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The England of Charles Dickens

By RICHARD W. LONG

Photographs by
ADAM WOOLFITT

YES, said the jovial manager of the Royal Victoria and Bull Hotel at Rochester, in Kent, people do ask about Queen Victoria's link with his four-century-old hostelry. "Her name was added to the inn's because she stayed here as a princess in 1836.

"But many, many more people," Luigi Prechezer continued, "ask about our link with Mr. Pickwick. Victoria was a great Queen, but she belongs to her own time. Pickwick is immortal. He belongs to all time."

The Bull at Rochester, of course, was the first stop of the immortal Samuel Pickwick, Esq., when he set off to enlarge "his sphere of observation, to the advancement of knowledge, and the diffusion of learning."

Mr. Prechezer showed me the inn's old courtyard, now a car park, into which,



"Please, sir, I want some more."
With a boldness worthy of his creator, Oliver Twist demands a second bowl of gruel in the 1838 novel by Charles Dickens. Genius for characterization and an abiding fervor for social reform helped Dickens paint vivid portraits of England and its people in the harsh years of the mid-19th century.



JOHN FRA, DORSET

"I was destined to be unlucky in life," observed young Davy in Dickens's largely autobiographical novel, *The Personal History of David Copperfield*. Standing before the entranceway of a Victorian estate, a serious-faced Highgate girl (facing page) seems to contemplate the unknown adventures of her own future.

Dickens himself (above, at 25) was haunted by bitter childhood memories. In 1824 his father was imprisoned for debt, and he himself was set to work in a London factory packing pots of shoe blacking. "No words can express the secret agony of my soul," Dickens later wrote of his five months' drudgery there. "Until old Hungerford Market was pulled down, until old Hungerford Stairs were destroyed... I never had the courage to go back to the place where my servitude began."

according to *The Posthumous Papers of the Pickwick Club*, a stagecoach named *The Commodore* rumbled one May day in 1827. On its roof rode Mr. Pickwick and his fellow Pickwickians, Mr. Tracy Tupman, Mr. Augustus Snodgrass, and Mr. Nathaniel Winkle, as well as their traveling companion from London, Mr. Alfred Jingle.

"Good house—nice beds," said Mr. Jingle as *The Commodore* halted. Then, nearly 150 years later, Mr. Prechezer cut in with a comment from today.

"We have given the place modern comfort, but kept its character and charm," he said. "Suppose Mr. Pickwick came back. He would be surprised to find an electric razor outlet in his bedroom, but I think he would still regard us as a good house with nice beds."

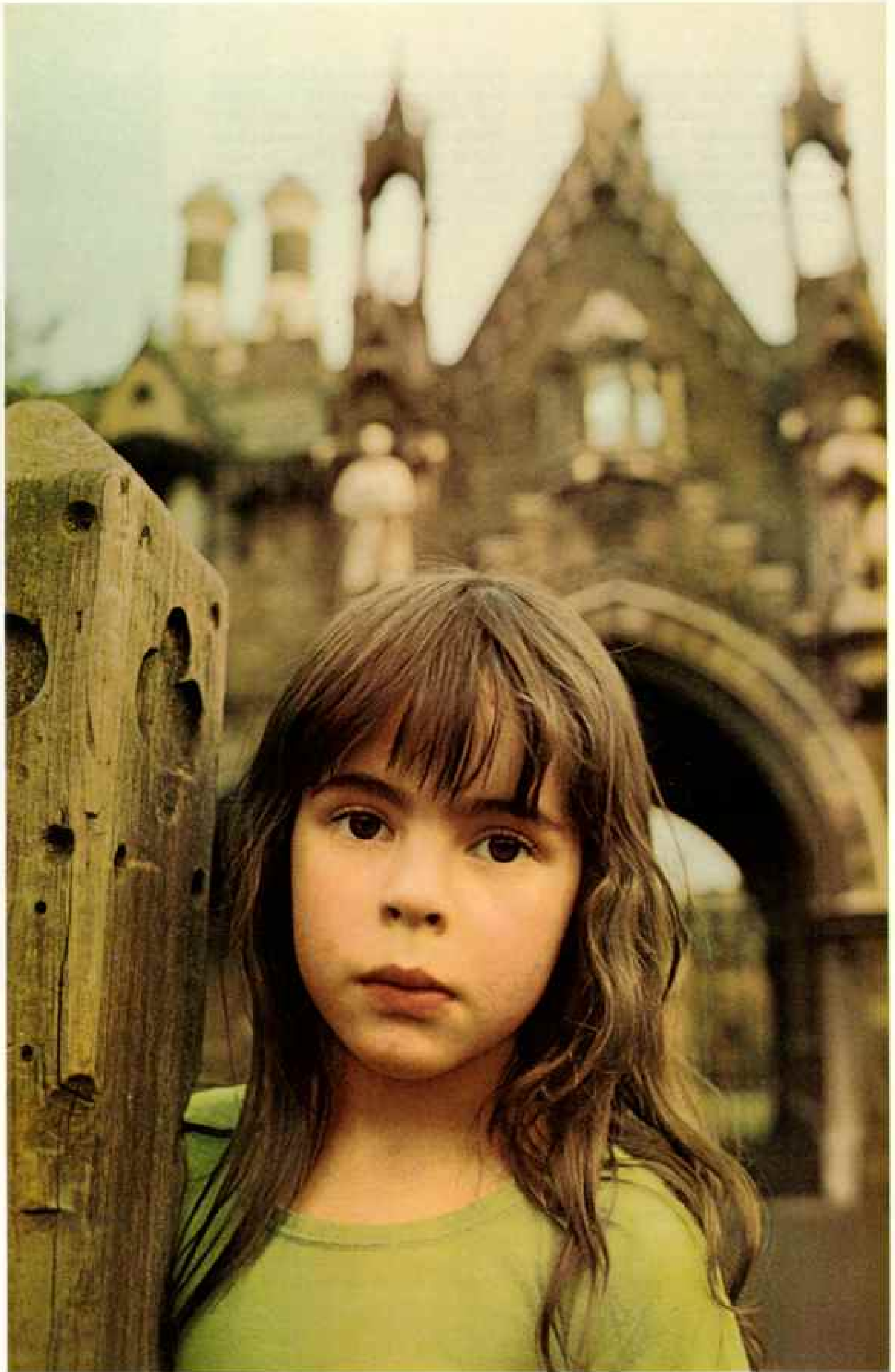
I thought so too.

YET MR. PICKWICK, I reminded myself, is fiction—a product of the quicksilver imagination of a 24-year-old newspaper reporter named Charles Dickens. The author of *Oliver Twist*, *David Copperfield*, *A Tale of Two Cities*, and 11 other internationally beloved novels apart from the immortal *Pickwick*, has been dead more than a hundred years. But his characters remain more real than reality—a paradox I often bumped into recently as I enlarged my own "sphere of observation" by touring some of the places that provided backdrops for his life—and for his novels.

One such place is Bath, set beside the sinuous River Avon in the lovely cider-growing region of the West Country. It is, arguably, England's most beautiful city.

Cars now whiz where sedan chairs once wobbled, but in spite of some recent ill-conceived "improvements," Bath remains much the city it was when that bewigged and shining "Master of the Ceremonies," Angelo Cyrus Bantam, Esq., corkscrewed his way through the bejeweled and befeathered throng at the Assembly Rooms Ball to greet Mr. Pickwick—"My dear sir, I am highly honoured. Ba-ath is favoured." The Assembly Rooms are still there, I found, restored to their chandelier-lit splendor after suffering heavy fire damage in a World War II air raid.

Equally enduring are the city's elegantly uniformed regiments of graceful stone houses that formed themselves into brave and magnificent streets, crescents, and squares in the 18th century and have valiantly refused



Sailing down a country lane, Anne and Peter Munt enjoy front berths aboard *The Commodore* (right), their 1850's stagecoach that once carried Dickens himself. Less fortunate in their travels, Samuel Pickwick and his friend, Mr. Wardle, clamber from the wreck of their chaise in *The Posthumous*

Papers of the Pickwick Club (below). Even before the accident, the journey had tried Mr. Pickwick's amiability. "Pretty situation for the General Chairman of the Pickwick Club," he grumbled. "Damp chaise—strange horses—fifteen miles an hour—and twelve o'clock at night!"



to break ranks ever since. And at the Great Pump Room (page 456), a center of the city's social life for almost 200 years, you can still drink a glass of the health-giving natural springwaters that brought Bath its fame as a spa. That master of deflation, Sam Weller, described the waters as having "a wery strong flavour o' warm flat irons."

On the other, eastern, side of England, at Canterbury in Kent, I stayed at a hotel named after a girl who never was. It is called the House of Agnes—for Agnes Wickfield, the

angelic second wife of David Copperfield.

In the novel the building is the home of Agnes and her drunken father, and of David during part of his boyhood. It also is the scene of the villainies of Mr. Wickfield's loathsome "umble" partner, Uriah Heep, and of their unmasking by the often financially shipwrecked but unsinkable Wilkins Micawber—"I am at present, my dear Copperfield, engaged in the sale of corn upon commission. . . it does *not* pay—and some temporary embarrassments of a pecuniary nature have



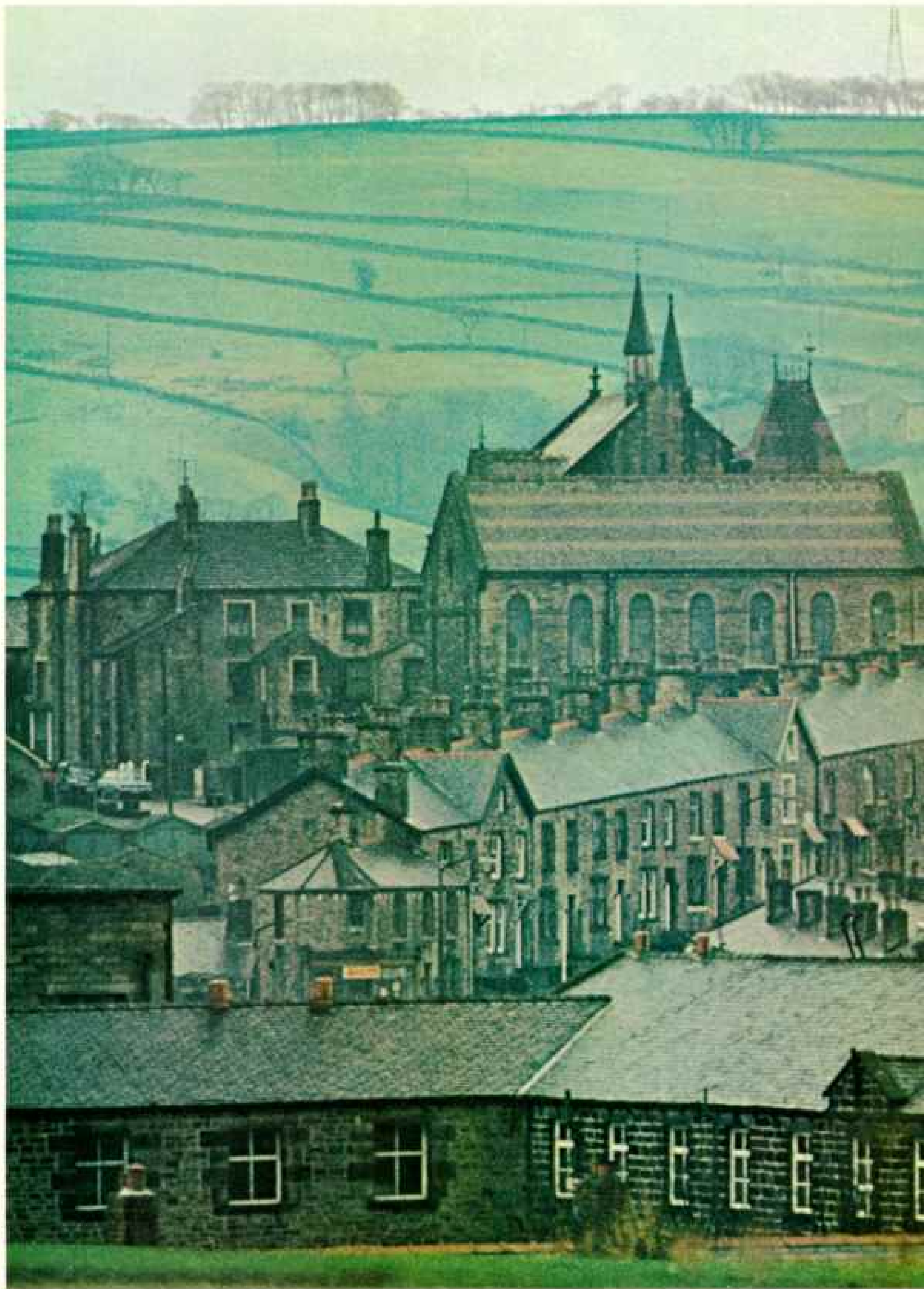
been the consequence. I am, however, delighted to add that I have now an immediate prospect of something turning up. . . ."

Mr. Micawber's "something turning up" is one of those Dickensian phrases that have passed into the language. There are so many more: Scrooge's "Bah! Humbug!"; "Barkis is willin'" from Clara Peggotty's shy suitor in *Copperfield* and, in the same novel, poor old Mrs. Gummidge's "I am a lone lorn creetur"; hungry Oliver Twist's workhouse cry, "Please, sir, I want some more"; gin-swilling Sairey

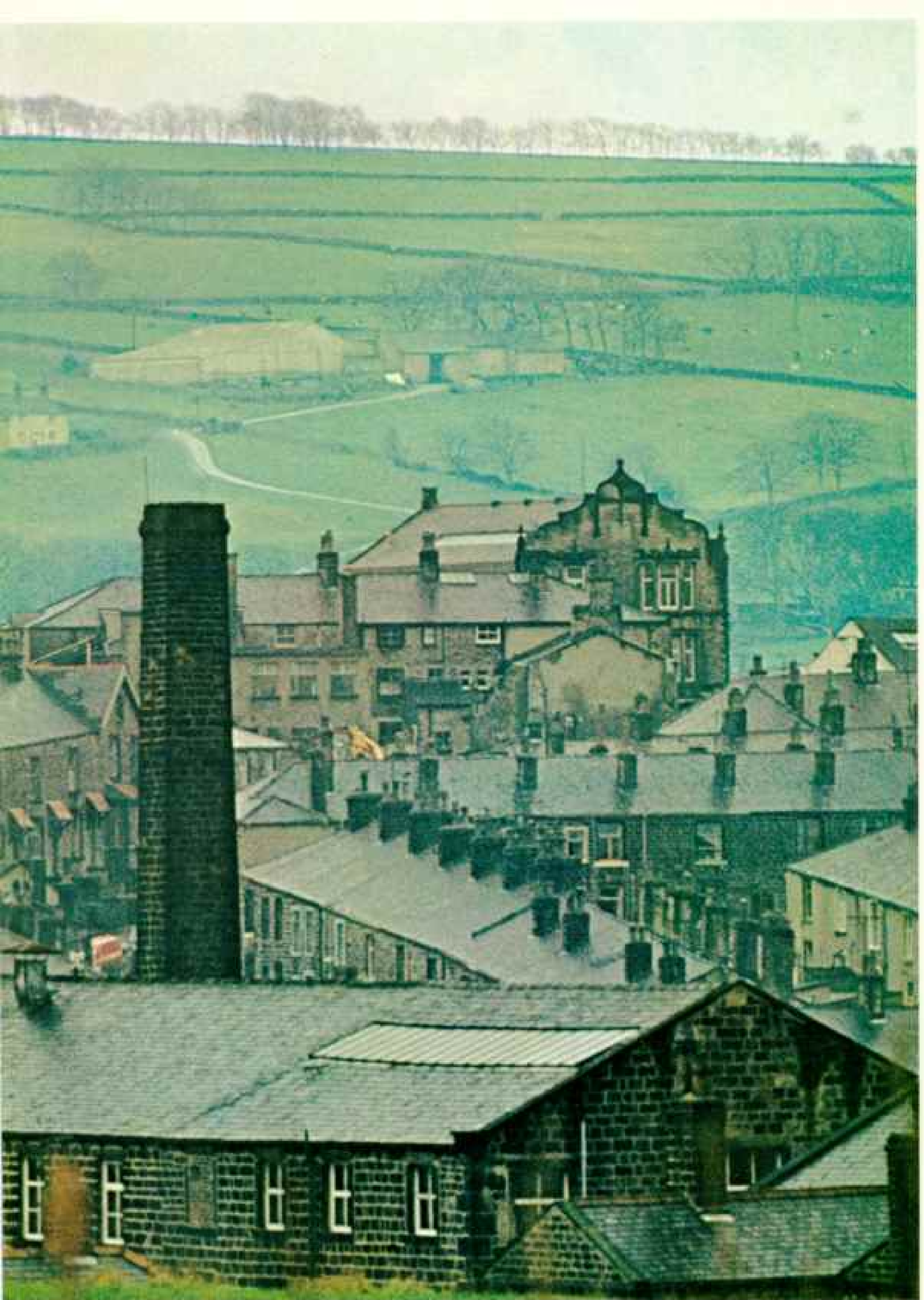
Gamp in *Martin Chuzzlewit* declaring, "If it wasn't for the nerve a little sip of liquor gives me . . . I never could go through with what I sometimes has to do"; Sydney Carton, in *A Tale of Two Cities*, sacrificing himself with "It is a far, far better thing that I do. . . ."

Many writers, including those of film, television, and radio, encapsulate human character in this way, but Dickens is their master. And his eye for the character of a place is just as sharp.

Canterbury in the 1970's owns its share of



"It was a town of red brick, or of brick that would have been red if the smoke and ashes had allowed it; but as matters stood it was a town of unnatural red and black like the painted face of



a savage. . . . out of which interminable serpents of smoke trailed themselves for ever and ever." Thus Dickens wrote in *Hard Times* of an industrial center much like West Yorkshire's Todmorden.





Bewigged and bemused, barristers ponder a problem on the well-worn steps of a London court of justice (left). Tradition dies hard in England, where legal documents are still formally bound with red tape, and stately notices in script still advertise for assistants (above).

As a youth Dickens himself clerked for a law firm in the "depressing" institution of Gray's Inn. He left after two years to become a reporter, but he never forgave the legal profession for turning a blind eye to the era's cruel penal code and appalling working conditions—including the widespread use of child labor (below). His novels helped arouse public sentiment for the passage of reform laws.



supermarkets and department stores, as well as a noisy bus station and a main street ever full of traffic, but its cathedral, a dream of Gothic towers, continues to give one the idea that there is "no such thing as change on earth." So do the jackdaws, the rooks, the ivied gabled ends, the ruined walls, the ancient houses and—away from that main street—the pastoral landscape, the serene air of which Dickens also spoke.

IT WAS HERE that I met John Greaves, Honorary Secretary of the Dickens Fellowship. Now in his seventies, Mr. Greaves has been "hooked on Dickens" since he was about 12, when his mother bought him a paperback copy of *The Old Curiosity Shop* to help him through a bout of measles.

"The thing about Dickens is his wonderful characterization," he said. "You can almost smell those meals cooking and hear his characters talk because of his marvelous choice of words. He gives you little moving pictures in your mind."

Mr. Greaves recently passed his quarter-century as Honorary Secretary of the Fellowship. Founded in 1902, it has nearly five thousand members and about 60 branches—26 of them in Britain and 15 in the United States. Other branches are located in Argentina, Australia, Canada, Japan, the Netherlands, New Zealand, and South Africa.

Among those who have held the presidency of the Fellowship is a great-grandson of Dickens—Capt. Peter Dickens, a brisk, strong-featured Royal Navy officer who in World War II served with distinction commanding a North Sea combat force. A writer himself—"naval and military stuff"—he thinks that his cousin Monica Dickens, best-selling author of sociological studies and documentary novels, is "quite a chip off the old block." Monica has, he feels, something of "the demoniac energy" of Charles Dickens.

That energy enabled Dickens to pack 35 of his adult years with 15 major novels, numerous collections of short stories and sketches, the editorship of several magazines, the founding of a newspaper, several plays, words for a comic opera, many appearances in amateur theatricals, and exhausting tours on both sides of the Atlantic to give public readings from his works.

When Dickens was born in Portsmouth on February 7, 1812 (only seven years after Nelson sailed out from there to his tragic triumph

The legacy of Dickens

HIS ENERGY and imagination seemed unbounded. Dickens composed 15 novels, several plays, and innumerable short stories in a richly productive 35 years. Most of his novels were published in monthly installments (below), so the author often had to work on more than one at a time. A list of his masterpieces:

The Posthumous Papers of the Pickwick Club (1837). A well-stuffed Christmas stocking of colorful characters, the record of Samuel Pickwick's wanderings made Dickens famous overnight.

The Adventures of Oliver Twist (1838). In an angry protest against England's social system, young Oliver Twist runs off to London, where he falls into—and, happily, out of—the clutches of licentious Fagin and murderous Bill Sikes.

The Life and Adventures of Nicholas Nickleby (1839). In Dickens's exposé of the often-cruel Yorkshire school system, Nicholas becomes a teacher at Dotheboys Hall, the boarding school of boy-beating Mr. Wackford Squeers—and administers a beating of his own.

The Old Curiosity Shop (1841). In a tragic tale of love, Little Nell dies just

as Kit Nubbles arrives to save her.

Barnaby Rudge (1841). Against the grim background of Newgate Prison, Barnaby Rudge tries to regain his wits while those about him are losing theirs.

The Life and Adventures of Martin Chuzzlewit (1844). "Ah! what a wale of grief!" cries Mrs. Gamp as she and her imaginary companion, Mrs. Harris, observe tribulations that work the moral regeneration of the senior and junior Martin Chuzzlewit.

Dombey and Son (1848). In a parable of pride and its fall, Paul Dombey heaps his hopes and expectations on the future of his son, only to see him die in childhood.

The Personal History of David Copperfield (1850). "Whether I shall turn out to be the hero of my own life, or whether that station will be held by anybody else, these pages must show," wrote Dickens in the autobiographical story of young David's rise from factory boy to writer.

Christmas Books (1852). A collection of stories, the volume opens with Ebenezer Scrooge's rejuvenation in "A Christmas Carol."

Bleak House (1853). Its pervasive element the dreary, muffling London fog, this novel centers on absurdities of the legal system and the plight of the uneducated and poor.

Hard Times (1854). In a brutally materialistic

world, hard-bitten Thomas Gradgrind learns to make his account books "subservient to Faith, Hope, and Charity."

Little Dorrit (1857). A child of the Marshalsea—the same jail in which Dickens's father was once held for debt—Little Dorrit grows up to wed Arthur Clennam in the shadow of the prison walls they both have known.

A Tale of Two Cities (1859). Amid the historical drama of the French Revolution, Dickens weaves a web of righteous murder and sacrifice that allows Sidney Carton his chance to make good—and ruins Mme Defarge's knitting in the bargain.

Great Expectations (1861). "Be grateful, boy, to them which brought you up by hand," Uncle Pumblechook advises young Philip Pirrip (Pip), whose backside shows a curious inability to be grateful for its treatment. Pip grows from orphan boy to wealthy gentleman—only to lose his happiness.

Our Mutual Friend (1865). In a satire of the nouveaux riches and those who would become so, John Harmon throws off his assumed identity to claim his bride and inheritance.

The Mystery of Edwin Drood (1870). Heavily influenced by newly fashionable mystery novels, *Edwin Drood* and its secret lay unfinished at Dickens's death in 1870.



COURTESY BATES LITTLEDALES

A vanished era comes to life as townspeople of seaside Broadstairs take a turn about the garden of "Bleak House," for years a summer home of the author, during the town's annual Dickens Festival.





at Trafalgar), the Royal Navy was still a fleet of sailing ships. Nowadays they might be nuclear-powered submarines, and the breezy little town of Dickens's early childhood has expanded into a thrusting city with nearly 200,000 inhabitants.

Much bombed during World War II, when it saw a huge Allied armada sail for Normandy in June of 1944, Portsmouth has been rebuilt into a city of housing developments, factories and office blocks, shopping centers, and multistoried parking lots. But a number of elderly churches and houses have been preserved. One of these, 393 Commercial Road, is Dickens's birthplace.

PART OF A MODEST ROW of little red brick villas, No. 393 was known as 1 Mile End Terrace when young John and Elizabeth Dickens rented it for 35 pounds a year in 1809. John's appointment as a 120-pounds-a-year clerk in the Navy Pay Office at the Royal Dockyard had brought the newlyweds from London.

Their first child, Frances Elizabeth—Charles Dickens's beloved "Sister Fanny"—was born the following year. There were to be seven more—two girls and five boys, of whom Charles was the eldest.

Today 393 Commercial Road is owned by the City of Portsmouth. Visitors are welcome. Only one piece of furniture in the house was there during the boyhood of Dickens—the sturdy old kitchen dresser, a built-in fixture.

In Dickens's day the house would have been lit by oil lamps or candles, and it would not have had hot and cold running water. Water then was carried through the streets of English cities and sold at a halfpenny a bucket. Still, the house would have displayed a certain elegance that reflected its tenants' youthful determination to keep up with the late-Georgian Joneses.

John Dickens, an amiable mismanager, was the original of Mr. Micawber. In June 1812—only four months after the birth of his eldest son—he was forced, despite a salary increase to 140 pounds a year, to move to a smaller, cheaper house. It was destroyed by air attacks during World War II.

In 1817, after a brief spell in London, John Dickens took a new appointment at the Navy Pay Office at Chatham in Kent. For Charles, then 4 years old, the move was one of the formative events of his life. Chatham, in the phrase of his friend and biographer,



Golden sinews of the Royal Navy feed the funnels of the Chatham ropery (above), where Dickens used to wander as a boy. He loved Chatham and its winding River Medway (right) with its "great ships standing out to sea or coming home richly laden," and its bright-painted yachts tossing with the waves. The writer often used this area as a backdrop for his stories. Nathaniel



Winkle, ardent sportsman of *The Pickwick Papers*, almost fights a duel by mistake on Chatham's outskirts, and Pip in *Great Expectations* visits the bridal-gowned Miss Havisham in a nearby city, Rochester.

"As I thought . . . of all I had lost in losing Chatham," Dickens said of his childhood home, "what would I have given . . . to have been sent back."





John Forster, turned out to be "the birthplace of his fancy." Sights, sounds, and smells that floated into his consciousness during the impressionable years he spent there floated out again long afterward through his pen.

CHATHAM APPEARS as Mudfog in some of Dickens's early sketches; it is the setting for Winkle's abortive duel with Dr. Slammer in *Pickwick*. The adjoining city of Rochester—Dickens said it was impossible to say where one city ended and the other began, and modern visitors agree—is forever linked with *Pickwick*, but it appears, too, in other books. It is Dullborough in *The Uncommercial Traveler*, an account of journeys through the countryside. It is Cloisterham in *The Mystery of Edwin Drood* and is the unnamed town that forms the backdrop of *Great Expectations*.

Still to be seen in the shadow of Rochester's fine old cathedral are Restoration House, a handsome 16th-century mansion that was the model for Satis House, the mysterious home of the eccentric Miss Havisham in *Great Expectations*, and Watts' Charity, the itinerants' rest house that inspired the tale of "The Seven Poor Travelers" in *Christmas Stories*.

In our day, Chatham and Rochester are part of a conurbation that sprawls beside the winding Medway before that 70-mile-long river merges with the Thames.* Every summer swarms of tourists descend here. They search out the buildings, streets, and corners associated with Dickens who, like a human salmon, returned at the end of his life to a spot on a river that was closely associated with his early years. Most of the pilgrims find their way to Gad's Hill Place, an elegant 18th-century country house two miles outside Rochester on the road to Gravesend; this was Dickens's last home. He died there on June 9, 1870; the house is now a girls' school.

But fewer visitors seek out a humbler spot that, for him, was a cherished part of boyhood—Ordnance Terrace, a modest street near Chatham Station. Here, in 1817, when Charles was 5, the Dickens family moved into No. 2. This terraced dwelling, with an honest face of Georgian brick, is now No. 11.

Over the front door a fanlight glints like a glass eye, and the facade is pierced by trim multipaned windows—one on the ground floor, two on the second, two more on the

*See *A Traveler's Map of the British Isles*, distributed with this issue of the magazine.

third—from which, one fancies, a pair of very young and alert eyes must often have gazed.

Eyes that would have noted everything happening in the exciting world just beyond the front garden... wandering musicians, scraping fiddles or blowing pipes... street traders crying their wares—"Milk-o!... Ripe strawberries!... Fine watercresses!..." the occasional bright uniform swaggering by on its way to ship or barracks... gold on gold as sunlight touched the hair of the girl next door, Lucy Stroughill, earliest sweetheart of the owner of the eyes... Lucy's handsome brother George setting out on some adventure with the dash and charm that was to take



"I live on broken wittles—and I sleep on the coals," mourns the waiter in *David Copperfield*. "The Old Contempable," a London sidewalk character (above), may share the waiter's lament. With nearly two million paupers crowding the relief rolls in 1850, Dickens was keenly aware of the rigid class divisions of his time. In *Pickwick* he took pleasure in satirizing gatherings of the fashionable in Bath's Great Pump Room (facing page), where tea and mineral waters still refresh a devoted clientele.

him into the pages of *David Copperfield* as the schoolboy James Steerforth.

From Ordnance Terrace young Charles set out with sister Fanny for his first school. It was over a nearby dyer's shop and was reached—the memory lived with him into manhood—by way of steps on which he frequently grazed his knees.

BACK AT ORDNANCE TERRACE there would be comfort for such childish mishaps, some of it provided by Dickens's nurse, Mary Weller. Mary gave her surname to Sam and her warmheartedness to the Copperfields' devoted servant, Clara Peggotty, whose cheeks and arms were so hard and red that David wondered "the birds didn't peck her in preference to apples."

Dickens's adult probing of an educational scandal rather than boyhood memories was responsible for the Dotheboys Hall section of *Nicholas Nickleby*, and during the last two years he spent in Chatham he had the guidance of a schoolmaster who was the very reverse of the terrifying Wackford Squeers.

By this time the little school over the dyer's shop had been exchanged for a more demanding academy run by a discerning educator named William Giles. He quickly spotted the sharp intelligence and remarkable imagination of the 9-year-old boy and encouraged him to use both.

Small for his age and never particularly robust, Charles took little part in games. But he was popular with his schoolfellows because he had a lively sense of fun, told stories well, and could sing comic songs that gained even grown-up applause at parties.

In 1821 John Dickens again fell a victim to Micawberism, and the family moved to a smaller house, No. 18 St. Mary's Place, on the street known as The Brook.

Redevelopments have changed, and are changing; this part of Chatham, bringing new shops, offices, and homes, but here and there exist old weatherboarded buildings that Charles must have known.

The district where he lived was semirural, and No. 18 was not much more than a cottage. The house is gone now, but the surrounding Kent countryside, though carved in two by its freeway, remains bright with orchards, cornfields, and hop gardens, as it was in his day. The wide Medway still has its "little sailing boats bobbing to and fro on their errands," as they did when he and his father

went voyaging on it in the Navy pay yacht.

John Dickens was responsible for another pleasure of these idyllic days. "My father," Charles wrote, "had left a small collection of books in a little room upstairs, to which I had access (for it adjoined my own) and which nobody else in our house ever troubled.

"From that blessed little room, Roderick Random, Peregrine Pickle, Humphrey Clinker, Tom Jones, the Vicar of Wakefield, Don Quixote, Gil Blas, and Robinson Crusoe, came out, a glorious host, to keep me company. They kept alive my fancy, and my hope of something beyond that place and time. . . ."

In 1823 it was good-bye to the little house because John Dickens's masters at the Navy Pay Office had decided they needed his services in London. And so I proceeded there too—to learn that many London buildings that Dickens knew have departed. To London, World War II brought a holocaust of destruction. And in the 29 years since the war, real-estate projects have been numerous.

Yet Greater London fairly bursts with reminders of Dickens. The directory lists a street, four avenues, two roads, and a square named for him, and many thoroughfares recalling his characters—Manette Street, Barkis Way, Micawber Street, Copperfield Street, Weller Street, Quilp Street, and Pickwick Road.

You can still drop in, as I did, for a tankard of ale at London pubs where Dickens drank with his cronies. In the Borough High Street, for instance, stands The George (page 479), survivor of the "great, rambling, queer, old" inns that once clustered on the south bank of the Thames near London Bridge. It retains the open galleries above the coachyard, providing access to upstairs rooms, as well as passages and staircases "wide enough and antiquated enough to furnish materials for a hundred ghost stories, supposing we should ever be reduced to the lamentable necessity of inventing any," as Dickens noted in *Pickwick*.

Rules Restaurant, where Dickens often dined and where I enjoyed the best steak I have ever eaten in London, was founded in the late 18th century in Maiden Lane, on the southern border of Covent Garden. A splendid survival of a more leisurely era, Rules exudes a relaxed charm to which snugly paneled walls, discreet lampshades, and out-size hat racks all contribute (page 478). And the staff will point out the alcove where Dickens liked to sit, sometimes bringing his

work with him and scribbling away as he ate.

You can dine out with him too at the Horn Tavern in Knightrider Street, amidst the banks, warehouses, and office buildings of London's business center, always referred to as "The City." A modest structure of brick, this cozy hostelry was the Horn Coffee House from which a bottle or two (or six) of wine was brought by a messenger to Mr. Pickwick in the Fleet Prison—long demolished—to celebrate the visit he received there from Mr. Winkle, Mr. Tupman, and Mr. Snodgrass.

THE FLEET RIVER, from which the prison took its name, once ran sparkling in the sun. Now encased in concrete, it flows darkly—beneath the heavily traveled surface of Farringdon Street. This hidden stream, tumbling down from the heights of Hampstead to become a secret tributary of the Thames, is still commemorated hereabouts by Fleet Street, that Parnassus of British journalism.

In Dickens's early days he worked as a reporter for the *Mirror of Parliament*, the *True Sun*, the *Morning Chronicle*. Later he edited a series of magazines (*Bentley's Miscellany*, *Household Words*, *All the Year Round*) as well as—very briefly—one great newspaper, the *Daily News*, which he helped to found.

Some of the elderly, ink-stained Fleet Street taverns that he knew as a newspaperman still remain. Perhaps the most famous is Ye Olde Cheshire Cheese, which was rebuilt in 1667 and has a history going back more than a century earlier.

With a sprinkling of sawdust on its Chop Room floor, pewlike "boxed" seating, and a décor dominated by autumnal browns, the ancient Cheese looks its age. One hopes that nobody will ever pretty it up to look younger; its wrinkles are part of its charm.

William Shakespeare is thought to have eaten at the present tavern's predecessor; his contemporary Ben Jonson was a member of a drinking club there. In the 18th century Samuel Johnson dined at the Cheese. So did Oliver Goldsmith. Both are believed to have sat at a long oak table in the Chop Room, at which a waiter pulled out a chair for me.

"Dickens sat here too," he said. Then he took my order for the steak, kidney, mushroom, and game pudding that has been a specialty of the house since . . . well, since long before another kind of pudding floated into Dickens's imagination and onto a page of "A



WITH COURTESY FRIZZLES OF BEAVERS HOUSE

"Dearest Mouse," Dickens once called his bride-to-be, Catherine Hogarth (upper). A devoted wife, she still could not fulfill Dickens's lofty ideal of a mate, and they ultimately separated. Perhaps the ethereal image of Catherine's younger sister, Mary (lower), lay closer to his vision of the perfect woman. "Thank God she died in my arms," Dickens wrote after her sudden death in 1837, "and the very last words she whispered were of me." His memory of Mary influenced the character of Little Nell, the angelic heroine of *The Old Curiosity Shop*.

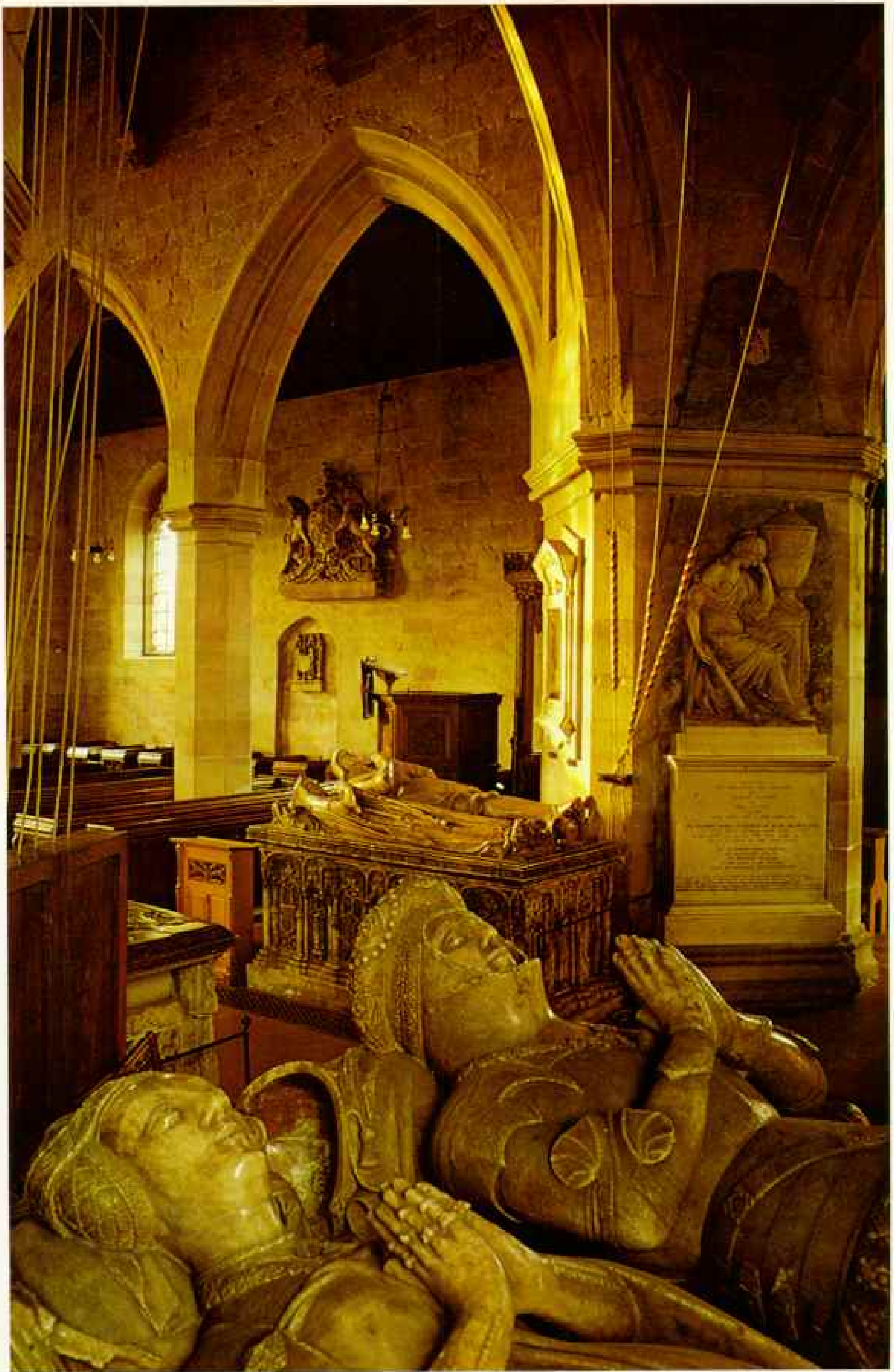


ENHOFEN COLLECTION, VICTORIA AND ALBERT MUSEUM

In hopeful reverie, the grandfather of Little Nell awaits her return from the grave in *The Old Curiosity Shop* (above). Believing the child still alive, he brings her bonnet and basket to the tomb. Dickens probably modeled the village where Nell died on Tong in what was then Shropshire, close to her fictional wanderings in the industrial Midlands. In the graveyard that Little Nell tended in the novel, strands of unkempt ivy twine about the tombstones (right), and inside the "old, dull, silent church," the sleeping figures that Nell had sat among seem to pray for her return (facing page).

Both Dickens and his public were greatly affected by the death of Little Nell. Many readers of the serialized story implored Dickens not to let her die—but to no avail. "She was dead," he wrote. "Dear, gentle, patient, noble Nell was dead. Her little bird—a poor slight thing the pressure of a finger would have crushed—was stirring nimbly in its cage; and the strong heart of its child mistress was mute and motionless for ever."





Christmas Carol." There the pudding, "like a speckled cannon-ball, so hard and firm," blazes forever in its half of half-a-quarter of brandy as it is carried to her family by the flushed but proudly smiling Mrs. Cratchit.

ANOTHER City pub that Dickens often visited, and one that, like the Cheese, is tucked into a quiet corner of an ancient alley, is the George and Vulture in George Yard, off Lombard Street.

Still other Dickensiana—his social philosophy—is recalled by visiting Natalie Goldwhite at The Old Curiosity Shop in Portsmouth Street, a twisty lane near

Kingsway, one of central London's busiest and widest arteries. Mrs. Goldwhite believes plenty of things remain wrong with today's world that Dickens would want to put right.

"He was a radical reformer who tried to solve mankind's problems by writing about them," she said to me as the shop's doorbell tinkled and a party of tourists came in to browse among handsomely bound volumes of Dickens's novels, china plates bearing portraits of his characters, pottery heads of Bill Sikes and Fagin. "Today I think he would be pushed into politics, there would be so much for him to do.

"And he has this tremendous appeal for



youth," Mrs. Goldwhite continued. "You can sense that by the number of young people from all over the world who come here. With his championship for underdogs, his hatred of injustice and of hypocrisy, he speaks to them of feelings they share."

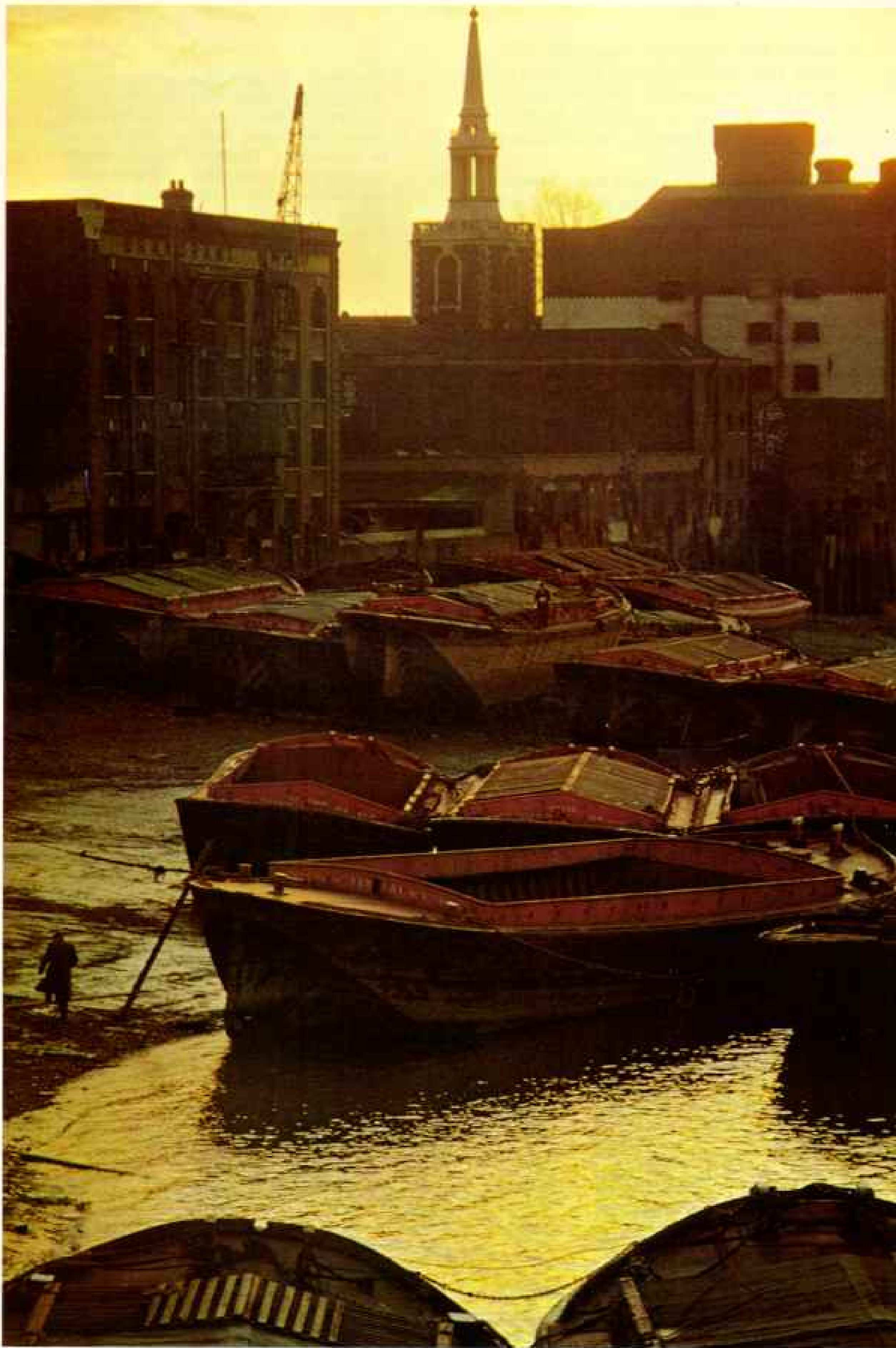
Dickens certainly must have known this shop well. It claims to be the oldest in London, and his biographer-friend John Forster lived just around the corner at 58 Lincoln's Inn Fields. Forster's old home—a fine Palladian-fronted mansion—is still with us, its stylish windows staring haughtily across a public park. Dickens, who "borrowed" the house for the home of the sinister lawyer Mr.

"Too stern and pompous . . . to be prepossessing," Dickens wrote of Mr. Dombey, a merchant in *Dombey and Son*; sporting sideburns, Basil Taylor (below) plays the part in Broadstairs' Dickens Festival. Gentlemen of Dickens's day often went in for raffish entertainments: In a 19th-century painting, sportsmen crowd around a rat pit (left). Dickens despised the often cruel pastimes of many well-to-do. "What do you call it," asks Miss Petowker in *Nicholas Nickleby*, "when lords . . . beat policemen, and play at coaches with other people's money, and all that sort of thing? . . . Ah! aristocratic."

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LONDON MUSEUM



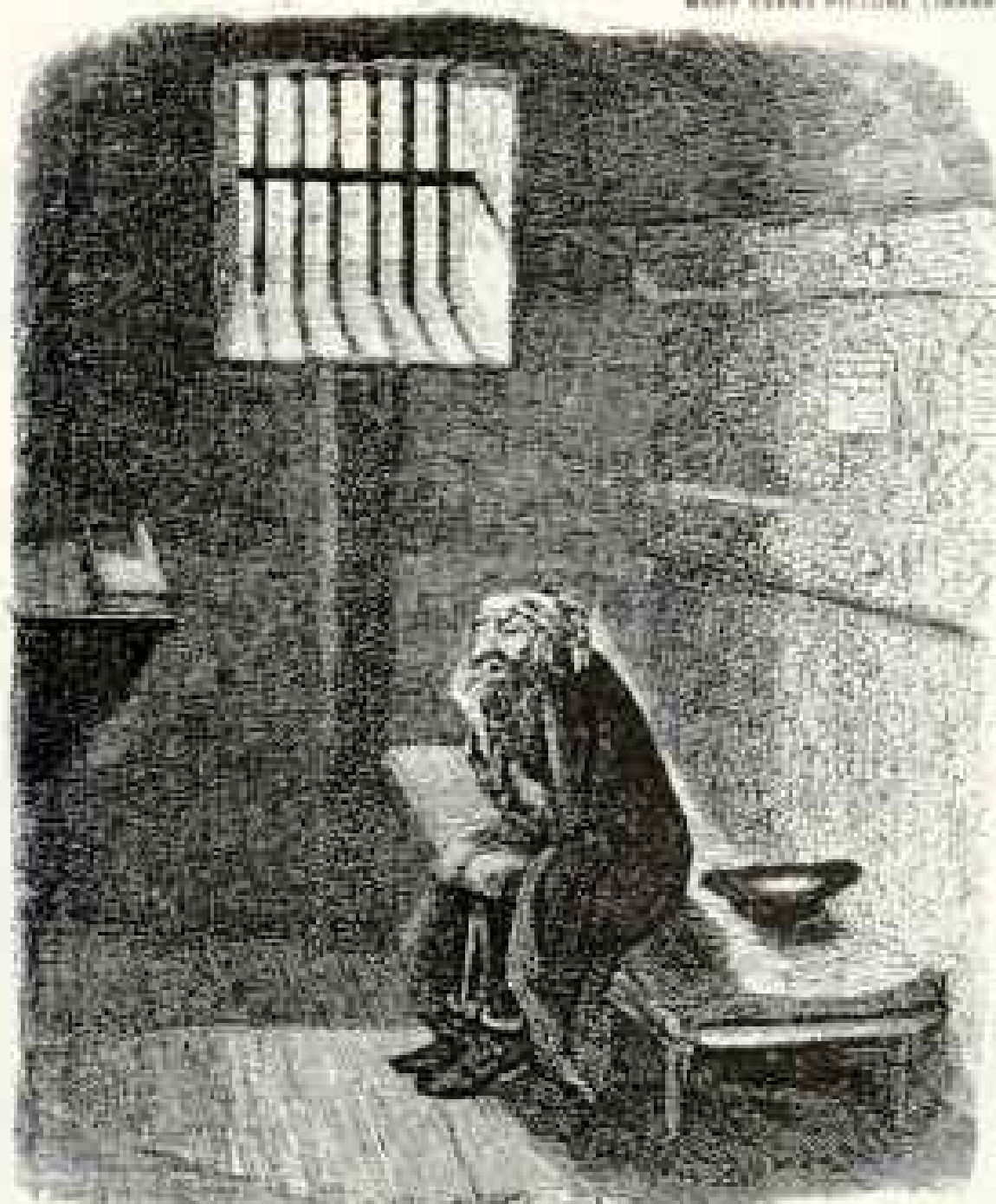




"Buildings . . . dirtiest and the vessels . . . blackest," Dickens writes in *Oliver Twist* of the unsavory region in Rotherhithe where murderer Bill Sikes hides from his pursuers. Today much of the Thames-side area (left) is being rebuilt.

Resplendent in beard and scarf, an unorthodox Londoner (above) seems a look-alike for Sikes's accomplice Fagin (below), condemned to the gallows for his crimes. "His unwashed flesh crackled with the fever that burnt him up," Dickens writes of Fagin the night before his execution. "Those dreadful walls of Newgate . . . never held so dread a spectacle as that."

MARY EVANS PICTURE LIBRARY



Tulkinghorn in *Bleak House*, was a caller there. It is now used for offices.

Beyond the Forster-Tulkinghorn house lies Lincoln's Inn, a collection of buildings, some elderly, some new but built in the old style, grouped around gardens and courtyards. Lincoln's is one of London's four Inns of Court—ancient guilds or colleges to which all members of the English bar belong, with offices and living quarters for barristers and some solicitors, and with libraries and lecture halls for students.

Nearby one finds Cursitor Street and Took's Court, a hideaway alley full of accountants and lawyers busily checking figures or drawing up documents behind the bland facades of elegant old houses.

TOOK'S COURT appears in *Bleak House* as Cook's Court, where Mr. Snagsby, the law stationer, "dealt in all sorts of blank forms of legal process; in skins and rolls of parchment; in paper—foolscap, brief, draft, brown, white, whitey-brown, and blotting; in stamps; in office-quills, pens, ink, India-rubber . . . in pocket-books, almanacks, diaries, and law lists; in string boxes, rulers, ink-stands—glass and leaden, penknives, scissors, bodkins, and other small office-cutlery."

Though the original of Mr. Snagsby's has been erased by that great India-rubber, time, plenty of other stationers' windows remain full of office cutlery.

Moving on through the Holborn district, I strolled into Gray's Inn, another of London's legal universities. Within the boundary of the Inn is South Square and the house, No. 1, where Dickens worked as a very junior clerk—he was 15—to attorney Edward Blackmore. I stood in the dark paneled hall and imagined him darting through it and leaping with schoolboyish glee over the worn front doorstep and into the freedom of the court at the end of his day's labors.

The ghosts of many a long-departed attorney must haunt this part of Holborn, and not only at Gray's Inn. Close at hand is Barnard's Inn, once linked with Gray's Inn as a legal preparatory school for boys who were not old enough to study at the senior Inn.

"The dingiest collection of shabby buildings ever squeezed together in a rank corner as a club for Tom-cats," was how Dickens summed up Barnard's when he sent Pip to share a set of rooms there with Herbert Pocket in *Great Expectations*.

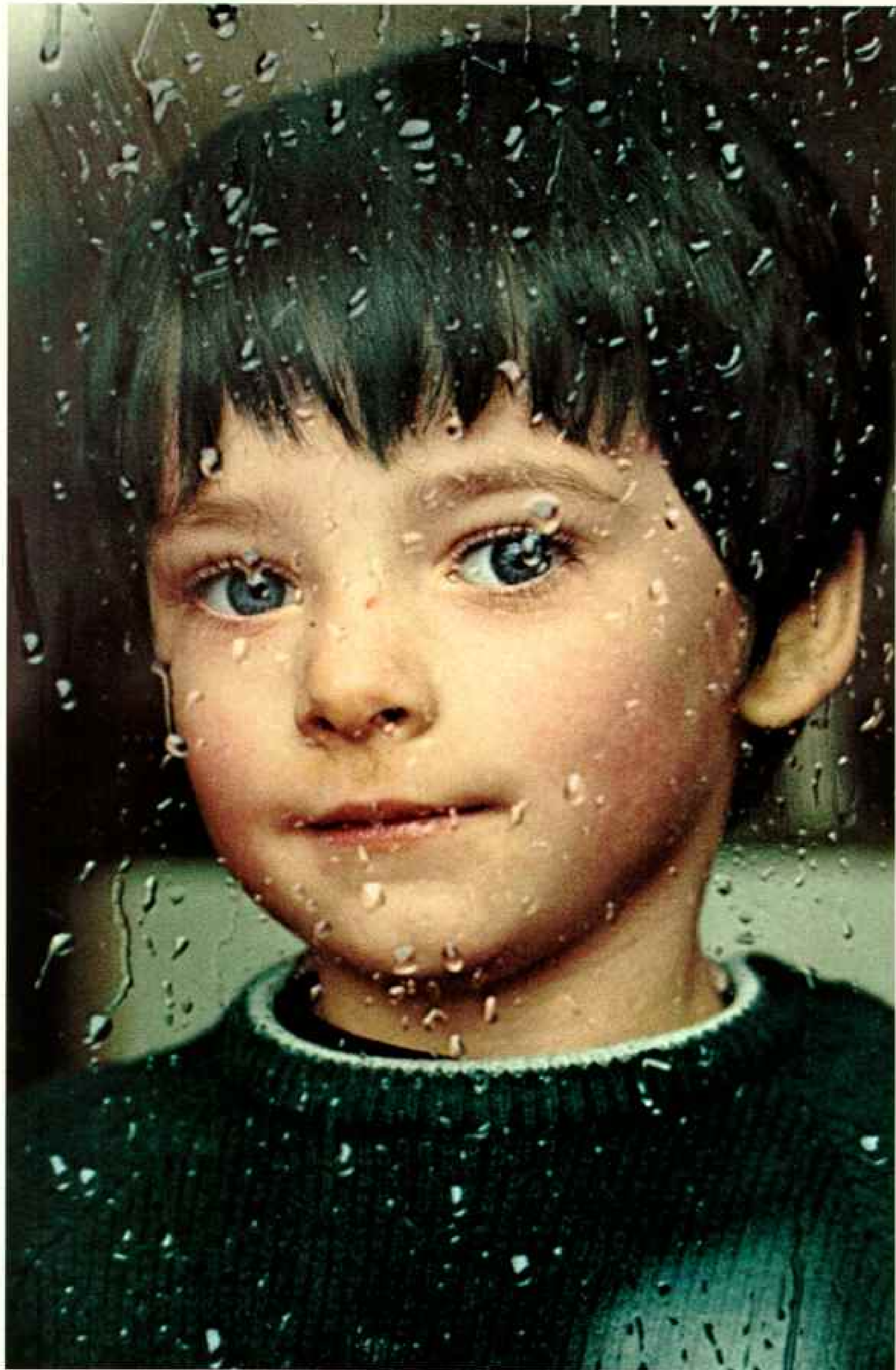
MAD
CHEZ A CIPAD
TUFF
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MAD
DAVE





A woman's solitary lunch on the porch of a London church brings to mind Dickens's sympathy for those forced to make their way alone in life. As in his day, the city streets are home to many who seek the comfort of another human hand.



Across the street from Barnard's Inn stands a vast pink and pinnacled building that turns out to be not an ancient royal residence but a remarkable example of the Victorian Gothic school of office architecture. It is the headquarters of the Prudential Assurance Company. One of the blushing walls of Castle Prudential bears a small blue plaque: "Site of Furnival's Inn—Demolished 1897."

This was yet another of Holborn's legal inns—a "shady, quiet place echoing to the footsteps of the stragglers who have business there; and rather monotonous and gloomy on summer evenings"—where John Westlock had a set of rooms in *Martin Chuzzlewit*.

Dickens lived at Furnival's between 1834 and 1837. In his *Life*, John Forster paints a word portrait of him as he was then:

"A look of youthfulness first attracted you, and then a candour and openness of expression which made you sure of the qualities within. The features were very good. He had a capital forehead, a firm nose with full wide nostrils, eyes wonderfully beaming with intellect and running over with humour and cheerfulness, and a rather prominent mouth strongly marked with sensibility."

LARGELY SELF-EDUCATED, Dickens at 18 took out a reader's card for the British Museum Library. In the next three years he spent many hours in its reading room. He learned shorthand, too.

He worked briefly as a court shorthand writer, but by the time he moved into Furnival's Inn, he had left the law behind and turned to journalism. His hard-won shorthand gained him a reputation for speed and accuracy among newspapermen, but the years at Furnival's were to win him a wider fame.

Along with his reporting assignments he was now writing sharply observed sketches of everyday life, inspired by memories of his childhood and by his strongly individual young man's view of the behavior patterns, personality quirks, and sad, mad oddities of the people around him.

In February 1836 a collection of these short pieces, which had been published separately, appeared in two-volume form as *Sketches By Boz*. Dickens borrowed the nom de plume from his youngest brother, Augustus, for whom Boz was a family nickname.

The two volumes of *Sketches*, rich literary plum pudding that gave the reading public its first assembled feast of Dickensian humor



THE REYMOND MANDON AND JOE RICHARDSON THEATRE COLLECTION

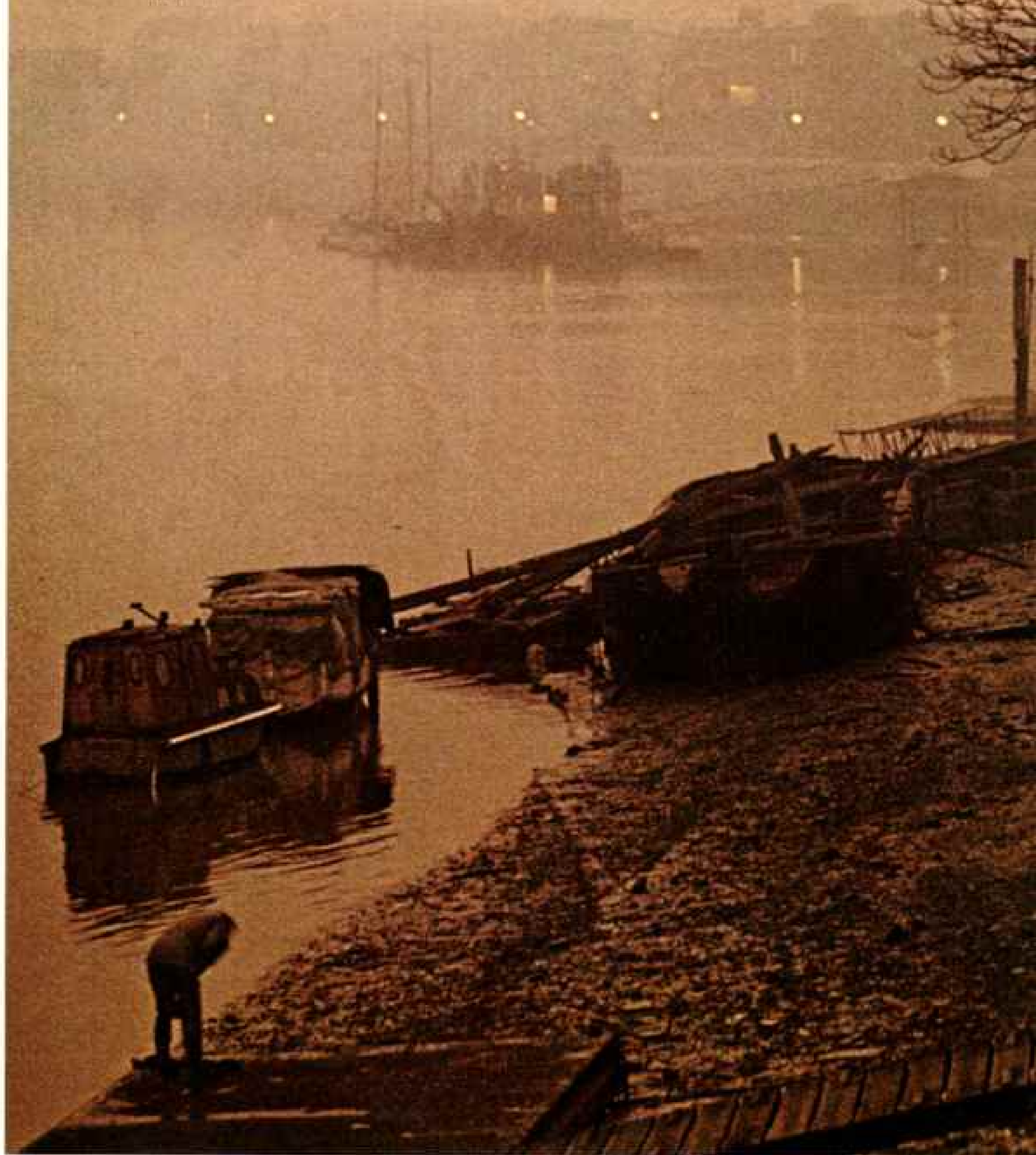
"A Christmas family party!" exclaims Dickens in an early story. "We know nothing in nature more delightful! There seems a magic in the very name of Christmas."

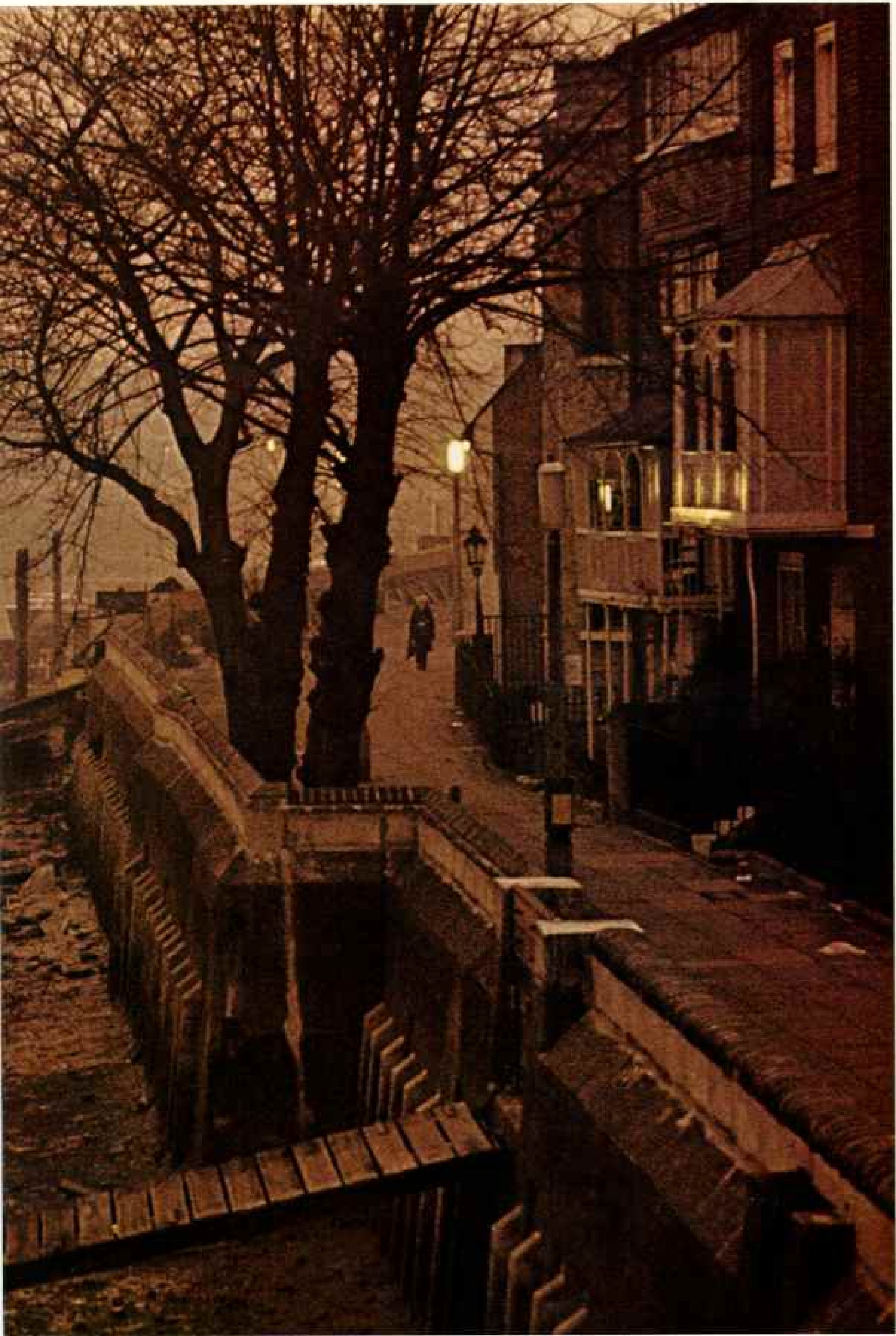
The appeal of one of Dickens's best-loved Christmas characters, Tiny Tim, seems re-born in a young Londoner (facing page). Neither hardship nor poverty could mar the joy of Tim and his father, Bob Cratchit, at the family's Yuletide dinner in "A Christmas Carol." "Two tumblers, and a custard-cup without a handle. . . held the hot stuff from the jug . . . as well as golden goblets would have done; and Bob served it out with beaming looks. . . 'A Merry Christmas to us all, my dears,'" he cried as he drank the punch. "God bless us!"

"God bless us every one!" echoed crippled Tiny Tim, "the last"—but not least thankful—"of all."

"Half-frozen moisture . . . floating about," wrote Dickens of a winter fog near London in Oliver Twist. Fogs still shroud the city, but environmental controls have largely eliminated the burning, blinding fumes that had plagued Londoners for centuries. "Animate London," Dickens noted in Our Mutual Friend, "was blinking, wheezing, and choking; inanimate London was a sooty spectre. . . ."

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Seven-gabled gateway to the past, a row of 16th-century shops (right) hides the peaceful courtyards of ancient Staple Inn. "It is one of those nooks," Dickens notes in *Edwin Drood*, "which . . . imparts to the relieved pedestrian the sensation of having put cotton in his ears, and velvet soles on his boots." A detailed development plan of the Greater London Council provides for the preservation of such quiet corners of England's capital. In Kentish Town, a London community, plump turkeys and chickens festoon a butcher's shop where customers still receive personal attention (below).



and sentiment, fired the rocket of his reputation as a writer. Soon came the beginnings of the book that was to send the rocket soaring; on March 31 appeared the first number of *The Posthumous Papers of the Pickwick Club* that, like many of his works, was originally published in monthly parts.

Pickwick was born at Furnival's. During these years at Furnival's, too, Charles Dickens fell in love with Catherine Hogarth, daughter of George Hogarth, editor of the *Evening*

Chronicle in which some of the Boz sketches first appeared. Catherine was plumply pretty with shining dark hair and heavily lidded blue eyes (page 459). "Dearest Kate" he called her in his letters, or "darling Tatie." Alternatively, she was his "dearest life," his "dearest love," his "dearest Mouse," his "dearest, darling Pig."

How delightful, he wrote her, "to be able to turn round to you at our own fireside when my work is done, and seek in your kind

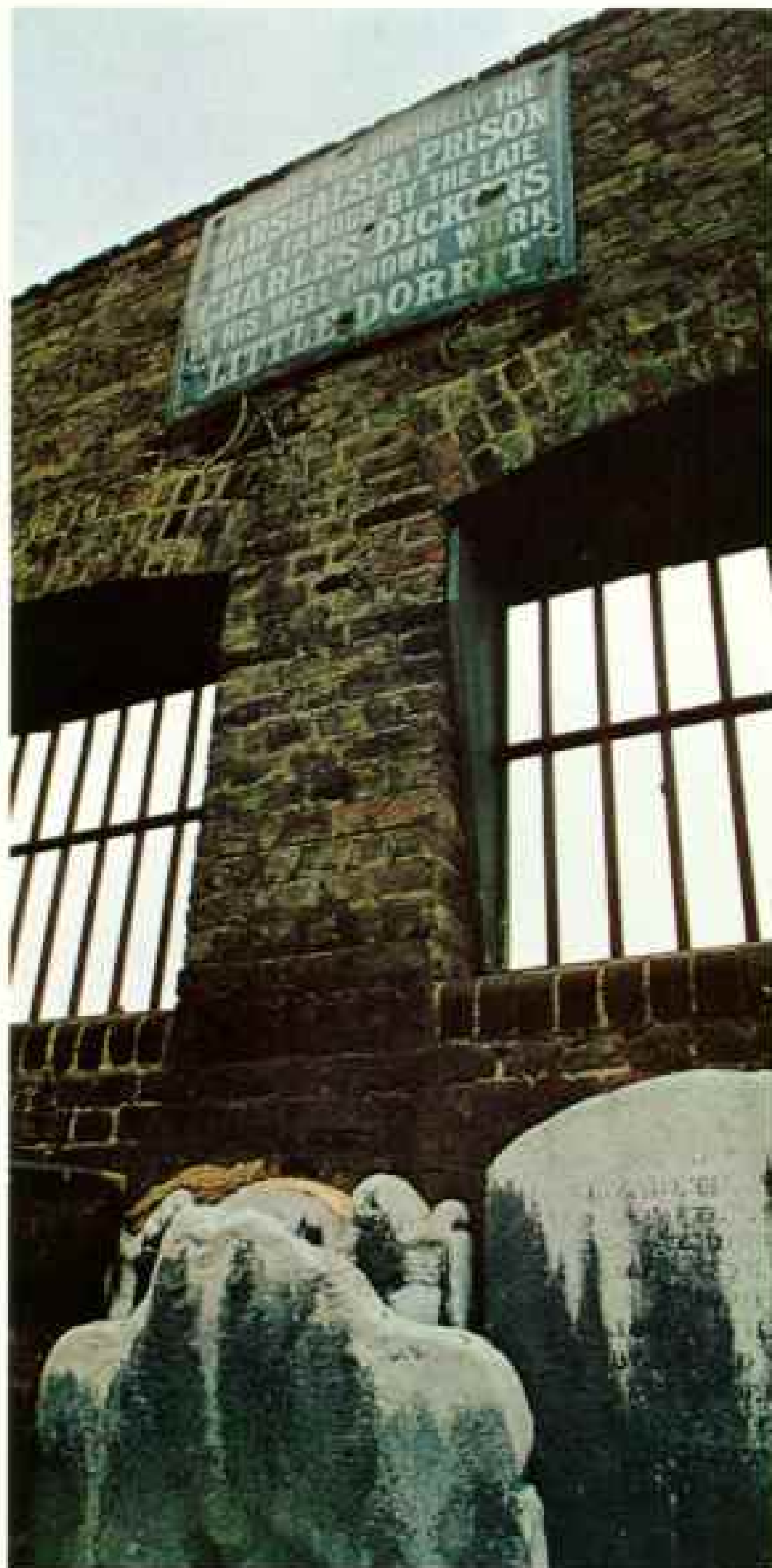


looks and gentle manner the recreation and happiness which the moping solitude of chambers can never afford. . . ."

The Pickwick Papers made it possible. His publishers, Chapman and Hall, agreed to pay him 14 pounds for each installment. Add to this his *Morning Chronicle* salary of 7 guineas a week, and he had a monthly income of more than 40 pounds. He could afford to get married.

In February 1836 he moved into larger

rooms at Furnival's that included a kitchen. On April 2, only a couple of days after Samuel Pickwick had been introduced to the public as a man of such distinction and learning that even his tights and gaiters "inspired voluntary awe and respect," Charles, 24, and Catherine, 20, were married at St. Luke's Church, Chelsea, which still stands. After a honeymoon at the village of Chalk in Kent, they returned to Furnival's, where Catherine's 16-year-old sister, Mary, came to stay with them.



Fair-skinned and flaxen-haired, a student at Beavers Holt School (facing page) calls to mind the "pale transparent face" of Dickens's Amy Dorrit. One blackened wall of Little Dorrit's birthplace, Marshalsea Prison, still overshadows the Church of St. George the Martyr in Southwark (above).

Imprisonment of debtors like Little Dorrit's father was a common occurrence in Dickens's day. Often whole families would take up lodgings inside the cold, damp walls. Once inside the locked gates, the prisoner might spend months or years before he could beg or borrow the money to pay his debts and leave. "I really believed at the time," Dickens later recalled of his own father's imprisonment by creditors, "that they had broken my heart."

Soon Mary was writing a cousin to describe "dearest Catherine in her own house! I only wish you could see her in it . . . she makes a most capital housekeeper and is as happy as the day is long—I think they are more devoted than ever since this marriage if that be possible . . ."

MARITAL CLASHES would mar their later years, and in 1858, after Kate had borne ten children, they were to part. Dickens—by that time 46—formed an association with a young actress, Ellen Ternan (page 483), which would last until the end of his life.

But in the early part of their marriage, Charles and Kate were enchanted with each other. Soon the rooms at Furnival's had become too small; son Charley had been born, and Dickens's growing fame as a writer made it necessary for him to have a house of his own. In March 1837 he and Catherine moved to No. 48 Doughty Street, Bloomsbury. Mary Hogarth came with them; so did Dickens's younger brother, Fred.

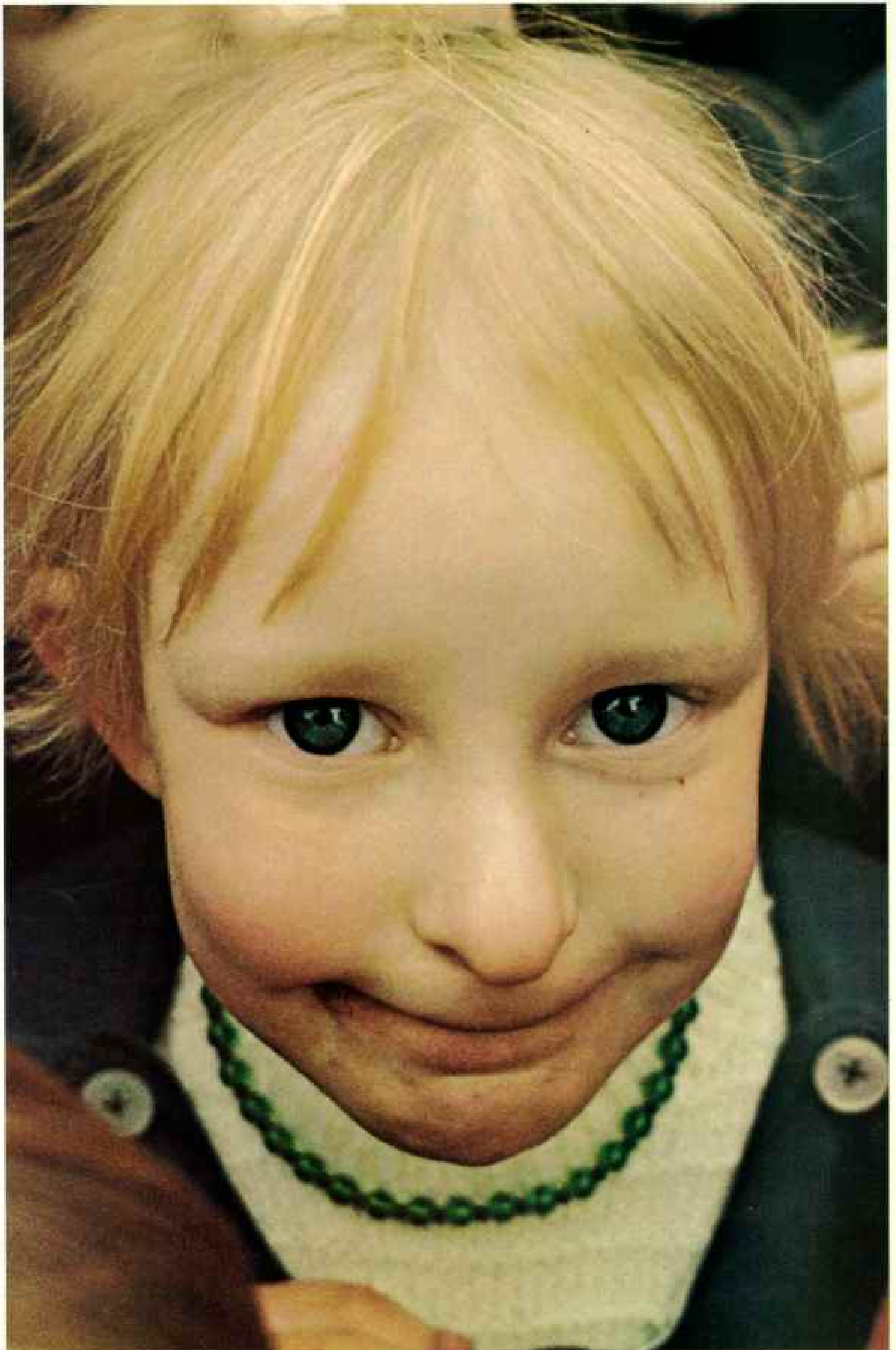
Today slick new hotels and reconstruction work at the University of London are bringing big changes to Bloomsbury, but it remains mostly a district of garden squares and drowsy streets with the British Museum at its heart. The brick houses, with their beautifully proportioned windows, their handsome chimney pots and ironwork, their twinkling brass letter boxes and door knockers, have changed little.

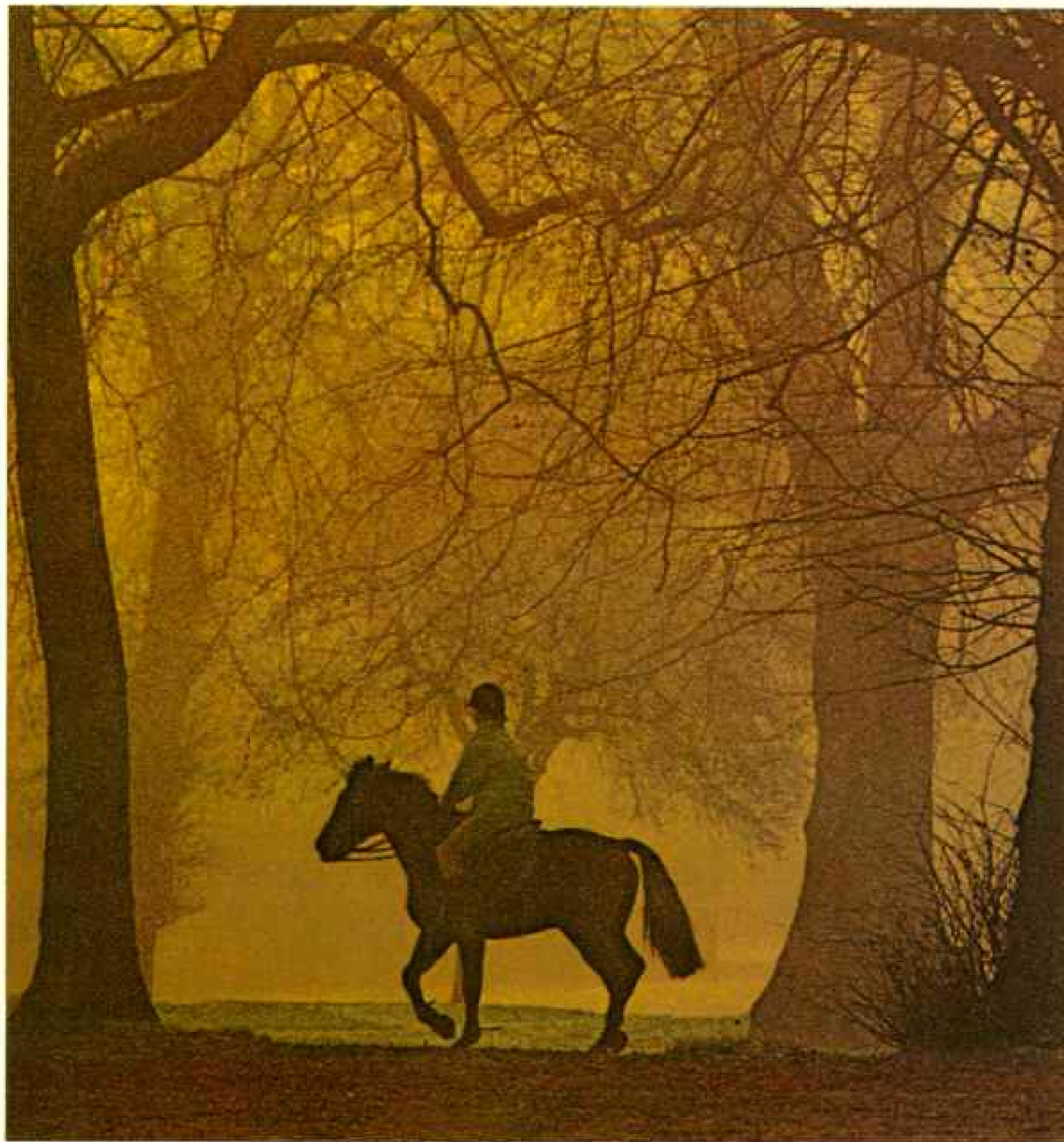
Back in the spring of 1837 everyone on the street would have been eager to glimpse the new young man at No. 48—the famous "Boz" whose account of the hilarious adventures of Mr. Pickwick was taking the town.

Few men of 25 can have reached such a dazzling pinnacle of success. But within weeks of his arrival in his new home came tragedy. Mary Hogarth, to whom Dickens had become greatly attached, was taken ill and died in her room on the second floor. He was to mourn her the rest of his life.

Little Nell, Kate Nickleby, Rose Maylie, Madeline Bray, Florence Dombey, Lucie Manette—all were inspired by Mary Hogarth. Mary, says Forster, "by sweetness of nature even more than by graces of person had made herself the ideal" of Dickens's life.

No. 48 Doughty Street now serves as the headquarters of the Dickens Fellowship, and as a memorial. The books Dickens worked





Ghosting past the steadfast trunks of Hyde Park's leafless trees, two equestrians chance

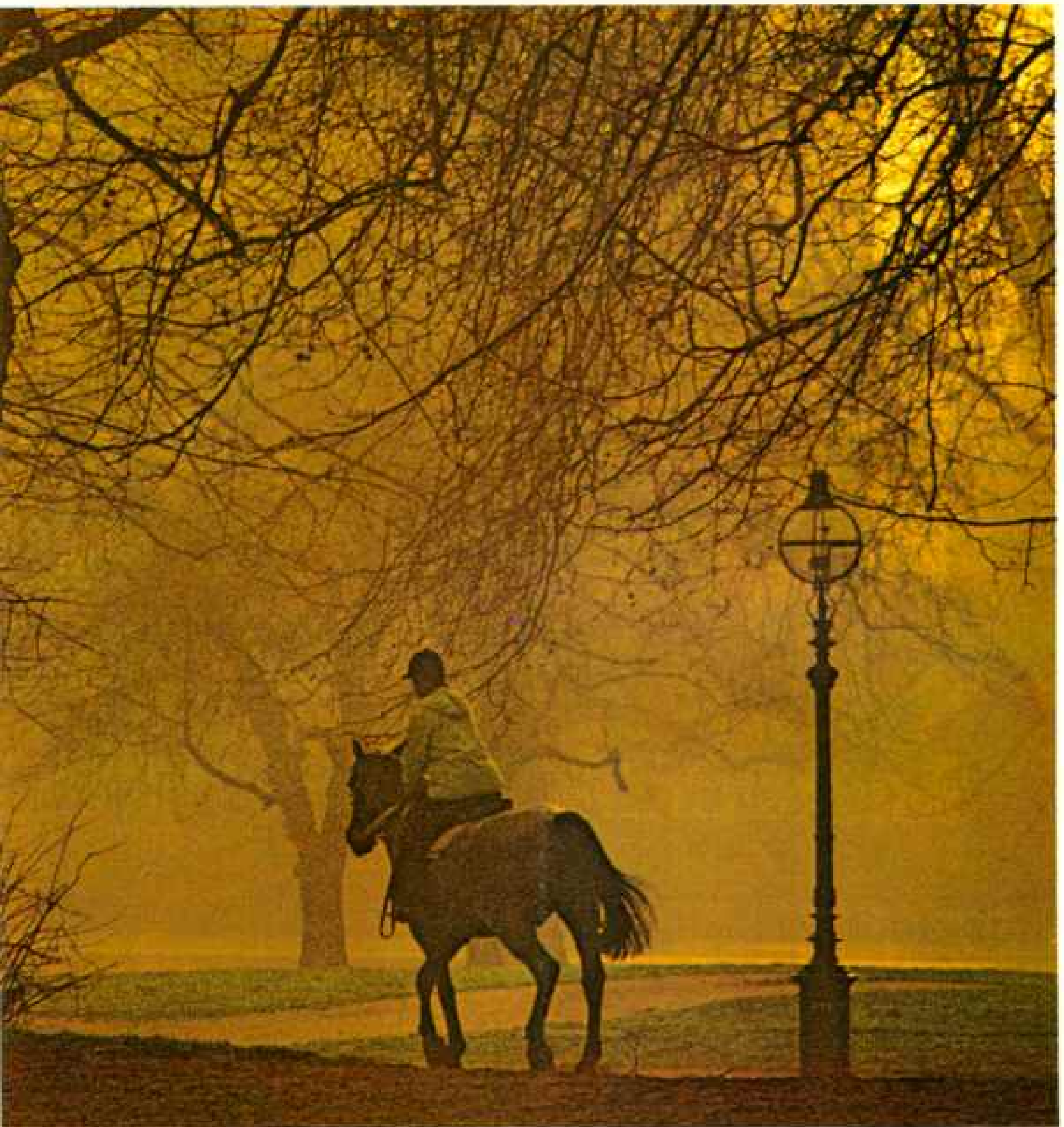
on there—they included *Oliver Twist*, *Nicholas Nickleby*, and the start of *Barnaby Rudge*—consolidated his fame. And No. 48 was the birthplace of his daughters Mamie, in March 1838, and Kate, in October 1839.

More than 30,000 visitors a year call at the house. "We have people on the doorstep asking 'Is Mr. Dickens at home?' if they are respectful, or, 'Is Charlie in?' if they are not so respectful," Miss Marjorie Pillers, the curator, told me. "Americans are enthusiastic for

everything that belonged to Dickens. They live their history. So often people say that London means Dickens to them."

I asked why, in her view, Dickens was still so popular. "It's his human touch," she said. "He knew so much about people. And although he was a gigantic literary figure, he retained the fresh view of a child, expressing it, however, in marvelous words that a child would never use."

Miss Pillers and her staff—none of whom



the hazards of a foggy morning's run along paths that Dickens used to haunt.

is noticeably ancient—are used to date-hazy visitors who ask, “Were you here in Dickens’s day?” The house contains much that was there in Dickens’s day, as well as many things that were part of his life elsewhere:

Reminders, for instance, of his other London homes, including No. 1 Devonshire Terrace, Regent’s Park, now replaced by an office building that bears a memorial to him on one of its walls. Reminders too of Broadstairs, the little Kentish fishing village-turned-

seaside resort where he spent many summer holidays. It has two museums devoted to him, and every June stages a festival when townsfolk stroll the narrow streets dressed as Dickensian characters (pages 452-3).

But, as Miss Pilliers said, London means Dickens for many people. One turns an old corner of the city and there is a recollection of him . . . and another . . . and another.

He had, wrote Forster, the “notion of finding rest from mental exertion in as much

bodily exertion of equal severity," and often, when he had been working hard on a book, this "bodily exertion" would take the form of walking for hours through London streets.

Does he walk there still? It is easy to imagine so. Once, in Doughty Street, I conjured him up from the fog that draped yellow pennants around lampposts and basement railings—a slim, elegant figure with a lively face peering out between the upturned collar of his great-coat and the brim of his tall hat.

"Good evening, Boz," I fancied myself saying. "Fog everywhere," he responded.



Walls crowded with the mementos of its 176 years, Rules Restaurant (above) delights in dishing up such traditional London fare as jugged hare and steak-and-kidney pie. Dickens often ate here; a program from one of his amateur theatricals adorns the walls. Across the river in Southwark the last of the city's galleried coaching inns, The George (facing page), still serves out a hearty mug of ale to visitors—just as it did in the pages of *Little Dorrit*.

"Fog up the river, where it flows among green aits and meadows; fog down the river, where it rolls defiled among the tiers of shipping. . . . You don't feel disposed, do you, to muffle yourself up, and start off with me for a good brisk walk?"*

I was not disposed to do anything else. Drawing my own coat snugly around me, I accompanied my phantom along Doughty Street in a black drizzle that the fog was lacing with particles of soot—"full-grown snowflakes—gone into mourning. . . . for the death of the sun," he said with a chuckle, brushing two of them from his cheek.

We went northwest, through Brunswick Square, past the great shining glass box that is the new Euston Station, and on to Camden Town—a district of old houses coming down and apartment blocks going up, of barber-shops and cafés, of tailors and fruit stores piled high with apples.

THE BOY DICKENS lived here when he first came to London. The small terraced home, at No. 16 Bayham Street, has vanished, but many like it remain, and one of them is described in "A Christmas Carol" as the home of the Cratchits. Does it still echo to Tiny Tim's "God bless us every one!"?

From Bayham Street young Charles could see the dome of St. Paul's Cathedral, floating like a great dark egg in the smoky London sky. From Bayham Street he could walk amidst the crushed cabbage leaves and uncrushable Cockney porters of Covent Garden market; he could wander past the gin shops, the old-clothes stores, and the noisome thieves' kitchens of the Seven Dials district, now a respectable area of printing shops, restaurants, office blocks, theaters, and hotels.

Our way took us southward now, down Hampstead Road and into Gower Street, with its 18th-century houses. At No. 4, said Boz, his mother had opened a school with the idea of improving the family's finances.

On the front door appeared a brass plate proclaiming "Mrs. Dickens's Establishment." My companion spoke: "Yet nobody ever came to school, nor do I recollect that anybody ever proposed to come, or that the least preparation was made to receive anybody."

Eventually we were going over London Bridge, with the lights of ships flaring up at us and splintering on the dark waters of the

*The words ascribed to Boz are Dickens's own, from his writings, speeches, and conversations.



Thames. Vast warehouses loomed out of the fog as we reached the south bank. There, in the Borough High Street, the Church of St. George the Martyr must frequently forget its own name because it is so often called "Little Dorrit's Church" for its association with the novel. Not far from its graceful facade, Boz led me into a little public garden, once a churchyard, where behind a row of moldering tombstones rose a glowering brick wall—all that is left of the Marshalsea Prison where his father was jailed for debt (page 474).

Then, diving through a maze of small streets, we soon crossed back to the other side of the river and stopped to look at the huge

black bulk of Charing Cross Station. The station, I remembered, occupies the site of Hungerford Market adjacent to Hungerford Stairs, where once stood Warren's Blacking Warehouse; Charles Dickens was put to work there at the age of 12, at the suggestion of the warehouse manager, a relative who knew the family's difficult financial circumstances.

"An evil hour for me," I heard Boz say. "On a Monday morning I went down to the blacking warehouse to begin my business life. It is wonderful to me how I could have been so easily cast away at such an age. It is wonderful to me that . . . no one had compassion enough on me. . . ."



Laced and frilled, actress Georgia Brown—famed for her part in the musical *Oliver!*—trills a tune in "The Good Old Days," a television show (above). Her costumed audience completes the impression of a rollicking 19th-century production in Leeds' City Varieties Theatre. Dickens himself acted in numerous amateur plays, including a performance for Queen Victoria.



"The blacking warehouse was a crazy tumbledown old house, abutting of course on the river, and literally overrun with rats."

There he packed and labeled pots of shoe blacking. Two or three other boys performed similar duties and one of them showed him how to tie the pots with string—"His name was Bob Fagin; and I took the liberty of using his name, long afterwards, in *Oliver Twist*."

We moved on, to the Church of St. Martin-in-the-Fields (where a chance meeting with Mr. Peggotty brought David Copperfield news of the search for Little Em'ly).

In the streets around the church were cheap pudding shops where the boy Dickens

fought off hunger by buying penny or two-penny slices of pudding cake.

Can phantoms sigh? "I know I do not exaggerate, unconsciously and unintentionally, the scantiness of my resources and the difficulties of my life," my phantom said. "I know that if a shilling or so were given me by anyone, I spent it in a dinner or a tea. I know that I worked, from morning to night... a shabby child."

The blacking factory, of course, inspired the Thameside warehouse of Murdstone and Grinby, where young David Copperfield pasted labels on wine bottles and packed them in cases.





We wandered on, via the Strand, to Fleet Street, where the lights of newspaper offices piercing the gloom brought reminiscences of Boz's days as a reporter. Dashing to make a deadline after a political meeting, he would transcribe his shorthand notes of the speeches, "Writing on the palm of my hand, by the light of a dark lantern, in a post-chaise and four, galloping through a wild country, and through the dead of the night, at the then surprising rate of fifteen miles an hour."

Then we strolled through a maze of courts and alleys north of Fleet Street until we reached the Saffron Hill district, once the haunt of Fagin and his gang.

ITS OLD VICE DENS now replaced by offices, factories, and craftsmen's shops, Saffron Hill nevertheless seemed a sinister place. Along the narrow street, curbside bollards to restrict parking loomed like watching dwarfs, and flights of steps led to twisted lanes where one half expected to hear the lisping voice of Fagin floating from a shrouded upper window, while the ocher light of a streetlamp glowed around Nancy's shawled head, the shadow of Bill Sikes leapt from a dark doorway, and the tall hat of the Artful Dodger bobbed by an old wall.

"I had read of thieves by scores," spoke my companion. "Seductive fellows (amiable for the most part), faultless in dress, plump in pocket, choice in horseflesh, bold in bearing, fortunate in gallantry, great at a song, a bottle, pack of cards or dice-box, and fit companions for the bravest."

But his reading had never shown him the miserable reality. "It appeared to me," he went on, "that to draw a knot of such associates in crime as really did exist; to paint them in all their deformity, in all their wretchedness, in all the squalid misery of their lives; to show them as they really were, for ever skulking uneasily through the dirtiest paths of life, with the great black ghastly gallows closing up their prospect, turn them where they might, it appeared to me that to do this, would be to attempt a something which was needed, and which would be a service to society."

Then, as suddenly as it began, our tour was over. The shade of Charles Dickens bowed slightly, bade me good evening, and strode off. I watched his elegant figure swinging in the direction of Doughty Street until the fog swallowed him. □



EMILY COLLECTION,
VICTORIA AND ALBERT MUSEUM

"There never was a man so seized and rendered by one spirit," Dickens wrote of his feelings for actress Ellen Ternan (above), a year before sitting for the portrait showing him at the height of his success (below). When Dickens first met Ellen in 1857, she was only 18 and possessed of the fragile English beauty that can still be spotted at a London flower mart (facing page). His relationship with Ellen lasted until his death in 1870.

Dickens left his nation a gift rare for any man: His rage over social injustices helped lead to changes in the England he had known.

VICTORIA AND ALBERT MUSEUM





Timber

HOW MUCH IS ENOUGH?

By JOHN J. PUTMAN

Photographs by
BRUCE DALE

WITH NATIONAL GEOGRAPHIC STAFF

NEWSPAPER HEADLINES called it "Another Crisis on the Way!" Last spring, lumber and plywood prices reached a new peak, double those of 1970. Manufacturers allocated items in short supply to favored customers. Home builders cried for relief, citing the nation's goal of a decent house for every American.

Woodpiles beside 60-million-dollar pulp mills shrank to only a day's supply. And while tree rustlers struck in the dead of night to whisk away walnut trees that might fetch \$2,000 each, homeowners were confronted with price tags as high as \$1.80 on the once-humble eight-foot "two-by-four"—which already measured only 1½ by 3½ inches.

Controversy followed. Congress debated a ban on timber exports. Industry spokesmen and a special President's panel called for stepping up the cut in the national forests. Conservationists protested.

It seemed indeed as if we faced a timber crisis. But unlike oil and many other resources, timber is renewable. Forests can be regrown and our supply of wood even increased. The remedy is not easy—it will require improved management, massive investments, and the abandonment of wasteful habits—but most experts agree it is within our reach.

Cries of "timber crisis" are not new. In 1853 Henry David Thoreau, observing the leveling of New England's forests, predicted:



Bearded with the moss of time, a giant spruce takes the bite of an Alaskan logger's chain saw (facing page). Floated to a sawmill, it will become another offering to the world's insatiable appetite for wood. Responding to the demand, scientists develop "supertrees" to make forests more productive. Here a device records a crossbred seedling's carbon dioxide intake: the greater the rate, the faster the growth.

"We shall be obliged to import the timber ... or splice such sticks as we have." In 1919 a committee headed by Gifford Pinchot, first Chief of the U.S. Forest Service, warned: "Within less than 50 years, our present timber shortage will have become a blighting timber famine." Reforms spurred by that warning helped postpone the pinch.

But now the Forest Service reports that with present levels of forest management in the United States, "timber supplies will not be adequate to meet potential increases in demand." By the turn of the century, the report adds, we could face an annual shortfall of 20 billion board feet of softwood sawtimber.

Lust for Lumber Knows No Letup

Recently I spent several months looking into the nation's timber resources. I traveled from Thoreau's Maine woods to the islands of southeastern Alaska, and from the great forests of the Pacific Northwest to the Deep South. I worked on the ground with loggers, visited sawmills and pulp mills, talked with representatives of industry, conservation groups, the Forest Service.

I found that viewpoints varied on many timber questions, but on one thing all agreed. In an age of spacecraft, computers, and exotic alloys, our appetite for wood continues to grow.

In 1972 we consumed a staggering 14.2 billion cubic feet of wood—enough to build a 12-foot-wide, one-foot-thick walkway to the moon.

Housing gobbled up a third. Don't be surprised: Even the average two-story brick house requires 10,840 board feet of lumber, 5,385 square feet of plywood, and 1,560 square feet of building board for framework, flooring, roofing, window frames, paneling, and molding.

Another third went into nonresidential construction, and such things as shipping containers, coffins, furniture, toys, railroad ties, telephone poles, barrels, and fuel.

The final third fed pulp mills to make paper and board, rayon, cellophane, explosives, and plastics. Last year we consumed 64.3 million tons of paper and board products, including bags, boxes, and newspapers.

The U.S.—with 5.4 percent of the world's population—consumed some 30 percent of all industrial wood harvested in the world.

And the Forest Service expects that in the next 30 years U.S. demand for lumber will

climb 57 percent, for wood pulp 119 percent, and for veneer and plywood 107 percent.

Quite a record for a substance that is basically only a very stiff jelly or gel, composed of cellulose (a fibrous material similar to cotton), lignin (a polymer of uncertain composition), various sugars, and absorbed water.

Fortunately, nature endowed our continent with more than a billion acres of softwoods, the trees historically preferred for construction and pulp. Only the Soviet Union holds more. The wood of some softwoods, by the way, is harder than that of some species labeled hardwood. Foresters define a softwood as a tree, usually evergreen, that has needlelike leaves and bears seeds in cones. Hardwoods have broad leaves, usually shed them, and usually produce seeds in fruits, such as walnuts and cherries.

Timbermen prefer the softwoods because they provide more strength for weight, and they have more uniform fibers, taller and straighter trunks, and fewer limbs—all making them handier to harvest and mill. And they are, by and large, easier to saw and nail.

Search for Wood Led West and South

The professional American logger appeared about 1800, probably in Maine. He lived apart in the woods, coming to town only "to blow her in." The "strength and execution of his arm almost exceed belief," one foreign visitor noted; his life was a mixture of "hardship and debauch."

With a ferocity known only to those who have shared that life, he lay to—cutting the prime softwood, the white pine. Thoreau might complain that they would next be allowed to cut "the clouds out of the sky, or the stars out of the firmament, one by one." To the logger, he was only "letting daylight into the swamp"—so gentler men would have sunlit fields to sow, and boards to build their houses, schools, and cities.

The logger cut out Maine first, felling the pine in winter, then riding the logs down the Kennebec and the Penobscot with the spring flood. Then he—and the timber barons he served—packed up and headed westward into the Lake States, buying land at \$1.25 an acre, settling Saginaw and Bay City. When the white pine was cut out from the Lake States, he moved down South and into the beautiful Douglas fir regions of Washington State, Oregon, and California. Then on to British Columbia and Alaska.



LUMBER				
SEP	NOV	JAN	MAR	MAY
6680	3560	1900	2100	2100
6690		1910 ^B		
7000	3750	2150	2260	2300
6600	3350	1850	2100	2100
152	656	155	36	25
6970 ^B	3640	2130	2240	2120
6980	3650	2110	2250	2240
6960 ^A	3640 ^A	2100 ^A	2220	2300
6950 ^A	3630 ^A	2100	2200 ^A	2240
6940 ^A	3630 ^B	2110 ^B	2150 ^X	2210
6900 ^A	3630 ^A	2120 ^B	2150	2250 ^X
6850	3620	2130	2200	2200 ^A
SEP	NOV	JAN	MAR	MAY
16600	13560	11990	12140	12050
17300	16740	15750	13600	13700
11600	10860	10520	10300	10900

Bull market in two-by-fours brings turbulent activity to the lumber pit of the Chicago Mercantile Exchange. Here buyers and sellers trade lumber futures—contracts for delivery—in lots of 100,000 board feet. Bids and offers come from builders, lumber wholesalers, and speculators.

Often-frenzied transactions show up on an electronic board (left), here recording the activity of a day last summer. Figures on the fifth line give the approximate number of contracts traded that day, for delivery in the months indicated. Other figures represent bids, offers, or sale prices of various lots, with all but the bottom three lines read by inserting a "1" before each quotation.



Loggers who live at sea: Timber camps dot the conifer-clad islands of southeastern Alaska, but few operate like that of Vern "Blackie" Neeley, shown here with his wife, Laura: His camp (below), built on rafts, forms a floating, mobile village: bunkhouses for 15 loggers, a cookhouse, even a little garden barge on which Laura nurtures vegetables and flowers.

The loggers, cutting in Tongass National Forest, leave a belt of standing trees along the shoreline, required by the Forest Service to ensure shelter for wildlife and to soften the sight of denuded slopes. Logs travel by raft (right) to mills at Ketchikan.

Concerned at the rate of clear-cutting, conservationists led by the Sierra Club seek to curb such methods of logging. In turn, many Alaskans, seeing a threat to their third largest industry, express resentment (lower right).



Steve Heston/Anchorage



Wanderer in a desolate land, a black bear forages amid debris from a clear-cut of hemlock and spruce on Alaska's Prince of Wales Island. Such battered habitats have profound—and still-disputed—effects on wildlife. While squirrels and other tree-dwelling creatures wane, foresters note that bear and deer prosper on the new growth that follows clear-cutting. Renewal will depend on windblown seeds from neighboring woods. Two decades may see the area covered with trees 25 to 30 feet tall.

It was in Alaska that I caught up with the last of the old-time bunkhouse loggers, who spurn the amenities of the isolated camps enjoyed by married men—a house, a bit of garden, a school for the children.

Checking in at the Ketchikan Pulp Company's Thorne Bay Camp on Prince of Wales Island, I was given a hard hat, a bunkhouse bed, and cookhouse privileges.

The first thing I learned was that in a logging camp the morning whistle goes off at 5:30. The second thing is that a logger dresses as ritually as a bullfighter: long johns, calked



(spiked) boots, blue jeans cut off high to prevent snagging, and broad suspenders.

The prince of loggers is the "bush'ler," so-called because he is paid by the number of bushels (1,000 board feet) of timber he cuts each day. He carries into the woods a chain saw, an ax, two metal wedges, a can of gasoline, a jug of oil, a rain slicker, a Thermos of coffee, and—like all loggers—a huge lunch.

It's a chancy job: A chain saw can "kick back" on a man, or he may slip and lose his footing. The result can be a lost finger, a mangled hand, a ruined leg. Widow-makers

—dead trees and limbs—wait in the forest for a wind to shake them loose.

But a bush'ler can earn from \$80 to \$160 a day, felling from 50 to 100 trees, and every ambitious young logger wants to be one.

After felling a tree, a bush'ler measures its length, cuts off the limbs, and "bucks" it—saws it into logs. He pencils his estimate of the tree's board feet on his hard hat, then moves on, clear-cutting (felling all trees) in 20-acre sweeps.

I worked with the choker setters, whose job is to attach steel cables to the logs so that



diesel-powered yarding machines can haul them to the truck landing.

I learned why a logger wears caked boots. We walked, ran, leaped, and scrambled in a tangle of fallen trees six feet above the ground. Where the bark had fallen from a log, the wood was like a curving sheet of ice; and where there was bark, it sometimes broke loose under our weight.

Each time the set of three 30-foot chokers came swinging and dancing down the 700-foot overhead cable, we seized them, tucked each over and under a log, then cinched them tight—"choking" the logs.

As the diesel revved up at the steel tower, we scampered out of the way—for the chokers first jerk up one end of each two-ton log, then wrench it free from the tangle, and drag it like some mammoth fish toward the landing. The logs around us shifted and rumbled in protest. I was reminded of the old-time logger who was once asked why, in such a dangerous business, his crews suffered so few accidents. His reply: "I just tell 'em—'Run, you sons of guns, run or die!'"

Off-duty Loggers Head for the Fo'c'sle

Little wonder that after a couple of weeks in the brush, a logger may buy a floatplane ticket to Ketchikan to let off steam. No matter where he finds a room, he'll show up eventually at the Fo'c'sle, the logger's bar.

Here a leathery veteran can find his heart's desires: plenty of logging talk, an endless supply of beer, tall stacks of "snoose"—Copenhagen snuff.

On a big weekend, flush with payday cash, a man can prove himself a man—with a fistfight or by "ringing the bell." By ringing the old brass bell, a man buys drinks for the house, an expensive but satisfying gesture.

Many if not most of Ketchikan's citizens are happy the loggers are here—the timber industry provides more than half the city's paychecks. But I discovered that in Alaska—as in almost every other region I visited—logging brings controversy.

The coming of the timber industry to Alaska was the culmination of a Forest Service dream. The Tongass National Forest,

in the southeastern part of the state, held a treasure of old growth—virgin timber that could bring jobs to an economically depressed area, increase federal and state revenues, and encourage forest management.

In the 1950's the Forest Service made two 50-year contracts, one with a U. S. company, the other with a Japanese-owned company. In the '60's Tongass harvests soared.

Japan Relies On Alaskan Timber

Seventy percent of the wood cut in Alaska is shipped to Japan—as lumber, or as pulp for the manufacture of rayon, cellophane, and photographic paper. A fleet of specially built Japanese ships ply the route.

Thirty percent of the wood is shipped as pulp to the U. S. market.

Conservation-minded citizens claim that the cost to the beauty of their region, to wildlife, and to the environment may come too high. One day I flew over much of the Tongass with Harry Merriam, a biologist with the Alaska Department of Fish and Game. "I'm not against logging, only those practices that harm the environment." He pointed out vast clear-cuts, stumps and cull trees pushed into streams, salmon streams stripped of shade, wildlife habitat "slicked off," tons of slash left to rot (preceding pages).

"Things have improved in the past few years because of public pressure, but more changes are needed. There's room here for loggers, wildlife, and people who love wilderness, if activities are properly managed."

We touched down at Point Baker, a community of some 30 people. Herbert Zieske, 64, welcomed us. He has lived there 30 years, fishing, trapping, raising a family. Now he fears for the community's future.

"They want to cut off that mountain there," he said. "We live here because we like this life, and we don't want it ruined. If they start cutting, that mountain will become an eyesore—and there'll be the sound of chain saws and logging trucks all day. We told the Forest Service we don't want 'em to do it, but I don't know what will happen to us."

The Forest Service has recently moved to meet some

(Continued on page 497)

Destination: Asian sawmills. Enough wood to build a thousand three-bedroom houses crams Fields Landing at Eureka in northern California. Open holds of a freighter take on Douglas fir and redwood for Japan and Korea. Nearly one softwood log in 20 goes abroad, mostly to feed Japanese industry.





DOUGLAS FIR

These huge trees tower 200 feet or more, with trunks 15 feet in diameter and bark a foot thick. Their strong, knot-free lumber ranks them first among all trees in commercial importance.



WESTERN HEMLOCK

is fine of texture and straight of grain. Among western trees, this shapely evergreen of the deep forests yields only to Douglas fir in volume harvested.



SITKA SPRUCE

grows in coast-tugging stands from California to Kodiak, Alaska. The soft, strong wood, valued for pulp, provided framing for early airplanes.



BALSAM FIR

lends its fragrance to northern woodlands where it is harvested for sale as a popular Christmas tree. The wood provides pulp, the resin serves pharmacists, and the needles make aromatic pillows.



COAST REDWOOD

is the tallest known living thing. One tree towers 367 feet. But its girth of 44 feet cannot rival that of shorter, bulkier sequoias, with circumferences of more than 80 feet.



PONDEROSA PINE

, stately sentinel of western plateaus and mountains, feeds sawmills from Canada to Mexico. Specimens reach heights of 200 feet and live for 500 years.





EASTERN WHITE PINE was prized by sailing-ship captains for its tall, tapering trunk—an ideal mast. Today the soft, workable wood finds ready market for use in paneling, crating, and furniture.



SUGAR MAPLE, celebrated for its sweet sap, also produces a strong, easily polished wood used in furniture and musical instruments.



WHITE OAK, reaching 8 feet in diameter and 600 years of age, reigns over a renowned clan. Nail-bending hard when seasoned, oak excels for flooring, furniture, and barrels used in aging whiskey.



LOBLOLLY PINE, planted by the millions across the South, matures rapidly in the long growing seasons. Its wood increases in value for use as lumber, plywood, and, most important, pulp.

Timber: the renewable resource

NATURE BLESSED North America with bountiful forests, they covered half the continent when the first settlers arrived. Even today, despite man's encroachment, rich and varied woodlands cloak a third of the United States. In the six forest zones shown here, variations in climate, elevation, and soil determine the range of the ten commercial tree species illustrated.

Thirty-four percent of the nation's timber lies within its national forests, which maintain a policy of selling only at a sustained rate of regrowth. Timber companies own 15 percent of the supply, with the rest in the hands of individuals and on state and county lands.

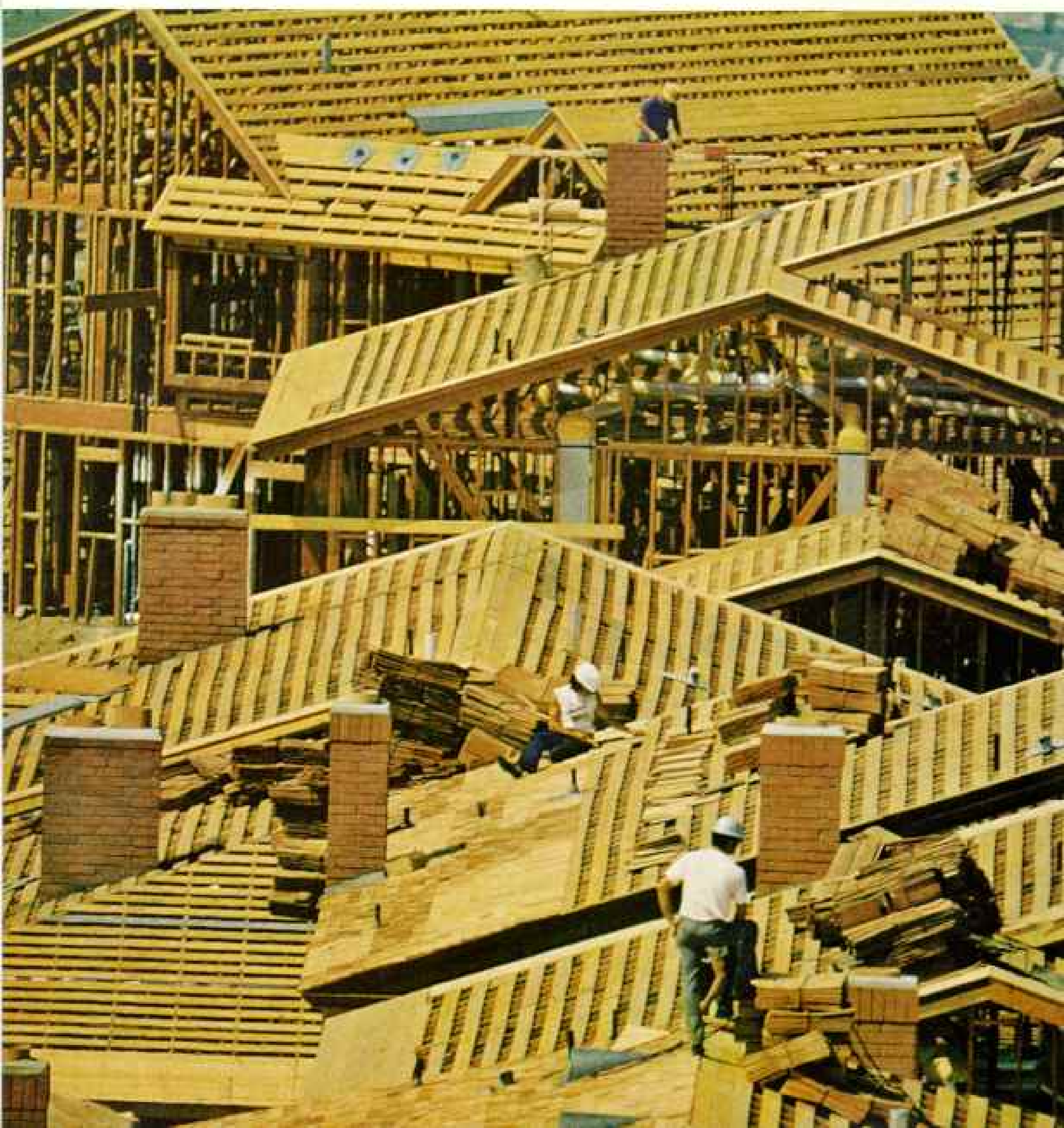
Softwoods—the conifers—preferred for construction and pulp uses, account for 74 percent of the United States timber harvest. Hardwoods, including oak, maple, and hickory, supply 26 percent.

The lush West Coast and Western forests now dominate the timber industry. But in a decade, foresters predict, the South will take the lead with its vast pine forests.

Color in box shows forest type in which tree grows

STATUTE MILES

PAINTED BY WILLIAM W. BOND
EDITED BY GEORGE W. BLATTY



Paper accounts for nearly three billion cubic feet of wood a year—roughly a fifth of the total U.S. intake. Mammoth rolls (left) await cutting into business stationery at the International Paper Company in Ticonderoga, New York. Pulp mills annually provide each American with more than 300 pounds of paper, along with ingredients for synthetics such as rayon and plastics.

Wooden except for their chimneys, homes in Newport Beach, California (below), attest to timber's vital role in housing—which consumes a third of the nation's annual cut.



complaints: It limits clear-cuts to 160 acres and provides for public discussion of sale plans. Yet the furor continues.

I'd meet these issues again, but now it was time to say good-bye to Harry and my logging comrades Tin Ear, Horrible Herd, Packsack Dave, Whiskey Bill, and the others. I headed back toward the Lower Forty-Eight.

I flew first to the Pacific Northwest. This region, where many of the old timber barons ended their westerly migration, remains the "wood basket" of the nation, producing 40 percent of its softwood sawtimber. Glancing out the jet's window, I saw evidence of the huge harvest: Great clear-cuts had turned whole mountainsides into patchwork quilts.

Mementos of the past remain: bronze drinking fountains in Portland, gift of a timber magnate who sought to lessen the consumption of liquor by his loggers; and Seattle's "skid road" area, named after the old logging trails, and the origin of the term "skid row."

Taxi, Take Me to Seattle

The epic old-time loggers dwell only in the memory of a handful of gray-haired men. They'll tell you of "Millionaire Johnson," who on a whim hailed a taxicab in Portland and rode to Seattle, spending a month's pay; of "Roughhouse Pete," who protested the quality of one meal by leaping on the table, kicking off all the dishes, then chasing off the cleaver-wielding cook; and of the unrivaled "White Hope from Astoria," who could top a tree, toss his hat sideways, and, with a whoop, beat it to the ground.

But the timber barons, or rather their descendants, are still there, and companies often bear proud names brought from Maine and the Great Lakes: Pope & Talbot, Stimson, Weyerhaeuser. The industry divides into giants and the "little fellows"—those doing a meager 2- to 20-million-dollar a year business—like Kimball Brothers, just outside Eugene, Oregon. Founded in 1929 by five brothers and a brother-in-law, the company holds no land and hires gyppo (contract) loggers to harvest the timber it buys.

The brother-in-law, Art Lindley, remains active to help guide a younger generation. A courtly, soft-spoken man, he led me through the mill; amid the whine of gang saws and the thump of conveyor chains, he explained his dilemma. The mill annually produces some 14 million board feet of lumber. Most is clear—fine-grained, free of knots, fit for

the best of uses. Such wood comes from slowly maturing old growth.

"When we first started in this business, people were knocking on our door to sell us timber like this. Now there is practically none left on the private lands; it's all been cut over. Today we have to get all our wood from the national forests."

So now and then Mr. Lindley, a son, or a nephew drive into Eugene and file into a small room in the headquarters building of the Willamette National Forest. Here timber on the stump is auctioned off, often to the

tune of more than a million dollars a day.

I sat in on one sale, officially labeled the "Coffee Two Sale." It offered 9.4 million board feet of Douglas fir, 1.2 million feet of cedar, and 900,000 feet of Western hemlock. The Douglas fir was the prize: Trees averaging 160 years in age, 36 inches in diameter, and 700 board feet per tree—ideal for either sawing or peeling for plywood.

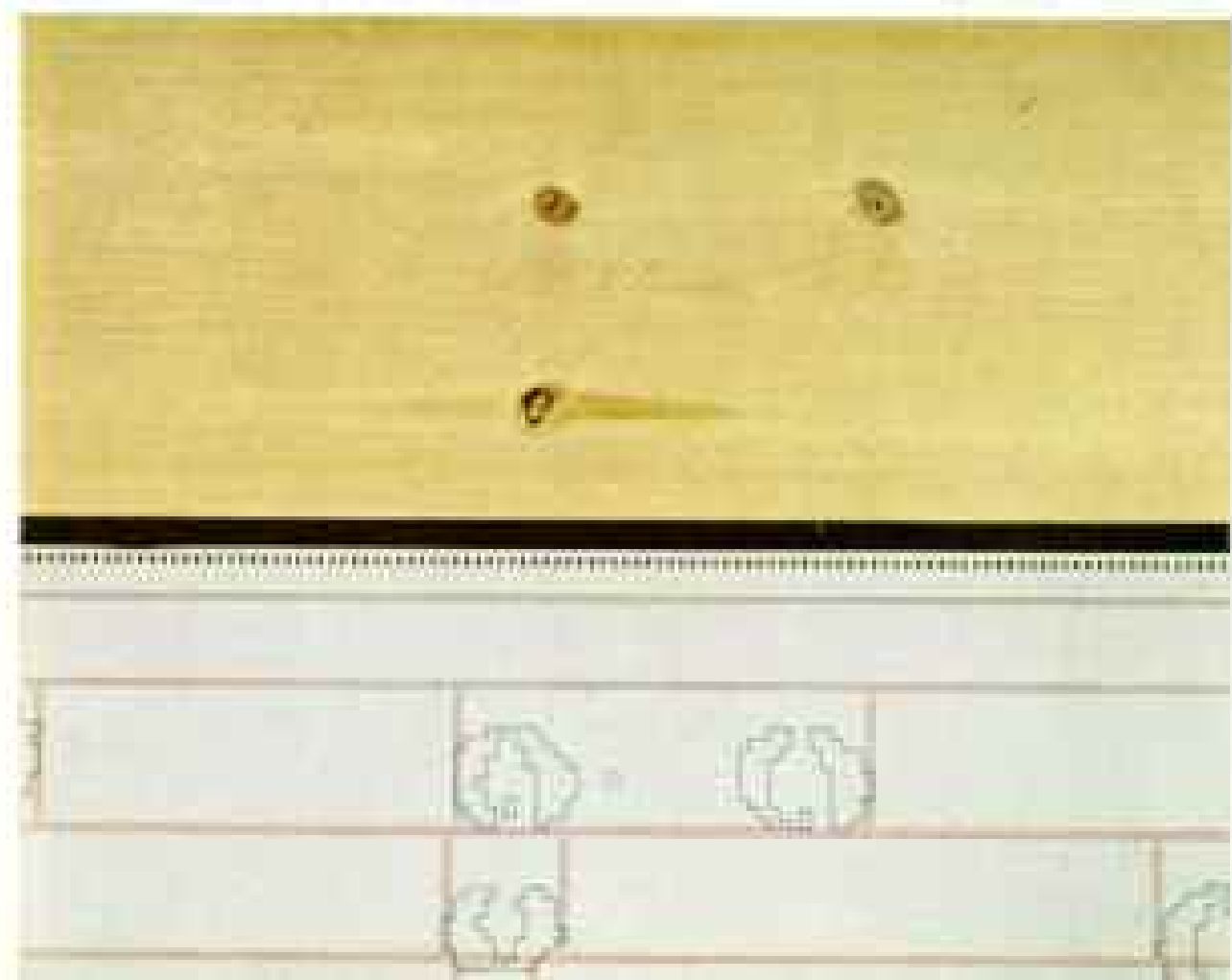
The room filled with 24 men in sport shirts and sweaters. Each bidder had walked the 244 acres of the sale to check the estimate, had calculated the cost of building the roads



KEEF WOODRILE, U. S. DEPARTMENT OF AGRICULTURE (BELOW)

A matter of how you slice it: To reduce mill loss in sawdust and chips—often 50 percent—an electronic scanner at Oregon's Sun Studs company measures each log's precise shape so a computer can plot the first crucial cut to increase yield by as much as a quarter. TV lets the operator study the log's face.

An experimental Forest Service device helps specialty mills cut defect-free wood by transmitting sound through a rough plank (right, upper). A printout of the waves' pattern reveals a flaw in the lower right corner, which the computer avoids as it marks saw lines, red.



over which the machines would be moved in and the logs hauled out, and made his judgment on what the market prices would be during the five years allowed for harvest. Finally he considered his inventory: How badly did he need the wood?

At 10:05 the bidding began on the Douglas fir (the other species would be included in the sale at appraisal prices)—inching up by 10-cent increments from the minimum \$120.50 per thousand board feet. At \$141 Seneca Sawmill Company jumped in—and rode it out at \$146.50.

Seneca had assured its future—at a cost of \$1,497,526. Whitey Howard, company vice president, told me he had figured it for “a production show—once the roads are in, we can pull the wood out at 15 truckloads a day.” And the old growth fitted Seneca’s specialty: two-inch-thick lumber for rafters and floor joists used in the construction of houses from California to the East Coast.

Current Harvest Outstrips Regrowth

If Whitey Howard appeared quietly jubilant, and the losers quietly depressed, all had good reason. For, like Art Lindley, many are entirely dependent on national forest timber.

Even giant landowning corporations like Georgia-Pacific, Boise Cascade, and Champion International must draw on the national forests and other public lands.

The simple fact is, according to Forest Service analysis, that the supply of industry-owned softwood sawtimber on the Pacific Coast will decline substantially over the next thirty years. Industry has been cutting more wood than it has been growing. In the Douglas fir region, for instance, the harvests in recent years have been more than double the rate of regrowth.

The reason: Industry is cutting old growth. These big-volume trees can be felled in minutes, but producing replacements requires 50 to 100 years. Reforestation efforts, relatively recent, are not expected to close the gap. So industry looks to the public lands.

W. D. Hagenstein, Executive Vice President of the Industrial Forestry Association in Portland, pointed out that more than half the timber acreage in the Pacific Northwest lies in the public holdings. “For decades,” he said, “the timber has come off the private lands, while the public lands received only custodial management. Now the time has come for the public lands to play their part.”

Industry officials blame the timber pinch on an underfinanced Forest Service and “the shrill cries of preservationists” who resist more cutting on the national forests.

Example: I rode on horseback into the Willamette National Forest with Arnold Ewing, Executive Vice President of the North West Timber Association. From a peak we looked down on French Pete, a valley lush with century-old Douglas fir. To conservationists, it is one of the last pristine valleys in western Oregon and must be preserved.

Arnie put it this way: “Sure it’s pretty, but that wood is ready for harvest. Its growth is almost at a standstill. If we cut that timber now, it could be replaced with a young and vigorously growing forest.

“But the preservationists are trying to lock it up—and they’re locking up more and more land.” We turned about and looked eastward. Snow peaks marked the Three Sisters Wilderness Area, by law declared safe from the chain saw.*

“Under the Wilderness Act of 1964, 10.7 million acres of national forest lands have been set aside in a National Wilderness System, and another 12 million are being considered. We are also losing timberland as communities expand and new roads are built.”

Arnie swept his arm toward the Three Sisters. “Let the purists get their nature there, but let us get the country’s timber from the national forests that are left.”

Timber Business Calls for Crystal Ball

How did the recent timber crisis come about? I put the question to Bill Dean, who for sixteen years has been editor of *Random Lengths*, an industry guide to softwood prices. His office is in Eugene.

“Two things you should understand,” Bill said. “First, this is a highly fragmented industry—some 80,000 companies that cut, manufacture, wholesale, and retail lumber and other timber products. Second, the market is based on home building and on the availability of mortgage money. And that depends on government-set interest rates. So a crystal ball is needed for this business.

“Well, through the 1960’s the country was building about 1½ million housing units a year. In 1971 the figure shot up to 2 million. Then, in 1972, it went up to 2.4 million units.

“Nobody expected a 2-million year, much

*The February 1974 *GEOGRAPHIC* discussed America’s surviving wilderness and efforts to save it.



less a 2.4-million year. The mills, which plan two years ahead, were caught short. Prices went through the roof and some items came into short supply. Same thing happened in 1968-69. Then, things leveled off, and everybody forgot about the crisis. I suspect the same thing will happen now."

Indeed, as we talked, lumber prices were falling, thanks to fewer housing starts. By the close of last year, the number of new housing units had dropped to 2 million; the projection for 1974 is a meager 1.6 million. But with time, an upswing in the economy, and lower interest rates, the timber crisis will return—and it may hit harder.

Not only are Pacific Northwest timber supplies declining, but also economics have put an end to the peckerwood sawmills that once sprang up by the thousands when prices "got right." At the University of California at Berkeley, forest economist Dr. John A. Zivnuska explained: "The small sawmill here relied on private timber, and now that's been pretty well cut over. And you once could go into the business with anything from \$25,000 to \$50,000. Now they're building

mills for six million or more. The reason is that, to make a profit, you must recover and market the residues. You have to have a chipper, a debarker—expensive equipment. The old peckerwoods simply can't afford the cost."

One company that can afford the cost is Weyerhaeuser, the only giant able to meet its needs from its own lands. It was in 1900 that Frederick Weyerhaeuser, a German immigrant with logging interests in the Lake States, moved west and with a group of investors began to buy hundreds of thousands of acres of railroad land grants.

It was an era of dizzying land deals, often tinged with scandal—an era that led President Theodore Roosevelt and Gifford Pinchot to join in establishing the present National Forest System as a buffer against those who practiced "cut and run."

But, unlike others, Frederick Weyerhaeuser and his partners decided to hold their land after harvesting it, and to grow new crops of trees. Today the Weyerhaeuser Company holds 5.7 million acres, one percent of all the commercial forest land in the nation.

In the glass-walled headquarters at Tacoma,



HUMBOLDT STATE UNIVERSITY LIBRARY (ARJIVE)

Like smoke on a battlefield, morning mist curls across a decimated forest of coast redwoods in northern California (left). Logs from a single massive bole burden a truck. Often a thousand years old, the West's celebrated "tall trees" have dwindled since turn-of-the-century loggers (above) challenged this Humboldt County titan with ax and crosscut saw.

Washington, I met George Weyerhaeuser, Frederick's great-grandson and company president. He foresaw no immediate crisis.

"But looking ahead 30 years or so, I would say we could find ourselves in a crunch. Today the nation is managing its forests so they produce only a third or half of their potential—and I'm talking across the board, the private and public sectors. Unless we move now to give our forests more intensive management, we may well be in trouble."

New Techniques Speed Tomorrow's Crops

Weyerhaeuser believes his company, like some of the other giants, is doing its part in growing the next crop. Last year the corporation planted 100 million trees (pages 504-5).

The Weyerhaeuser system is labeled "high-yield" forestry. It calls for clear-cutting, burning over or scarifying the ground, then planting seedlings. Tree growth is helped along by periodic thinning to allow more sunlight, fertilizing, and the use of repellents to discourage browsing by deer. Through such practices, Weyerhaeuser believes it can cut the time required to grow a marketable Douglas fir from 90 years to perhaps 40.

The company has also invested in new technology: chipping headsaws that cut lumber from logs only four inches in diameter, a size previously judged fit only for pulping; and systems that recover up to 100 percent of

mill residues—chips for pulping, bark for mulch, sawdust for fuel in steam plants.

But equally significant, Weyerhaeuser has branched out from its historic bastion in the Northwest and moved strongly into Canada (leasing cutting or residue rights on nine million acres) and into our own South.

At some point in the 1980's, the U.S. Forest Service predicts, a historic shift will occur: The Pacific Northwest will yield to the South its title as the nation's largest producer of softwood sawtimber. The South already produces 67 percent of all our pulpwood, 30 percent of our lumber, and 30 percent of our plywood. Within the next three decades production may increase by a third.

Certainly industry sees great things for the South. In the past ten years alone the giant paper, pulp, and lumber corporations have bought 10.5 million acres of forest land (mainly from old-line lumber companies), extending their holdings to 32 million acres. In the same period 37 new pulp and paper mills have gone on line, boosting the number to 123. And the number of softwood plywood mills has jumped from zero to 53.

Nature gave the South a seasonal advantage: In its warm, moist climate, fast-growing species such as loblolly, shortleaf, and slash pine reach marketable size in 30 years.

And its 192 million acres of commercial timberland, cut over during the boom years



Hairy scourge of western forests, the voracious larvae of the tussock moth killed thousands of acres of prime fir during a catastrophic 1972-73 infestation in Oregon and Washington. Recurring explosively in five- to ten-year cycles, the caterpillars quickly defoliate vast stands, leaving the dying trees vulnerable to lightning bolt or unstubbed cigarette. Loggers salvaging the timber find fresh cause to loathe the tussock: Hairs of larvae, living or dead, may inflict a painful skin rash.

of the early 1900's and then largely abandoned, now hold a new and rapidly maturing crop of trees (map, page 495). Technology gave a further boost: The chipping headsaw and the invention of a way to make plywood from southern pine added dollar values.

But I found industry executives talking more about a new kind of forest—great plantations where genetically improved trees are planted in rows like corn, carefully cultivated, and harvested by machines.

Often nature's mixed hardwood-softwood stands are replaced with pine-only plantations, which are much more efficient for cultivation and logging. Conservationists protest that removal of hardwoods destroys squirrel and turkey habitat, and that pine-only forests are more vulnerable to disease. The new plantings are often "supertrees"—seedlings bred to grow faster and straighter than nature's own (page 485).

Marilyn Stands Tall in Alabama

The process begins with foresters tramping the woods to find mature trees with superior characteristics to serve as progenitors. These are sometimes given names—"Father Abraham," or "Marilyn Monroe." I gazed on Marilyn one day on International Paper Company lands near Mobile, Alabama.

She was a sight to make a forester's mouth water: tall, straight, with a few light limbs that swayed gently against the blue southern sky. Forester Pat Smith explained how Marilyn's characteristics are passed on to coming generations.

Marksmen use special bullets to shoot off high limbs; the branch tips (scions) are collected and grafted onto young nursery stock and planted in seed orchards. Within a remarkably few years—for the scions retain the maturity of their source—these trees begin to yield seed. It is collected, placed in nursery beds and cultivated for a year. Then the seedlings are planted by machine or by hand.

The results? Dr. Bruce Zobel of North Carolina State University at Raleigh, who has coordinated the program for 31 companies, told me: "We find a 10 to 20 percent improvement in growth, plus a 10 percent gain in mill production because of easier handling and better quality."

Dr. Zobel and his colleagues now envision breeding trees for special uses: Trees with thin-walled tracheids (wood-fiber cells) for use in making fine papers, and trees with

thick-walled tracheids for use in manufacturing sturdy boxes. But it will be some years before the impact of the genetically improved trees is felt: Only 700,000 acres are now planted with such trees, and they average about four years in age. Thinning comes at 10 to 15 years, harvest at about 25 to 30.

In the meantime the South is still drawing its wood from traditional sources—mainly from small lot owners—a farmer with a wooded back forty, or a dentist who purchased a hundred acres for investment.

To see how this system works, I visited International Paper's divisional headquarters at Mobile. Woodlands manager Bob Nonnemacher was scrambling for wood over the telephone. The huge Mobile Pulp and Paper Mill gobbles 2,200 cords a day—and only a day's supply stood in the once-crowded woodyard. The result of a timber shortage?

"Nope," Bob replied. "Traditionally, we have felt no pinch in basic supplies—we can use the smaller trees, hardwoods, wood chips, and sawdust. In the past, paper shortages have been the result of mill capacity."

Bob's problems included record floods that barred harvesting on thousands of acres, a growing scarcity of woods labor, and logistics. He must juggle supplies from the company's own lands and hundreds of private ownerships; arrange transportation by barge, railcar, and truck; and coordinate the needs of International's other southern mills.

One Man's Boom Is Another's Bane

Ironically, the South's sawtimber boom increased his problems: The new sawtimber and plywood mills offer top dollar both for wood and labor. Bob kept shifting between phone and computer. The insatiable monster was fed.

However dramatic, industry's strides in the South will not keep pace with our growing demands. Where then might the wood come from? The Forest Service says that the greatest potential lies with the small lot owners such as those in the South. More than four million private woodlots contain 41 percent of the nation's timber on 296 million acres, mainly east of the Mississippi.

The yield from these lands could be doubled with proper management. But most owners simply sell off when they need the money and let nature do the regenerating. The Forest Service believes that technical and financial support from government and industry,



along with rising prices, can spur the small lot owners to improve management.

What about imports? We already draw 22 percent of our wood products—lumber, pulpwood, pulp, and paper—from Canada, and its great forests will probably provide more. We also import about 255 million cubic feet of hardwood veneer and plywood, principally from tropical regions.

But as our imports have climbed, so have our exports. We have been sending about 2.5

billion board feet of logs and 2.5 million tons of wood chips to Japan annually, almost 2 million tons of pulp and a million tons of paperboard to Europe, and a billion board feet of lumber to countries around the world—in all, roughly half as much as we import.

Forest Service analysts expect increases in exports—unless they are restricted—to offset any gains in imports. Companies in the trade argue that wood is an international commodity, that sales enhance our balance of



STEVE BAYNE (ABOVE)

From pampered progeny, tomorrow's forests: Douglas fir seedlings carpet a Weyerhaeuser nursery near Little Rock, Washington. Soil under cover in the background has been sterilized for seeding. After trees are transplanted to clear-cut areas, Weyerhaeuser will spur growth by fertilizing and thinning.

With similar coddling, this week-old loblolly seedling (right), sprouting at a Forest Service research station in Louisiana, will become large enough to cut for pulpwood in ten years.



Timber: How Much Is Enough?



payments, and that we should hold to the principle of free trade. They point out that demand is growing in Japan and Western Europe, and that if we don't reap the profits, Canada or the Soviet Union will.

We could stretch our timber supplies through improved technology. At the Forest Service's Forest Products Laboratory in Madison, Wisconsin, I glimpsed the sawmill of the future: A computerized headsaw system to instantly compute the "best opening face," the crucial first cut that determines how much lumber a log will yield; and an ultrasonic scanner to spot hidden defects in logs and lumber before costly errors are made.

I saw plywoodlike boards made of wood chips and glue, large beams fashioned from many smaller boards, and two-by-fours actually made of paper.

Laboratory director H. O. Fleischer pointed out that timber savings could start in the field. Today an estimated 1.6 billion cubic feet of usable wood is left on the ground after harvesting each year.

Forests Ravaged by Natural Forces

At other Forest Service laboratories scientists seek better ways to guard our standing timber against nature's ravages. Insects and disease nullify about a fifth of our annual timber growth. And despite new technology and massive organization by the Forest Service and other agencies, fire sweeps some three million acres a year.

What about substituting other products for wood—steel, plastics, aluminum, concrete? The Forest Service points out that such materials come from nonrenewable resources, and that their production draws heavily on already burdened energy supplies.

Many believe the only way to significantly increase our timber supply in the near future is by improving the management and increasing the cut in the national forests. With only 18 percent of the nation's commercial timberland, they now hold a whopping half of all our softwood sawtimber.

Crucial to the proposal is the harvesting of much of the old growth and its replacement with young, fast-growing trees—in

short, providing Weyerhaeuser-type management to those national forests with appropriate soil and climate conditions.

This is the course recently recommended by the special President's Advisory Panel on Timber and the Environment. Ralph Hodges, Executive Vice President of the National Forest Products Association and a panel member, told me: "Growth could be doubled. The nation would have more timber, the government more revenue, and the environment can still be protected. It would be a waste not to do so."

Woodlands Growing More Popular

Many conservationists disagree. They see the old-growth stands as an irreplaceable natural legacy to be enjoyed and preserved for future generations. They point out that public lands, unlike industry-owned lands, serve varied interests. Last year, for instance, visitors spent more time in the forests than in the national parks.

Gordon Robinson, consulting forester for the Sierra Club, views the panel's proposals this way: "Industry has cut over and mismanaged its own lands; now it wants to do the same to the national forests."

He points out that timber harvests in the national forests have already jumped from 4.8 billion board feet in 1950 to 12.7 billion in 1972—17 percent of the nation's production. And he claims that clear-cutting, which accounts for 60 percent of national-forest yield, has already led to massive abuse of the forests and the land.

"They say clear-cutting is necessary to regenerate certain species such as Douglas fir and loblolly pine, which do not grow well in the shade of taller trees.

"That's true, but a clear-cut of a quarter of an acre to ten acres is all that is required biologically. When you get clear-cuts of forty or a hundred acres, the only reasons are to increase timber yield and make industry's job easier. Then it's timber mining, not forestry. And the impact on the environment is similar to that of strip mining."

Gordon prefers selective cutting where possible: the marking and felling of individual

Felling tree after tree, a harvester guided by a lone operator methodically cuts 20-year-old slash pines planted by the Owens-Illinois company in northern Florida. The machine shears the trees at ground level, severs the limbs, saws the trunks into 6½-foot logs, and bundles them for later pickup by truck.

trees in a stand. "This preserves the character of a forest and prevents erosion, soil depletion, and other environmental damage."

To combat what they consider excessive clear-cutting, conservationists have drawn on two weapons: The Multiple Use-Sustained Yield Act of 1960, which requires the Forest Service to manage its lands not only for timber, but also for recreation, range, watershed, and the enhancement of wildlife; and the 1969 National Environmental Policy Act, which calls for written justification and public discussion of any federal act that may have a major impact on the environment.

As I talked with Gordon, judges were considering a dozen lawsuits. One locked up 8.7 billion board feet of timber in southeastern Alaska; another, involving the Monongahela National Forest in West Virginia, challenged the practice of clear-cutting itself.

Striving To Strike a Proper Balance

The Forest Service has recently moved to meet many of the objections of conservationists. Interdisciplinary teams now often plan sales to minimize the impact on visual and environmental qualities, and the average size of clear-cuts in the Lower Forty-Eight has been reduced to 40 acres.

Still, conservationists protest that the Forest Service is not doing enough—and some supervisors agree. On the Willamette National Forest, Supervisor Zane Grey Smith told me: "In the crunch of budget and manpower limits, we risk poor decisions with the potential of harm to the environment."

A stepped-up harvest can only increase the problems of men like Zane Grey Smith. Increased logging holds the certainty of thousands of miles of new roads, the major cause of erosion and landslides, and of growing heaps of slash, a fire hazard. It holds too the possibility of nutrient depletion on some soils, increased flooding and sedimentation in streams, and harmful effects on wildlife.

In Washington, D. C., I put the question to the man in the middle, U. S. Forest Service Chief John R. McGuire. He sat at the sturdy turn-of-the-century desk once occupied by Gifford Pinchot.

"We could increase the yield by perhaps half and still meet our other obligations, but only if we can make substantial long-term investments. By law, we are required to operate on a sustained-yield basis—to cut at a level that can be indefinitely sustained,



"With luck I make a living and have a little to spend on weekends," says Emery Seratt of Chester, Arkansas. He and his family belong to a vanishing breed, the peckerwoods—small independent loggers whose way of life fades before increasing mechanization.

Going into the woods soon after sunup, the Seratts fell white and red oaks, hickories and gums, then skid the logs out behind an old horse and roll them onto a truck (right). When a pile accumulates, they run the logs through their mill (above), rough cutting beams, boards, and railroad ties.



considering new growth and trees held in our forest inventory. Our allowable cut for 1973 was 13.6 billion board feet. It cannot go up until we begin planting more trees."

At the present rate of funding, Mr. McGuire said, the allowable cut is likely to go down.

The Forest Service is not master of its own budget. Timber-sale receipts—446 million dollars last year—are passed on to the U. S. Treasury and to local counties. For total appropriations—611 million in 1973—the service must present a line-by-line budget to the Administration and to Congress. In recent years the Forest Service has received up to 95 percent of the funds initially requested for its administration and sales, but only 40 percent of that requested for reforestation.

I asked Mr. McGuire about pressures to cut more wood without more funds. "The Forest Service will resist pressure from those who want to cut without worrying about the consequences. The laws are on our side. I don't believe Congress will change them, and I don't see popular support to change them."

The President's panel reported all obstacles to increased national forest yield could be overcome through increased funding by Congress, stronger policy emphasis on production, and greater efficiency and responsiveness to timber needs by the Forest Service.

Timber's Future Hinges on Our Decisions

It was to Thoreau's Maine woods that I journeyed to ponder what I had learned. It seemed a proper place: Here it had begun, the felling of the old growth. The woods are still lovely, though the white pine is scrubbier and less widespread. The loggers are yielding to great machines that toil under lights through the night. The Kennebec's spring flood still carries wood—not noble sawlogs but pulpwood that from a distance merges into a gray and glutinous mass.

Time has caught up with us: The last of the old growth dwindles a continent away. How shall we respond?

Clearly we now have the technology to grow more trees faster than in the past, and to make greater use of the trees at hand. By investing in such techniques, we could probably meet expected timber demands and hold lumber price increases not too far from the historical 1.7 percent annual climb.

Will we make these investments? The timber industry, long laggard in capital investment, is now moving to make up for lost time. The small lot owners remain dormant, awaiting price rises or financial assistance. The question of the national forests will be settled in the political arena.

We could, of course, fall back on a classic solution. Let prices run their course. As they rise, demand will fall to the level of supply. A cruel remedy, perhaps, but a sure one.

The decision lies in large part with Congress, and therefore with us. The next time you go down to the lumber store for a two-by-four, think about that. □

Light floods a redwood shrine that was already old when Columbus reached the New World. Today chain saws reverberate within earshot of Redwood National Park, symbolizing the competing demands on our ever-shrinking wilderness.



Damascus,

THE GUN TURRET slowly revolved; the cannon barrel came down to point straight at me. I froze behind the wheel of my car. I had driven up the Barada River valley, a few miles northwest of Damascus, and was making an ascent along a narrow gravel road toward An-Nabi Habil, the legendary hilltop Tomb of Abel, Cain's murdered brother. Now here I was smack in the middle of an encampment of Syrian troops, deployed around Soviet-built antiaircraft guns guarding the approaches to the Syrian capital. With Arab-U. S. relations at an all-time low, was I about to become a tragic victim of mistaken identity?

Then the Syrian friend who was with me smiled, and the troops roared with laughter. It was all a good old-soldier-type joke. I waved to the soldiers and we went on.

Not long after that incident, Israeli bombs did fall on Damascus. On October 6, 1973, at 1:30 p.m., Syria, in a surprise offensive coordinated with Egypt, sent 850 tanks across the 1967 cease-fire line and landed helicopter troops on Mount Hermon. The objective was to regain the Golan Heights, Syrian territory occupied by Israel ever since the six-day war of 1967 (map, page 516). It was not only an attempt to liberate territory rapidly being colonized by Israel, but also to regain *karamah*, Arab dignity, after previous ignominious defeats. Three days after hostilities started, Israeli planes bombed Damascus.

The Arab offensive failed. An Israeli counter-attack was halted by strong Syrian resistance at Sasa, 22 miles from Damascus. A United Nations cease-fire silenced the guns, and once again Damascus knew a tense sort of peace.

Damascus: The 12th-century traveler Ibn

Puzzled gesture parries a hard question
for a Damascus first grader in the region where the alphabet was born. The city helped teach the ancient world the A B C's of trade, and learned the X Y Z's of conquest from invading Arabs, Mongols, Turks, and French, who coveted this gateway between East and West. In the recent struggle with Israel, the Syrian capital once again felt the gusts of battle sweeping over the desert toward its green borders.



Syria's Uneasy Eden







Tromp, tromp, tromp of Damascus schoolgirls (above) forms part of their required paramilitary training. These teen-agers must learn drill, discipline, nursing, and some weapons handling. The 15-to-18-year-olds do not serve in combat, but they contribute to Syrian homefront preparedness.

Martial skills are displayed at twilight (left) as girls parade on May Day, bearing flags, torches, and a portrait of Syrian President Hafez al-Assad. The girls represent a spectrum of religious and ethnic backgrounds that makes Damascus one of the most varied human tapestries in the Moslem world.

Military garb worn to school (right) may give way after class to a more mod look. A leader among Arab nations in allowing women to vote, Syria has long recognized their changing role in contemporary society.



Jubayr called it "the paradise of the Orient." Mohammed was of like mind. On a journey from Mecca, legend has it, he refused to visit the city because he wanted to enter paradise only once, and that when he died.

Damascus: Where Saul of Tarsus became Paul the Apostle. Where Cain wandered in the oasis for days with the dead Abel on his shoulders, before burying him on a barren promontory above the Barada River.

Damascus: The Syrians' traditional Garden of Eden and site of the eighth-century Umayyad Mosque, fourth most holy sanctuary of Islam. The city is also a center of fervent Arab nationalism, and birthplace of the Baath, the Arab socialist party.

Damascus has always been a paradise in tumult. It has been ruled by Egyptians, Aramaeans, Hebrews, Assyrians, Babylonians, Persians, Greeks, Nabataeans, Romans, Byzantines, Arabs, Mongols, Ottoman Turks, and French. It learned to live with them all, and with Armenians, Kurds, and Circassians.

Religious Diversity Remains a Hallmark

The city still tolerantly embraces significant numbers of Jews. Its people include Sunni, Shiite, and Alawite Moslems, Dervishes and Druzes, and Catholic, Protestant, and Orthodox Christians. But the soul of Damascus is Islamic, as it has been for 1,338 years.

In the Umayyad Mosque, a thousand bodies knelt in unison, foreheads touching the carpets, bowing toward Mecca. The imam of the mosque, Sheik Mohammed Rashid al-Khatib, raised his face to the heavens and cried, "*Allah u akbar!*" and the congregation repeated after him, "God is great!"

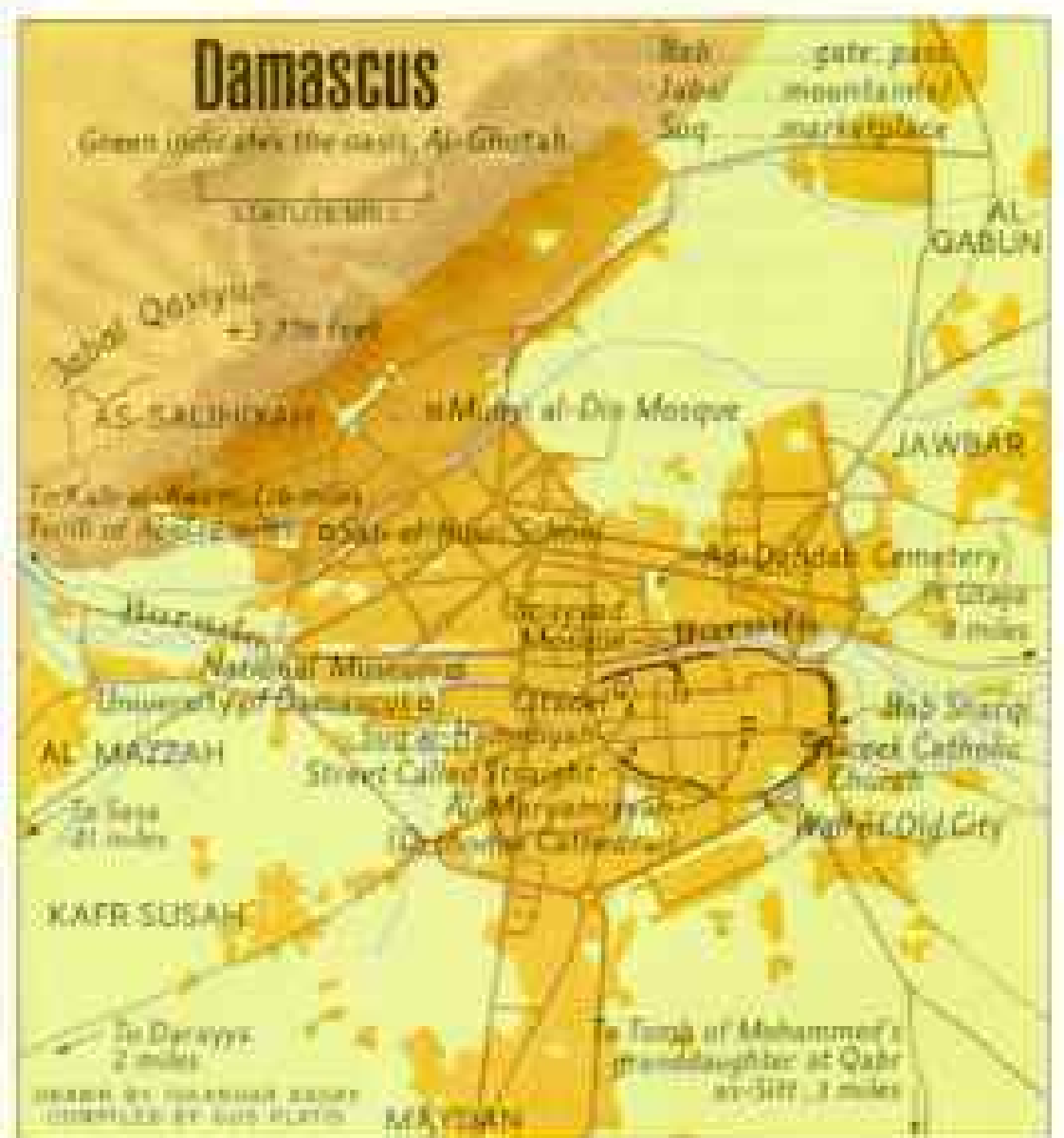
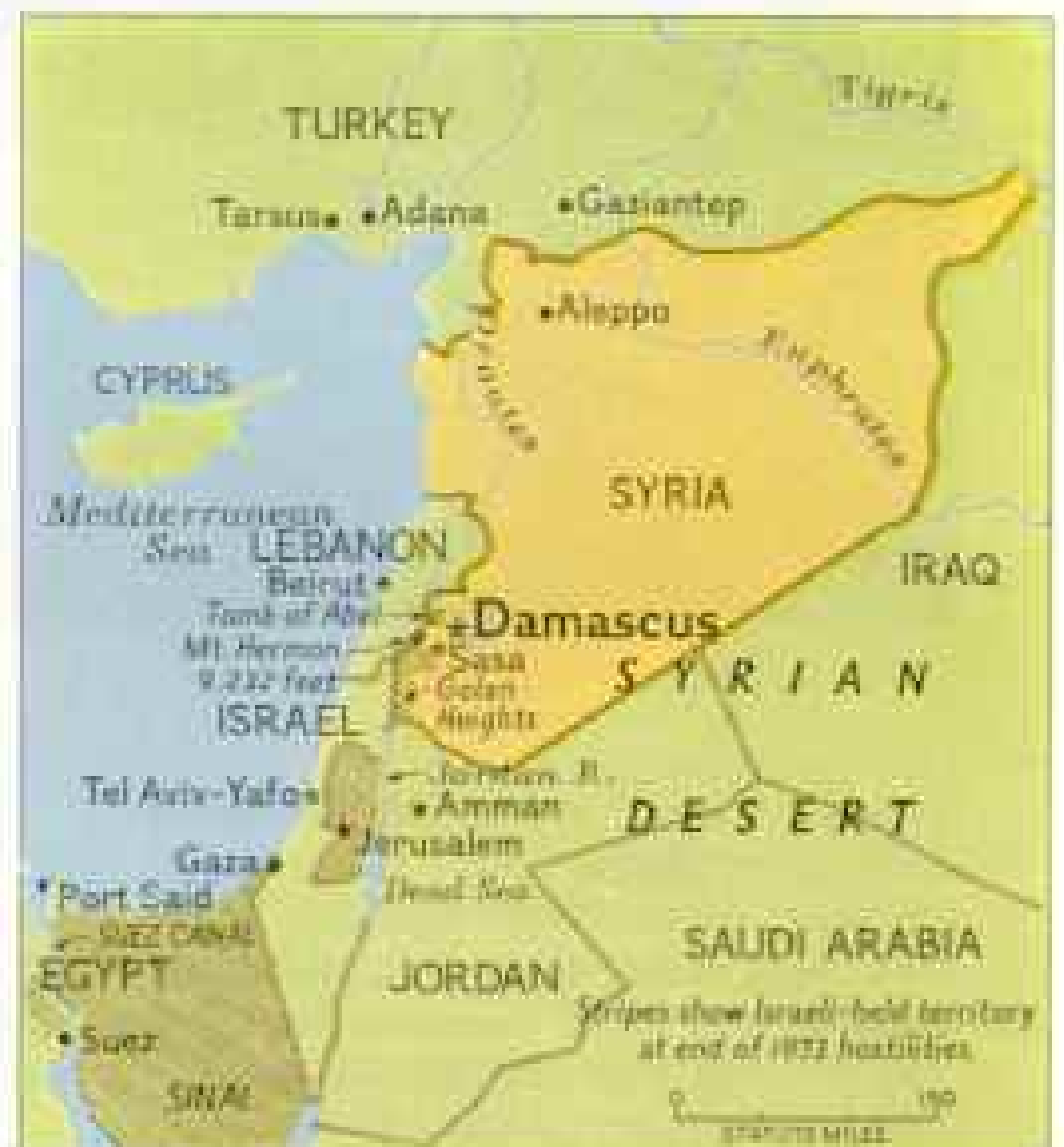
I was in the 145-yard-long prayer hall of the mosque to observe the Friday worship. Above me, pigeons and sparrows darted among the eaves and Roman capitals, around Byzantine cupolas and the mausoleum that allegedly holds the severed head of John the Baptist, a saint to Moslem and Christian alike.

"Today, as every Friday, the city is closed for observance of prayers," said Salahadine Bastati, of the Ministry of Religion, "and you will see on Sunday that most of Damascus will be closed for Latin Easter. And also on the following Sunday for Orthodox Easter. Our sense of religious coexistence is a strong part of our character."

The Jewish community in Damascus now does not quite coexist. Before the 1948 Middle East war and the emergence of the State of

Haze settles like the drifting centuries over one of the world's oldest cities—already ancient when the Prophet Abraham passed this way. When the Arab world cut a crescent of empire from India to the Atlantic in the eighth century, Damascus was capital of a dominion larger even than the Roman Empire at its height.

Minarets of the Umayyad Mosque, fourth holiest in Islam, spike the skyline. Beyond them the Barada River nourishes Al-Ghutah (**lower map**), a broad green oasis that has slaked the thirst and grown the crops of the city for numberless generations.









Debris of war litters countryside and city. When Syrian tanks advanced eight to ten miles into the Israeli-occupied Golan Heights last October, the Middle East's endless tale of war took a new turn. Arab honor and dignity, a victim of the 1967 six-day war, had been restored. Although much Syrian armor was eventually lost (**below**), the army's fighting ability, both on attack and in disciplined retreat, earned new respect—some given openly by enemy officers.

For the first time since independence from France in 1946, bombs fell on Damascus. Israeli jets, flying sorties against military targets, hit some civilian housing (**facing page**). Two major raids caused scores of casualties, but most of the action was confined to the skies, where Syrian jets and missiles streaked to the defense.

Following the cease-fire, the blue berets of U.N. peace-keepers appeared in the no-man's-land separating Israeli and Syrian forces. A Canadian Army major (**left**), on duty as an observer, scans the road to Damascus, helping to man the hot spot while diplomats try to solve one of the world's bitterest disputes.



BRUCE BARBER, MAGNUM (LEFT), AND ERIC ADAMS, TIME (BOTH ABOVE)

Israel; some 30,000 Jews lived in Syria. Today about 3,500 remain, 2,500 in Damascus.

Rabbi Ibrahim Hamra, 30, spiritual leader of Syria's Jewish community, told me: "We have many synagogues in Damascus. The main one is Al-Frange, the Synagogue of the European, and the oldest is the 2,000-year-old Jawbar Synagogue. We have 800 students in two schools, and many of our people go on to the University of Damascus.

"Our people, all Sephardic Jews, have been here for hundreds of years. Saladin, who saved Jerusalem from the Crusaders, had a Damascus Jew for a personal physician. Today we have rights like any other citizen."

It is true, as the rabbi added, that the Syrian Jews have "freedom of worship and freedom of opportunity," but they cannot leave Damascus without a permit, and are not free to emigrate. Syria feels that each new settler in Israel is the potential bearer of a gun pointed at Syrian soldiers. Perhaps 500 Jews have fled Syria since 1967, most across the border into Lebanon and from there into Israel. Reprisals against the families of those who leave, however, are rare.

One Damascene summed up the situation for me: "Our Jews leave because they want to be free, not necessarily because they want to be in Israel. If we have peace, they can be free, and then most will stay because Damascus is their home."

Oasis Once Ruled an Empire

The Umayyad Mosque, built on the site of a Roman temple to Jupiter, was originally the Cathedral of St. John the Baptist, and for a time was a symbol of the coexistence of faiths. Arab armies under the command of the famous Gen. Khalid ibn al-Walid took Damascus in 636, ending a thousand years of Western occupation. Thereupon the cathedral was divided into two sections, allowing both Moslems and Christians room for worship. In 705 the city's Umayyad rulers converted it into the present mosaic-rich, arcaded mosque.

The Umayyads ruled the entire Islamic world from Damascus for 89 years; from its verdant oasis they created an empire larger than Rome's, stretching from the Indus to the

Pyrenees.* But when the last Umayyad caliph was overthrown in 750 by a more religion-oriented faction led by the Abbasid family, the decline of Damascus began.

Outraged by the "improprieties" of the wine-drinking, fun-loving, poetry-reading, monument-building Umayyads, the Abbasids desecrated Umayyad tombs, neglected the city, and moved the capital of the Arab Empire to Baghdad. Thus began a series of subjugations to non-Damascene rulers that was to last another 1,200 years, ending only when the French pulled out in April 1946.

Hamid's Suq Sells the World's Wares

Suq al-Hamidiyah, largest and most famous of the Damascus bazaar streets, is also the main passageway through the Old City to the Umayyad Mosque. The suq is named after the oppressive Sultan Abdul Hamid II (1876-1909), one of the Ottoman caliphs who ruled Damascus from 1516 to World War I. Roofed by metal sheeting, it is a bazaar of narrow, tightly clustered shops selling everything from Muhammad Ali T-shirts and Japanese radios to valuable antiquities.

I walked down Al-Hamidiyah one morning with my driver, Said Shibli. It took us more than two hours to navigate the 600 yards to the mosque, weaving our way through crowds of bearded Druze sheiks, deeply tanned Bedouin, village women wearing bright-colored dresses, and soft-skinned, dark-eyed, miniskirted Damascene girls.

The sounds began to reach a crescendo. On nearly every corner, vendors beside brightly decorated carts advertised fruits and vegetables with cries famous for their originality:

"Walnuts. They have a white heart!"

"Almonds as big as cucumbers!"

"Cucumbers as tender as baby fingers."

"Figs as white as jasmine—as fresh as the cold morning's dew."

"Pomegranates—sweet, like roses—good for the newly weaned baby."

It was time for one of the day's five prayers,

* "The Sword and the Sermon," by Thomas J. Abercrombie, in the July 1972 *GEOGRAPHIC*, and a double-sided supplement map of the Middle East, portrayed the dazzling sweep of the Arab Empire.

Silver beacon of devotion draws Moslem pilgrims to the tomb of Al-Sitt Zainab, Mohammed's granddaughter, outside Damascus. Commerce also lures visitors to the city. Buyers and sellers still vie in the Street Called Straight, where Saul of Tarsus was given back his sight (Acts 9:11-18). The jumble of shops jamming the street has turned it into a narrow, twisting lane.





اللَّهُمَّ صَلِّ عَلَى مُحَمَّدٍ وَعَلَى آلِ مُحَمَّدٍ
وَعَلَى مَنْ تَرْضَى خَلْقَهُمْ
وَصَلِّ عَلَى مُحَمَّدِ بْنِ عَبْدِ اللَّهِ
وَعَلَى مَنْ تَرْضَى خَلْقَهُمْ
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اللَّهُمَّ صَلِّ عَلَى مُحَمَّدٍ وَعَلَى آلِ مُحَمَّدٍ
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وَعَلَى مَنْ تَرْضَى خَلْقَهُمْ

and the muezzins—prerecorded—added their calls to the voices of the hawkers and the rat-a-tat-tat of the three-wheeled motorized rickshas that moved goods from shop to shop through masses of pedestrians.

We left the suq, passing through the remains of the Temple of Jupiter. In the Old City, which lies within the ruins of Damascus's ancient walls, I met Mrs. Siham Tourjman. A liberated, petite, fiery blonde, Mrs. Tourjman said, "Damascus took me in her hands when I was a child. Now I take her in mine. She is my daughter, and I'm afraid a flood by the name of progress will take her."

She was talking of the Old City, known for the charm of its winding narrow streets, the hospitality of its inhabitants, and the richness of its architecture. Today, except for protected tourist sites and sacred places, the walled city is under a siege as threatening as that of Tamerlane, who sacked and burned Damascus in 1401.

Bulldozers Obliterate the Past

Mrs. Tourjman, who was recently widowed when her fighter-pilot husband was killed in a battle over the Golan Heights, fights her own battle for the Old City. "Developers here are in love with 'progress.' They are using bulldozers to tear down old buildings, break neighborhoods apart, and build roads."

I visited a threatened home. Two stories high, built around a courtyard with a blue-tiled fountain in the center and bougainvillea climbing the walls, it was a quiet oasis centuries away from the bulldozers threatening outside. Its owner said, "My family has lived here for over 200 years. Now a road will pass through here, and these tiles and stones will be only collector's items."

The Governor of Damascus, Yassine El Ostah, sees the development of Damascus differently. "We cannot have a healthy city without decentralizing, and without constructing new roads, buildings, and sanitation facilities. Our rate of construction is 16,000 housing units a year, but with all the rural immigration Damascus is getting, 50,000 are needed. We need a beltway to divert traffic around the city. We must move the animal and vegetable suqs to the outskirts."

The population of Damascus and its surrounding villages is almost 1,500,000, and the population density of Damascus itself has nearly doubled since 1960. The pressures for growth and development are great. But

Wrapped in piety, a woman touches the tiles of Muhyi al-Din Mosque (facing page). The names of Allah, Mohammed, and the earliest caliphs, successors of the Prophet, are worked into the design; Moslem tradition for centuries banned human images.



"Prescribed for you is retaliation," says the Koran. The ancient code of justice shadows the future of a Bedouin (above). He told the author that he and his family must wander the desert as fugitive scapegoats until his tribe can raise enough blood money to appease another tribe for a killing, done not by him but by another of his people.



many Damascenes see rampant development as a deathblow to the traditional, conservative religious neighborhoods, which are often at odds with the secular, socialistic nature of the present regime. The potential strength of this opposition was manifested last year when the Baath, after ten years in power, felt it prudent to add to the new constitution, "The religion of the head of state will be Moslem."

George Siddikni, now Syrian Minister of Information, told me: "Baath represents

renaissance—Arab renaissance—and our motto is Arab unity, socialism, and freedom. We are satellites to no one. But there are two major powers—the United States and the Soviet Union. If you Americans back Israel, do you expect us not to arm and ally ourselves? We stress land reform, education, and industrial development. But the continuous struggle against Zionism takes much of our resources; we cannot give up the defense of Arab lands."

Yet there is yearning for a settlement, too.



In Al-Ghutah, the Garden in the City, the name the Arabs give to the oasis around Damascus, I visited the home of the Grand Mufti of Damascus, Ahmad Quftaru, spiritual leader of Syria's Moslems.

The Grand Mufti, father of 12 sons by his one wife, lives in a large villa amid groves of fruit trees, grape arbors, brilliantly blooming jacaranda trees, and rows of rosebushes. We sat on a terrace facing the gardens, sipping tea and drinking fruit juices.

"I visited the U.S.A. in 1966 and presented

Outing in Eden finds a father and son resting alongside irrigated orchards where, as in Genesis, "grow every tree that is pleasant to the sight, and good for food." Damascenes traditionally relish excursions into the green Ghutah, which they identify as the garden of Adam and Eve.

lectures at 14 universities, speaking either about Islam or Palestine in the hope of improving understanding between Moslem and Christian," the Grand Mufti said. "Our time needs such men as architects or engineers who will also be men of religion, who will balance both sides, not neglecting either spiritual or material needs.

"Men of religion look at the three religions, Jewish, Christian, and Moslem, as being monotheistic, and therefore mutually respecting. If there are problems now, they are problems of state, not of religion. We as Moslems know our religion demands that we treat others as we treat our own. This is basic."

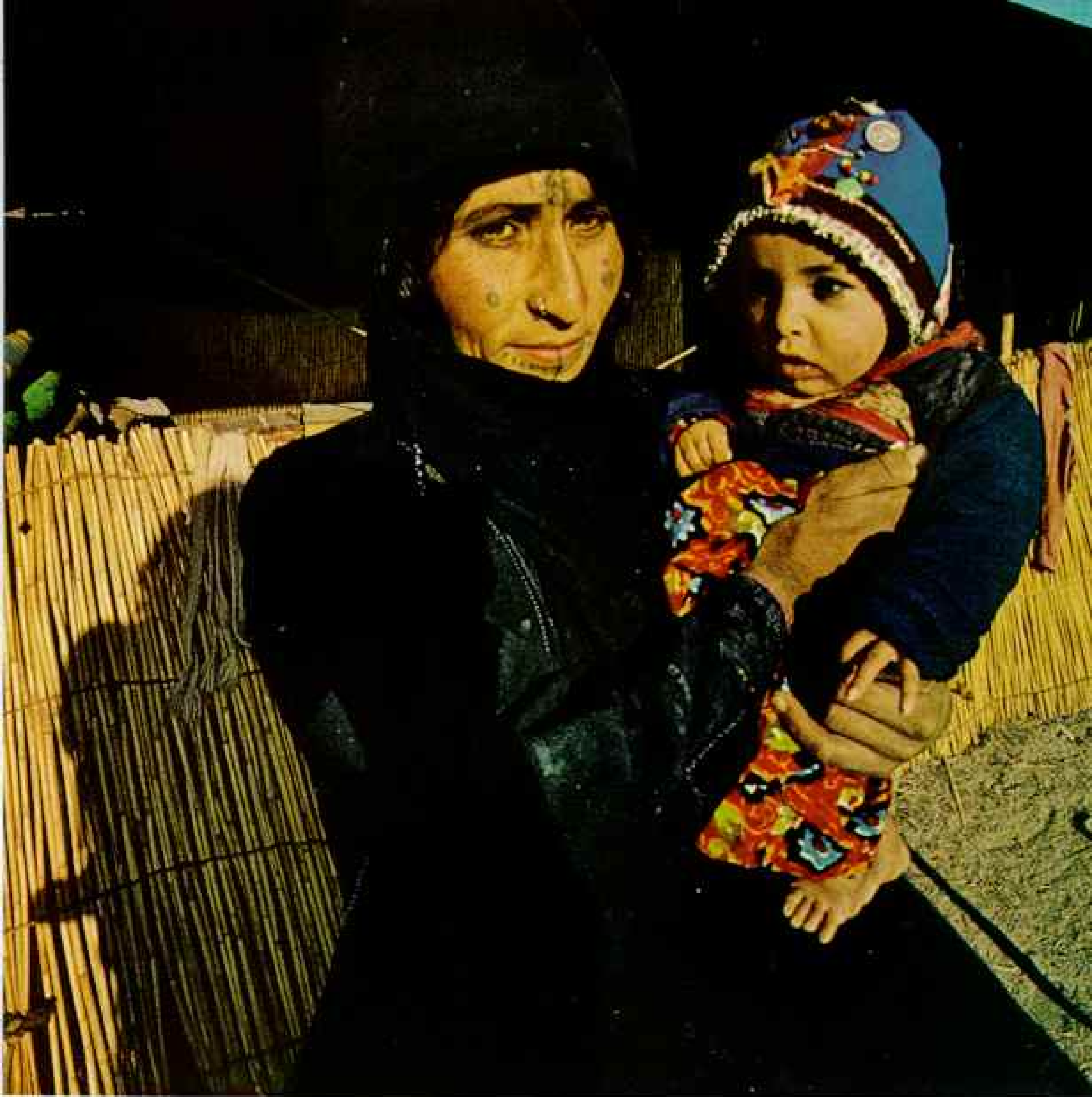
As I was leaving, he pressed a yellow rose into my hand, said "*Allah maak*—God be with you," and waited by the roadside until my car was out of sight.

City Where Saul Became Paul

In the city's Greek Catholic Church, I heard the blessing again, in another tongue. "*Kyrie eleison*—The Lord have mercy . . . In the name of the Father, and of the Son . . ." Redolent with incense, the silver censer swung high, filling the church with its pungency, while parishioners bent their heads to receive benediction from their Patriarch, Maximos Hakim V.

Easter Sunday. The church, built in 1865, was filled with more than 700 of the capital's 13 percent Christian population (page 528). Young matrons dressed in European fashion, black-clad peasant women clasping tattooed hands before them, old peasant men wearing white headdresses and headbands, and long-haired teen-age boys and girls costumed alike in unisex bell-bottoms—all pressed forward to receive Communion.

Christianity has been on the scene in Damascus since early in the first century. Saul of Tarsus, who had been the scourge of Christians in Jerusalem, was blinded by a vision of the Lord near the village of Darayya outside Damascus. He was led into the city to the home of a Christian named Judas.





Desert-wise gaze of a tattooed Bedouin mother (above) bespeaks the harshness of nomadic life and the shrewdness needed in bartering livestock for villagers' staples. Damascus once depended upon the Bedouin to guide the merchant caravans that filled the city's coffers.

By 3000 B.C. the city flourished as a trade center. Its roads brought spices from Arabia, linked the Nile and Euphrates, and fed the main trade route eastward. Later, its caravansaries lodged Moslems gathering for the pilgrimage to Mecca. After centuries of exploitation and neglect, Syria again puts its goods, including a bus-top load of washing machines (left), on the road.

There he was cured of his blindness by Ananias, who had also received a vision from the Lord: "Arise, and go into the street which is called Straight. . ." (Acts 9:11). Converted, Saul of Tarsus became Paul the Apostle, who later spread the word of God across the Roman world.

His conversion so outraged the Damascene Jews, who considered him a renegade, that he was forced to flee the city; he was lowered outside the city walls in a basket.

Street Called Straight Now a Maze of Shops

When I went into the Street Called Straight, accompanied by Dr. Afif Bahnassi, Director-General of Antiquities and Museums, it bore no resemblance to the original mile-long, 100-foot-wide arcaded thoroughfare known to the Romans as Doconomos.

"The original Doconomos is 15 feet below us," he said. "Most of the antiquities of Damascus are still in the ground. The city is so densely developed, there's no room to dig."

The street no longer seems straight. Nor wide. Shops pushing in on either side leave only a long, narrow, noisy, twisted passageway, covered by an arched metal roof. Under it pass not regal Roman processions but hundreds of buses, motorcycles, donkey carts, bicycles, and motorized rickshas. They carry cargoes as varied as Damascus damask, fresh vegetables from Al-Ghutah, and locally made refrigerators.

The street is filled with people of the oasis, their faces reminders of the many civilizations that have left their mark on Damascus over the centuries. The Mongol is here, the Western European, the North African and Arab, and the fair Circassian.

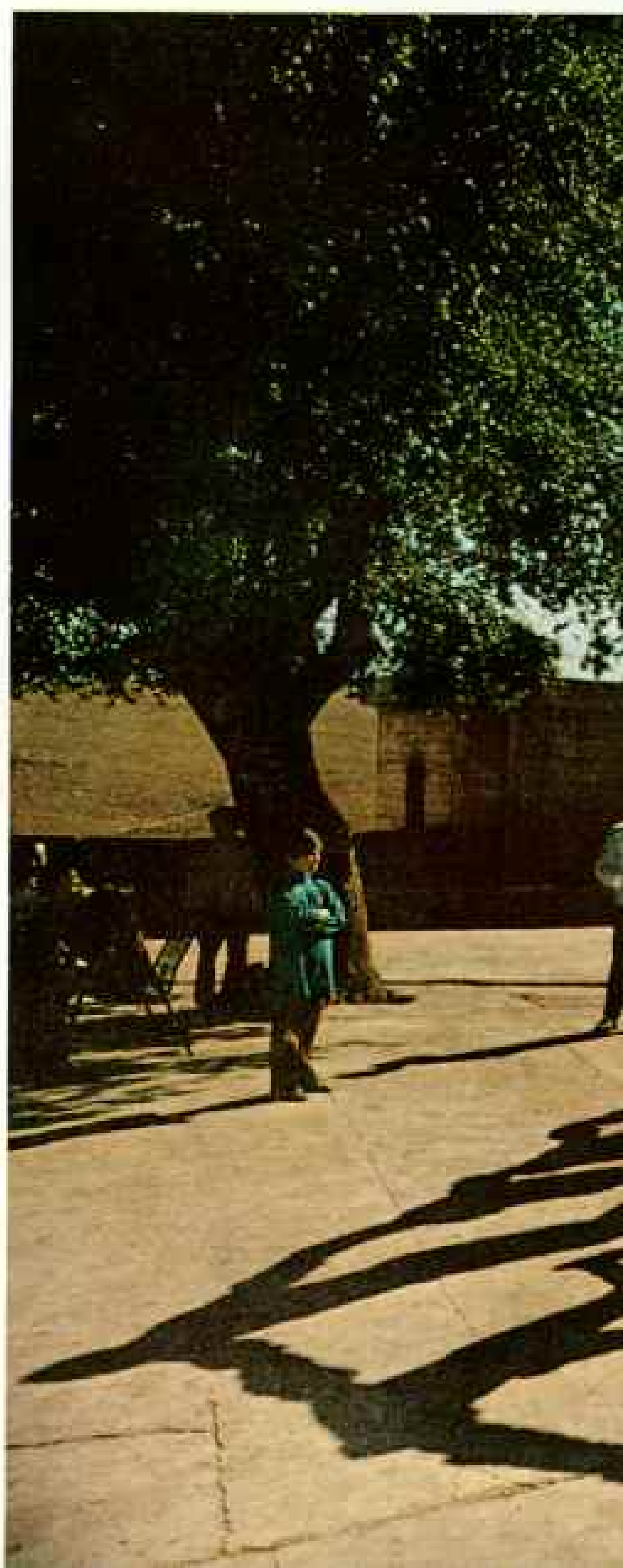
I left Dr. Bahnassi near Bab Sharqi, the Eastern Gate of the Old City, and went into a shop where *al-dahhiri*, the ancient art of brass and copper engraving and gold and silver inlaying, is still being done, mostly by Damascene Jews. A 16-year-old girl named Rebecca, working on a tray, overwhelmed me with her precision and faithfulness to traditional design. After two months' work, the finished tray would sell at retail for nearly \$1,000.

In modern art, too, Damascene artists are seeking out traditional Syrian themes. Painter Fatch Moudarres told me: "At first we all felt obliged to imitate Western art, but in 1955 I went back to the Assyrians for inspiration. In Europe they have a base for their art. So should we. We have special forms, unique



"Unto you your religion and unto me my religion!" counsels the Koran, the holy book of Islam, being read (top) by a worshiper in the Umayyad Mosque. A crypt in the left background, the faithful say, holds the severed head of John the Baptist, saint to both Moslem and Christian.

Islamic religion was spread by the sword, yet tolerance has always been a Moslem tradition. In Damascus, Easter finds Christians receiving Communion (above) in the Greek Catholic Church. Even as Syria launched its attack on Israeli troops, Sephardic Jews of Damascus observed Yom Kippur unmolested.



Victim of the first murder, as told in the Koran and the Bible, Abel was laid to rest by Cain, his brother and killer, in a rocky niche near Damascus, now enclosed by stone and dome (below). The site invokes the special reverence of the Druzes, whose theology mixes Islam with mysteries known only to initiates. Friday visits to the tomb include a feast that ends before sundown with young men linked in a version of the circle dancing common throughout the Middle East. Unlike the

Dervishes, whose steps whirl them into religious ecstasy, the Druzes dance just for fun.

Many Druzes who live in the region around the Golan Heights, where Lebanon, Israel, and Syria meet, find themselves caught in the cross hairs of international conflict. Though close knit as a people, the Druzes have contingents in both the Syrian and Israeli armies.



light, and brilliant colors. Out of them will emerge an imagery that is Syrian."

For centuries it was prohibited by tradition, though not by Islamic law, to represent people in art. Consequently the Arabs turned to other forms of expression, among them speech. "The beauty of man," states an old Arab proverb, "lies in the eloquence of his tongue."

In the mid-1940's a Damascene poet, Nizar Kabbani, shattered poetic tradition by writing in the guise of a woman to express his displeasure with the roles women were forced to fulfill in traditional patriarchal society. Now that the lot of women is easing, Kabbani exhorts them: "Tread! For your footsteps cause the pavement to bloom."

In the yard of the Sati al-Husri school, I could see footsteps that were not designed to make pavements bloom. Fifty teen-age girls, all in khaki, goose-stepped in ranks (page 515). I asked Mrs. Omayya Ghebe, headmistress of the government-run, all-girl school, what they were doing.

"They are in the Futuwah, the Youth Corps—somewhat like your own ROTC."

She went on: "Our girls now have much stronger personalities, have no fear of their teachers, discuss everything freely, and demand and receive more freedom and responsibility from their families."

Women's Lib Changing the East

This opinion was confirmed by Mrs. Omayma Diab, member of the executive committee of the Syrian Women's Federation, an arm of the Baath Party. "Women are no longer willing to accept the passive roles men previously thrust upon them," she said.

"When the Baath took power in 1963, it found that women needed as much organizing as peasants or workers. Now we are members of parliament, doctors, lawyers, and engineers. Day-care centers have been established for working mothers, who get equal pay for equal work, and women now have more control over marriage and divorce. More girls are refusing arranged marriages. When they marry, they have fewer children. The Koran allows four wives, but polygamy is finished. Of 11 men in Damascus who have four wives, six are over 60."

"We may not be burning our bras," an aide to Mrs. Diab added, "but our Women's Liberation Movement is 'right on!'"

Despite such sentiments of modernity,

much of the daily life of Damascus still moves in timeless ways. At the Tomb of Abel, west of the city, I found a party of Druze men singing and dancing before it (page 529). Abu Assaf, keeper of the tomb, welcomed me and explained that Abel is a saint to the Druzes.

"Groups come here every Friday," he said, "bringing sheep to slaughter, cook, and eat. Then, after feasting, the old men play backgammon, the women wash the dishes, and the young men dance and sing love songs. They leave before sunset, to get home for *maghrib*, the evening prayers."

The Tomb of Abel overlooks the Barada River, which waters Al-Ghutah, green with olive groves, fruit trees, grape arbors, and vegetable gardens. For centuries the Barada, Damascus, and Al-Ghutah have been economically interdependent.

"Damascus, for all its man-made beauty, is the gift of the Barada," said Sami Younis, of the Ministry of Information. "Where the Barada flows, there is life. Where there is no Barada, only the Bedouin can live. This river was known to the Greeks and Romans as Chrysorrhoas, River of Gold, and it is on this thread of gold that Damascus has survived. In Al-Ghutah the Barada separates into six main channels and fans out into an oasis of more than 100 square miles. Here the waters are fully exploited. None is wasted."

Yet my old friend Ali Alkum, *mukhtar*—headman—of the village of Kafr al-Awamid, was worried about those fully exploited waters. When I joined him for breakfast one day in his modest three-room stone house, he said, "It has been a dry year, and many people have suffered bad crops."

The unfortunate harvest seemed to have little effect on the meal we shared. We sat in his sunny courtyard, and the sixtyish, blue-eyed, burly *mukhtar* urged me to partake of his "simple peasant breakfast." It consisted of bread, olives, homemade cheese, fresh figs, ground thyme, apricot jam, butter, tea, and coffee. "Eat before working, not before sleeping," the *mukhtar* advised.

We chatted about figs—unirrigated trees give sweeter fruit; women—it's good to see the girls of Damascus in short skirts walking with their boyfriends, but it won't do for villages, where change must be more gradual; and government—more people are needed who know about wells and pumps. "However, Allah will provide," the *mukhtar* concluded. "Here, have another fig."

Among the Damascenes, good food makes problems bearable, and their cuisine is famous throughout the Arab world. A favorite Arab nickname for Damascus is Al-Matbakh, the Kitchen. Wherever I went I was fed meals, sweets, and fruits, all of surpassing freshness and richness. The most notable dish, *fattet mahdous*, is to Damascus what chili is to Mexico. A mixture of *laban* (yogurt), eggplant, and bread, it is a favorite meal of Arabs, and renowned throughout the Middle East. During the six-day war in 1967, the Israeli radio was heard to demand, "Women of Damascus, prepare fattet for us. We are coming."

Last Stop Before the Desert

The eating—and the living—are not so good on the edges of the oasis. "We are the last stop," said Mukhtar Ali Hussein of Utaya, at the eastern end of Al-Ghutah. "Beyond is Al-Sahra, the desert, then Baghdad, 500 miles away. This is where the Barada dies."

The people of Utaya, like many at the edges of Al-Ghutah, grow cotton, which needs little irrigation. "When the crops are good," said Ali Hussein, "there are many marriages in the village." But though the government had been helping with crops and wells and improving communications, the future seemed uncertain. There had been no rain recently, the Barada had dried up a little earlier than usual, young men had gone to Damascus looking for work, and fewer young women were getting married.

I went to the desert to visit an encampment of Bedouin, whose camel-hair tents were clustered in a depression five miles east of Utaya. The tribe's chief, Sheik Khalid ibn Mohammed, dressed in boots and flowing robes, greeted me and led me to his tent, where we joined a group of tribesmen gathered round an early-morning fire. In a corner of the long narrow tent, I noticed an aged but obviously lovingly tended motorcycle, minus lights and

Fetters of tradition still bind everyday Syrian life, despite the displays of movie posters (above). A variety of dress is tolerated among the young, but the attire of conservative Moslem matrons reveals no flesh between ankle and wrist. Here shoppers haggle and giggle in one of the city's crowded suqs (right).





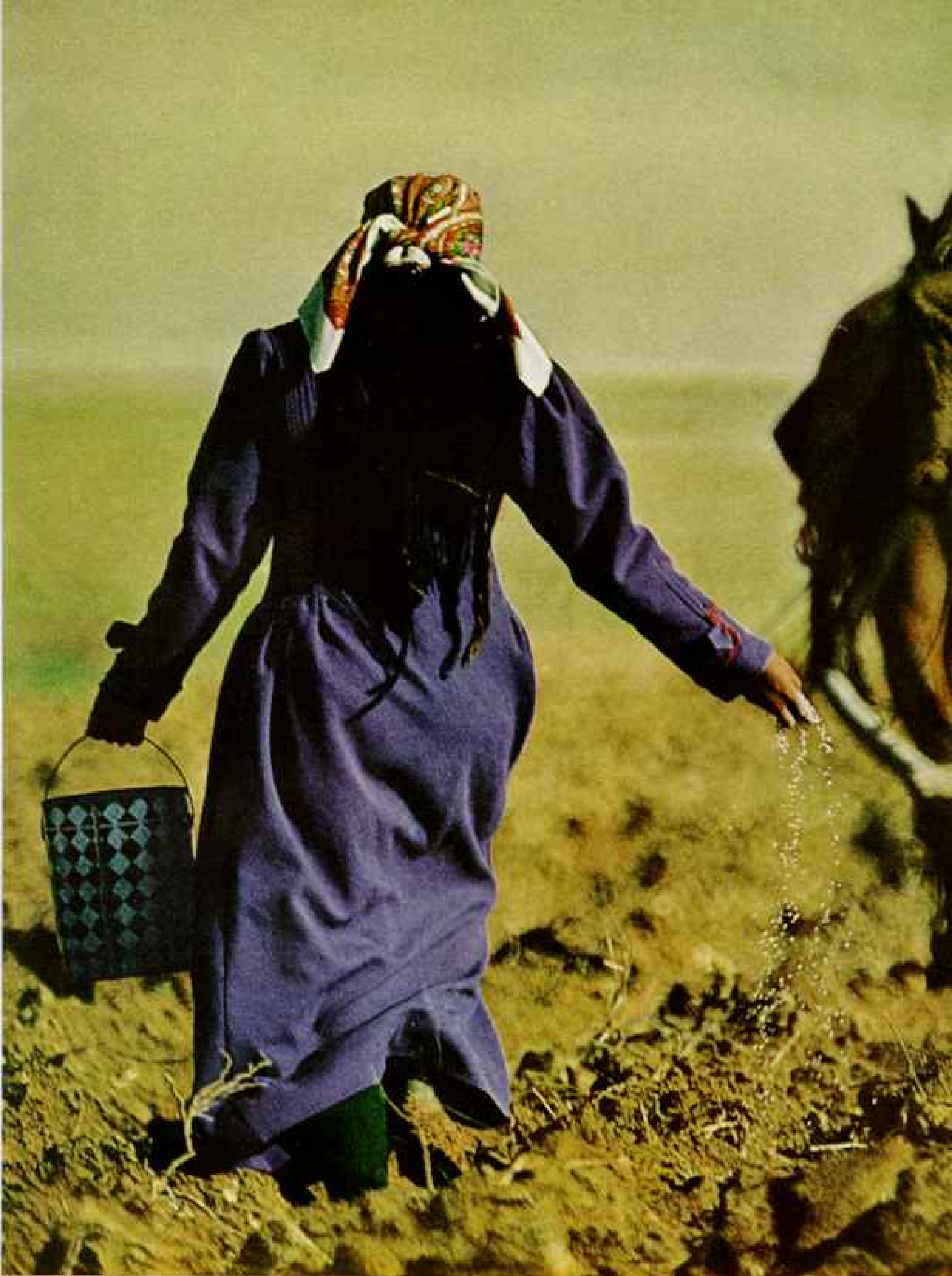
Both fingers and feet work for Damascene craftsmen. Hands deftly splice broken yarn from one of scores of spindles feeding a carpet loom (left).

Practiced toehold on steel helps guide the cutting tool as an artisan using a hand-driven lathe turns out chess pieces, mostly for the tourist trade (below).

The warp and woof of generations meld in the skill of Mohammed Ali Taibi (right) and his assistant as they hand-weave rugs in the quarter called Maydan.

The finest of Spain's Toledo steel was crafted by a technique refined in Damascus, and damask, a lustrous patterned fabric, takes its name from this city of fine workmanship.





Wooden plow turns Syrian soil in the endless cycle: "... a time to plant, and a time to pluck up that which is planted; a time to kill,



and a time to heal; a time to break down, and a time to build up . . ."—ECCLESIASTES 3:2-3

fenders. Sheik Khalid told me he used it when he needed to go to Damascus or Utaya.

"Bismi llahi r-rahmani r-rahim—In the name of Allah, the Compassionate, the Merciful," the Arabs intoned as we began a simple breakfast of yogurt, bread, and coffee.

"Where we are sitting—where I have pitched my tent and graze my sheep and goats—used to be a lake filled by the Barada," Sheik Khalid said. "Now there is no water. No rain. No grazing for the animals so they will give milk for our children. We slaughter them for sale in Damascus so we can have butter and yogurt. When the weather is good to us, we can wander as we wish. When it is bad, we must stay close to Damascus, because we need her."

Strife Remains a Fact of Life

By nature peace loving; by politics an avant-garde of the Arab world, the people of this once-great desert port—the cross-roads between East and West—yearn for peace but have most often lived amid strife.

Since independence in 1946, Syria has been racked by seven major military coups, the latest in November 1970, led by Lt. Gen. Hafez al-Assad. Now President, he placed priority on growth and development and soon established enough stability to propose a new constitution and election of a parliamentary assembly. In 1973 both measures were adopted with wide popular support. Nonetheless, the Syrian commitment to the Palestinian cause and the liberation of all Israeli-occupied Arab territories has never wavered.

A shopkeeper in Suq al-Hamidiyah told me, "We will fight as many times as necessary to regain our lands. Remember our battles against the French—and the Turks. We must fight. We have no choice."

So last October Syria went to war again—and lost the battle, with the Israelis closer to the capital than ever before. But the Syrian sense of karamah, Arab dignity and honor, was restored; they had proved they could fight without fear and with modern weapons.

The war came to a halt at the end of the holy month of Ramadan, a month of fasting. Battle-weary soldiers returned to Damascus to join their families and pray in the Umayyad Mosque. Another peace was settling as families gathered at sunset to end their fast. But the oasis is still turbulent, the conflicts unresolved, and Damascus still faces an uncertain future. □



In Touch With Nature

“**I**T SMELLS LIKE CHEWING GUM.”
“It tastes bitter.”
“It feels kind of moist.”

Thus a group of 10-year-olds describe a sprig of wintergreen, a not-quite-ripe blueberry, and the earth on a forest floor.

“Acclimatization,” they call it at Towering Pines Camp for boys and neighboring Woodland for girls, at Eagle River in Wisconsin’s lake country. Here campers do more than memorize the names of birds and trees. No longer do they uproot wild flowers and capture insects for soon-to-be-discarded collections. Instead, the youngsters don “swamp clothes” and crawl through a bog, wade a marsh, snorkel a lake. They pretend to be raccoons, tree roots, fish.

“I can feel a sunny spot,” exclaims Molly Buckingham (left) as she walks blindfolded from the cooling gloom of the forest into the warmth of a glade.

“How does that spider walk on the water?” wonders Doug Brandt. His palm placed gently on a lily pad (right) explains the surface tension of water better than any book or lecture.

Having people learn to become part of nature—to merge with the environment—is the aim of acclimatization, the brain child of Steve Van Matre, associate director of Towering Pines. Steve’s book on acclimatization has proved a best seller for its publisher, the American Camping Association—a sign of the program’s success.

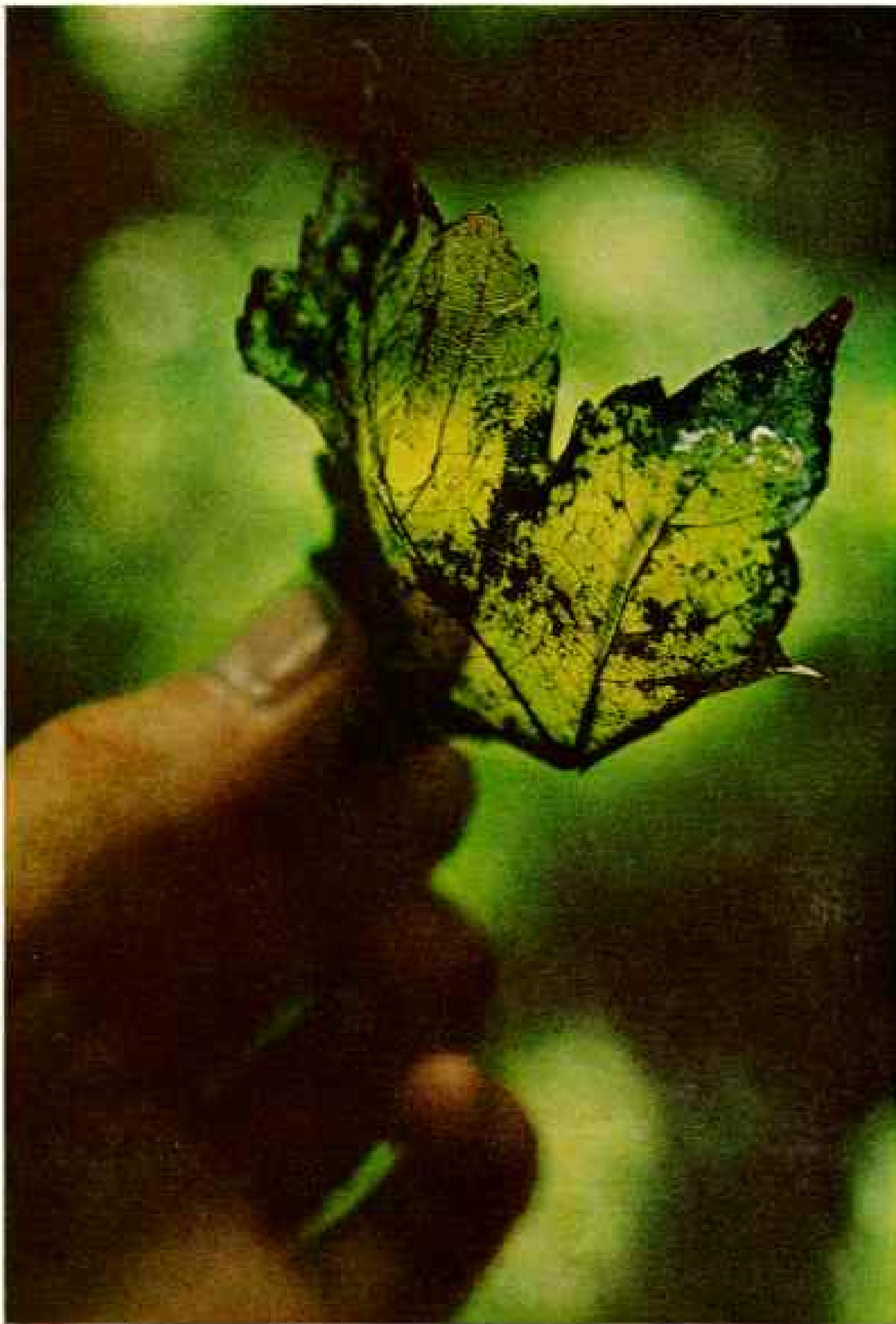
“It’s not showing, but sharing and feeling—a heightened awareness and respect for the wholeness of the environment that we are seeking,” writes Steve. “What do we care if the camper fails to remember the name of a wild flower. Does he remember its fragrance, the texture of its leaves? Does he know where to find it? And does he know, not because someone told him he should know, but because for him it is a thing of enjoyment and beauty?”



Text by ELIZABETH A. MOIZE

Photographs by STEVE RAYMER

BOTH NATIONAL GEOGRAPHIC STAFF

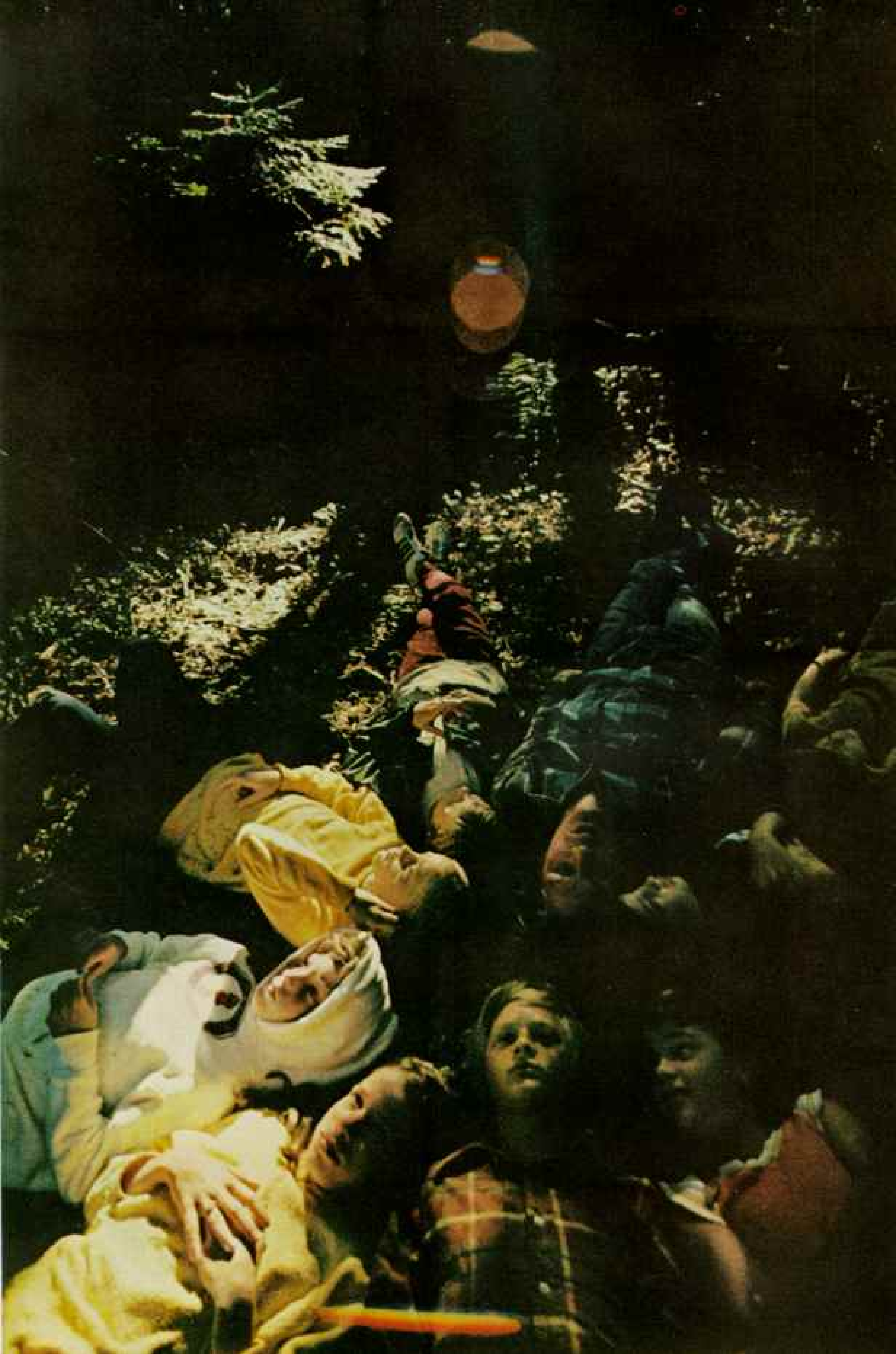


“Feel the earth...penetrate the woods with your eyes....”

LIKE SPOKES OF A WAGON WHEEL, campers lie shoulder to shoulder (right), keeping in touch with each other as they learn to understand the forest. “Let’s compare it to an apartment house,” the counselor suggests. Each boy and girl reaches down into the basement to explore the foundation, which is soil; they examine the fuel supply—a decomposing leaf (above). “What lives on the ground

floor?” “Deer. Foxes. Small plants and trees.” “What about the lower stories?” “Chipmunks and squirrels.” “The upper floors?” “Birds, of course.”

To look at the commonplace from a fresh perspective is a major goal of acclimatization. Each camper rides an elevator, actually a bosun’s chair, to the mezzanine, about 15 feet above the first floor, to get a resident’s-eye view of the community.





*“Feel the
out-of-doors...
absorb its
various moods.”*



AN UNRIPE CRANBERRY TASTES SOUR. A raccoon tickles. Sphagnum moss feels spongy. Disturb a patch of slime mold and watch it quickly grow back together. Campers discover firsthand how things taste, feel, and react.

The raccoon resides in the camp zoo, a community of partially tame creatures. Boys and girls learn to know a fawn, a ferret, a frog, and a baby robin.

Jim Wells, leader of the acclimati-

zation course, rubs moss on his cheek (lower left), and the campers do the same. "Now we have the bog on us. We're part of the bog," he suggests. To try to understand what it is like not to have a thumb opposing their other fingers, Jim and the campers tape theirs down and crawl on all fours, coming face-to-face with a spider web, an insect-eating sundew, and a slime mold, a subject for the exploration of untaped fingers (below).





*“Let’s see this
area as an
animal might...
down on all fours.”*



HOODED IN BLACK to heighten their sense of touch, campers crawl through shallows (left), patting the lake bottom as if they were raccoons in search of food. One boy dons a face mask (lower left) and is amazed to find insect eggs clinging to the underside of a lily pad. Others pretend to be deer bounding over a bog (below).

In five days the campers have examined a forest, a marsh, a lakeshore,

and learned how an insect, a plant, a bird contribute to the whole. On the last day each camper is given a block of earth and asked to take it apart to try to determine where it came from and what it's made of.

Finally they are asked to put it back together. And suddenly they understand: Something that has taken so very long to put together should not be taken apart heedlessly. □



Drought Threatens the

A BABY IS BEING BORN in the Sahara night, near a lonely desert well in Niger. The mother has been crying out in pain for hours.

I cannot sleep, and I can see that my companions, like me, have their eyes on the velvet sky. A full moon has just popped above the dark horizon, and it extinguishes the stars like fairy lights at the end of a feast.

Lying near me on the soft sand are my 15-year-old daughter, Barbara, and my 13-year-old son, Eric. A little farther off, our Tuareg guides and interpreters, Mohammed and Hamid, are wide awake. In their three tents fifty paces away, our Tuareg hosts are not sleeping either.

Piety Rests Lightly on Tuareg Shoulders

Every few minutes the woman in labor cries mournfully, "*La ilaha illa Allah; wa-Mohammed rasul Allah*—There is no god but God; and Mohammed is His Prophet."

"Hamid," I ask, "is Raisha's time near?"

"Yes, I think so," he answers. "And she may well pray now; she has never done so in all her life."

"Neither have you, I suspect. Since you joined us yesterday, I have not seen you bow once in the direction of Mecca."

Hamid is relaxed about his faith, as are many Tuareg. His people's name, according to one theory, means "the abandoners" (implying they had abandoned religion). It was given to them by Arab invaders of North Africa in the Middle Ages because the Tuareg were pagans. Though long converted to Islam, many still show little religious fervor.

Hamid responds to my accusation with an embarrassed smile. He pulls his blanket over his head, pretending he can sleep in spite of poor Raisha's cries. Our hosts and their children talk softly in the dark. Suddenly I realize that Raisha's cries have ceased.

The people I am visiting this night have been my friends for years. Since I first met the Tuareg in 1957, I have not been able to live happily away from them for long, and

have returned many times to share their campfires and their tents, their ceremonial tea, their joy in a successful journey with a salt caravan.*

But on this visit I share their frustration and bewilderment as they confront a foe against which their bravery avails them little, an enemy that could well put an end to their centuries-old way of life. A terrible drought plagues six nations that rim the desert's southern edge: Senegal, Mauritania, Mali, Upper Volta, Niger, and Chad (map, page 547). Some have not seen meaningful rain for seven years. Also stricken are parts of Nigeria, Cameroon, and Sudan. Rainfall has been sparse even in distant Ethiopia and Somalia.

The Sahara has devoured thousands of acres of once-productive farmland. Larders are empty, for even the seed grain has gone to feed hungry families. But a massive international relief effort has brought new seed and grain to avert mass starvation. If Allah wills it, and the rains are good, farmers may begin a slow recovery.

To the nomadic Tuareg, the decimation of the herds that made them mobile has been a crushing blow. Dazed Tuareg men gather in the towns and cities to seek jobs, and they gaze glumly at a noisy, bustling world they would never inhabit willingly. Families huddle in relief camps there, existing on the grain and powdered milk that is airlifted in. Some Tuareg have committed suicide, some have gone mad.

Drought Hastens Inevitable Change

Even before the drought, the winds of change sweeping Africa had eroded some of the old nomad ways. Arab and European fashions had crept into the Tuareg costume, the famed indigo robes of a unique culture. In some places I have seen tents of plastic instead of leather, and water bags fashioned from old inner tubes rather than goatskins.

Such change is the reason my children and

* "I Joined a Sahara Salt Caravan," by Victor Englebert, appeared in the November 1965 *GEOGRAPHIC*.

Tuareg World

I sleep tonight near I-n-Abanrherit Well. I have long cherished a dream for Barbara and Eric: I have wanted them to know, before the old ways have vanished, the beautiful desert people I love so much.

And so I have taken my son and daughter out of their school in New York for a while, and now, with the aid of a Land-Rover shipped from Belgium (we were all born there), we are in the heart of the Sahara, 1,200 miles south of the Mediterranean, and our ears are straining to hear the cries of a new babe pierce the stillness of the desert night.

Nomads Ignore National Boundaries

A Berber people, the Tuareg are predominantly tall and fair skinned, though intermarriage has resulted in darker hues among some groups. The Arab invaders of the 7th and 11th centuries and the Europeans who later ruled most of North Africa feared and respected the Tuareg as fierce warriors; they were never truly conquered, but only subdued by modern weapons.

Today they number about 300,000, organized into several political confederations that have nothing to do with the boundaries of Sahara nations. Our friends of I-n-Abanrherit belong to the confederation of Ahaggar.

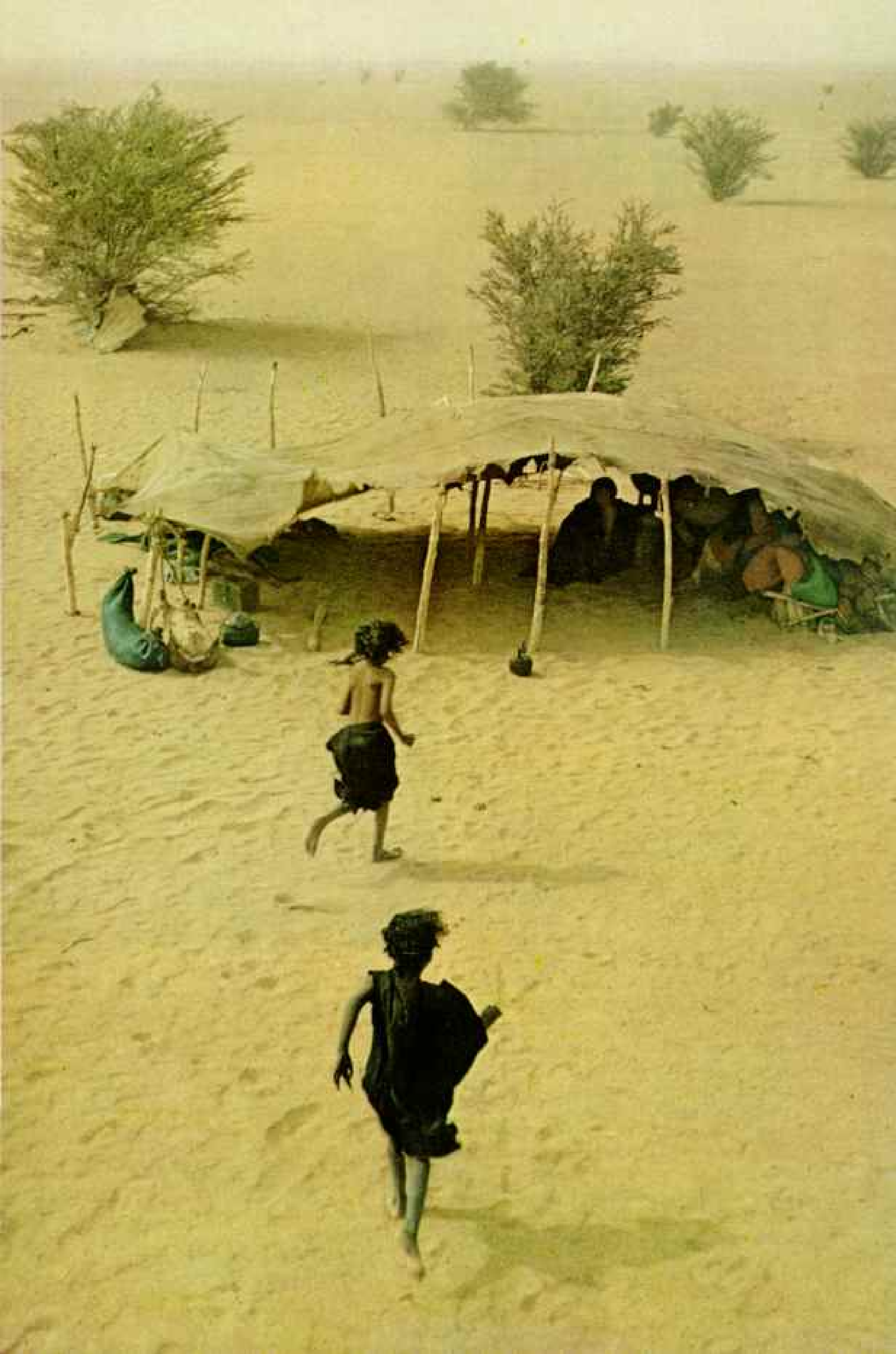
Tuareg society, established long ago by force, is feudal in character, with nobles—*imaheren*—the topmost caste, followed by clergy, vassals, artisans, and slaves, who are now merely servants and laborers.

Mohammed and Hamid are not nobles, but of classes a bit below. We found them 140 miles southeast of I-n-Abanrherit in Agadez, a market town on the southern edge of the Sahara in Niger. I was looking for the Tuareg companion of my last Saharan journey. Although once I was almost fluent in the Tuareg language, Tamahaq, the years and new tongues I have learned have erased much of it, and I must now have an interpreter.

But my old friend had gone away to work in a uranium mine, I was told, and when Mohammed came to me and asked if he could



Destiny in doubt, 19-year-old Raisha and her daughter live under the shadow of a drought that for seven years has plagued the southern Sahara. For centuries, the wandering Tuareg have eked out a livelihood from the unsparring desert. Now the nomads watch helplessly as pastures fail and livestock dies, endangering their proud and ancient way of life.





Sun-toughened youngsters streak toward the leather tent of the camel herdsman Bukush (left) to announce the arrival of visitors. The author, on this sixth trip to the arid Sahara, brings his own two children to give them an appreciation of Tuareg ways before old customs fade.

At the camp, northwest of Agadez, new friends teach 15-year-old Barbara to play their drum, a goatskin stretched taut over a wooden mortar (above). A 6-year-old searches Barbara's head for lice, a common pastime—and is surprised to find none. Thirteen-year-old Eric (right) helps a Tuareg woman pull a dead acacia tree apart for firewood.

Life seems normal, yet something is desperately wrong. The camels must forage far from camp. There is no milk, the nomads' normal thirst quencher and food, and only millet for porridge. The drought—most severe along the Sahara's southern edge (map)—has reached Bukush's camp.





During the interminable wait for rain, a maiden known as Bikkelu grooms her aunt



Sata's hair in a breezy desert boudoir.

serve us, I was pleased to engage him. As for Hamid, he tried to sell the children silver jewelry of his own manufacture and wound up by selling himself.

"Please ask him to go with us," they begged. I did, and he accepted.

Merry, marvelous companions, the pair brought joy into our lives from the outset. They showed Barbara how to make a frayed-twig toothbrush that is as good as any commercial one. They taught Eric how to crack a rock-hard sugarloaf with a frail tea glass.

When the children wanted to know the length of Mohammed's turban—his *tagilmust*—he did not hesitate, against normal Tuareg male custom, to bare his face as he unwound the great headgear to its full twenty feet. Delighting in the children's wonderment, the two men put their feet into the cook fire until even soles turned to leather by years of plodding in the sand must have felt pain.

Now, with the consummate ease that also causes the children to marvel, they roll up in their bedding by the fire, they smile, they bid us good-night, and they are instantly asleep.

Barbara Basks in the Glow of Gratitude

As the sun is rising, Bukush, husband of Raisha, comes to light our fire and prepare our tea.

"Is the baby born?" asks Barbara.

"Yes," Bukush answers with a smile. "And I think we may call her Barbara. You have brought us luck. Raisha had been suffering for days when you arrived last night; you brought her deliverance."

The beautiful pink baby is lying unwashed on a piece of cloth, already covered with a film of sand, already the prey of flies. If she survives, she will be another tough Tuareg specimen. Two knives are planted in the ground at her head to protect her and her mother against demons.

Demons? There are greater enemies of these people, including, at times, themselves. Visiting the Iullimiden tribe south of the Sahara, I have sorrowed in a sun-seared world's end where no animal life moved, not even a bird. Too much of the brush had been cut for animal forage by desperate herdsman, allowing the sand to move in and cover the dead roots. Nothing may grow there for years. If the herds are rebuilt, what food can they find, now that the trees are gone?

This is the Sahel. Stretching across West Africa, it is the zone where the savanna and





HOMeward BOUND with precious cargo, donkeys lug water bags—tan goatskins and sections of truck inner tubes—from a well two miles away. Though pastures die for want of heavy rains, deep wells still yield drinking water.



"Hauntingly beautiful, like the Saharan night," the author describes melodies drawn from an *amrad*, a leather-covered calabash strung with horsehair. Bikkelu's tunes hark back to a time when the Tuareg ruled the desert, leading great trade caravans and amassing fortunes from lightning raids. Now, as then, women help perpetuate tribal culture by passing to daughters the distinctive musical traditions.

"Like this..." Mohammed, the guide, teaches Eric how to wind the *tagilmust*, the turban-veil worn by all Tuareg men before strangers, women, and especially in-laws. Strictest practitioners even pass food under the cloth rather than show their mouths. As more men flee the desert to seek work in towns, some abandon the veil—a fateful step in the gradual disintegration of age-old social patterns.

desert struggle for separate existence, and the desert has been winning steadily with the help of the demons—and the nomads.

The morning has gone quickly, passively. The tents are clacking in the wind. Sand blows into our eyes, buries our luggage, and obscures the sky. No life stirs in the camp except the Tuareg children we see playing soundlessly inside the Land-Rover. We are at the end of March, the season of sandstorms.

Laughter Conceals Growing Fear

A truck loaded with thin sheep, and bulging with tents and collapsible wooden beds, pauses so its passengers can rest.

"Where are you going, and why do you move?" I ask the travelers over sweet tea.

"Because," they say, "our animals are dying of hunger, and we fear to die the same way. We go to Tamanrasset in Algeria, where we will find jobs, *Inshallah*."

They do not complain. It is not proper for a Tuareg to do so. They laugh and tease each other as the Tuareg always do, and they are

still smiling as they go on their lonely way.

On this night our hosts are also smiling, although, because the animals are so undernourished, the camp does not have the milk and rancid butter that goes so well with millet porridge. A woman produces a *tendi*, a mortar over which a goatskin has been stretched to form a drum. The women beat the *tendi* and dance and sing and clap their hands as joyously as if all were well and normal in the Saharan world.

The days pass. When there is no wind to swirl the sand, the sky is blue and mirages define the horizon. Sometimes we feel we are surrounded by water, as on an island. It is very hot. Irrationally, I am tempted to go to the horizon and jump into the water.

Mostly there is wind; sandstorms obliterate the sky. The voice of the wind, the hiss of driving sand, the flapping of tent material oppress me. I imagine the movement of evil spirits. Only the voices of Eric and his Tuareg playmates drive away these ghosts.

With the Land-Rover we make our friends'



chores easier. We carry their water from the well and search for firewood. We take them on visits to neighbors.

On one of our wanderings we see a gazelle. With us rides a handsome young man of the Taitoq tribe. His eyes light with craving for meat, which he may not have had in months.

"Oh, catch this animal!" he cries.

Tears Decide Outcome of the Hunt

I press the accelerator and we roar away in pursuit. Barbara digs her nails into my arm.

"Let her go," she pleads.

"Faster!" begs the Taitoq.

The gazelle tires. We gain.

"Now! Now!" screams the man of the desert. "It is the time to go faster and catch her."

His joy is boundless, but Barbara's face is wet with tears.

I lie as I slow the Land-Rover.

"The sand is stopping me. It is over."

The gazelle staggers away into the desert. The young Tuareg has no word of reproach. Guilt overwhelms me.

"Do you know where I can buy a sheep?" I ask him.

Yes, he knows. From now on I will buy one every three days and share its meat with my Tuareg friends.

In the course of another trip we come upon a woman who imperiously signals us to stop. We stop. She is holding a wooden bowl.

"You must give her water," says Mohammed. "Her husband is a very powerful *marabout*, a great holy man who can make strong *gris-gris* against us if he is slighted.

"Every vehicle that passes and does not stop to give the woman water has an accident. I hope you remember those two wrecked tourist cars we saw."

"The marabout had nothing to do with that," I scoff. "It was merely a matter of two idiot drivers who ran into each other even though they had practically the whole Sahara to themselves."

The day passes uneventfully. The next morning, as I stir before getting up, I feel a burning sting in my leg. I throw back the





Hospitable even in times of adversity, a family of Tuareg cattle herders in Niger's savanna country welcome the author into their home. Later they served steaming sugared tea. The family had lost nine cows, the livestock hardest hit by drought, but their sheep and camels still survived. Uncomplaining, the nomads remained strong in spirit.

Warm ties among the extended family give stability in these unsettling times. Boys and girls grow up in an atmosphere of persistent but friendly teasing. After maturity, young men court girls openly at evening songfests, but families must approve a match and pay the bills. The father of the groom presents camels and cash to the bride's family, which in turn furnishes the dowry seen here: the mat-covered collapsible bed, bowls, saddlebags, and the tent of palm mats.

Even after marriage, husband and wife continue good-natured banter with others—except their in-laws, whom custom decrees they must avoid. There is little quarreling in any Tuareg camp, the author observes. His daughter, Barbara, adds, "The women are really free; they can divorce easily, and keep all their property."

blanket and discover a large black scorpion.
I pass a painful day.

"I gave water to the marabout's wife," I complain to Mohammed. "Why, then, did he send the scorpion to sting me?"

"Because you sneered at his power," replies my friend, quite seriously.

Trucks pass every day. Each stops for tea, for their drivers are Tuareg or Arab.

After love, sugary green tea is the sweetest thing in the harsh life of the Tuareg. The nomads drink it ceremoniously, three cups to a ceremony. I think they must be able to smell it brewing from great distances. Almost always in the evenings, when Mohammed is making the beverage by the campfire, visitors materialize from the shadow of night.

"Peace be unto you," they say quietly.

And we wish them the same, and invite

them to sit beside us, to savor the tea as I would savor a fine wine.

Young Europeans and Americans in cars of all makes and ages also pass by every day. In a mad rush to get through this awesome desert, they have no time for the Tuareg. Bukush makes me notice that they are always eating as they go.

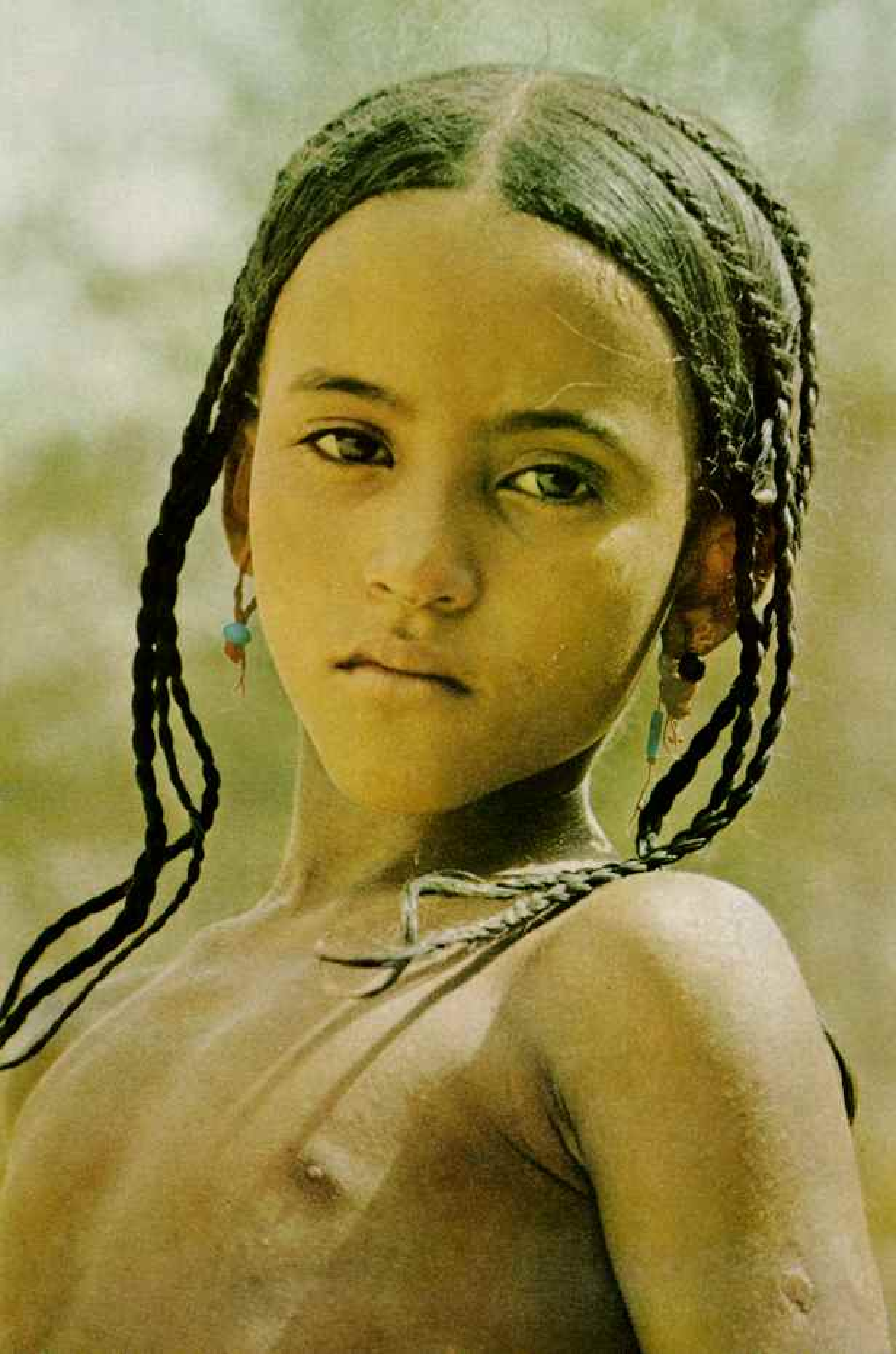
Evening after evening, the young Tuareg women sing. Their songs praise an ancient war feat, the handsomeness of a boyfriend, or, more simply, say, "We have created nice songs," or "We have sewn nice clothes."

Barbara sits fascinated. Eric, however, is preoccupied with his Tuareg clothes, especially the tagilmust. His is only 12 feet long; he would not be wearing even that for another two to four years were he a nomad boy.

But Tuareg men love children, and when



Abandoning the veil but not the braids, shirt, or necklace purse of his kinsmen, a Tuareg teacher (above) brings literacy to a desert camp. Sponsored by the Government of Niger, he teaches the Tuareg language with the Roman alphabet. When French colonial rulers insisted on education, some defiant Tuareg nobles sent the children of their vassals to school instead of their own. Today those former vassals are valued civil servants. Another mark of progress, a vaccination against smallpox (facing page).





Aristocrat of a desert domain, 24-year-old Radwane quiets his camel with nose rope and bare heel; his hand rests lightly on an ornamental three-pronged pommel. The young noble takes a proprietary look as servants (right) draw water for his father's herds, so vast they are beyond counting. Overgrazing by so much livestock can destroy the root systems of the most tenacious desert plants and hurry the spread of barren sands. Later, the father lost thousands of cattle to drought, but with a huge savings account in camels, sheep, goats, and donkeys, he did not have to turn out his servants, as poorer masters did.

they saw how fascinated the boy was with their clothing, they dressed him as one of themselves; they even gave him a sword.

Each man of the desert has a favorite way of winding the tagilmust. Everyone meeting Eric has to undo the boy's headgear and rewind it in his own fashion (page 553).

When it is full dark, there are mysterious visitors at the camp, faceless behind their veils and shapeless in their robes. They sit silently beside the girls or lead their camels in graceful ballet around them. After the singing we gather very close to each other on a rug and chat, and I feel that even if the stars and this human warmth were all that one should ever know, life would be worth living a hundred times.

On one clear night when I cannot sleep, I see a man slip out of a tent. Intrigued, I



watch his strange behavior. Walking backward, he is erasing his tracks with his robe. He disappears into the night, although not before I have recognized him as the young Taitoq who chased the gazelle with us.

Suitors Rely on Silence and Guile

Next morning when I tell them what I have seen, Hamid and Mohammed laugh heartily. It is obvious to them that I have caught a young man at the end of a romantic date with Raisha's sister. Such a rendezvous always takes place in the girl's tent, next to the sleeping parents, long after the camp has fallen silent, and involves nothing more than sniffs of the noses, petting, and love words.

It is, of course, all a game, but a game played very seriously. I ask Hamid what happens if the lover is detected by the parents.

"Ah," says he, "I can tell you, for I was caught twice in my dating days.

"Once the mother of the girl awoke and, thinking I was a goat, spat upon me. 'Out, evil beast,' she cried.

"I bleated and lay still, but she sensed I had not gone and began beating me with a stick. It hurt, I can tell you, and I could barely contain cries of pain, but I left—fast.

"On the other occasion, I was visiting a girl for the fourth consecutive night. Having slept so little, we were both dead of fatigue and fell asleep.

"When the father pulled me out of the tent by the feet in the morning, I thought I was dreaming, but not anymore when he lashed me with a whip. You should have seen me run away!"

Early in the morning of the seventh day

after Raisha's baby is born, the name-giving ceremony begins. The neighbors have been invited, and there is a marabout.

Following Tuareg tradition, Bukush takes the marabout aside and gives him two thorns representing the names that he and Raisha have each chosen for their daughter. The marabout picks one. Bukush tells him the name. The two return to the guests.

A camel is lying shackled on the ground. The marabout slits its throat and announces, "The girl will be named Barbara!" The women answer with three cheerful howls, and Barbara flushes with pride and pleasure.

"What name did the other thorn represent?" she asks.

"It was Barbara also," beams Bukush.

The camel is cut up. The marabout receives a leg. So does the woman who usually braids Raisha's hair and who is now shaving the baby's head. Some six weeks after the birth the tiny pate will be shaved again, and a woman relative of Raisha will formally present the baby to the family.

Little Barbara will then receive presents of jewelry, sheep, and camels—if there are any. Were the child a boy, Bukush's mother would give him a sword.

Three months after the birth, the hairdresser will artistically braid Raisha's hair afresh, and Raisha will give her the clothes she has been wearing, for she will have received new ones from Bukush. Then she will leave her tent and again appear in public.

Sad Parting Promises Fresh Adventures

It is time to go, for we wish to visit other friends in the desert. We start packing. Our friends watch us sadly and silently, incapable of understanding the permanent hurry of Europeans. We distribute our excess clothes and most of the food, sugar, and tea, and we drive away into the desert.

Briefly we visit the noble Kel Fadey Tuareg of the Kel Air confederation. The Kel Fadey are tall, and their lean, chiseled faces reflect a fierce pride in their heritage as warriors and raiders.

"Their arms are thin," I say to Mohammed.

"Because they do not have enough to eat," he replies. "They are nevertheless without fear." I notice he is uncomfortable beneath the hawklike, direct gaze of these people of a higher caste.

Perhaps, I later learn, he is nervous also because he and *(Continued on page 565)*



"We breathed sand, ate and drank it,"



recalls Barbara of storms that struck with maddening frequency as the drought persisted.





DONALD MCCULLIN, THE SUNDAY TIMES, LONDON (FACING PAGE), AND CARL PURCELL

End of the trail: Once-proud nomads face the humiliation of a refugee camp. Only the most excruciating hunger or serious illness forces these self-reliant people to trade their nomadic freedom for food. In that extreme, they trek by the thousands to the closest of the relief centers set up in the drought-stricken nations. These women of Mali (facing page), shielding their faces from the camera, seek succor in the neighboring nation of Upper

Volta. In Niamey, Niger, an undernourished child (above) may be beyond aid. Drugs, grain, and powdered milk contributed by friendly nations around the world save many, but some are too debilitated to benefit from the food once they get it.

By stockpiling harvested grain, farming people of the region can cope better than the nomads. Few of the wanderers, though, are willing to become tillers of land.



Hamid have injudiciously inquired whether there are any single girls in the camp and have been given to understand that they had best keep to their own tents after dark.

Next we head toward the camp of the noble Iullimiden chief, Mohammed, and that of his Ibakan vassal, Najum, both more than 100 miles southwest of Agadez. We reach Najum's first; his eldest son, Hamiada, greets us with traditional Tuareg courtesy.

"Have you suffered much from the drought?" My question is the routine one.

"I have lost some cows," he replies, "but when I saw the first one die, I sold most of the others and invested the proceeds in rice, millet, sugar, tea, noodles, and such things, and I have resold them at a profit.

"Now I am building a house and will not live anymore in a tent. I hope to buy a Land-Rover for use in my new business enterprise. Will you sell me yours? I will pay in cash."

This from a blue man of the desert!

Scorn for Schooling Carries a High Price

The Ibakan are better equipped than their masters to face the nomads' changing world. In 1946 the French ordered the noble Iullimiden to send a certain number of their children to school. Instead, they scornfully sent the children of their vassals. Now those children are grown, and they are government employees—teachers, clerks, male nurses, and so on—and as independent as their former masters. It is not only drought that is changing the Tuareg way of life.

We drive westward 65 miles and find Mohammed and his people near Edemboutene Well. On the way to the encampment we pass thousands of skinny cows that belong to the chief, but we see no grass anywhere and wonder where the animals find anything at all to eat.

Mohammed is hospitable, but I find conversation a bit strained. He tries to keep it on the subject of my Land-Rover, and I try to avoid this topic. The last time I visited him, he commandeered my Land-Rover and driver and used them every day to go hunting.

He says he would like to buy such a machine not for commerce, like Hamiada, but for further hunting and traipsing about. Commerce would not befit his noble station.

Desperately I try gambits that will get his mind off my vehicle, which I greatly need.

"I have heard you everywhere called the 'Lion of the Tuareg.'" I venture, sure that

Ghostly casualties on nature's battlefield, a donkey and cow (facing page) disappear under the shifting sands outside Gao, in Niger. Some nomads tried to herd weak animals to such villages to buy fodder, but too late. Last year's rainy season, June to October, brought some water, but not enough to make the desert flourish again.



Thirst makes beggars when a well is many miles away. The rumble of a truck or Land-Rover draws youngsters to the side of the track, seeking water. The Tuareg social code also permits them to ask for sugar, tea, or tobacco, but never for food.



this will please and divert him, but to this bit of flattery he replies with a wan smile.

I remove my sandal, I make a deep bare footprint in the sand.

"See how my toes stick out straight forward," I tease. "The toes of a Tuareg fan out, is it not so, because they pick up objects with their feet, and also they hold the necks of their camels between their first two toes when they ride?"

This time I get a pained look, richly deserved. I decide to try angering him.

"Hamiada gave me a message for you," I say. "He said, 'When you see that man Mo-

ammed, you tell him he has a lot of things that do not belong to him.'"

He replies with an unexpected roar of laughter. The intended insult is true: Much of his immense fortune came from ancient pillage. Arrant—and profitable—banditry against other tribes was long regarded as acceptable before the French put an end to it.

In the best of humor, the old reprobate returns to the subject of the Land-Rover.

"I want to slaughter a sheep for you and your children," he says. "In fact, I will kill one every day of your stay. But the flocks are far and you will have to drive me there."



Macabre monument to lost wealth, cattle bones bleach near the circular granaries of Gao. Normally nomads build herds not for meat but for milk and prestige, butchering only for feasts or for barter. Now they must sell or watch the animals die. Itinerant butchers paid 50 cents a head for these animals, then dried the beef for sale in Nigeria.

Like distress signals, slabs of camel meat (left) dry on an acacia in Bukush's camp. The hungry Tuareg reluctantly slaughtered the beast for meat to eat and to sell.

And so, in the following days, I drive him to the flocks, and he takes along his gun and makes me detour, and he kills some bustards and gazelles. But I get to know him very well, and I discover with great pleasure that his lion's heart cradles a great humanity, a great tenderness for people.

Mohammed has two sons, 24-year-old Radwane and 20-year-old Hamzetta. When they visit us, they arrive on fine camels. Dismounting, they toss their bridles to a slave-servant—an *akli*—and greet us in French, a language that Radwane speaks as well as he does his native Tamahaq.

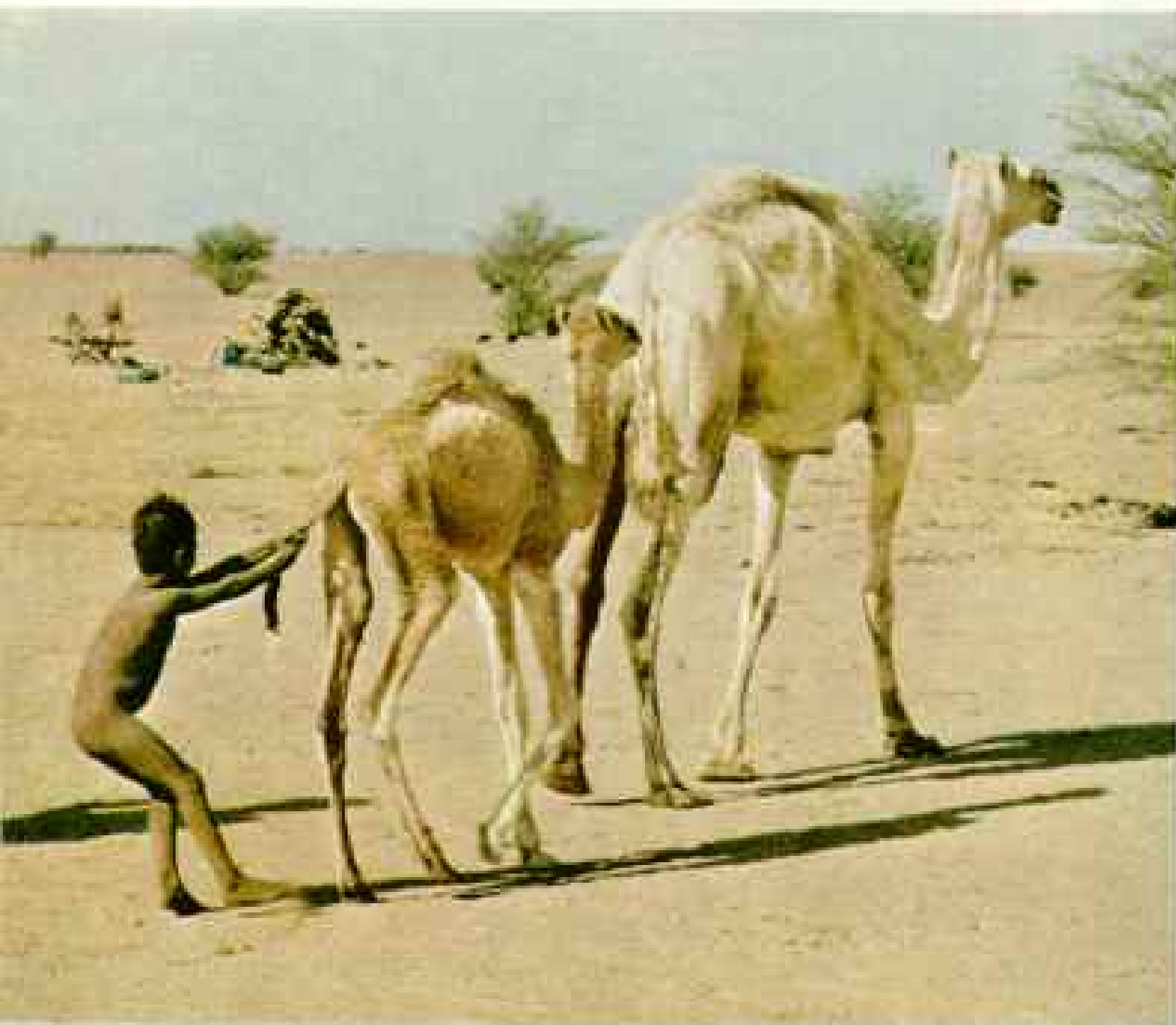
No one who ever saw the handsome pair could mistake their noble heritage. Their bearing is regal; they are true desert princes. And they are restless. They have seen some of the fascinating world beyond the Sahara, and they would like to see more.

Radwane's beautiful wife, Raishatu, only 18 and fat as a butterball, is also restless, the young husband confides.

"Her young friends are all gone away," he patiently explains. "She has no fun now. She has nothing to do but sit all day in her tent, as befits the wife of a noble, and eat too much. We could travel, but my father is very

Camels come first in Bukush's camp. Dromedaries can eat the scruffiest of thorny plants, but such vegetation eventually imperils their health. So Bukush—his robe billowing in the wind—force-feeds his best riding animals an unaccustomed diet of barley, purchased in Tamanrasset, Algeria. His male servant and his niece Lifu help. The girl chews on a twig toothbrush.

Tail-tugging looks like play (**below**), but this 6-year-old boy actually is keeping the young camel from continuously suckling the camp's last she-camel and exhausting her already-meager milk supply. Finally a decision is made. A brother and the servant will stay to care for the best camels, while the rest of the tribe moves to Tamanrasset to wait out the drought with relatives.



conservative; he says we must all stay here."

Hamzetta, a bachelor, falls under the spell of my glowing Barbara. He watches her lift a horse or camel into a gallop and, as she sweeps by in a cloud of dust, hair streaming in the wind of her passing, says admiringly, "Ah, those wonderful European women."

It comes to me with a shock that my little girl, in the eyes of a Tuareg, is of an age for marriage. Perhaps I should keep a whip handy in our tent these starry nights!

When we tell them Hamiada is building a house in town, the brothers are not surprised.

"But we too have houses," they say. "Many houses: in Niamey, in Tahoua, in Tchin Tabaraden. Some of us, like our cousin Rumer, whom you know, use them a lot because they like being in town. We prefer camp life.

"But it is our women, most of all, who stick to our traditions and refuse to leave their tents. One day, probably, we will move to town. Our shepherds alone will remain with the herds, and we will supervise them by Land-Rover."

Tuareg Rank Decides Who Does What

The leaders of the aristocratic Iullimiden sleep late in the morning and do not even know what time the she-camels are milked. But every day, each poor child who appears before Mohammed's tent is fed, and so are some twenty or thirty adults.

The haughty chief will give a man clothes, or a she-camel to milk for a year. He turns no one away—but when he asks a favor, he expects to receive it without hesitation.



A sad day dawns. Eric is silent. Barbara seeks solitude. She is hiding tears. The young princes bring presents—leather pouches, a fine knife for Eric, silver ornaments for Barbara—and one of these, a thing of exquisite simple taste, she will surely keep forever.

It is the day of parting. We must go. Eric and Barbara will fly back to the States to resume their schooling. I have some things to do in Equatorial Africa.

But I plan to return when the calendar says the rainy season should begin, and I will pray with my nomad friends, to their God and mine, for the end of the drought.

* * *

Three months pass. I find Mohammed in Niamey. "The rains have not come," he says simply, "and almost all my cows have died.

I have bought a Land-Rover, so I will not need again to trick you out of yours. I hope you will find it in your heart to forgive this deceitful old man."

* * *

My Land-Rover rattles east and north across the savanna, past the rotting bodies of cows and camels and donkeys. Vultures fat from their feasting ignore us.

Only the tons of grain and powdered milk arriving from the outside world keep the people alive. Each day cargo planes from the United States, Great Britain, France, Belgium, Canada, West Germany, and other nations supply cities and the nomads who cluster by the thousands at food distribution points in the desert. There is disease, including outbreaks of cholera and measles; they take the

old, the feeble, the undernourished children.

In the savanna spotty rains have at last begun to fall. Thirsty fields start turning green, but the unpaved roads become almost impassable, making it more difficult than ever to distribute relief supplies.

* * *

I see a beautiful 12-year-old girl with an uncouth European truck driver. The child is his wife; he has paid the traditional bride-price, in this case about 200 U. S. dollars.

To my Western mind, it appears a pure sale, arising from distress, and I want to take the girl back to her family. But my companion, Bukli, young brother of Hamiada, tells me that it would be useless.

"The mother would only send her back to him," he explains sadly. "There is no father anymore. The mother is desperately poor, and refuses to see her daughter die of hunger."

* * *

Children stop us, holding up empty bowls. We give them water as long as we have any, then ignore the rest.

A man asks for tobacco. I do not want to unload half the car to find our supply, so I say we do not have any. The man smiles and walks away.

Two days later Bukli says that the man had been walking for days without food, and was still far from the nearest relief center.

I could have helped him, but he was too proud to mention his plight.

There are moments when one could cry.

* * *

Now we are in the full desert, and dead camels mark the trail. We pass five in a neat row, like a blasted caravan.

We are looking for Bukush, and find him still camped by I-n-Abanrherit Well. "How are things?" I ask.

"*El kher ghas*—All is satisfactory," he replies. I mention the five dead camels.

"Oh, those," Bukush says. "They were ours."

The children want to know where Barbara and Eric are. I tell them:

"In an airplane, going to America."

The Tuareg children spend the rest of the day watching the sky, hoping to see them.

I ask to see Raisha and the baby Barbara.

"They have gone to Tamanrasset," says Bukush. "The rest of us will join them there in a few days."

He breaks into laughter. "I have news about them," he continues. "They are strong and well. They have found houses in which to live. But they put only their belongings in the houses. They sleep in their tents pitched in the courtyards!"

* * *

Tonight the moon is full. I must leave early on the morrow. We sit together in the night as we have always done, as always instinctively pressing closer to each other.

"Many of the people in Tamanrasset," says Bukush, "still hope that the rains will come here soon. They plan to buy new herds and once again see baby camels tethered before their mothers."

"But I do not think many will return to the old ways. I do not believe Allah wishes it."

Many officials of the Sahel nations do not wish it either. There is talk of turning these wanderers into more productive citizens—farmers and city workers. But where will the jobs and the new farmland come from?

* * *

I stop at Tamanrasset before leaving Africa to say goodbye to Raisha and to my daughter's namesake. Little Barbara is already amazingly strong, a true Tuareg (page 545).

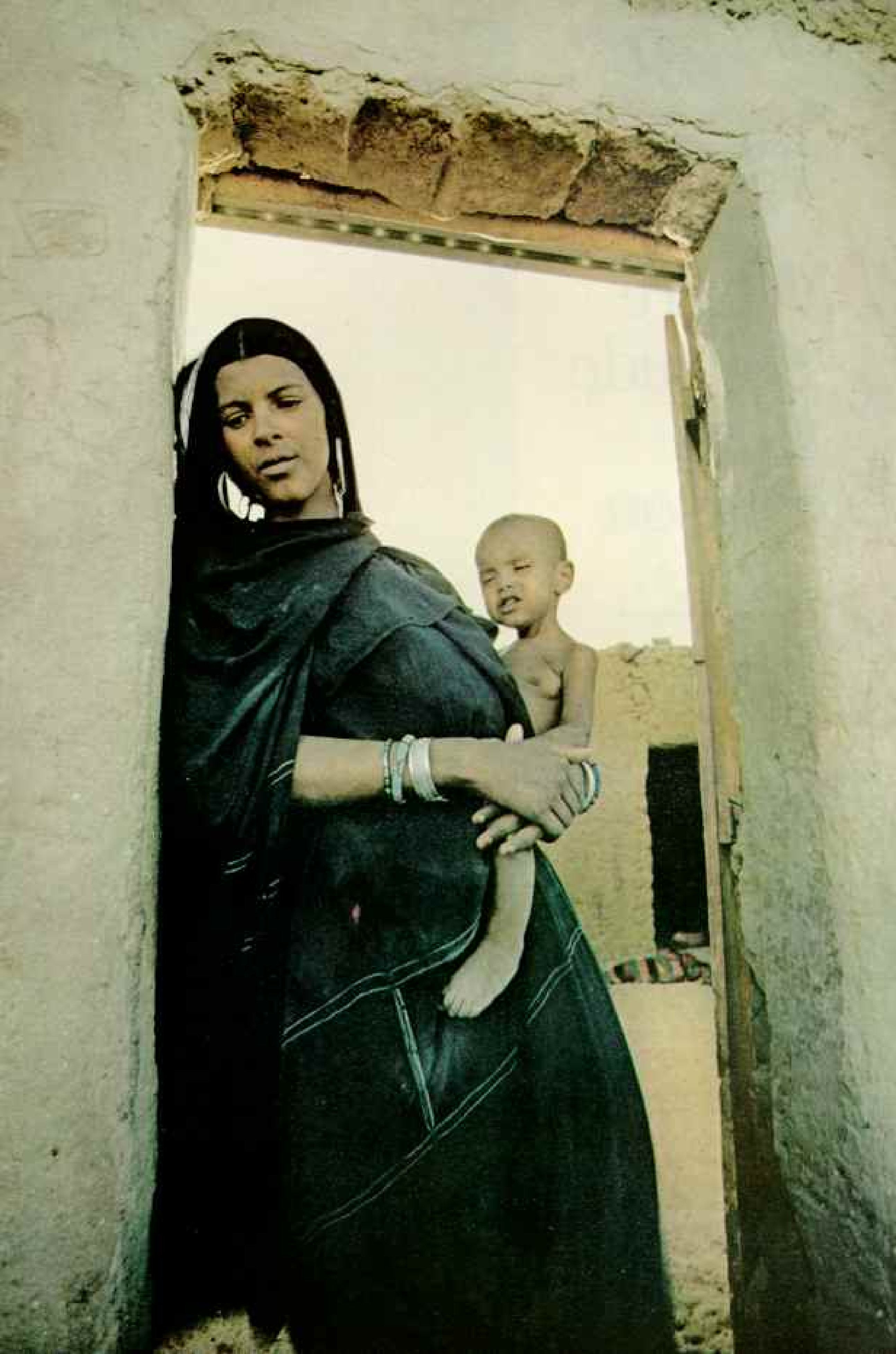
Back in New York I ask United Nations officials about the future of my blue-veiled friends. Neither they, nor spokesmen for the Sahel governments, can give me answers.

Perhaps a noble way of life is ending for the Tuareg. Some, like Hamiada, will adapt. But what of the others? What can they hope for, except long, empty years in relief camps?

The herds may someday be replenished. The desert trees, pulled down for forage and for firewood, may grow anew. And then the men of the desert can roam again.

I pray that those things will indeed occur, for I cannot conceive of a Sahara without the Tuareg. If it is Allah's will that the nomads roam no more, I do not think I could return to the empty sands of the Sahara. □

Patient but ill at ease in Tamanrasset, a young mother longs for the desert spaces. Crowds of poorer refugees camp in dry riverbeds outside town. If rains come, they will all return to their grazing grounds in Niger to rebuild their herds and resume their nomadic ways. If drought persists . . . only Allah knows what will become of the long-suffering desert people.



SNOW-MANTLED
STEHKIN

Where Solitude Is in Season

A picture essay by

BRUCE DALE

NATIONAL GEOGRAPHIC PHOTOGRAPHER

Text by

PAT HUTSON

DECEMBER 21 Snow is almost three feet deep and still falling. The mail boat has made one of its thrice-weekly winter visits, and most of the village's 40 year-round residents met it—including me.

I first came to Stehekin (Steh-HEE-kin) in central Washington on New Year's Day 1971. Accessible only by boat, plane, or trail—its roads link the houses but go nowhere else—this southern gateway to North Cascades National Park was a snowbound oasis in a hectic world. Since I was young, single, and enraptured with the solitude of winter, I decided to settle here.

And winter still seems the most vibrant season to me, for it holds the sleeping breath of new life. The earth drinks in moisture, and buds form unnoticed under their blankets of snow.







JANUARY 27 We've had a cold spell, with the thermometer shivering around zero. I have to wake up every two hours during the night to stoke the fire in my wood stove to keep the inside water pipes from freezing. Staying warm is almost a full-time job. I find few hours for drawing and painting, pastimes I had looked forward to during my summer job at the park lodge.

My neighbors Guy and Hazel Imus and I are about the only ones with running water; others'

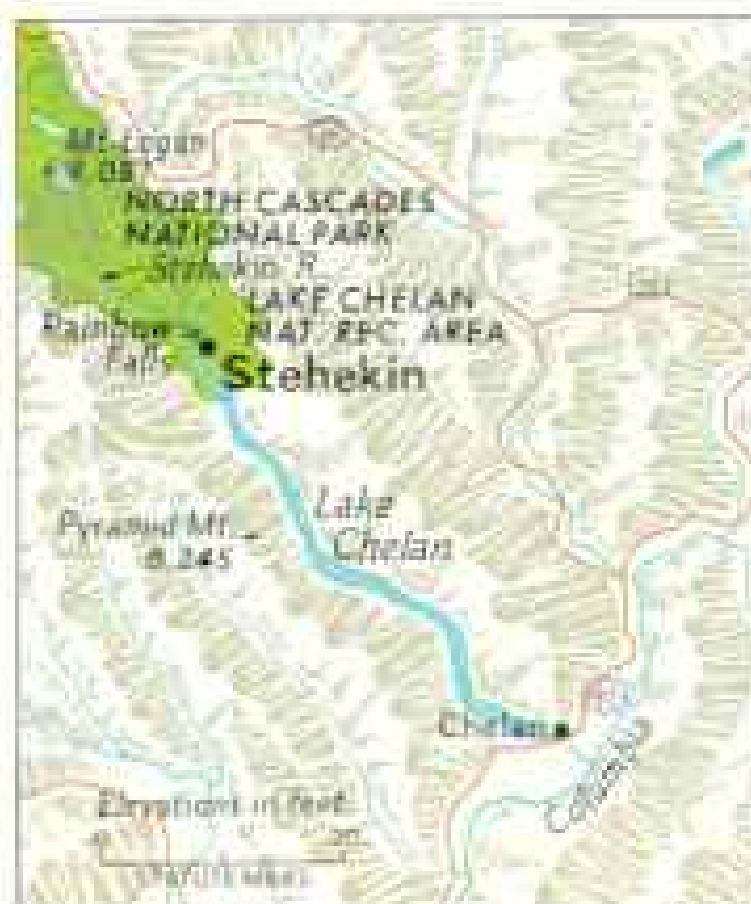
pipes are frozen. Guy says if I hadn't kept my hose running, our line to the spring up the hill would have frozen too.

Guy makes his living guiding pack trips in and around the park (map at right). Some of his customers have been coming back for more than 24 years. He says he is retiring at 68, but it's hard to believe. Guy's love for horses and the backcountry makes him seem ageless. This morning as I shoveled a path to my woodshed, Guy was clearing one from his house to the road,



adding to the roof-high snowbanks in the process.

My woodpile shrinks each day, so I spent five hours yesterday splitting logs, an exercise warming enough to warrant short sleeves. I'm getting pretty good. I'm glad I was forced to cut my own. It's hard to remember those days—not too long ago—when each session in the woodshed brought undreamed-of pains, including one monumental headache after I bonked my forehead with the sledgehammer.





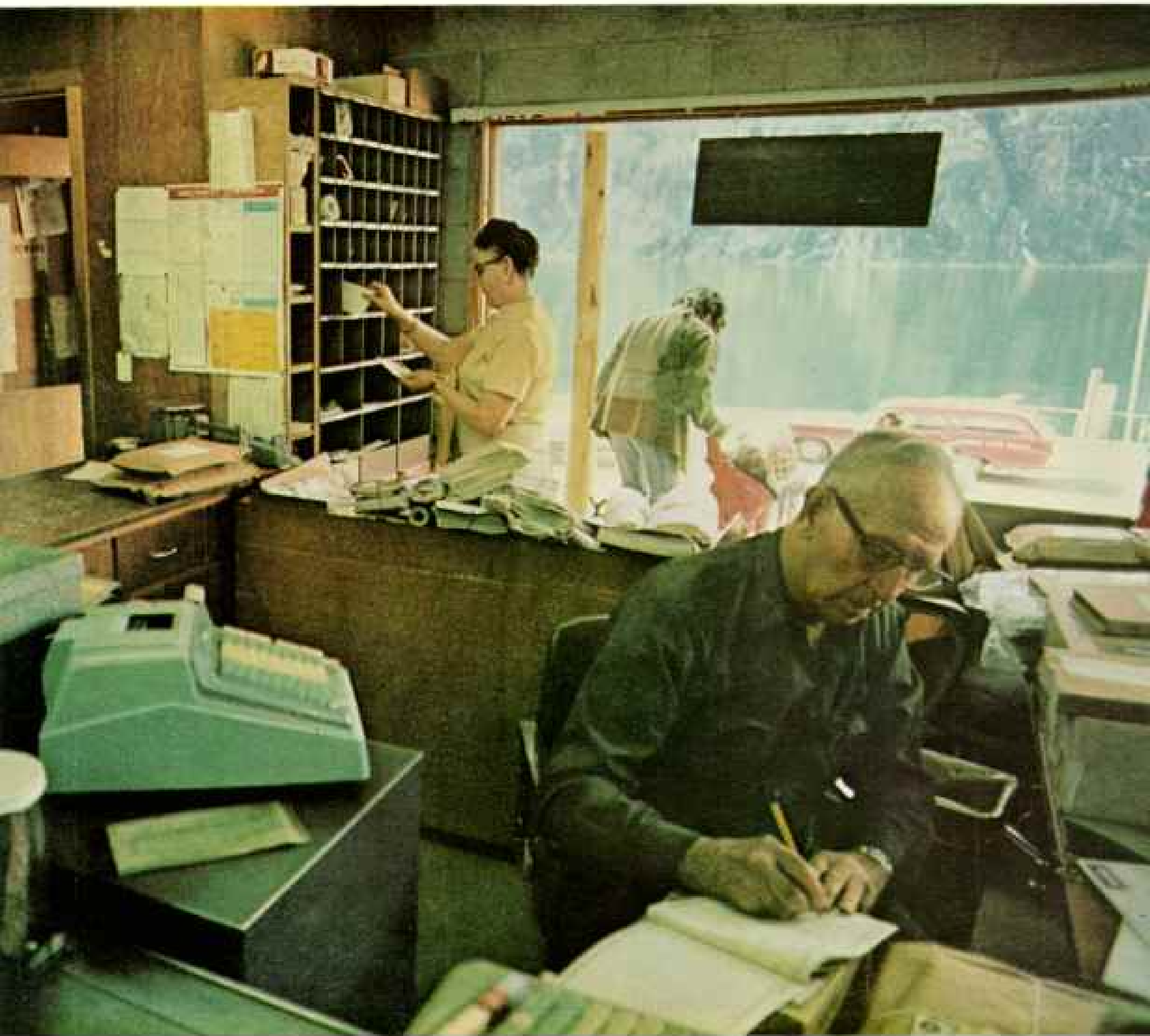
Meandering into the heart of the Cascades, 55-mile-long Lake Chelan never



freezes, providing year-round access from the highway at Chelan to isolated Stehekin.



FEBRUARY 5 Eager to get a package of wool shirts I had ordered, I tracked Guy today as he lugged a mail sack from the boat to Buckners' combination store and post office. While Harry Buckner registered outgoing packages and his wife, Lena, sorted letters, I augmented my grocery supply with eggs and flour. Others stepped next door to the park lodge to trade valley gossip. The shirts, thank goodness, arrived, along with some



letters and my order from the county-run "Mailbox Library"—including *Shut up and Eat Your Snowshoes*, humorist Jack Douglas's account of his attempt to escape to the wilds of northern Ontario.

Letters and newspapers are the most welcome items in phoneless Stehekin. Today Betty Wilsey had barely stepped outside the store before opening her mail to catch up on family news.

When emergencies arise, we can always rely on Harry

Buckner's shortwave radio. Harry came to Stehekin in 1911. He has kept the village weather records almost since that time, and also served as deputy sheriff, notary public, and postmaster.

Harry is not the oldest resident in the valley, however. That award goes to photographer Paul Bergman, who has been "over 80" for years. He settled uplake in 1947 because the scenery reminded him of his native Switzerland.

FEBRUARY 23 Went to Judy Breeze's for milk this morning. Judy, her son Finley, now 24, and daughter Robbie, 11, came to the valley in 1971. They have built their small farm from scratch, planting a large garden to feed themselves and their animals through the winter. They raise

goats for milk and cheese, and chickens for eggs and meat.

I love their house, built of foot-long wood rounds instead of logs. It's comfortable and roomy—as noted by many friends who come visiting. Finley, at ease with the rhythm of a crosscut saw, usually finds someone to man the other end. Robbie is an expert at kneading bread dough, putting knuckle power into it on the broad kitchen counter. Judy is always busy and complains that she rarely has time to crochet.

The Breezes prefer kerosene lighting and outdoor plumbing, but have decided to lay a waterline from the creek to save the backbreaking work of hauling water the half mile to the house.







Stranded by a blizzard at his Stebekin mooring, bush pilot Ernie Gibson shovels snow off his floatplane every three hours to keep the wings from



cracking under the weight. Only the most severe weather keeps Ernie grounded when an emergency calls. He has served the region for more than 25 years.



FEBRUARY 27 I trekked to Rainbow Falls via the Stehekin River today and stopped at the schoolhouse to apply new wax to my skis. I was greeted with snowballs! Lynne Baarson, the teacher, had just let the kids out to see a bald eagle soaring overhead.

How typical of our village! Stehekin has one of the last one-room log schoolhouses in the country—a 50-year-old structure heated by a wood stove. But what it lacks in concrete-and-glass modernity is more than made

up for by the awareness of nature and the outdoors it brings to our handful of students.

This year Lynne has eight pupils in grades one through eight. To go on to high school, they will have to take correspondence courses or board downlake at Chelan.

Soon after I arrived, Lynne set some of the children to molding snow into a polar bear, a project combining nature study, sculpture, and physical education. Unfortunately, the bear's nose kept getting knocked off.



The year's lone eighth-grader, Cragg Courtney, climbed into the family's snowmobile to give those who had skis a tow. I was tempted to hitch a ride myself, but squeals of glee lured me around the side of the building to find a few daredevils sliding down the schoolhouse roof onto a mammoth snowbank.

After Lynne shooed the kids inside, I strapped on my skis. As I left, Karl Fellows was at Johnny Wilsey's desk, consulting on a math problem.

MARCH 10 This morning a dozen mule deer came to breakfast. I first made friends with Stebekin's deer on one of my moonlight walks last winter. Harsh winters make for meager meals, so I sometimes put out apples or pellets of horse feed. I've rubbed the deer's foreheads and scratched their noses, so naming them was inevitable. I christened one buck fawn "Little Guy," and Guy Imus was noticeably pleased.

Just before dawn a few days ago I was awakened by the clamor of yips, barks, and howls. Hastily slinging a shawl over my nightgown, I ran outside, and found myself suddenly face-to-face with a great yellow coyote, who greeted me with a mournful howl. I answered as best I could and then put on proper clothes to investigate. I soon found the answer—there lay one of the deer, almost devoured and impossible to identify. I felt regret, of course, but this experience gave me yet another lesson in nature's ways. I can still feel the excitement of having answered the howl of a wild animal a mere 20 feet away.

This land abounds with animal life—black bears, mountain goats, cougars—and countless Oregon juncos, nut-hatches, Clark's nutcrackers, and wild ducks and geese. Raucous chatter outside my window announces the arrival of Steller's jays in their own version of Air Force blue.







MARCH 14 Today I began making herb planters for an early start on spring. Linda Broussard had promised me some seeds, so I dropped by and found her grinding flour. She and her cat-loving husband, John, have fixed up an old cabin that radiates warmth and welcome.

Spring is not far away. Then summer, with too many people and too much noise. But Stehekin must pay its dues. Fall will find the leaves again turning to their dying, glorious colors. Then, again, welcome to winter. □



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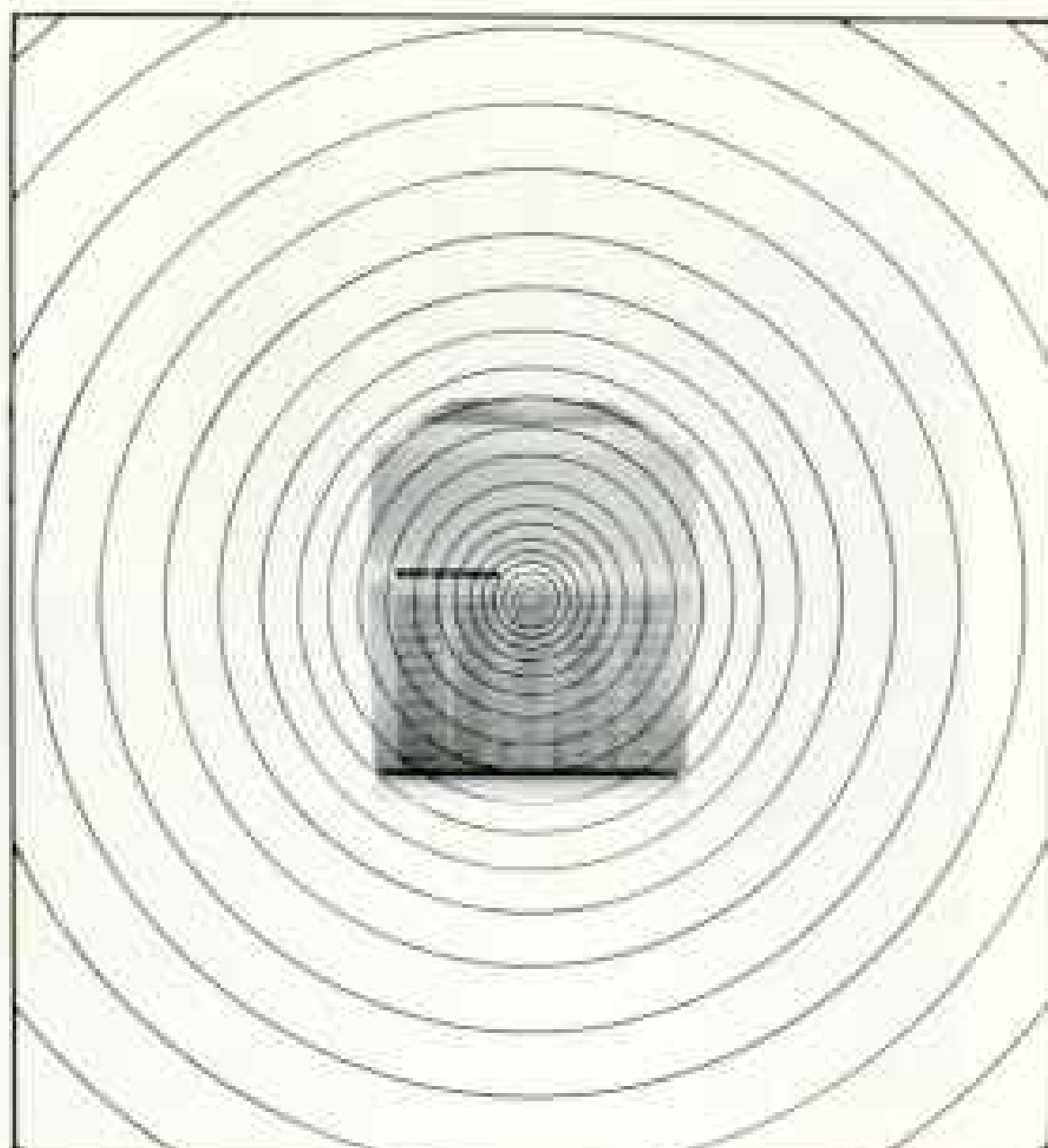
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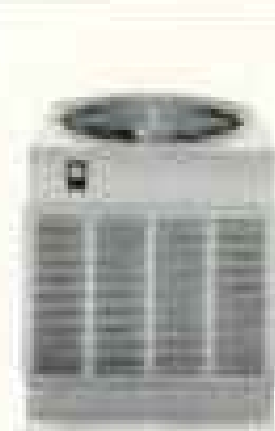
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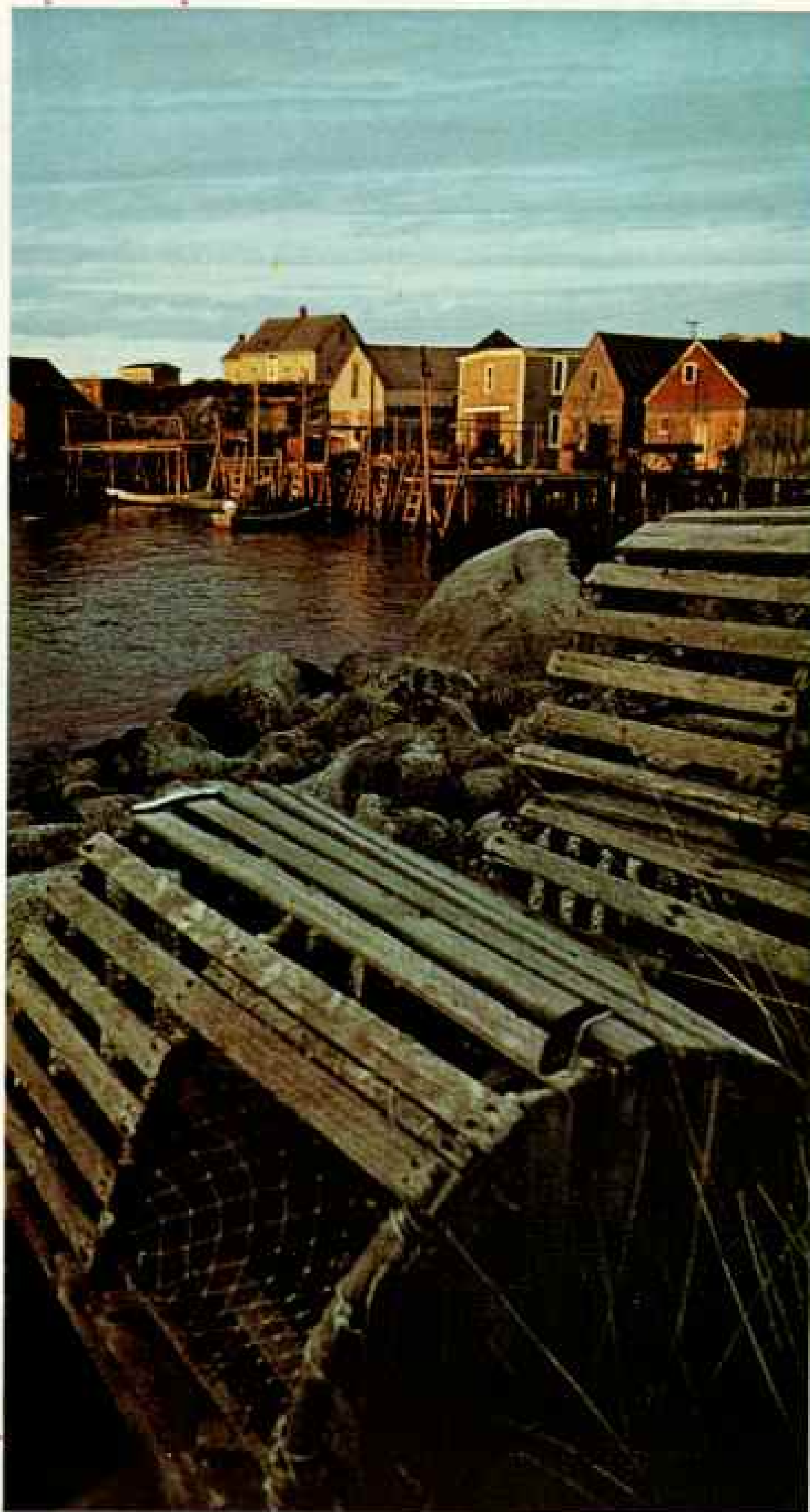
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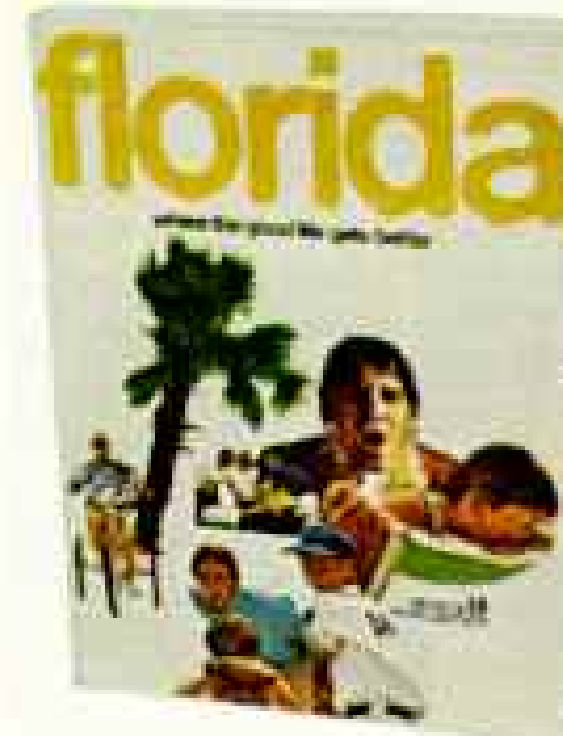
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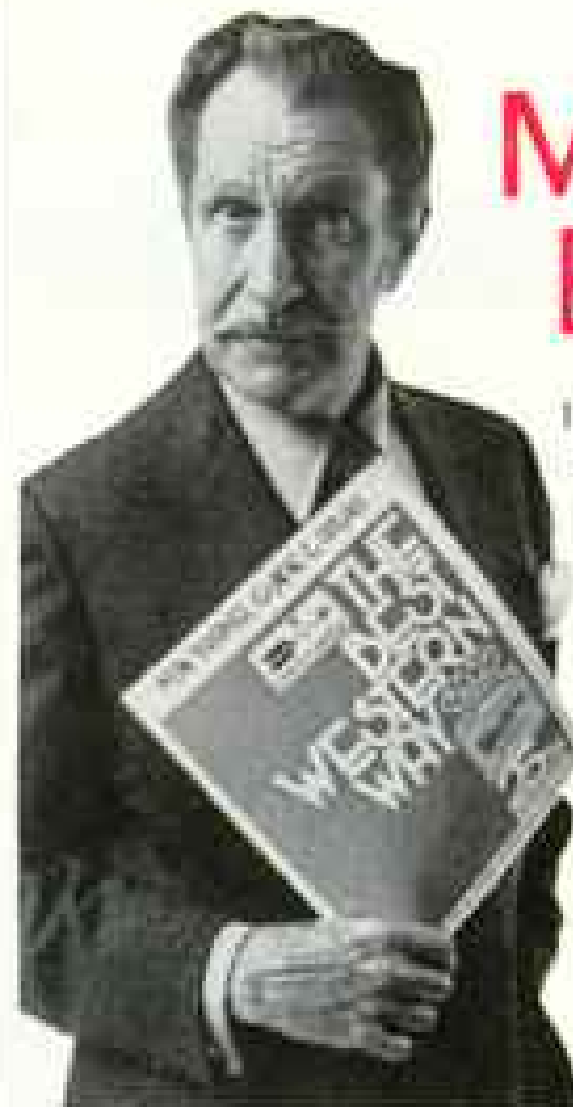
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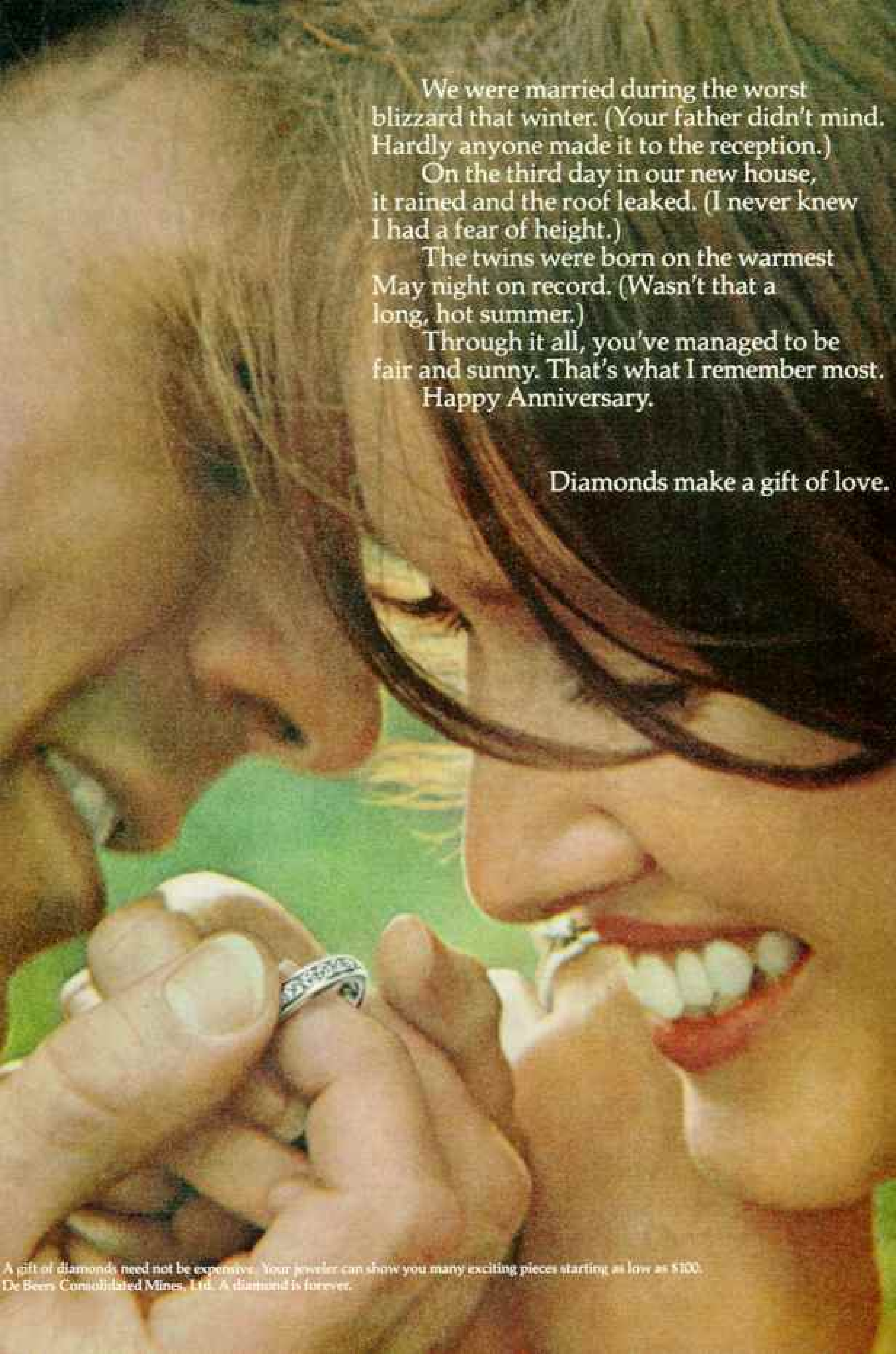
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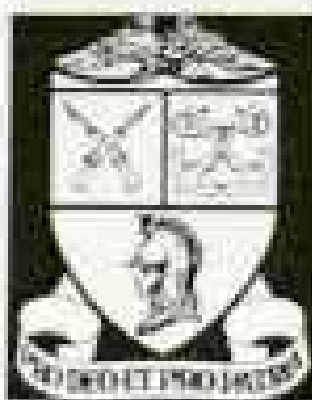
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If your company has men traveling in all directions by car and commercial airlines, you might find that you can operate much more efficiently and economically by setting up your own privately-scheduled routes with a Beechcraft King Air.

Some of the most successful businesses in the world have discovered a King Air can save both time and money while allowing them to cover their business opportunities more effectively than with any other forms of transportation.

Perhaps the time is right for your company to consider its own "anytime-airline" ...and perhaps one of the four famous Beechcraft King Air jetprops will be right for you.

Consider, for instance, the new Beechcraft Super King Air, a 383 mph executive jetprop capable of carrying up to 15 people (although the normal corporate seating arrangement accommodates from 6 to 10).

The Super King Air has a nonstop range of 2,045 miles...a range you may never use, perhaps. But with it you can complete many short stage lengths and return home without refueling.

With the Super King Air, your "anytime-airline" can be scheduled to depart in the morning with individuals and management teams, drop them at their required destinations, then pick them up and return home later the same day.

Result: Overnight stays out of town are virtually eliminated, your executives, salesmen and management teams can spend

more time with their families, and they're back in the office for a full day's work the next day.

Thorough planning of important business trips and efficient scheduling of appointments can allow your company to continue inter-city travel that presently requires four or more automobiles.

Here's the real surprise: A Super King Air (like the one shown above) can go to work for your company for about \$2,440.00 per month net capital cost. Your CPA will verify that if you show him the Beechcraft Capital Recovery Guide...a part of the free Business Flying Kit we'll send you. The kit contains all the facts you need to make an initial judgment on how to put a Beechcraft King Air to work for your company.



THIS IS NOT A COUPON!

But it is an urge to action. Please write on your company letterhead for the Beechcraft Business Flying Kit called "How To Turn Blue Sky Thinking Into A Blue Chip Investment."

Give us your full name, company title... and mention if you're a pilot. Also, do you presently own an airplane?

Address: Beech Aircraft Corporation, Department A, Wichita, Kansas 67201.

(P.S.: To speed things up, call collect and ask for Art Cross at 316-689-7080.)

