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THE NATIONAL GEOGRAPHIC MAGAZINE



# In the London of the New Queen



By H. V. Morton

THE Coronation of Queen Elizabeth II is now a brilliant memory. The flags and the bunting have been taken down. The grandstands have been demolished. The golden coach is back in its mews and the Crown Jewels are back in the Tower of London.

While it is a memory, it is a historic memory that will not perish. It caught the imagination of a world starved for color and romance. An age that has split the atom and talks of invading the moon watched with emotion and with awe as the trumpets of chivalry sounded and the knights and the heralds led a young queen to her crowning in what seemed to be an enchantment staged by Merlin.

It may well be that a hundred years from now some historian will take down this number of the NATIONAL GEOGRAPHIC MAGAZINE and search for details of the scene that may help him to shake up the dust of history and blow life into it; and it is with an eye on the unborn author of *Elizabeth II, Her Life and Times*, that I set down the things I saw and the thoughts that came to me in the London of the new Queen.

## "By Command of The Queen"

I was in South Africa. I had no idea that I should see the Queen crowned. Sixteen years before, I had sat in Westminster Abbey and seen the Crown of St. Edward placed upon the head of King George VI, but it never occurred to me that I might have the luck to see that same crown placed upon the head of his daughter.

Then one day the telephone rang and a voice from Washington asked me to go to London on behalf of the National Geographic Society. I gladly agreed, and there came to me, as the representative of your Society and its Magazine, an important sheet of cardboard which measured ten and one-half by eight and three-quarter inches. Upon it were these words:

> By Command of The Queen
> the Earl Marshal is directed to invite
> Mr. H. V. Morton
> to be present at the Abbey Church of
> Westminster on the 2nd day of June 1953
> Norfolk
> Earl Marshal

I packed up and immediately left by air for London. The projectile in which I found myself, a Constellation, shot across the Continent of Africa at a height of 12,000 feet and descended only three times, at Nairobi, Khartoum, and Rome. Then it streaked across the frosted Alps like a hornet over a wedding cake and landed me in London within 26 hours of having left the Rand.

I walked out into London feeling stunned. I stood under a gray sky looking up at Nelson in Trafalgar Square, the dust I had collected in Khartoum still on my shoes. I thought what an incredible age we live in. I wondered

### The Author

Henry Vollam Morton is admirably equipped to describe the new Queen's London. Now the author of many books on London, the British Isles, and Bible subjects, he made his name as a young reporter in Fleet Street with a highly entertaining newspaper column about London and its people. These columns have been published as a book and still sell briskly under the title *H. V. Morton's London*.

Among Mr. Morton's best-known books are the "In Search of" series, which began in 1927 with *In Search of England*. This was followed two years later with *In Search of Scotland*; others have since covered Ireland, Wales, and South Africa. The latest, published in 1951, is *In Search of London*. In the late 1930's Mr. Morton became interested in Biblical history; the result was a trilogy: *In the Steps of the Master*, *In the Steps of St. Paul*, and *Through Lands of the Bible*.

The author was born and educated in England, served with the Warwickshire Yeomanry in World War I, and now owns a grape farm in the Cape Province of South Africa. "But my heart," he says, "is still in London."






**Coronation Visitors Feed Pigeons and Dodge Spray in London's Trafalgar Square**

Red buses bring daily throngs to see the National Gallery (directly above) and famous old St. Martin-in-the-Fields (beyond the equestrian statue). Coronation banners deck the plaza, a favorite spot for public gatherings.

Kodachrome by Rip Rose, National Geographic Staff

## Crossroads of the Royal Procession: the Queen Passed This Spot Three Times

Hub of London, the square commemorates Lord Nelson's victory at Trafalgar in 1805. Bronze lions guard a granite column topped by his statue. Coronation press stands (in blue) await cameras and microphones.

what Livingstone or Mungo Park would have said could they have met a man in Trafalgar Square who a few hours before had been south of the Zambezi.

Then I took my travel-tortured limbs to bed and slept the clock round.

The sun was shining in the morning, and I had not been in London for three years. Only a Londoner, perhaps, can know how thrilled I was to be back, how exciting it was to look out and see the scarlet buses speeding through the silver grayness of the streets, the thousands of chimney pots, the gray church spires, the towers.

I loved every bit of it. I went out into the streets. I took taxis. I sat on the tops of omnibuses. I walked down the Mall, where Charles II used to play the mallet-and-ball game called pell-mell, and saw ahead of me the brown front of Buckingham Palace with the Queen's banner on top of it and the scarlet sentries below.

### Breastplates Glitter as Guards Parade

Then I saw the Life Guards come jingling down Constitution Hill, their breastplates glittering, their plumes tossing, their black chargers lifting their heads with a jingle of burnished bits. As they drew level with the palace they slowed to a walk; the horsemen "carried swords" and swung their eyes to the right; and the palace sentries came to the salute with a slip-slap-bang and a slight puff of pipe clay.

A group of workmen stopped hammering at a Coronation stand and looked up to watch the Queen's Guard go past. It has not been called the Queen's Guard since Victoria died half a century ago.

I must tell you that when I left London three years ago life had touched exasperation point. Tempers, like everything else, were short. People were fed-up and browned off. They were also cynical. War was infinitely more exciting than victory, and privations in peacetime were harder to endure. Men reluctantly wore rationed reach-me-downs, and women looked unloved in utility garments; even the buildings wore their cloaks of soot with an air of sullen resentment.

That was what London was like, and I began to think that the famous "London pride" had gone forever.

But now—what a change, what a fantastic recovery! I saw smiles everywhere. A character rather like the now legendary man about town went jauntily along, a bowler (derby) on the side of his head and an umbrella hooked on his arm. He was not, maybe, as expensively smart as the men about town of other days, called beaux, mashers, and knuts in the slang of the time, but he was definitely a Londoner. And he was everywhere. The bowler hat, the black coat, the tightly rolled umbrella were like a uniform.

Women looked happy, and Bond Street was elegant again. Every other motorcar wore a little Union Jack on its bonnet. The shops were full of everything the heart could desire, but at three to four times its old price.

From hundreds of billboards, from thousands of shop windows, one face gazed gravely at the crowds. It was the face of a beautiful young woman who wore a diamond tiara and a shimmering evening gown crossed by the blue ribbon of the Order of the Garter (page 311). So the Queen looked out on her London.

It is an ancient fiction of all courts that queens are always beautiful; but I can say, with my hand on my heart and my soul free from the sin of flattery, that Elizabeth II has emerged from her girlhood as a really beautiful and graceful woman. In her expression it is possible to catch an endearing look of her father and sometimes a fleeting resemblance to her wonderful grandmother, Queen Mary.

I found everyone talking about her—taxi drivers, bus conductors and conductoresses, people in the streets, in hotels, restaurants, and shops.

"How her dear father, God bless him, would love to 'ave seen her now she's such a lovely queen!" was the amazing comment of an old woman in a tobacco shop in Kensington.

It was the first time I had ever heard anyone suggest that a monarch might be expected to enjoy the sight of his successor occupying the throne! But I knew exactly what she meant, and no one would have been happier than that gallant, gentle, God-fearing father, King George VI, to have seen his daughter's triumph.

### Why Elizabeth Is Queen of Hearts

I have described London's pride in the new Queen. Let me analyze it.

The English people are acutely aware that it was under the rule of queens that their greatest national triumphs were achieved. They remember with pride the age of Elizabeth I and of Victoria; and I think good Queen Anne should also be remembered, for she was the presiding if unattractive genius of a brilliant and splendid epoch.*

And now, at the end of a long stretch of postwar depression, there suddenly swings into English history not some elderly masculine member of a royal family but a lovely young queen who is also the elder daughter

*(Text continued on page 300)*

* See "The British Way," by Sir Evelyn Wrench, National Geographic Magazine, April, 1949.

## Wide-eyed Children Envy the Guard Standing Sentry at Buckingham Palace

What London visitor has not felt his blood surge on glimpsing the splash of scarlet against the sentry box at the royal palace?

Behind the scenes, Scotland Yard protects Britain's Queen, but the Brigade of Guards, flower of the British Army, cherishes the tradition of maintaining vigil.

Fairy-tale splendor surrounds these toy soldiers-come-to-life in their old-fashioned uniforms of scarlet, gold, and blue and towering bearskin headdresses. Rigid as ice, they stare across the crowds and past the Queen Victoria Memorial.

The changing of the guard delights a large audience every other day at 10:30 in the palace courtyard. There, against martial cadence of drum and fife, a new regiment takes over in a crash of stamping feet and a display of lead-soldier precision.

Red plume and eight-point collar star mark this sentry as one of the Coldstream Guards. A United States Air Force master sergeant stands behind the children.

→ A Grenadier Guard stands under the Queen's new cipher (monogram). Flaming grenade collar insignia and white helmet plume (barely visible) identify his regiment.



Photograph by George Vattas from European
Kodachrome by Frank Shaw, National Geographic Staff

ZOOLOGICAL GARDENS
Regent's Park
Broad Walk
Outer Circle
Queen Mary's Gardens
MARYLEBONE STATION
Dorset Square
Marylebone Road
York Street
Crawford Street
George Street
Portman Square
Park Square
Devonshire St.
Wey mouth St.
New Cavendish Street
Harley Street
Cavendish Square
Oxford Circus
Oxford Street
Hanover Square
MARBLE ARCH
ROOSEVELT MEMORIAL
Grosvenor Square
AMERICAN EMBASSY
Grosvenor St.
Brook Street
Berkeley Square
MAYFAIR
Hyde Park
Park Lane
Curzon Street
Piccadilly
The Serpentine
Hyde Park Corner
Rotten Row
APSLEY HOUSE
WELLINGTON ARCH
Knightsbridge
Constitution Hill
Green Park
Buckingham Palace Gardens
BUCKINGHAM PALACE
ROYAL MEWS
BELGRAVIA
Sloane Street
Pont St.
Eaton Place
Eaton Square
Lyall St.
Chester Road
VICTORIA STATION
Victoria Street
Buckingham Palace Road
Pimlico Road
Ebury Street
PIMLICO
Hobhouse
Euston Road
Tottenham Court Road
Fitzroy Square
Fitzroy Street
Charlotte Street
Howland Street
Grafton Way
EUSTON STATION
Euston Square
Gower Street
Chalton Street
Phoenix Road
Pancras Road
ST PANCRAS STATION
KING'S CROSS STATION
Euston Road
UNIVERSITY OF LONDON
Russell Square
Guilford St.
BRITISH MUSEUM
Bedford Square
Great Russell Street
New Oxford St.
High Holborn
Soho Square
Cambridge Circus
Shaftesbury Avenue
Monmouth St.
Long Acre
Mercer St.
EROS
Piccadilly Circus
Haymarket
NATIONAL GALLERY
Trafalgar Square
ST MARTIN-IN-THE-FIELDS
CLEOPATRA'S NEEDLE
NELSON COLUMN
CHARING CROSS STATION
Cockspur Street
St. James's Square
Pall Mall
ADMIRALTY ARCH
Charing Cross
HUNGERFORD BRIDGE
ST JAMES'S PALACE
The Mall
Downing St.
St James's Park
QUEEN VICTORIA MEMORIAL
Birdcage Walk
Parliament Square
BIG BEN
CENOTAPH
NEW SCOTLAND YARD
WESTMINSTER BRIDGE
HOUSES OF PARLIAMENT
WESTMINSTER ABBEY
Victoria Street
Smith Square
Horseferry Road
LAMBETH BRIDGE
Vauxhall Bridge Rd
Millbank

# London

Scale in feet

CORONATION ROUTE
to Westminster Abbey
to Buckingham Palace

Drawn by William N Palmer

Wynford Road
Pentonville Road
City Road
Regent's Canal
Clerkenwell Road
Farringdon Road
St. John St.
Goswell Road
Theobalds Road
Lincolns Inn Fields
ROYAL COURTS OF JUSTICE
Fleet Street
ST. MARY-LE-STRAND
KING'S COLLEGE
(Adapted east wing of the Somerset House)
SOMERSET HOUSE
BLACKFRIARS STATION
Victoria Embankment
WATERLOO BRIDGE
BLACKFRIARS BRIDGE
Commercial Rd
SITE OF FESTIVAL OF BRITAIN
1948-51
Farringdon Street
Holborn Viaduct
Newgate St
Cheapside
ST PAUL'S
Cannon St
Queen Victoria St
Upper Thames St.
SOUTHWARK BRIDGE
CANNON ST STATION
BANK OF ENGLAND
MANSION HOUSE
Cornhill
ROYAL EXCHANGE
Leadenhall St
Lombard St
Fenchurch Street
Lower Thames Street
LONDON BRIDGE
LONDON BRIDGE STATION
THE TOWER
TOWER BRIDGE
Tower Hill
Aldgate
BROAD ST STATION
LIVERPOOL ST STATION
Moorgate
Finsbury Circus
GUILDHALL
Bishopsgate
High Street
Commercial Street
WATERLOO STATION
LONDON COUNTY HALL
Kennington Road
Westminster Bridge Road
Lambeth Road
St George's Road
Blackfriars Rd
Borough Road
Tooley St
Great Dover Street
Trinity Square
Long Lane
Old Kent Road
New Kent Road
Grosvenor Rd
Tabard St
Crimscott St
Abbey St
Grange Road
BRICKLAYERS ARMS STATION
BERMONDSEY






**A Gilded Cage in Piccadilly Circus Discourages Revelers from Scaling the Statue of Eros**

The winged aluminum archer, preparing to bury a shaft in the ground, was originally a pun on the name of Lord Shaftesbury, the philanthropist whom he honors. Londoners call him Eros (Cupid), god of love (page 307).


299 Kodachrome by National Geographic Photographer David S. Boyer

**A Midday Lull Slows the Surge of Traffic Through London's Busiest Intersection**

Restaurants and theaters cluster around this pleasure center, whose lights rival New York's. Underground stations here load and discharge 25,000,000 passengers a year. Central building splits Regent Street (left) from Glasshouse.

300

© Fox Photos, Ltd.

**Gog and Magog Return to Their Posts as Guardians of the City of London**

London since the days of Henry V has usually maintained effigies of the mythical giants Gog and Magog in the Guildhall, the council hall of London's oldest section, the City. Fire destroyed the statues in 1666 and again during the Nazi blitz in 1940. The newest figures, of laminated limewood, were sculptured by David Evans. Here, minus weapons, they arrive at Guildhall just in time for the Coronation (page 309).

of one of the most revered of kings. That her name should be Elizabeth, a name that rings a thousand joy bells in the English memory, is too good to be true.

At the back of the nation's mind is the thought that the new reign may be as glorious as the reigns of former queens and that under Elizabeth II the Commonwealth may enjoy another Golden Age.

A dear old woman who, to my knowledge, has been selling newspapers in Fleet Street for at least 25 years, gave me her explanation of the Queen's popularity.

"She's one of us," she said, nodding delightedly. "She's a Londoner; you might almost say she's a Cockney! [Her Majesty was born in Bruton Street off Berkeley Square.] And she's got a touch of old Vic [Queen Victoria] about her. She knows her own mind and no mistake. She won't stand no nonsense, not likely she won't!"

It always delights me when old Cockneys, who have probably never been within hailing distance of royalty, talk familiarly about the monarch as if he, or she, were in the habit of dropping in to tea with them now and then.

People probably talked like that centuries ago when the King and the Queen were accessible and visible and often ate in public. Samuel Pepys reflected the mood of his time when he wrote in his diary (October 19, 1663): "Coming to St. James's, I hear that the Queen [Catherine of Braganza, wife of Charles II] did sleep five hours pretty well to-night, and that she waked and gargled her mouth, and to sleep again."

It is also on record that a visitor to St. James's Palace once tripped on the stairs and

301 J. Allan Cash

**Wimbledon Fetes the New Sovereign with Roast Ox—an Ancient Custom**

As meat rationing remains in force, the town had to get permission from the Ministry of Food. A fat ox was found in Surrey. Dressed down, it weighed 750 pounds, enough for 1,000 rations.

fell headlong through a door at the bottom. When he recovered consciousness, he saw that a fiery-looking little man with white eyebrows and a red face was sticking plaster on his skull. This was George II, and the visitor had fallen into the royal bedroom.

I wonder whether the impossibly intimate and familiar stories which Cockneys tell about the goings on in palaces, and what the Queen said to so-and-so, may not be a relic of a day when the tittle-tattle of St. James's was the talk of the town.

### A Tale of Young Prince Charles

For instance, before the Coronation I encountered quite a crop of stories about little Prince Charles, who will be five years old this November (page 306). The best, I think, was told me by a man who said he had heard it from the mother of a guardsman:

One day when the sentries were relaxing in their shirt sleeves in the Buckingham Palace guardroom they were surprised to see young Prince Charles standing there. They jumped to attention. He is said to have remarked, "You don't look very much like soldiers to me." They then hurriedly put on their scarlet tunics.

"That's better," the Prince is reported to have said. "And now I will drill you." Then he turned them left, right, and about, but, suddenly becoming tired of it, said, "Come on, let's play at horses"; and the guardsmen dropped on all fours.

The Londoner loves a story like that.

Although so many millions of words have been written about the Coronation, it seems to have escaped notice that never before in history has a queen regnant been greeted with unanimous approval. There have been five such queens in English history, and they all ascended the throne in an atmosphere of gloom, doubt, and even personal danger.

Poor Mary Tudor, a pathetic love-starved

## Coronation Road Lives Up to Its Name: East End Youngsters Hail the Queen

Streets and squares both poor and wealthy celebrated with street dances and parties. A designer of Coronation decorations gave flags and greeting cards for these chimney-potted row houses. Coronation Road was named in honor of the newly crowned Edward VII.

## Brass and Glass Duplicate the Queen's Priceless Regalia

This lathe operator, tenant at No. 4 Coronation Road, puts finishing touches on models of St. Edward's Crown and other royal jewels (pages 324, 325, 326). Guided solely by picture post cards, he produced accurate copies. Stones from his wife's jewel box cost $3.

woman who is fated to go through history called "Bloody Mary," was the storm center of a religious revolution.

So perilous was life that it is a miracle Elizabeth I ever reached the throne. Even so, at first she could find no churchmen willing to crown her. Those archbishops and bishops not in the Tower called her a "heretic and a bastard" and boycotted the ceremony, and the obscure bishop who eventually anointed her is reported to have died of remorse within a year.

Mary II was never liked, and Anne, her sister, was welcomed as a pleasant change; but she was so huge and gouty that she had to be carried to Westminster Abbey—hardly an inspiring inauguration.

Even Victoria, so glorious in retrospect, came to the throne a young untried girl, and many contemporaries wondered if she could stand the pace. Her coronation was called the "Penny Crowning" because it was done on the cheap, and even Disraeli, who became one of the glories of her reign, almost failed to attend it because he did not wish to spend money on a court dress or get up at 8 a.m.

Let the historian of the future note, therefore, that Elizabeth II is the first queen regnant in English history to be crowned with universal acclamation. And the reasons, apart from those of personal affection, are: because the Crown is no longer involved in politics or religion; because since Victoria the Royal Family has presented an idealized picture of the domestic virtues; and because, after years of postwar depression, the country feels that fate may have given it the break it so badly desires.

### London in Light-hearted Mood

During my first weeks I saw a great deal of London. I went to Buckingham Palace. I talked to the Lord Mayor of London. I had tea with the Chief Warder in the Tower of London. I went to Westminster Abbey, which was locked up but looked as though beavers were building a dam inside it.

I had lunch in the House of Commons and sat afterwards on the Terrace watching the tugs go hooting up the Thames with their strings of barges like ducks with their chicks. I sat in the new House of Commons. I saw the Churchill Arch, the only part of the blitzed chamber that remains, an archway scarred and pitted by bomb and fire and preserved at the suggestion of the Prime Minister (page 309).

Sir Winston, sitting in the front row of the Government benches, was perceptibly older than when I crossed the Atlantic with him in 1941 to meet President Roosevelt off Newfoundland, the meeting that produced the Atlantic Charter. He was wearing a hearing aid in his right ear. It must have been a good one, for he missed nothing; and I heard him rise up and demolish an opponent with a phrase.

I took hundreds of buses and taxis. I talked to everybody, and everybody talked to me. I got lost, as I always do, in the Underground.

And all the time I was thrilled to be in London again. It was so good to hear a bus conductor clumping up the iron steps to the upper deck, jingling the coins in his bag and shouting, "Henny-more-fares-please"; to hear once again the incredibly refined voice of a London telephone girl asking softly, "Ken aye help you?" And once, when I encountered a real old-time London taxi driver, and he, glancing at the tip I gave him, said in a rich, beery voice, "Best o' luck, guv'nor," my cup of happiness was nearly full. I was at home again.

It is my duty to you, unborn author of the future, to tell you that the London of the new Queen was suffering from high blood pressure. Before the bewildered gaze of visitors from every corner of the earth it was turning itself into a fairground. It was like watching some dignified elderly gentleman on a festive occasion putting on a false nose.

### Capital Grows Bright with Bunting

As everyone is aware, London exists beneath a gray pall of suspended moisture. Sometimes it parts to reveal the sun, and then London appears—at least, to me—the most beautiful city on earth. And the gray days and the gold days followed one another while an army of workmen transformed a city that had only just emerged from mourning the late Queen Mary into a fantastic labyrinth of loyal avenues covered with flags and bunting.

The speed with which this happened surprised many people. An American woman said to me, "Back in the States we talk about the American know-how, but it seems to me that these Londoners have nothing to learn."

The Ministry of Works and the 28 Metropolitan Boroughs were determined that no lamppost should go ungarlanded and that no vista should remain unimpeded if a few acres of assorted heraldry could block it up. I dislike decorations, especially in London, but some of them were quite good.

Whitehall, I thought, looked wonderful. Someone had had the brilliant idea of mounting enormous masts, two by two, down the center of the roadway, each one topped by a huge plumed helmet of gold. It looked, especially from Trafalgar Square, as if a squadron of gigantic Life Guards was trotting down to Westminster.

## Plumed Helmet and Drawn Sword Thrill a Lad and Lassie

White-plumed Life Guards and red-plumed Royal Horse Guards, the two regiments of Household Cavalry, take pride in being among the oldest regular units of the British Army. Their burnished helmets, white buckskin breeches and gauntlets, glossy jack boots, red or blue tunics, and elevated plumes add brilliant color to ceremonial occasions.

Here the young Earl of Aboyne and Lady Pamela Gordon, children of the Marquess and Marchioness of Huntly (page 313), admire a Life Guard on sentry duty at Whitehall.

These students of King's College School chat with a master at Wimbledon. For the last 12 coronations, boys of one school, Westminster, have exercised the privilege of being first to acclaim the sovereign with a "Long live" shout in Latin.

Two nights before the Coronation, spectators began claiming places along the six-mile procession route. Despite heavy showers and cold wind, curb fronts were crammed six and eight deep on Coronation eve. These early arrivals, carrying food, flasks of tea, and air cushions, shivered through the night in Pall Mall.



Kodachromes by Franc Shor,
National Geographic Staff



Kodachrome by Clement E. Geiger

© United Press 306

## Umbrellaed Gold Coast Chiefs Attend the Queen's Garden Party

Ascot toppers and morning coats sprinkle Buckingham Palace lawn, scene of the fete (page 330). Kip Ross of the National Geographic staff and his wife Rosita appear in the upper left.

Queen Elizabeth lends a hand to Prince Charles as she discovers her venturesome son climbing a window ledge at the Royal Family's castle in Scotland. The four-year-old Heir Apparent watched his mother's crowning from a box in the Abbey (page 318). Later, on the balcony of Buckingham Palace, he showed enormous interest in two golden bracelets acquired by his mother at the ceremony.

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The Strand became rustic and coy, with every lamppost entwined by enormous artificial climbing roses. A good idea was the Maypole in the center of the road opposite the church of St. Mary-le-Strand. Many people must have thought it a curious obstruction, but the point was that it stood on the same spot occupied by the famous Maypole that was one of the sights of medieval London.

The Puritans pulled the Maypole down as a relic of "vile heathenism," but the first thing London did when Charles II was restored to the throne was to put up an even bigger and better one in the same place; and there it remained until the 18th century. Still another was soon erected, and when it too was abandoned, Isaac Newton bought it as a support for an astronomical telescope.

Piccadilly was suffering from a species of monarchical measles. It was a rash of loyalty. All the travel offices had staged little shows in their windows. Pan American World Airways had reproduced the complete Coronation procession in lead soldiers. The French railways had pictured all the French princesses who became queens of England, and a Danish travel agency stressed the many historical links between England and Denmark. Indeed, I thought that an intelligent foreigner, just wandering along Piccadilly, could have taken a degree in history.

### Piccadilly's Cupid in a Cage

The statue of Eros in Piccadilly Circus had been enclosed within an openwork gilded cage that, when lit up at night, was gayer than anything London has seen for years (page 298).

There was evidently a motive in this decoration, for the cage was apparently unclimbable. Nevertheless, Eros was scaled on the night of Coronation Day by two revelers, one a seaman, the other a woodwork polisher, who succeeded in getting inside the cage. When they were charged at Bow Street police station with insulting behavior, the magistrate dismissed them with the comment that perhaps no one had been insulted except Eros.

It has been the custom of revelers since the Armistice rejoicings in 1918 to scale Eros on every festive occasion, much to the annoyance of the police.

Eros, as first created, was really just a statuesque pun. Its sculptor, Sir Alfred Gilbert, when commissioned to create a memorial to the seventh Lord Shaftesbury, after whom the near-by Shaftesbury Avenue is named, thought it would be appropriate to design the figure of an archer in the act of burying a shaft in the avenue. And that was at first the target at which the statue was aiming.

But officialdom, possibly disliking puns, in course of time turned the figure round so that the idea is now pointless. But London has taken to its heart this statue (by the way, the first large one ever to be cast in aluminum), has christened it "Eros," and has made it the presiding deity of West End gaiety.

Anyone who knew London 20 years ago will remember the apple-faced old women who used to sit around the base and sell gardenias and violets which in those days, and in their words, were "luvly-vi'lets-a-penny-a-bunch!"

But if you wanted to see the genuine decorations, it was necessary, as I told every stranger I met, to leave the official tributes of the West End and to explore the hundreds of little streets in East Ham, Stepney, Bermondsey, and any of the east or southeastern boroughs (page 302).

There you saw the real thing uninspired by any municipal body, an individual effort that almost defies description: whole streets hidden beneath flags and bunting, streamers from one little bedroom slung across the street to the bedroom of the house opposite, banners with "God Save our Queen" upon them, and pictures of the Queen and the Duke of Edinburgh. It was in one of these humble districts that, during a Silver Jubilee drive years ago, George V and Queen Mary turned into a beflagged street and read above their heads, upon a banner slung across the road, the words "Lousy but Loyal."

To any Coronation visitor it must have been obvious that he was seeing an abnormal London, a city that had gone gay for the first time in many years and was trying to forget its problems. These problems are the result of the war and a social revolution.

Generally speaking, the man in the street is better off than he has ever been, while the professional and middle classes have taken a big step downward. I met a friend who was once well off with an income of £4,000 ($11,200) a year. He is now impoverished. He has divided his house into three flats, in one of which he lives himself, and he has given up his car and other luxuries to keep three children at the kind of school he thinks right and proper for a gentleman's children.

Another man who owned some property had handed it over as a gift to its tenants! He could not legally turn them out; neither could he raise their rent, nor could he pay for the repairs. He had been losing about £200 ($560) a year on this house and was regarded into the bargain as a bloated plutocrat.

### Housing Short Despite Rebuilding

Housing is one of the greatest problems in the London of the new Queen. The authorities have called a halt to the outward expansion of London. The London County Council, the governing body of the 117 square miles of the County of London, is working with its neighbors on 20-year plans of development; the hope is that many Londoners will find homes and work in new and expanding towns outside the "green belt" and 25 to 100 miles from the center of London.

They told me at County Hall (which, by

308 British Travel Association

**Yeomen of the Guard Keep the Ravens in London Tower**

Tradition gives Charles II credit for the prediction that England would fall if the ravens ever left the Tower. During the war, when only one bird survived, Prime Minister Churchill ordered the colony "brought up to strength." Now there are six. They get an official daily ration (page 310).

the way, when lit up for the Coronation looked like some enchanted Venetian palace) that since the war the Council has built 51,000 homes and flats and has restored as habitable dwellings over 86,000 bombed houses. And still there is a housing shortage. Plans exist for another 30,000 homes.

The result of this shortage is that thousands of Londoners are living with relatives or with other families. It is difficult for newly married couples to find anywhere to go, and one of the most frequent sources of domestic woe, and even tragedy, is a kitchen shared by two women.

It is a little surprising, when you have heard so many hard-luck stories from the once prosperous middle classes, to see in the shop windows of the West End handmade shoes at £15 ($42) a pair and Savile Row suits at £50 ($140) each, both finding ready customers. There seem to be as many Rolls-Royces as ever on the streets.

I asked an old shoemaker in St. James's, who used to make shoes for me for £4 ($11.20) a pair, who bought his shoes at the new prices.

"Lots of people," he replied. "Nobody dreams of saving money now or of trying to leave any capital. Everybody tries to dodge the tax collector and the death duties. The idea today is to divide your capital by your expected span of life and then proceed to blow it. Who wouldn't rather have a pair of my shoes at £15 than think of the money going in death duties? You can see old boys of about 70 deliberately having a spree and just chucking their money away."

### Bobbies and Cockneys, New Style

Two changes in London must be apparent to the experienced traveler. One is the virtual disappearance of the old-type London "bobby," and the other is that Cockney is dying out as the argot of the London streets. Both changes, no matter how sentimentally regrettable, are inevitable.

The social conditions which produced the massive London policeman have gone; so also, I might add, have the days of Dickens' Bill Sikes. The modern crook is no longer a person who must be mastered by physical strength but an individual who can more readily be circumvented by intelligence and quick thinking. In recent years the Metropolitan Police Force has recruited a more educated, if less physically notable, type, and the evidence of this policy is now everywhere visible.

It is not unusual for the stranger to London, when appealing for help to a policeman, to be answered in a cultured Oxford accent. I actually heard a policeman say to a stranger in the Strand: "Well, sir, I know it's an awful bind, but I'm afraid you'll have to walk along the Embankment to Blackfriars Bridge because Fleet Street is now closed to traffic until the Queen has been to St. Paul's."

One night when I was in a car driven by a young American, we came into Parliament Square on the wrong side of the road. He had just muttered to himself, "Here I go

again, forgetting I'm not at home!" when we were stopped by a hand in a white glove, and a helmeted head was lowered to the car window.

"Now, sir," said the policeman, "if you come round this corner, please *do* use the right side of the road!" He was stern but regretful, as if rebuking a willful child.

"I'm awful sorry, constable," began my friend.

"Don't worry," cut in the policeman. "I'm just telling you for future reference. I'm sure you won't do it again. Go ahead!"

These boys, though they lack the massive presence of the old bobby, are nevertheless quite as effective and just as efficient.

309 © United Press

**Sir Winston Beams as He Starts for the Coronation**

Recently knighted, the Prime Minister wears the Star of the Garter and the uniform of the Lord Warden of the Cinque Ports. Here he and Lady Churchill leave No. 10 Downing Street to take their place in the procession.

The disappearance of the Cockney accent—I mean the real, rich old-time "Gor-blimey" type of Cockney speech—is due to education and to the radio and the film. Even in Whitechapel anyone today who greeted a friend with "'Ello, me old cock sparrer," would be regarded with suspicion as a curious survival. With a more polite, standardized speech a lot of the raciness has departed from the London streets.

Like all living dialects, Cockney has changed from time to time. Readers of Dickens will remember that Sam Weller and other characters pronounced the letter "w" as "v," and later in the 19th century "th" was pronounced as "f," so that "think" became "fink" and "thanks" became "fanks." And a pamphlet just issued for the use of London County Council school inspectors notes that one of the most deplorable tendencies is a lazy habit of omitting the letter "t" so that "water" becomes "wa'er" and "butter" becomes "bu'er." I first noticed it when I heard a Cockney talk about "a lo' o' li'le bo'les" instead of "a lot of little bottles."

The Cockney accent had an extraordinary gusto and was the perfect medium for the expression of ironic witticism. I, for one, regret its gradual passing.

### "The City"—One Square Mile

I went down to the City one day to meet the Lord Mayor of London, Sir Rupert De la Bère. The City (with a capital C) is a constant puzzle to the stranger. When a Londoner refers to the City, he means the square mile where London began, 1,910 years ago. This area was walled by the Romans and in time became medieval London. It contains St. Paul's Cathedral, the Bank, and London Bridge. Close by is the Tower of London.

The Lord Mayor of London is, as a historical character, second only to the monarch. His state is that of a medieval baron, and he takes precedence within the City boundary over everyone except the sovereign. On ceremonial occasions even the reigning monarch asks permission to enter. The Lord Mayor has his marshal, his sword and mace-bearers, and his chaplain, and he travels in state in a gold coach not unlike the royal coach.

He is elected by the Aldermen and holds office for only 12 months, during which time he must live and sleep in the City in his splendid official residence, the Mansion House, opposite the Bank of England. Since the "square mile" is now a business area, its few thousand other residents are chiefly caretakers.

I arrived an hour or so before the time of my appointment and took a walk round the City. I was surprised to notice little change in three years. Cheapside still bore many signs of the war, and the enormous blitzed area round St. Paul's Cathedral and between Cheapside and Moorgate had not been rebuilt. I wandered into the Guildhall where, amid considerable excitement, the new Gog and Magog, the guardian giants of the City whose predecessors perished during the air raids, had just been installed in the minstrels gallery.

I well remember the terrible morning of December 30, 1940, when I climbed my way through rubble towards this building to be met by the librarian, who had been up all night fighting the fire and looked like an exhausted coal miner. He told me with tears in his eyes that Gog and Magog had gone up in flames.

"It's all my fault!" he cried miserably. "I should have sent them away to safety, but I couldn't bring myself to do it. I couldn't think that the City of London should be without Gog and Magog, its guardians!"

And now the great moment had arrived when, in readiness for the Queen's state visit to the City, two new giants had been installed. They are the work of Mr. David Evans, the sculptor, and are beautifully carved limewood figures 9 feet 3 inches in height (page 300).

They are grotesque and fierce, as giants ought to be; yet I found that the staff of the Guildhall preferred the more uncouth old oak figures. Londoners are like that. I, personally, thought the new giants a great improvement on the old ones.

### A Chat with the Lord Mayor

Walking down Cheapside, I presented myself at the Mansion House.

I was shown by a footman into a vast drawing room whose Georgian pilasters and cornices were picked out in gold. The Lord Mayor, who is a Member of Parliament, a businessman, and a farmer, came briskly in, wearing the usual black coat and striped trousers of a City man. He was interested to know that I was writing for the NATIONAL GEOGRAPHIC MAGAZINE, which he reads and enjoys.

We discussed his part in the forthcoming Coronation. His robes are of scarlet and ermine (page 312). He drives to the Coronation in state accompanied by his sword and mace-bearers. His heavy coach, which has no springs, is drawn by a team of powerful dray horses.

"All I have to do," he said, "is to stand near the Throne among the heralds and hold the Crystal Scepter of the City, which, by the way," he added, "I hope I shall not drop!"

This scepter, often called the "Crystal Mace," is an object of unknown age which some authorities think may be Saxon. It is 18 inches long, the shaft of twisted crystal mounted in gold. It is used only at coronations and on extremely rare occasions.

Passing to modern London, the Lord Mayor told me that of the City's 393 acres of buildings 104 were totally destroyed by bombing. Nearly £7,000,000 ($19,600,000) of rebuilding has been completed, with but little effect on the appearance of the City. Another £15,000,000 ($42,000,000) has been approved by the City Corporation, but the work has been held up by housing priorities.

The sight of so many bombed sites in the City is surprising so many years after the war and is in marked contrast with other parts of London, notably the West End.

The City of the new Queen will eventually be a less crowded and a better planned place, but no skyscrapers are to be built. St. Paul's is to be surrounded by gardens so that the Cathedral may stand out as Wren, the architect, intended it to do, uncluttered by neighboring buildings.

The problem of reconstructing a crowded area like the City, of reconciling town planning with private property rights, and of providing adequate parking space is a complex one. During a recent census it was discovered that 5,000 cars are parked every day on bombed sites. The new buildings are to have underground garages, and some, in crowded lanes, will be given electrically driven turntables that will enable cars to drive in, turn round, and get away.

While we were talking, the Lord Mayor's valet came in carrying the scarlet Coronation robes, which Sir Rupert put on. It was at this moment that I noticed the improbable figure of an American sergeant, in uniform, standing beside a Corinthian column, holding a fishing rod! The scene was one that reminded me of Lewis Carroll or maybe Salvador Dali.

"Yes, he's there all right," said the Lord Mayor, "and his name is Sgt. Maynard E. Hosner. He has come over for the Coronation bringing me a fishing rod made of spun glass, with the compliments of the Governor of Michigan and the Mayor and citizens of Kalamazoo."

In this pleasing atmosphere of fantasy I said good-bye.

### "Murder" at the Tower of London

I walked along to the Tower of London to look up my old friend, Mr. Cook, the Chief Warder. I found him in his office a few yards from the site of the headsman's block on Tower Green. The new partisans, or pikes, carried by the Beefeaters had just arrived, bearing the new royal cipher, EIIR.

"How do you like it?" asked Mr. Cook, handing me the head of a partisan.

"Very nice," I replied.

"Well, I'm not so sure," he said, his head on one side. "I think the E is too upright and—well, too *masculine!*"

Hanging on the wall was a document which can have no equal in any guardroom on earth. It is headed "Ravens."

As all the world knows, these birds have been kept in the Tower of London for centuries. They hop clumsily and often angrily about Tower Green, croaking at the Tower cats and at visitors (page 308).

This document was their official roll and conduct sheet. It gave the name of each bird, its number, and its military career. It

*(Text continued on page 330)*





Ektachrome by Baron from Pix

**A Quarter of Earth's People Hail Elizabeth II as Queen; Among Them, Philip, Her Husband**

As head of the British Commonwealth, Elizabeth is symbol of unity for 610,000,000 people of diverse races, creeds, and religions. Here she wears the ribbon and Star emblem of the Order of the Garter.





Kodachrome by National Geographic Photographer David S. Boyer

**In Coronation Robe, the Lord Mayor of London Sits for His National Geographic Portrait**

Sir Rupert De la Bère is a Member of Parliament, businessman, and farmer. In the City of London he walks second only to the Queen. His velvet and ermine robe will never be worn again during Elizabeth's reign.

313

Kodachrome by David S. Boyer and Frank Hurt, National Geographic Staff

**Five O'clock in the Morning: Lord and Lady Huntly Dress for Coronation Day**

Her robe style proclaims Lady Huntly a marchioness. As premier Marquess of Scotland, Lord Huntly was one of the five peers who personally pledged homage to the Queen. He wears the dress tartan of Clan Gordon, which he heads.

**Clad in Simple White, the Queen Awaits Her Hallowing. (Introducing a Series of Remarkable Photographs of the Coronation)**

From anointing to homage, the NATIONAL GEOGRAPHIC MAGAZINE presents highlights of the Coronation ceremony in historic Westminster Abbey. Here, in mantles of azure velvet, Knights of the Garter (left) carry a golden canopy to shield Elizabeth as she is consecrated with holy oil. The Bishop of Durham and the Bishop of Bath and Wells, flanking the chair, support the monarch, a right their predecessors have had at coronations since 1189.

**"Receive This Kingly Sword . . . Do Justice . . . That You May Reign Forever," Counsels the Archbishop of Canterbury**

The Most Reverend Geoffrey Fisher, Primate of All England, wears a shimmering cope, gift of Japanese churchmen. He is assisted by the Archbishop of York (at his right), whose medieval predecessors contested Canterbury's right to crown the monarch. The Queen grips the diamond hilt of the Jeweled State Sword. In ermine and velvet robes, the Lord Great Chamberlain, Marquess of Cholmondeley, and the Lord Chamberlain, Earl of Scarbrough, stand in attendance on the Queen. Bishops of the Church of England are seated on the right.



Kodachromes by James Farrell

**Elizabeth Wears the Cloth-of-gold Supertunica. She Walks in the Footsteps of 38 Kings and Queens Crowned at Westminster**

Mistress of the Robes, the Dowager Duchess of Devonshire, stands ready to help the Queen put on the great Robe Royal, held by the Groom of the Robes and the Dean of Westminster. Stone of Scone, ancient seat of Scottish monarchs, shows in St. Edward's Chair, a coronation fixture since the crowning of Edward II in 1308.

## Massive St. Edward's Crown Nears the Chair. The Queen Takes Scepters in Hand. Peers Prepare to Put On Coronets

Elizabeth holds Scepter with the Cross (left), signifying power and justice (page 325), and Rod with the Dove, symbol of equity and mercy. The Bishop of Bath and Wells extends a hand to steady her. Canterbury lifts the crown from a pillow held by the Dean of Westminster, whose cope was made for Charles II's coronation.



Kodachromes by James Jarché

318

**The Archbishop Puts the Crown on the Queen: Supreme Moment of the Ceremony**

The slowly descending Crown fixes every eye except that of Prince Charles. His attention momentarily flickering, the lad who may one day be King stands in the royal gallery between Queen Mother Elizabeth and Princess Margaret. Princess Alice of Greece, mother of the Duke of Edinburgh and head of a Greek Orthodox convent, wears her nun's gray habit. Westminster's Communion plate glitters below the balcony.

319



**The Drama of a Pageant Centuries Old Reaches Its Climax in the Abbey**

Just behind the Archbishop, the Marquess of Salisbury holds aloft the unsheathed Jeweled State Sword. Close by, the ermined Lord Mayor of London (page 312) cradles the Crystal Mace of the City of London. Six Maids of Honor wait to carry the Queen's train. Kings of Arms wear tabards and carry rods. Peers and peeresses now don their coronets. Pages, many of them titled youngsters, watch near pillar.





**Elizabeth Is Crowned. Shouts Rock the Abbey: "God Save the Queen!"**

Silver trumpets blared triumphantly within Westminster, cannon boomed the news from the Tower of London, bells pealed across England, and British guns in Korea fired red, white, and blue smoke shells as a joyous salute.

321

Kodachrome by James Jarché

**The Archbishop Addresses His Queen, "God Crown You with . . . Glory"**

Peers don their coronets, the Anglican bishops rise, and the choir (not shown) sings, "Be strong and of a good courage." Canterbury is attended by three chaplains, the Archbishop of York by three bishops assistant.

## ^ Elizabeth Takes Possession of Her Kingdom After Peers of the Realm Symbolically Lift Her to the Throne

ϟ The Queen's lords spiritual (left) swear fealty, promise to be "faithful and true." Then her husband (right) kneels before her to do homage, pledging, "I, Philip, Duke of Edinburgh, do become your liege man of life and limb, and of earthly worship; and faith and truth I will bear unto you, to live and die, against all manner of folks." Page Duncan Davidson, 11-year-old nephew of the Duke of Norfolk, Earl Marshal of England, holds the Archbishop's book and Edinburgh's coronet (right).

All three pictures show General of the Army George Marshall, chief United States delegate to the Coronation, in formal dress standing in first row of choir stalls behind the Queen. Prime Minister and Lady Churchill appear in the rows behind him. Lord Simonds, the Lord High Chancellor (left), wears a wig.



Kodachromes by James Zarchi

### St. Edward's Crown Is Worn Only at Coronations

Named for Edward the Confessor, whose crown was broken up, this crest of office was made for Charles II. Designed to fit over wigs, it was too large and heavy (seven pounds) for Victoria, who refused to wear it. Two golden gem-studded arches, symbolizing sovereignty, vault above the velvet Cap of Maintenance. Orb and cross express Christ's dominion.







**London Tower's Treasures: the Royal Regalia Glitter with Gold and Jewels →**

Cromwell's Parliament destroyed Britain's ancient regalia. Crowns and scepters were melted; gems sold for a song. Only survivors were the golden eagle, called the Ampulla, which holds anointing oil, and the gold-washed silver Spoon, which receives it. Among new regalia made for Charles II was the golden Orb, topped by a diamond-crusted cross with amethyst eye. The Coronation Ring, called the Wedding Ring of England, flashes with sapphire, diamonds, and ruby cross. St. George's Spurs, with straps of velvet, are emblems of chivalry. Star of Africa, 516½ carats of the Cullinan diamond, blazes from the Scepter with the Cross.

### A King's Ransom in Famous Jewels Frosts the Crown of State

If tradition's tales are true, the sapphire (top) was buried with Edward the Confessor. Elizabeth I wore the pearls (beneath the orb) as earrings, and Henry V carried the egg-sized Black Prince ruby at Agincourt. Second Star of Africa (just above ermine) took a 309½-carat bite from the Cullinan diamond.





326

**Scepter and Orb in Hand, Elizabeth Leaves the Abbey** ➤

Seven thousand distinguished witnesses, many from places halfway around the world, packed Westminster's aisles and balconies. Formal, court, military, legal, and exotic dress heightened the spectacle.

Here Elizabeth wears the State Crown, as she will do many times during her reign. Her royal purple Robe of State is borne by six Maids of Honor. They are followed by the Mistress of the Robes, her page, the Groom of the Robes, Ladies and Women of the Bedchamber, and robed peers. Plumed Gentlemen-at-Arms escort the Queen past Yeomen of the Guard standing at attention. Trumpeters, silver instruments in hand, watch from the organ loft. Steps to the Throne, on which the Queen received homage (page 323), may be seen through the portal.






**Lamppost Sitters and Periscope Holders Strain for a Better View of the Parade**

Coronation visitors swelled London's 8,500,000 population by a million. Cardboard periscopes used mirrors to let rear ranks see over the crowd. Greased posts of street lights failed to discourage climbers.

329

Kodachrome by Rig Ross, National Geographic Staff

**Royal Foot Guards March Up Whitehall and Swing Past Trafalgar Square's Banners**

Two million spectators lined the route, their tumult of cheers surging along every foot of the Queen's six-mile round trip. Big Ben's chimes scarcely pierced the din; his clock tower looms through the mist.

began with Nigger, who "died of shock during the 1940 air raids, aged 18 years." Then came Mabel, who "disappeared mysteriously August 1946," and Grip, who also "disappeared mysteriously, September 1946."

"What happened to them?" I asked.

"We never found a feather," replied Mr. Cook.

The next entry concerned Pauline, who "died from injuries caused by Mabel and by Grip." Short and Towerlike was the comment on the fate of a bird named MacDonald—"Found murdered."

The present ravens are six in number and have been named Cora, Corax, Gunn, Garvie, Charles, and Cronk.

I learned that the Beefeaters were having revolver practice in preparation for their all-night vigil on the eve of the Coronation, when they have to guard the Crown Jewels in the Jerusalem Chamber of Westminster Abbey. I smiled to imagine these Tudor figures armed with Colts. Mr. Cook told me that the idea of arming them with submachine guns had been abandoned in view of the possibility that, should anything happen, the Beefeaters might shoot up the Crown Jewels by mistake!

### Toppers and Turbans at the Palace

As the day of the Coronation approached, I received an invitation to a garden party at Buckingham Palace. This meant a visit to Moss Bros., the firm of outfitters known everywhere in London as "Moss Bross." They can, at a moment's notice, dress a duke or a field marshal or turn you out, complete with court sword, looking like a character in a comedy by Sheridan. They told me that within a week of King George VI's death all their peers' robes had been booked.

That a peer should hire his robes is not necessarily a sign of insolvency. When the first Elizabeth was queen there were about 50 temporal peers; now there are about 800, most of them business or professional men. These costly robes are essential only at a coronation, and it is obviously much more sensible to hire than to buy them.

In a day or so I strolled onto the wide lawns of Buckingham Palace wearing a gray Ascot topper and a well-cut morning coat. I suppose hundreds of my fellow guests had drawn their splendor from the same source.

The scene was a remarkable one. The lawns were crowded with several thousand people from every part of the world. They wore every imaginable costume. I saw African chiefs walking beneath their state umbrellas; Burmese princesses; Indian women in yellow, silver, and magenta saris; gentlemen in glittering turbans and gold trousers; and I felt that there must be quite a lot of the Empire still left (page 306). A guards band played in a marquee; tents and pavilions stood ready to provide the guests with tea, cakes, and ice cream.

The ritual of a palace party is always the same. Those guests who are to be presented to the Queen are segregated by the Lord Chamberlain. The rest stand round and rubberneck. Suddenly every top hat is doffed, a band plays the anthem, and the Queen is standing on the lawn, the Duke of Edinburgh beside her.

They walk slowly round, and, as they pass, the men lift their hats, the women curtsy. The guests are shameless in their curiosity. Some even stand on chairs to get a better view.

When the royal party has retired to its marquee, there is a polite but tough fight for tea and cakes in the other pavilions. The band plays Gilbert and Sullivan. Photographers mounted on the palace roof with enormous Big Bertha lenses take long shots of the guests, for no camera is allowed on lawn level.

After about two hours of polite strolling to and fro, a long lane is formed, the Queen passes back to the palace, and the party is over.

While this was going on, I was hunting for a mulberry tree. I have it on the best authority that one mulberry tree still remains in the palace gardens, a relic of those planted there in 1609 by James I in an abortive attempt to create an English silk industry. But on the rare occasions when I have been in this garden I have failed to find it; and I failed again.

That was how Buckingham Palace began: a mulberry garden that soon degenerated into a kind of roadhouse where the gallants of the time of Charles II used to take their lady friends to eat mulberry pie. Pepys called it "a very silly place."

Though I failed to find the tree, I came across a sight that might have been seen in any suburban garden. It was a children's sand pit from which obviously Prince Charles and his sister had been whisked off to the nursery before the party began. Like all children, they had found an old wooden kitchen spoon, which lay stuck in the sand just as they had left it after making sand pies with the half of a large Easter egg.

### London Learns Atom-bomb Defense

As a contrast to these exalted moments, I changed my gay attire and went that night to Hammersmith with a friend who lectures to members of the Civil Defense Corps on the atom bomb. It is interesting to know that while, to the superficial observer, London





Kodachrome by Quentin Keynes

**Spectators Paid Up to $150 for Choice Seats Like These in Pall Mall Stands**

Tattoo of drums, fanfare of trumpets, and skirling of pipes rose from 40-odd bands. Pipers included Nepalese and Pakistanis as well as Highlanders in regimental kilts. Here a Grenadier band passes a fence of bayonets.

seemed incapable of any other thought than the Coronation, 33,000 Londoners meet all over the London area once a week to study how to save the lives of their fellow citizens in the event of war.

We entered a room in which a number of men and women—ordinary shopkeepers, artisans, and housewives—were studying instruments issued by the Home Office to detect the presence of radioactive dust. They were all keen and interested. I was told that some of them were old air-raid wardens. I thought that to attend these classes in peacetime proved them to possess the highest possible sense of civic responsibility.

I was so interested by this sidelight on London's real activities that I went to the Home Office and found that they were not satisfied with their 33,000 air-raid volunteers and were thinking of a recruiting drive to obtain at least 100,000. The secret War Room of London's Civil Defense is standing ready to be manned at a moment's notice.

I was taken with a group of visiting generals to see the War Room, but I am not permitted to say where it is. I can say, however, that it is far underground. We went through acres of air-conditioned corridors into a complete rabbit warren of rooms all ready with telephones and teleprinters.

The War Room itself contained three large maps of the London area on which enormous disks, used for practice, denoted the devastation caused by atom bombs. This room had a complete link-up with all Civil Defense organizations, with the Army and the RAF, the police, hospitals, and other relevant bodies, and could, I was told, be in action with 97 local authorities in the London area within 24 hours.

### Outdoor Dining Where Bombs Fell

I have indicated that in the past three years London has pulled itself together in a notable manner. It has definitely entered a new era. I saw around me many new signs of the times. For instance, London is now full of little restaurants run mostly by Cypriotes, Greeks, or Italians, and these are no longer confined to Soho. They are an indication that in these servantless days the Londoner, whenever he can afford to do so, eats out.

On the bombed sites, especially in the City, I saw many little continental cafes where typists and City folk can eat beneath gay striped umbrellas which blossom the moment the sun shines. The sight of Londoners dining out of doors is a novelty.

I had the delightful experience of being shown by an American visitor something I had never seen in London, although it has been in existence for 15 years. This was the Derry Roof Garden atop one of Kensington's largest department stores. I doubt whether the Hanging Gardens of Babylon were as beautiful or as ambitious.

Here, 100 feet above London, are an acre and a half of flower beds, 20-foot-high trees, and flowering shrubs, with running water full of goldfish and Japanese carp, and lakes on which ornamental ducks are swimming. There are a Moorish Garden, a Tudor Garden, and an Old English Garden, all planted in two feet of soil that is changed once in 12 months. There is nothing to remind the visitor of his position on the roof of London but the close companionship of neighboring church spires.

### Duke Gives Mansion, Lives in Attic

I thought the museums and art galleries of London were better than ever, and I was delighted to solve what has been a mystery to everyone of my generation. The Duke of Wellington's somber mansion, Apsley House, at Hyde Park Corner, known as No. 1, London, has for years been one of the enigmas of London. It was always closed and apparently lifeless. Now it has been presented to the nation and is open to the public.

Its presentation was unusual, and a special act of Parliament was passed before the nation acquired it. By the terms of this act, the present Duke of Wellington gave the mansion and its contents to the nation on the condition that he and his descendants should occupy a flat rent-free in the attic!

So the splendors of Apsley House, beautifully restored by the Ministry of Works, are visible to anyone who pays a shilling, while His Grace lives upstairs in quarters once occupied by the family servants.

The house is one of the finest sights of modern London. Its ground-floor rooms are full of the massive and costly tributes showered upon the Iron Duke by a grateful Europe; upstairs is to be seen the famous Waterloo Gallery with the enormous table at which Wellington entertained his generals at dinner on the anniversary of Waterloo.

It is just a century since the Iron Duke died, and perhaps no more illuminating commentary exists anywhere on our changing world than this spacious mansion with its suites of superb rooms and galleries, which were the usual background to a duke's life around 1853, and the flat in the attic now occupied by the duke of 1953.

And now I come to the Coronation. I acquired two curious little sidelights on this great occasion. While I was admiring the splendid royal gray horses which were to pull the golden coach through the streets of London, I asked the superintendent of the Royal

(Text continued on page 339)

333

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**The Young Queen and Her Prince in a Gilded Coach Smile on Their Admirers**

The Royal State Coach, four tons of wheels, upholstery, and carving, is as uncomfortable as it is magnificent. Monarchs have complained of the unpleasant sway and jolting shocks of "Old Rattlebones" since George III bought it for £8,000 two centuries ago. A recent renovation added rubber tires and fluorescent lighting but little comfort. Door panel shows Mars, Minerva, and Mercury supporting the Crown of England. Here the Queen, leaving Buckingham Palace, wears a diadem; after coronation she wore the State Crown (page 326). The Duke of Edinburgh wears a Fleet Admiral's uniform. Both are great-great-grandchildren of Queen Victoria.

**Royal Canadian Mounted Police Reach Parade Route's End at Victoria Memorial Circle**

Glint of steel and flash of color cascaded through London with 10,000 parading servicemen. Gurkhas with curved knives, Rhodesians under tarbooshes, and Malayans in sarongs marched with Trinidadians, Cypriotes, and Fijians.

335 Kodachrome by National Geographic Photographer David S. Boyer

**Mounties' Crimson Tunics Match Those of the Brigade of Guards Lining the Mall**

More than 1,000 horses took part in the parade. They included spirited chargers as well as sturdy teams borrowed from breweries. Many were drilled to accustom them to waving flags, pounding drums, and shouting people.


337

© United Press

The Queen in Her Golden Coach Begins the Last Lap of a Triumphal Tour

From Cockspur Street and Trafalgar Square the procession heads for Admiralty Arch, the Mall, and Buckingham Palace, which looms in the distance. The triple archway, part of Royal Navy headquarters, flies the British white ensign, as do ships of war. The flag of Malaya, resembling that of the United States, waves over the Malayan Information Agency in center. Crowds on the left climb the statue of Charles I to catch a glimpse of passing royalty.

Mews to tell me their names. I found that the offside wheeler is called Eisenhower! His companion is Cunningham. The other six are: Tovey, Snow White, Noah, Tipperary, Tedder, and McCreery. For a day these were the most celebrated animals in the world.

### Holy Oil Saved for Generations

My second inquiry concerned the holy oil with which the Queen is anointed. It is this act of unction, not the act of crowning, which is the essential feature of a coronation. The anxiety of early kings was not to be crowned but to be anointed by the Church, and until this happened they never felt their succession to be sure. In the Middle Ages men talked of the "hallowing" or the "oiling" of the monarch, not of his coronation.

I found that the consecrated oil is kept from one coronation to another. Victoria reigned for so long that the surplus oil from her anointing had become granulated by the time of her death. A new supply was therefore made for Edward VII, and this served also for George V. New oil was made for George VI, and this supply would have been used to anoint the present Queen if it had not been destroyed when the Deanery of Westminster Abbey, in which it was kept, was burnt out during the air raids.

The maker of the oil for this Coronation, I learned, was Mr. J. D. Jamieson, who is connected with a well-known firm of Bond Street chemists. The ancient recipe came into his keeping from Sir Peter Wyatt Squire, whose ancestor made the oil for the coronation of Queen Victoria.

There is considerable mystery about this recipe, which Mr. Jamieson has now lodged for safety in the muniments room of Westminster Abbey. He told me that he made the oil last November on Sundays when the dispensary in Bond Street was empty. As a preparation, he gave up smoking for a month in order to increase his sense of smell, for since the first Elizabeth complained that the oil was "nasty grease and smelt ill," it has apparently been highly scented.

The formula is a secret, and Mr. Jamieson said: "The recipe made all the textbooks on solubles look extremely foolish. It was real hard work. The formula is almost the same as that used for the anointing of Charles I, but I am not allowed to divulge it."

He did tell me, however, that it includes the oils of orange flowers, of roses, cinnamon, jasmine, and sesame, with benzoin, musk, civet, and ambergris. It has a rich and peculiar smell, is amber colored when freshly made, but turns reddish with time, and the scent improves with age.

### Rain Fails to Dampen Loyalty

When the great day arrived, I rose at 5 a.m., dressed, and found my way to Westminster Abbey. It had been raining most of the night, a malicious wind whipped round the street corners, and it was chilly enough for snow. I had never known the weather to behave with such disloyalty to the British monarchy. I felt sorry for the crowds who had spent the night in the streets (page 305), and for those who had come at great expense from distant countries, to encounter this depressing morning. But the excitement and expectation of the crowds were such that even the rain was soon forgotten.

A blind man could have told that the early-morning streets were filled with thousands of people. Above the sound of gears and car engines came from every direction the hum of crowds.

The Abbey was transformed by blue hangings and floodlit carpets. I was shown to my seat by a colonel in full-dress uniform, scarlet tunic, tight overalls, and box spurs; and I wondered where I had seen him before. Then it occurred to me that he might have been Sir Aubrey Smith, the film actor who was practically a celluloid representation of all that is best and most noble in English life, and who was always "playing the game" and not letting down the side.

Then I realized that the Abbey was full of Aubrey Smiths, both young and old. They clanked about in spurs, holding swords in kid-gloved hands; they stole noiselessly about the church in black satin or velvet knee breeches and court dress, rapiers slanting from their coattails. How efficiently the Earl Marshal had sacked the military messes of Aldershot and the clubs of the West End to discover so many British types who, as Gold Stick officers, or ushers, marshaled a gathering as brilliant, as dazzling, and as British as themselves.

Why, I wondered, does a peeress wearing long white-kid gloves almost to her shoulders, a tiara on her head, and her ruby-colored ermine robes trailing on the carpet look so

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**The Queen's Coach Rolls Across Parliament's Wet Shadow**

Two miles of men and guns, horses and carriages, sultans and dignitaries stretch ahead as Elizabeth leaves the Abbey (around the corner at right) to greet the expectant multitudes. Here she passes Parliament's Victoria Tower, scaffolded for refurbishing. Postilions steer while riding four of the eight Windsor grays; no coachman could safely manage the 24-foot, four-ton carriage. Walking grooms accompanying each horse carry crooks to lift up traces when turning corners. Yeomen of the Guard (on right) wear beribboned hats, doublets, and ruffs. The stands are filled with notables.

 Kodachrome by W. Edward Boecher

**A Lone Guard Braves a Thousand Stares to Cross the Empty Mall**

These guards, part of 20,000 servicemen lining the route, spent much of the day putting on and removing blue rain capes according to the weather's whims. The crowd cheered each time the drizzle let up and bright-red tunics came out of hiding. Soaking the grooms' red coats, the rain dyed their tight breeches pink. Despite the weather, Kodachromes came out brilliantly.

This officer, in a rare burst of sunlight, strutted across the boulevard down which his Queen later rode under a cloudy sky.

End of the procession appeared in sight as the royal coach and its grooms passed steel arches decorating the Mall with queenly symbols. Now there came a roll of drums and a clatter of hoofs. A horse named Eisenhower and another named Snow White helped bring the Queen back home to Buckingham Palace.

Kodachromes by National Geographic Photographer David S. Boyer

exquisite, while her husband in his regalia appears faintly comic?

I gazed at the peeresses in amazement. It hardly seemed possible that these superbly poised creatures had ever washed up a dish or made a bed, while the peers, who sat opposite in the south transept, looked as though death duties had never been known and each one possessed an enormous estate, a crowd of loyal tenants, and a vast house designed by the Adam brothers.

Could it be possible, I asked myself, that these magnificent persons were the men who for the past 30 years have been giving away their houses to the National Trust?

Women in full evening dress at 6:30 a.m. are never at their best, or perhaps at their sweetest, but they carried it off wonderfully, and only their decorative husbands knew what had really been said at the dressing table at 4 or 5 o'clock that morning!

### Great Abbey Fills with Splendor

Gradually the whole church filled with proconsuls and ambassadors, with admirals and generals, with sultans and rulers of every hue. Upon a floodlit acre of gold carpet before the altar the Earl Marshal and the Great Officers of State moved, trailing clouds of glory, while every now and then the heralds—looking remarkably like the knaves from a pack of cards—appeared in their quartered tabards, turned inwards, and bowed as they showed some member of the Royal Family into the royal box. And all the time a great orchestra mounted on the organ loft filled the church with the splendid solemnities of Handel.

At last came the moment which must have touched the heart even of a cynic. All alone in the solitude of a great destiny stood a young woman in a white dress beneath the floodlights on the golden carpet. From hidden vantage points in concealed boxes television and film cameras were at work. The Queen of England was standing before the whole world (pages 314-327).

No man, I thought, at such a moment could have behaved with such composure. Her bearing was a credit to all queens and to all women. And as I saw her I confess that my heart melted and I knew that I was in the presence not only of the daughter of George VI and our "undoubted Queen" but of Victoria, Anne, Elizabeth I, Mary Tudor, of Great Harry himself, of the splendid Plantagenets and of the far-off Normans.

When the trumpets split the air in triumph, they seemed to open the gates of the past and to fill the church with crowned and sceptered ghosts, each one with the word "England" on its lips. I wondered if she were conscious of them. They were all round her, watching her with grave faces and experienced eyes.

Hidden by the tapestries and the hangings and concealed by tiers of boxes were the tombs of her remote ancestors. Behind the altar was the grave of Edward the Confessor, who died nearly 900 years ago. Round him in a circle were Henry III, who built the present Abbey Church; Edward I and Edward III, those great warriors; and Richard II, who lies there with Anne of Bohemia, the wife he loved to distraction.

How strange it was, I thought, that one young woman in a white dress standing before the altar of Westminster Abbey could symbolize 900 years of a nation's history, its successes and its failures, its aspirations and its dreams.

I saw a slow wave of gold brocade sweep up and surround her as the archbishops and the bishops led her to the Coronation Chair. A golden canopy hid her from view as she was signed with consecrated oil upon the hands, the breast, and the head, and became from that moment "the anointed of God." I saw them dress her as if she were a Byzantine saint on an icon, until she sat weighted down with golden vestments, the Rod in one hand and the Scepter in the other. In the head of the Scepter the Great Star of Africa, cut from the Cullinan diamond, writhed with fire and sent out flashes of blue and red light every second like a lighthouse.

### Bells, Voices, Guns Salute the Queen

Then the Crown of St. Edward was lifted high and placed upon her head, and instantly a great cry went out to God to bless her, the bells of Westminster began to ring, and far off in the Tower of London the guns fired a salute. Elizabeth II had been crowned.

I watched her husband kneel before her and swear homage in the exact formula used in the days of chivalry. She sat stiffly, her hands held together, the fingers extended. He placed his hands within hers and swore to be true and loyal to her all his life. And the stiff, glittering image who was his Queen, his wife, and the mother of his children, looked back at him gravely and saw his bent fair head without a smile. Then, rising, he quickly touched the crown and bent forward and kissed her on the cheek.

Hours afterwards I stood in a wet street outside the Abbey and watched her pass in the golden coach, the Crown upon her head, the Scepter and the Orb in her hands. I felt as one feels for a bride at a wedding, only this bride had been married to England. All the church bells were ringing, and so the new Queen drove out into London.

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# From Tucson to Tombstone

## Southeastern Arizona Keeps the Dudes Happy with Cowboy Styles, Cactus Forests, Ghost Towns, and Live Indians

By Mason Sutherland

*Assistant Editor, National Geographic Magazine*

I FLEW out to Tucson to investigate southern Arizona's four C's—climate, cotton, copper, and cattle. My observations on the climate—it was a shirt-sleeve day in February—were interrupted by a burst of gunfire.

Tombstone's Vigilantes were shooting up the streets of Tucson. Disguised in black beards and armed with six-shooters, the visitors were advertising the Fiesta de los Vaqueros, Tucson's annual rodeo. Firing fusillades of blank cartridges, they enacted the shooting of Waco Bill, an old-time desperado (page 357).

Next day every man, woman, boy, and girl who could scare up a horse rode in the rodeo parade. Others stood on sidewalks or scaled rooftops to watch (page 351). Mayor and sheriff shared honors in the procession with bogus Black Bart the bandit and Geronimo, the outlaw Apache. Real cowboys and Indians vied with Air Force and high school bands. Cancan dancers flounced skirts aboard a float, and burros pulled covered wagons. But the most popular figure, I judged by the small boys' applause, was Hopalong Cassidy in person!

So many visitors—5 to 10 thousand—were in town that every hotel, motor court, and guest ranch was packed.

Nearly every man and boy on the streets was dressed as a Wild West character. Those who resisted the style risked public exposure in the Junior Chamber of Commerce's mobile lockup, the Court of Injustice, whose attendant Vigilantes made merry by firing paper bullets at one another's hats (page 344).

### A Style Revolt in the Desert

Even store-window dummies, which the week before wore evening clothes, blossomed out in the western look. One maid of plaster roped her man amid bales of hay in a glassed-in barnyard.

I saw two women, one in sun suit, the other in fur jacket, escorted by a man in gambler's-stripe suit (page 352).

That dude in polished yellow boots came out of Boston a week ago. Had he been a cowboy, his boots would have been scarred. The "casual" rumple in his 10-gallon hat was steamed in.

Tucson uses wearing apparel to manifest its independent spirit. A party hostess specifying formal dress is lucky to get a third of the men in tuxedos; the others arrive in blue jeans, frontier pants, or plain business suits.

I watched concert-goers variously attired in white tie and tails, tuxedos and black ties, tropic whites, and blue denims. Feet were stuffed into shoes, boots, or moccasins.

Women's standard house dresses are definitely out. Fashion favors the squaw dress, the smart seamstress' modification of Navajo apparel, which the modern Indian girl scorns.

Go to any square dance and you will see squaw dresses ballooning out with centrifugal force. Heavy belts flash with polished silver.

Visiting Porter's, a specialty store, I had as guide a saleswoman clad in boots, frontier pants with wide front pockets, and a shirt fastened with cowboy's snap-on buttons. She wore a little vaquero string tie.

### Houses Wear Desert Colors

Inspecting a leather shop, the Kaibab Buckskin, I found Hopi Indians making Navajo moccasins, here called squaw boots, a popular style with both men and women. Thick and heelless rawhide soles, quickly conforming to the shape of the feet, give the sensation of walking barefoot without running the risk of upended tacks.

Similarly, Tucson revolts against architectural styles which do not fit the desert scenery. Newer banks discard the Greek-temple style. Decorated with water colors and potted plants, their interiors look like fashion shops.

The typical Tucson country house is a long rambler without basement or attic. Walls of burned-adobe bricks may be paneled with wood painted in desert colors—paloverde green, sunset pink, or the alkali gray of a cowman's hat. The ceiling may reveal a layer of prickly stems from the ocotillo, a desert plant. Floors are cemented to discourage termites, a surprising scourge of this arid country. Strings of dried red peppers hang beside fireplaces built into corners.

Big picture windows look out upon mountains on every side. In the yards barrel cacti lean southward like inverted compass needles to catch the most sun (page 354). Feathery leaves of paloverde trees brush against windows, their branches remaining green to absorb the sunlight. Scarlet tips of ocotillos dance in breezes, and salt cedars trail gossamer evergreen needles. Most dramatic of all, droopy-armed saguaros stand in penguin postures.


Ray Manley, Western Ways

**Rodeo's Prisoners Have Fun in Jail**

To advertise its Fiesta de los Vaqueros, Tucson each February goes western with a sartorial bang. Pistol-packing Vigilantes, custodians of the motorized Court of Injustice, lock up any pedestrian caught in eastern attire (provided he is willing). These captives obviously do not qualify for the full treatment.

Tucson sits amid a forest of saguaros, largest and stateliest members of the cactus family in the U. S. (pages 353, 374, and 375). Several lifetimes could be spent growing a saguaro; the oldest attain 200 years, possibly 300, and, very rarely, exceed 50 feet in height. I saw 10-year-old specimens barely an inch and a half high.*

### The Saguaro: Nature's Water Tank

A saguaro, storing water during the rainy season, can exist months without a drink. Shallow roots extend laterally, like the spokes of a wheel, to catch surface moisture, and when rain does fall one can almost watch the thirsty plant's accordion pleats swell up.

* Some 85 to 90 percent of the saguaro is moisture. Its ribby skeleton contains a wood which householders burn in their adobe fireplaces and Indians use as building material.

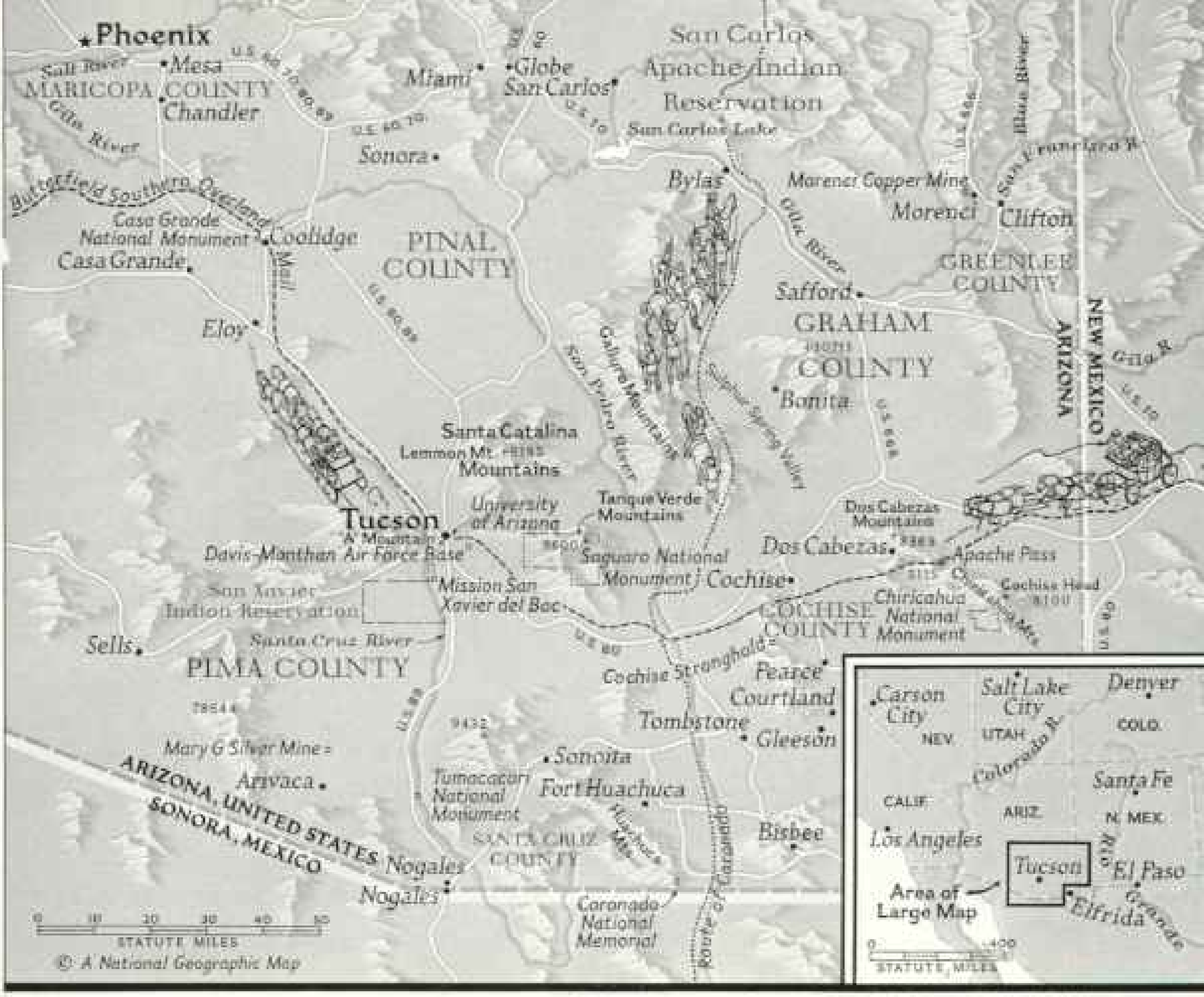
Today homesite developers and disease threaten the giant cactus. A bacterial necrosis spread by a moth's larva produces rot lesions. Once a lesion girdles the trunk, the plant is doomed. I saw the black wounds bleeding even in Saguaro National Monument, a 63,000-acre park set aside to preserve the finest specimens. Huge stands climb the Tanque Verde Mountains up to 4,000 feet.

A hundred painters make a living depicting the desert, but I turned to a word artist. Elliott Arnold, author of *Blood Brother*, a novel about Tucson in Apache times, gave me the words I was groping for. When I visited him in his Pima County (Tucson) home, spring in February was turning the desert green and yellow, and the air was so clear that distant mountains loomed with magnifying-glass clarity. What better inspiration, I wondered, could a writer have? But Mr. Arnold confessed grumpiness due to inability to plot a chapter of a new book, *The Time of the Gringo*.

"It's that confounded desert," he said. "It's my inspiration and despair. I'm like a schoolboy staring out of a class window in springtime. I can't keep my mind off the attractions out there. I'm always watching a road runner, some other bird, or a chipmunk. In order to work I have to draw the shades.

"Nothing could have been more alien to me than this desert," he continued. "I was born amid the brick and steel of Manhattan and lived there 30 years. Then as a soldier

* See "The Saguaro, Cactus Camel of Arizona," by Forrest Shreve, National Geographic Magazine, December, 1945.






Drawn by Robert W. Northrop and Victor J. Kelley

## Land of Climate, Cotton, Copper, and Cattle—Southeastern Arizona

Here Indians prowl the five-and-tens, dudes pick cactus thorns out of their breeches, and the sun shines all winter. National forests, ghost towns, and adobe villages blend into mountain and desert scenery.

during the war I left Wyoming in a blizzard and next day found Tucson basking under a warm sun. I found I could swim in winter instead of freezing. Like many another soldier, I said, 'This is the climate for me!'

"At first I found the desert as harsh and repellent as bare granite. Saguaro and ocotillo looked as incredible as plants on the moon. How could I know that in spring they would put out delicate blossoms! In winter the desert was as stern and masculine as a mail-clad warrior. Blooming, it turned into a frilly little girl with a lei around her neck.

"And so, without realizing it, I was exposed to something like an insidious drug. I grew to like the place. Today the feel of the desert, the look of the mountains are closer to me than anything in the world. The desert is my peace and solace. An ocean of sand and solitude, it is as wild and unpredictable as the sea. Sometimes I get the feeling of trespassing. If I leave the place for three months, the desert rushes back like a tropic jungle to reclaim its own. Scorpions and black widow spiders take over. I think, basically, that man will always be an alien here. Oddly, that's part of the fascination."

### Dudes Enjoy Blizzards Back Home

Tucson's climate has been described as "ten months of summer and two months of no winter." Intense sunshine is the city's good fortune in winter, its misfortune in summer. The sun shines nearly every day of the year.

To enjoy a Tucson winter to the hilt, I recommend sitting in the patio of a guest ranch and talking about the winter weather back home. Guests at the Westward Look ranch, where I stayed, bragged about our home towns' blizzards and secretly, I believe, wished our stay-at-home friends some of them. We forgot the world's troubles; few of us read a paper or heard a newscast. Getting a February suntan seemed more important.

346

**Tucson, Once an Adobe-walled Village, Grows Out-of-bounds in All Directions**

Since 1930 the metropolitan area's 43,000 people have increased to an estimated 170,000. Bulldozers daily scrape the desert for new homes. Tucson Freeway, a traffic bypass, cuts a wide gash through town.

Meeting as strangers, we quickly developed community feeling. Some of the guests were millionaires; others were struggling artists. It made no difference; within hours we were calling one another by our first names.

Southeastern Arizona has some 75 guest ranches, every one of them boasting a string of horses (pages 353-355).

"Some of our guests are allergic to horses," said Robert M. Nason, my host. "Our corrals are removed from the main house so they won't have to look at the animals."

Few real cattlemen run dude ranches; most of the owners are retired business people who have gone west for their health. Some of them never make a dime; they are happy if they can break even.

Next to its ranches and farms, Tucson likes the aircraft industry, for it requires no coal or heavy transportation and very little of Arizona's precious water. Both its Grand Central Aircraft Company, which modifies bombers, and Hughes Aircraft Company, which designs and manufactures electronic equipment, work for the United States Air Force (pages 376, 377).

### Big Bombers Fly Out of Tucson

At Strategic Air Command's Davis-Monthan Air Force Base the 15th Air Force keeps B-50's and B-47's alerted for war.

"Essentially this is not a training base," an officer told me, "though we are training all the time. Our mission is to keep flyers and bombers in readiness. Should war be declared tomorrow, our planes could rebase themselves abroad within a short time. Their job would be to knock out the enemy's war

**Visitors on "A" Mountain Look Past the Business District into the Santa Catalinas**

Santa Cruz River, whose waters run north out of Mexico, flows at the foot of the hill. On its banks Father Eusebio Kino in 1699 discovered an Indian village and named it San Cosme del Tucson.

machine and blast his factories and oil fields."

Rehearsing against that day, Gen. Curtis E. LeMay's* Tucson flyers have been making mock bombing runs on places as far away as Minneapolis. Recently the base has added more refueling planes, KB-29's and KC-97's.

Today many of the base's operations are geared to the aerial-refueling process. Planes on simulated combat missions gulp gasoline in mid-air. Few strategic places on earth lie beyond Davis-Monthan's range.

### Old Town Wall Has Crumbled

Southern Arizona was acquired by the United States in 1853 with the Gadsden Purchase from Mexico. Tucson, which calls itself the Old Pueblo, came wrapped in an adobe package, the mud wall surrounding the town. Behind the wall lived mostly Mexicans, some Indians, and American adventurers.

Tucson's Spanish flavor survives, and Indians still walk along its streets; but a man of the 1860's would not recognize the place.

If you stand at Congress Street and Stone Avenue, you will see the newer ingredients of the Tucson brew: descendants of the pioneers, artists with beards, New Yorkers in Cadillacs, college kids in hot rods.

Carpenters and masons work far out into the desert; scrapers open dirt roads overnight; but almost nothing remains of the town wall that protected the Old Pueblo against the Indians. Only a crumbling three-foot mound of dirt on the Courthouse lawn survives from that barricade.

* See "Air Force School for Survival," by Gen. Curtis E. LeMay, National Geographic Magazine, May, 1955.

## University of Arizona Men Select Their Desert Queen

In 1952 these campus beauties faced members of the university's Board of Publications, who chose five finalists to reign over the Desert Dance, an annual Valentine's Day affair highlighting the social season. They met in front of the new Student Union Memorial Building.

Opened in 1891 with a handful of students, the university last year taught 10,000 and awarded 928 degrees. Its handsome buildings of mellow brick and red tile were designed to fit into its desert environs. An irrigation system keeps palms and grass green.

Ray Manley, Western Ways

## Mechanical Pickers Attack a Cotton Field

Cotton is both the blessing and the curse of Arizona agriculture. Grown under irrigation, it never knows a crop failure. But when prices soar, as they did in both World Wars, farmers scrape off cactus and mesquite, dig new wells, and raise more cotton. Watery reserves in Nature's underground bank are used to excess. Down go the water tables; up go pumping costs.

Arizona is famous for its Pima lint, whose fiber is long and strong. Rich soil often produces more than a bale to the acre.

Mechanical pickers work easily in level valleys such as the Santa Cruz, pictured here south of Tucson. In the more northern counties one can see machines and Indians, the latter encamped in roadside wickiups, gleaning fields side by side.

To see the walled city as it looked, I visited Old Tucson, an unpeopled adobe pueblo erected as a movie set and now preserved as "an exact replica of Tucson in the 1860's."

Visitors thronged the mock jail, and husbands stuck their heads through the mesquite bars for giggling wives to photograph. Old Tucson's town well had no water; the saloon was just as dry. The corral had no horses; the church, no priest. Boothill's graves were strictly phony.

### San Xavier, a Living Mission

Mission San Xavier del Bac, Tucson's best preserved landmark, stands a few miles from town on San Xavier Indian Reservation. Father Eusebio Francisco Kino, Jesuit missionary and explorer, established it two and a half centuries ago as one of a chain of missions from northern Sonora, Mexico, to southern Arizona (pages 380, 381).

Father Celestine Chinn, O.F.M., the padre in charge, pointed out that Spanish Franciscan missionaries had built the present church between 1783 and 1797. From 1827, when the Franciscans left San Xavier, until 1859, when Tucson was in American hands, the mission lay neglected. Sections have been repaired; most recently replicas of 10 original columns have been installed on the façade.

Surveying that façade, the eye naturally follows two lines spiraling up toward a plaster cat and mouse, the pair staring at each other with enduring suspicion.

"May they long continue to do so," says Father Celestine, "for the Indians say, 'When cat catches mouse, end of world will come.'"

The interior reveals the touch of primitive Indian artisans. Each pilaster appears to have had its patterns applied by bare thumbs dipped in blue vegetable dye. Since the architects liked formal balance, they painted false doors opposite real ones.

Molded on the walls, brown Indian cherubs float above their white counterparts, suggesting that the padres consoled persecuted Indians with visions of equality in Heaven. Statues of the apostles stand in niches. One vacancy tacitly calls attention to Judas, the traitor.

### Hermit Artist Builds Own Mission

I found one Tucson resident building his own mission. He was Ettore de Grazia, an artist who takes pleasure in wearing scuffed boots, miner's rough clothes, battered Navajo hat, and full-blown beard (page 380).

Mr. De Grazia, who would like to be a hermit, confesses he hates civilization. He allows no running water in his home, but compromises with electricity. It took his wife two years to coax a vacuum cleaner out of him.

Tucson, which once regarded De Grazia as eccentric, now takes notice because he has become successful. Art buyers beat a path to his door; his ceramics are catching on, and a fabrics manufacturer pays him a cent-a-yard royalty for each sale of skirt material decorated with the artist's dancing Indians.

And now De Grazia has undertaken his "one-man dream," the construction of a "ruined" mission in the Santa Catalina Mountains, where he is five miles from telephone, gas, and electricity. He hauls materials into the mountains in a battered old model A. Its radiator freezes, tires blow out, and people ask, "Why do you do it?"

"We have lost the flavor of the West," he replies. "We are becoming an imitation of the East. In my mission I intend to dream of what the country used to be like. The mission will have no functional purpose. It will be a place of beauty where I can go and hide. It will be built to look like a ruin because I love ruins."

### Meat Deliveries by Horsecar

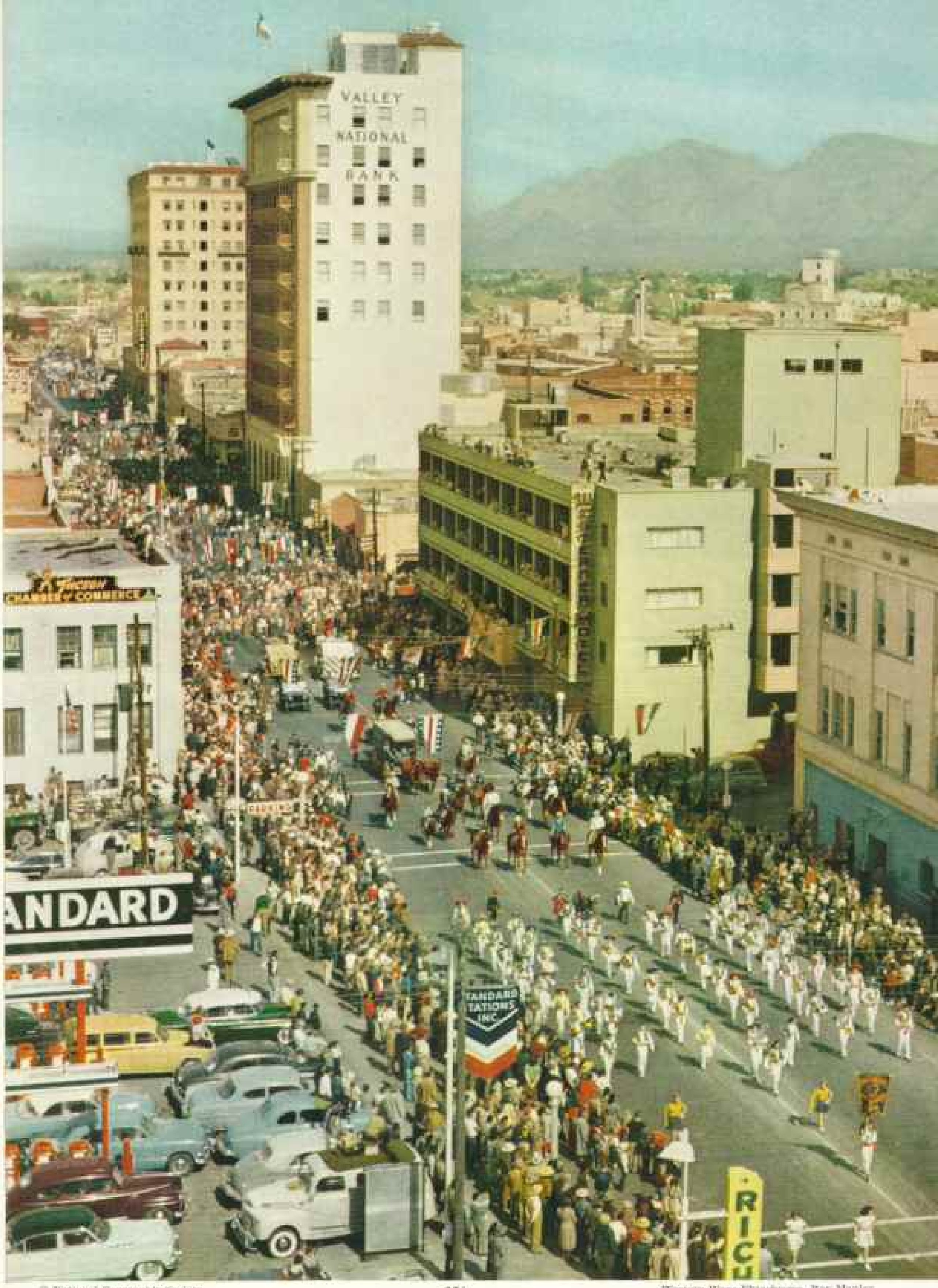
Rosemary Drachman Taylor, author of *Chicken Every Sunday*, told me how her father in 1905 had built his home so far out in the desert that he had no neighbors.

"In those days," she said, "the University of Arizona stood even farther out in the brush. City and school were linked by canopy-topped horsecars running past our door.

"I can remember when Mother, having forgotten to buy meat, called up the butcher and asked him to give her order to the horsecar driver. The driver appeared half an hour later, his passengers fuming because he had stopped to deliver our lamb chops. Then, whipping his old crowbaits, a horse and a mule, he drove into the desert.

"Today Tucson has not only swallowed us but the university too. The last trolley has gone; only a few rails are left."

The University of Arizona, opened in 1891, has a total enrollment of 10,000, including men and women students from 28 foreign countries. Old Main, the first building, still stands in the center of the landscaped 85-










**Tucson Revives Pioneer Days with a Rodeo Parade Down Stone Avenue**

Work stops and nearly everyone gets into western dress for February's Fiesta de los Vaqueros, a cowboy carnival. Make-believe rustlers and gun fighters march beside peace officers. Santa Catalina Mountains stab the distant sky.

### ↑ Cowboy Hats Bloom in Violent Colors

Porter's, a Tucson specialty store, offers girls everything from Indian moccasins to cowboy shirts with snap-on buttons (shown). Many Arizona men favor the frontier suit (left) for its deep, wide pockets.

### ↓ Boots Complete the Dude-ranch Outfit

Mother, father, and children may order boots to match; a lady's saddle and purse may be of similar leather. The salesman wears gambler's-stripe trousers, an old-time style, and tops them with buckskin jacket.

Western Ways Illustrations, Ray Manley

**Moon, Music, Campfire, and Giant Cactus Make the Desert Night Romantic**

Arizona moonlight is often bright enough for reading, but these guests and hands of the Flying V Ranch prefer steaks, coffee, and singing to newspapers. Dudes afraid of horses can take a station wagon to the rendezvous.

## Spring Paints the Desert Yellow; Riders Emerge from a Saguaro Forest

Spring's first green blush may appear on southern Arizona's trees and grass as early as January. From February to April the desert bursts into astonishing colors, depending on rains. Saguaros (page 374), colossal members of the cactus family, put out white flowers in May. With water, the gray skeleton-like ocotillos (left) turn green, and each branch grows a tip-end cluster of red flowers dancing in the breeze. In summer the squat barrel cactus (extreme left) carries a bouquet of waxy blossoms among its thorns. This plant makes a fair compass, for it generally leans south to catch the maximum sunlight.

These guests of the Wild Horse Ranch, 14 miles from Tucson, ride through poppies. Howard Miller, the owner, does not encourage the inexperienced to go out without a cowboy guide, "for spines of the cholla [a cactus] seem almost to jump out at the unwary. I've had to dethorn hundreds of dudes."

▼ Guests of the Double U Ranch enjoy a buffet lunch beside the swimming pool. By day they can ride into the Santa Catalina Mountains (background) or motor 65 miles to Nogales, Sonora, for a Mexican shopping expedition. Night finds them playing parlor games, square dancing, or listening to cowboy concerts.

**Tombstone, Once a Roaring Mining Camp, Revives Its Yesteryears in the Old Bird Cage Theater, Now a Museum**

Left: Cap-pistol fighters shoot it out in Tombstone's Boothill cemetery. The five men "legally hanged" tacitly call attention to a sixth who was lynched. Right: Tombstone Vigilantes enact a famous shooting. Stripe-shirted Waco Bill, having shot three men in Tucson, muttered, "Now I'll find Marshal Duffield." Just then the marshal stepped up, shot Waco Bill, tipped his hat, and said, "Sir, I'm Milton B. Duffield."



Western Ways Extachromes, Ray Manley


### Indian Turquoise, Heavy and Dramatic, Stands Out Like Old Egyptian Gold

Tucson sells more Indian gems and silver (in bulk) than conventional jewelry. Frank Patania (right) designs articles fashioned by his Indian workmen. This silver and turquoise belt weighs a pound and a half.

### Artists Stencil Designs on Fabrics by the Silk-screen Process

Adolph and Berta Wright and Sylvia Jacobs (center) take inspiration from Indian motifs like old picture writings. Here they transfer an Apache sand-painting design to cotton in Tucson's Desert House.

acre campus; 55 handsome structures have sprung up around it (page 348).

The university's faculty claims a number of distinguished men, but perhaps the most celebrated is Dr. A. E. Douglass, discoverer of the tree-ring method of dating Indian ruins.* One day he took me touring close to the snowy summit of 9,185-foot Lemmon Mountain, Tucson summer colony and one of his favorite tree-hunting grounds.

When close to the ski lodge, Dr. Douglass assembled his Swedish borer, which extracts a solid core, and took samples from 16-inch pine and 500-year-old Douglas fir.

An astronomer by education, Dr. Douglass became interested in trees when he found that the varying thicknesses of their annual growth rings not only reflect years of heavy and light rainfall but also significantly resemble certain cycles related to the 11-year cycle through which sunspots wax and wane.

Starting with rings of modern trees whose dates are known, and matching them with rings of older trees of unknown date, Dr. Douglass has established climate conditions in the southwestern pueblo area back as far as A. D. 11 and has dated prehistoric ruins by their timbers (page 363).

Now, using his tree rings, he believes it will become possible to forecast certain climatic changes. "But we need more local data," he says. "There are so many complexities, so many variations in different parts of the world."

### "We Still Fight for Water"

To understand the background of another of the four C's—cotton—I saw a scientist at the university's College of Agriculture.

"Though Arizona is noted for its mines," he told me, "its farms do even better. The production score for 1952 was: mining, $225 million; agriculture, $416 million.

"Illustrating cotton's westward march, Arizona grew 948,000 bales in the 1952-53 crop season. The value of that crop outweighed the money return from cattle $193 million to $85 million—and this is a celebrated cattle country. The average yield, 682 pounds to the acre, was the highest of any State in the country. Pima County picked 1.36 bales to the acre, or more than twice the national average (page 348).

"In Arizona the issue is water," my informant continued, "and we still fight for it. The old sheep and cattlemen did it with guns. Now people go to courts and lawmaking bodies. Our case with California over the Colorado River's waters is now pending before the U. S. Supreme Court.

"Cotton, as you know, is a thirsty crop, requiring torrents of water. Where is the water coming from? The basic story is this: We have enough water to farm 700,000 acres indefinitely. Today we are trying to till 1,000,000. In certain areas water for these extra acres is being drawn out of the ground more rapidly than it is being replaced." †

### Colonel Greene's Cattle Empire

For the sight of cattle,‡ I toured southeast Arizona with Charles W. Herbert, president of Western Ways, a Tucson studio whose photographs illustrate this article. During our 1,500-mile trip the face of Arizona changed dramatically.

One February day we drove across bone-dry cholla wastelands where scrawny cows barely scratched a living and, just over a rise, we entered lush valleys where cattle grew fat.

Entering a waving sea of grass, the Santa Cruz Valley, we found true cow country, with tremendous ranches and registered herds. There Mr. Herbert and I were guests of the Greene Cattle Company's 25,000-acre San Rafael Ranch, founded by the late Col. William Greene, owner of one of the continent's greatest cattle empires.

"I know of no area in the Southwest so well suited to Herefords as this valley," G. Marshall Hartman, the ranch manager, told me. "No area south of Kansas has so heavy a sod.

"Our cattle, always in the open, do not suffer in winter, as they do in the North. Cows calve from January to April, three months ahead of northern cattle. Survivals average 90 percent. We have no fever ticks, no Bang's disease, no tuberculosis. One ranch hand can do the work of many here. Our main drawback is the lack of spring moisture, our big rains coming in July and August."

Touring San Rafael Ranch in a pickup truck, we drove across trailless pastures. Fields of native grama grass stretched as far as the eye could see. New calves had tails

* See "Secret of the Southwest Solved by Talkative Tree Rings," by Andrew Ellicott Douglass, National Geographic Magazine, December, 1929.

† See "Water for the World's Growing Needs," by Herbert B. Nichols and F. Barrows Colton, National Geographic Magazine, August, 1952.

‡ See "America's 'Meat on the Hoof,'" by William H. Nicholas, National Geographic Magazine, January, 1952.

painted pink to tell riders that they had been counted. On every road we found old eroded gullies dammed to catch every drop of rain that fell and spread it across the green pastureland.

The pursuit of fortune underground has fascinated Arizona men since the days of Coronado, who journeyed across the State in quest of the fabulous Seven Golden Cities of Cibola. Gold and silver poured out of the first bonanzas. Then high-grade copper lured prospectors to tunnel the cliffs and boneycomb the ground.

Today the quest is for low-grade copper, an ore that didn't interest the old-timers. New discoveries, new machinery, and new capital have made profitable the extraction of ore containing less than one percent copper. Arizona, with half a dozen huge open-pit mines, is the leading copper State.

### Jail and Hospital Crumble

The graduate mining engineer with bulldozer and power shovel has largely replaced the bearded prospector with burro and pickax, but the latter left his indelible mark on the country. Mountainsides along many a trail remain scarred with abandoned shafts, rusting ore cars, and decaying head frames. Legends of lost gold mines are a dime a dozen. Any turn in the road may reveal a ghost town.

Detouring down one dirt road, Herbert and I visited Gleeson, a ghost camp that recently tried to make a comeback. Three automobiles sat on the dusty main street. But Gleeson's adobe buildings were crumbling back into the earth from which they came. The jail had tumbled in; the 8-room schoolhouse had been quarried for stone. Grass grew in a roofless, abandoned hospital, and a general store stood empty.

Steve Pryor, Gleeson's most articulate resident, informed us:

"Ten years ago my doctor told me to quit business and lead the quiet life. I couldn't have found a quieter place."

A few miles past Gleeson, once-booming Courtland lay abandoned behind a locked gate. We found the only resident camping in a large and dusty block of stores.

When we asked him how long Courtland had been deserted, he glowered and replied, "It ain't deserted; I'm still here, ain't I?"

Leaving Courtland, we passed by Pearce, semi-ghost town, whose mines in eight booming years shipped out silver and gold valued at six million dollars. At that time, to frustrate outlaws, miners freighted out gold bullion in bars too heavy for riders to carry away.

### They Mined Silver, Fought Apaches

Close to Arivaca, Herbert and I visited one of the last of the Arizona silver mines. The Mary G, a four-man operation, gave us a glimpse into the romance of mining.

E. V. Chester, "60 years old and a miner as long as I can remember," told us the history of the mine, whose tantalizing lode enriched and baffled men before he was born.

"The poorest ore down there," he asserted, "will assay $200 a ton and some of the highest grade, $2,000. The Mary G had already grossed $200,000 to $300,000 in silver when flooding at the 100-foot level closed the mine. Now the falling water table [the curse of Arizona farmers] has made operations possible at 200 feet.

"This mine must have been worked as long ago as Spanish times. You can almost date it by the miners' antique 'chicken' ladders.

"Those old fellows messed up the ground with a maze of tunnels. We sank $14,000 into the old pit before undermining forced us to abandon it. Now we're digging a new shaft, hoping to tunnel over to the old level.

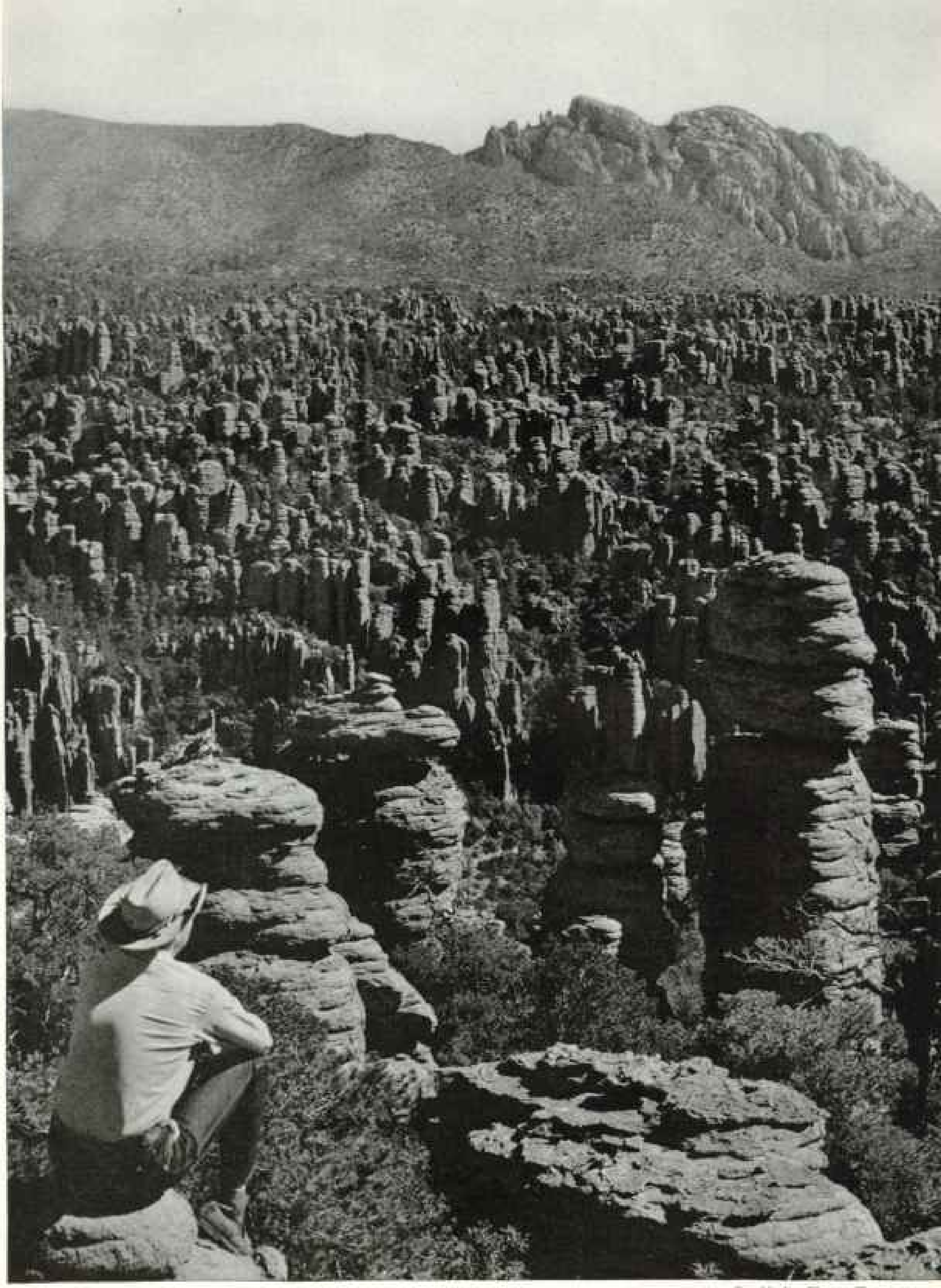
"All we have to lose is our investment. Think of the old-timers who worked the Mary G in Apache times! They used to mine a bit, then fight a bit. I can see them, sticking their heads out of the ground to sight Apaches."

Like so many of his predecessors, Mr. Chester abandoned the Mary G a few months later.

### A $70-million Hole in the Ground

To learn the story of copper, we toured the Morenci open pit and smelter, the Nation's second largest copper operation, surpassed only by the Bingham Canyon mine in Utah. Morenci stands above U. S. Highway 666, near the Coronado trail, where the Spanish explorer, who had eyes only for gold, passed by a fortune in copper.

Millions of tons of waste rock dumped into canyons gave us a dramatic introduction to Morenci, a town of 6,500 people. Here the Phelps Dodge Corporation, having turned a mountain into a hole in the ground at a cost of $70 million including plant and facilities, produces up to 250,000,000 pounds of copper a year.



361

Ray Manley, Western Ways

**Cochise Head, an Enormous Stone Profile, Stares Skyward from a Mountaintop**

Thousands of weird and grotesque figures rise in Chiricahua National Monument's Wonderland of Rocks. Balanced monoliths slowly take shape, totter, and fall under erosion's relentless chisels. Led by Cochise, the warlike Chiricahua Apaches made the area a stronghold. A clear day shows trees growing out of the profile's eyes.


Bill Sears, Western Ways

**Tombstone Vigilantes Swing a Playtime Bandit by His Artificial Neck**

"Don't riddle my body with bullets, boys." Those were the last words of John Heath, who was lynched in 1884 for his part in a murderous Bisbee holdup (page 357). Realizing the futility of resistance, he instructed the mob on adjustment of the noose and tied his own handkerchief over his eyes. The *Tombstone Epitaph*, whose office witnessed this funmaking, chronicled famous gun battles and stagecoach robberies of the 1880's.

Morenci's Paul Carson drove us up to the mile-wide pit. From its topmost bench we looked into a hole so deep that men below us were almost lost to sight (page 378).

Electric shovels scooping up 5-cubic-yard bites gnaw into 20-odd benches, or terraces. Trains haul the ore, containing a copper sulphide, to the concentrator, which grinds and washes 48,000 tons a day, discarding the waste and increasing the copper content from the one percent in the ore to 25 in the concentrator product.

A smokestack taller than the Washington Monument exhausts fumes from the smelter. Like eclipse gazers, we peered through dark screens into 2,200° F. furnaces burning natural gas. Their molten scenery surpasses an Arizona sunset. Tapped, the furnaces belch cascades of fiery copper, and slag flows like lava.

To me, the disposal of the concentrator's liquid waste is Morenci's most spectacular operation. This waste is a mixture of rock particles and water resulting from the fine grinding necessary to separate minerals from barren rock.

Mountains being dug away and churned into a thick soup are filling a canyon with immense mud pies. Liquid tailings flow downhill, build their own dams, and level off behind them, laying out table-smooth, chalky rock across 1,000 acres. Seen from an eminence, the tailing dams look like frozen lakes or salt beds.

A day in Tombstone gave us a picture of one of the West's most fabulous mining camps.


Ray Manley, Western Ways

**Dr. A. E. Douglass, Who Dates Trees by Growth Rings, Points to the Years 634-661**

Thirteen centuries ago this Sierra redwood suffered fire damage. The apparent crack (at pencil point) shows Nature's repair work over 27 years. When blown down by the wind in 1915, the tree was 1,704 years old. Sequoia National Park, California, sent this 10-foot section to the Arizona State Museum. By studying the growth rings in timbers used in dwellings, Dr. Douglass has dated ruined Indian pueblos (page 359).

A fortune in silver lies locked in the ground below Tombstone, but underground water has retarded its exploitation. Miners for three generations have been saying that Tombstone's day is done, but the town carries on. "The town too tough to die," its motto boasts.

### One Man "Hanged by Mistake"

The town is not a restoration; it is the bloodstained, powder-marked original. Seventy-year-old adobe houses and saloons still stand. No one demolished them because the town did not need space.

Our introduction to Tombstone was made at Boothill, a roadside cemetery where the pioneers buried men who died with their boots on. For many a gambler and outlaw, Boothill was the end of the trail.

"Stabbed," "Shot," "Died of wounds," "Killed by Indians," say the white crosses, most of them restored after the originals had been taken for souvenirs or firewood. A "natural death" among them surprises the visitor.

Here lies Lester Moore, "four slugs from a .44, no less no more." George Johnson was "hanged by mistake."

John Heath, snatched from the Tombstone jail and lynched by a Bisbee mob, lies in a grave marked "February 22, 1884." A coroner's jury decided he had met death by "strangulation, self-inflicted or otherwise." Heath's five companions in a murderous holdup in next-door Bisbee lie close by. They were "legally hanged" soon after the mob strung up Heath (pages 357, 362).

Boothill's most prominent spot is reserved

for Billy Clanton, Frank McLowery, and Tom McLowery, all victims of one of the West's most spectacular gun fights. They were killed October 26, 1881, by the brothers Wyatt, Virgil, and Morgan Earp, all peace officers, and a crony, Doc Holliday, in a battle at the OK Corral, the climax of a smoldering feud. Within less than a minute three men lay dead and three wounded.

### Guns Still Blaze in OK Corral

Nothing in its turbulent history disturbed Tombstone so much as that battle. Did the Earps fulfill their official duties, as a court decided, or did they remove hostile witnesses, as enemies contended? Eyewitnesses have passed on, but Tombstone still debates the Earp-Clanton feud.

In October, at its annual Helldorado, Tombstone's Vigilantes enact the gunfight with six-shooters and blank cartridges. Then visitors swell the town's population from 900 to as many as 20,000, and most of them crowd around the OK Corral, now a vacant lot, to watch a drama that never grows old.

When six-shooters stop blazing, cap pistols go to work. Boys start mowing one another down; they enthusiastically drop dead all over the pavement. Scarcely a boy in town does not own a set of guns, and even little girls play cowboy (page 357).

Vigilantes start growing beards two or three months before the celebration.

"You grow so accustomed to whiskers that you scarcely recognize your friends when they finally shave," one Vigilante told me.

Tombstone was named by Ed Schieffelin, who, starting to prospect in an Apache-infested country, was warned, "All you will find is your tombstone." Discovering one of the West's richest strikes, he said, "Here is my tombstone."

So many miners, gamblers, gun fighters, and hangers-on poured in that by 1881, its heyday, Tombstone had 7,000 residents or more. Every other house in the business section was a saloon, dance hall, or gambling den. Gamblers from Dodge City, Kansas, arrived in a body.

Reckless cowboys matched their speed on the draw with tinhorn gamblers. A fabulous list of characters, male and female, settled down to enjoy the mines' flood of riches. The diggings yielded millions of dollars worth of silver, but their prosperity was short-lived. Water, found around the 400-foot level, stopped work, and by 1890 the population dropped to 1,875.

Today when Tombstone people talk of reopening the old shafts they think of mining water, which in Arizona is almost as precious as ore.

In the parched, forbidding hills behind the town you will find the abandoned stopes and glory holes where men once dug like moles. Be careful as you step over that bush, or you may land 200 feet down an open shaft.

Beside the firehouse at 5th and Toughnut Streets, an immense opening marks the Million Dollar Stope, a former silver producer. Here a cave-in once dropped an ice wagon into a tunnel. The driver jumped free; his horse emerged unscathed from a shaft a quarter-mile away.

"No trespassing," says a sign, a warning ignored by three schoolboys a year and a half ago. Playing hooky, they explored the stope, which leads into a labyrinth of dangerous chambers. Before long they were as lost as Tom Sawyer and Becky Thatcher in the limestone cave. Several old-time miners, at the risk of their own lives, fished the boys out 12 hours later.

### Show Girls' Trunks Gather Dust

C. M. Palmer, Jr., a former Virginian proud of his 1882 adobe house, guided us through Tombstone's historic places.

First of these was Schieffelin Hall, a famous theater now turned into a museum. Flying buttresses supported its adobe walls. In the dark, unfinished basement we inspected actors' dressing rooms inscribed "Tomb A," "Tomb B," and "Tomb C." Antique trunks of bygone chorus girls moldered in a corner. On a wall "Lester & Allen" scribbled the words, "Played here February 5, 1883." "Ben Hur was rotten," said another eloquent penciled scrawl.

The Bird Cage Theater (1881), named for the bird-cage-like boxes in its auditorium, also survives as a museum (page 356). Here the Marshal Earp and Sheriff Behan factions, hardly the best of friends, used to take seats on opposite sides, scowl at one another, and watch the variety shows. Show girls served drinks between acts.

Antique arms fill a gun rack where customers were required to park their hardware. Wall displays picture famous acts. Says one: "Prof. Charles Andress, magician. He showed at the Bird Cage in the early 1880's. His

Elmer L. Chaffee, Western Ways

## Pet Coatis Romp in Huachuca Mountains

These raccoonlike animals, commonly called chulas, hunt fruits, nuts, and nesting birds. Balancing with long tails, they scamper up and down trees like monkeys. Though they make friends with man, coatis are not to be trusted around chicken eggs. Arizona does not protect them.

Javelina, the peccary, stands at bay in the San Pedro Valley. This 45-pound native American, commonly called a wild pig, bears only distant kinship to European swine. Mainly a vegetarian, he gulps prickly pear, spines and all. If cornered by dogs, he fights to the death, creating havoc with sharp tusks and hoofs. When excited, he sprays a musky odor. Arizona allows an open season on javelinas in the spring.

Andreas Feininger, Western Ways

assistant would shoot at him and he would show the bullet in his teeth and then spit it on the floor.

"A drunken cowboy pulled his gun and said, 'Catch this one, Professor.' A theater patron struck the cowboy's arm as he shot a hole in the ceiling."

Gone are most of the Crystal Palace Saloon's oil paintings and brass fixtures; juke box and leather lounges replace them. Silenced are the sinister whispers of gamblers, the shrill laughs of show girls. The drinks are still hard, but now the Palace caters to tourists.

There I met Bob Johnson, a cowman who came from Texas in 1893. Recently, he related, he installed his first indoor plumbing and took his first shower.

"Scalded myself, too," he said. "Forgot to mix cold water with the hot, and I nearly went through the wall."

Windows broken, the Cochise County Courthouse, built in 1882, stands in ghostly disrepair. Tombstone suffered a staggering blow when the county government moved to Bisbee at the height of the depression, leaving the Courthouse vacant.

### *Epitaph* Reports the News

The *Tombstone Epitaph*, whose files record the town's story almost from the beginning, is still published once a week, but now leans more to social events than gun fights (page 362).

"I've seen the mornings when I could have fired a cannon down Allen Street and hit no one," an editor told me.

"Biggest Rose Bush in the World," proclaims the sign of the Rose Tree Inn. In its patio grows a Banksia rose planted in the 1880's. The original slip has grown into a rambler covering the courtyard. When in full bloom, laden with thousands of tiny white blossoms, it looks like a snowbank, and the delicate scent can be detected two blocks away. It's a real treat on a moonlight night.

Proprietor of the inn is Mrs. J. H. Macia, who was born in Tombstone in 1881 and has seen all its changes. "Tombstone is a religion to Mrs. Macia," say her friends. "She never gave up when things looked blackest. As much as anyone, she made Tombstone 'too tough to die.'"

Copper-mining Bisbee, Tombstone's neighbor, is famous for its mineral riches, postal service, and mountainous streets. Bisbee is by no means on the level. Two miles long and a block or so wide, the city rises along both sides of a deep gulch. Houses stand on terraces pitched one above another like swallows' nests on a cliff.

The Bisbee postman never rings twice; he never rings at all! To save him weary steps up and down hill, Bisbeeans daily trudge to the post office for their mail. They take pride in the fact that their community (population 3,800) is one of the largest in the U. S. without house-to-house delivery.

### Buffalo Graze Old Fort's Lands

Not far away, in the Huachuca foothills, lies Fort Huachuca, recently closed, one of several army camps that used to girdle the Apache country. It lies in a game preserve. Foxes and wild javelina hogs (peccaries) raid its garbage pails; coatis hunt quail and eggs (page 365). Mountain lions and an occasional gray wolf also wander in.

A herd of State-owned buffalo crops the fort's open range, usefully reducing the fire hazard. As we drove into their midst, more than 400 shaggy animals regarded us with benign, well-fed expressions.

A few motorists and their children, convinced the bison are tame as dairy cows, get out and try to pet them.

"That's a dangerous and foolish stunt," said Harry W. Anderson, ranger in charge of the herd. "You can't trust buffalo even in the corral. You never know when one may decide to charge. One old bull rogue, whipped out of the herd, chased me last week. Camp rumor says another bull treed two GI's who tried to stroke his horns.

"Recently the entire herd got spooked and stampeded into the mountains when a P-51 buzzed them; they didn't come back for a week."

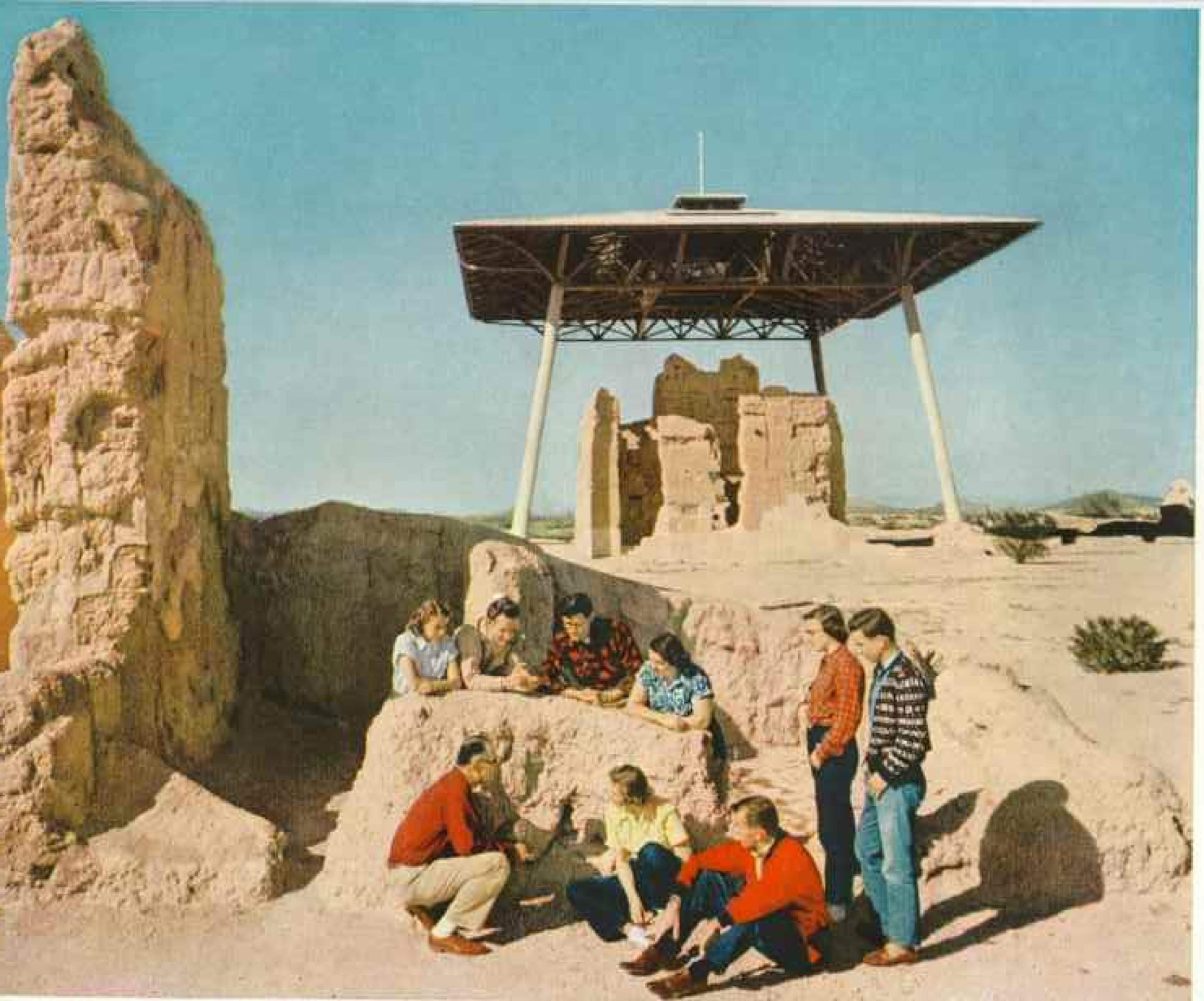
The ranger, who regularly worms and sprays the bison, says they are harder to handle than cattle "until you get used to them." Not long ago when the size of the range was reduced, half the herd was slaughtered. Hunters paid $25 each for the privilege of killing a bison and taking the head, hide, and fore quarter."

### Apache Scouts Helped Fight Indians

Fort Huachuca's famed Apache Scouts are no more, the last six having disbanded in 1946. Today their adobe quarters are falling into ruin. The thought of these brave men, who assisted the Army in the days when Indians were still a problem, prompted us to

Tree-ripe Dates Give Suburban Tucson an Oriental Flavor

Desert Treasures, a 60-acre showplace, grows citrus, figs, olives, bananas, persimmons, guavas, and 17 varieties of dates. Using its own new pasteurization process, it cans many dates, some of them for export to Latin America.



**Casa Grande Tower, a 40-foot Adobe Ruin, Is Called America's First Skyscraper**

Each summer the University of Arizona takes some 25 archeological students on a field tour.

"Doing their own digging, our boys and girls get hands blistered and eat dust," says Dr. E. W. Haury (crouching, left), head of the university's Department of Anthropology, "but they do learn archeology by field exploration, the only true way."

Here professor and students visit Casa Grande National Monument, which takes its name from the 600-year-old adobe structure protected by the white man's steel canopy. Built in four stories by the Pueblo people, it appears to have served as a watchtower against raiders.

First European to visit the Casa Grande (Great House) was Father Eusebio Francisco Kino (1644-1711), a Jesuit missionary.

Two small apertures in opposite walls are known as the Calendar Holes. Anciently, on each March 7 and again on October 7, the rising sun shot a beam of light through both holes, signaling the seasons for planting and harvesting.



Western Ways Ektachrome,
Ray Manley

## Red Fire in the Desert: Peppers Grown Near Elfrida Put the "Hot" in Hot Tamale

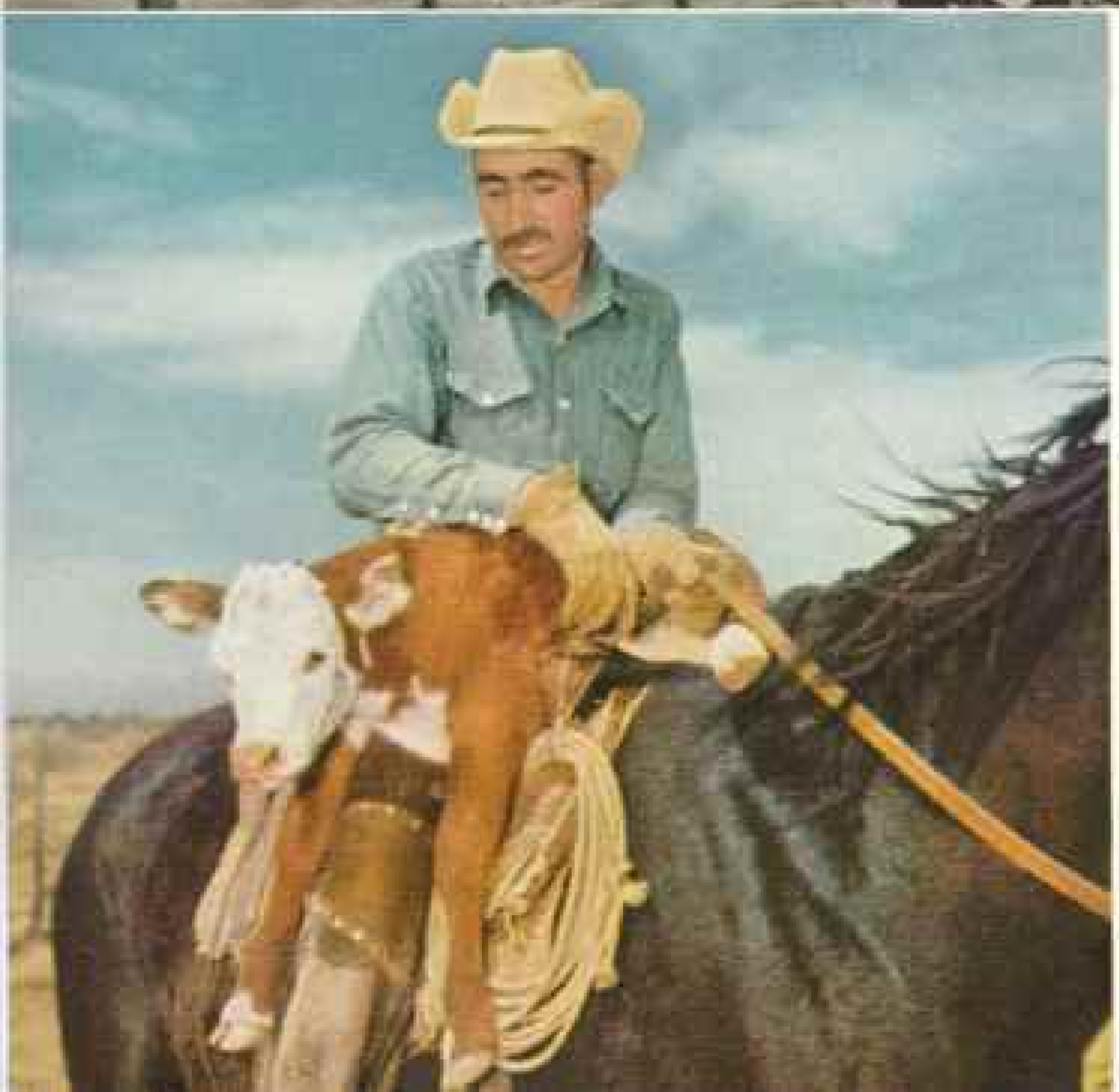
Fall's first frost turns the landscape scarlet. Pickers (inset) gather the pods in cans and sacks and spread them to dry.



Western Ways Redactreme, Bill Seats

## Roundup on Cowan Ranch . . .

This grassland in the San Pedro Valley has long been a profitable ranching area, but 90 years ago it bore the brunt of Apache raids. Riders here separate some 500 head of cows, calves, and steers.



## Calf Gets a Ride

Some young animals cannot keep up with the roundup's pace. To save this bawling Hereford without delaying the herd, James A. Shugart laid him across the saddle and gave him a lift. Mr. Shugart is wagon boss of the Boquillas Ranch, near Tombstone, one of the large cattle spreads in Arizona.

## . . . Cowboys Corral a Herd

Once the mob is penned in, a horseman cuts out any animal wanted and chases it into the weighing chute on the left while a dismounted helper opens and shuts the corral gate.

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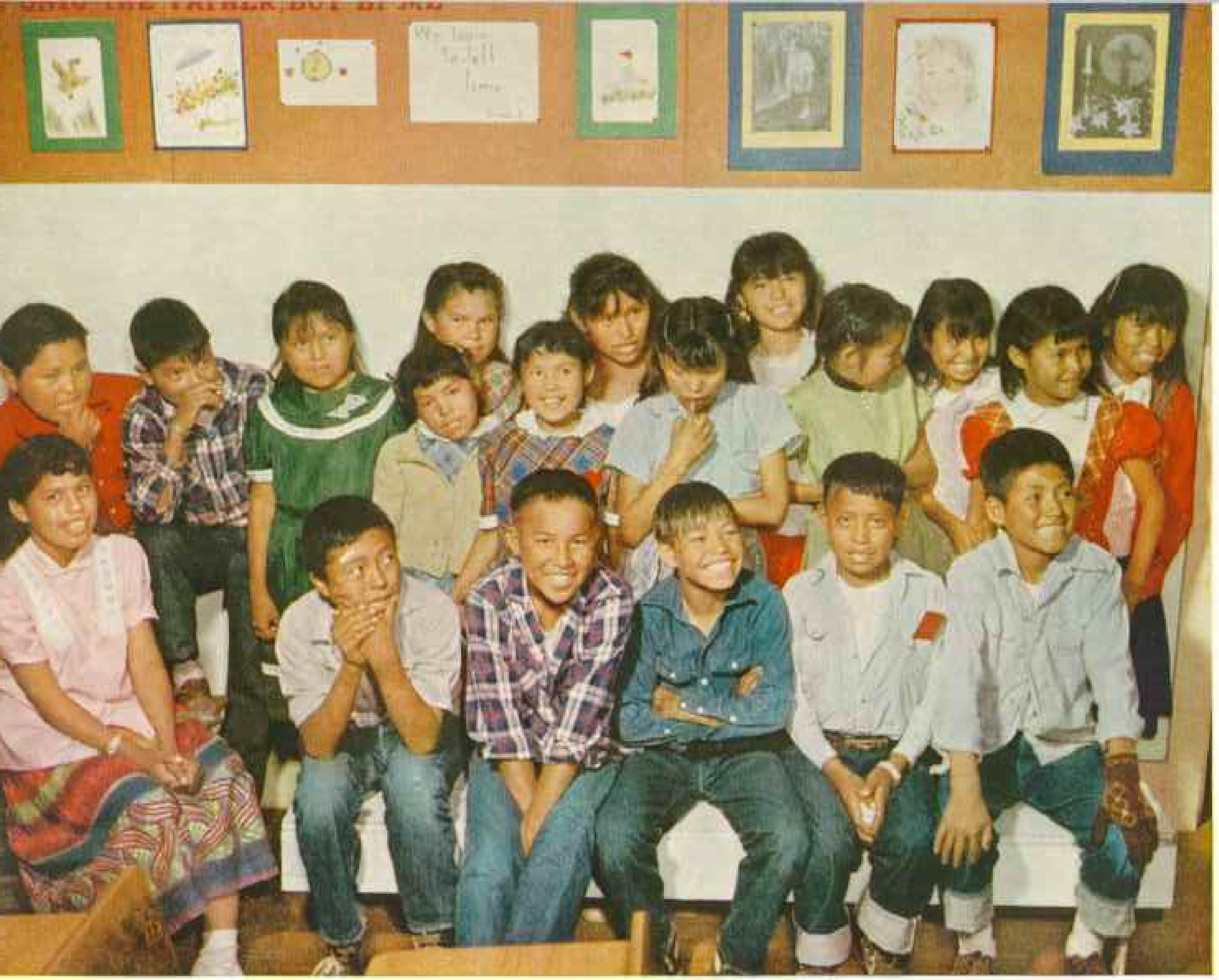
### Hot Iron Burns Hide →

Always at roundup there are strays to be cut out, sick cows to be doctored, and calves to be marked and branded. The days of the open range are gone, but branding is still necessary. Identification of each animal is impossible, and a brand is prima-facie evidence of ownership. These boys work near Sonoita.



## Youthful Grins Tell a Success Story in Apache Town

Bylas, a town straddling U. S. Highway 70, has a population of 700 Apaches.

Fathers of these children own radios, and their mothers run powered washing machines. Neat frame houses replace the brush wickiups. Gone are the old buckboards and wagons; pickup trucks now carry the Apaches.

These boys and girls are a few of the 83 attending Lutheran Apache Mission. "Their grandparents hated school," says the principal, Edward V. Rasmussen, "as an evil forced upon them by the white man, but today the Apaches realize the need for education."

In sports the Apaches are keen competitors.

Lewis Monical, principal of the Bylas Day School, told the author: "Our boys have won a dozen basketball trophies. Now the girls, having overcome their traditional bashfulness, play the game too. As coach of the girls' team, I had difficulty getting them into shorts. They didn't want to expose their legs to the boys' wolf calls. Finally I persuaded the girls that the calls were complimentary."

## Tumacacori Mission Revives Indian Days with a Diorama

In the 1690's Father Kino, a missionary priest of New Spain, established the Indian town of Tumacacori as a visiting place for priests of his Sonora chain of missions. Thus Christianity entered the land which later became southern Arizona.

The present church of San José de Tumacacori came into use more than a hundred years later. After six years' service it was abandoned by the clergy in 1828 for reasons connected with Mexico's winning her independence from Spain.

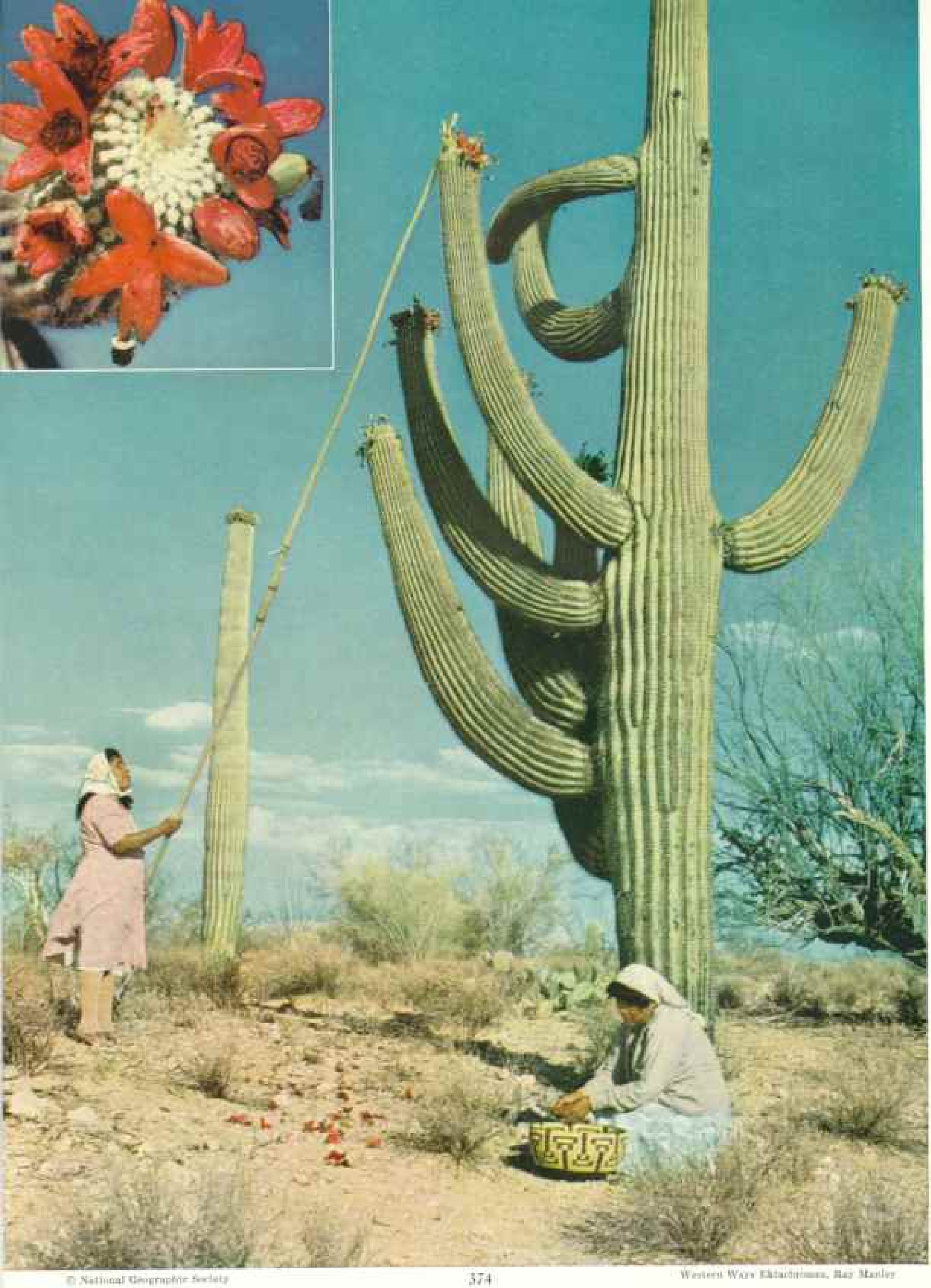
In 1844 the building and its lands were sold at auction for $500. Gradually the cloisters and the Indians' adobe houses crumbled back to dust. Ranchers used the mission cemetery as a corral, and treasure seekers, inspired by rumors that the priests had hidden gold, explored walls and graves with picks.

President Theodore Roosevelt made Tumacacori a national monument. Today the ruined church has been partly restored and a museum erected.

These children survey a scale miniature of the church's interior.

Western Ways Illustrations,
Ray Manley











**Papago Indian Women Pick the Saguaro's Red Fruit with 25-foot Poles**

Tribesmen near Sells, Arizona, celebrate the cactus's ripening with a festival. They convert the fruit into wine, syrup, and jam, and fatten chickens with the seeds. Inset: The saguaro's fruits burst open.

375 Western Ways Kodachrome, Charles W. Herbert

**Six Bales of Hay and 43 Mattresses Swaddle a Fragile 12-ton Saguaro on Moving Day**

Nothing so becomes a Tucson country home as a many-armed cactus just outside the picture window. Not every lot has a saguaro, but this crane crew will dig a spare from the desert and transplant it for $1,000.

### A Fiery Furnace Devours B-29's, Veterans of the War over Japan

At the close of World War II the United States Air Force wrapped hundreds of surplus bombers in plastic cocoons and stored them on the desert at Davis-Monthan Air Force Base, Tucson. War in Korea put some craft back into service and doomed others to cannibalization for spare parts.

Stripped of everything but their aluminum skeletons, the B-29's are fed into a portable oil-burning smelter. In goes half a wing (inset); out comes molten metal which may go into another warplane. One stripped fuselage yields 14,000 pounds to the molds (left).

Flat on their bellies, proud old ships lie on the distant scrap heap.


### B-47 Packs the Nation's Sunday Punch on 6 Jets at 600 Miles an Hour

If World War III should start tomorrow, part of our retaliatory attack would be launched at once from the Strategic Air Command's Davis-Monthan Base (opposite).

One of the United States Air Force's medium bombers operating out of Davis-Monthan is the B-47 Stratojet, Boeing Airplane Company's new atomic bomb carrier. Each of six jet engines delivers a thrust of 5,800 pounds, making the Stratojet the world's fastest known bomber. Although the ship weighs 92½ tons, it can match speed with many jet fighters. The B-47 can carry a load of bombs and a three-man crew 3,000 miles.

After production of the B-47 was under way, certain modifications were decided upon.

Since production lines at the factory cannot make some of these changes without costly slowdowns for retooling, the Air Force gives many of them to modification centers. Such a center is Grand Central Aircraft, Tucson, where these two B-47's await changes.

Western Ways Ektachromes,
Ray Manley





**Morenci, Arizona's Largest Open Pit, Has Converted a Mountain into a Hole in the Ground**

Towering 603 feet, the smelter's smokestack can withstand 100-mile winds. Just beyond it, liquid tailings from the concentrator settle into glaring white lakes of pulverized stone.

379 Western Ways Ektachrome, Bar Mosier

**Twenty-three Enormous Benches Terracing the Copper Mine Form a Bewildering Labyrinth**

Power shovels, each devouring the bench above it, take bites of five cubic yards. Electric trains, barely ant-size in this air view, remove the ore. Trucks and trains dump waste 1,000 feet down gullies, as on the left.





**Indian Children Kibitz Artist Ettore de Grazia Sketching Mission San Xavier del Bac**

Founded in 1699, the jewel of the Kino missions remains a living church, serving 500 Papages on their reservation. One bell tower remains unfinished, the architect-builder having died in a fall around 1797.

381

**Father Celestine Chinn, O.F.M., Says Mass Before San Xavier's 156-year-old Altar Screen**

Each year Indians make new garments for the statue of St. Francis Xavier (center), patron of the mission. Life-size angels (extreme left and right) are draped in painted canvas; tradition says the artist's daughters served as models.

**Graduates of Southern Arizona School for Boys Burn Their Brands into Ceiling Beams**

Boys in this Tucson school learn to rope calves and play polo while preparing for college. They dig into archeological ruins and live in steam-heated lodges named for Indian tribes. On many mild winter days they study outdoors.

visit surviving Apaches on the San Carlos Apache Indian Reservation.

Tales about Cochise, the Chiricahua Apaches' wily leader, and his warriors gave us immense respect for that small body of horsemen who raided Mexico at will and for years defied the power of the United States Army. Cochise and his men never raised a horse or a cow; they rustled them, and whatever supplies were needed. Masters of surprise, camouflage, and ambush, they made the country unsafe for miners and ranchers.

Cochise, giving up the fight in 1872, virtually dictated the terms of his surrender. Geronimo, the outlaw Apache, carried on guerrilla war until 1886.

Visiting Cochise Stronghold, northeast of Fort Huachuca, we found a natural fastness so well boxed in by canyon walls that a few sentries could have defended it. There Cochise died in 1874. To obliterate every trace of his grave, faithful braves ran their horses up and down the canyon. Only one white man, Tom Jeffords, Cochise's brother by blood rite, knew the secret, and he carried it to his death 40 years later.

### "Wagon Wheels" Broke Indian Power

Apache Pass, a defile between the Dos Cabezas and Chiricahua Mountains, showed us the spot where Cochise suffered his only major defeat. Here the Apache leader in July, 1862, lay in ambush for 11 companies of Union infantry marching toward a spring which he commanded. Hidden behind trees and rocks, his warriors poured down musket fire and arrows.

The soldiers, almost delirious from heat and thirst, saved themselves by firing howitzers, which the Indians, meeting for the first time, called "wagon wheels." These small cannon, mounted on wheels and pulled by soldiers, penetrated defenses that turned rifle balls aside. Leaving 63 dead, the Apaches fled the scene after the worst defeat they ever suffered in a single battle.

This same Apache Pass, a point on the immigrant road to California, became the grave of so many travelers that the stagecoach line offered triple pay to drivers. We found wheel ruts of the pioneer stage line, Butterfield Southern Overland Mail, still scarring the earth. Making no attempt at grading, the abandoned line zigzags across the modern road. At times it parallels a wide gash tracing the freshly laid El Paso-Los Angeles natural gas pipe line. Imagine what old-time Apaches would have done to the pipelayers!*

I met one Apache who piped the line's gas into his home. Clarence Wesley, chairman of the San Carlos Apache Tribal Council, grows alfalfa and barley and runs 70 head of cattle on the Gila River bottom. A member of the Miami Rotary Club, he often drives 66 miles to meetings. I found him supervising two sons who were currying a handsome bull calf for a 4-H show.

White neighbors treat Mr. Wesley with a good deal of respect. Under his leadership the San Carlos people have made rapid strides. Their pride is a herd of registered Herefords bred by artificial insemination. Cattlemen attending the Apaches' sales pay high prices for bulls.

"I have to lead my people; I can't drive them," Wesley told me. "I encourage them to get an education so they can take their place in American society and be a part of the community."

When we asked Wesley if any Cochise descendants survived, he said, "Yes, my mother-in-law, for one; she's his granddaughter." Asked to call her, he pointed to a pole-and-brush wickiup and, with a twinkle in his eye, replied:

"You know I'm not supposed to talk to her."

Wesley, wise in the white man's mores, referred to the Apaches' avoidance relation, whereby husband and mother-in-law keep apart, though living in the same household. Arizona humorists see great merit in the institution.

### Buck Rogers in the Desert

Leaving the Apaches, we visited a pavement-reared, tongue-in-the-cheek exemplar of the Old West. He is cartoonist-writer Dick Calkins, originator of Buck Rogers. Mr. Calkins and his wife Margaret occupy 20-acre Buckskin Ranch—"just room enough to swing a lasso"—in Sulphur Spring Valley.

Calkins, a savage gun fighter with blank cartridges, has decorated the living room with rifles, pistols, sawed-off shotguns, cavalry sabers, reward notices, cattle skulls, and his own aviator's helmet from World War I.

Seven years ago, he told us, he was in Chicago fighting syndicate deadlines and a back injury.

"When my doctor told me I would have to

* See "The Eternal Flame," by Albert W. Atwood, National Geographic Magazine, October, 1951.

Charles W. Herbert, Western Ways

**"They Went Thataway!" Dick Calkins, Town Marshal of Bonita, Tells the Author (Left)**

Cartoonist Calkins, who abandoned "Buck Rogers in the 25th Century," now writes western scenarios and helps run a dude ranch, the Buckskin. "Guests are welcomed with a blast of gunfire which puts them on their toes or vice versa," he says. The star on his vest "can't be got by sending in a boxtop; it must be earned by gunsmoke." It proclaims him a member of the gun-slinging Tombstone Vigilantes (page 364).

go to a hospital," he said, "I leaped out of bed, hopped into my jeep and trailer, abandoned Buck Rogers, and headed for Arizona.

"In doing so, I dropped back into history. I used to write stuff 500 years in the future. Now I'm 100 years in the past, doing cartoon scenarios about desperadoes and sheriffs. I've become so familiar with those old boys that I've gotten to talk like them.

"Out here," he continued, "all we have is the simple life and a lot of wide-open space. When Margie and I drive to town for groceries, it's an adventure. Tensions that used to hog-tie us are gone. There is no necessity to cultivate an ulcer. No one cares whether I am full of business or baloney. I live so far away from cartoonists' deadlines that I never write a script until I'm hungry."

When I asked Calkins how he had accustomed Chicago feet to Arizona boots, he replied in the tall-story technique of one of his western characters:

"Wa'al, podner, in 1872 I was ridin' herd up the Chisholm Trail, and that's where I plumb learned to sleep with my boots on. If that herd had ever a-stampeded by night, I never would have got feet into leather again."

# Crickets, Nature's Expert Fiddlers

## Celebrated in Story and Legend, These Accomplished Insects Are Musicians, Ventriloquists—and Thermometers

By Catherine Bell Palmer

*National Geographic Magazine Staff*

ONE September evening in Silver Spring, Maryland, the incessant *chirp, chirp, chirp,* of a cricket in the house interrupted my reading. During the summer I had become so accustomed to these insects' familiar calls outdoors that I rarely noticed them. But within the four walls of a house the chirp seemed to double in volume and fill the whole living room.

My collie, Ginger, cocked her head, looked up at me with a quizzical expression, and trotted off in search of the noisemaker. I joined her, but whenever we reached a spot where we thought the cricket was, its call seemed to come from another part of the room.

### Fiddle by Scraping Wings

This aural illusion was no accident. Most crickets, like cicadas, become ventriloquists to deceive pursuers.* Nature's fiddlers, they produce their shrill music by rubbing their wings together. When the common field cricket wants to make his call, he raises his fore wings at an angle of about 45° to his body. A file on one wing rasps against a scraper on the other, creating the sound variously described as *treat-treat-treat, cree-cree-cree,* or *gru-gru-gru* (page 391).

During this fiddling process, called stridulation, the insect controls the volume and direction of the sound by position of the wings in relation to the body. To make the muted, muffled notes giving the illusion of distance, the wings are lowered close to the back. Some species—certain small bush crickets, for example—do not sing at all.

Of the 2,000 known species, the one we were chasing probably was *Acheta assimilis,* the common field cricket. Although *Acheta domesticus,* the house cricket of the Old World, has been introduced here, it is not nearly so numerous as the field cricket.

Through the ages the cheerful chirp of the cricket has been woven into literature and legend. Charles Dickens did more than any other writer, perhaps, to popularize the little creature with his classic *The Cricket on the Hearth.* In this charming story there is a contest between a kettle and a cricket to determine which can sing louder and longer. Cricket wins when the kettle boils over.

The song of the snowy tree cricket, *Oecanthus nivens,* evoked extravagant praise from Nathaniel Hawthorne. "If moonlight could be heard," he wrote, "it would sound like that." Henry David Thoreau called the sound "a slumberous breathing" and "an inner dream."

To many, the steady chirping of a cricket, reminiscent of a singing teakettle, suggests peace and comfort. The French entomologist, Jean Henri Fabre, proclaimed, "I know of no insect voice more gracious, more limpid in the profound peace of the nights of August."

But a *New York Times* nature writer, Hal Borland, apparently had an experience similar to mine. In a *Times* editorial he described a cricket as "a black, ambulatory noise surrounded by a sentimental aura. On occasion it lives in the open fields, but its favorite habitat is behind a couch or under a bookcase in a room where somebody is trying to read. It has six legs, which make it an insect; two antennae, which make it a creature of sensitive feelings; two wings that can be scraped together, which make it a nuisance."

In old England it was considered good luck to have a cricket chirping on the hearth.

For centuries cricket fighting has provided a national pastime in China. Records of celebrated insect fighters are preserved by the Chinese as records of thoroughbred race horses are kept in other countries. Weighed in before every fight, crickets are divided into heavyweight, middleweight, and lightweight classes (pages 388, 389).

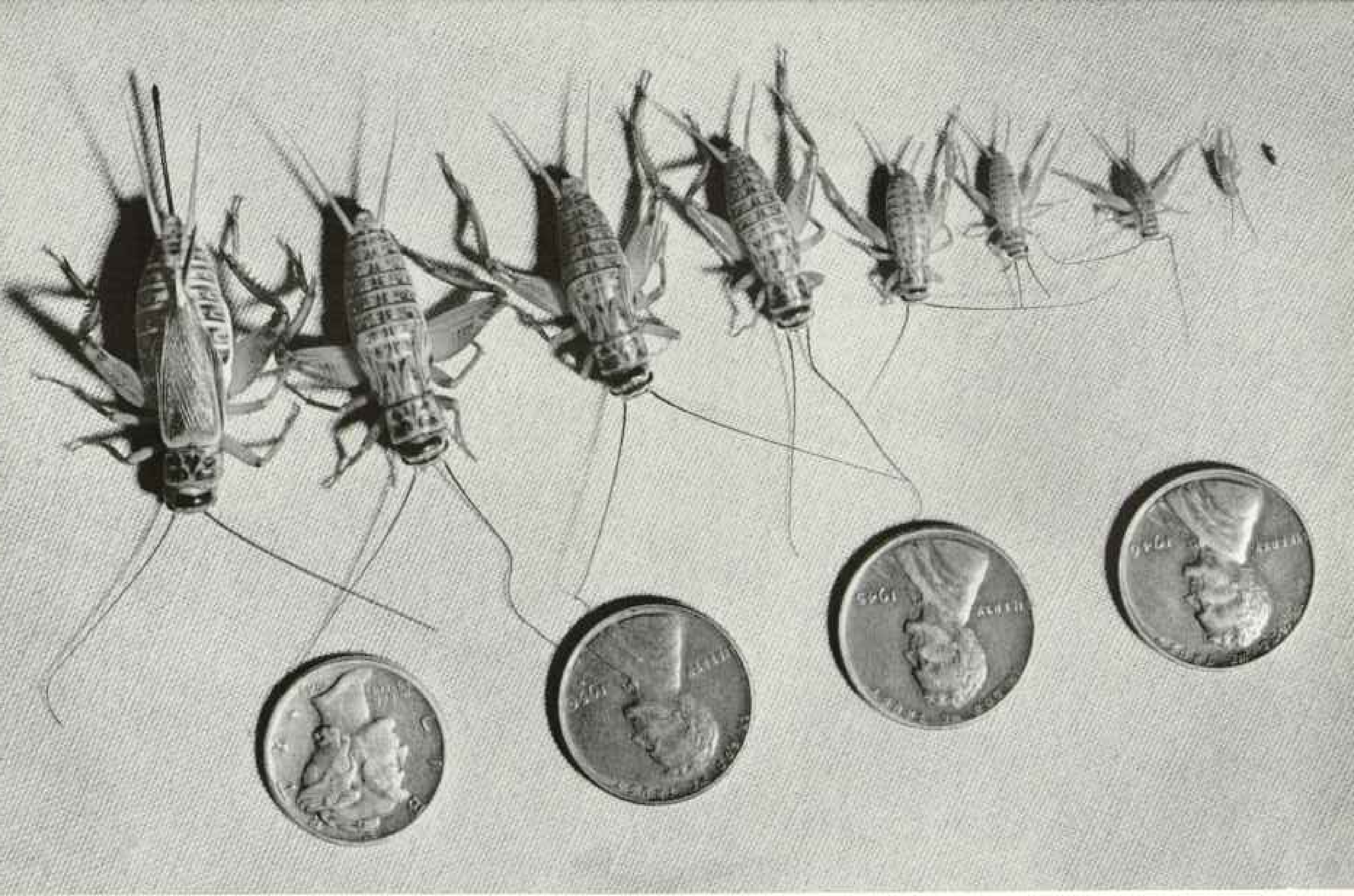
Some devotees of cricket fighting raise the insects and hire professional trainers to feed and care for them. Special diets consisting of rice, boiled chestnuts, and mosquitoes are given before a fight.

### Temperature Affects Song

In both China and Japan crickets are also kept as musical pets. In the days of the Chinese empire even the palace had its royal chorus of crickets. Beautiful specimens of cricket cages are now museum pieces (page 393). Common folk had to be content with cages of bamboo or of coconut shell; the rich had gourds with covers made of carved ivory and jade. Cricket cages in the collection of the Chicago Natural History Museum include one made from a carved walnut shell.

Whether the call of this fiddling member of

* See "Rip Van Winkle of the Underground," by Kenneth F. Weaver, National Geographic Magazine, July, 1953.






National Geographic Photographers Bonnie Walker and Bates Littlehales

## Crickets Bred in a Georgia Hatchery Arrive at the National Geographic Society

Receptionist May Haney signs for an express shipment of hopping, chirping fish bait from College Park, Georgia. Bass especially are fond of live crickets. For a close-up of one, see page 390. After serving as models, these were taken home by a staff member to his children, who later released them.

← The nine crickets shown (top to bottom) range in age from one day, one week, two weeks, and so on to the largest, eight weeks old. Bait-age crickets (four to six weeks) sell for $1.50 a hundred.

Nature's orchestra is music or discord to your ears, you can tell the temperature by some species. Entomologists have found that the chirping rate of the snowy tree cricket rises and falls with the thermometer. Just count the number of chirps in 15 seconds, add 40, and you have the number of degrees Fahrenheit with surprising accuracy.

Variations of their notes in tone and strength according to the temperature are also noticeable. In general, crickets do not chirp at all when it is colder than 55° F. or at temperatures much higher than 100° F.

To the human ear the song of *A. assimilis* is a series of chirps. Each chirp, however, is not a single pulse of sound but a group of three or more. In a series of experiments conducted over a period of 12 years Dr. George W. Pierce, professor emeritus of Harvard University, found that this species has two distinct classes of song, common and courtship. In the common song the cricket strikes 47 percent of the teeth of his file. Vibration frequency is about 4,900 cycles a second. During the courtship song, however, Mr. Cricket raises his pitch to 17,000 cycles

388 Horace Bristol, Ewit-West

**"Get In There and Fight!" A Balinese Trains Battling Crickets**

To goad an insect to combat, the owner prods it with a bamboo stick. Conditioning regimen also includes baths in a strengthening mixture of aromatic herbs. For exercise, crickets bounce up and down on twigs stuck into a coconut. Bamboo cages are the insects' homes.

a second and strikes 89 percent of his file teeth.

As a result of his experiments with a sound-receiving and measuring apparatus he designed, Dr. Pierce discovered that some crickets make supersonic noises, sounds too high for the human ear to hear.

### Why Does a Cricket Sing?

Another scientist timed a snowy tree cricket at 90 chirps per minute, or 5,400 chirps per hour in a 12-hour night. At that rate he would chirp nearly 4,000,000 times in 60 nights! Only adult male crickets chirp. Females, with ears in their knees, listen; wingless baby crickets are seen and not heard.

The carrying power of crickets' chirps is surprising. One species barely an inch long makes notes audible for almost a mile. Chirping of crickets has been recorded on sound film by the late Dr. Frank E. Lutz, former curator of the Department of Insect Life, American Museum of Natural History, New York City. Analysis showed that the notes of some species consist of beautifully executed slurs like those of an expert violinist.

Why crickets sing is a question naturalists have been trying to answer for years. The courtship song explains itself, but why the common song? Some believe that crickets and their cousins, katydids and grasshoppers, chirp for the same reason that birds and

Bettmann Archive, drawing by A. Castaigne

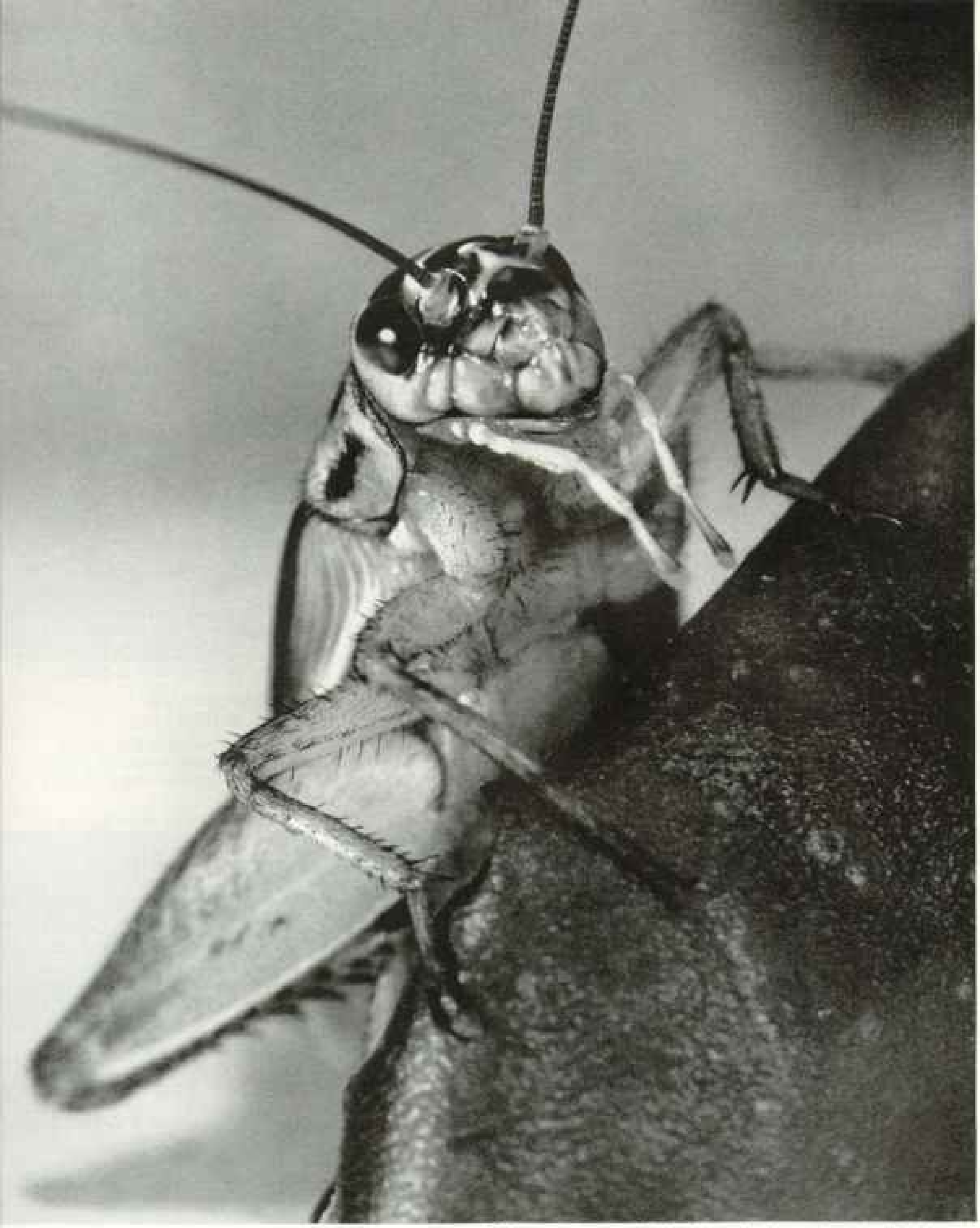
### Crickets Slug It Out While Bug-eyed Bettors Watch

Since A. D. 960 Chinese have bred crickets for battles to the death, as shown in this old drawing. Large sums often are wagered on the bouts. Pre-fight diet includes mosquitoes fattened by feeding on trainers' arms.

### Tickling Makes a Cricket Mad Enough to Fight

The girl demonstrates a Chinese cricket tickler usually made of rat or hare whiskers in a reed or bone handle. A wire cage holds the insect while its jade-topped gourd (right) is being cleaned.

National Geographic Photographer Willard R. Culver



390 National Geographic Photographer Willard R. Culver

**Jiminy Cricket, Symbol of Cheer, Becomes a Horned Monster by Camera Magic**

Chirping on a hearth, the little insect enjoys a reputation as a gentle harbinger of good luck. In its own element it fights as grimly as any other creature to stay alive.

Like its near relatives, katydids and grasshoppers, *Acheta domesticus* has biting mouth parts. Although a vegetarian by choice, the cricket readily eats other insects. If caged without other food, crickets will devour each other.

During their stay at National Geographic headquarters, crickets from a Georgia live-bait hatchery were fed apples and lettuce. Here one, greatly magnified, perches on a bit of apple.

Most crickets lay their eggs in the ground in summer or autumn. Others bore into trees or shrubs. Eggs hatch the following summer if laid in the fall; older crickets usually die when winter arrives.

humans sing: they love sound and find it a means of self-expression. Another theory is that male crickets sing to challenge members of the same sex.

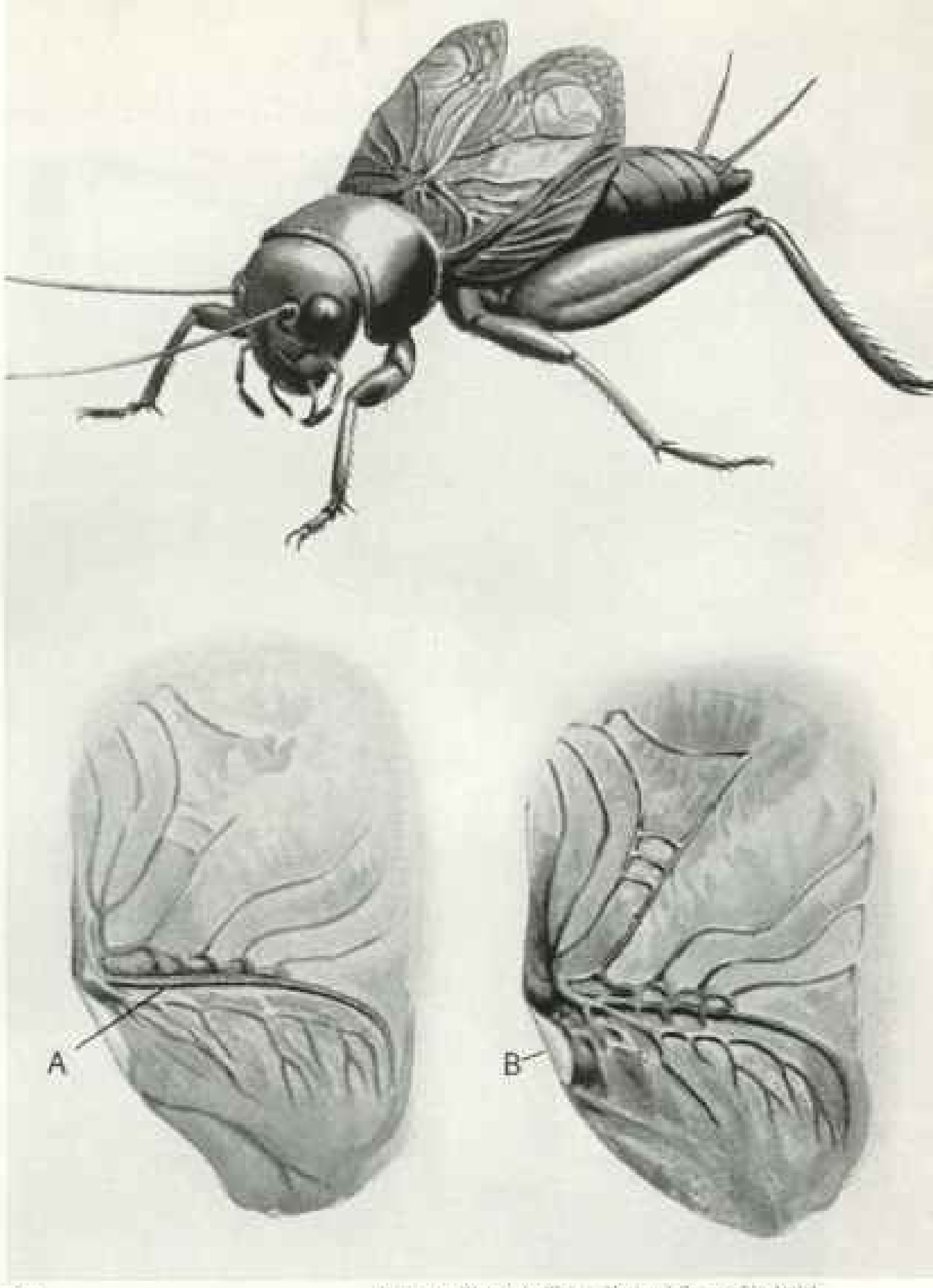
In contrast to the sawing of the grasshopper and the lisp of the katydid, a distinctive feature of cricket music is its definite musical pitch. One naturalist recorded the sounds of three different species of tree crickets and found they were singing, respectively, C (D on warm nights), E, and F, starting two octaves above middle C.

Not normally household residents, crickets do enter houses in late summer when vegetation becomes scarce. Once inside, they will eat clothing, upholstery, carpets, and even rubber goods. To get rid of them, the United States Department of Agriculture recommends DDT as a 5-percent spray or 10-percent powder; or chlordane as a 2-percent spray or 5-percent powder applied around baseboards or other places where the crickets may be hiding.

In Cleveland, Ohio, angry housewives whose homes were invaded by crickets from a city dump armed themselves with cricket-filled paper bags, marched into the office of the city's service director and released the insects. Their action forced the director to order a 10-foot strip cleared between the dump and private property, a DDT barrage in the strip, and a special watchman to guard against "wildcat" garbage dumping.

### Chirps Drown "Yankee-Doodle"

A few summers ago, crickets in the thickets around the Carter Barron Amphitheatre in Rock Creek Park, Washington, D. C., chirped so loud during a performance of Paul Green's "Faith of Our Fathers" that the management had National Capital Park Service people spray with insecticide. But the crickets' chirps were just as loud, especially when the orchestra played "Yankee-Doodle"!




391 Drawn by Walter A. Weber, National Geographic Artist

**Cricket Produces His Cheery Chirp by Rubbing One Wing Against Another**

To sound off, the male insect raises wings above body and moves them back and forth laterally so that the file (A) rubs against the scraper (B). This action vibrates the wings and creates the sound (page 385). Only adult males chirp. Some scientists say the cricket's song is a mating call. Others insist it is a challenge to battle; still others say it is merely a means of self-expression. The insect's name comes from the French *criquer*, to creak.

When crickets are numerous outside, the United States Department of Agriculture has another remedy to destroy them. A good bait formula contains 25 pounds of bran, 1 pound of sodium fluoride or sodium fluosilicate, 2 quarts of molasses, and 2½ gallons of water. Care should be taken to prevent children and pets from eating the bait.

Western United States farmers are sometimes beset by the crop-devouring Mormon cricket, *Anabrus simplex*. A notable invasion by this species, not a true cricket but related to the grasshopper, was the plague of 1848 in the Mormon settlement at Salt Lake City. Their crops doomed to destruction, the Latter-


Howell Walker, National Geographic Staff

**Georgia's "Bug Factory" Turns Crickets into Cash**

George Smith, of College Park, started his live-bait hatchery with a handful of crickets left over from a 1950 fishing trip. Now he raises 1,000,000 a year for direct and mail-order sale to anglers (pages 387, 394). Fresh-water fish strike eagerly at the insects. Here a couple, headed for a stream, stocks up with bait in screened boxes.

day Saints prayed for help. As if in answer to their prayers, sea gulls came in droves to gorge on the insects. Today a monument to the birds stands in Temple Square of Utah's capital.*

The western meadowlark, Brewer's blackbird, and the sage thrasher are avid eaters of adult Mormon crickets and their eggs. One species of wasp, *Sparaison pilosum*, also is their enemy.

### Crickets Harm and Help Fruit Trees

Tree crickets sometimes spread a canker disease in apple twigs by their egg laying. The female hollows out cavities in twigs with her ovipositor. Then she lays pale-yellow banana-shaped eggs in them.

Because of their egg laying and their taste for berries, tree crickets are considered harmful by fruitgrowers. On the credit side, however, a single snowy tree cricket was found to eat from 300 to 900 destructive scale insects in one night.

In late summer, when the chorus of male field crickets is at its height, females are busy laying their eggs just below the surface of the ground.

To study the insect's ovipositor, Dr. Vincent G. Dethier, Johns Hopkins University biologist, offered five cents apiece for 1,000 female crickets a few summers ago. Dr. Dethier hoped

* See "Utah, Carved by Winds and Waters," by Leo A. Borah, National Geographic Magazine, May, 1936.

James E. Mays

**A Williamsburg, Virginia, Hostess Admires a 17th-century Chinese Cricket Box**

Gift of Mrs. John D. Rockefeller, Jr., this treasure carved from porcelain is on display in the Governor's Palace at the restored colonial capital of Virginia. The Chinese, lovers of cricket fighting (page 389), housed their insect warriors in such boxes between bouts.

that the same cooperative youngsters who caught fireflies for Dr. William D. McElroy, another Hopkins scientist, would catch crickets for him.*

He received so many crickets in the first two weeks that the *Baltimore Sun* had to come to his rescue, begging the children not to bring any more.

### Mole Crickets Live Underground

Of all the species, the mole cricket is perhaps the strangest. Resembling a mole as nearly as an insect can, this cricket is covered with fine, short hairs which give it a furry appearance.

In his *Book of Monsters* Dr. David Fairchild calls the mole cricket "a monster of the underworld." Most of its existence is spent underground in permanent galleries. Powerful front legs, four-pointed like spading forks, enable it to dig under the soil. They also serve as oars in water and as shears to snip roots.

One entomologist, in describing the song of male mole crickets, states: "Their music is solemn and monotonous, being always a series of loud, deep-toned chirps, like *churp, churp, churp*, repeated very regularly about a hundred times a minute.

"Since the notes are most frequently heard coming from a marshy field or from the edge of a stream, they might be supposed to be those of a small frog." Others compare some mole crickets' notes to those of the European nightjar, a nocturnal bird, also known as the goatsucker. These insects have spotty distribution throughout the United States, but are rarely seen.

For one reason or another, crickets have

* See "Torchbearers of the Twilight," by Frederick G. Vosburgh, National Geographic Magazine, May, 1951.

National Geographic Photographer Willard R. Culver

**One More Step and This Fireside Troubadour Will Sing No More**

The author's collie, Ginger, deeply interested in the cricket, was totally oblivious of the photographer's activity with high-speed lights and other gear. To keep the insect from hopping out of camera range, it was drugged momentarily with a painless chemical. The episode ended unhappily: Ginger ate the cricket.

been of interest to primitive and civilized people alike.

At College Park, Georgia, an enterprising man runs a cricket hatchery (pages 387, 392). George Smith returned from a fishing trip in 1950 with a few crickets left over. He decided to breed the insects for fish bait. In 1952 he sold a million.

One species of cricket is widely eaten in Burma. It is sold, fried, on the market in Mandalay.

Caught by professional collectors from near-by villages, the crickets sell for one rupee and four annas (about 23 cents in United States currency) a hundred. During festivals, baskets of fried crickets often are consumed as a special treat.

The insects are also greatly prized as food by the Siamese, who roast them over a fire. One Occidental visitor to the country found courage enough to try eating crickets, but thought them insipid; others have described their flavor as similar to lettuce.

As one entomologist points out, it would be difficult to give sound reasons why Americans eat oysters, crabs, snails, and lobsters but disdain to eat equally clean, palatable, and nutritious insects.

## Crickets May Speak Dialects

An American entomologist is working on the theory that crickets have dialects, and he believes that a careful study of their songs can place them geographically. For instance, a distinguishing trill might prove the cricket was a southerner; an unusual flourish could mean he was a Yankee.

Outside my house, in the darkening hours of the night, hundreds of crickets, tuning up their fiddlesticks, struck the opening bars of the insect opera. Inside, Jiminy Cricket answered with a solitary chirp.

Giving up the search, I returned to my book. My dog was more persistent. Suddenly I realized that the chirping inside had ceased. Some people believe that to kill a cricket will bring bad luck, but apparently Ginger is not a superstitious dog.

# Along the Yukon Trail

## On a Route of Tragedy and Treasure, Old-timers and Ghost Towns Recall the Stampeders of '98, "Clean Mad for the Muck Called Gold"

By Amos Burg

*With Illustrations from Photographs by the Author*

HARDLY had the *Portland* steamed into Seattle on that momentous day in July, 1897, before paper boys were hawking the news through the streets.

"Gold! Gold! Gold!" they cried. "Sixty-eight Klondikers bring back a ton of gold!"

It was the biggest strike in history, the papers said, a stream of gold in Canada's Yukon that flowed richer and richer as news of it flashed round the world. At first the nuggets were said to be as big as peas, then eggs, then potatoes. Gold nuggets of all sizes danced before the eyes of millions. Men of all callings, of many virtues and varied vices, fell victim to the lure. The rush was on.

Main goal and port of entry was Skagway, 1,115 sea miles north of Seattle at the top of Alaska's Panhandle. So it was natural that I chose Skagway as my own starting point for a recent trip back over one of the main routes of the stampeders (map, p. 400).

Like thousands of early prospectors, I had sailed northwest from Seattle through the Inside Passage along the broken Alaskan coastline. From Skagway I planned to go by train and boat 600 miles farther, to the famed Klondike gold fields in the Yukon.

As our steamer glided up the Lynn Canal, a natural arm of the sea, to Skagway's port, I tried to imagine what it must have been like 50 years earlier. Not all the thousands who poured in had been hardy outdoorsmen.

In Tacoma streetcar conductors got together and sent nine men to the Klondike. Clairvoyants in Chicago dispatched a medium to dig where the spirits directed. Within two months after graduation, half of California's fledgling doctors had left for the fields.

### Women Joined the Mad Rush

Women went, too. Greatly outnumbered by men, they were more than welcome in the north. "Any woman, innocent or full of guile," one of the returning miners reported, "can become a bride within 30 minutes after she lands at the creeks."

Most miners toted the standard 500 pounds of flour, 200 pounds of bacon, and 100 pounds of beans, plus tools and sundries which brought the typical pack to an even ton. To transport these mountains of supplies, plus the horde of humans and animals, every vessel on the Pacific coast was pressed into use—every liner and whaler, every yacht, cutter, and ketch; even rusty old craft hauled out of their graves. On arrival at Skagway they simply dumped cargo and sped back for more. Horses, dogs, cows, and pigs were shoved into the water and forced to swim.

As I hurried down the gangplank, I felt I was entering the wings of a stage on which one of history's greatest dramas had been enacted. One of the original actors walked ashore with me, an old-timer who had been here in '97 and had come back to visit.

"Why, there's a wharf here now!" he exclaimed.

After a long pause he added: "It's sure quiet."

### Broadway Was Knee-deep in Mud

The old-timer walked with me along Skagway's Broadway, which resembles in places a Hollywood western set. In gold-rush days, my companion told me, when you walked the streets you sank in mud almost to your knees. Every 50 feet or so you'd stumble on a big lump, a dead horse that had keeled over from working too hard and eating too little.

There was hardly a spot, he recalled as he looked down the nearly empty street, where you could pitch a tent. Some 15,000 people got here by '98. And there was a saloon for every 200.

Now a respectable little town of 750, Skagway shows its past only in spots, mostly in deserted, gingerbread-trimmed buildings that stare back hollowly when you peer in. One of these is a saloon once owned by Jefferson Randolph Smith, even today a legend in Skagway. They call him "Soapy" Smith—but not because he lived clean; eventually he died in a gun fight with Frank H. Reid, a Vigilante.

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### The Author

Amos Burg, adventurer, author, lecturer, and cameraman, was just 14 when he first went to sea. He has since piloted his own craft from one end of the Americas to the other. He cruised the Strait of Magellan in *Dorjun*, a 26-foot surfboat, and voyaged the lengths of the Columbia, Snake, Yellowstone, Missouri, Mississippi, Athabaska, Slave, Mackenzie, and Yukon Rivers in *Song o' the Winds*, his canoe. He conquered the Grand Canyon of the Colorado in *Charlie*, a rubber boat. Viking by ancestry, Oregonian by birth, Burg has been writing for the National Geographic Magazine since 1930 when his first article on the Yukon was published.


396

**A Skagway Bust Commemorates a Heroine of the Gold Trail**

Few women braved the Far North's rigors during the stampede of the '90's. One who did was Mollie Walsh, who kept a grub tent on White Pass Trail. A former sweetheart erected this monument years after she was murdered.

There were no Soapy Smiths to harass stampeders once they crossed from Alaska into Canada. Across the border Canada's North-West Mounted Police had a firm hand on things. They made every stampeder register and saw to it that he was relaying at least 1,100 pounds of grub.

Most stampeders came by ocean steamer to Skagway or Dyea, then hiked across the Coast Mountains to the headwaters of the Yukon River. From there they paddled down a waterway of lakes and rivers 550 miles to Dawson City.

Skagway and Dyea were bitter rivals for the gold trade. The route from Skagway led over White Pass; from Dyea, over Chilkoot Pass. It was 18 miles from Skagway to the summit of White Pass, the last two being a steady, hard climb; and it was another 17 miles from the summit to Bennett Lake. This route was longer than the Chilkoot, but the pass was much lower.

Both towns wanted desperately to be the main entry to gold. Both made the most of every opportunity to prove they should be. In April, 1898, when a terrible avalanche of wet snow roared 3,000 feet down Chilkoot, killing at least 50 people, a writer for the *Dyea Trail* slapped the rival Skaguans for taking "advantage of this sad calamity by advertising their fever-stricken hole of hell."

"Skaguans have no shame," he wrote. "They are ghoulish enough to wish that there had been 5,000 buried if it only happened on the Chilkoot Trail."

The grade to Chilkoot's summit was 25 percent; and, up the last half mile, 35 percent. "Heaven to look at," they said, "and hell to negotiate." In summer Chilkoot was a precipice of sliding rock; in winter, a monster of ice. It was safer to cross it in winter, though, because a man was better off falling into a drift of snow. Since it was almost impossible to get an animal up it, a man had to relay his own pack, some 50 to 100 pounds at a time (page 399).

Storms blew up frequently, lashing wind and ice in his face, but once he started up Chilkoot there was no turning back. This was a one-way street: up. Man followed man, inch by inch, fingerhold to fingerhold.

### "Don't Build a Coffin"

Once over the passes, the two trails met near Lindeman Lake and again at Bennett Lake. Here is where the stampeders stopped walking and started paddling. But first they felled trees, sawed lumber, and built boats. "Build strong," cautioned the Mounties who walked among them. "Don't start off in a floating coffin."

When the ice went out of Bennett Lake, May 30, 1898, 800 hand-hewn craft shoved off in the race to Dawson. Hundreds ahead, thousands behind, the pressure mounted and

397

**Dawson Firemen, Staging a Drill, Hook onto an Electrically Heated Hydrant**

Dawson, with its closely crowded tinderbox houses and red-hot stoves, has always feared fire. Twice during gold-rush days flames swept the town, while water froze in the fire hose. Tipsy houses, lacking adequate foundations, sag where stoves have thawed permafrost, which begins a few inches below the surface.

mounted. By the end of summer, according to the tally kept by the Mounties, 7,000 craft had started off, carrying 28,000 stampeders.

The survival of either Skagway or Dyea depended ultimately on which pass was chosen for a railroad route. When White Pass was chosen in 1898, Skagway bloomed and Dyea wilted. By 1900, when the railroad was finished, Dyea had shriveled to a trace of its once colorful self.

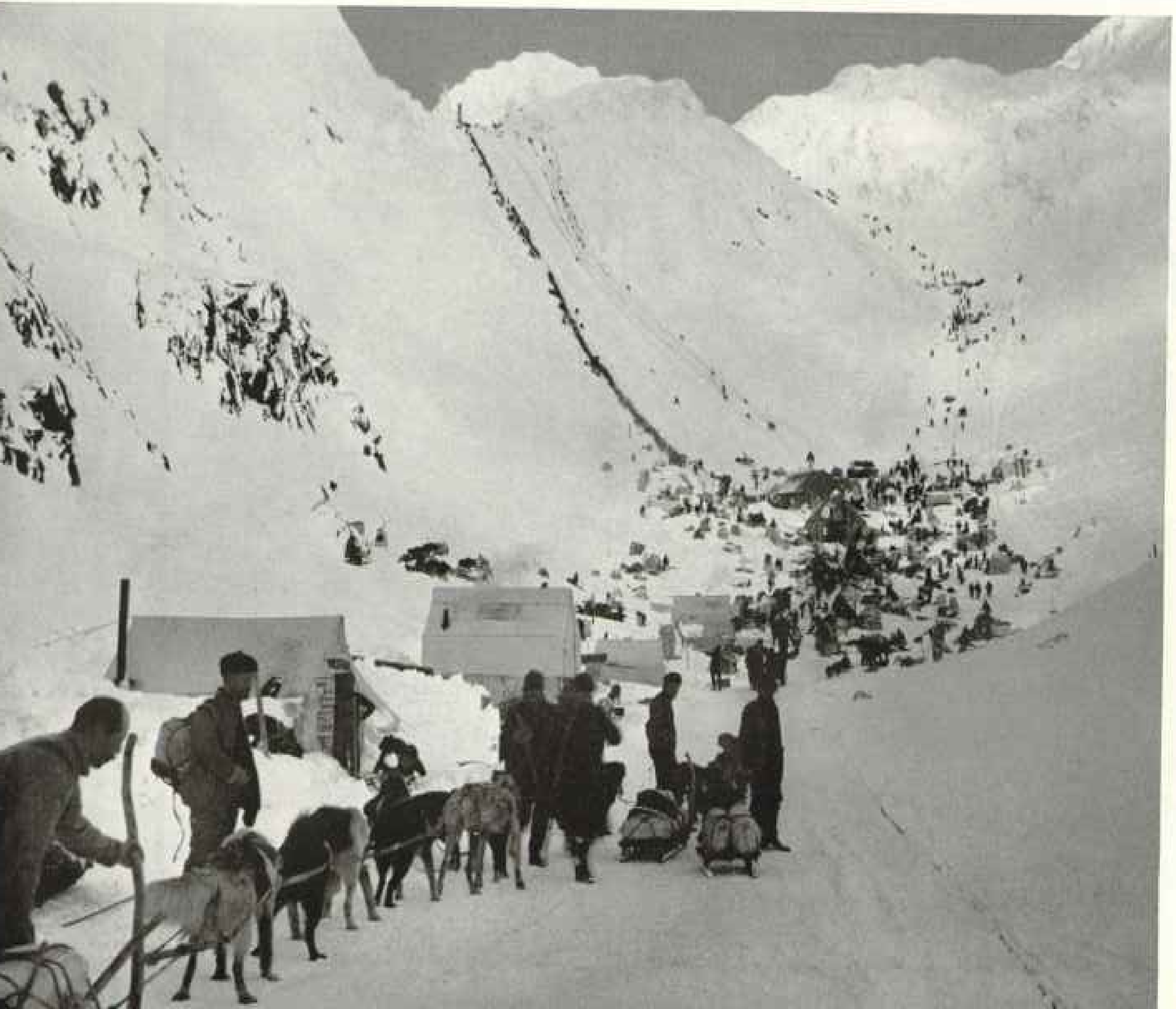
### High Hopes for a New Boom

Now, after all these years, Dyea may come to life again. I rode to Dyea with Chuck Roehr, who was superintendent of the rail division of the White Pass and Yukon Route. He told me something about Dyea's possible future as we poked among the remains of frame buildings and log cabins long ago engulfed by the wilderness.

The Aluminum Company of America has plans for building a $700,000,000 power and smelting project in the Taiya River Valley, he explained. It would require a whole new town to run it.

So far, Canada has refused Alcoa's proposal to use its Yukon water, but Alcoa hasn't yet given up hope. Meantime, a Canadian firm, Ventures Ltd., has revealed an even more daring plan that would develop the Yukon's mineral resources as well as its water. Surveyors have already studied Yukon waters, and work on the first power plant is scheduled to start next spring. This project, which may take 20 years and two billion dollars to complete, calls for processing Canadian lead and nickel and for making pig iron, steel, and aluminum from ore brought in from all parts of the world.

Back in Skagway again, Chuck and I boarded the train that was Dyea's undoing. A mere 110 miles of narrow-gauge track, the White Pass and Yukon was fondly called "the biggest little railroad in the world" during



### ← 1898 Photograph Shows Men Streaming Like Ants Across Chilkoot

From September to June, Chilkoot Pass is solid with ice and frequently racked by storms. Each fortune seeker had to pack his ton of supplies in relays and carry his dogs across. Even with steps hacked in the ice, the long climb was grueling and dangerous.

Despite these hardships, stampeders streamed in unbroken lines over the pass as long as the light of day held out. Sickness, hurry, confusion, and bewilderment marked the trail; time was scarce for eating and sleeping—or for sentiment if a man dropped out of line.

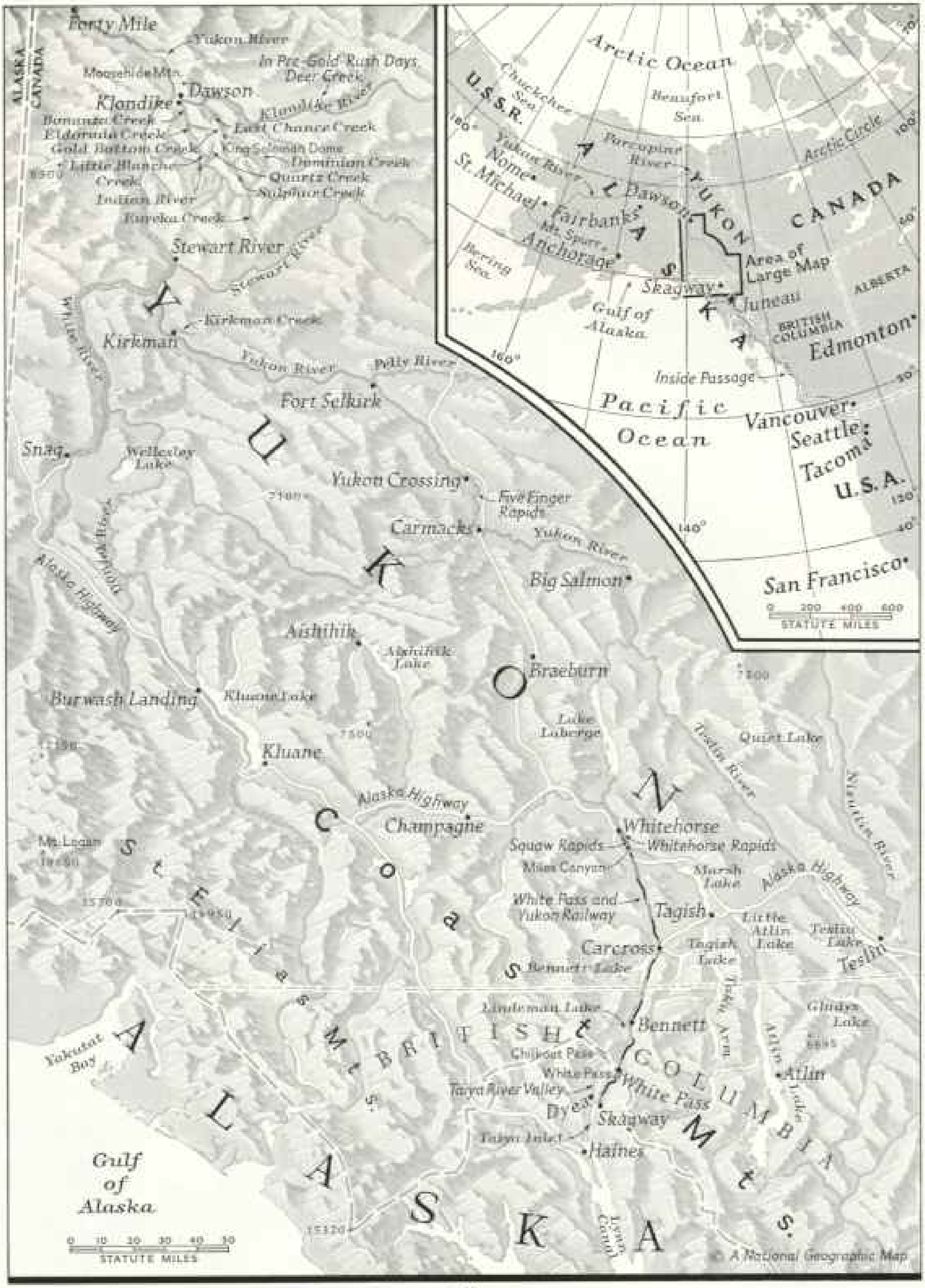
Here men coming up from Dyea in 1898 wait their turn to tackle the summit. Once across, they raced on for Bennett Lake.

Ambitious Dyea dreamed of becoming the main passage to the gold creeks. But Skagway's wharves lured the steamers, and White Pass offered easier going than Chilkoot. Moreover, the railroad chose the White Pass route. So in time Skagway bloomed and Dyea wilted.

A half century later the author found signs that Dyea might revive. There are plans for two power and smelting projects near by (page 397).

Opposite page: A visitor looks down the tide flats at the mouth of Dyea Valley, which marked the entrance to Chilkoot Trail.

Webster & Stevens




400

## Visions of Easy Riches Brought Thousands to the Forbidding North

Men of every type from every part of the world fought for space on ships. Some came up the Yukon to Dawson from the Bering Sea; many challenged the rugged passes above Dyea and Skagway, seeking to float downriver.

World War II, when it did a heroic job of hauling men and supplies to the Alaska Highway.*

As we crawled up the mountain side, up one of the world's steepest railroad grades, I saw that the bed had been blasted out of solid rock. Chuck told me the work had been done by one of the fanciest construction gangs in history: disillusioned stampeders, including lawyers, doctors, artists, teachers, farmers, bankers, and bookkeepers.

As the train chugged up the last 20 miles to the summit, I spied my friend, the old prospector, luxuriating in the parlor car.

"This is comfort," he said, flicking cigar ashes grandiosely into the aisle. "Took me a month to relay my grub to the summit in '97." The trip to the summit and all the way beyond to Whitehorse, Chuck reminded us, would take just six hours by train.

At the top of White Pass we read a sign on the international border. It explained that on the Canadian side the waters flow 2,150 miles to Bering Sea; on the American side they flow 20 miles to the Pacific Ocean.

### Tall Fences and Tall Stories

Then we tilted downward for Bennett Lake. High board fences lined one side of the tracks, I noticed. They obviously were winter snow fences, but I overheard the brakeman soberly telling a lady passenger, "Them's moose fences, ma'am. Keep moose from getting on the tracks and derailing the train."

Bennett, junction point of the White Pass and Chilkoot Trails, was where stampeders built their boats to go downriver to Dawson. A roaring town of 10,000 at its peak, it's now no more than a lonely, wind-whistling ghost town.

Here Chuck and I got an old dory, *Klondike III*, and pushed off from the rotten wharf on the trail of the gold rushers. The boat wobbled like a tired accordion. Since it hadn't been used for years, water squirted in through its dried-out seams, and we had to bail constantly to keep from sinking.

Fifteen miles downriver we crossed the boundary from Canada's British Columbia into its Yukon Territory, a vast region comprising 207,000 square miles of hills and mountains interlaced by large valleys. At the northern end of Bennett Lake we steered the foundering dory under a railway bridge and beached at Carcross.

Having had enough of *Klondike III*, we gladly boarded the next train to Whitehorse. Like most other Yukon towns, Whitehorse was born of, and nourished by, gold. But this town has continued to thrive, while the others languished. Always the distributing center for the Territory, as head of river navigation and terminal of the railroad, Whitehorse is now also the leading metropolis (population 4,000). The Alaska Highway and a large $13,000,000 airport strategically located on polar air routes helped it grow and become an important military base.

Modern as it is, the town still shows many traces of the past. As I lugged my baggage up Front Street to the Regina Hotel, a water truck, swinging its empty buckets, came clanging past me. After all these years, many pipeless log cabins and houses still buy water at five cents a bucket.

### No Time for Shoelaces

Most business in Whitehorse is crowded into the three or four months of warm weather, and things were booming when I was there. I dropped into a shoe repair shop, where I interrupted a busy cobbler working on a mountain of old shoes. I bought a leather shoe lace to use for a watch chain. "Please put a hole in it," I asked.

The shoemaker exploded. "Here I have a thousand dollars in shoes to repair," he said, "and you ask me to cut holes in a 25-cent shoelace!"

I saw the old cabin that belonged to Sam McGee, immortalized by the Yukon's bard, Robert W. Service, in his ballad, "The Cremation of Sam McGee." Sam, facing death as he trudged the trail, had but one fear—the pain of an icy grave. Before he breathed his last, he wrenched a promise from his partner to cremate his remains. The partner complied by stuffing the frozen corpse into the blazing firebox of a derelict boat he found on the edge of Lake Laberge.

Sick with dread, the partner came back later to investigate: "I guess he's cooked, and it's time I looked."

There sat Sam wearing "a smile you could see a mile." Said he, "Since I left Plumtree, down in Tennessee, it's the first time I've been warm."

Although Service wrote racily about "the cussedest land that I know" and about its people—"in a stark, dead world, clean mad for the muck called gold"—he also wrote pensively of the country's beauty. On his long, solitary rambles around Whitehorse he drank in the grandeur that most of the others sped by. One early spring, he tells in his autobiography,† he stood on the heights of Miles Canyon, breathing in the beauty. Suddenly this line popped into his head: "I have gazed

* See "Alaskan Highway an Engineering Epic," by Froelich Rainey, NATIONAL GEOGRAPHIC MAGAZINE, February, 1943.

† See *Ploughman of the Moon* (1945), and *Harper of Heaven* (1948), by Robert W. Service. Published by Dodd, Mead & Company, Inc., New York.

on naked grandeur where there's nothing else to gaze on."

To me, Miles Canyon and the Whitehorse Rapids just beyond are the most thrilling part of the Yukon. The canyon is only 150 feet wide. The whole river, fat with the water of the upper lakes, turns on edge to squeeze through it. In these turbulent waters many stampeders were dashed to death in their clumsy craft.

### Shooting the Whitehorse Rapids

Watching that wild water, I promptly determined to shoot both canyon and rapids in a canoe. The plan was announced over the Whitehorse radio and heralded as a revival of the thrilling days of '98.

Once our "public" had assembled at Miles Canyon and Whitehorse Rapids, Billy Goodlad, who is a Yukon River pilot, Bill MacBride, and I pushed off into the head of Miles Canyon. Slicing off the tops of the largest breakers, I steered the lunging craft through in what seemed like only a couple of minutes.

Below Miles Canyon, before we got to the dangerous Whitehorse Rapids, we shot the rollicking whitecaps of Squaw Rapids with ease. As we neared the big rapids three miles below, our attention was sidetracked from the leaping waves to the 500 spectators on the bank. For a second, seeing many hands in the air, I thought something was wrong. Then I saw that the hands held exposure meters.

We are probably the only voyageurs ever to navigate the Whitehorse whitecaps paddling each with just one hand. But then, we had an audience, and what could we do but wave? In an instant we were through the breakers and around the bend, still waving as we swept downstream to Whitehorse.

There we relinquished center stage to an old river queen. We stood on the wharf as she approached. Actually, we heard her before we saw her. Puffing loudly, stemming the stiff current, the yellow-funneled stern-wheeler finally heaved into view. Soon we made out her name: *Casca*. She had just come up from Dawson, 434 miles in 150 hours. Silently we watched her steam to her berth and didn't leave till her last puff subsided like a heavy sigh (page 407).

Whitehorse is impressed by the majestic airliners and big express buses that stop there, but its heart belongs to the old-time river boats. *Casca* is one of the few survivors of scores of steamers that once plied the river. Up to 1914 there were about 250. Now there are only two in service; hence I considered it a rare privilege to be making the last lap of the gold trail on *Casca*.

On steamboat day it seemed as if half the town had come to the wharf to see *Casca* off. Capt. Malcolm Campbell, veteran of 45 years on the Yukon, stood high in the wheelhouse, waiting with the poise that attends mastery. This was his moment (page 414).

He yanked a cord. Bells jangled in the engine room. Immediately the 20-ton paddle wheel began to revolve, and the exhaust exhaled powerfully in rhythm with the piston strokes. As if to dramatize our departure, we first moved upriver. Finally we turned and puffed downstream past the town.

As the last log cabin slid by, wilderness took over. The passing wall of spruce forests cut a jagged silhouette against the pale sky. Occasionally a short toot of *Casca's* whistle broke the silence, signaling her passengers to the rails to view a couple of moose swimming in the river, a black bear clowning along the bank, or a bald eagle sitting sedately in a tree. Once I thought I saw caribou swimming in the river ahead, but it turned out to be several Indians and their dogs floating on a raft.

As we cruised the 32-mile stretch of Lake Laberge, I was reminded of Chief Boss, the Indian who lived there during gold-rush days. The story goes that when a stampeder fell through the ice, Chief Boss tried to charge him 50 cents for taking a bath in his lake.

### Cable Tugs the Boat Upstream

The section formerly known as Thirty-Mile River, between Lake Laberge and the Teslin, is the swiftest, most dangerous part of the Yukon system. We went downstream in less than three hours, but it takes nine or ten to buck the current upstream. At times it seems that *Casca* won't make it with her paddle wheels. And indeed she didn't in one section. A cable had to be run ashore and the ship literally dragged by her winch over a swift, shallow place.

In addition to shallow spots, navigation was complicated by many bends in the river and by the burden of a steel barge *Casca* pushed ahead of her, making their combined length 305 feet. As we neared one bend, Captain Campbell noticed my interest and pointed toward pilot Goodlad. From the pilothouse, 35 feet above the river, Goodlad read his waters as easily as a scholar reads a book. Yet, ahead, the bow of the slowly swinging barge seemed almost ready to climb the bank, while astern the thrashing wheel looked as if it might soon be mowing down trees.

"It's a tight squeeze," said the captain, seeing the strained look on my face. "If the barge was any longer, we'd have to jackknife it around these bends."

I could see why steamboat pilots consider the Yukon too risky for races like those they had on the Mississippi. There is room in the


**A Dawson Miner Tilts His Poke to Swap Glittering Gold Dust for Cash**

In stampede days every miner carried a mooseskin poke and paid his way with raw gold. Scales on every bar and counter weighed the dust and nuggets. Magnets detected iron-bearing sand which chiselers sometimes added.

channel for only one boat. In passing, the upstream boat generally noses into the bank.

Down on the main deck a perspiring fireman with a red, peeling nose was stoking four-foot spruce logs into the firebox of *Casca's* boiler. "I feed her about half a cord an hour," he said. "Upstream she'll eat up twice as much." Since my visit the *Casca* has been converted to burn oil.

Exhaust steam from the engine shot skyward from her funnel in puffs. By listening to them I got so I could tell how the pilot was handling the ship. A few puffs and then silence meant we were drifting a bend. If the puffs slowed up, it meant shallow water and that the paddle wheel was laboring. Fast, regular puffs, 70 a minute, indicated deep water and a straight channel.

Pilots get so accustomed to working by listening to the exhaust puffs, the captain told me, that when they change to boats equipped with steam condensers, which don't puff, it takes a month or two for them to adjust.

Whenever *Casca* stopped to wood up, her passengers fished for grayling. Fishing is good almost anywhere in the Territory, and there are many other assets Yukoners can shout about. I heard a lot about some of these from one of the passengers, a Dawson woman who was coming back from her first visit "outside" in 50 years. After a month of too many people and too much traffic, she was glad to be coming home. And how she looked forward to eating a Dawson tomato!

"Why, their tomatoes are pulpy and tasteless," she said. "In Dawson our hothouse tomatoes are sweet and juicy."

### Gardens Flourish in Short Season

Nearly everyone has a garden and hothouse in Dawson, she told me. In general the last spring frost occurs in mid-June; the first autumn frost in mid-August.

But the sun shines nearly around the clock in June and 20 hours a day in July. The thermometer rises to 80° or 85°, sometimes higher, melting some of the frost and providing natural irrigation. This combination of sun and irrigation makes almost every kind of flower and vegetable flourish.

Unlike flowers and vegetables, trees do not thrive in the Yukon. Except in major valleys and depressions, timber does not grow to merchantable size. Stands of native white spruce and birch take care of local fuel needs, but since 1930 sawn lumber for Dawson and Whitehorse has had to be brought in from British Columbia.

In places along the river we noticed much smoke from forest fires, many caused by careless trappers. One pilot told me that the fires affected navigation. By destroying vegetation they lessen the soil's water-holding properties and cut down the volume of flow in the Yukon, which is less than that of some other rivers its length. Now, in mid-August, the water was so low it took the utmost in skill to navigate it.

### Five Fingers Squeeze *Casca*

When word filtered down from the pilothouse that we were approaching Five Finger Rapids, a knot of passengers gathered around Captain Campbell. He was something of a hero to us by this time, and soon to become an even greater one.

We could see ahead four huge, tree-fringed rocks almost blocking the river. They form five channels, only one of them navigable. So narrow is the passage between the rock walls that if the wind is blowing it's considered too dangerous to make the attempt. "If a new pilot hits here," the captain said, "he generally loses his nerve. If he misses the channel the first time, he doesn't get another chance."

With that, the skipper climbed confidently to the pilothouse and took the wheel. Quickly he swung *Casca* into position for a straight run, then jangled the bell for full speed ahead. As we skimmed by the rock walls, it seemed I could reach out and touch them (page 413).

It was shortly before midnight of our second day when we tied up at Fort Selkirk, an old trading center. Here Hudson's Bay Company built a fort in 1848, but the Indians burned it down. Long noted for its numerous Malemutes, it couldn't muster enough dogs of any kind now to pay the traditional howling tribute to *Casca's* whistle. All of Selkirk's population today—a trapper and five Indians—stood on a high bank and watched us gravely as we took on wood.

Presently the trapper, trailed by his big black dog, came down to greet us. He invited me to his cabin for coffee. Fur is way down in price, he told me, and making a living by trapping is tough. As he talked, the trapper waved his dog to the table. The dog lapped up two cups of sugared coffee and then went into his big act: eating bacon held in the trapper's mouth.

The intimacy between trapper and dog didn't surprise me. I had read more than one account of a stampeder sleeping with his dog to keep from freezing to death. Often when a dog worked on an icy trail, he'd get painful balls of frost under his nails and between his pads. To thaw the paw, the dog's master would put it in his mouth, then carefully dry it off with his shirt. Many a Klondike diary has told how a limping dog would suddenly stop, turn to his master, and hold up a paw.

Kirkman, with a total population of two, was the prettiest place on the river. It was almost overgrown with flowers—pink, blue, magenta, spiked here and there with yellow. Nearly 500 varieties of wild flowers, ferns, and shrubs have been identified in the Yukon, including several varieties of the orchid family. I was told that within a few minutes' walk of Dawson I could find the bog orchid, fly-spotted orchid, lady's-tresses, and calypso.

Before turning in that night, I overheard Captain Campbell say to a Dawson boy returning from school in Vancouver, "It's a wee bit of a way to Dawson now, laddie, and there's nothing to stop us."

Lying on my bunk, I leafed through page after page of Klondike lore I had stored in my mind. I could almost feel the frenzy the stampeders felt as they drew closer and closer to their goal. And I visualized the river banks piled high with freight and boats, scows and rafts jammed four or five deep for miles up and down from Dawson.

One look at Dawson harbor next morning, however, brought me up sharp to reality. Except for a trader's launch just in from the Porcupine River, *Casca* was all alone at the water front. The town looked as if it had curled up at the foot of Moosehide Mountain and gone to sleep, impervious even to the roar of the Klondike River, which comes snarling out of the hills to join the Yukon on the south side of town (page 408).

### Eggs Once Cost $3 Each in Dawson

I hurried to the Royal Alexandra Hotel and had breakfast in the adjoining cafe. As I ate a couple of eggs, I recalled that in '98 eggs cost $3 each. The "Royal Alec" still had the same old embossed sheet-metal ceiling. Old-time black-leather chairs lined the lobby, and on the walls hung life-size paintings of nudes in 7-foot gilt frames.

I promised myself I would come back for a longer look and dashed to catch a ride to King Solomon Dome. There, 20 miles out of the city, 4,250 feet up, I beheld the great panorama. Here at last were the famed creeks of the Klondike Valley—Gold Bottom, Dominion, Eureka, Last Chance, Eldorado, Sulphur, Little Blanche, and Bonanza—cours-

ing over an area of 800 square miles. Since 1896 they have yielded $215,000,000 in cold, yellow gold.

Gold was reported in the Yukon as early as the 1850's by Hudson's Bay Company officers, and by 1887 there were 250 prospectors in the district. But it wasn't until August 16, 1896, that George Washington Carmack, together with his Indian brothers-in-law, "Skookum" (strong) Jim and "Tagish" (no good) Charlie, made the big strike on Bonanza Creek, called Rabbit Creek at that time.

The three men and Kate, George's squaw, were out netting salmon for the winter. At Deer Creek they drove a few sticks and set their nets. While they waited, a visitor came by, a Canadian prospector named Robert Henderson. In his hand he held a bottle containing $750 worth of gold which he and his partners had washed out of Gold Bottom Creek.

Henderson urged that Carmack join his partners and then went on his way to buy winter provisions.

When Carmack and the two Indians arrived at Gold Bottom, they said it wasn't worth the digging. They turned around and headed for home, though along a different route which took them to Rabbit Creek. There they soon panned a whole handful of glistening gold and staked down four claims.


**Dawsonites Eat Lunch on the Flora Dora's Old Mahogany Bar**

Gold-crazed Dawson supported numerous saloons, gambling rooms, and dance halls, thronged with men trying to forget the cold, misery, and loneliness. Saloons roared wide open 24 hours a day except Sunday, when customers had to enter by the back door. Here at the Arcade Cafe faded gold letters adorn the archway which led to the Flora Dora Dance Hall, where miners paid a dollar a minute to sashay with such celebrated characters as Diamond Tooth Gertie and Nellie the Pig (page 406). The owner panned several hundred dollars' worth of gold dust—sifted from miners' pokes as they paid for drinks and dances—from the ruins of the cafe after a fire.

### How the Great Stampede Started

According to custom, the discoverer of a new creek took two 500-foot claims; others, one claim each. Carmack wrote his name with "Discovery" and "One Below" on the first two stakes; Jim's name and "One Above" on the third stake; Charlie's name and "Two Below" on the fourth. Leaving Jim as guard, Carmack and Charlie rushed off to register the claims with the Mounted Police and to broadcast the news at Forty Mile.

Within two weeks the 25-mile creek was staked from end to end.

One version of the story is that Henderson

had directed Carmack to dig on Rabbit Creek and to let him know if he found anything. Henderson, working less than a day's journey away from the strike, didn't hear of it, however, before all the good claims were staked. The Dominion Government hailed him as the "true discoverer" of the Klondike because he had been first to mine on one of its tributaries, and gave him a $200-a-month pension.

But Henderson's pain was not assuaged. Some years later he renounced the pension and took up prospecting elsewhere. He died still searching, still bitter.

Carmack, an American citizen like the vast majority of Klondike stampeders, drew no official recognition from either the Canadian Government or his own, but he did draw attention. He saw to that. When he took Tagish Charlie and Kate to Seattle for a visit, they blocked traffic by throwing gold coins from their hotel windows. The story goes that in a San Francisco hotel Kate blazed a trail with her knife on the stair banisters so she could find her way to her room.

Skookum Jim and Tagish Charlie were given honorary Canadian citizenship and the white man's privilege of entering a saloon, a kindness which literally killed poor Charlie. Having celebrated too much once too often, he toppled to his death off a White Pass and Yukon railway bridge.

But while he lasted, Charlie experienced no greater joy than ordering up a round of drinks for the house. Dawson afforded him almost countless outlets for joy. Every third door opened on a saloon.

### Gold Panned from a Cafe's Ashes

When a man bought drinks he'd throw his poke on the bar. Then the bartender weighed out the gold due him on the bar scales and tossed back the remainder. A careful tender would keep a cloth around the scales in case any dust spilled, and later he'd gather up the cloth and shake the dust into his own poke. Some saloonkeepers, it's said, put molasses on the end of their whiskers to gather dust.

After fire consumed the Arcade Cafe, next to the Royal Alexandra Hotel, Harry Gleaves, who owns both, panned the ruins and made himself several hundred dollars. His hotel once housed the Flora Dora Dance Hall and the Dominion Gambling House, but now the dance hall is the kitchen of the new Arcade Cafe. Over the carved archway to the kitchen you can still make out the gold lettering: "Flora Dora" (page 405).

Here is where Nellie the Pig bit off her partner's ear for a keepsake, where Diamond Tooth Gertie danced, and Cad Wilson strutted about, listing from the weight of a $50,000 belt of nuggets she wore twined around her waist. Men were crazy to dance the "cowtillion" with the girls and willingly paid $1 a minute for a twirl on the floor.

I got a queer feeling as I clopped along the warped wooden sidewalk down Dawson's Front Street past Dance Hall Row. Building after building now was boarded up, its false front weathered gray, its roof sunken like a cadaver's cheek. For a while I thought I was losing my sense of balance, for many of the buildings appeared to be leaning at a rakish angle. I was glad to learn that the fault was with them and not with me.

Dawson's buildings go askew because the soil underneath, starting usually about 18 inches below the surface, stays permanently frozen, and the active layer above heaves and contracts as it thaws and freezes. The cost of digging foundations in the permafrost is nearly prohibitive, so people put up frame buildings the best they can. They know that ultimately the heating unit will melt the permafrost below it, causing the portion of the structure directly above to cave in.

### Melting Holes to Bedrock

Permafrost was the scourge of mining, too. Ground nearly always had to be thawed, usually with wood fires, before it could be dug. A man set his fire at night and in the morning descended his shaft to dig out the ground thawed while he was sleeping. As tedious as this process was, it could have been worse. For had the ground not been permanently frozen, the workings would have been flooded with water. Some placer deposits lay on or near the surface, but the richest were in the bottom of the creek valleys.

Placers, known as poor men's mines because they can be worked without expensive machinery, are found throughout the Klondike. So far, only one lode mine has been worked in the Klondike. In lode deposits gold is firmly trapped in quartz or other matrix, from which it has to be shattered

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**Yukon Stern-wheeler, Puffing Smoke, Shoves a Barge Downstream →**

Scores of steamers like the *Casca* plied the 1,979-mile Yukon watercourse during gold-rush days just before the turn of the century. Prospectors, gamblers, and adventurers embarked by the thousands, some at the river's mouth on the Bering Sea, others on the headwaters near Whitehorse. All were headed for the Klondike, and all had gold dust in their eyes.

Today much of the gold and most of the people are gone from the Klondike. Stampede days are but a memory. Only a few stern-wheelers remain to challenge the wilderness route from Whitehorse to Dawson, in Canada's Yukon Territory (page 410).

Here summer visitors watch from the deck as *Casca*, river queen of the upper Yukon, puffs downstream to Dawson. Members of the deck crew ride the barge loaded with oil drums and mining supplies.

 Kodachrome by Anne Burg

↑ **A Landslide's Scar Marks Dawson, End of the Yukon Trail**

In the summer of 1898 this Dawson waterfront was jammed for miles with boats of every description. Palatial river packets contended for space with hundreds of rafts and scows as gold-hungry stampeders poured into town. Before the brief summer ended, some 7,000 craft passed Tagish alone, attempting the hazardous Yukon River journey.

A tent city sprang up, booming quickly to more than 30,000 people. Hundreds wandered the muddy streets asking, "Where do we dig?" Those in the know staked 500-foot claims along the Bonanza, Eldorado, and other near-by creeks.

Arriving visitors still welcome sight of Dawson's gashed mountainside as signaling their journey's end. Legend tells of an Indian village buried under the rubble.

Here the Yukon flows left past Dawson. A ferry, which connects with the Fairbanks highway, and an amphibian plane tie up at the landing.

← Mrs. J. R. Gaudin, whose husband is retired superintendent engineer for the White Pass and Yukon Route, works needlepoint. Flowers in her Whitehorse garden grow profusely in the almost nightless summers.

Kodachromes by Anon Burg






**The *Whitehorse*, Resting Between Trips, Calls to Mind a Mississippi River Packet**

The city of Whitehorse is now capital of the Yukon Territory as well as its chief transportation center. All-weather roads and a large airport on the bluff compete with the hard-pressed paddle boats.


411 Kodachrome by Amos Burg

**River Steamers Lie in the Whitehorse Slipway Like Shelved Volumes of Adventure**

Remnants of the once-great Yukon fleet rot in many a boatyard and on many a sand bar. This yard holds most of the active steamers left, together with a few retired veterans of stampede days.

### Five Finger Rapids Grasp at Shipping with Rocky Claws

Only flat-bottom stern-wheelers like *Casca* navigate the shallow and often cramped channels of the Yukon headwaters. And only swift-water pilots of long experience can steer safely through Five Finger Rapids. Many a stampeder's craft was crushed against the rocky walls.

Here tree-fringed rocks split the Yukon River into five narrow channels, only one of which is navigable. Going upstream, *Casca* faces such racing currents that it must winch itself over the rapids with a cable fastened to the shore and running the length of the barge (left foreground).

Downstream passage takes only a minute or two, but it must be made at top speed and requires utmost vigilance and skill.

← Thrashing paddles drive the boat through Five Finger Rapids. The powerful stern wheel measures nearly 20 feet in diameter and 33 feet in breadth. Powered by wood-burning boilers, it turns 19 times a minute at full speed of 10 knots. It is reversed when the boat drifts around bends; the wash thus thrown against the six rudders gives tremendous leverage for steering.

Kodachromes by Amos Burg

**Skipper Competes for Attention with Mighty Mouse and Lone Ranger**

*Canada's* Malcolm Campbell, Yukon veteran, fascinates most passengers with his Klondike tales. These Canadian youngsters find the comics just as exciting.

**A Yukon Sourdough Plays Solitaire on the Porch of His Dawson Cabin**

Gold lured George McGill to the Yukon in '96. Packing a thousand pounds of supplies in relays over Chilkoot Pass gave him a taste of hardships ahead.

loose. Placer gold, on the other hand, lies free in sand, gravel, or loose rock. Nature has done most of the reduction work; man has only to dig and wash.

In winter a prospector usually mounded up his diggings and waited for the spring thaw. During the warm months he washed as he dug. The simplest, and slowest, way to wash was in a pan or rocker, but wherever it was practical a miner used a sluice box.

There were all kinds of sluice boxes, but the principle was the same: shoveling gravel into a stream of water diverted through a series of inclined wooden boxes. Gold, 19 times heavier than water and several times heavier than rock, sank to the bottom of the boxes, where it was trapped by cross bars called riffles. By this method two partners could average $100 a day on a rich stream.

### Hush Falls on the Rush

In October, daylight slipped away and the thermometer's mercury crawled lower and lower (lowest officially recorded temperature at Dawson: −73° F., and at Snag, 120 miles south, it is −81°, the record for all Canada). Then gloom sat on the Klondike like mountains of frozen gravel.

Out on the creeks the search went on, only now it was crazier, lonelier, stiller. Through the soundless cold you could hear a man cough three miles away. Now and then a wolf howled far off in the hills or a tree split the full length of its frozen trunk, shrieking as if in pain.

Many cabins held more gold than grub, and not many held much gold. There were numerous suicides along the creeks. Some men swore they, too, would end it all, if only they could afford a rope.

Those who didn't take their lives took themselves to Dawson for relief. There they flocked to one of the saloon shows to see the most talked-of act in the Klondike.

A man mounted a scaffold, let his arms be tied and a noose put around his neck. Then the platform was shoved from under him and he dropped into space, bouncing from the jerk of the rope. As his face turned purple, the curtain was drawn.

Since a different man was selected for the act every night, the audience never knew for sure whether the victim survived.

Gambling was as desperate as the dramatics. Pots commonly ran to $5,000, and whole fortunes were lost in an evening. Except for the gentle thrums and clicks at the tables, the rest of a saloon might be noiseless. Miners drank in silence and listened long-faced to their favorite song, "Home, Sweet Home." From where they stood it was 1,700 long miles to Seattle.

It seemed nothing happened to break the pall. But at last, on October 14, 1898, it came—the big fire. Flames leaped from one tinder-dry shack to the next. When water froze in the fire hose, men lined up from water holes to flames, passing buckets hand to hand, and saloonkeepers passed out buckets of whisky to keep them going. Soon nobody could tell firewater from water, and both were thrown on the flames in merry abandon. It was Dawson's first real celebration.

In two weeks the town was rebuilt. Six months later it burned again. This time, as before, the fire hose burst before a trickle could reach the flames. Today, fire chief Elmer Guardroe told me, Dawson has 26 fire hydrants "all electrically heated so they won't freeze even at 74 below" (page 397).

Rebuilding Dawson after the fires gave a lot of unhappy, unoccupied people something to do. When 25,000 newcomers arrived in the summer of '98, they found they had been beaten to every creek. About the only way left to get a claim by that time was to buy one, and that took anywhere from $5,000 for an unproved mine to $50,000 for one with pay on it. The largest single sale of the summer, according to the *Klondike Nugget*, was $350,000, for No. 8 Eldorado.

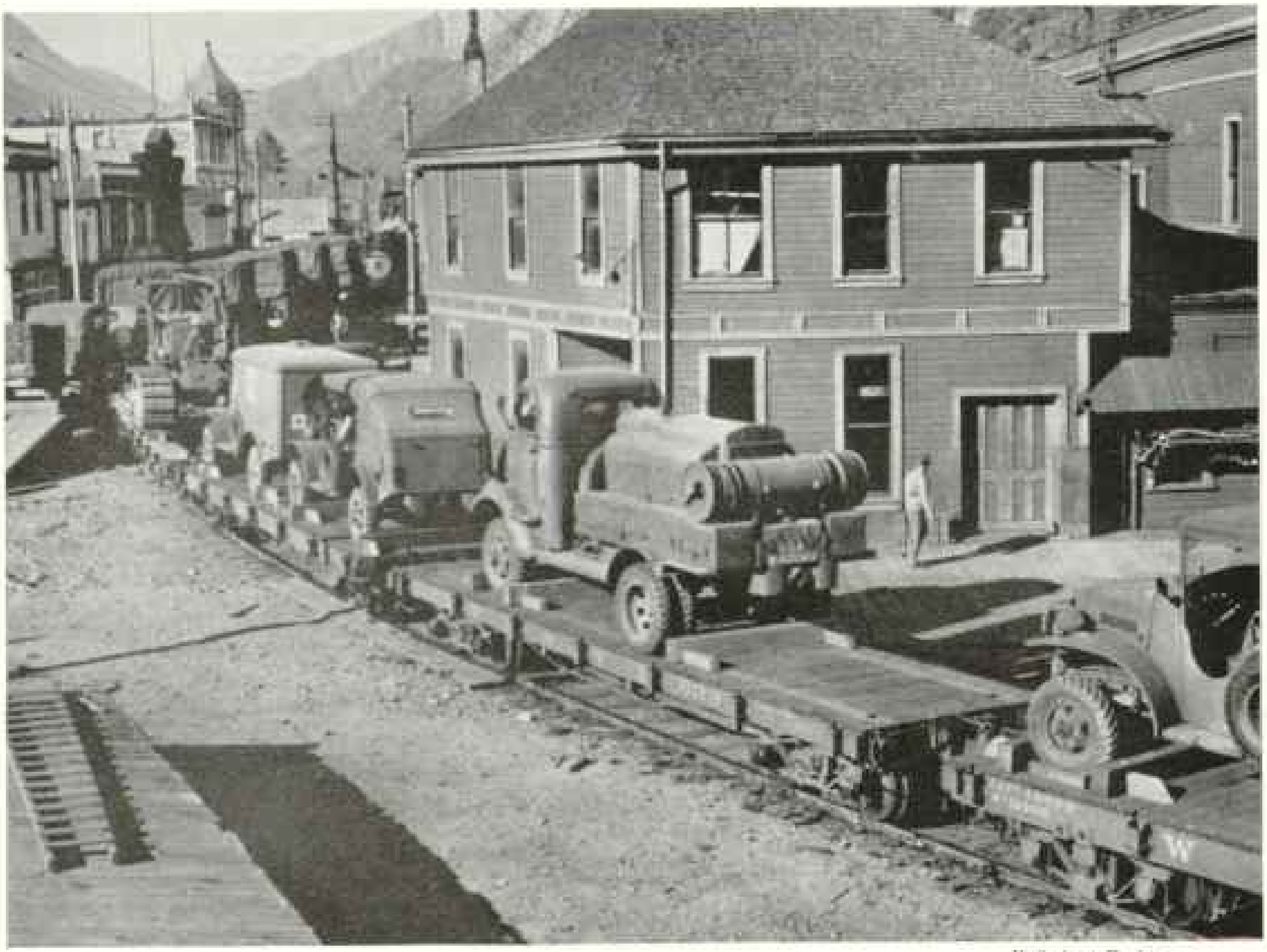
Worthless claims were often passed on to innocents or drunks. Charlie Anderson, the Swede, was fooled that way—or so the men who witnessed the swindle thought. Charlie, who had been working a creek far away, hadn't heard the news of the Bonanza and Eldorado strikes until he returned to buy supplies, and then it was too late. The more the boys told him of the killings made off those creeks, the worse Charlie felt—and the harder he drank. Finally, in utter despair he threw his puny poke of $800 on the table.

In the morning when the Swede awoke, he found himself the owner of No. 29 Eldorado, which everybody knew was a dry claim. Charlie begged for the return of his poke, but a deal was a deal.

All Charlie could do now was to beg a bunk at the cabin nearest his new claim and set to work melting a hole 30 feet deep. That very first hole paid Charlie $130,000. He took his money to Seattle, got married, came back, and dug out another $100,000. That was in the fall of 1898.

### Men Move Out, Machines Move In

By 1899 the big rush was over. Machinery was moving in, and gravel was soon being thawed by steam points. Having skimmed the cream off the Klondike, the prospectors scattered into the wilds or stampeded to Alaska. There, it was reported, gold had been found on a beach. In the first week



U. S. Army Engineers

**Road Equipment, Brought by Sea, Leaves Skagway for the Alaska Highway**

Like gold prospectors a half century earlier, wartime supplies arrived in Alaska's Skagway by the Inside Passage. Here an air compressor, jeeps, ambulance, tractor, and trucks roll toward Whitehorse over the narrow-gauge White Pass and Yukon Route, which for 110 miles parallels the Chilkoot Trail (page 397).

after word of the Alaskan strike had been confirmed, 8,000 men left for the new fields, leaving signs on their cabin doors: "Gone to Gnome."

As the gold balloon deflated, so also did Dawson. Full-blown, it was a city of 8,000, hub of an area containing at least 18,500 more. Today her population has dwindled to fewer than 800. I saw a few prospectors still mining by hand, but since 1905 nearly all the mining has been done by giant electric dredges. And since 1952 nearly all the gold reserves have been owned and worked by one giant concern, the Yukon Consolidated Gold Corporation, Ltd.

Floating factories, three or four stories high, the dredges crawl across the land like monstrous crabs, cutting giant bites of gravel with 3,000-pound bucket teeth and leaving ugly piles of tailings (waste) in their wake. One dredge processes from 2 to 2½ million cubic yards of gravel in the April-to-November season. It has to. Klondike dirt now yields only 25¢ worth of gold per ton. Once miners turned up their noses at any dirt paying less than 10¢ a pan (two shovelfuls).

Though the population of the entire Yukon Territory today is only 9,100, and though Ontario and Quebec produce far more gold, the Territory nevertheless maintains a steady contribution to Canada's total gold production, now surpassed only by South Africa's. Gold is mined in all but two of Canada's Provinces and, in point of value, is its most important mineral product.

Proud little Dawson, still the center of Canada's placer mining, looks as much to the unknown future as to her brilliant past. On known resources alone, it is estimated there are enough deposits in the Klondike to keep dredges going another 30 years. And the Yukon holds untold, untapped quantities of other mineral and water resources.

Some people say Dawson is dead; others say she's just in a coma. I think she is very much alive—surely in spirit. Dawson doesn't intend to let you forget about the gold spoon in her mouth. Nor does she mean to let it go.

# American Family in Afghanistan

## Where Camel Caravans Share Ancient Routes with Motorbuses, a Yankee Teacher, Wife, and Children Happily Set Up Housekeeping

By Rebecca Shannon Cresson

*With Illustrations from Photographs by Osborne C. Cresson*

FROM four years' residence in New Mexico we traveled as a family half around the globe to live in Afghanistan—and were surprised to find much in that strange setting to remind us of our former home in the American Southwest (map, page 421).

But there, in that far-off kingdom in Asia, mountains loom higher and deserts stretch wider, farmlands are painstakingly terraced. Shadows cast by mud-walled villages are all that pick them out from their brown setting; and the word for auto mechanic is "busta-car!"

When we reached Kabul, the capital and largest city, my husband started teaching mathematics at Habibia College, where some lessons are taught in English. So Osborne did not have to know Persian, though he learned Persian numbers in a hurry to check on whispered answers!

In Kabul, Persian is the predominant tongue; the ancient Pashto, or Pushtu, is used as a second national language. In the south the situation is reversed.

Habibia College is run by the Afghan Government and employs a number of American teachers in its English and science departments. Boys alone compose the student body, which has 2,600 in grades from first through twelfth. For this selected enrollment tuition is free (page 422).

Other schools in Kabul use French, English, and Austrian teachers. Kabul also has several schools for girls, though few girls seek education beyond the sixth grade, becoming at that age marriage-minded.

While Osborne taught, our 9-year-old daughter, Wetherill, and 8-year-old son, Os, went house hunting with me. During our wanderings Kabul emerged as a unified metropolis, where at first it had seemed a bewildering succession of high, plastered walls lining a confusion of streets (pages 424, 425).

### Camels Plod Among Autos

Sometimes we rode in a two-wheeled, horse-drawn "taxi" called a *gadee*, which has two seats placed back to back over the wheels. The driver faces forward, while the passenger faces to the rear, in imminent danger of sliding off the seat that slopes downward at an alarming angle (page 420).

We grew accustomed to camel caravans plodding calmly down the street in magnificent disdain of motorcars, gadees, donkeys, and flower-painted trucks. Men ride in gadees or buses, on donkeys or bicycles, or they walk. Even Americans learn to walk in Kabul, where there are few cars.

Soon after we arrived, traffic flow was switched from the left side of the road to the right. For a few days a walk or ride along the streets was hair raising.

Donkey trains were especially stubborn about keeping to the left; trying to face down buses and trucks, they would stop at the very bumpers with slit nostrils flaring and ears twitching in irritation. The buses were constructed for driving on the left, so now, when they drew up to the right-hand curb, they discharged their passengers, perforce, into the middle of the street!

### Rear of the Bus for Men Only

When our whole family took a bus ride, Osborne had to enter by the rear door with the other men, while Wetherill, Os, and I got on at the front with the shrouded Afghan ladies.

The *chaderi* worn by the Afghan woman is a billowing, tentlike garment in a great variety of colors. A small embroidered cap has yards and yards of material shirred onto it; back and sides reach the ground, but the front section is only about knee-length and is handsomely embroidered. The long edges usually are held together in the wearer's hand, covering the short piece, which is seen only when a woman reaches out to accept change or to shake hands. She peers at the world through a lattice-embroidered rectangle across the eyes.

Men's wear is as varied as women's is stereotyped. Some men wear turbans wound around stiff embroidered skullcaps. Full cotton pantaloons and long brightly striped quilted coats complete the costume. Others wear suit coats over their pantaloons, and native shirts with long tails flapping freely. If a man is not prosperous enough to buy a Western coat, he may settle for just a vest.

In Kabul most students and government officials wear brimless karakul hats, and many wear Western dress, omitting neckties (page 426). When boys stopped at our house to

418 Robert Laubach

**On a Creaking Merry-go-round, Kabul Children Celebrate the Feast of Nauruz**

New clothes appear on every Afghan who can afford them during this traditional spring feast. This lucky youngster sports embroidery and new lace-edged pantaloons. Behind her, seated, a man holds kite-string reels. Only men and children patronized this fair just outside the capital; Kabuli women do not mingle in crowds.

study, talk, play games, and drink tea, they never removed their hats. In Afghanistan it is more respectful to keep the head covered.

"To Let" signs are usually in English. Finding one on a gate, during house hunting, we would peek into the compound. Though the house might not be finished, flowers were always blooming in the garden.

### Big Windows for Winter Warmth

In this land, furthermore, planting a garden is a complicated business, involving sinking, sloping, and ditching for irrigation. Yet every house has roses, snapdragons, sweet williams, or petunias, mostly in deep shades of red and purple. Flower beds leave no space for young baseball players. So we persuaded our landlord to eliminate the flowers and make a "lawn" of mud and crab grass.

All houses have sunrooms called *gulkhana*, literally "flower room." Flower and living rooms face south, with wide windows to admit warming sunshine during the winter.

Scarcity and high cost of lumber prohibit wooden houses. Plastered mud brick, baked brick, and stone are the exterior finishes. Since most roofs are flat and made of mud, leaks are inevitable in the rainy season, which is in the spring.

A popular early-spring recreation is the "leak-story" contest. My favorite story concerned a sociable and ingenious couple who


419 Robert Lautman

**In Crowded Buses Like This, an American Family Toured Mountainous Afghanistan**

To escape from its jam-packed interior, passengers make a double-decker of this Kabul-bound bus as it leaves Pakistan over the road through Khyber Pass. Jingling lucky pieces hang in a row above the windshield. When the bus reaches the Afghan frontier, customs examinations may take a couple of hours.

served umbrellas with the soup at a spring dinner party.

We grew completely philosophical about leaks. We just moved the furniture out of the way and, after the rain, simply waited for the floor to dry.

Wooden flooring is unknown in most Afghan houses. Floors may be of mud and straw, pounded mud with a tiny bit of asphalt in the top layer, or cement poured exactly one-eighth inch thick—a coating that wears off in no time if the floor isn't covered with rush or straw matting, rugs, or carpets. Halls and bathrooms, on the other hand, often are floored with stone, brick, or marble.

The one place where lumber is used extravagantly is in wooden ceilings. There's a reason: they do not collapse when subjected to leaks and occasional mild earthquakes.

These ceilings show superb carpentry, expressed in elaborate rosettes, paneling, and geometric designs. Usually they are varnished, but sometimes painted. The most startling color job in our experience was a room with crimson ceiling and woodwork, with shocking-pink water paint on the walls. We almost rented that house; after all, we could use the violently colored room for a bedroom and go into it only after dark!

Wide hallways usually divide living rooms from bedrooms, to which the wife or wives retreat when the man of the house enter-

**Autos Are Few in Afghanistan's Capital; Two-wheeled *Gadees* Take Their Place**

For safety, passengers hook an arm over the seat back, as demonstrated by the author and her daughter. Eight-year-old Os Cresson and Ezmari, an Afghan student, will ride with the driver.

tains. In larger homes men gather in a special "tearoom." On a few occasions, Afghan women appeared when my husband was present, but they would not have done so if Osborne had been an Afghan.

On some of our house-hunting visits we actually drove the women from room to room ahead of us, always waiting to let the man of the house, who was showing us around, peek into each room to be sure the women were safely sequestered in the next before we were admitted. Other times, when the women were cornered, my daughter and I were allowed to enter the women's room. Always they were friendly, smiling, and most appreciative when we admired their babies.

In Afghanistan a man may have four wives, but in actual practice the large majority of our acquaintances married only one at a time. They explained it variously as less trouble, more economical, more modern. Also, many students said that they refused to marry until their parents would allow them wives of their own choice.

Homes of well-to-do Afghans are furnished with thick-piled rugs and good furniture; poorer homes have the rugs, but their furniture consists of floor pads to sit on, quilts for beds, and a hubble-bubble pipe (*chillum*) for smoking. The chillum differs slightly from the hookah, having a straight pipestem of reed wound with copper wire or beads.

Bathrooms are of infinite variety. One extreme is the spigot-and-hole type; the other, the gorgeous marble-floored and wainscoted bathroom of our first home, where the plumbing, despite its being America's best, behaved most peculiarly.

### Hot Water Hoarded for Shampoo Day

Since fuel was carefully rationed, we all took shampoos on the same day. Our first ones went well enough, except that the water was a trifle muddy.

Last in line was Osborne. When his turn came, he discovered that valuable hot water came from the cold-water spigot—and no water at all from the hot! Then he noticed steaming water gushing into the toilet. He hastened our houseboy downstairs to pump

Drawn by Irvin E. Alleman


## Landlocked Afghanistan Sits in One of the World's Hottest Hot Spots

With iron-curtained Soviet Russia, disputed Jammu and Kashmir, a corner of Red China, Pakistan, and oil-troubled Iran as neighbors, Afghanistan is a classic example of the independent buffer state.

more water into the supply tank and re-establish the proper course of the hot water.

The well went dry regularly every other day for six weeks, and mud collected in the tank and connections. Finally we had to bicycle-pump the pipes to blow them open before we could take a bath. After a year with the gorgeous, erratic plumbing, we left the house it glorified for a larger one, with a bigger garden, tin-pipe plumbing—and less rent.

A few houses in Kabul are now being built with indoor kitchens. One house we know of has a kitchen adjacent to the dining room; but, to reach the dining table, food must be carried out the kitchen door, along a path half the length of the house, into the main hall, and thence into the dining room—all because there is no connecting door between dining room and kitchen! Step saving is not yet a concern of most Afghan builders.

In our new home the cookhouse was just a few feet from the dining room. It boasted an elegant wood- and coal-burning iron stove plus the usual charcoal stove, which is little more than a mud shelf with four holes in it.

How Nabi, the cook, produced a blazing charcoal fire in a few minutes remains a mystery to me. Yet, with the dexterity of a juggler, he broiled, stewed, and baked over those four holes. Nabi liked to use the pressure cooker, and I worried a little about his gay unconcern lest the cooker blow up with too hot a fire. I soon ceased to marvel at the incongruity of a pressure pan on an age-old charcoal stove.

No such thing as a sink graces the usual Afghan kitchen. Its substitute is a square stone on the floor with a raised edge around it, a drainpipe, and a water pitcher, or, perhaps, a galvanized tin tank with faucet. Though we provided a large kitchen table, dishpans and drain trays still sat on the floor during dishwashing.

The cook crouched on his haunches or sat on a low bench to prepare the vegetables. He would drop potato parings on the floor when my back was turned!

"I finish. I sweep up," he reassured me.

Nabi was a blessing who came to us as our bearer before we had even found a house.

422

**Kabul's Habibia College Lacks Heating Facilities, So Midwinter Vacations Are the Rule**

Named for Amir Habibullah Khan, who died in 1919, Habibia has 2,600 pupils. Often they learn English along with chemistry and mathematics; few of their American instructors have time to master either Pashto or Persian (page 417). In mild weather classes are held outdoors.

He could neither read nor write. His English was not always dependable; if I was not careful, he taught me strange words which I later discovered were his corrupted English instead of the Persian I thought I was learning. But Nabi was honest, good humored, and faithful. He never "borrowed" our things; and he drove a hard bargain for us in the markets.

Nabi is slender and a little under medium height, as are most Afghan men. Many people of the working class resemble Mongols, having straight black hair and prominent cheekbones. Officials and people of higher rank generally have more aquiline features, large dark eyes, and, quite often, curly black hair. Almost all Afghans have beautiful hands with long slender fingers and well-shaped nails.

Nabi saved us much time and expense in assembling our household equipment. Each day he trotted off to the bazaar and returned with an amusing assortment of items slung about his person: a sack of groceries over one shoulder, a dustpan (cheaper because it was second-hand and patched), a flapping chicken, and a short fireside-type broom.

### Bearer Carries Motley Cargo

One day Nabi sauntered home guiding a bearer who carried on his back the *charpi-ee* which were to be our beds. They have

unpainted wooden frames decorated with bands of color applied with crayons. Woven rush twine forms the "springs." With cotton-filled ticks for mattresses, they make surprisingly comfortable beds.

We decided to use narrow charpi-ee for sofas too. Osborne measured the necessary dimensions, knotted a string at the proper lengths, and sent Nabi off with it to the bazaar. When the "small" frame was delivered, I sat down on it. My toes barely touched the floor! Osborne measured the legs (of the bed) and called Nabi.

"This is two inches higher than I specified," he stormed.

Nabi laughed and shrugged his shoulders. "I dunno, Sahib," he said. "I tell the man, but he say the string is wrong. He sit down like this and measure."

And Nabi demonstrated how the man had squatted on air and measured from the seat of his pants to the ground. That carpenter must have had long legs!

### Swedish Modern, Kabul Style

Much of the furniture in Kabul bears a strong resemblance to the dark mission designs of some 40 or 50 years ago. One day, however, we spotted a blond-finished armchair in a cabinetmaker's shop. It was barely wide enough for me to squeeze into, and the back leaned forward instead of backward.

We have friends who are broader than we are, so we explained our requirements in breadth and proper tilt. The whole family contributed suggestions in Persian. At last, four rather Swedish modern type armchairs arrived, with side chairs and tables to match. We kept them shiny with shoe polish, furniture polish being unavailable.

When we began our home school, attended by Wetherill, Os, and two small Turkish boys, I found I would not be able to teach and do the cooking as well. Nabi stepped into the breach, declaring he would like to learn how to cook; so we had to acquire a new houseboy.

Rather, we took on a procession of houseboys in swift succession.

First came Mohammed Noor, a youngster who had never worked for foreigners. He had off-the-face ears that held up an expressive turban. Deep in thought, he tilted the turban over his eyes so he could scratch his shaved head. On the verge of striking a bargain with us, he pushed the turban to the back of his head so he could scratch his forehead.

Abdul Jamil was a laughing, bustling individual whom we enjoyed, but he went off on a protracted spree. Sayad Sarwar wore mascara and lasted only four days. Abdul Ali stayed even less time. "You don't want tea, do you!" he challenged our guests.

Mohammed Salaam was a nice gangling boy who asked in pantomime if, in the Afghan way, he should bring water pitcher and bowls for hand washing at mealtime. I told him we would wash in the bathroom. So after Osborne he trudged, to watch openmouthed while my husband washed his hands.

Salaam was unwilling to stay alone in the house when we went to Iran with Nabi, so Kurban Ali came to take his place. Having previously worked for foreigners, Kurban Ali realized we were strange people who ate with forks instead of fingers, who cringed at flies on the food, and considered irrigation water, in which our neighbor might have washed his feet, unfit for drinking.

When our landlord's wife died, we almost felt a part of the funeral. Their small house was only a few feet from our back windows, painted over so our servants and Osborne could not look out at the women in the landlord's compound.

We truly sorrowed with the bereaved husband, for he seemed devoted to his wife, an invalid for several years. From the moment of death, members of the family lamented, said prayers, and sobbed all night. Even the little children joined in. A crescendo of wailing the next morning warned us that the body was being taken away.

Because the landlord was a wealthy man and of position in the army, a hearse, instead of the usual charpi-ee, bore the body to the graveyard next day. Only men went to the service at the mosque and to the interment. The women stayed at the house; not until the men returned did the wailing cease.

### Mourning Lasts for Forty Days

For three days the relatives gathered, talking, eating, and sleeping, with occasional outbursts of wailing. The family feasted each Thursday, the night before the Moslem day of worship. Forty days after the death there was a final gathering of the clan, with great feasting—and the mourning period was over.

Afghans do not reverence the dead in the same way that Westerners do. Their graves are simple holes into which the cloth-wrapped body is lowered, then covered by stones and earth. Perhaps a rock is set at head and foot to mark the grave, but a formal tombstone or other identification, rarely.

If a natural route for a new road runs through a graveyard, the graves are leveled and no one bothers to move the bones to other locations. Ordinarily Moslem graveyards are inviolate.

A happy event for me was a visit with a newborn baby. The young parents had an apartment in the large house of the wife's family.

### As in Rome and Paris, a River Adds Richness to Kabul Street Scenes

For centuries one of the world's most out-of-the-way capitals, Kabul is catching up. This Afghan center, with 200,000 residents, now boasts new buildings, wide streets, and a traffic problem.

Here pedestrians flow across a Kabul River bridge. Policeman and signal (right) control cyclists, gadees, and pedestrians. In the background a mosque thrusts twin minarets skyward beneath a backdrop of white-crested mountains.

Many of Afghanistan's motor vehicles (left) are remodeled American trucks, with bodies built by local craftsmen. Afghan mechanics skillfully keep them running despite the wear and tear of unpaved roads and uninhibited drivers.

Robert Laubach

## Only Water Is Needed to Make This Kabul Scene Resemble Coney Island

On holidays, Afghanistan's capital is almost deserted. Here on March 21 merrymaking New Year's crowds gather by a mosque on the edge of Kabul to pray and picnic, fly kites, and gossip with friends. Domes cover mosque and memorial hall.

In the walled compound the pious pray while a mullah reads passages from the Koran. Teahouses have brought their samovars and pots to customers on the hillside. Itinerant merchants hawk sweets and beverages. Games like those at an American carnival bid for copper *puls:* "throw-the-ring," wheels of chance, and coin pitching. Children gape at mechanical toys and trained animals.

The mosque is in the fast-growing suburb of Cartai-char. Another Kabul suburb, Shar-i-nao (New City), where diplomatic and United Nations personnel live, is behind the hill on the far left.

426

**Born Half a World Apart, These Friends Laugh at Barriers of Language and Dress**

Wetherill Cresson (left) happily adopted Afghan clothing: embroidered sheepskin vest and soft leather boots. Her brother Os favors Western styles, as does Afghan student Ezmari.

I found the pretty young mother bedecked with ruby earrings, beads, and rings. An embroidered white-silk counterpane covered her bed. The baby's swinging metal cradle was draped with a silk net and filled with elaborately embroidered pillows. Afghan women do exquisite needlework.

### Newborn Baby Wears Mascara

The baby, as yet unnamed, was a tiny, swaddling-wrapped bundle with long black hair. Mascara lines drawn around her eyes came to long points at the corners. When her mother unwrapped her, it was some moments before the infant realized she could move the tiny arms that had been bound so tightly to her sides.

Babies stay in swaddling clothes for six months; then, if they are girls, they are dressed like their older sisters in short-waisted dresses with white pantaloons (page 418). Boys wear miniature pajamalike suits. Practically every child, and many men and women, wear small silver boxes with verses of the Koran inside; children often have a whole row of them strung across their chests.

Some days after a baby's birth the father gives a party. He entertains the men, while the women gather around the mother and child. Each person suggests a name, and the mother chooses one. If father approves, that is the child's name. Registration of a baby's birth is seldom performed.

"How old is your little brother?" we ask the older of two children.

"Nine years, maybe seven," comes the nearly inevitable answer. "I don't know. My mother doesn't remember."

Every man hopes for sons, but daughters are petted and spoiled just as much as boys. Afghan men are devoted to their children; it is common to meet them walking the street,

child in arms, or to see a shopkeeper tending his child as well as his store.

Traveling about Afghanistan, we have seen how many different tribes make up this small nation. Their dress, their faces, and their dwellings all vary.

A holiday before the annual *Jeshan* gave us a chance to go west to Bamian, where two colossal ancient statues of Buddha are carved in the cliffs.* We arrived at night, as one always seems to in Afghanistan (page 429).

Startling was the outlook in the morning over that lovely valley. From our hotel windows stretched a patchwork of varying shades of green and yellow. Below us a farmer squatted at the edge of his wheat field, cutting the ripe grain with a sickle. Farther off I could see a straw stack; beside it cattle tramped around and around, threshing the wheat.

Women were bright spots of red in brilliant shawls and ankle-length bloomers. They do not wear the chaderi at Bamian; passing a man, women merely turn their backs or pull a corner of their shawl across their faces. Here in these rural districts are seen bands of coins across foreheads, long bell-shaped earrings, numerous silver necklaces, and coins sewed to dress bodices.

A handsome middle-aged guide opened the gate so we might climb up and stand on the head of the taller Buddha. From that perilous perch we could admire the painted decorations on the inner wall of the statue's niche.

I confess I did not fully appreciate the murals nor the view across the valley to the snow-covered Koh-i-Baba. My stomach kept knotting uncomfortably until we got the children back to safer regions. Despite that distracting concern, however, I still find those delicate drawings and that peaceful scene clearly etched in my memory.

### Tears Flow from Lifeless Dragon

Wetherill and Os enjoyed clambering along the spines of the "Dragon," a high hill that really does look like a two-headed dragon. A mineral spring drips tears from one eye.

Best of all we liked the sapphire-blue lake located about 50 miles from Bamian. So clear is the water that you can see the fish you don't catch; a stone seems to sink in slow motion, so far can you follow its descent.

Nomads were beginning their southward trek toward winter pastures. Their black-felt tents were folded and packed on camels. Tied down atop the loads were assorted lambs, chickens, and babies. The animals were led by women, padding along the roads in bare feet, dust coating their dingy black clothes. They seldom bothered to pull their head shawls across their faces. Nomads are an independent people, proud and respected. A city man speaks with pride of the grandfather who was a nomad.

Back in Kabul, streets were bright with banners for Jeshan, the independence celebration. Though Independence Day is May 27, Afghans celebrate it for a week in August because the flowers and fruits are at their best then.

Shopkeepers had tacked costly rugs at their doorways and draped lengths of silk and cotton cloth around them. Pictures of the King were much in evidence, and lights were strung across the main street. The avenue near the Jeshan field was gay with streamers of the black, red, and green national colors; a multitude of lights made it as festive as a carnival. During the celebration our house lights dimmed because the public illumination put a strain on the supply of electricity.

### Soccer Teams Play in Bare Feet

Hockey and soccer games went on day after day. Osborne, a former soccer right wing, shuddered when the players came on the field in bare feet.

Dancing groups performed the national dance, the *attan-i-meli*. Men moved in a large circle, executing the same figure over and over—clap, bend, twist, toss the head, whirl around. The dance makes something primitive inside you go thump-thump.

Rams battled, men wrestled, and the American colony added a comic touch when nine untrained men played a game of baseball with Habibia College boys. The Americans had more sense of humor than ability and lost gloriously, to the delight of their youthful opponents and the crowd's amusement.

A parade was the main event. In a shiny Rolls-Royce the King rode past the pressing crowd and the pavilions sheltering members of the foreign colony. As he reviewed the army, airplanes swooped overhead. Little cadets tried to goose-step in boots so big they could scarcely lift them.

Habibia College has school sessions all summer and, in compensation, a long winter holiday. People thought we were foolish, even crazy, when we decided to take the children on a long trip by Afghan Mail bus.

Several writers have told of safaris by Afghan Mail. Our story is quite different and more enthusiastic. Rough going it certainly was at times, but after a few days our bodies became adjusted as our minds became engrossed in the passing scene. All of us found the journey most enjoyable.

* See "Back to Afghanistan," by Maynard Owen Williams, National Geographic Magazine, October, 1946.

Safely embarked, we soon became acquainted with the other passengers. The two wives of Mohammed Khan, a fellow traveler, offered us home-baked sweet bread and advice. Whoever knew English or French polished it up, the better to instruct us. Those who spoke no foreign language patiently taught us new words in Persian.

New acquaintances leaned on our knees in order to hear above the creak and rattle of the bus as we sang rounds and plantation songs. They applauded vigorously and sang Afghan songs for us.

Young Os had been primed to accept a few of the unwashed raisins so often offered to him and to store them quietly in his coat pocket. One day he leaned over and whispered, "What can I do now? All my pockets are full!" He solved the problem later by dispensing the raisins to new fellow travelers when we changed buses.

If we still were rolling along when night came, the passengers shuffled themselves and their bundles to make comfortable nooks where Wetherill and Os might sleep. They didn't object if a boot unintentionally stretched across their laps or poked their ribs.

### Pilau: Rice with Meat and Caramel

Wetherill lost interest in tea, and I was glad to pass up hard-boiled eggs for a while. Our daily diet could usually be supplemented with washed raisins, dates, pomegranates, and walnuts, so that even six weeks wasn't unbearably long to be subjected to the monotonous fare of the roadside teahouses—*nan* and *pilau* or *chilau*.

Nan is a flat, platter-shaped whole-wheat bread—tasty, wholesome, and eaten in large quantities by Afghans and Cressons alike. Chilau is a dish of rice and fat from the fat-tailed sheep, with boiled meat buried in it. Pilau has caramel added to the rice during the cooking and has meat buried in it also. Some kinds have a stew along with the rice; sometimes raisins, slivered carrots, and almonds are mixed with the rice. It is delicious.

At Herat we saw the crumbling minarets of an ancient mosque and the exquisitely tiled towers of a newer one. Such tiling indicates Herat's long subjection to Persian influence.

Herat's people still wear huge karakul hats, knee boots of soft black leather, and short quilted coats belted instead of loose. Houses are separate beehive-shaped adobe structures; seldom are they clustered within walls, the common practice in the north and east. Some are scattered singly across the plains.

The southern city of Kandahar centers the region called by many the home of the "real Afghans." Kandahar, at a lower elevation, is much warmer than Kabul. We looked over low walls in front of white stucco houses to admire wide porches, beautiful gardens, pomegranate trees, and grapevines. The "purdah wall," to hide women from view, is at the rear of the house. Yards are much larger than in Kabul, giving Kandahar a more open and modern look than the capital city. Actually, it is much less cosmopolitan.

### Handiwork with the Help of Feet

Walking through the bazaar with a train of curious followers, we saw a man working a wood lathe. He pulled a bow to make the wheel turn, guided the wood with his work-flattened big toe, and carved shapes with a tool held in his left hand. A helper, also working with hands and bare feet, smeared crayon on in gay stripes and polished the color with wood shavings. Os was delighted with the little spice boxes they made; he uses one for his tacks and screws.

Women with black shawls and embroidered white face shields tied around their heads and hanging to their waists turned to stare at us.

The city of Ghazni, in spite of its age and streets too steep and narrow for a car, has more of Kabul's worldliness than Kandahar (page 432). Foreigners do not attract quite as large and inquisitive a following. Bazaar men aren't too surprised, even when a family of four purchases three brass hubble-bubble pipes.

One pipe per Afghan household is usually considered sufficient, for a puff or two is all anyone takes at one time; a single filling of tobacco will be adequate for family and guests. Our intention to make the pipes into lamps might have astonished the merchants, but Ghazni men just smile indulgently.

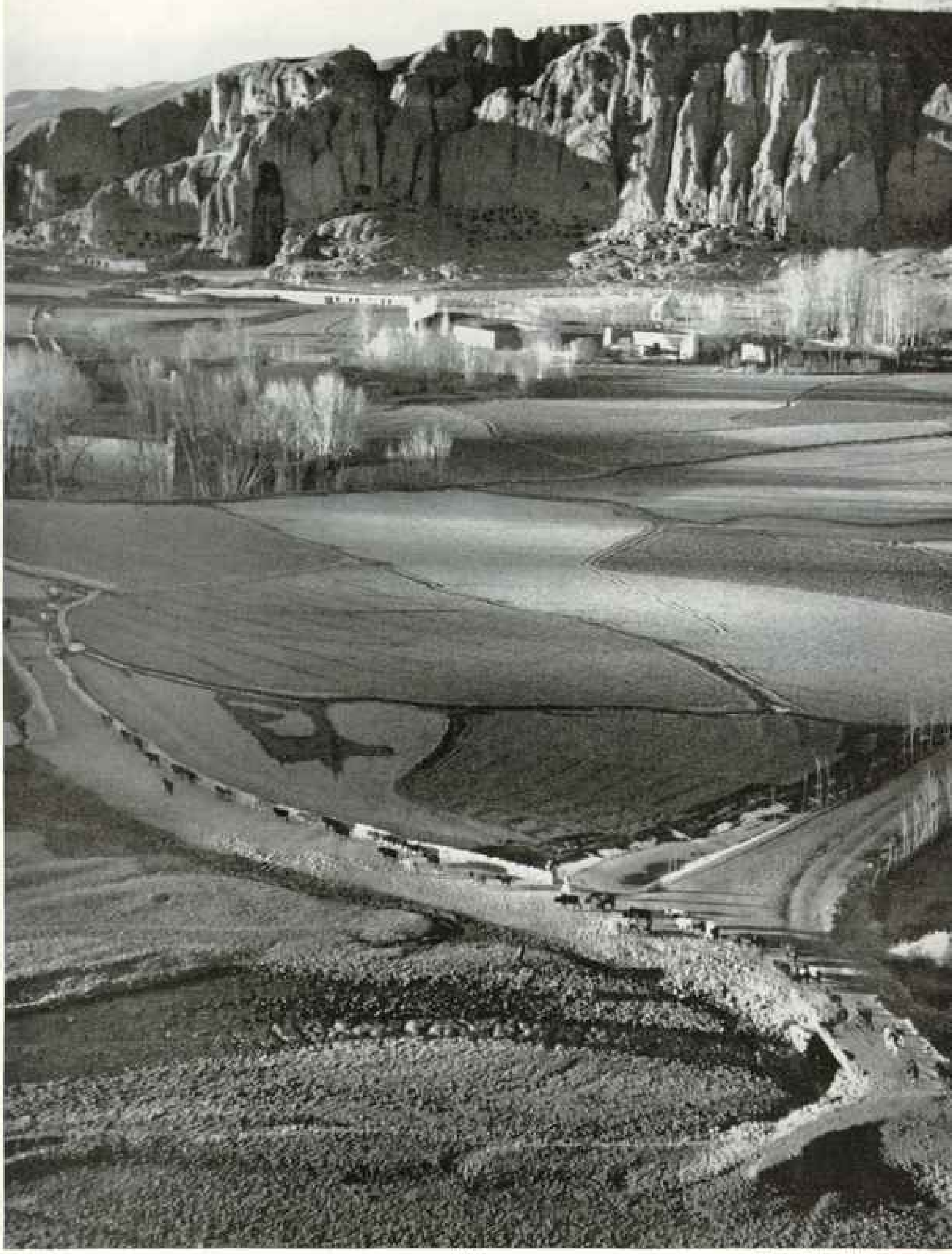
In retrospect, as in actuality, our Afghan Mail journey was a great success.

During the religious holiday of Ramazan we journeyed to the far northeastern province of Badakhshan. When people heard of our plans, they opened their mouths—and quietly closed them again, recalling that we had enjoyed our winter trip.

Transportation was our problem, because of an acute gas shortage. As it turned out, we rode as far as Khanabad in an army lorry going north for rice.

Across the plains we bounced to Charikar, up countless curves to Shibar Pass, through a narrow canyon, and down the far side of the great Hindu Kush mountains. Beyond the green valley surrounding Doab Mekh-i-Zarin we crossed a region of rice fields, then drove miles across brown prairies, pasture for cattle and sheep. At last, by a bare brown ridge, we came to Khanabad.

The tall, husky young governor (*hakim*) of Khanabad is a cousin of Ezmari, a student



429

Maynard Owen Williams

**Sightless Images Tower Over Mud-fenced Farmlands of Bamian Valley**

Ancient followers of Buddha carved gigantic statues in the distant cliffs. One, showing dimly on the extreme right, is 116 feet high; the other (left) stands 175 feet in its shaped niche. Moslem iconoclasts—literally "image breakers"—carried out Mohammed's injunction against idols by disfiguring the faces.

430

**Concealed Under a Blanket, a Charcoal Burner Warms Boy Barber and Customer**

Though Kabul has Western-style barbershops, some Afghan barbers must be content to squat by the roadside. This teen-ager plies his razor in an open-fronted cubicle. Winter days are cold in Afghanistan. The hidden charcoal brazier warms bare toes while soapless faces are shaved.

who traveled with us. The governor let Wetherill and Os ride one of his horses and entertained us with a sumptuous meal on the terrace that overlooks the river flowing past his house.

### A Feast of Novel Delicacies

The table was set with handsome Chinese porcelain flower vases. Several foods were served that were new to us and proved delicious: paper-thin, plate-shaped wafers of fried dough with bits of spinach and chives rolled into it, a thick whole-wheat pastry, and black "king" mulberries so juicy we couldn't eat them with our fingers. The hakim's mother, wife, and sister joined us, though they could not dine with us. During the month of Ramazan, Moslems fast from just before dawn until after sundown.

The good-hearted governor helped arrange our progress toward Faizabad; he phoned ahead, advising the "small" governors of Taliqan and Kishm to expect and assist us.

At Kunduz there is a cotton mill and a small pottery plant, the latter powered by a converted narrow-gauge locomotive of advanced years. After visiting Kunduz we clattered back to Khanabad and on to Taliqan in a rickety lorry with a barefoot driver. At Taliqan Osborne inquired about a truck to take us on to Faizabad.

"We are waiting for the lorries that went up to come back," was the reply.

"When did they go?" Osborne asked.

"One went a month ago."

"And the other?" Osborne persisted.

"Oh, that one left three months ago!"

So we did not wait for the lorries.

The supervisor of a salt mine gave us a lift as far as his mine. This gentleman is also a relative of our travel companion Ezmari. He took us up the hill to see the mine.

Workers ran to greet him. Half kneeling, each one took the boss's hand in both of his, kissing it. They seemed genuinely glad to see

431

**American Youngsters Quickly Learned the Tricks of Bargaining in Kabul Bazaars**

Often more successful than their parents, Os Cresson (left) and his older sister Wetherill assume expressions of studied disdain as they try to convince an Afghan merchant that his prices must come down. The children's quarry: stuffed animals of cloth (center) and gaily painted toys.

him and were pleased as children with the plastic goggles he had brought to protect their eyes from flying chips.

It takes a man about an hour to cut a block of salt, working by hand. The blocks go by truck to Kabul or by donkey train to near-by towns, where the salt, of great purity, is ground for use.

From the salt mine we rode horseback to Mashhad. Beyond, six mountain passes intervened before we saw the little town of Faizabad clinging to a mountainside on a bend of the Kokcha River.

### Os Explains His Weariness

The governor of Badakhshan also was most kind. We stayed in his guesthouse, and he asked us to have dinner with him on the terrace above his lovely garden.

"Why are you so sleepy?" he asked Os in Persian. "I have a boy your age, and he likes to stay up late."

"But he hasn't been riding horseback since 5 o'clock this morning," Os explained before he curled up and went to sleep.

After tea, ending the meal, Wetherill put her head down on the table and dropped off to sleep, too. The governor, unperturbed, had servants carry the children to bed; then he invited us to dine with him again the next night. That time both youngsters were able to stay awake.

In the Faizabad bazaar we found unusual soft, angoralike wool. A white wool coat Osborne bought me differed from the universally worn quilted coats, as it did also from the white camel's-hair felt native to Kandahar and Ghazni's embroidered sheepskin coats. Silk cocoons were for sale, and sweet-grass baskets we had never seen before in Afghanistan.

Ezmari's brother, a doctor who lived 20 miles away, came to Faizabad with a wool muffler for Os and soft white socks for Weth-

**Money Changes Hands Beneath the Towering Mud Gates of Ghazni**

Once capital of Afghanistan, Ghazni today is a quiet market town where the author bought several brass hubble-bubble pipes to make into lamp bases (page 428).

erill made of wool and fine chicken feathers. This gentle-voiced man was the last doctor an eastbound traveler was apt to see for hundreds of miles. The next one, they said, was somewhere in China.

A lorry (the one that had been in Faizabad three months) took us back to Khanabad. Part of the way we followed the twisting, attractive Kokcha River, reputedly Marco Polo's route to China.* This province of Badakhshan used to trade heavily with China, but that traffic has been discontinued.

### Glad to Get Out and Walk

When the driver asked us to get out to lighten the load before crossing some of the bridges, we were all too happy to comply, for the rickety log-and-stone structures suspended above deep gulches looked hazardous. We passed few villages, though we sometimes saw a solitary summer home, built of bent saplings and reed mats, clinging to a ledge beside a small plowed field.

By the time we climbed aboard an Afghan Mail bus for the return trip from Khanabad to Kabul, the bus seemed like luxurious transportation, in spite of its burden of 28 adults, 13 children, three birds, and a rooster!

After 18 days of sleeping on floor pads we found our native beds in Kabul to be wonderfully soft. The Embassy parties and gay foreign-colony gatherings; meat-potato-and-vegetable meals, after so much chilau and nan; even school, students for tea, and house cleaning—all seemed temporarily strange to us, integral parts though they were of our home life in Afghanistan.

* See "We Took the Highroad in Afghanistan," by Jean and Franc Shor, NATIONAL GEOGRAPHIC MAGAZINE, November, 1950.

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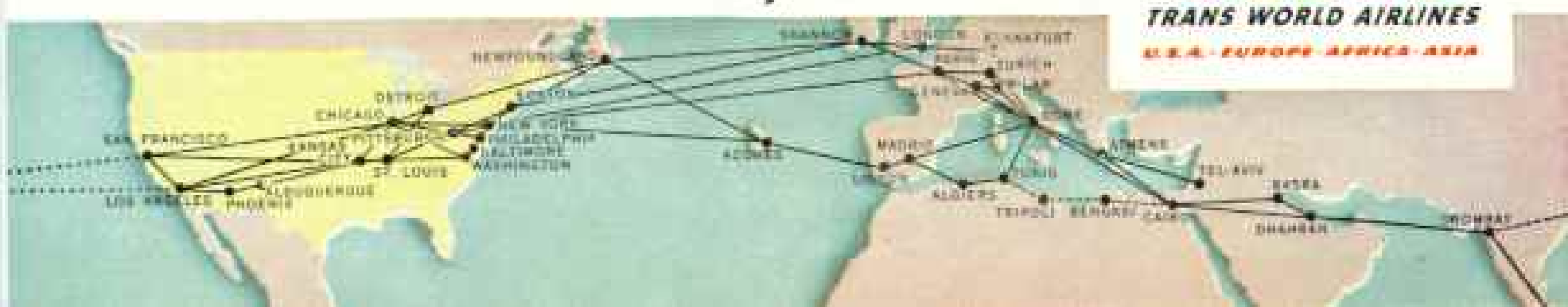

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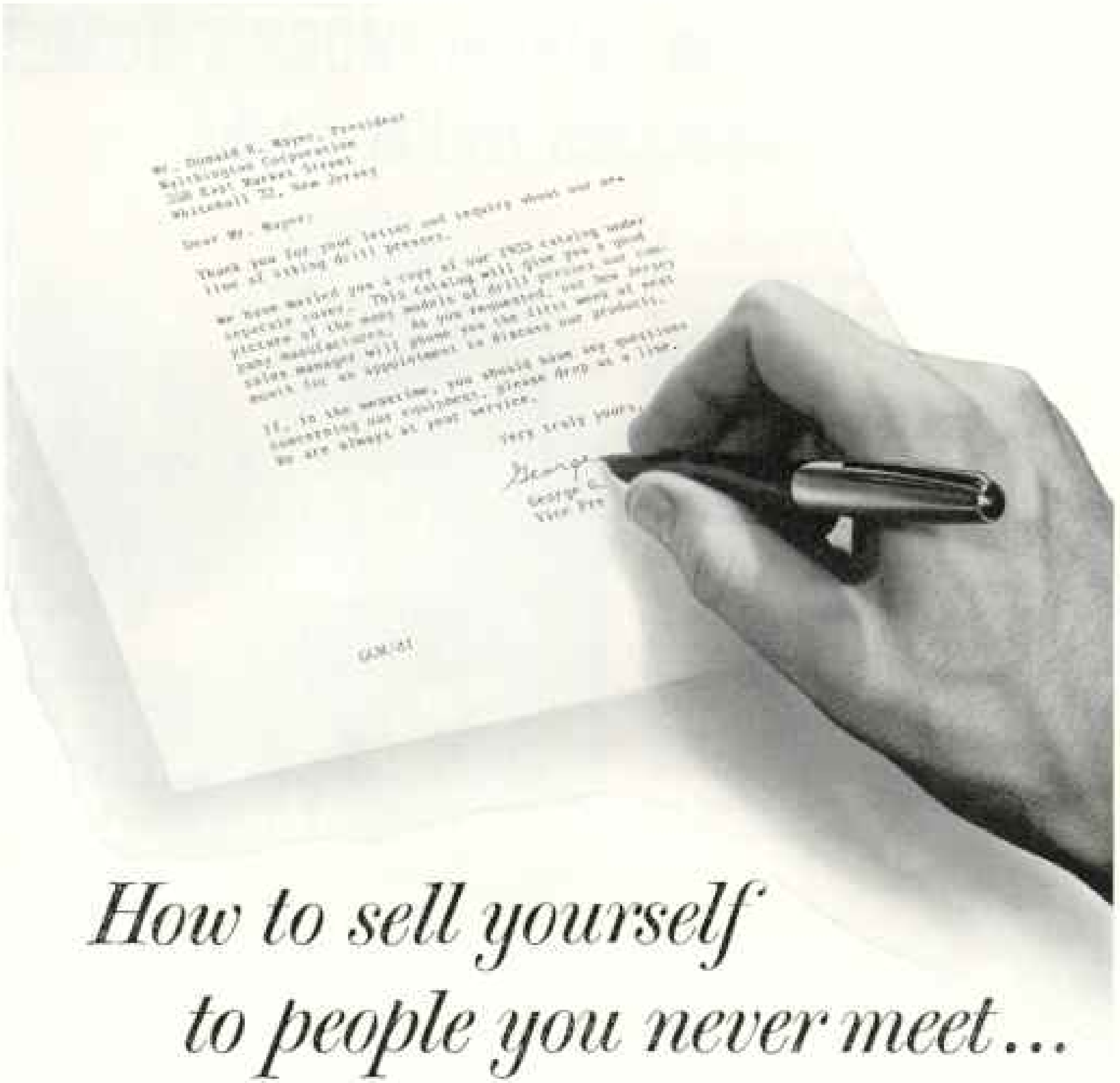

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Tensions ease, cares vanish, the complexities of life fade when you travel the glorious world of France-Afloat. For the moment you step aboard a French Line ship, you enter a carefree world where you've nothing to do but *relax!*

Doze outdoors in the cooling salt air in a long, lazy deck chair; daydream as you gaze at the infinite sea; play shuffleboard, deck tennis; enjoy a pre-release movie. There are so *many* ways to relax! And, of course, all French Line ships provide distinctive food and wines, quick, English-speaking service.

Book passage on a great French Line ship: the luxurious 51,840-ton *Liberté*, the celebrated *Ile de France*, or the new, informal *Flandre*. French Line, 610 Fifth Avenue, New York 20, N. Y.

***Consult your authorized French Line travel agent***


Sailing dates from New York and minimum one-way thrift-season fares to Plymouth (slightly higher to Le Havre): **Liberté** sails Sept. 15, Oct. 2, 31. First Class, $339; Cabin, $215; Tourist, $165. **Ile de France:** Sept. 26, Oct. 14, 31. First Class, $325; Cabin, $215; Tourist, $165. **Flandre:** Sept. 23, Oct. 10, 29. First Class, $290; Tourist, $165.

# 3D with Bolex

Movies that simply move were exciting once, but today's new thrill of thrills is home movies that come *alive* with 3-D.

With Bolex Stereo your own movies can be as up-to-date as a Hollywood production. For Bolex Stereo gives you sheer REALITY . . . *in all its three dimensions.*

Yes, your Bolex sees like your eyes do — through twin lenses. And when you show your film, you get back all three-thirds of what your eyes took in . . .

Don't miss the biggest third of movie-making fun . . . the life-giving third dimension of Bolex stereo.

*Bolex owners . . . receive regular free mailings of Bolex Reporter by registering serial numbers. Offer applies only to residents of U.S.A. Overseas subscriptions, $2.00 four issues.*

*Paillard Products, Inc., 100 Sixth Ave., New York 13, N. Y.*
*Outside U.S.A. write to Paillard, S. A. Ste. Croix, Switzerland.*

Be first . . . to enjoy *Bolex® Stereo!* 16mm Home Movies

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*In A Completely Furnished*

New Moon

*Mobile Apartment Home . . . . . .*

This fact-packed colorful book tells you how you, too, can thrill to the joys of Lightheartened Living in a New Moon mobile apartment home . . . how you can enjoy complete comfort and convenience for semi-permanent living, travel and vacation fun — all in a New Moon home you can take with you wherever you go — and at new low cost for real "budget" pleasure.

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*Write for your free copy of "Adventures In Living". 10 fully illustrated pages tell how thousands of New Moon owners are enjoying "Lightheartened Living" and will give you ideas on how you too can enjoy new living freedom at new low cost.*

**New Moon Homes, Inc.**
Alma 6, Michigan

# Make way for power with a new thrill!


THERE is vested in this 1953 Buick ROADMASTER a performance combination that can set you atingle with sheer joy.

On the one hand, you have the most advanced V8 engine ever placed in a standard-production American automobile.

On the other, you have Dynaflow — the new *Twin-Turbine* Dynaflow.

Together, these two great engineering triumphs of the year give you a new brilliance in power and performance — with new get-away and new whisper quiet—and all in one progressive build-up of power delivery that is completely and utterly smooth through all ranges.

Why not try this wonderful way to go? Your Buick dealer will be more than happy to put a ROADMASTER in your hands for your own demonstration. See him soon.

BUICK *Division of* GENERAL MOTORS

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*When better automobiles are built Buick will build them*

*Enjoy Yourself on a Streamliner*

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*Modern Pullman Accommodations • Reserved Coach Seats Designed for Restful Sleep • Dining and Club Lounge Cars • Cafe-Lounge Car for Coach Passengers • Finest of Fresh Foods*

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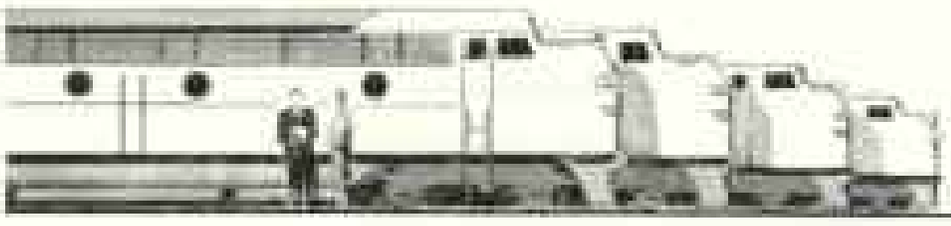

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It makes luxury more fun, good living more worth while. It's the easy-going informality, the genuine friendliness for which American Export ships are famous . . . it's *traditional* American friendliness.

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# M

*is for Mother*

so loving and kind,
with Chrysler Airtemp . . .
dust is harder to find!

**ONE ROOM** . . . can be air conditioned quickly and easily with Chrysler Airtemp Room Air Conditioner in the window.

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Imagine cutting YOUR housework way, way down . . . enjoying far more leisure time! It's easy when you install Chrysler Airtemp Year 'Round Air Conditioning. That's because drapes and furnishings stay sparkling clean . . . furniture requires less dusting!

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**for HOMES, BUSINESS, INDUSTRY**
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*YOU SEE MORE*—In a clean new car you can enjoy visiting all famous, historic places . . . all the charming out-of-the-way places of your dreams!

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*YOU HAVE MORE FUN*—Take up to five friends for extra fun . . . *at no extra charge!* The cost? For 200 miles in one week, the national average cost is only $49.00—or $9.80 per person if five ride! This includes all gasoline, oil and proper insurance!

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**Gasoline, Oil, Insurance Furnished** . . . Even on long trips, whatever amount you pay for additional gasoline and oil is refunded to you. Also Public Liability, Property Damage, Fire and Theft Insurance and $100.00 deductible collision protection are included in the low rate—at no extra cost.

**How To Get It** . . . It's as easy as **A-B-C** to rent from Hertz: (A) look in your telephone directory under "H" for your nearest station; (B) show your driver's license at the station and identify yourself; (C) step into a fine new car and go!

**Advance Reservations** . . . To be sure of a car when you need it, locally or in some other city, it is well to make a reservation in advance. Any Hertz station will make a reservation for you, anywhere, for any time. Or, if you have the correct Hertz station name and address at your destination city, you can make your own reservations by letter, telegram or telephone. Also, any airline or railroad reservation office will make a Hertz reservation for you through the Hertz Plane-Auto Plan or the Hertz Rail-Auto Plan at the time you purchase your airline or railroad ticket. Always insist on Hertz when you make your reservation and be sure you get Hertz service when you arrive at your destination.

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**Charge Cards Available** . . . Hertz Charge Cards (international in application) are issued to well rated business firms and individuals. The card serves as identification, eliminates deposit requirements, and provides credit privileges if desired. Air Travel Card holders and Rail Credit Card holders are accorded the same privileges extended to holders of Hertz Charge Cards.

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*Look in your telephone directory under "H" for your nearest Hertz station*

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WHEREVER YOU GO . . . WHATEVER YOU DO . . . YOU CAN RENT A NEW CAR FROM HERTZ AS EASY AS A B C

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The famous fun-team of NBC-TV goes all out to discover how *their* slides can be more fun, more enjoyment to show. Seeing your color slides on a TDC projector with the TDC Selectron system means fast moving, smooth showing, without ever touching your slides by hand. Only TDC projectors (most models) offer a Selectron as original factory equipment.

**He:** *Observe, all the slides fit permanently into the TDC Selectray . . . ready to slip into the Selectron and show at the drop of a hat! No more fumbling, no more misplaced slides!*

**She:** *With TDC Selectrays it's so simple to have a fine slide library . . . cataloged and stored for easy reference, and ready for immediate showing without touching a slide by hand.*

**He:** *TDC color slide projection is so easy it's all fun! The Selectron changer puts the next slide on the screen with just a finger flick!*

***Sid Caesar and Imogene Coca, starring in NBC-TV's "Show of Shows," Sat. 9 P.M., E.S.T.**

**TDC DeLuxe Model D** (shown at top) with 300-watts 3" f/3.5 anastigmat lens, blower cooling, Selectron-Semimatic Changer, **$69.50***

Other TDC Quality Stars For Your "Show of Shows"—the economical 200-watt **Headliner,** $37.50*—the ultra-portable **ShowPak "300,"** built into its own metal carrying case, $54.50*—**Mainliner "300,"** with 300 watts, blower and Selectron-Semimatic changer, **$62.50***—the powerful **Streamliner "500"** (2" x 2", with Selectron) is $84.50*—**Streamliner "500 Duo,"** $89.50* or **"300 Duo"** at $69.50*—TDC's **Project-Or-View,** combination viewer and projector, $74.50* and 84.50*. Greatest of all, three dimension shows with the **Stereo Vivid,** $175*.

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# I get all the sleep I need!"

## DON'T STOP DRINKING COFFEE... JUST STOP DRINKING CAFFEIN!

YOU SLEEP better at night and *feel* better during the day when you don't drink *caffein*. For it's the sleep-disturbing caffein in ordinary coffee that keeps so many coffee-drinkers feeling tired, jittery and upset. And caffein adds nothing to coffee's flavor or fragrance!

That's why millions of wise coffee-lovers have switched to New Extra-Rich Sanka Coffee. It's 97% caffein-free—gives you all the rich *goodness* of really choice coffee, yet *can't* irritate your nerves. Enjoy it today! Sleep tonight!

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The striking new Bel Air 4-Door Sedan. With 3 great new series, Chevrolet offers the widest choice of models in its field.

# Why is it, wherever people travel, you see more Chevrolets than any other car. . .

Suppose you should get off one of those ships up there into that fine, new Chevrolet.

Then suppose you should drive all across the U. S. A. until you came to water's edge at the other ocean.

All along the way and everywhere you went, you could count on seeing far more Chevrolets than any other car.

The reason for that, of course, is simply that more people now drive Chevrolets than any other car—about *two million* more!

It all adds up to this: People *must* like Chevrolet better or they wouldn't buy more of them. They *must* favor Chevrolet's gracefully styled, luxuriously appointed Body by Fisher . . . the finer, thriftier performance of Chevrolet's high-compression valve-in-head engines. And they *must* regard Chevrolet's Powerglide* and Power Steering* as the finest advances of their kind offered in the low-price field.

You, too, will prefer Chevrolet for these same reasons—plus the important fact that *it's the lowest priced line in the low-price field!* Plan to drive a new Chevrolet soon—your Chevrolet dealer will be happy to oblige. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

**Optional at extra cost. Combination of Powerglide automatic transmission and 115-h.p. "Blue-Flame" engine available on "Two-Ten" and Bel Air models only. Power Steering available on all models.*

**MORE PEOPLE BUY CHEVROLETS THAN ANY OTHER CAR!**

CHEVROLET


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*"Let's not lose our heads, Ma—make sure they give us American Express Travelers Cheques."*


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**AMERICAN EXPRESS TRAVELERS CHEQUES**

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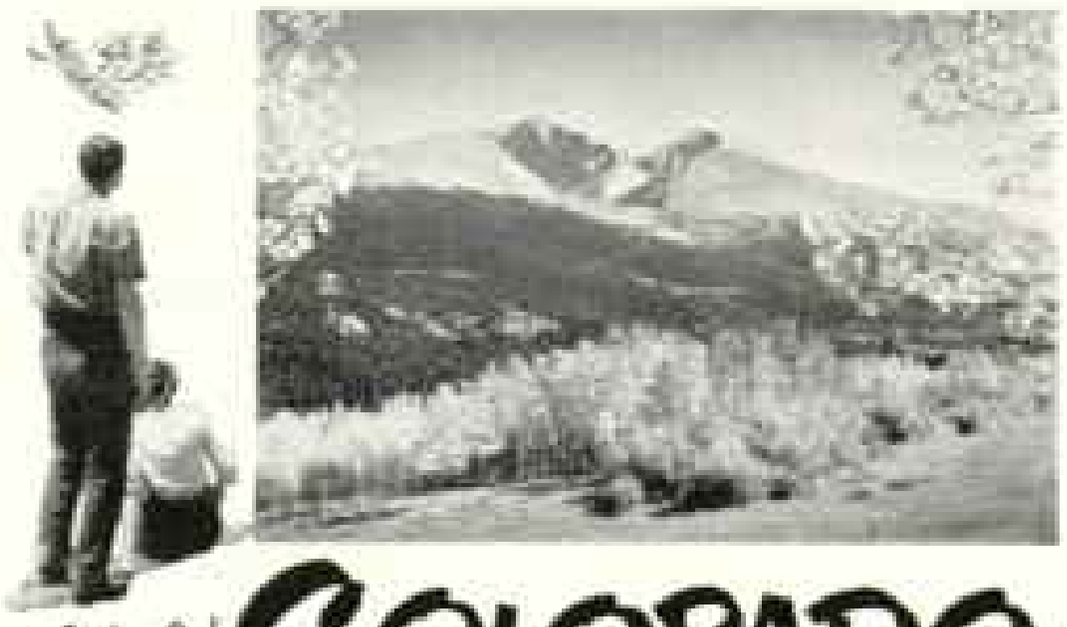

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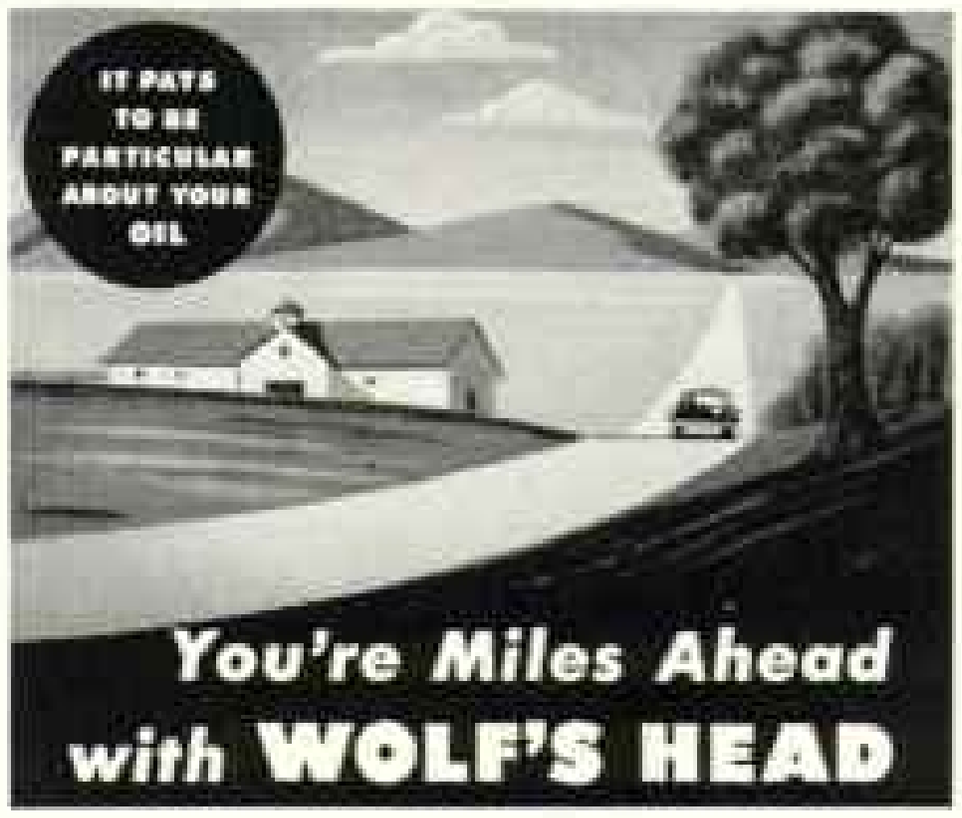


WOLF'S HEAD—100% Pure Pennsylvania—puts your car miles ahead in performance and economy . . . adds miles of trouble-free driving. For WOLF'S HEAD is Scientifically Fortified—provides complete protection against wear, corrosive acids, engine deposits and rusting. Be particular—always insist on WOLF'S HEAD. Send for free WOLF'S HEAD Folder that helps you forecast weather.


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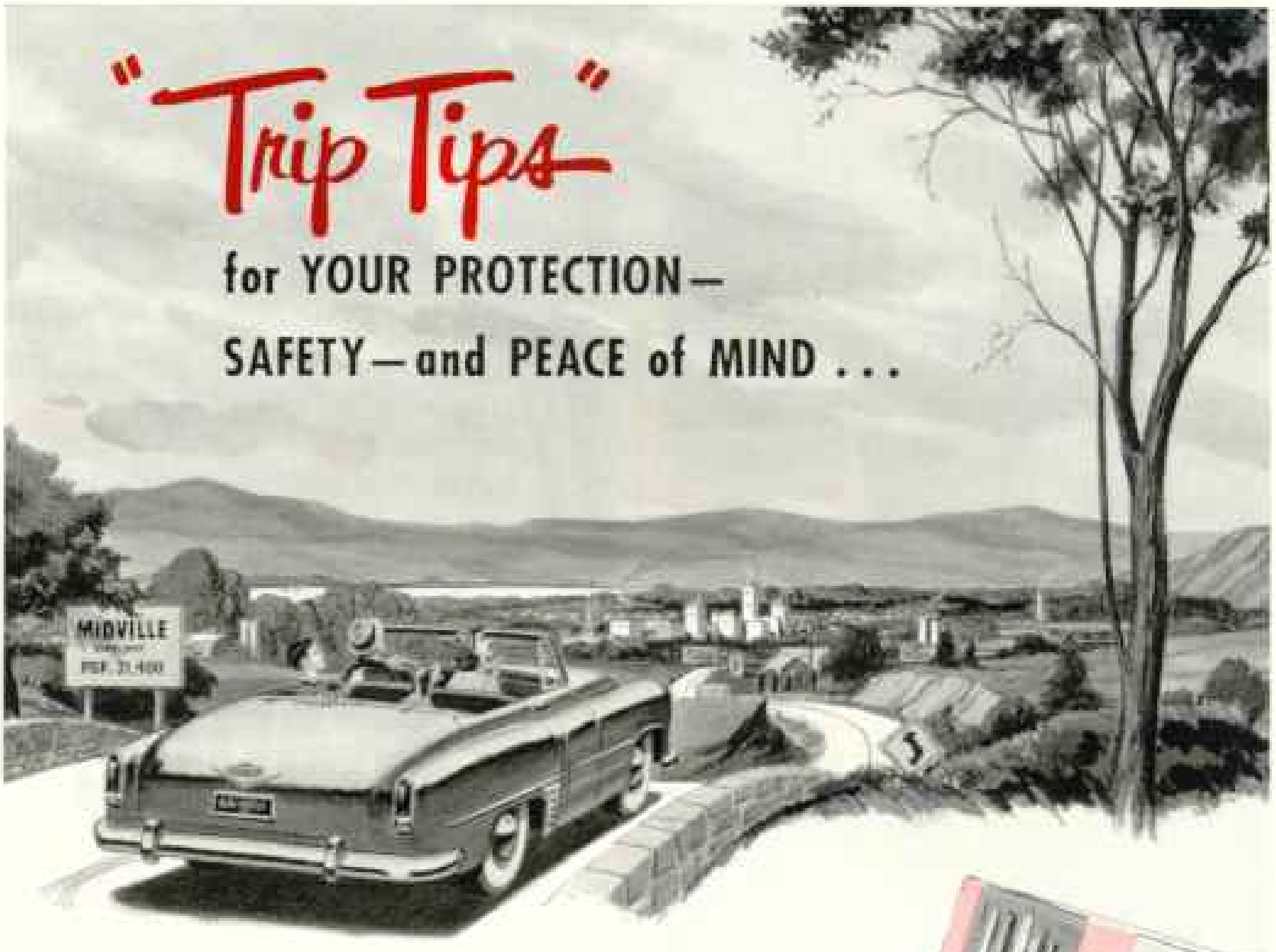
## for YOUR PROTECTION— SAFETY—and PEACE of MIND . . .




When you plan a trip, send for a copy of our booklet, "Trip Tips". It tells you how to—

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If you follow the suggestions in "Trip Tips" you can be assured of a safer and more carefree journey.

And remember this—if you are insured in America Fore Companies you will have the additional comfort of knowing that no matter where you may be—nearby there will be an America Fore insurance man—ready and eager to help you in case of need.

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out of the Future . . .

# the all-new 1954 La Belle Automatic SLIDE PROJECTORS

★ shows color slides AUTOMATICALLY!
★ changes slides INSTANTANEOUSLY!
★ never touch a slide for A WHOLE HOUR'S SHOW!

*Automatically*
FEEDS slides
CHANGES slides
RE-FILES slides in "Safety File Magazine"
KEEPS your slides in proper sequence . . . ready for next showing
ALL THIS WITHOUT TOUCHING A SINGLE SLIDE!

**NOW** . . . showing slides is fun! All the tedious hand-feeding, fumbling, mistakes, breakage is over. La Belle AUTOMATICALLY shows your slides for you . . . at the "flick of a finger."

**YOU CAN ENJOY** a whole hour's show without touching a single slide. Your "Safety File" Magazine holds 75 slides . . . keeps them in the order you want them—always safe, free from smudges, warping, dust and dirt.

**AMAZINGLY BEAUTIFUL PROJECTION!** The most brilliant, clearest, sharpest projection you've ever seen! No other projector can match La Belle's superb Precision Optical System—which delivers maximum beauty and color. La Belle's Turbine Blower cooling system AUTOMATICALLY keeps your slides at safe, efficient-to-operate temperatures.

**LA BELLE "55"**
500 Watt, Powerful, Quiet Turbine-Blower, Twin-Tilt Knobs, "Finger-Flick" Slide Changer. Complete with 500 Watt Lamp, F/3.5 Coated Lens, 2-67 Safety File Magazines, only $90.00.

**LA BELLE "75" PROFESSIONAL**
*The World's ONLY Remote Control Projector. Changes slides automatically from anywhere in same room. 500-Watt Lamp; Turbine-blower; F/3.5 Coated Lens; two Magazines; Matching Case. $154.95 complete.*

**THRILLING, FREE DEMONSTRATION!** Your La Belle Dealer will show you your own color slides on the new 1954 La Belle.

**La Belle** INDUSTRIES, INC.
ECONOMOWOC, WISCONSIN, U. S. A.
In Canada—PRECISION CAMERAS—Montreal, Quebec

## Enjoy an autumn vacation in la Province de Québec

Come when the hillside blazes with unbelievable color, when the highways and hotels are less crowded. You will indeed enjoy visiting historic, picturesque French-Canada, where you will be welcomed with old-time hospitality, in comfortable modern inns and hotels.

LA PROVINCE DE **Québec**

*For free road maps and booklets, write: Provincial Publicity Bureau, Parliament Buildings, Québec City, Canada; or 48 Rockefeller Plaza, New York 20, N.Y.*

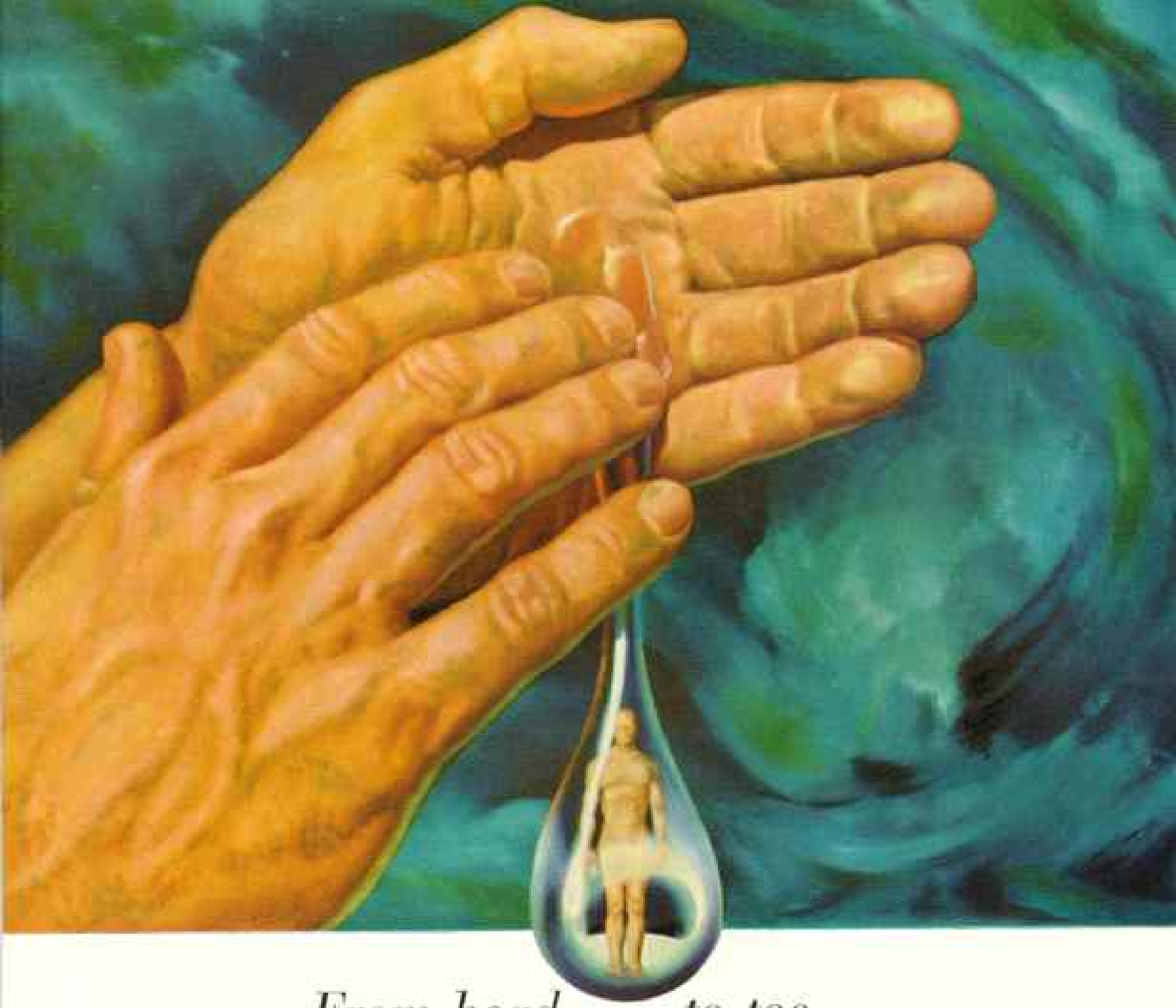
# Tough...

## BUT SO COMFORTABLE!

**SKOS**—Brier Tan Borhide, Sizes 5 to 15: $19.95
See your dealer or order direct.

Casual continental styling—in tough Allen-Edmonds BORHIDE . . . long-wearing yet soft, washable with mild soap and water, supremely comfortable. Famous Allen-Edmonds features include nailless construction, U-turn flexibility, all-round stitching — and *comfort guaranteed in writing!*

**Allen-Edmonds**
BELGIUM, WISCONSIN



# *From head to toe*

## Your friends, the glycols, help shampoo your hair, smooth your skin, and even improve the fabrics of the clothes you wear

FEW OF US would recognize a glycol if we saw one. Yet practically all of us are in constant and pleasant association with this man-made family of chemicals which are known to chemists as the dihydroxy alcohols.

**SMOOTH AND PLEASANT**—That pleasant feeling you get from many modern skin lotions, sun-tan creams, or shaving creams—that's the work of some of the glycols. The latest shampoos don't leave your hair dry and brittle—thanks to the same glycols.

**THE FIRST MAJOR USE** of glycols was in "Prestone" one-shot anti-freeze. Today, everywhere you turn glycols are at work for you. One is a vital ingredient in a new, man-made textile fiber. Others keep liquid mixtures, such as medicines, cosmetics, and hair tonics, from separating in the bottle. They keep tobacco fresh and moist, cellophane soft and pliable, and also are used to make your car's new improved hydraulic brake fluid.

**FROM OIL AND GAS**—These busy aids to better living are obtained from petroleum and natural gas. Certain of the glycols in turn are used to purify the natural gas that serves so many of us in our homes and at work.

**UCC PRODUCES GLYCOLS**—As pioneering leaders in the field of petroleum chemistry, the people of Union Carbide produce great quantities of glycols in many forms—and hundreds of other chemicals that make ours a better world in which to live.

**FREE:** *Learn more about the interesting things you use every day. Write for the illustrated booklet "Products and Processes" which tells how science and industry use the ALLOYS, CARBONS, CHEMICALS, GASES, and PLASTICS made by Union Carbide. Ask for booklet E.*

**UNION CARBIDE**
**AND CARBON CORPORATION**
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*UCC's Trade-marked Products of Alloys, Carbons, Chemicals, Gases, and Plastics include*

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PYROFAX Gas • ELECTROMET Alloys and Metals • HAYNES STELLITE Alloys • PREST-O-LITE Acetylene
DYNEL Textile Fibers • BAKELITE, KRENE, and VINYLITE Plastics • LINDE Oxygen • PRESTONE and TREK Anti-Freezes

# "She was fast asleep when the fire started

## and discovered later that she hadn't been wide awake for years"

*(A true story based on Company File #H-52-2925)*

It was late one windy night and old Mrs. Bartlett was lucky in two ways. Lucky that the wind was blowing the flames away from where she was sleeping and lucky that I came along while she could still get out.

But in a third way, luck was *against* her. For years she had been asleep to the increase in property values, had never increased her insurance to keep pace. She told me afterward that it fell short of covering her loss by almost $4,500.

Don't push *your* luck too far. How long since you checked up on the value of your house? And your household belongings?

Even if that was only two or three years ago, you're running the risk of tragic loss, for values have gone up since. Like 7 out of 10 property-owners, you are probably *under-insured!*

Find out where you stand. Send for a free copy of a chart that compares average building costs, year by year.

Or, better still, phone your Hartford Fire Insurance Company Agent or your insurance broker. He'll tell you how much any additional coverage would cost. So, act now! Have him bring your insurance into line with today's increased values.

***Year in and year out you'll do well with the*** **Hartford**

**Hartford Fire Insurance Company** • **Hartford Accident and Indemnity Company**
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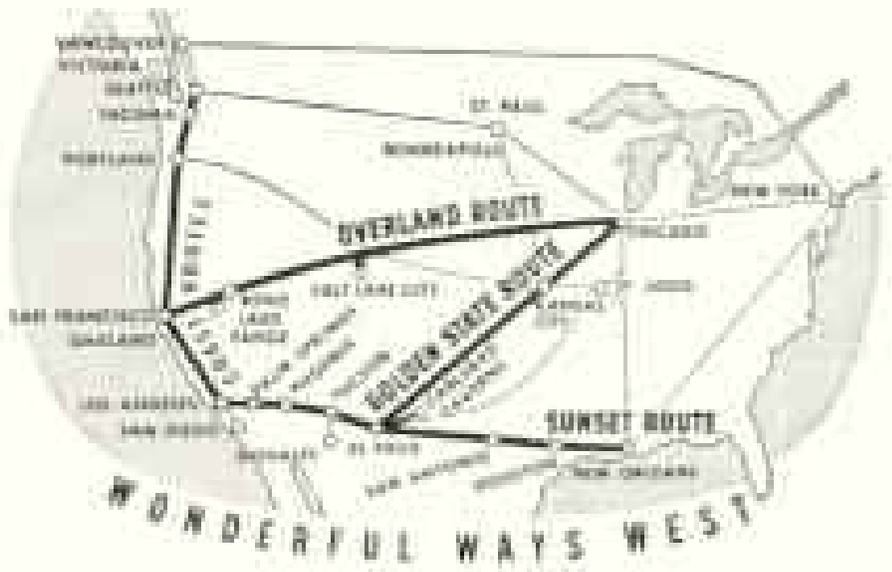
# to go to California on the SUNSET LIMITED

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From Denmark, Holland, Spain, India, Italy, France — wherever our treasure hunters find a rare and exquisite bargain—come fabulous gifts for our club members. American dollars obtain tremendous values abroad, gifts worth $3 to $5 for only $2 each. Mailed direct to your home from overseas, duty free, and postage paid. Every package contains the fascinating story of the origin and significance of the article you receive. And an EXTRA GIFT FROM ABROAD awaits you if you join now! Send at once for FREE illustrated brochure, or enclose $5.00 for 3 months' trial membership, $11 for 6 mos., or $20 for 12 mos. Satisfaction guaranteed!

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# What can YOU do with a glass like this?

Can you use a glass that withstands a temperature of 1800° F. for hundreds of hours . . . that can be heated red hot, then plunged into ice water—without breaking?

Sylvania Electric Products Inc. could. They use one of Corning's Vycor brand glasses to make an amazing range lamp that withstands the quick, intense heat of 1550 watts . . . melts a pat of butter twice as fast as ordinary heating elements. Sears Roebuck & Company, first to use this new lamp in their new line of Kenmore electric ranges, reports "widespread consumer acceptance."

If you have a high-temperature application, one of the Vycor brand glasses may be the answer. Or perhaps its high chemical stability and ultraviolet transmitting properties may solve a problem for you.

To learn more about how special types of glass developed by Corning have helped restyle products or improve performance, mail the coupon below for your copy of "Glass and You."

**GLASS FOR ELECTRONICS.** Stable under high voltages and frequencies, glass by Corning is used for receiving tubes in radios, television sets, radar equipment and other electronic devices. Metallized glass components include temperature stable inductances and capacitors, bushings for hermetically sealed enclosures. Pure silica is now available for supersonic delay lines in radar and electronic computers.


**PICTURES IN GLASS.** In Corning's photosensitive glass, photographs or lettering can be reproduced right in the glass, giving a three-dimensional effect. This is already in use for diffusing fluorescent light, for dials and name-plates on appliances. And because it may be cut by a new chemical process, photosensitive glass appears to have broad potential applications in the printing and engraving industries.

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CORNING GLASS WORKS, 159 Crystal St., Corning, New York

Please send me: ☐ a copy of your new brochure, "Glass and You";
☐ more information about Vycor brand glasses.

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Company _____

Address _____

City _____ Zone _____ State _____

"Vycor" is a registered trade-mark of Corning Glass Works in the United States.

# 5 out of 5 preferred

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Every bus traveler questioned in recent surveys said, "I prefer traveling thru . . . without changing buses!" You, too, will enjoy the added convenience of Trailways THRU-LINERS that take you thru to your destination . . . with no bothersome baggage transfers and connections to make enroute. First to offer this modern type of bus service TRAILWAYS continues to make THRU-LINER ROUTES its predominant cross-country service.

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TOMMY
TRAILWAYS

# TRAILWAYS

108 North State Street, Chicago, Illinois

# *A Toast to Model T*

● For all the jokes that Model T inspired, the memory is one of affection and respect. And that is only right.

If it would never occur to you to build a house without a garage, it is because Model T established the principle of universal ownership of automobiles.

If you drive five hundred effortless miles in a day, it is because Model T forced the building of paved highways.

And it was a symbol of the manufacturing skill and integrity to which we, ourselves, subscribe. Remember the Model T slogan: Wherever you go you see it; wherever you see it, it's going.

No other single product has had so profound an influence on every aspect of the way we live today.

Our first association with the Ford Motor Company was making body parts for Model T, in 1918. It is an association we have prized ever since and enjoy today, and lends extra warmth to our congratulations to this great Company on the occasion of its fiftieth anniversary.

The Budd Company, Philadelphia, Detroit, Gary.

Budd

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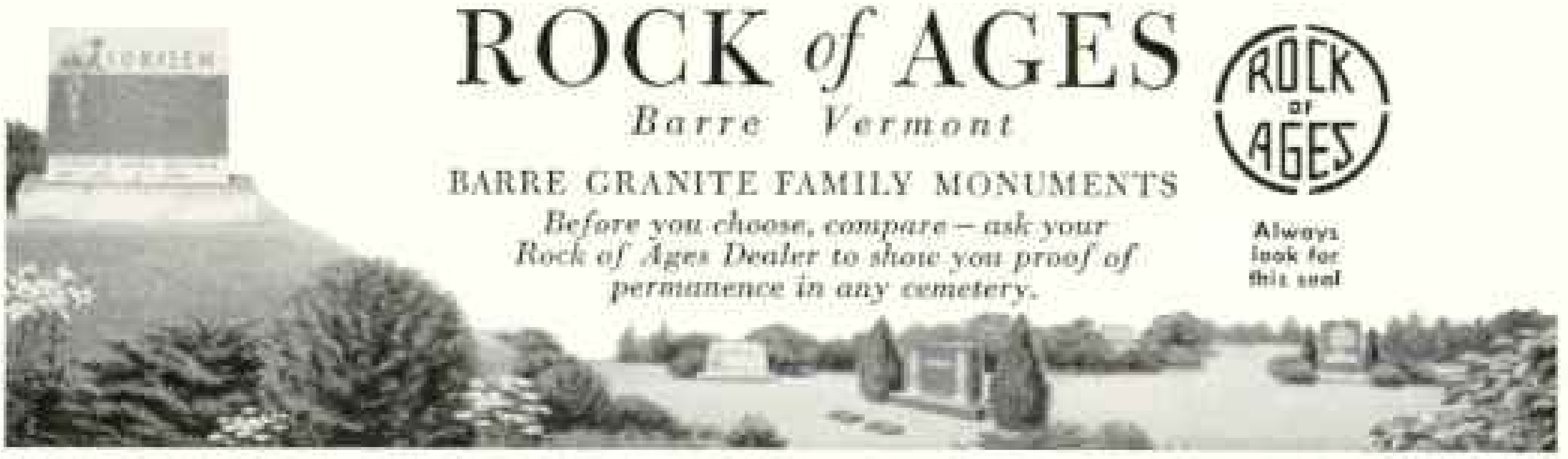
**The Ivy . . . Its Symbolism:** The beautifully entwining leaves of ivy denote one's highest ideals of faithfulness and friendship. In the expert sculpture of Rock of Ages monuments, they form a graceful pattern of decoration, signifying deep devotion and lasting memory.


# It is here that we are closest to each other

Here on a sun-swept knoll in a peaceful cemetery, a family can find the spiritual strength it needs. Here by a monument strong and serene as the person it commemorates, the family is held close together. Close . . . in the memories of the past and in the courage for the future the monument suggests.

For the family monument in the traditional cemetery speaks to the living. It tells of a distinctly personal family character . . . of ideals meant to guide future generations. And it portrays a remembrance as undying as the granite itself. In choosing such a monument you will have need of wise counsel and satisfying assurance. You will find the satisfaction in the counsel of your Rock of Ages Dealer. And the Rock of Ages Seal in the granite will bring you absolute assurance of quality.

Many thoughtful people choose their family monument—as well as their cemetery plot—*before the need arises.* Ask your nearest Rock of Ages Dealer for "How To Choose a Family Monument"—a large illustrated booklet available without obligation. You'll find his name in the Classified Section of the Telephone Directory. Or write Rock of Ages, Barre, Vermont.



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*Barre Vermont*

BARRE GRANITE FAMILY MONUMENTS

*Before you choose, compare—ask your Rock of Ages Dealer to show you proof of permanence in any cemetery.*

ROCK of AGES

Always look for this seal

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**Instantly!**

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**Makes photo-exact copies of anything typed, written, printed, drawn or photographed in any color or black and white.**

Now make photocopies in color! The amazing Apeco Systematic Auto-Stat makes a dry photocopy in red, blue, green, yellow or any other color—including black and white—in less than 45 seconds. Now —"color-code" orders, invoices, letters, etc.—speed up order filling and office procedure—save filing time! This lightning-fast copying machine prints from any original up to 11" wide, any length, whether printed on one or two sides opaque or translucent paper . . . all automatically. Finished copies are ready for instant use. Save up to 80% on copying cost by eliminating costly re-typing, hand copying, checking and outside copying service. Offers even greater savings in increased business efficiency.

**SO LOW COST!** A complete Apeco Systematic Auto-Stat installation is priced well within the budget of even the smallest firm.

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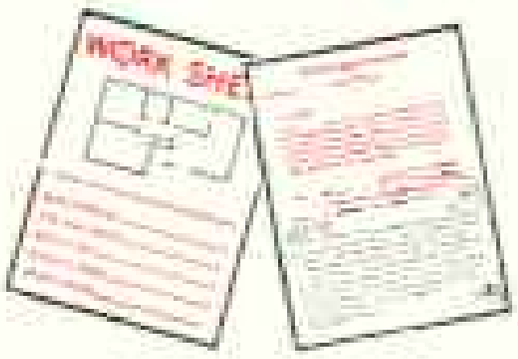
Increase office efficiency with copies in any color for immediate recognition, faster filing, speedier handling.

**PRE-PRINTED COPIES FOR SYSTEMS USE**




Methods experts acclaim new pre-printed Auto-Stat copy system offering simplified office record procedure tailor-made to your particular needs.

## HAVE YOU READ THIS FREE BOOK?

American Photocopy Equipment Co.
2843 North Clark Street, Chicago 14, Ill. Dept. NG-93

Please rush me, without obligation, your factual report on office copying. I understand this free booklet pictures and tells the complete Auto-Stat story and shows how I can use Apeco Auto-Stat in my office.

Name_____

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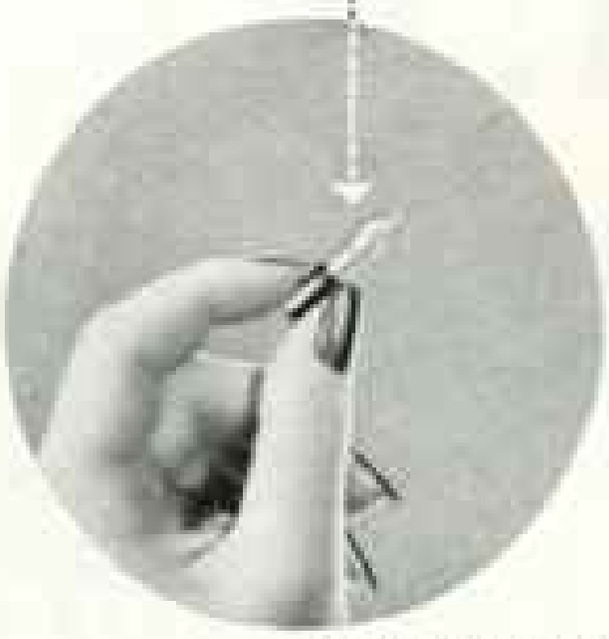
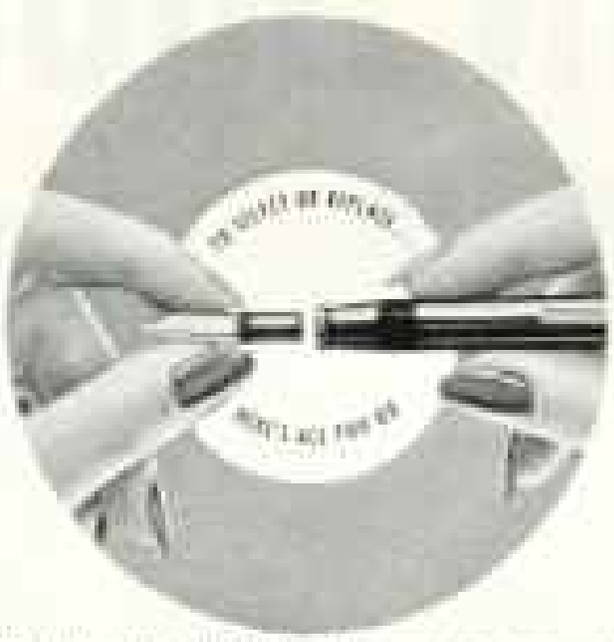
## the right point for the way you write...

CHOOSE an Esterbrook Point
*...by number*



ADD it to the barrel of an
Esterbrook Fountain Pen



WRITE with an Esterbrook Pen
that writes your way...naturally

ALL POINTS INSTANTLY INTERCHANGEABLE. INSTANTLY RENEWABLE. ONLY MOST POPULAR POINTS SHOWN.

**Esterbrook Pocket Set**—*Pen and matching Push-Pencil. (Push the top to feed the lead.) Pencil holds 12 sticks of lead—writes for months without reloading. Choice of regular or thin lead models.*

### Writing is easier . . . more comfortable . . . with the right point

Easier, more comfortable, more pleasant writing is yours when your pen is made for your kind of writing. Prove it yourself. At the nearest pen counter, choose—by number—the Esterbrook Point that writes <u>your</u> way, fit it into the Esterbrook Pen barrel you like best and write. Feel how the words fairly flow off the point. See how your writing reflects your individual personality.

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THE WORLD'S MOST PERSONAL FOUNTAIN PEN

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## Keep Teeth Naturally White and Free from Offensive Odor—Without Brushing!

Your dental plate material, 60% softer than natural teeth, is easily scratched by brushing with toothpaste or powder. These scratches allow food particles, other impurities to collect faster, cling tighter, causing denture breath.

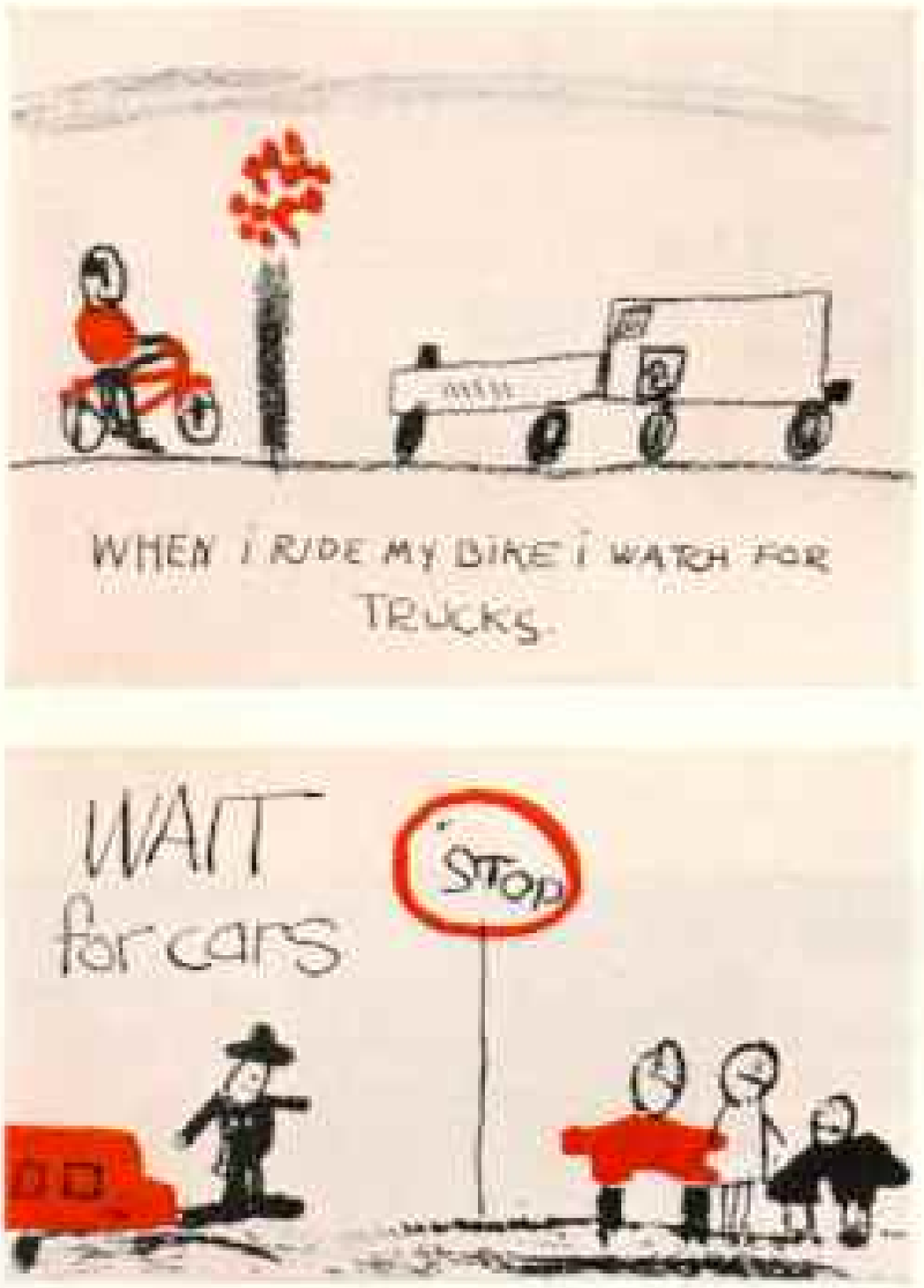
So, starting today—and every day, clean your plates the way more dentists recommend—with Polident. A soak—a rinse—a clean, fresh mouth! Your teeth stay naturally white, and odor-free.

No danger from abrasive wear and tear. No danger of Denture Breath! Get Polident today. Guaranteed to satisfy, or money back.

World's Largest Selling
Denture Cleanser

# POLIDENT

**Recommended by More Dentists Than Any Other**




# They're never too young to learn SAFETY

AFTER SCHOOL opens this fall, many classrooms will be decorated with pictures like those shown above. All of these pictures were actually drawn by children in the first grade.

These simple sketches show that even very young children can grasp the importance of safety and can apply its rules in their daily lives. In fact, our greatest hope of reducing the high toll of childhood accidents depends largely on helping children to develop the attitudes and skills necessary for their safety now and in the future.

**Accidents kill annually about 14,000 children under age 15. In addition, some 2 million children are temporarily or permanently injured by accidents every year.**

When children return to school, they will be exposed to an increased number of potential accident situations. Is there anything you can do to help save children from accidental injuries or loss of life? Indeed, there is. You can put more stress than ever on habits of safe conduct.

All children—especially those just entering school—should be warned to take safety precautions in the streets. If a child rides his bicycle to school, he should know and obey such rules as keeping to the right, riding single file and signaling for turns.

Children may also be helped to avoid accidents if parents themselves set a good example by consistently practicing habits of safety in the home and elsewhere. You can do this by checking your home and removing possible accident hazards.

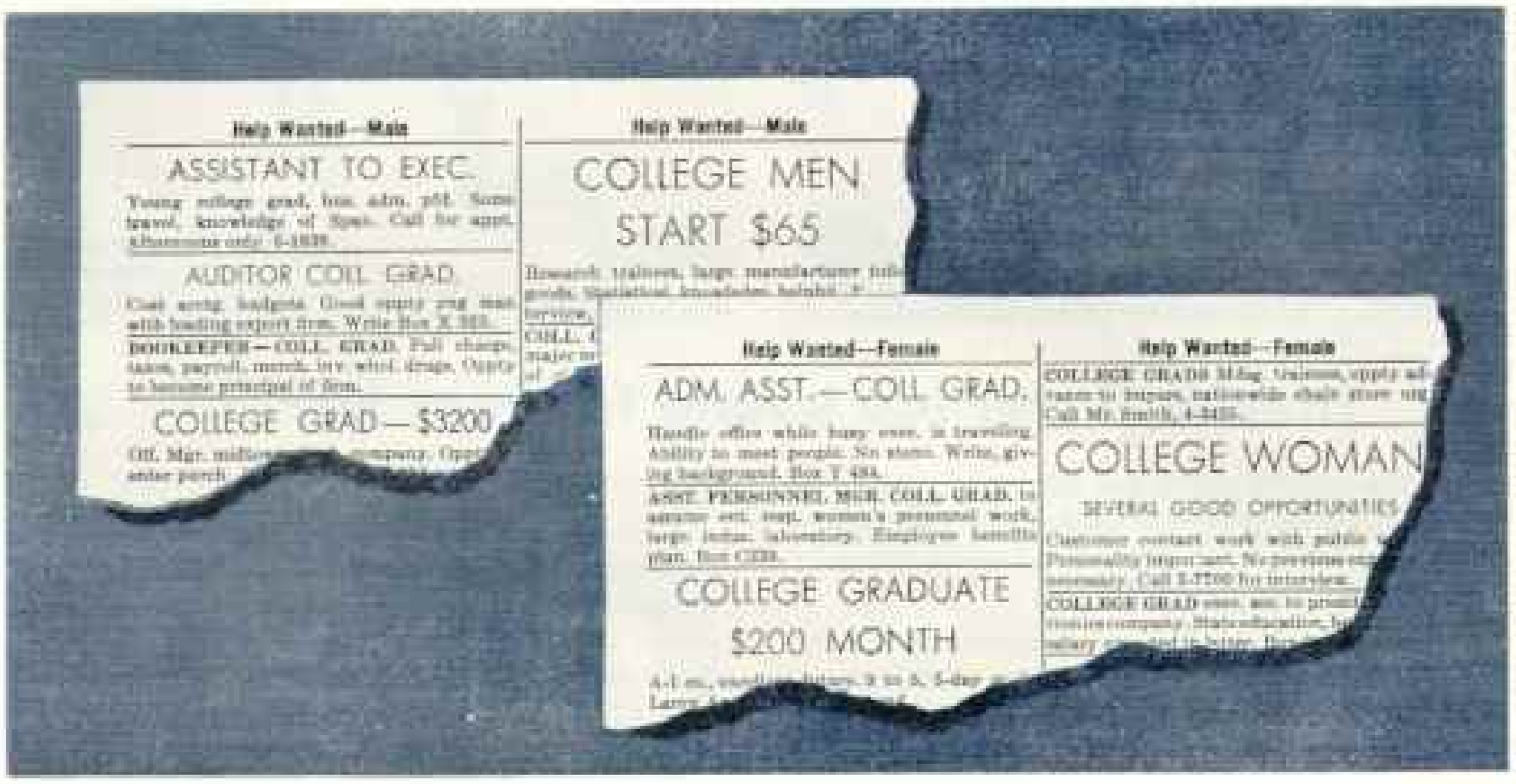
If, despite your protection and training, your child has repeated accidents, it would be wise to consult your doctor. Sometimes accidents may be caused by physical or emotional conditions which he can help correct.

Remember that most accidents do not "just happen." Some authorities estimate that 90 percent or more of them are preventable. So, make your child safety-minded as he enters or returns to school.

# Why fathers with jobs should look at the "help wanted" pages

THIS SUNDAY, when you pick up the paper, take a look at the "help wanted" pages—with that boy or girl of yours in mind.

Notice how many advertisements like these you see:




Don't you agree that, when your youngsters are trying to get a foot on the ladder, they will have a better choice of jobs if they have a college education?

Hundreds and hundreds of fathers are using a Travelers Educational Life Insurance Plan to make sure there'll be money enough on hand to meet all expenses when their children reach college age.

Under this plan, you can choose from among several Travelers policies the one that suits your needs and your income best. Let your Travelers agent or broker show you how these policies can assure the financial help necessary for your youngsters' education.

Providing for the education of your children may be the most important thing you can do for them, and your Travelers agent is the man to see. If you don't know the Travelers man in your community, write and we'll gladly send you his name.

HELP YOURSELF TO SECURITY THROUGH

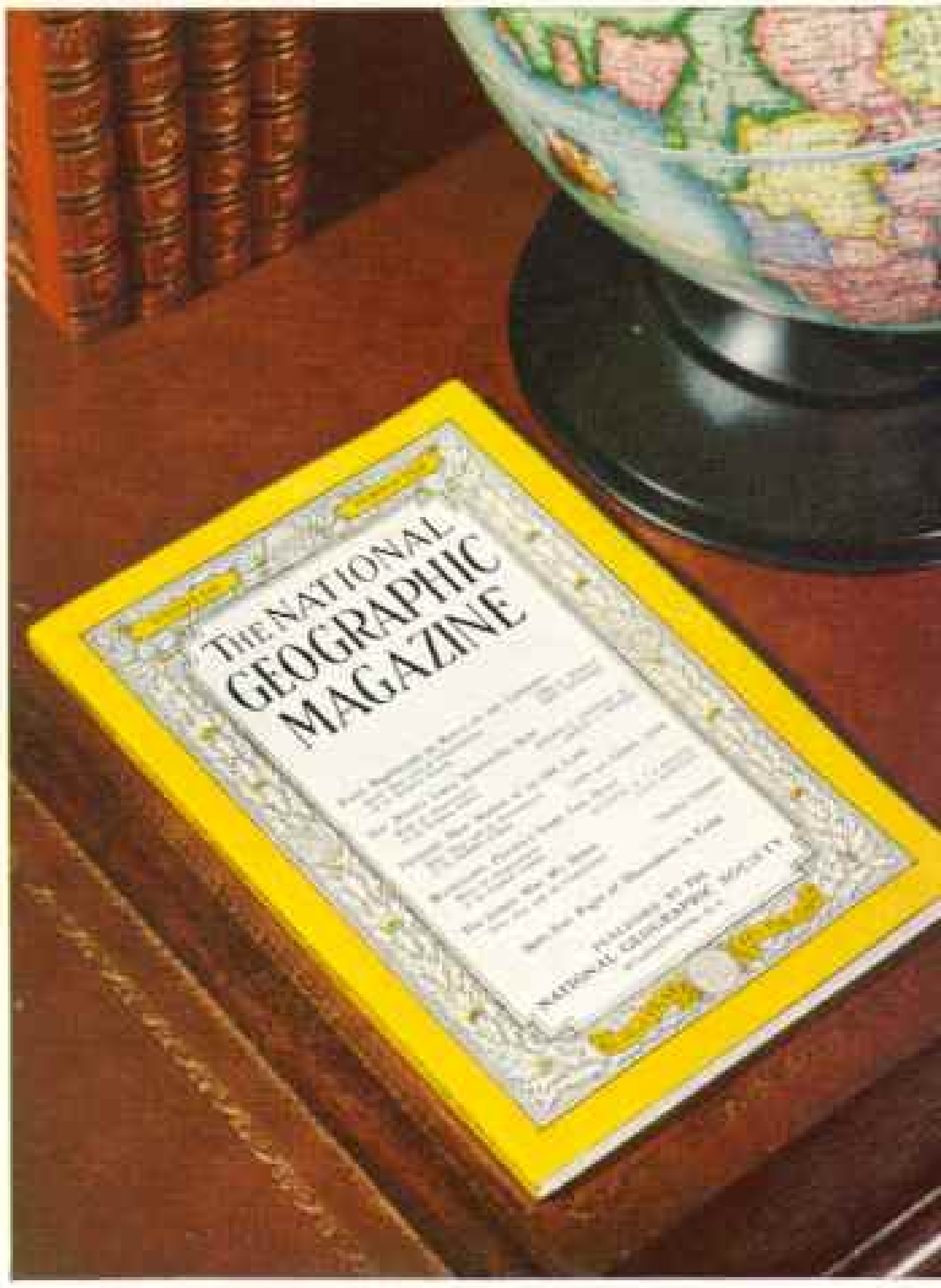
*The Travelers*

HARTFORD 15, CONNECTICUT

ONE OF THE LEADING LIFE INSURANCE COMPANIES

THE superb paintings in fresco of medieval Greece were the *standard of excellence* of their day. Shown here on the wall of an old Greek monastery near Ioannina are paintings depicting three saints of an early Christian era.

THE renowned *National Geographic Magazine*, world-famous for the brilliance, fine detail and faithful reproduction of its superb color and fine black and white illustrations, demands the finest in coated paper. This magazine has used Champion-International quality coated paper exclusively for over forty years.

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*of Lawrence, Massachusetts*

*Manufacturers of Quality Coated Papers*

# "You'll get lots more from your trip

## *if you make movies as well as snapshots"*

**"Our national parks and historic sites offer some mighty exciting picture possibilities. And people are making the most of it. They've always taken snapshots, but today more and more are making movies, too. With all the action and color, I guess it takes a movie camera to get it all."**

**OSCAR SEDERGREN**—Chief Ranger, naturalist, mountaineer, and photographer

OF COURSE, you'll take snapshots on your trip—lots in color. But if you want pictures that will bring back your holiday *—just as you lived it*—then you must make movies as you go.

And you'll *be* on the go . . . with new faces . . . new scenes . . . new and thrilling experiences tumbling past you from the moment you pick up your bags and say, "This is it!" You simply can't do full justice to it all in "still" pictures, only. Life just won't stand still!

### So movies are wonderful! But aren't they hard to make?

Not at all! Movies are simple as snapshots. There's an exposure guide on every Kodak movie camera. Some models don't even have to be focused. You can focus the others, if you like, or use an all-purpose setting that gives you crisp movies at almost any distance.

A fine, fast lens does a perfect job under varying light. It has a built-in sunshade, too, so you can follow action almost right into the sun.

### It's easy to *make* good movies. But the cost?

Well—the Brownie Movie Camera sells at a new low $39.75. It uses economical 8mm. roll film . . . only $3.95 for full color or $3.25 for black-and-white—*including processing!* And each roll makes 30 to 40 average-length movie scenes!

So movies need cost no more than a dime a scene. Hard to see how you can afford *not* to make movies, a picture record precious above all others because it faithfully, excitingly re-creates the color, the action, the reality of life itself.

But get the story from your dealer. Or mail coupon to Kodak—for free copy of "Let's Make Movies." You'll find out how easily you can bring home movies to your house.

From the budget-minded **8mm. "Brownie"** (left) at $39.75 to the **16mm. Cine-Kodak Royal** at $176.25, there's a complete line of Kodak personal movie cameras to choose from. See them at your dealer's soon.

*Prices include Federal Tax and are subject to change without notice*


See "Photographic Equipment and Supplies"


**"LET'S MAKE MOVIES"** Free booklet tells how to make color movies . . . how to make movies indoors as well as out . . . how to choose the right camera for your needs. Just use this handy coupon.

**Eastman Kodak Company,** Rochester 4, N.Y.

Dept. 6: Please send me my free copy of "Let's Make Movies."

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Kodak
TRADE MARK

Striped Marlin, Painting by Maynard Reece

© N.G.S.

Eastern Bluebird, Kodachrome by A. A. Allen



# Lavishly Color-illustrated National Geographic Books Reveal Bird and Fish Life

**THE BOOK OF FISHES**—Here is the new 340-page edition of this famous book on fishing, conservation, and life of the watery world!

Edited by John Oliver La Gorce, it brings you 159 FULL-COLOR pages including 116 COLOR PAINTINGS and 24 COLOR PHOTOGRAPHS—with biographies—identifying 236 species of game and food fishes and other aquatic life in United States salt and fresh waters. Sixty-seven other photographs in COLOR and 170 in monochrome illustrate the 15 engrossing chapters of high adventure and practical information.

Maroon-and-gray covers, 7" x 10¾". Because first cost was borne by the NATIONAL GEOGRAPHIC MAGAZINE, this superb volume is only $6.50 in U. S. & Poss.; elsewhere, $6.75, U. S. funds. Postpaid.

**STALKING BIRDS WITH COLOR CAMERA**—A revolution in wildlife illustration! In 189 pages of NATURAL COLOR there are 331 photographs, many in full-page size. Most of them were taken within arm's reach of the wild subjects. They include 1/5000-second flash pictures in color catching minute details of bird flight.

Edited by Dr. Gilbert Grosvenor, this beautiful 328-page book is a result of Dr. Arthur A. Allen's many years of ornithological research and expeditions, sponsored in great part by the National Geographic Society. Not just another "bird guide," it is a treasure of "inside information" on our feathered neighbors, pictured in their natural habitat.

As first cost was borne by The Magazine, *Stalking Birds with Color Camera* is moderately priced at $7.50 in U. S. & Poss.; elsewhere, $7.75 in U. S. funds. Postpaid. Rich green covers, 7" x 10¾".

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Enclosed please find $_____ for which send me:

_____ copies of "The Book of Fishes" ($6.50 in U. S. & Poss.; elsewhere, $6.75 in U. S. funds. Postpaid).

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IN THE

# NATIONAL GEOGRAPHIC SOCIETY

* *The Membership Dues, Which Are for the Calendar Year, Include Subscription to the National Geographic Magazine*

*To the Secretary, National Geographic Society,*
*Sixteenth and M Streets Northwest, Washington 6, D. C.:* _____ *1953*

*I nominate* _____
PRINT NAME OF NOMINEE

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(This information is important for the records)

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_____ *for membership in The Society.*

*Name of nominating member* _____
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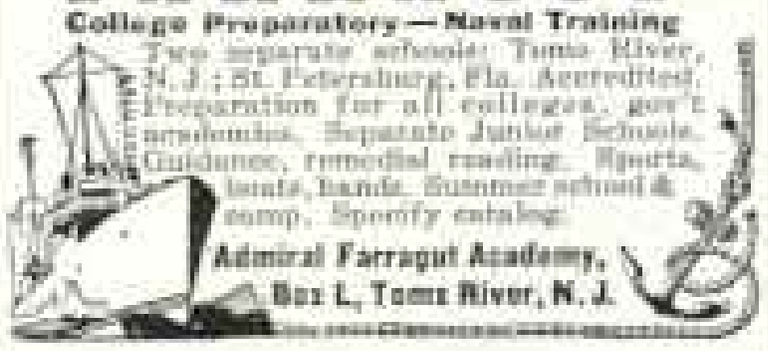

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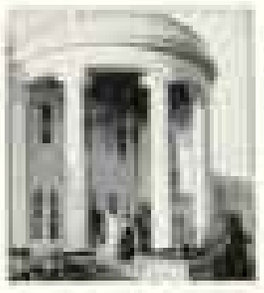

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