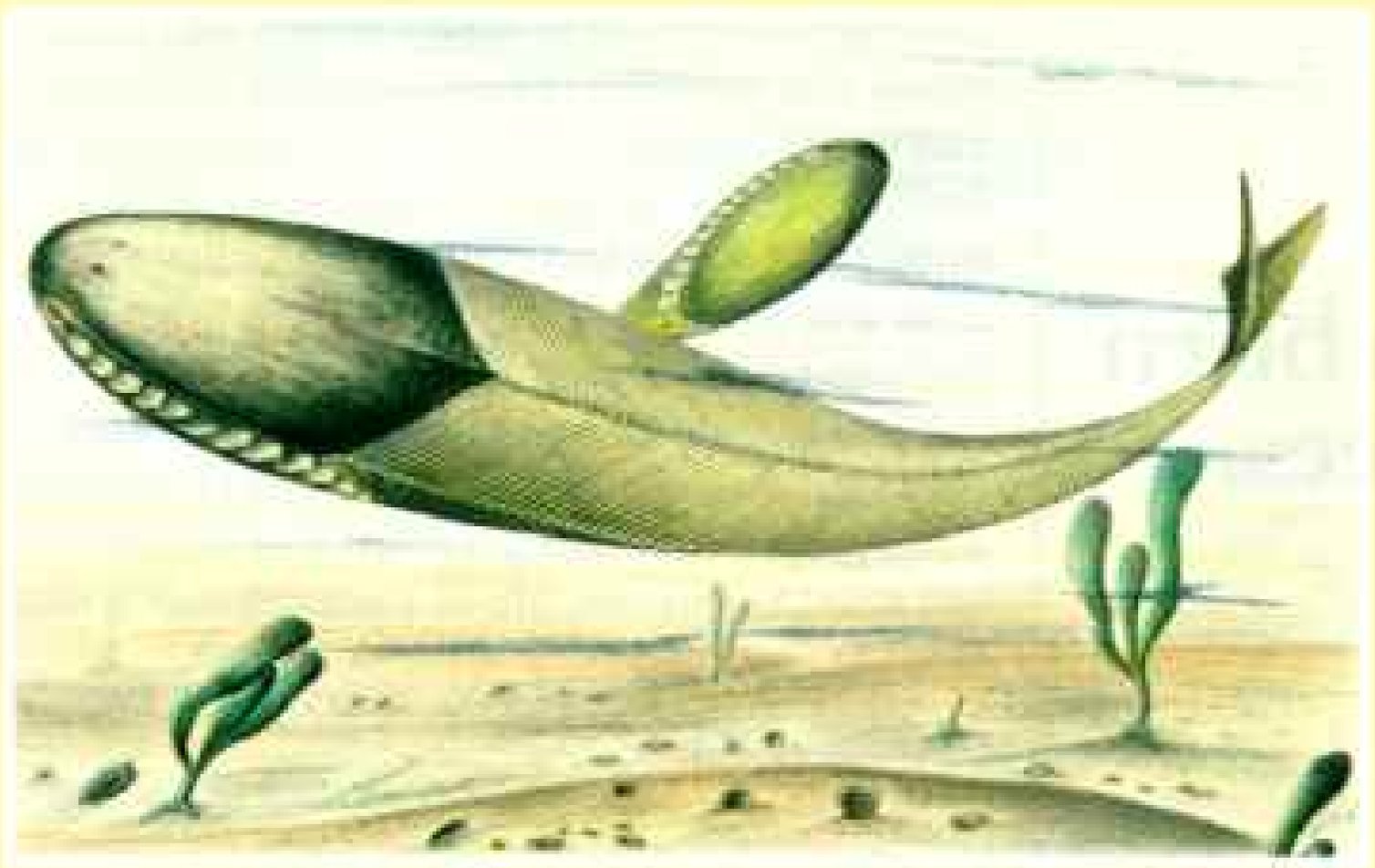
Gagnier, who describes the discovery in the spring issue of *National Geographic Research*, says scientists had already found bone-like fragments dating from between 470 and 500 million years ago, but none were definitely identified as coming from vertebrates.

Tons of Toads Threaten Australia's Animal Life

The best laid plans of toads and men. . . . In June 1935 Australia's sugar industry imported 101 cane toads from Hawaii in the hope that they would kill cane beetles threatening the sugar crop. The toad, described by one writer as "ugly even by toad standards," did not have much success, or even interest, in eating cane beetles. But it made itself at home. It now exists over half of Queensland and is spreading into New South Wales and the Northern Territory. A single female has been known to lay as many as 54,000 eggs in a clutch, and females may lay eggs twice a year. Australia's toad population has reached the millions—and is growing.

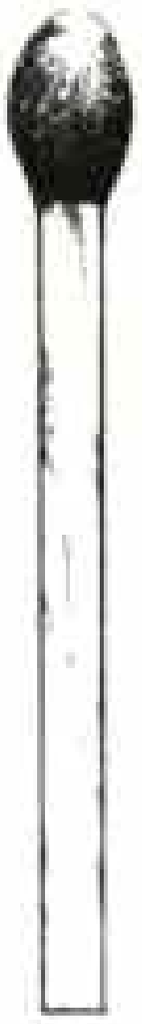
And the cane toad, which can grow to a length of more than eight inches, is dangerous. It eats baby snakes and frogs, and when other animals try to eat *it*, it secretes a poison that can kill an animal as large as a dog in 15 minutes. Even humans can die from ingesting the poison.

Biologists have suggested introducing a parasite or disease to control the pests. But isn't that where we, and the cane toad, came in?



DRAWING BY PASCAL LE ROCH

One tree can make 3,000,000 matches.



One match can burn 3,000,000 trees.

SOME of the most memorable geographic places, with distinctive landscapes, languages, and people, never existed: J.R.R. Tolkien's Middle-earth, Jonathan Swift's imaginary lands through which Gulliver traveled, Sir Thomas More's Utopia, and William Faulkner's Yoknapatawpha County.

Such landscapes, of course, have their models in the real earth. There is little question that Oxford, Mississippi, will live as long as world literature, because it provided Faulkner with his landscapes and models and human personalities from which he could draw truths about human nature everywhere.

Our challenge in dealing with subjects of this sort is to bring yet another art form to bear upon them. In this case, it was to capture Mississippi as Faulkner saw it—to present the writer's and photographer's insights about Faulkner's insight about Mississippi. Willie Morris and Bill Allard have done so superbly, and they let us see things about both Faulkner and his Mississippi that we would not have otherwise seen.

Ironically, Faulkner's finest moment as a writer came not in one of his works of fiction but in the real world, when he received the Nobel Prize in Literature and gave one of the great addresses of our time:

"I feel that this award was not made to me as a man," he said, "but to my work—a life's work in the agony and sweat of the human spirit, not for glory and least of all for profit, but to create out of the materials of the human spirit something which did not exist before."

This was in 1950, when the threat of nuclear destruction loomed in men's minds and pessimism was rampant. Many believed that man's end might be near, but Faulkner sounded a different note: "I decline to accept the end of man. . . . I refuse to accept this. I believe that man will not merely endure: he will prevail. . . . because he has a soul. . . ."

We think we know something of Faulkner's own soul through Morris's words and Allard's photographs. It is the geography of Mississippi, but also the internal life of a remarkable writer.

Joseph Judge

SENIOR ASSOCIATE EDITOR

Thick-billed Parrot **Genus:** *Rhynchopsitta* **Species:** *pachyrhyncha*
Adult size: Length, 38cm **Adult weight:** 350g **Habitat:** Mountain pine forests of Mexico
Surviving number: Unknown
Photographed by Fulvio Eccardi

Wildlife as Canon sees it

Using its powerful bill, the thick-billed parrot can pry open pine cones, its primary food source, to uncover the edible seed inside. The mountain forests of Mexico, where this rare bird seeks food and shelter, are rapidly being lost to logging. In addition, parrot numbers are dwindling due to the demand for colorful exotic pets, which encourages poaching. Because of these factors, the thick-billed parrot faces a precarious future in Mexico. But a program in Arizona, which was part of the bird's range until the late 1930s, offers new hope for its survival. There the parrots are being reintroduced in the Chiricahua Mountains.

To save endangered species, it is vital to protect their habitats. Understanding the fragile balance of our world's ecosystem holds the promise for the future. Expressive color images, with their unique ability to reach people, can help promote a greater awareness and understanding of the thick-billed parrot and how it lives within its natural environment.

And understanding is perhaps the single most important factor in saving the thick-billed parrot and all of wildlife.

On Assignment

PHOTOGRAPH FROM GEORG GERSTER

"ARE YOU RELIGIOUS?" my Chinese interpreter teased me, after my first balloon flight over southern China. Li Dong was listening to the tape I had taken aloft that morning to record my impressions. Most of the words on the tape were the pilot's. I had contributed nothing but a stammer, repeated over and over again: "Oh my God . . . oh my God. . . ."

We had lifted off from Ruijin in Jiangxi Province. As we wafted over the ponds and paddies skirting the city, China's inch-by-inch struggle for food and fiber began to unfold beneath us. Later flights in fixed-wing aircraft and helicopters ranged from the Land of Rice and Fish, in southern China, across mountains transfigured into man-made sculptures by terracing, to the deserts and oases of China's far west. As the topography changed, so did the crops: Rice gave way to wheat and barley in a seamless tapestry of human triumph over nature. Threads of defeat, however, were woven in along the way, where gashes and gullies in the fertile loess plateau told of heavy soil losses.

Never before had the authorities of the People's Republic of China approved the free flight of a balloon for aerial photography. The images obtained were to illustrate a book that retraced the Long March of the Red Army. So pleased were the Chinese with the aerial views that a more ambitious plan was spawned—to photograph the entire country from the air. This time most of the aircraft at our disposal were military, such as the Soviet-built Mi-8 (above), piloted by Chinese crews.

When I first saw another transport, the Soviet-designed Antonov AN-2, which looks like a huge crop duster, my heart fell and my voice rose. "This plane must be 30 years old."

"No, no," my companions soothed me, "more . . . older." Echoing the Chinese respect for advanced age, their reply held the promise of heightened reliability. In the open doorway of the plane my hosts had tied a kindergarten chair to hold my large frame. After a few flights in a cramped fetal position, I solicited something more adult. When I arrived for the next flight, my wish was granted. Neatly tied down in the doorway was a large, plush, overstuffed club chair.

Georg Gerster

GEORG GERSTER