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NATIONAL GEOGRAPHIC

Feeding time for a cormorant in a San Diego aquarium

OFFICIAL JOURNAL OF THE NATIONAL GEOGRAPHIC SOCIETY WASHINGTON, D.C.

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COVER: Hungry cormorant dives for a fish dinner at Sea World in San Diego (pages 138-9).

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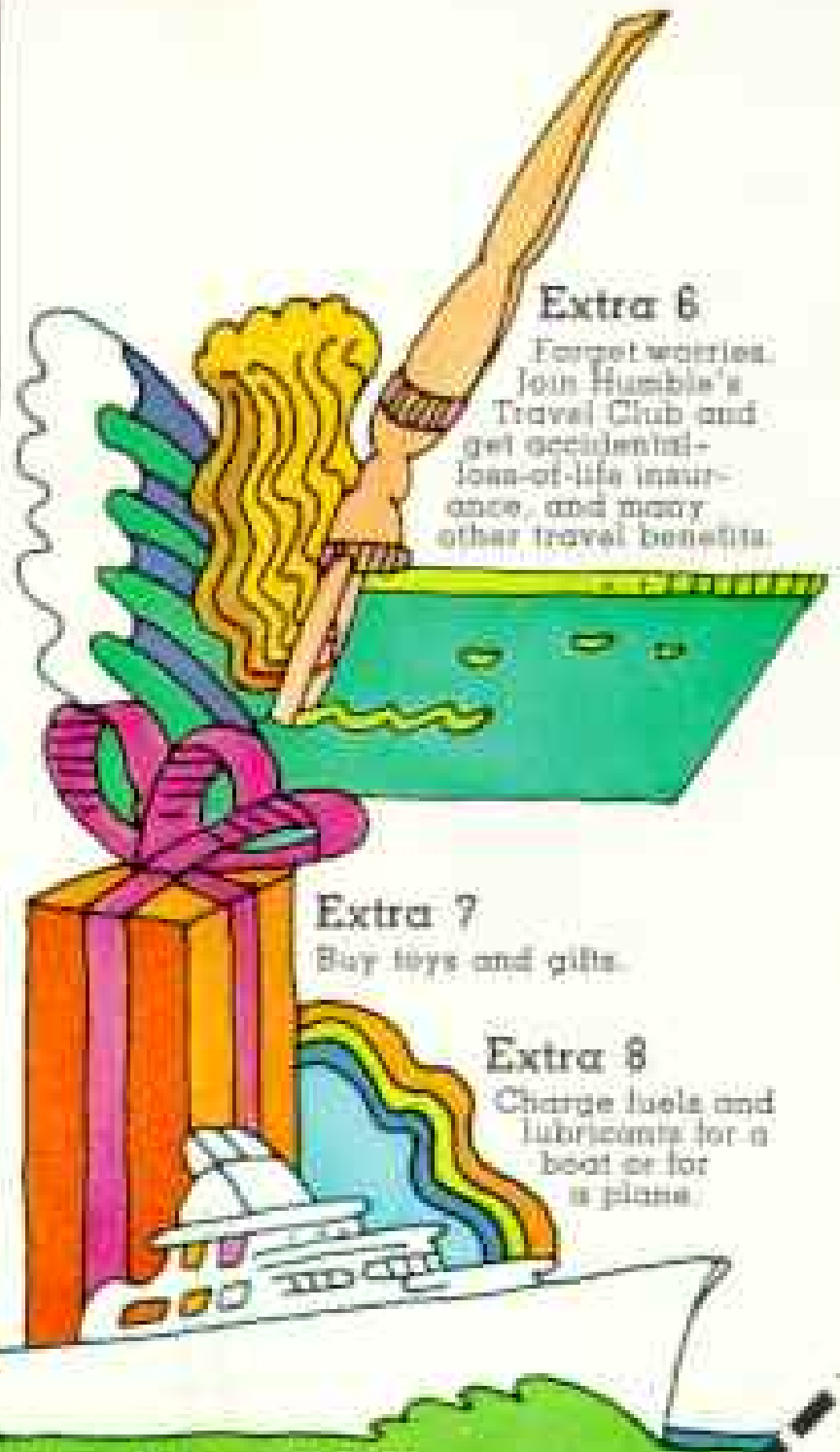

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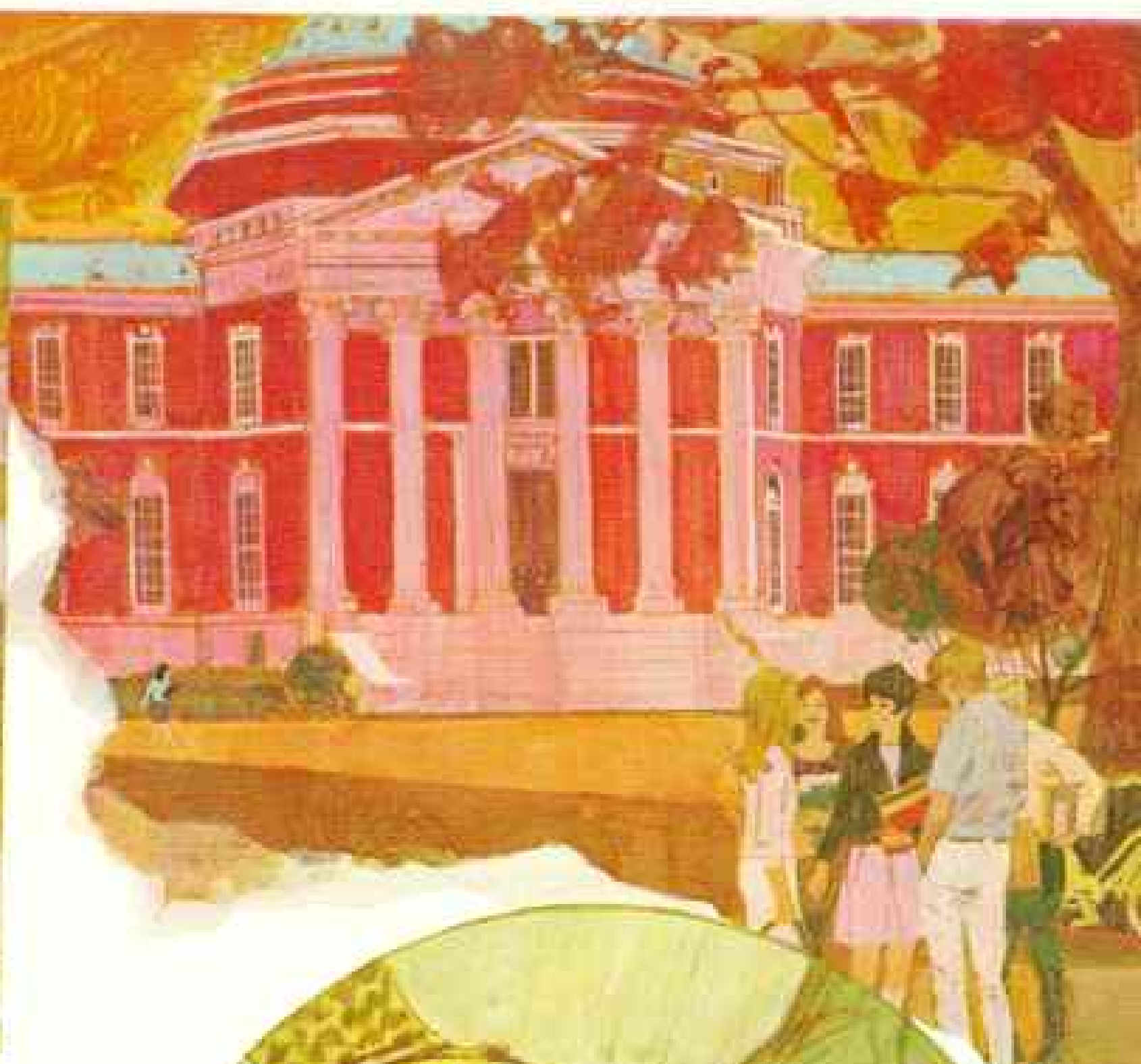

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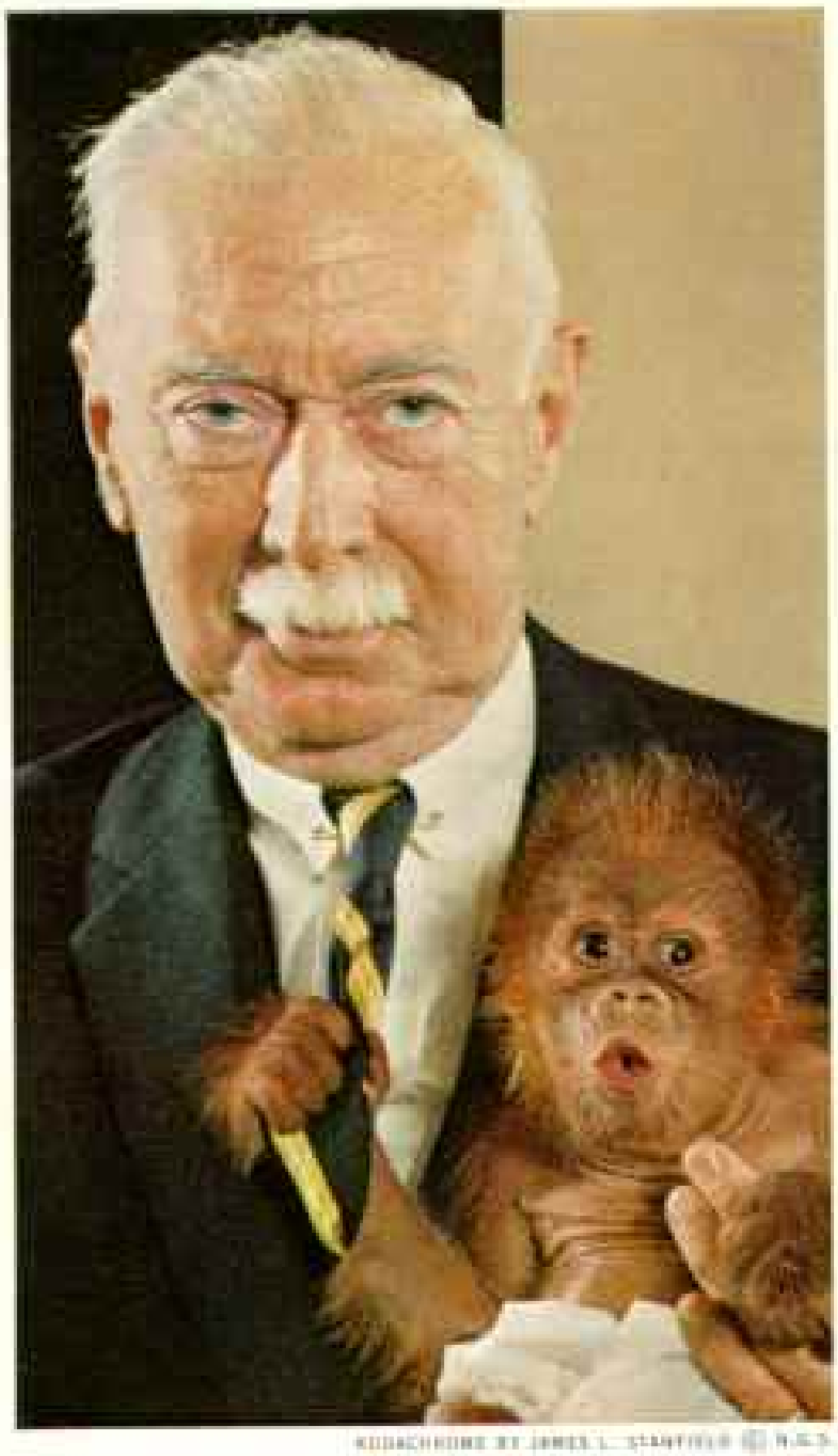

DR. LEONARD CARMICHAEL AND FRIEND

The National Geographic Society's Vice President for Research and Exploration risks a wrinkled tie to comfort diaper-clad Manis—an orangutan born this spring at the National Zoological Park in Washington, D. C. Dr. Carmichael, former Secretary of the Smithsonian Institution and last year President of the International Primatological Society, has been a lifelong student of young mammals.

The proper study of mankind is . . . practically everything

LITTLE MANIS, whose name means "beautiful" in Indonesian, gazes at the world in wide-eyed wonder from a secure haven, the arms of a man who says that some of his best friends are anthropoids. Chimpanzees, gorillas, orangutans, gibbons—Dr. Carmichael finds their conduct fascinating, especially when compared with that of another primate, man. A world-renowned psychologist and former President of Tufts University, Dr. Carmichael has devoted much of a distinguished career to studies of human and animal behavior.

Twelve years ago when Dr. Carmichael became a member of the National Geographic Society's Committee for Research and Exploration, the Society had sponsored 160 explorations and research projects. Today, under his chairmanship of the committee, that number has grown to more than 500.

Society-sponsored scientists have charted the heavens and explored the ocean floor. They have added new pieces to the jigsaw puzzle of human prehistory and brought aspects of the world of archeology and biology into clearer focus.

Consider just the field of primatology. Do you recall Baroness van Lawick-Goodall's fascinating studies of the wild chimpanzee? And remember Snowflake, the unique white gorilla, discovered during a Society-backed study of the lowland gorilla of West Africa? The proper study of mankind is more than just man.

As a member of the National Geographic Society, you have supported the increase and diffusion of knowledge, for part of your annual dues goes to finance these scientific projects. Expansion of the work can come about only with increased membership, and you can help by nominating a friend on the blank below.

A Summer Remittance reminder is on its way to you. Early payment of dues helps the Society avoid a year-end rush in renewal of memberships, keeping costs down and dues low.

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In a city famous for its pretty girls, she's most beloved of all

Copenhagen's lovely Little Mermaid, perched gracefully on her rock at the harbor shore, was created in bronze by sculptor Edvard Eriksen. The fairy-tale heroine sent all of Copenhagen into mourning and nearly created an international furor when she was decapitated by vandals in 1964. Not until a new head was skillfully cast from the original 1913 mold and fitted to her slim figure was the city restored to its normal good appetite and spirits.

Copenhagen is indeed world famous for both food and fun. One Dane, a multimillionaire industrialist who commutes to work in his sailboat each day, told a NATIONAL GEOGRAPHIC staff writer that "if the warrior-bishop Absalon hadn't founded Copenhagen in the 12th century, the place would have been invented by Hans Christian Andersen or Walt Disney."

But a hard-working city it is, too. The Danes' centuries-old love affair with the sea has made Copenhagen a booming port. With its 25 miles of quays, its busy merchant fleet, and its great marine-engine and shipbuilding complex, it is first in Scandinavia.

Danish beer, meat, and dairy products whet jaded appetites throughout the civilized world.

Danish craftsmen and designers, working in precious metals and rich teakwood, have become silversmiths and cabinet-makers to the world. Their clean, bold lines typify the best of 20th-century design.

But over all of this industry hover the lighthearted spirits of Hans Christian Andersen, immortal storyteller, and of good King Christian IV, 17th-century master-builder. From King Christian's vision came much of central Copenhagen's rich beauty—classic structures with graceful arched doorways, elegant towers and spires soaring above wide plazas, and the Stock Exchange, with its fanciful tower formed by the entwined tails of four copper dragons.

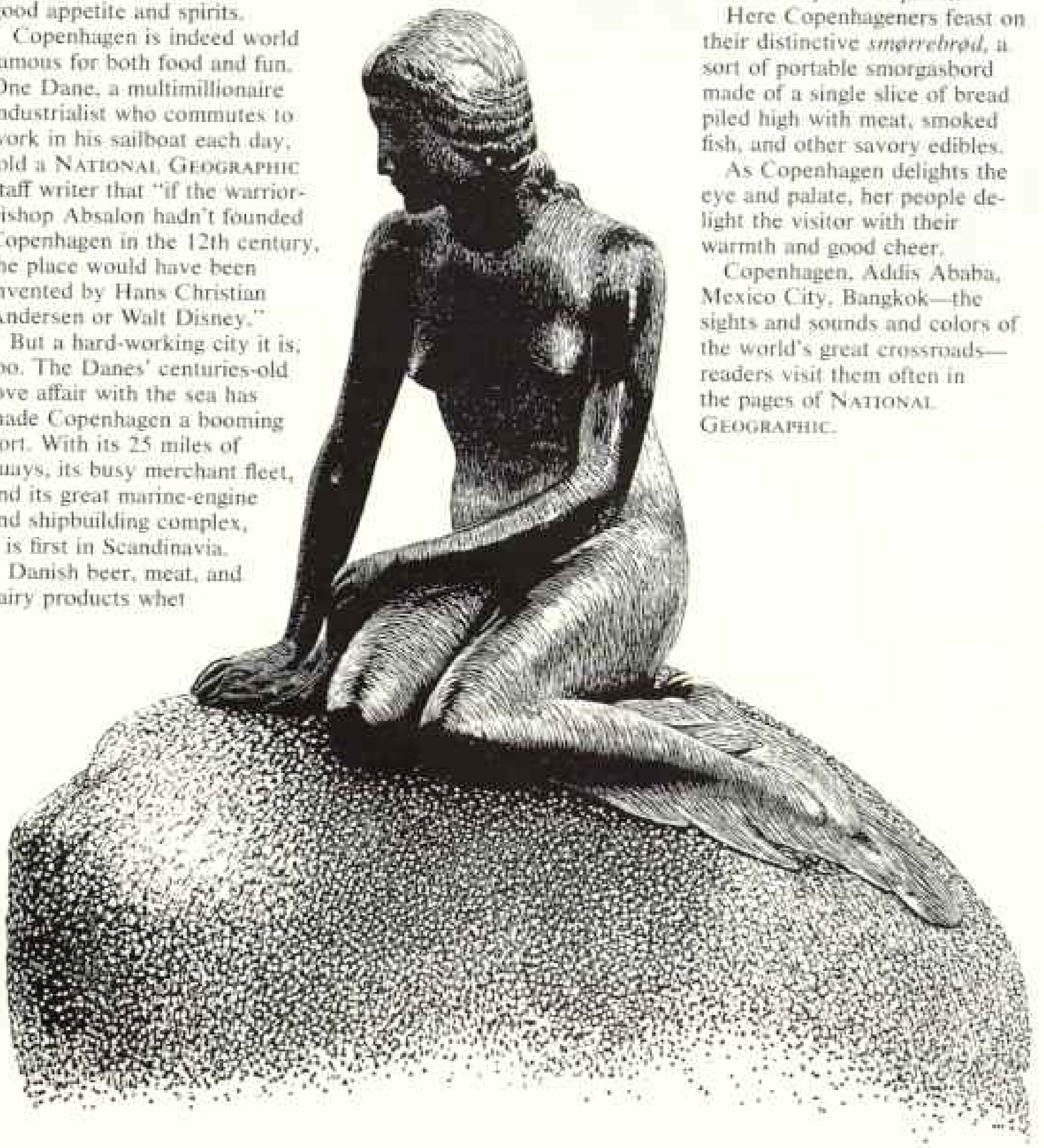
Tivoli, best known and very possibly best of Europe's amusement parks, is certainly in the spirit of the great king.

A glittering 20-acre fairyland of light, Tivoli is a mid-city magnet for gourmets and concert-goers, young or old, king or commoner. Its restaurants, theaters, concert halls, playgrounds, fun house, and fireworks displays have enchanted more than 150 million people in a century and a quarter.

Here Copenhageners feast on their distinctive *smørrebrød*, a sort of portable smorgasbord made of a single slice of bread piled high with meat, smoked fish, and other savory edibles.

As Copenhagen delights the eye and palate, her people delight the visitor with their warmth and good cheer.

Copenhagen, Addis Ababa, Mexico City, Bangkok—the sights and sounds and colors of the world's great crossroads—readers visit them often in the pages of NATIONAL GEOGRAPHIC.

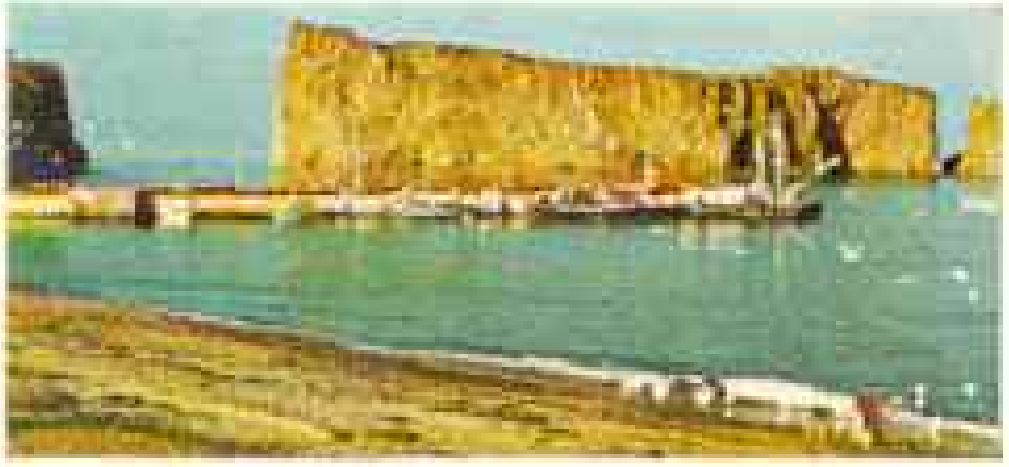


FOR A VACATION THAT IS REALLY DIFFERENT

North America's most "continental" city, Québec, overlooks the broad, blue expanse of the Saint-Laurent River.

The changing of the guard at the Citadel in Québec City is a colourful ceremony.

Val-Jalbert Falls, the main attraction of a provincial park in the Lac Saint-Jean area.



Percé Rock, at the tip of the Gaspé Peninsula, is a world-famous landmark.

Shopping for handicrafts in *la belle province* is an adventure in the unusual.

Cooking is an art in French Canada, a feast for the eye and for the palate.

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It's not too late to take a summer holiday in Bermuda. Ask your Travel Agent or write Bermuda, 610 Fifth Avenue, New York 10020. 6 North Michigan Avenue, Chicago 60602.

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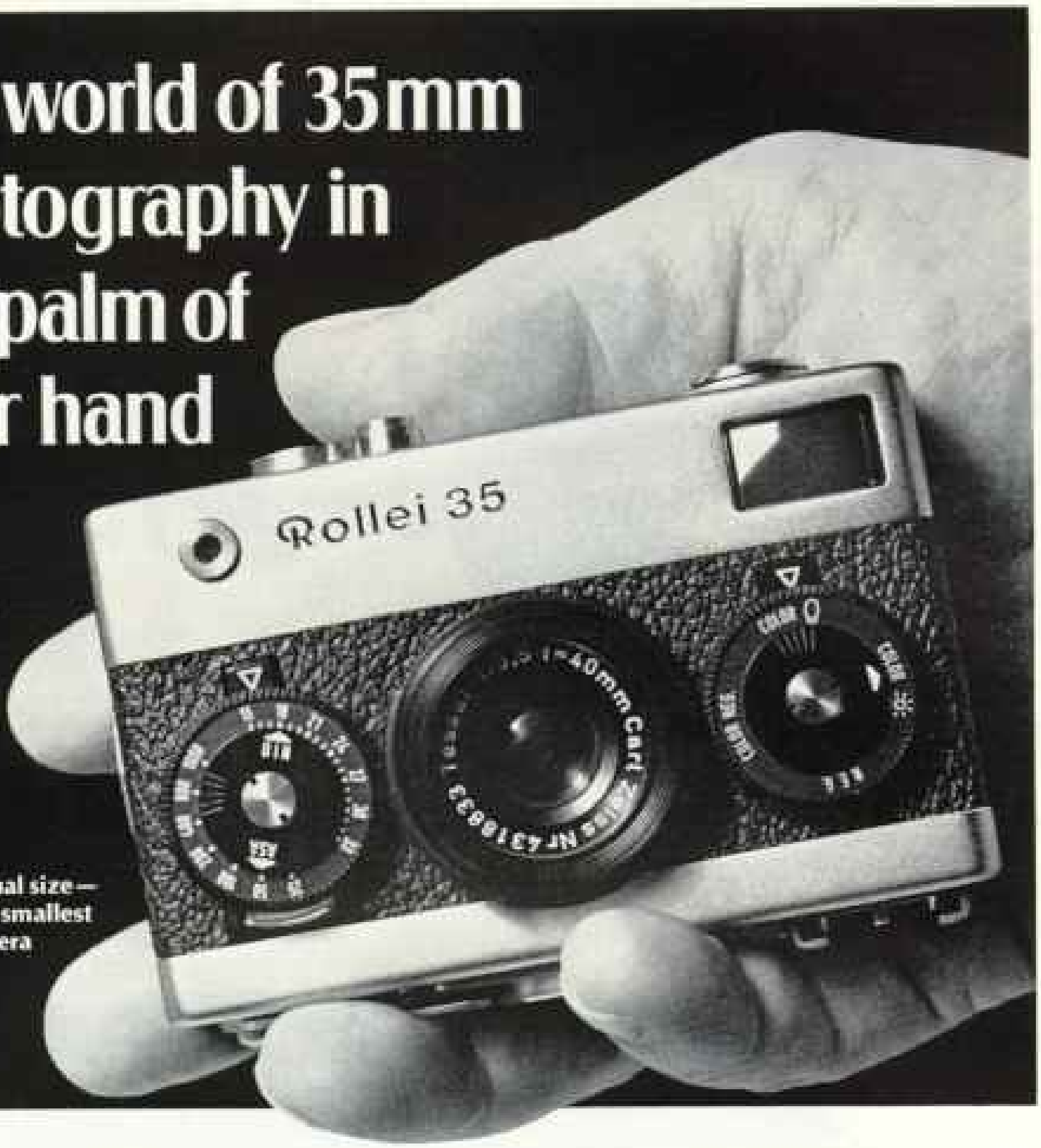

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July 1969

NATIONAL GEOGRAPHIC

"...and I've always loved my country"

The Eisenhower Story

EISENHOWER IN SEOUL, KOREA, JUNE 1960
PHOTOGRAPH BY HENRY BURROUGHS, MAGNUM

THIS INCREASE of power from the mere musket and the little cannon all the way to the hydrogen bomb in a single lifetime is indicative of things that happened to us.

DWIGHT D. EISENHOWER
TELEVISED SPEECH, APRIL 5, 1954

Weighted with years, with honors, and with glory, General of the Army Dwight David Eisenhower died quietly in Washington, D. C., on March 28, 1969.

When the last captain and the last king had departed the solemn funeral services in the Nation's Capital, a train bore the mortal remains of the 34th President of the United States to his beloved Abilene, Kansas. There, in a limestone chapel on the grounds of the Eisenhower Center, he sleeps beside his first-born son, Doud Dwight, whose death from scarlet fever at the age of 3 in 1921 he always remembered as "the greatest disappointment and disaster" in his life.

Just across Southeast Fourth Street from the mausoleum stands the plain white clapboard home of Dwight Eisenhower's childhood. Close by, pupils of Lincoln School swarm onto their playground twice a day at recess to romp beneath the piercing blue of the prairie sky. Occasionally a boy or a girl will glance at the soaring steeple of the chapel, but for the children the mausoleum is an everyday sight that excites neither awe nor grief. Like their elders, they see it merely as the final resting place of a fellow townsman who, long away, has at last come home.

By HOWARD LA FAY
National Geographic Staff

In years, the life of that fellow townsman spanned some three generations; in history, it bridged an era. In 1890, when he was born, Indian warfare still threatened; American life, politics, and economics focused on the family farm; livestock outnumbered people in the Nation by three to one.

In the year of Dwight Eisenhower's death, that same rustic Nation had evolved into the world's most powerful state. The great-grandsons of the frontier farmers of Eisenhower's youth—strangers now to the slap of harness and the smell of silage—were probing the solar system with huge, sleek rockets.

General Eisenhower's long and fruitful life personified all the paradox and promise of the American Dream. An indifferent student, he came to preside over a great university; almost denied a commission as second lieutenant in the U. S. Army, he commanded the mightiest invasion force in history; son of a bankrupt, he became President of the United States.

I THINK for any American who had the great and priceless privilege of being raised in a small town, there remains always with him nostalgic memories. . . . And the older he grows the more he senses what he owed to the simple honesty, the neighborliness, the integrity that he saw all around him. . . .

DWIGHT D. EISENHOWER
TO THE NATIONAL EDITORIAL ASSOCIATION,
JUNE 22, 1954

Denison, in northeastern Texas near the Oklahoma border, was and is a railroad town. Founded in 1872 when the new tracks of the Missouri-Kansas-Texas (Katy) Railroad made it a springboard for cattle shipments to eastern markets,

"**Nothing less than full victory.**" On the eve of the D-Day invasion of Europe (June 6, 1944) the Supreme Commander hammers home the momentous order of the day to taut-nerved U. S. paratroopers in southern England. Their faces blackened for a predawn landing, the men wear the "Screaming Eagle" emblem of the 101st Airborne Division on their shoulders. A few hours later they took off for a parachute and glider assault behind Utah Beach on France's Cherbourg peninsula (map, page 17).

Ike had a special concern for these men, for he sent them on their bold mission despite a warning by British Air Chief Marshal Leigh-Mallory that they might suffer 70 percent casualties. When actual losses ran less than 20 percent, Leigh-Mallory called to express regret for a pessimism that added to Ike's "personal burdens during the final tense days before D-Day."

"I come from the very heart of America"

GUILDHALL ADDRESS, LONDON, 1945

FIRST WHISTLE STOP on the road to fame, this modest frame house in Denison, Texas (above), now a memorial open to the public, saw the birth of Dwight David Eisenhower on October 14, 1890. Growing up in Abilene, Kansas, he lived the robust life of a prairie youngster—camping (right, forefront) along a wooded creek with friends, roughhousing with five brothers, helping with family chores while earning money on the side, and learning a stern but compassionate rural ethic—all a part of "the great and priceless privilege of being raised in a small town," as Ike wrote.

He dreamed of becoming a railroad engineer, "arriving in Abilene, steam engine hissing, bell ringing." Instead, he went to West Point—after narrowly missing an appointment to Annapolis because of the age limit. More athletic than scholarly, the wiry lad was hailed as a potential All-American halfback (left) until a knee injury in his sophomore year ended his football career.

EISENHOWER LIBRARY (ABOVE); PHOTOWORLD, INC. (OPPOSITE, LOWER); ROCKWELL BY ROBERT R. RAYSEN © S.E.P.

Denison helped short-cut—and doom—the historic old Chisholm Trail that led north from Texas through the Indian Territory of Oklahoma to Kansas.

Sometime in the late 1880's—family records are vague on the exact year—an itinerant young mechanic named David Eisenhower drifted into northern Texas in search of work. He was joined later by his wife Ida and two baby sons.

Member of a prosperous farm family, David—who hated the soil—had invested and lost his patrimony in a general store near Abilene, in Dickinson County. To pay his debts, he took work as an engine wiper, following jobs from one Texas rail town to another. October 1890 found David Eisenhower working in Denison.

On the 14th of that month, in a small rented house hard by the Katy tracks (opposite, upper), Mrs. Eisenhower gave birth to a third son, christened David Dwight. Later, to avoid the confusion of having two Davids—father and son—in the same family, the child's name was inverted to Dwight David.

About a year after Dwight's birth, David Eisenhower returned with his family to Kansas, to take a job in Abilene's Belle Springs Creamery. His father, Jacob Eisenhower, had left the Pennsylvania Dutch country to settle near Abilene in 1878. He had come with a devout band called the River Brethren—now known as Brethren in Christ—who lived and dressed simply in the tradition of Pennsylvania's Plain People.

Rollicking Years as Cow Town

Abilene, toward the turn of the century, had survived a checkered history. It was laid out on the banks of Mud Creek in 1860, and the wife of its first settler christened it Abilene—a name she found in the third chapter of the Gospel of Luke—in the belief that it meant "city of the plains."

Commerce—and to a greater extent, sin—soon overwhelmed the piety of the name's

origin. In May 1867 a new railroad, soon to be known as the Kansas Pacific, extended its tracks to Abilene, and by September cowboys were driving herds of longhorns from Texas to market them by rail. For a hectic five years the devout inhabitants suffered a plague of trail-weary cowhands who sought strenuous amusement at the Drovers Cottage and the Alamo Saloon. Drunkenness and licentiousness reigned. Marshals like "Wild Bill" Hickok—still a local hero—frequently employed violence of their own to keep the peace.

Then other towns replaced Abilene as the Southwest's pivotal railhead, and the brutal tumult ended as abruptly as it had begun. In the ensuing calm, the Kansas town grew quietly and solidly into a typical Midwestern county seat—the pleasant, tree-shaded agricultural center of Dwight Eisenhower's formative years.

Golden Age in Abilene

The passage of more than half a century has wrought few changes in Abilene. Huge grain elevators flank the town like sentinels—stark against the scudding prairie clouds. Where the neat frame houses end, the rich farmland begins, rolling from horizon to horizon. Religion still dominates community life, as it did in Ike's boyhood. One minister says proudly, "Abilene is the only town I know that has more churches than gas stations."

"In the case of Dwight Eisenhower," a historian has explained, "the influence of Abilene can't be overemphasized. Ike grew up in a kind of golden age. From 1900 to 1917, towns such as this represented the most stable and vital element in American life. The virtues cultivated by townsfolk—industry, thrift, independence—shaped his entire philosophy."

The future President bore the stamp of Abilene throughout his life, just as another small-town boy, Mark Twain, bore that of Hannibal, Missouri, through a long and illustrious literary career.

The first thing that strikes a visitor to Abilene is the location of the Eisenhower home—preserved now as a shrine. The President and his parents lived, literally, on the wrong side of the tracks. Then, as now, the Union Pacific roadbed split Abilene socially and economically. To the north lay the principal streets, the shops, the opulent dwellings. South of the tracks—and the Eisenhowers lived on Southeast Fourth Street—lay smaller, plainer houses and open fields.

Not long ago a reporter, in Abilene seeking friends who might have known the general in his youth, was told not to bother visiting one high-school classmate. "He lived on the north side," a local informant explained. "He wouldn't have been a friend of Ike's."

For the Eisenhower children—seven boys, of

EASTERHOME BY PAUL SARKIS, WIDE WORLD LABORATORY, U.S. ARMY

"I've always loved my wife..."

FROM LAST WORDS, MARCH 28, 1969

SAUCY, BLUE-EYED BELLE from Denver and the ramrod-straight West Pointer (right) met late in 1915 at Fort Sam Houston in San Antonio, Texas, Ike's first post after graduation. On July 1, 1916, Mamie Geneva Doud and the young lieutenant repeated marriage vows that would hold strong and true for more than half a century. Numbing tragedy struck in 1921 when their first-born, Doud Dwight, died in infancy. A second son, John, was born the following year. He graduated from West Point, served under his father's command in World War II, and is now Ambassador to Belgium.

The Eisenhowers knew many homes and many separations, as Army life kept Ike moving from one assignment to another. Not until the twilight of their years—after the vicissitudes and victories of World War II and the Presidency—would they establish permanent residence in their own home, the beloved farm at Gettysburg, Pennsylvania, where they quietly celebrated Ike's 73d birthday in 1963 (above).

"I thank you... humbly for your teachings"

TO CITIZENS OF ABILENE, JUNE 4, 1952

IN A WHITE FRAME HOUSE on a dusty street of a prairie town, David and Ida Eisenhower (seated at right) reared and shaped the character of six strapping boys. As Ike wrote: "Father was the breadwinner. Supreme Court, and Lord High Executioner. Mother was tutor and manager of our household. . . . According to her, each of us should behave properly not because of the fear of punishment but because it was the right thing to do." Despite their strict discipline, the parents did not interfere with their sons' life plans—though peace-loving Ida wept when Ike left to attend West Point.

The family formula of hard work, frugality, self-reliance, and diligence produced, from left, a pharmacist, Roy; a banker, Arthur; an engineer, Earl; a lawyer, Edgar; a university executive, Milton; and an American military chief and President—here in 1926 portrayed early in their careers.

At another reunion in 1945, after Eisenhower's triumphant return from Europe, a reporter asked Ike's mother, then 83 (above), "What do you think of your son?" She responded, beaming with pride, "Which one?"

whom six survived infancy—life in Abilene possessed a certain idyllic quality. True, they had little money; David Eisenhower had signed on at the Belle Springs Creamery for an annual salary of $380. Dwight had to share a tiny bedroom with his brother Edgar; as infants, the children slept in the drawers of a highboy.

"But they were such a happy family," recalls Mrs. Ray Etherington, a first cousin and frequent visitor. "Uncle Dave and Aunt Ida studied the Bible intensively, and all the boys read it from cover to cover, taking little exams on each chapter. With her dowry, Dwight's mother had bought a piano, and she gave her sons lessons on it.

"Aunt Ida never had a daughter, so the

boys pitched in with the housework. They made beds, and they even cooked. Their specialty used to be something we called 'pudding meat and mush'—ground pork and beef and liver fried with cornmeal mush. Every blessed one of them loved it."

Ike the Boy "Fun to Be With"

Dwight's youth passed in a kaleidoscope of chores and studies and sports. He brought in kindling, helped with the cow and chickens and garden in the 3½-acre backyard, attended Sunday School at the austere white River Brethren church that still stands on Buckeye Avenue, struggled with algebra, and played end on the high-school football team. Two passions gripped him, history and baseball. By turns, he studied the exploits of his heroes —Hannibal and George Washington—and dreamed of major-league glory.

"Ike was one of the most popular boys I ever knew," says a childhood companion. "He had this incredible grin, and a big, hearty laugh. It was fun to be with him."

Dwight was particularly close to his brother Edgar, almost two years his senior. Illness had held Edgar back, and the two boys finished high school in the same class and played together on the various varsity teams.

Edgar and Dwight graduated from Abilene High School in 1909, and the class prophecy in the yearbook contains an eerie near-miss. "All of a sudden," wrote classmate Cecilia Curry in *The Helianthus*, as she purportedly

PHOTOGRAPH BY JOHN S. D. EISENHOWER

While the drums of war crescendoed in Europe in the late 1930's, Lieutenant Colonel Eisenhower served in the Philippines, which were being groomed for independence. His task, as senior military assistant to Gen. Douglas MacArthur (page 12), was to help organize the defense of these islands. "Duty with troops was my first desire," he later wrote, but he performed his staff duties with great effectiveness.

While building a Philippine air force, Ike took flying lessons (above). "Because I was learning to fly at the age of 46, my reflexes were slower than those of the younger men. But it was fun. . . ."

Back in the States in 1938, Eisenhower appealed for more aid to the Philippines, convinced that the islands would play a key role in the event of an Asian war.

A visit to Denver (below) finds Ike at the controls of one of the Doud family's cars, a vintage 1914 Rauch and Lang electric.

read a newspaper of the future, "I recognized the name Eisenhower. 'If Eisenhower is elected president this year it will make the third term.' Then I sat wondering if Edgar really would take the chair the third time."

And Dwight? "I hear about all the great men. . . . He is professor of history in Yale."

FROM THE FIRST DAY at West Point, and any number of times thereafter, I often asked myself: What am I doing here? Like the other young men, I sometimes wondered—where did I come from, by what route and why; by what chance arrangement of fate did I come by this uniform?

DWIGHT D. EISENHOWER
At Ease, CHAPTER 1*

In their genteel poverty, the Eisenhower boys had come to appreciate that only education could raise their status. Edgar and Dwight struck a bargain: As the elder, Ed would matriculate at the University of Michigan, while Dwight worked to help pay his way. After a year or two, Ed would reciprocate by financing Dwight's higher education.

For two years Dwight—"Ike" as he was then definitively branded—toiled at a succession of jobs. For several months he labored 12 hours a night, seven nights a week, lugging 300-pound blocks of ice in the creamery. He started at a dime an hour and worked his way up to a quarter. One entry in the creamery account books docked him 20 cents for ice cream eaten on the job.

Suddenly fate intervened. A friend told Ike of the free education offered by the service academies at West Point and Annapolis. He immediately applied to his Senator, Joseph L. Bristow, a Teddy Roosevelt Republican. Bristow bestowed appointments by means of competitive examinations; after weeks of intensive study, Ike took both exams.

He scored first for Annapolis, second for West Point. Although hoping for a career in the Navy, he found that at 20 years he was beyond the age limit set by the Naval Academy. Ike therefore happily settled for West Point when the winner of that examination failed to meet the physical requirements. Meanwhile Ed worked as a waiter in a university dining hall at Ann Arbor, a job that would defray his expenses.

Dwight's departure for the Military Academy induced a small domestic crisis. Both his mother and his father had become converts to a religious sect called Bible Students, or Millennial Dawn, and shared a passionate pacifism. Indeed, during World War I, while Dwight served in the United States Army, his mother—despite threats of arrest—distributed pacifist tracts on the streets of Abilene. Neither parent, however, elected to stand between their son and his chosen education. But Dwight's younger brother Milton recalls that, on the day Ike left for West Point, he saw his mother—ever a strong and joyous woman—cry for the first time.

At the Military Academy, the young man from Abilene was not a model cadet. He gave his books their due—no more—and devoted his leisure to athletics and, most profitably, to poker. Indifferent to innumerable regulations governing conduct and dress—"After all, I've never been able to set any hat exactly straight on my head"—he collected a plethora of demerits. Although he had earned sergeant's chevrons in the Corps of Cadets, his infractions caused him to graduate with "a clean sleeve"—no rank.

The class of 1915, Ike's class, has become a West Point legend. From its graduates came 59 generals—an Academy record—including, in Eisenhower and Omar Bradley, two of the nine men who have attained five-star rank in all our national history.

Academically, Ike placed 61st in his class of 164; in discipline, he ranked 125th. Remembering his own many hours of walking punishment tours, General Eisenhower, when revisiting West Point in 1957 for a ceremony, declared a presidential amnesty for all minor offenders.

Ike played briefly with the varsity football team (page 4)—long enough to suffer a leg injury, later aggravated by a riding mishap, that jeopardized his chances of being commissioned. Only his promise never to seek service with mounted troops persuaded the Academy medical officer—after much reflection—to recommend him for a commission.

THERE ARE a good many dissenters, I'm sure, but the American Army, in my experience, has a substantial respect for the latent potential in every man.

DWIGHT D. EISENHOWER
At Ease, CHAPTER X

Two events early in the Army career of Dwight Eisenhower radically altered his life. In October 1915, while serving as a second

**At Ease: Stories I Tell to Friends*, Doubleday & Company, Inc., Garden City, New York, 1967.

MARCH OF TIME

lieutenant at Fort Sam Houston, Texas, he made the acquaintance of a young visitor from Denver, Mamie Geneva Doud (page 7). The following July he married her. A year later the United States entered World War I.

With the declaration of war, Eisenhower, now a captain, was assigned to train new troops. Eventually he assumed command of Camp Colt at Gettysburg, Pennsylvania, where he supervised the instruction of some 600 officers and 9,000 men. Gettysburg, with its rolling fields and poignant memories of the Civil War, so impressed Eisenhower that 32 years later he bought a farm there.

Despite frequent importuning of Washington, Eisenhower never managed a transfer to Europe and the front lines. He did, however, rise meteorically in rank. By the time the war ended in 1918, he wore the silver oak leaves of a lieutenant colonel. The swift contraction of the Army following the Armistice soon reduced him to captain, and not for 18 years did he regain his World War I rank.

Eisenhower regarded his failure to serve overseas as a grave impediment to his future in the Army. He wrote, "I was mad, disappointed, and resented the fact that the war had passed me by."

The interlude between the two wars brought a variety of assignments. From 1922 to 1924 Ike served in Panama—the first of a series of trips abroad that later made him one of the most widely traveled men ever to become President of the United States (map, pages 30-31). In 1926 he was graduated from the Army's Command and General Staff School at Fort Leavenworth, Kansas. No longer the casual student of West Point days, he finished first in his class of 275.

Eisenhower then journeyed throughout France, preparing an official guidebook to World War I battlefields. The year 1933 brought him to the staff of Gen. Douglas MacArthur, U. S. Army Chief of Staff (above). In 1935 MacArthur was appointed Military Adviser to the Philippine Commonwealth. Ike accompanied the general to his new post. In Manila Ike helped draw plans for the defense of the Philippines in the event of attack; although in his middle 40's, he also learned to fly, obtained a pilot's license, and logged 350 hours in the air (page 10).

MacArthur and Eisenhower, the two future heroes, developed a notably chill relationship. A journalist later observed: "Their parting was cool. The general regarded him [Eisenhower] as a good clerk. He regarded the general as an excellent dramatics teacher."

But in the course of these assignments, Eisenhower had caught the eye of one of America's greatest soldiers—the future World War II Chief of Staff, Gen. George C. Marshall.* He and Ike had met only two or three times—in Washington while Ike worked on his battlefield guidebook, in California in 1940, and possibly during the 1941 Louisiana maneuvers—before Pearl Harbor propelled the

*General Marshall served as a member of the Board of Trustees of the National Geographic Society from 1949 until his death in 1959.

On the ladder of high-level command, Ike gained valuable experience soldiering with MacArthur (left). Then, during the massive Louisiana war games in 1941, his brilliance at military planning impressed Chief of Staff Gen. George C. Marshall. Ike at that time was so obscure that an official Signal Corps photo caption identified him as "Lt. Col. D. D. Ersenbeing." In nine months, he catapulted to command of U.S. forces in Europe and in late 1942 headed U.S.-British landings in North Africa, where he and Marshall confer at right.

WIDE WORLD

United States into global war. Yet the younger officer had made so favorable an impression that Marshall entered his name in a notebook listing those he thought capable of high command. Among them: Omar Bradley, Courtney Hodges, George Patton, Mark Clark.

FREEDOM, since the dawn of time, has been a hunger, God-set in the hearts of men. Always and everywhere, even though they may have never experienced it—even though they know its values only in their instincts rather than in their minds—men have sought personal liberty; have fought for it; have died for it.

DWIGHT D. EISENHOWER
AT COLUMBIA UNIVERSITY,
NEW YORK CITY, MAY 31, 1954

When the Japanese bombed Pearl Harbor, Marshall summoned Eisenhower to Washington and outlined the catastrophic condition of U.S. forces in the Pacific. Then, drawing upon the new brigadier general's intimate knowledge of the Philippines, he asked, "What should be our general line of action?"

Eisenhower was granted a few hours to ponder the question. When he returned to Marshall's office, he pointed out that neither troops nor transport were available to reinforce the islands, which would doubtless fall to any major enemy action. Still, from both a moral and strategic standpoint, the United States must do everything possible to defend them. Ike added: "The people of China, of the Philippines, of the Dutch East Indies will be watching us. They may excuse failure but they will not excuse abandonment."

Marshall agreed. "His tone," Eisenhower remembered, "implied that I had been given the problem as a check to an answer he had already reached."

Ike was correct. He had confirmed Marshall's high opinion of his capabilities. Futile though it was, the U.S. began to strengthen Far East defenses. Meanwhile, Ike progressed from one vital assignment to another, always under Marshall's watchful eye.

He rose to major general in March 1942. In June Marshall gave him the chief prize the American Armed Forces could then offer—appointment as Commanding General, European Theater—and, shortly afterward, the third star of a lieutenant general.

I HAVE SEEN the American proved on battlegrounds of Africa and Europe over which armies have been fighting for 2,000 years of recorded history. None of those battlefields has seen a more worthy soldier than the trained American.

DWIGHT D. EISENHOWER
BEFORE JOINT SESSION OF CONGRESS,
JUNE 18, 1945

When General Eisenhower took up his new command in the summer of 1942, Allied fortunes had reached a chaotic ebb. Virtually all of Europe lay in the hands of the Axis Powers. In North Africa Field Marshal Erwin Rommel's Afrika Korps controlled the desert wastes. In the Pacific, Japanese forces—in

Functional in war and peace, barbed wire now serves as a fence for sheep near Kasserine Pass, Tunisia. Eisenhower's forces put it there to stop a drive by Germany's "Desert Fox"—Gen. Erwin Rommel—in February 1943. The wily enemy plunged through the pass and nearly cut Allied defenses in two. It was a dark moment in the first big offensive in which U.S. troops—still green and shaky—took a major part. The Allied line yielded, but then snapped back. Soon GI units such as the Second Battalion, 16th Infantry (left), were hard at Rommel's heels. Allied pincers—an Anglo-American force from the west and the British Eighth Army from the south—closed in May at Tunis, ending the Axis threat in Africa.

U. S. ARMY (OPPOSITE); SOUTHWICK BY ROBERT W. MADDEN © N.G.S.

lightning campaigns—had carved out an empire that stretched from the Aleutians to the Netherlands East Indies (Indonesia). For the Allies, World War II had been an unbroken chronicle of defeat, debacle, and despair.

Yet Allied staffs were already planning massive offensives. The first, named Torch, was launched against North Africa with Eisenhower as commander in chief.

At his headquarters in London's Grosvenor Square, the new commander initiated a seven-day work week for himself and his staff; he frequently labored 18 hours at a stretch. The conference table and the telephone dominated his schedule; a daily average of more than 6,000 calls swamped the Grosvenor Square switchboard.

By November of 1942, the invasion forces were ready. On November 5, a Flying Fortress called *Red Gremlin* droned in a wide circle through the mist that obscured Gibraltar, the western Allies' sole toe hold on the continent of Europe. After an hour, the plane knifed down to land on the small, cluttered airstrip. From it emerged General Eisenhower and his staff—supplemented by a black Scottish terrier puppy called Telek recently acquired by the general as "somebody I can talk to who won't mention the war."

With the initial landings in North Africa

U. S. ARMY

scheduled to span an 800-mile front—from Safi, Morocco, to Algiers (map, opposite)—Ike was forced to direct the operation from the only locale that would provide both secrecy and reliable communications with Washington, London, and his field commanders—a man-made cave in the Rock of Gibraltar.

On the eve of D-Day, the commander in chief drove up a winding road toward Gibraltar's summit to seek out one of the Barbary apes that live there and pat it on the head for good luck. Then he proceeded to his command post, one of the dank chambers cut into the Rock. In the huge, echoing war room close by, a battle map covered one wall, and from somewhere water dripped . . . dripped . . . dripped. Ike labeled the cave "the most dismal setting we occupied during the war."

Outside, the dawn of November 8 broke over the blue Mediterranean. Slowly, reports filtered to the Rock. American troops were entering Algiers without difficulty . . . at Oran the French, resisting bitterly, could not stem the Allied onslaught.

After the successful assault, Eisenhower shifted his staff to Algiers; then, as his troops continued to slash eastward, he tirelessly shuttled between headquarters and the front.

Because of the chronic shortage of aircraft, Ike often flew in "battle-fatigued" bombers unsuitable for combat missions. On one flight across the Atlas Mountains, two of the four engines on his B-17 failed, and a third faltered. The pilot barely managed to get the aircraft safely to Casablanca. Beyond repair, it was scrapped on the spot.

The general avoided wearing combat garb in his visits to forward units. He felt that battle dress was the prerogative of those actually engaging the enemy; he saw himself as essentially a staff officer in a planning role. He did, however, exercise a privilege of rank, and designed a short, natty jacket that came to bear his name.

The progress of Torch was inexorable. In May of 1943 Allied troops finally broke the Axis in Africa. The rubble included 275,000 German and Italian prisoners.

General Eisenhower began to plan the invasion of Sicily well before the final rout in Africa. As a preliminary, he wrested the strategic island of Pantelleria from its Italian garrison. In a discussion preceding the amphibious attack—which followed six days of heavy, relentless aerial bombardment—British Prime Minister Winston Churchill had

With Operation Torch in North Africa a success, General Eisenhower in July 1943 launched Operation Husky against what Prime Minister Winston Churchill called "the soft underbelly of the Axis." This included invasions of Sicily and Sardinia, plus landings on the Italian boot itself. Husky's main purpose, Ike later wrote, was "pinning down German forces far from the region of the major assault that was to take place the following year across the English Channel." Code-named Operation Overlord, the latter plan had been taking shape since early 1942. Combined with Operation Dragoon, knifing up from southern France, it would—the Allies hoped—slice to the heart of Germany and end the war in Europe.

An optimistic President Franklin Delano Roosevelt and his commanding general (left) inspect an air base in Sicily in December 1943. Roosevelt, a short time before, had casually remarked, "Well, Ike, you are going to command Overlord!"

estimated the strength of the defenders at 3,000 men, Eisenhower at 11,000.

Churchill promised to pay the general a French centime for every man beyond 3,000 on the island. At the sight of Allied troops sweeping toward shore, the Pantelleria garrison surrendered—11,000 strong. The Prime Minister promptly remitted 8,000 centimes (about $1.60) with an offer to buy at the same rate all the Italian troops Ike could capture.

On July 8 the commander in chief flew to Malta* to direct the invasion of Sicily. Near the city of Valletta he once again moved into a cave—part of an underground and surface headquarters shared with the British.

Pre-battle tension knotting his stomach like "a clenched fist," Eisenhower spent the night in his underground command post. With morning came the report that the assault had thoroughly surprised the enemy. In 39 days all of Sicily passed under Allied control.

Disillusioned, the Italian people forced Fascist dictator Benito Mussolini out of office and capitulated to the Allies. Although German troops continued to wage a tenacious struggle the length of the peninsula, and Mussolini even regrouped his supporters in an ill-starred Fascist republic in northern Italy, the fall of Sicily effectively knocked the southern component of the Rome-Berlin Axis out of the war.

Exploiting the Sicilian victory, Eisenhower swiftly struck at Italy proper, but he had scant opportunity to savor the success of his Italian campaign. As 1943 waned, he joined President Franklin D. Roosevelt and Prime Minister Churchill for a meeting at Cairo. High on the agenda was the preeminent Allied venture of the war—the cross-Channel invasion of France, now labeled Overlord. As the conference ended, General Marshall sent his protégé a fateful scrap of paper as a memento. It read:

"From the President to Marshal Stalin

"The immediate appointment of General Eisenhower to command of Overlord operation has been decided upon. Roosevelt."

ONE HUNDRED seventy-five years ago, the founding fathers of the American Republic declared their independence of the British crown. Little could they have known—in the heat and bitterness of the hour—that the severance, accomplished in

*See "Democracy's Fortress, Unsinkable Malta," by Ernle Bradford, GEOGRAPHIC, June 1969.

passion, would through the years flower into an alliance of such fitness and worth that it was never recorded on legal parchment, but in the hearts of our two peoples.

DWIGHT D. EISENHOWER
BEFORE THE ENGLISH-SPEAKING UNION,
LONDON, JULY 3, 1951

Once more in England—and deprived of his beloved Scottie, Telek, by Britain's rigid six-month quarantine on incoming pets—the Supreme Commander addressed himself to perfecting the details of Overlord. From Telegraph Cottage, his small, ill-heated billet, he commuted to his headquarters at Bushy Park, Teddington.

Inside the main building of the headquarters compound, the general worked in an office decorated with the flags of the Allied

"**Unity and strategy** were the only reigning spirits," Churchill wrote of the Supreme Commander. Here Eisenhower presides over the battle leaders of two nations as they meet in London early in 1944 to plan the invasion of Hitler's Fortress Europe. Ike's success in winning their loyalty earned the Churchillian accolade—a "creative, constructing, and combining genius."

From left, Lt. Gen. Omar Bradley, U. S. Forces Commander; Adm. Sir Bertram Ramsay, Allied Sea Commander; Britain's Air Chief Marshal Sir Arthur

nations. A cluster of telephones on his desk provided instant communication with high personages in London and Washington, as well as with military units throughout his command in the British Isles and North Africa. A great globe stood beside the general's walnut desk. From the office a door led to his personal air-raid shelter.

After studying the preliminary plan, Eisenhower raised the strength of Overlord's assault force from three divisions to five. He begged Washington for more landing craft, more airplanes. Above all, the new Supreme Commander brooded upon the dismal fate of joint military operations of the past. Historically, the internal hostilities generated by coalitions had produced failures. Eisenhower determined from the outset that the Anglo-American forces scheduled to assault *Festung Europa*—Fortress Europe—would become a band of brothers. He had set himself no easy task.

BRITISH INFORMATION, IMPERIAL WAR MUSEUM

Tedder, Deputy Supreme Commander; General Eisenhower; Gen. Sir Bernard Montgomery, Commander of Allied Land Forces; Air Chief Marshal Sir Trafford Leigh-Mallory, Air Commander-in-Chief; and Lt. Gen. W. Bedell Smith, U.S. Army, Chief of Staff.

Furtively his generals sniped at each other—and at the Supreme Commander—with depressing regularity. British Field Marshal Sir Alan Brooke, Chief of the Imperial General Staff, complained to his diary that "Ike is incapable of running a land battle. . . ." Field Marshal Sir Bernard Montgomery, often a troublesome subordinate, privately agreed with Brooke that "Ike was no commander, that he had no strategic vision, was incapable of making a plan or of running operations when started."

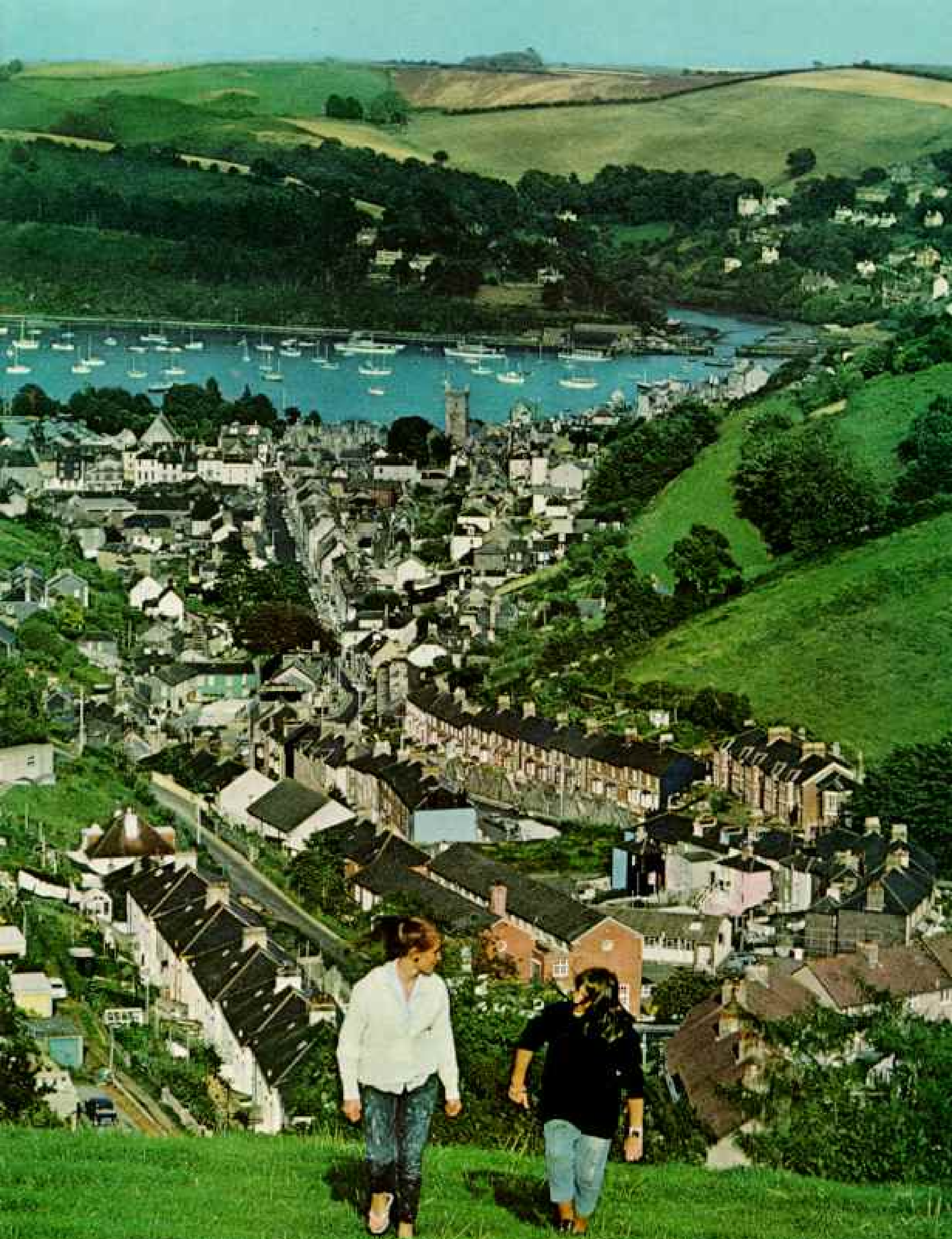
On the American side, one of Lt. Gen. George Patton's staff officers termed Eisenhower "the best general the British have." And Patton himself, speaking off the record, likened Montgomery to "an angry rabbit." At one point, confronted by the possibility of serving under Montgomery's command, General Bradley flatly informed Ike that he would resign first. Yet Bradley in his memoirs wrote of the American commanders, "So scrupulously did we conceal our irritation with Monty that I doubt he was even aware of it."

At one point, an American colonel in Ike's command had a violent falling out with his British counterpart. The controversy ended with heated words. Ike summoned the American officer.

"I've reviewed your argument and I think you were right," he said. "The other man was wrong, and you might be excused for calling him an S.O.B. in the heat of an argument. But you called him a *British* S.O.B! For that I'm sending you home."

In the end, Eisenhower's dedication to Anglo-American unity prevailed. Field Marshal Brooke even conceded that Ike was "a most attractive personality." Montgomery, when the war had ended, thanked Ike, observing that "you have kept me on the rails in difficult and stormy times, and have taught me much."

It remained, however, for Churchill to spell out exactly how vital had been the role of the



Supreme Commander: "In him we have had a man who set the unity of the Allied Armies above all nationalistic thoughts. In his headquarters unity and strategy were the only reigning spirits. . . . At no time has the principle of alliance between noble races been carried and maintained at so high a pitch."

In the months preceding the invasion, mighty air fleets pounded the Continent without surcease—American bombers by day, British by night.

By May, Eisenhower's plans for D-Day were firm. Upon the advice of meteorologists, he had scheduled the great cross-Channel invasion for dawn of June 5. Conditions of tide, moonlight, and weather gave him a margin of only a day or two either way; missing the occasion could force a lengthy postponement. He and his planners had fixed the target as a series of beaches in Normandy between the dunes of Varreville and the mouth of the Orne River.

In the war room of Widewing, as the SHAEF nerve center near London was called, big wall maps bore the code names assigned the landing areas—Utah, Omaha, Gold, Juno, and Sword Beaches. All would pass into history; one, Omaha, would become a synonym for valor (map, page 17).

MORE THAN any other war in history, this war has been an array of the forces of evil against those of righteousness . . . no matter what the sacrifice, no matter what the suffering of populations, no matter what the cost, the war had to be won.

DWIGHT D. EISENHOWER
UPON RECEIVING ORDER OF VICTORY
FROM MARSHAL GEORGI ZHUKOV,
FRANKFURT AM MAIN, GERMANY, JUNE 10, 1945

Years of Nazi occupation had brutalized Europe. Six million Jews had perished. Russians and other Slavs were officially characterized—and disposed of—as *Untermenschen*,

How Ike saw Churchill. Taking up painting as a means of relaxation late in life, Eisenhower depicted the British leader (above) in 1956 from a photograph of a portrait by London artist Arthur Pan.

Onetime rendezvous for part of earth's mightiest armada, the harbor at Dartmouth, England, now welcomes pleasure boats. In June 1944 several hundred U. S. vessels set sail from here to join the 5,000-ship fleet that assaulted Normandy. Eisenhower called the vast armed camp in southern England "a great human spring, coiled for the moment when its energy should be released and it would vault the English Channel in the greatest amphibious assault ever attempted."

"The fate of the world is in your hands," said Churchill to Ike before the invasion. Here on a visit to U. S. troops in England, the Supreme Commander and Prime Minister witnessed a mass parachute jump.

THE TIDE RAN RED *with American blood as the first wave of invaders on Omaha Beach hit a solid wall of enemy fire. Morning mist, battle haze, heavy seas, and treacherous currents added to the chaos of those early hours. Here members of the 16th Infantry, First Division, plunge shoreward at low tide to avoid mined stakes and steel "hedgehogs" strewn like giant jacks across their way. The fearful price of taking Omaha was 2,500 U.S. lives. By nightfall, miraculously, 31,000 GI's had fought their way ashore.* ROBERT CAPA, MAGNUM, FROM "IMAGES OF WAR" 23

subhumans. Every day, political prisoners and hostages died by the hundreds from Kiel to Kharkov. In the somber words of Winston Churchill, "the long night of barbarism" once again obscured the Continent.

Overlord was the key to the liberation of Europe, to the dispelling of all the horrors of Nazi tyranny. General Eisenhower knew that he could not afford to fail.

The possibility of failure haunted him. He even scrawled a brief communique to be released in the event of an Allied defeat. In many respects, it is the measure of the man. It read: "Our landings in the Cherbourg-Havre area have failed to gain a satisfactory foothold and I have withdrawn the troops. My decision to attack at this time and place was based upon the best information available. The troops, the air and the Navy did all that bravery and devotion to duty could do. If any blame or fault attaches to the attempt it is mine alone."

Fortunately, the note died in Eisenhower's pocket.

Early in June the Supreme Commander and his staff moved into an advance command post, a camp on the grounds of Southwick House, a manor near the key loading point of Portsmouth. His aides remember Ike during those tense days as restless and preoccupied. Most mornings he rose before first light; often he went to the darkened kitchen of the officers' mess and pensively cooked his own breakfast. At every opportunity, he visited the troops preparing to embark.

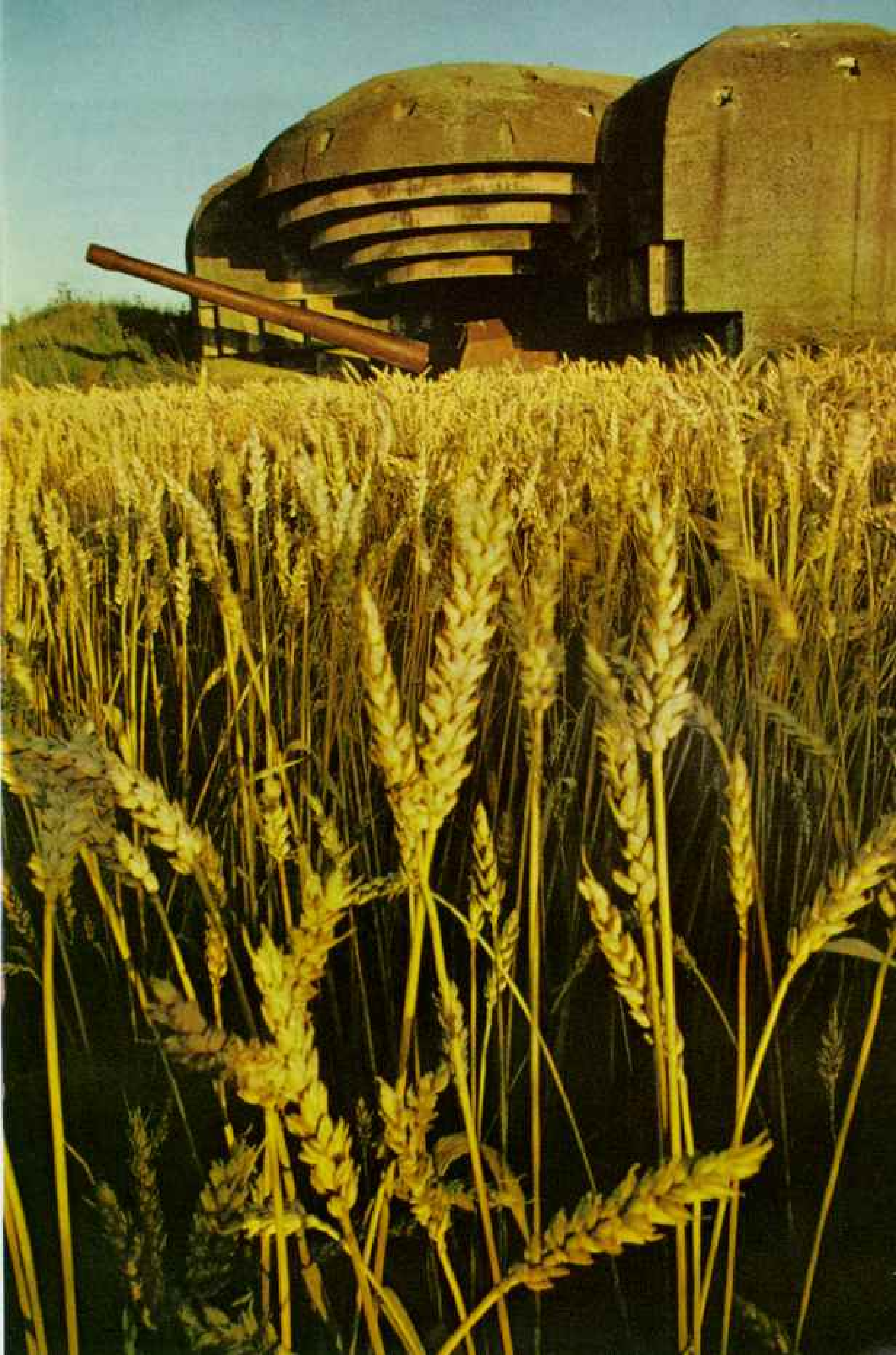
Day of Decision

The first agonizing command decision came in the still, predawn calm of June 4, D-Day minus one. At 4 a.m. Eisenhower and his staff trooped into the library of Southwick House to receive a meteorological report. Aides passed out steaming mugs of coffee, and the officers clustered about the fire crackling pleasantly on the hearth. But despite the star-strewn skies outside the manor, the chief meteorological officer had bad news. Gales

RESEARCHMES BY ROBERT W. MADDEN © N.G.S.

Ghostly relics still intrude on the peaceful Normandy landscape a quarter of a century after D-Day. Strolling past the rusted hulk of an Allied landing craft on Omaha Beach, ex-GI Leo Heroux reminisces with his wife, whom he met after landing with the invasion forces in 1944. Heroux remained in France after the war, settling near Bayeux.

Grim specter of war, a Nazi gun emplacement looms above a field of ripening wheat at Longues-sur-Mer, between Omaha and Gold Beaches, where enemy fire reaped a deadly D-Day harvest on that fateful June 6.



would begin to lash Normandy on the following morning.

Even if the landings could be effected, Ike realized, foul weather would curtail vital air support and heavy seas would impede naval gunfire. He deliberated for a long moment, then said, "All right, we have to postpone." The ponderous machinery of invasion—5,000 ships, 11,000 airplanes, more than 1,000,000 fighting men—groaned to a halt.

General Issues a Fateful Order

Twenty-four hours later the scene was set again. But this time—while the predicted storm clawed at Southwick House—the meteorologists tentatively forecast a 36-hour lull in the tempest, beginning the morning of June 6. Abruptly the full weight of decision again settled upon the Supreme Commander. His aides waited silently for his verdict.

Carefully, Ike weighed the factors. The troops, some already crammed aboard ships and landing vessels for 24 unforeseen hours, might fall prey to rising tension and sinking morale. . . . On the other hand, sending them into battle in uncertain weather could cause the entire enterprise to founder. . . . Yet a further delay might postpone Overlord for at least a month, perhaps a season, or even a year. Either way, victory in the west could well go glimmering.

"The silence lasted for five full minutes," remembered Lt. Gen. Walter Bedell Smith, Ike's chief of staff. "I never realized before the

loneliness and isolation of a commander at a time when such a momentous decision has to be taken, with full knowledge that failure or success rests on his judgment alone."

Ike—who remembered his decision as a matter of mere seconds—finally raised his head. "Well," he said, "we'll go!"

"Quit Worrying, General"

At dusk of that same day, men of the 101st Airborne Division—faces blackened for the night operation—stood on an airdrome near Newbury (pages 2-3). Laden with packs, parachutes, and weapons, they were scheduled to drop behind Utah Beach. A car halted beside the runway. To the astonishment of the troops, out clambered the Supreme Commander.

Ike circulated among them, relieving tension with discussions of crop yields and haircuts and anything else that came to mind.

The men, in their turn, reassured their leader. "Now quit worrying, General," one said. "We'll take care of this thing for you."

Ike stayed until midnight, when the last squad filed into the last C-47. Then he watched the airplanes roar into the blackness, their red navigational lights blinking, diminishing, vanishing. And he remembered that a high Royal Air Force officer had predicted that these men might suffer 70 percent casualties.

If the general's agony came on the eve of battle, that of his troops came in the misty morning of D-Day on the Normandy coast. On Gold, Juno, and Sword Beaches, British

ERWIN GALLOWAY (ABOVE), U. S. ARMY

"Every one of those men is precious to me," General Eisenhower said of the four million troops under his command in World War II. Four weeks after D-Day, he visits front-line forces near Montebourg (left). By this time the tightly constricted Allied beachhead in Normandy brimmed with more than a million men. On July 25 they finally punctured a segment of the solid German perimeter and poured through the breach in a long-awaited "breakout." Buoyed by these events, an exuberant Lt. Gen. George S. Patton (above) joins Lt. Gens. Bradley and Courtney H. Hodges in hailing Ike.

WIDE WORLD (ABOVE); HARMAN, COLUMBIA UNIVERSITY

"I am not the hero," said Ike after the war, "I am the symbol of the heroic men you . . . have sent to war." But honors came. Above he receives an oak leaf cluster to the Distinguished Service Medal from President Harry S Truman in June 1945. "Honors," Ike once remarked, "cannot hide the crosses . . . of the dead."

The postwar years found the general intensely busy as head of U. S. occupation forces in Germany, and later as Army Chief of Staff. When Columbia University offered him its presidency, he hesitated, then decided, "If the faculty could stand me . . . I could stand the job." Below, at his investment in October 1948, he marches in academic procession past his proud wife and son. In 1950 he doffed cap and gown and put on uniform again (opposite) as the first Supreme Commander of NATO.

and Canadian troops stormed ashore with swift and stunning success. On Utah Beach, U. S. airborne and seaborne forces efficiently neutralized the defenders and moved inland.

On Omaha Beach, however, everything that could go wrong did go wrong. Heavy seas swamped the amphibious tanks; landing craft failed to reach shore, or did so at the wrong points. A fresh and powerful German division waited, its presence unsuspected, on the bluffs.

Company A of the 116th Infantry bounced shoreward. The Germans, their big guns zeroed in, waited calmly. When the ramps of the landing craft slammed down, a crescendo of artillery and mortars devastated A Company. Many of the troops died in the surf. Others crawled ashore, only to be shredded by machine-gun fire. No member of A Company managed to fire a single bullet at the enemy.

All along the five-mile stretch of Omaha Beach, men died grotesquely in the sea. The rising tide surged ruby-red up the sands that peacetime children had been wont to sift. A German defender who fired a staggering 12,000 rounds from his machine gun during the morning noted that the bodies were aligned in orderly waves as they had fallen.

By late morning the Germans believed that they had repulsed the attack on Omaha.

Eisenhower could only keep a dread vigil over the confused dispatches trickling in. As the long day passed, he later wrote, "we began to see these little individual acts of heroism, leadership coming to its very acme." Here and there an improvised squad managed to engage the Germans; a half-track or a howitzer would silence a pillbox before being, itself, silenced by the fearful German artillery.

Gradually, imperceptibly, through raw courage, the tide began to turn. By nightfall the "thin, wet line of khaki," as General Bradley called it, had won one of history's greatest victories (pages 22-3).

I HATE WAR as only a soldier who has lived it can, only as one who has seen its brutality, its stupidity. *Yet there is one thing to say on the credit side—victory required a mighty manifestation of the most ennobling of the virtues of man—faith, courage, fortitude, sacrifice!*

DWIGHT D. EISENHOWER
TO CANADIAN CLUB, OTTAWA, CANADA,
JANUARY 10, 1946

Slowly, painfully, the troops pushed inland. Yet Eisenhower, like all the Allied commanders, was haunted by the thought of stalemate and a return to the static trench warfare and futile bloodbaths of World War I. Therefore, employing air support on an unprecedented scale, in late July he hurled the U. S. First Army against the German line at Saint Lô.

When the First Army smashed through, Eisenhower played a long-held trump. Into the breach he threw the Sherman tanks of Maj. Gen. George S. Patton's Third Army. Restrained only by his overtaxed supply lines, Patton raced across France.

In late summer, Eisenhower—following the advance of the troops—set up his headquarters near the small town of Jullouville in Normandy. One day a delegation of shy

WIDE WORLD

"Well, I'll be darned!" said Ike in April 1951 to the news that Gen. Douglas MacArthur had been relieved of command in Korea by President Truman. His highly expressive face, often breaking into a grin, reflected a transparent honesty that won the trust of those Americans who would soon elect him President.

farmers approached the sentries. They had brought General Eisenhower a cow, they explained, so that he might enjoy the taste of fresh milk. They left their gift in one of the apple orchards surrounding the command post.

The cow mooed pitiably for an unconscionable time as the Supreme Commander's aides debated how to cope with the animal. Finally Eisenhower—the onetime Kansas farmboy—had to milk the unhappy cow himself.

Autumn found Eisenhower installed in a new command post at Versailles, just outside Paris, and the Allied Armies breaching the German border.

In December the Germans counterattacked—suddenly and savagely—through the snowy forests of the Ardennes. Eisenhower swiftly reorganized his forces. Montgomery attacked the German salient on the north, and Patton from the south broke the German siege of Bastogne. The Allies gained the initiative, and the panzer armies withdrew behind the Rhine, poorer by some 90,000 casualties and 500 precious tanks. The Battle of the Bulge marked the last big German offensive in the west.

Following this debacle, the Nazi front crumbled swiftly. The Allies reached the Elbe River in April. Then, despite the urging of his generals and high-level pressure from Churchill, Eisenhower decided not to continue the attack toward Berlin. He felt that the Yalta agreement bound his armies to stand fast and await the Russian troops driving from the east. Besides, he explained to Marshall, "Berlin itself is no longer a particularly important objective." On April 25, 1945, the Russians and the Western Allies met. Germany had been cut in two.

Early in the morning of May 7—with Hitler dead and the Thousand Year Reich a hollow ruin—German emissaries formally surrendered at Eisenhower's headquarters in Reims. The Supreme Commander sent a terse cable to the Combined Chiefs of Staff: "The mission of this Allied force was fulfilled at 0241 local time, May 7, 1945."

SO LONG AS WE GOVERN our Nation by the letter and the spirit of the Bill of Rights, we can be sure that our Nation will grow in strength and wisdom and freedom.

DWIGHT D. EISENHOWER
AT NATIONAL ARCHIVES,
WASHINGTON, D. C., DECEMBER 15, 1952

With the flowering of peace, a grateful people showered Eisenhower with honors. He rose to Chief of Staff of the U. S. Army, succeeding his old friend General Marshall. Then, in 1948, he left Government service to become President of Columbia University in New York City (page 28). Two years later—at the request of President Harry S Truman and the old Allies of World War II—he obtained a leave of absence from Columbia and returned to Europe to command the North Atlantic Treaty Organization forces. Finally, in 1952, the American electorate raised him to the highest office in the land (right, above).

He had promised, as a candidate, to seek an end of the long, debilitating struggle between United Nations and Communist forces in Korea. After his election he journeyed to the war zone, and, early in his term, peace

TAKING THE OATH OF OFFICE, Eisenhower becomes the 34th President of the United States in January 1953. Past

and future Presidents flank the Chief Executive: Mr. Truman, at left; Herbert Hoover, behind him; and Richard M. Nixon, right. Ike considered his greatest presidential achievement an "Era of Good Feelings." He recalled, "I tried to create an atmosphere of greater serenity and mutual confidence."

High honor of the National Geographic Society, a Special Gold Medal is presented by President Eisenhower to Britain's Prince Philip in 1957. Society Board Chairman Melville Bell Grosvenor, then president, points out the inscription.

Temporary thaw in the cold war: President Eisenhower and Soviet Premier Nikita Khrushchev help a flower-laden Mrs. Khrushchev from a car. The Russians' arrival in Washington, D. C., began a 13-day tour of the United States in 1959.

came to the troubled Asian land.

Shortly after the Allies attained their smashing victory in Europe, Ike had voiced his views on the need and use of national power, which now guided him as President: "It is to our interest to see that we are strong. . . . Weakness cannot cooperate with anything. Only strength can cooperate. . . . I believe we should be strong, but we should be tolerant. We should be ready to defend our rights but we should be considerate and recognize the rights of the other man."

Ike brought an essentially conservative philosophy to the White House; in three of his eight years in office he managed to balance the Federal budget. Yet his Government passed the first civil rights law in 80 years, raised the national minimum wage, and also extended unemployment insurance and Social Security to millions of low-income Americans.

As one of his White House aides recalled, Ike absolutely refused to "use the prestige of the Presidency to promote or tear down another individual publicly by name. He was acutely conscious of the fact that a word from the President . . . could cause damage to another human being out of all proportion to the power one person should have over the fortunes of another."

Ike Withholds Censure

This policy sometimes evoked criticism, as in his handling of the wholesale accusations of Communism against prominent Americans, leveled in the early 1950's by Senator Joseph McCarthy. To advisers who urged him to denounce McCarthy, Ike said, "All you do is double the audience he had the first time." Eventually the Senate itself, without executive intervention, disciplined the free-wheeling Senator from Wisconsin.

In 1966 Eisenhower sent a letter to James C. Hagerty, his former press secretary, listing "from the top of my head" 23 achievements of his administration. Mr. Hagerty did not release the text until after

Lighter duties of office: President Eisenhower tosses out the first ball of the 1953 baseball season. Picking up pointers are two future Presidents, Lyndon Johnson (left), then Senate Democratic leader, and Vice President Nixon (half obscured at right).

"**Serious Steps**" was the caption of this Pulitzer Prize photograph showing President John F. Kennedy and General Eisenhower conferring at Camp David, Maryland, in April 1961 after the disastrous Bay of Pigs invasion of Fidel Castro's Cuba.

PAUL VATHIS, WIDE WORLD (BELOW), WIDE WORLD

Mr. Eisenhower's death. The former President wrote:

"It seems that the deportment and words rather than the achievements of people in positions of heavy responsibility are taken by columnists and partisans and, at times by serious students, as evidence of the true capacities of those of whom they write.

"They equate an individual's strength of dedication with oratorical bombast; determination with public repetition of a catchy phrase; achievement with exaggerated use of the vertical pronoun. They ignore completely the circumstances that have made difficult any progress by one of their victims just as they do the accidents and planned publicity that often made easy the way of the exhibitionist. To them record means little; manner, and method, are vital.

"The new economists and members of the personality cult belittle the achievements of the devoted men and women who served in the Executive Branch from 1953 to 1961. Yet consider these accomplishments.

"Statehood of Alaska and Hawaii.

"Building of St. Lawrence Seaway.

"End of Korean War; thereafter no American killed in combat.

"Largest reduction of taxes to that time.

"First Civil Rights Law in 80 years.

"Prevention of Communistic efforts to dominate Iran, Guatemala, Lebanon, Formosa, South Vietnam.

"Reorganization of the Defense Department.

"Initiation, and great progress in, most ambitious road program by any nation in all history.

"Slowing up and practical elimination of inflation.

"Initiation of Space program with successful orbit in less than three years, starting from scratch.

"Initiating a strong ballistic missile program.

"Conceiving and building the Polaris program, with ships operating at sea, within a single administration.

"Starting Federal Medical care for the aged (Kerr-Mills).

"Desegregation in Washington, D. C., and Armed Forces even without laws.

"Fighting for responsible fiscal and financial policies throughout eight years.

"Extension of OASI [Social Security] coverage to over ten million persons.

"Intelligent application of Federal aid to education (Defense Education Bill).

"Preservation, for the first time in American history, of adequate military establishment after cessation of war.

"Using Federal power to enforce orders of a Federal court in Arkansas, with no loss of life [Little Rock school crisis].

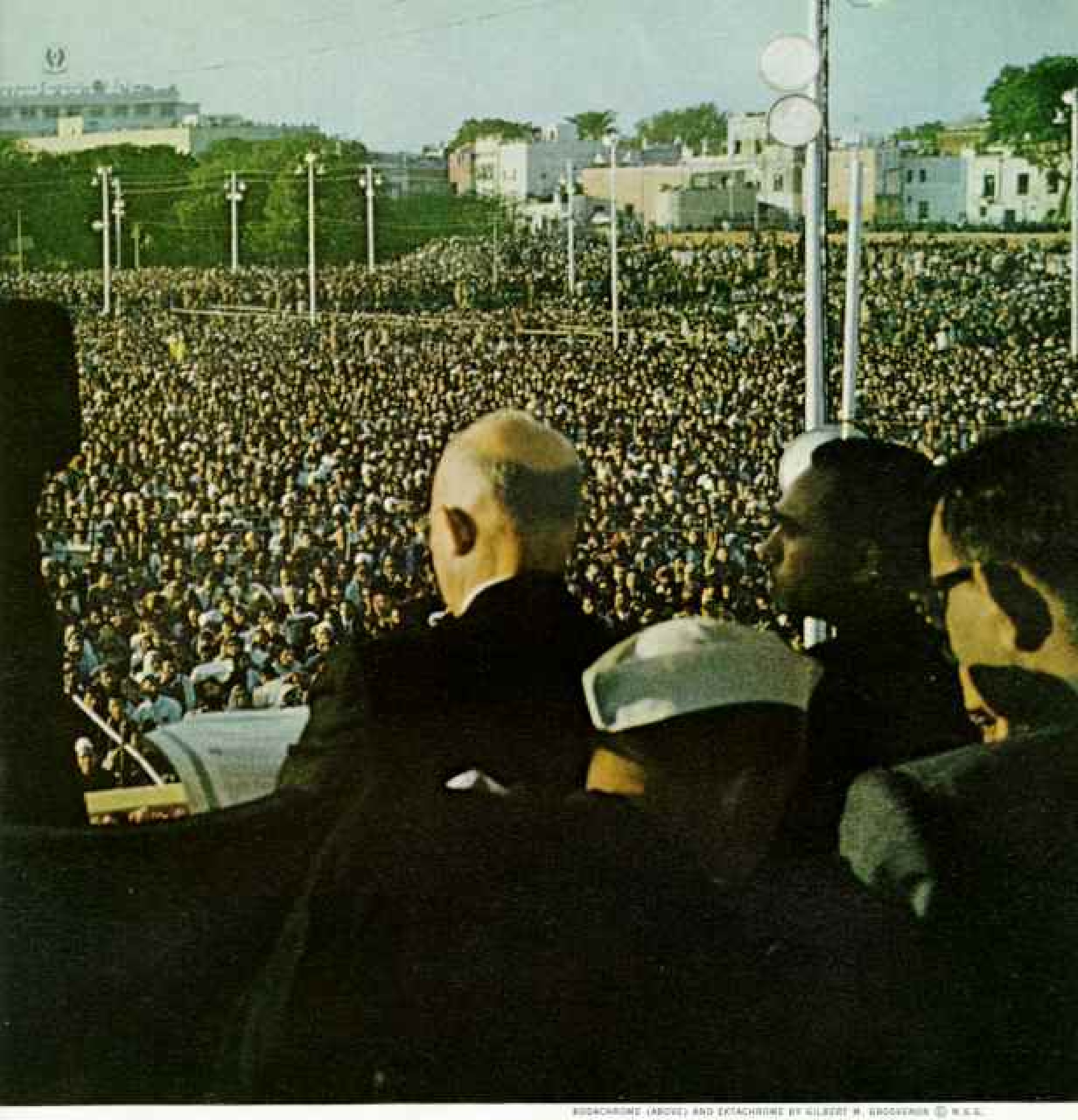
"Good will journeys to more than a score of nations in Europe, Asia, Africa, South [America] and in the Pacific.

"Establishment of the Department of Health, Education and Welfare.

"Initiation of plan for social progress in Latin America after obtaining necessary authorization from Congress for $500 million—(later called Alliance for Progress).

"Atoms for Peace proposal.

"All this . . . with a Congress controlled by the opposition . . . for six years, the other two having only a nominal Republican majority."



BIOCHROME (ABOVE) AND EKTACHROME BY GILBERT M. GROSVENOR © N.G.S.

"**Internationally I enjoyed** a measure of good will. . . . This might be put to some use," remarked Ike. And so it was that he climaxed his years of service with a series of travels abroad. In December 1959 he went on a 22,000-mile mission of personal diplomacy to Europe, Asia, and Africa (maps, pages 30-31), and nine million people turned out to cheer him. In New Delhi a million Indians strain for a glimpse of him (above). From India's late Prime Minister Nehru (right), Ike accepts an LL.D. degree awarded by the University of Delhi.

President Eisenhower's rugged physique withstood three major onslaughts of illness in little more than two years—a heart attack, ileitis, and a mild stroke—and these threats to life left him thoughtful about the role of the man who might succeed him as the Nation's Chief Executive. Looking back after he had left office, he wrote:

"... my use of Vice President Nixon as a member of advisory bodies and as a personal representative in many affairs, both domestic and foreign, created an organizational precedent in American history. Traditionally the Vice President had been the forgotten man of the Washington scene; more than one man, because of his lack of respect for the office, has refused to be considered for ... the post. But Mr. Nixon's willingness to perform a variety of tasks, at my request, and his presence at all important policy meetings, assured that in the event of my death or disability, his own knowledge and understanding of the

Keeping in the swing of things, a retired Ike teams up with golfer Arnold Palmer to play a benefit in Ardmore, Pennsylvania. Palmer recalls that "Ike would ask advice on his swing. If my tip worked, it delighted him and lit his face like a six-year-old on Christmas morning."

Proud grandfather: Ike and his son watch young David take two sisters on a pony-cart ride at the President's Gettysburg home. Of the 230-acre farm he said, "When I die I'm going to leave a piece of ground better than I found it."

changing world and domestic situations would have no gaps."

Although Ike suffered his coronary and ileitis attacks during his first term, he chose to run again, and was re-elected by a resounding plurality. Politics, however, is no respecter of persons, and the President often found himself under fire from critics. Some condemned his easy, military-style delegation of authority to Cabinet members; others denounced his passion for golf. The fact remains that his two terms at the helm of the Republic brought a period of peace to the Nation and a measure of prosperity never before equaled.

As his term drew to a close, President Eisenhower—the professional soldier who had always been a man of peace—delivered a speech of farewell to his countrymen. In it, he warned against "the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex. . . .

CYPACHROME BY W. E. GARRETT © N.E.A., CARTOON COURTESY WILLIS ASSOCIATES, INC., AND BILL MAULDIN

'Hail to the Chief!" . . . and farewell. Martial strains of the U. S. Army Band echoed in the Nation's Capital during the solemn days of mourning following the 78-year-old soldier-President's death. The courageous heart that had withstood so many trials finally succumbed on March 28 after a long illness. Said former President Johnson, sharing the sentiment of the entire Nation, "A giant of our age is gone. . . . America will be a lonely land without him."

Cartoonist Bill Mauldin's moving tribute to the general recalls the words that used to pass like wildfire among frontline troops whenever Ike paid one of his frequent visits to the fighting men. Mauldin's famous series of "Up Front" cartoons in the Army newspaper *Stars and Stripes*, recording the humor and pathos of war as seen through the eyes of foot-slogging GI's, won him a Pulitzer Prize in 1945.

"We must never let the weight of this combination endanger our liberties or democratic processes," he said.

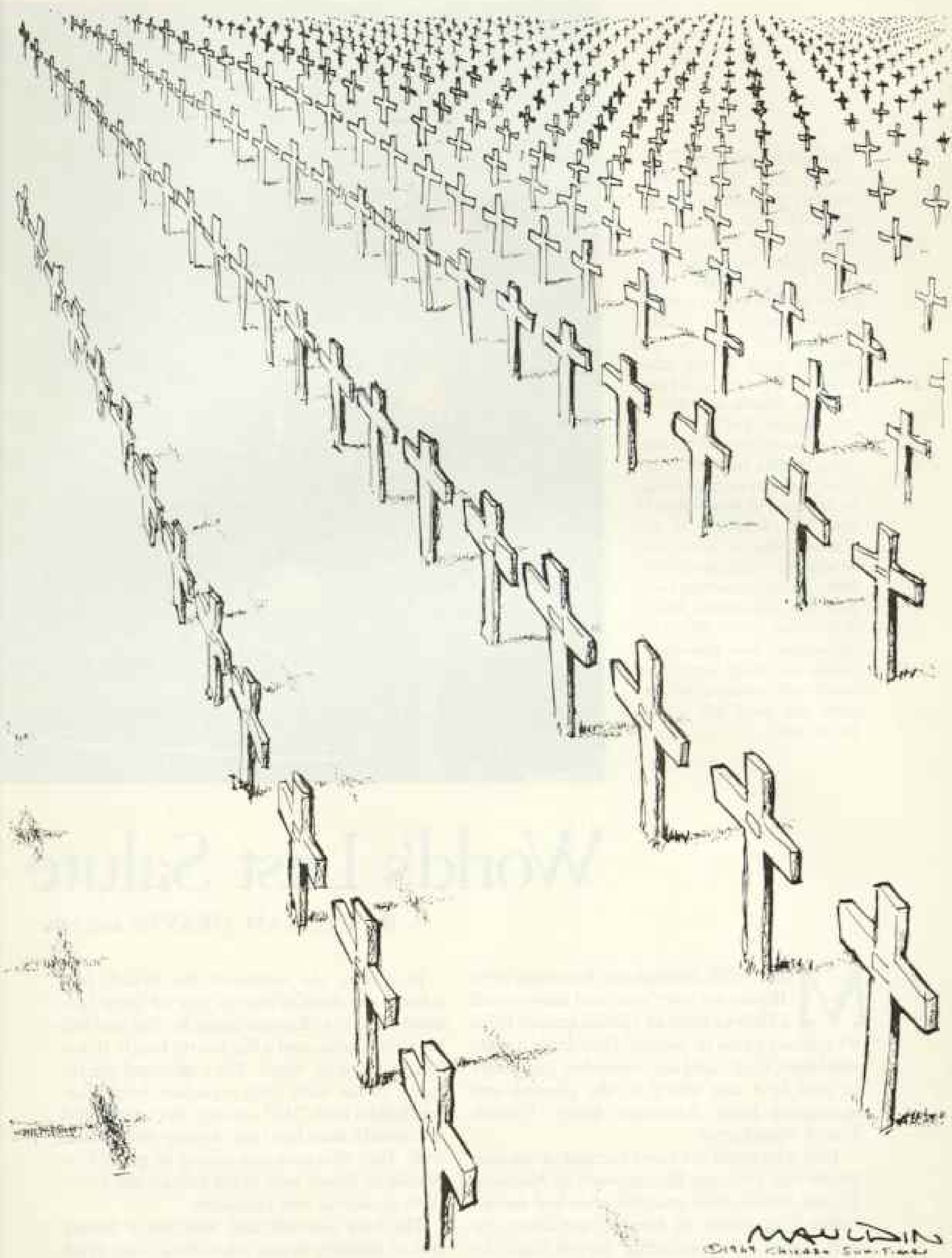
In the same speech he warned of expansionist Communism, "a hostile ideology—global in scope, atheistic in character, ruthless in purpose, and insidious in method. Unhappily the danger it poses promises to be of indefinite duration. To meet it successfully, there is called for, not so much the emotional and transitory sacrifices of crisis, but rather those which enable us to carry forward steadily, surely, and without complaint the burdens of a prolonged and complex struggle—with liberty at stake."

On a snowy January day in 1961, after half a century of service to his country, Dwight Eisenhower laid down the burdens of his high office, and John F. Kennedy succeeded him as President of the United States. As the 70-year-old war hero and statesman drove away from the inaugural ceremony, he passed the gray-clad West Point cadets who waited to march—just as he had done himself in 1913 for the inauguration of Woodrow Wilson—in the ceremonial parade. His car slipped past the formation unrecognized and unnoted. It was, he remarked wistfully to a friend, the first time in his adult life that his presence had gone unmarked by a military unit.

In his post-presidential years, Mr. Eisenhower's counsel was sought by his successors in office. Presidents Kennedy and Johnson both consulted him in times of crisis and profited from his advice and experience.

Now, the bugles sound no more for Dwight David Eisenhower. He has returned to Abilene to lie in a quiet chapel, amid the green of the fields, the rich smell of growing things, the sudden chorale of birds in the long, cool hour before sunset. But his epitaph was written half a world away in England, on a brass plaque in the room where once the Supreme Commander, Allied Expeditionary Force, planned an operation called Overlord. The plaque could, with equal validity, have been mounted anywhere between Manila and Moscow, between Abilene and Algiers. It says: *A great man passed this way in the defense of freedom.*

* * *



"IT'S IKE HIMSELF. PASS THE WORD."

Toward the Capitol under leaden skies rolls the field artillery caisson bearing the body of Dwight David Eisenhower in the flag-wrapped coffin of a plain soldier. The Joint Casket Bearer Team from the five armed services marches alongside. A Marine sergeant snaps to rigid present arms as the state procession passes. It is Palm Sunday, March 30, 1969, in Washington, D. C.

In three days of solemn rites, leaders from 89 countries joined in paying tribute to the hero of World War II and 34th President of the United States. It was a time of muffled drums and tolling bells, of heart-touching eulogies and sad salutes. But it was a time, too, of proud remembrance and thanksgiving for the life of a man who made unity a banner of freedom and good will a goal for all men.

World's Last Salute

By WILLIAM GRAVES and other

MILLIONS throughout the world were there—by television and radio—and chiefs of state or special envoys from 89 nations came in person. Presidents, prime ministers, kings, and old comrades, they came to join in a last salute to the general and statesman from America's heart, Dwight David Eisenhower.

One who could not come because of age and health was Viscount Montgomery of Alamein, 81, the British field marshal who had served under Eisenhower in Europe, not always in full accord. Remembering far-off days, he said, "He had only to smile at you, and there was nothing you would not do for him."

In a way the words of the British peer echoed the recollection of one of Ike's boyhood friends in Kansas (page 9): "He had this incredible grin, and a big hearty laugh. It was fun to be with him." They summed up the magic of the man; they explained why "like" was linked with "Ike" and why he commanded not merely men but their loyalty and love as well. This affection was rooted in respect; as President Nixon said in his eulogy, the key to Ike's greatness was character.

The long farewell that will live in history and in memory began when Brig. Gen. Frederic J. Hughes, Jr., of Walter Reed Army Hospital in Washington, on March 28, 1969,

EXTERIORS BY GILBERT M. GROSVENOR, NATIONAL GEOGRAPHIC STAFF © NATIONAL GEOGRAPHIC SOCIETY

to a Great American

members of the National Geographic staff

gave the last of many bulletins on the general's failing heart. In a voice that faltered and broke, he informed the press and the world:

"General of the Army Dwight David Eisenhower, 34th President of the United States, died quietly at 12:25 this noon, after a long and heroic battle against overwhelming illness. His passing was peaceful, and he experienced no distress."

News Lowered Flags Around the Globe

The news had not been unexpected; all over the globe black headlines in many languages had borne the word that Ike was dying. Nonetheless it came as a blow; a world without Ike would not be quite the same. Many felt that an era was ending.

Now flags fluttered to half-staff from the White House to Whitehall, from Seoul to Stockholm, from Brasilia to Beirut. President Nixon, for eight years Ike's Vice President, proclaimed Monday, March 31, a National Day of Mourning: "I invite the people of the world who share our grief to join us in this day of mourning and rededication." Government offices and many businesses closed.

Then, slow and solemn as the tolling of a bell, came the memorial service at the Washington Cathedral, the lying-in-state beneath the Capitol dome, the eulogy, the funeral, and

the train ride back to Abilene on the Kansas plains of home.

Besides the throngs in Washington and Abilene, an unseen audience numbering as many as 75,000,000 in the United States alone watched with a sense of personal participation as television once more rose to the challenge of historic and moving events. This time, however, there was none of the outrage, the incredulity, the ache, and the anger that had enveloped the Nation when it said farewell to President John F. Kennedy, his Senator brother Robert F. Kennedy, and Nobel Peace Prize winner Martin Luther King, all struck down by assassins' bullets when at the height of their powers. This loss stirred emotions like those the world felt when the vast and inspiring figure of Winston Churchill passed from its stage.

"When Sir Winston Churchill died on January 24, 1965, full of years and honors, the entire world quickened with emotions of grief and of pride. Grief for his passing; pride in this champion who had so gallantly upheld freedom in its darkest hour."

These words had been written four years before by General Eisenhower himself.* Now they seemed to apply to him as well.

*From "The Churchill I Knew," by General of the Army Dwight D. Eisenhower, in the GEOGRAPHIC for August 1965. With characteristic courtesy, the author sent this note with the article: "I am deeply honored by the opportunity NATIONAL GEOGRAPHIC has given me to introduce the tribute which, in these pages, is paid to the memory of Sir Winston Churchill.—D D E."

Moment for memory: Whispered words give a new generation a share in the Eisenhower legacy as families pay their respects at the bier in the Capitol Rotunda (right). One elderly man, asked why he had come out in the early morning, replied simply: "For Ike."

In a last goodbye, thousands in patient lines file past the casket resting on the catafalque that bore the bodies of

Details of the state funeral reflected Ike's own wishes. In approving the plans in 1966, he insisted on a minimum of pomp.

On Saturday, March 29, a private service was held for family, old comrades, and close friends in the pillared and vaulted Bethlehem Chapel of Washington Cathedral, on one of Washington's highest hills.

Throngs Come to Pay Tribute

Outside, a large throng had gathered, and after the brief service the public filed past the bier. All night and through the next morning the people came. When the big doors finally closed, 12,000 had paid their respects.

On the raw, rain-swept afternoon of Palm Sunday, leaders of the Nation and the world escorted Dwight Eisenhower in solemn procession along Constitution Avenue to the Capitol.

A company of West Point cadets led units from the service academies, followed by contingents from all the armed services.

Behind them rolled the artillery caisson that had carried President Kennedy and General of the Army Douglas MacArthur on the same journey. Upon it the $80 regulation steel casket of an American soldier lay wrapped in the Stars and Stripes, shielded from the rain by a plastic cover (pages 40-41).

After the caisson and its Joint Guard of Honor came the symbol of a fallen soldier: a riderless black horse, with saber reversed —hung from the right side of the saddle— and boots turned backward in the stirrups.

Presidents Abraham Lincoln and John F. Kennedy. The Joint Guard of Honor, here standing at rigid attention, changes every half-hour in slow-motion precision. Throughout the long night, awaiting their turn in the damp cold, the people come, many to pause for a prayer or a salute. Television cameras enabled the Nation and the world to share in the ceremonies that marked General Eisenhower's passing.

EKTACHROMES BY NATIONAL GEOGRAPHIC PHOTOGRAPHER

A long line of black cars bore Mrs. Eisenhower and her son John, President Nixon and his family, foreign leaders and envoys, Eisenhower relatives, and high officials of Nation and states.

Protocol dictated that foreign chiefs of state be given precedence according to their years in office. Thus the Shah of Iran, who had ruled since 1941, led the foreign dignitaries.

Overhead the thunder of 21 U. S. Air Force jets momentarily drowned the rhythmic clop of hoofs and the rasp of iron-rimmed wheels as the procession slowly moved toward the Capitol through shivering, silent crowds.

On Capitol Hill the gusty northwest wind buffeted umbrellas and scarfs and thoroughly chilled the waiting throng. Were tears brought by sadness or by the slap of the wind? It was a varied mass of people—matrons in the black of mourning, a father wrapping his overcoat about a small daughter, old soldiers wearing American Legion caps, an elderly Negro carrying a palm frond from morning services, long-haired hippies huddling under handmade quilts, college boys in school jackets from Illinois and Connecticut. They waited quietly in the unseasonable cold.

JAMES L. AYRES (UPPER RIGHT); DEAN CONGER (RIGHT) AND JAMES P. BLAIR © N.G.S.

Britain's delegate, Lord Louis Mountbatten represents Elizabeth II. He was the member of the royal family closest to Ike, whom he served as chief of Combined Operations in World War II.

"We gather today in mourning but also in gratitude." Thus President Richard M. Nixon began his eulogy of Eisenhower in the Capitol Rotunda. Behind him stand, from left, Mrs. Mamie Eisenhower, John Eisenhower, and his wife Barbara.

Old comrade and last surviving five-star general, Omar N. Bradley suffers the loss of his West Point classmate and wartime commander. Ike as Chief Executive once marveled with wry humor, "This job must be pretty important; even Brad calls me Mr. President."

Immobile in salute, Gen. Charles de Gaulle, then President of France, says adieu. "For me," he said earlier, "I see disappear with great sadness a dear companion in arms and a friend." Leader of the Free French in World War II, he wears the insignia of rank he bore throughout that conflict.

As the cortege halted on the Capitol plaza, the United States Army Band struck up "Hail to the Chief," then broke into the triumphant strains of the Easter hymn, "The Palms."

The rains had gradually stopped, and now —suddenly—sunlight streamed through a widening corridor in the clouds. Amid the rolling cannonade of a 21-gun salute, a newspaperman who had followed Dwight Eisenhower for many years glanced up at the sun and remarked to a friend, "It always did that for him."

With solemn precision eight pallbearers from the five armed services carried the casket up the Capitol steps to the center of the Rotunda, followed by the family, official guests, and the President of the United States.

"We gather today in mourning but also in gratitude," President Nixon said to the hushed assemblage (page 44). "We gather also conscious of the fact that in paying tribute to Dwight Eisenhower we celebrate greatness."

The President recalled a sentence from General Eisenhower's famous Guildhall speech in London in 1945: "I come from the [very] heart of America."

"He did come from the heart of America," said the President, "not only from its geographical heart, but from its spiritual heart. He exemplified what millions of parents hoped that their sons would be—strong, courageous, honest, and compassionate. . . .

"It was the character of the man—not what he did, but what he was—that so captured the trust and faith and affection of his own people and of the people of the world. . . . He was a product of America's soil and of its ideals, driven by a compulsion to do right and to do well; a man of deep faith who believed in God and trusted in His will; a man who truly loved his country and for whom the words 'freedom' and 'democracy' were not cliches, but they were living truths.

"I know Mrs. Eisenhower would permit me to share with you the last words he spoke to her on the day he died. He said, 'I've always loved my wife, I've always loved my children, I've always loved my grandchildren, and I've always loved my country.' That was Dwight Eisenhower. . . .

Brought Out the Best in People

"He had the great leader's capacity to bring out the best in people. He had the great humanist's capacity to inspire people, to cheer them, to give them lift. I remember, for example, just a few months ago when I asked all of the members of the Cabinet to go out [to the hospital] and call on him. Each of them returned with wonder and admiration and said, 'You know, I went out there to cheer him up, and instead I found he cheered me up'. . . .

"People often disagreed with Dwight Eisenhower, but almost nobody ever hated him. And this, I think, was because he himself was a man who did not know how to hate. . . .

"The last time I saw him, that was what he talked about. He was puzzled by the hatreds he had seen in our times. And he said the thing the world needs most today is under-

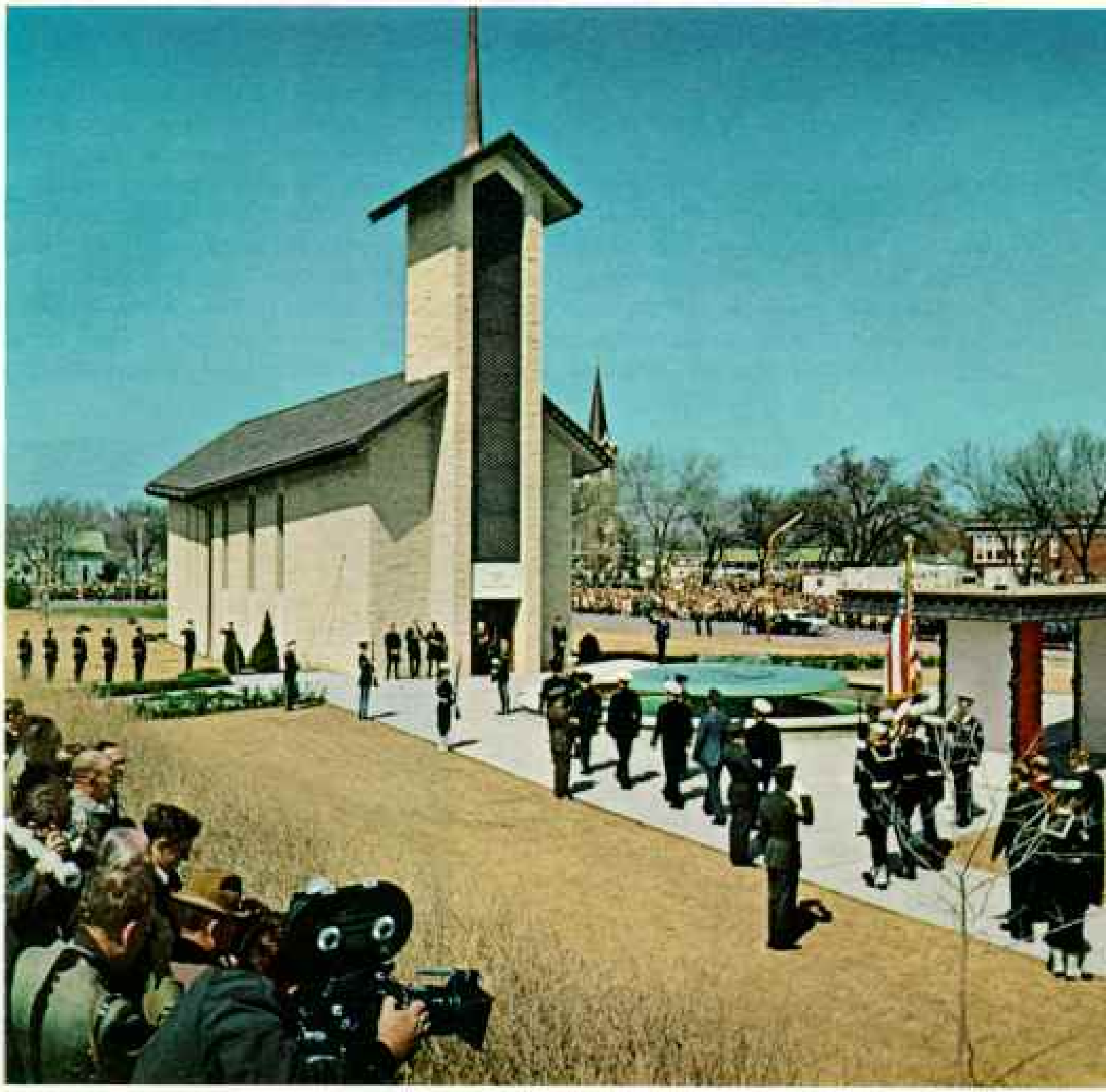
"**Suffer us not to miss the glory** of this hour," prayed the Reverend Dr. Edward L. R. Elson, Eisenhower's pastor, during the funeral in Washington Cathedral. Throughout the service, at the general's request, hymns, prayers, and Bible passages celebrated unswerving faith, victory over evil, triumph of good. "A Mighty Fortress Is Our God," sang choir and congregation, then "Onward, Christian Soldiers."

Now it is over and acolytes, prelates, and pallbearers follow the flag from the cathedral. The Eisenhower and Nixon families stand at right; behind them, the highest officials of the Nation and leaders from across the world. The diplomatic corps occupies the section beyond the casket.

Ike's beloved grandson, Dwight David Eisenhower II, leaves the cathedral with his bride of three months, the former Julie Nixon. David observed his 21st birthday on the funeral train, en route to Abilene.

Flags dip for the Eisenhower funeral train at Salem, Illinois. As the train rolled westward, citizens waited at trackside to see it pass. Moved by the spontaneous tribute, Mrs. Eisenhower asked that large American flags mark the car that bore Ike's body so that the people could recognize it. At St. Louis, she appeared on the train's rear platform, accompanied by her grandson, to thank the crowds that had paid her husband honor along the way.

And at last—home. To the Place of Meditation in the Eisenhower Center at Abilene moves the body of Dwight David, to rest beside the infant



standing and an ability to see the other person's point of view—and not to hate him because he disagrees. . . .

"Dwight Eisenhower's greatness derived not from his office but from his character, from a unique moral force that transcended national boundaries, even as his own deep concern for humanity transcended national boundaries.

"His life reminds us that there is a moral force in this world more powerful than the might of arms or the wealth of nations. This man who led the most powerful armies the world has ever seen, this man who led the most powerful nation in the world, this essentially good and gentle and kind man —that moral force was his greatness. . . ."

Following the ceremonies the Rotunda was opened to the public, and during the next 20 hours some 25,000 people passed the catafalque after waiting patiently in line. Many of the men saluted, some a bit rustily. Asked why he had come, one said simply, "For Ike." Another explained, "I was with him in Normandy." A young Guatemalan woman who had traveled that day by bus from New Jersey to Washington was asked by a neighbor in line what had prompted her to make the trip. In halting English she replied, "My heart open, and I come."

In the evening an old soldier and ally, President Charles de Gaulle of France, arrived.

son, Doud Dwight, whom the father mourned all his life. A rifle squad, at left of chapel, stands ready to fire the final salute; a bugler, to sound the aching notes of "Taps." So the days of an ending come, themselves, to an end. But the surge of memory denies death. Across the street, Ike's boyhood home, right, opens its door to all who would remember him in his youth. And the Eisenhower Library and Museum, out of the picture at right, preserve the record of his manhood.

He had come directly from his transatlantic jet in the olive-drab uniform of a French *général de brigade*—the same two-star rank he had held on the day of victory shared with Dwight Eisenhower in Europe.

Aging but still erect, one general who became president of his country slowly saluted another. He gazed down intently at the flag-draped casket for a moment; then, with a second salute, he turned and was gone (page 45).

Next day—the memorial day proclaimed for Ike—was to be his last in Washington. This was the day of the state funeral. As one young woman noted in her diary: "It was as if close to a half-century of history passed before us. The drive leading to the cathedral had turned into a parade ground for world leaders, coming to pay tribute.

"Here were the old warriors I knew only from history books: General de Gaulle, returning each salute proffered to him (his nimble Citroën like a pony among the Cadillac thoroughbreds); Gen. Alfred Gruenther, leaning on a worn yellow cane; Omar Bradley, wearing the five stars of a General of the Army—now the only one to hold that rank.

"Other men sparked memories of political victories and defeats of recent years: Lyndon Johnson, Hubert Humphrey, Barry Goldwater, Nelson Rockefeller.

"Finally there were figures out of yesterday's newspaper: South Viet Nam's Vice President Ky, King Constantine of Greece, German Chancellor Kurt Kiesinger."

"We Thank Thee for Thy Servant"

In a brief but moving ceremony, Dwight Eisenhower's friend and long-time pastor, the Reverend Dr. Edward L. R. Elson, led the former President's widow, his family, and 3,300 distinguished guests in prayer.

"We give Thee thanks for all the sacred memories and hallowed recollections which cluster about this hour. We thank Thee for Thy servant, Dwight David. . . . for his warm friendship, his transparent spirituality, his patience in suffering, and for all that endeared him to the multitudes of mankind."

Now the great 12-ton bell in the cathedral's Gloria in Excelsis Tower tolled for Ike for the last time. That evening Washington bade him farewell as eight military pallbearers placed the casket aboard a 10-car special train for the 1,379-mile journey to his boyhood home, Abilene, Kansas. In final tribute the Army Band played the haunting old West Point song he loved, "Army Blue."

We've not much longer here to stay,
For in a month or two,
We'll bid farewell to Kaydet Gray
And don the Army Blue.

Although the train's route was never officially announced, people gathered in hundreds and often thousands at grade crossings and stations along the way. As the train passed, they sang some of Ike's favorite hymns—"Onward, Christian Soldiers," "Lead, Kindly Light," "A Mighty Fortress Is Our God"—and "The Battle Hymn of the Republic," reminiscent of a century past, when another President, Abraham Lincoln, had traveled home for the last time by train.

At St. Louis, Missouri, Mamie Eisenhower spoke quietly from the rear platform, saying, "I am most grateful for all the expressions of love." On other occasions, she waved wordlessly to the crowds.

The throng in Abilene surpassed any in Washington, swelling the small plains town of 7,400 residents by an estimated 100,000 visitors, including former President Johnson and President Nixon.

The general had chosen to rest in the chapel-like Place of Meditation at the Eisenhower Center (preceding pages), within sight of the two-story white frame house where he grew up—now a museum.

Past this and other landmarks of his youth Dwight Eisenhower's casket was carried under the noontime sun of April 2, 1969, and lowered with final military honors—three volleys by a squad of riflemen, a 21-gun salute, and the beautiful benediction of "Taps."

Almost at the same time, identical salutes were fired by designated U. S. military stations and naval vessels throughout the world. At sunset they fired 50-gun salutes, honoring each of the 50 states and the man who had served his country so brilliantly and so long.

In the chapel at Abilene, a brother officer, Maj. Gen. Luther Miller, former Chief of Army Chaplains, pronounced the final words over Dwight Eisenhower, for the Nation and for the world: "His battles are all fought, and his victories all won. . . . Unto God's gracious mercy, we commend you, old friend."

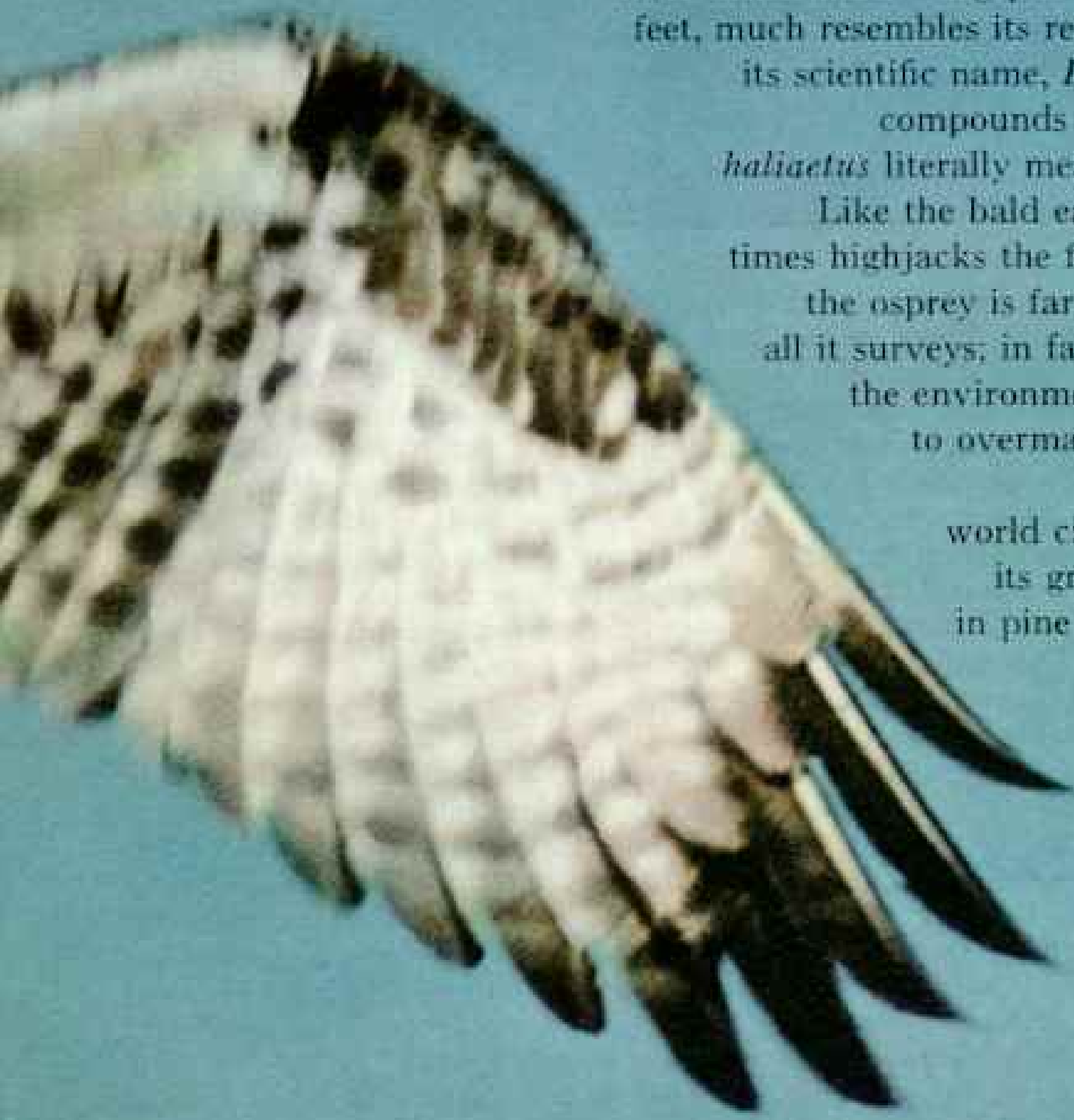
Store-window portrait in Abilene honors a fellow townsman come home and helps remind the Nation of the heritage of hope he bequeathed it. "There is nothing wrong with America," Dwight Eisenhower said, "that the faith, love of freedom, intelligence, and energy of her citizens cannot cure."

SCREAMING DEFIANCE, *an osprey veers sharply from a near-vertical dive to avoid collision with naturalist-photographer Frederick Kent Truslow at her nest in the Florida Everglades.*

THE OSPREY
Endangered World Citizen

By ROGER TORY PETERSON

Photographs by FREDERICK KENT TRUSLOW



"ÖRN!" cries the Swede; *"¡Águila!"* the Spaniard; and the North American or Briton exclaims, "Look, there's an eagle!" Probably the most misidentified bird in the world, the osprey, or "fish hawk," with white on its head and a wingspan of more than five feet, much resembles its regal relative. Even its scientific name, *Pandion haliaetus*, compounds the confusion, for *haliaetus* literally means "sea eagle."

Like the bald eagle (which sometimes highjacks the fish hawk's catch), the osprey is far from monarch of all it surveys; in fact, in some places the environment now threatens to overmaster both birds.

The osprey is a world citizen. I have seen its great nests of sticks in pine trees on Japanese

islets, on sea cliffs near Gibraltar, on Sweden's spruce-covered Baltic islands, on pinnacles in Yellowstone National Park, and on the headlands of Mexico's west coast. This cosmopolitan bird has extended its dominion around the Northern Hemisphere and south into Australasia; in winter it also invades South America, India, and Africa. But today in much of its range, the osprey is in trouble. Though it has been holding its own in Florida, Maryland, and some Canadian lakes, it is declining drastically in other parts of North America, and the once-big osprey colony near my home in Old Lyme, Connecticut, has shrunk close to extirpation.

In Scotland these days, the osprey makes national headlines. On a recent visit to Glasgow I heard newsboys shouting, "Ospreys nest again!" In the past 10 years 225,000 pilgrims came to the Scottish Speyside district from all over the British Isles to watch the famous birds in their nesting tree.

We know what brought the British ospreys to their present plight. By the mid-19th century, gamekeepers had decimated them, and ruthless egg collectors all but finished them off. The bird had long been extirpated in Britain when, in 1955, a pair (perhaps on their way to Scandinavia) stopped in Speyside and built a nest. In 1958 the Royal Society for the Protection of Birds took the eyrie under its wing, so to speak. It set up a 24-hour guard and later an alarm system to foil egg thieves. Since then two other pairs have joined the original homemakers, and a total of 23 young have flown.

Ospreys' Young Decline Alarmingly

The story of the threatened Connecticut ospreys is sadder and more mysterious. Fifteen years ago, when I moved to Old Lyme, nearly 150 active nests lay within a 10-mile radius of our house. The main colony lived on the broad lower reaches of the Connecticut River and the estuary where it joins Long Island Sound, chiefly on Great Island. But ospreys were all around.

I had an active eyrie in an oak on the ridge right back of my studio, and my neighbors seemed to find a new status symbol in having

BOOMERANGING BY CAMERON THATCHER © N.G.S.

Hitting the water with a splash, an Oregon osprey plucks a fresh fish dinner from Davis Lake. The female braked at 100 feet when she spied a whitefish near the surface. Then, diving, she crashed into the water, talons extended, almost disappearing in a wall of spray (above).

Hooking the fish, the 3½-pound bird strains to lift her 1½-pound catch (upper right). Airborne (right), she flaps furiously to gain altitude. Time from splashdown to liftoff: about 20 seconds.

Occasionally, an osprey locks its talons into a fish too large to handle and is pulled under to drown.

their own osprey eyries. Several landowners fixed cart wheels atop poles for nesting sites, and when they lured a pair, they boasted as shamelessly as Rhinelanders with storks atop their chimneys.*

But this agreeable picture changed alarmingly. After two or three years, my wife Barbara and I realized something was desperately wrong with our summer-resident ospreys.

One July day in 1957, when Great Island should have been a scene of activity, with young birds at the flying stage, I scanned the marsh through my telescope. I saw the usual number of adults about—but where were the young?

The nesting season obviously had been a failure. The next year confirmed my suspicions. Although young ospreys ordinarily pip the shell in about five weeks, many adults sat on unhatched eggs for 60 to 70 days. Other eggs mysteriously disappeared. One bird brought a rubber ball to the nest and faithfully sat on it for six weeks!

*See "White Storks, Vanishing Sentinels of the Rooftops," by Roger Tory Peterson, GEOGRAPHIC, June 1962.

To find out how bad the situation was, I consulted Peter Ames, who had begun studies of the Connecticut River osprey in 1957 while a graduate student in ornithology at Yale.

"Reproduction is only a seventh to an eighth of what it should be," he reported. "The main problem is hatching, but plenty of eggs are disappearing too."

"Egg collectors?" I asked.

"I don't think so," Peter replied. "Could be raccoons."

In 1962, with the aid of a grant from the National Geographic Society, Peter and my wife built 21 raccoon-proof nesting platforms, each about 39 inches square, mounted on 12-foot posts. Three-foot bands of sheet metal wrapped round the posts protected the nests from climbing animals. These platforms we ferried across the channel and erected throughout the Great Island marsh (page 65). Many pairs that had nested on nearby duck blinds and on the ground switched to the safer sites. But production of young remained the same—scarcely 13 percent of the norm.

Finally we had several eggs analyzed.

ADDACHROMES BY FREDERICK KENT TRUSLOW (ABOVE) AND DR. FRANKLIN B. PECK, M.D. © N.G.S.

Dropping to his nest on wings spanning five feet, a male brings home a two-pound ladyfish from Florida Bay. Father—normally the family's sole provider at nesting time—eats the fish head, leaving the choice meat for his brood.

If taken from an insecticide-polluted area, fish may introduce poisons into the birds' bodies. The author, world-famed ornithologist Roger Tory Peterson, believes that this may be the reason for egg failures in Connecticut River eyries.

Skyway robbery! As an osprey wings to its nest with a 1½-pound bonefish from the Gulf of California, a frigate bird attacks. The osprey, left, swerves and loses its grip on the prize. Neck outstretched, the pirate jerks the fish away with its hooked bill. Such air battles between these two species rarely occur, since their summer ranges overlap only slightly; the more common highjacker is the osprey's powerful cousin, the bald eagle (page 66).

These showed significant percentages of DDT metabolites and traces of DDT itself. So did several fish found in the nests.

If DDT and its derivatives are the villains, they have taken a terrible toll. With a rate of attrition that in some years reached 30 percent, active nests dropped from 150 in 1954 to 10 in 1968. Unless this decline is arrested, we might expect to see our last nesting ospreys in Connecticut in the 1970's.

The Connecticut disaster is not an isolated case. The great colony on Gardiners Island, across Long Island Sound—once perhaps the world's largest—dropped from 300 pairs in 1945 to 35 in 1968.

Ospreys have also run into trouble in the heavily polluted Great Lakes area. Michigan's fish hawks, carefully counted by ornithologist Sergej Postupalsky, are producing young at less than a third the normal rate and are declining about 12 percent a year.

At Cape May, New Jersey, a traditional osprey stronghold, their bulky nests no longer dominate the skyline. Most of the Cape May ospreys are gone.

If the osprey passes from the American scene, we will lose a majestic and unique bird. Alone in a family between the hawks and the falcons, the osprey, unlike those numerous tribes, has but one genus, one species. The

EKTACHROME (ABOVE) AND KODACHROME BY W. E. GARRETT, NATIONAL GEOGRAPHIC STAFF © N.G.S.

Well-disciplined nestlings sit quietly as father brings a fish. They fly at 6 to 10 weeks of age but return to feed at the nest for several more weeks.

For the remarkable close-ups on the following pages, photographer Truslow (below) sat in this Everglades blind for 38 days, 10 hours a day, while temperatures inside soared to 110° F.

Two-week-olds (right) grow quarrelsome with hunger as mother watches for their provider.

fossil record to date shows us no ancient near-relatives either, no ospreylike birds prior to the Pleistocene, the Ice Age.

Expert Fisherman on the Wing

Of all the birds that fish, the osprey is the master technician. Recently I watched one at work at the mouth of our estuary.

Cruising over its fishing grounds, it checked itself 40 or 50 feet above the water and hovered on laboring wings in one spot. Scanning the riffles below, it took a bead on its quarry, then plummeted, its needle-sharp talons thrown far forward and its head in line with them. This falconlike thrust plunged the big bird completely out of sight in a splash of spray, but a moment later it reappeared to flap off with a fish. As it almost invariably does, it carried its prey nose forward like a silvery torpedo (pages 54-5).

The technique of other fishing birds, such as the bald eagle, is quite different. The eagles usually make a glide, throwing out the feet at the last moment to hook their prey and fly on without so much as wetting a feather.

Bald eagles from the north visit the Connecticut when the ice is on the river, but I seldom see one after the ospreys return from their wintering grounds far to the south. Where the two birds are found together,

however, one can sometimes witness such a drama as I once saw at Penobscot Bay in Maine. A heavily laden osprey, coming in to its eyrie, was intercepted by an eagle, bent on highjacking.

As the eagle swooped, the osprey veered and climbed, clutching its catch in both feet, one before the other, as is its habit when the prey is large. But the eagle climbed faster and swooped again. Both birds ascended until they were mere specks in the blue. Each time the eagle made an aerial thrust, the osprey swerved or side-slipped.

Finally the osprey, tired and rattled, dropped the fish, and before the prey had reached the water, the eagle, with the speed and precision of a missile interceptor, had it in its talons.

This does not mean the osprey is weak-willed. Sometimes an ambitious bird will lock onto a fish too big to haul out and, unable to loose its grip, will be pulled under and drowned.

A spirited osprey will also, on rare occasions, turn the tables and harry an eagle—not in a mood of piracy but rather to drive it from the nesting territory. I watched such an encounter in Maine. The eagle seemed more

Dishing up dinner, a mother offers a piece of silver mullet to her five-week-old youngster. When he grasps the morsel with his beak, she releases it. Should a bit drop, she retrieves it and tries again. After satisfying her young with the tender body of the fish, she consumes tail and bones herself. Eyes of the adult glisten yellow, those of the young reddish-brown.

Sleepy: Two youngsters, their crops full, pant drowsily.

Sleepier: Chicks' eyes close as mother keeps sharp watch.

Sleepiest: They finally droop head to breast in slumber.

Landing gear in position, a female makes a smooth approach into the wind. Legs stretch forward to seize the perch as tail and wing feathers spread wide for braking and stabilization. Still traveling too fast, she rotates wing tips in reverse to slow forward motion further.

Talons down, she comes to rest, folding her wings in a perfect landing. The complete angler, the keen-eyed osprey can spot fish from 100 feet. Long legs thrust deep into the water. Curved talons pierce scaly skins, and thorny spicules on the bottom of the toes grasp slippery prey.

annoyed than alarmed by the screaming osprey that swooped repeatedly from above.

Though our local ospreys are not eagle fighters, I never tire of watching them as I canoe the quiet backwaters of the Connecticut. High over Great Island one fish-laden osprey after another wings its way homeward. Sometimes a herring gull gives hopeful chase, but I have never seen an osprey lose its prey to a mere gull.

From my canoe on the Connecticut I have often watched the male enter the eyrie with his catch. After he eats the head, his mate takes the remainder from him and feeds the young the choice center part, bit by bit, saving the tail for herself.

But in Florida, Fred Truslow, who photographed ospreys so beautifully for this article, saw a male depart from etiquette.

"He brought back a pound-and-a-half weakfish and sat there nibbling," Fred said. "When he ate beyond the head, the female clucked impatiently. When he reached the halfway mark on the body, she grew strident. And when he ate into the tail section, she flew off with an angry scream. A few moments later she was back with a fish of her own. This she divided—center part for the youngsters, head and tail for herself."

Not until the young are five or six weeks old will they occasionally pick at a whole fish. By that time feathers have replaced the young birds' buff baby down and they look quite like their parents, except that each dark feather is broadly edged with pale buff and their irises are tinged with red. They spend much time exercising

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Setting-up exercises show the beautiful and powerful wing structure of the osprey. Stretching brings relief after the female has spent hours on her perch waiting for her mate to bring supper. She simultaneously extends her right wing and leg, then her left ones. Much between-feeding time is spent preening—first ruffling and smoothing short feathers, then pulling primaries and tail feathers through her bill. Photographer Truslow watched enviously, for he could not move from his cramped, three-foot-square blind without disturbing the birds.

their wings, flapping and jumping in one spot, against the day when they will fly.

This is usually in July in Old Lyme. For five or six weeks thereafter they play flying games with their parents before their late-summer departure for South or Middle America. They are not taught how to catch fish; that comes naturally. Even hand-reared young ospreys that have never seen their parents catch a fish can do so as soon as they have mastered flight.

Today we rarely have the pleasure of watching a young osprey make its first flight. How different from those early years when every duck blind on Great Island supported a flat platform of sticks, and several great snags that had been stranded by storm tides attracted numerous nest makers. So favored was this island, but so limited the supply of good nesting sites, that some even nested in the marsh grass with only the scantiest lining of sticks.

On the mainland, where the birds normally nest in trees, a few opportunistic pairs used to build their nests on telephone or power poles. An enterprising osprey in Old Saybrook, just

across the river from our town, made off with the top of a metal trash can, a perfect bowl for its sticks when placed on the crossbars of a power pole. The next downpour filled and tipped the metal cover, which short-circuited the wires and plunged the neighborhood into darkness for an hour.

A few years ago, when a distinguished British colleague, Max Nicholson, asked to see our Connecticut ospreys, I was even able to show him a pair nesting on a pole beside the railroad track. As we watched them, a New York-Boston express thundered past, but so conditioned had this pair become that they did not fly. Later in the day I showed Max another pole nest at an intersection of a busy thoroughfare.

Birds' Plight Prompts Government Study

Such nests are no longer to be seen, though some of the 10 breeding pairs remaining in our area still use the nesting platforms that Peter Ames and my wife built. Despite their efforts, production has not improved. In 1967, 11 nests produced a single fledgling; in 1968, 10 pairs produced only one young. All the nests had eggs, but most failed to hatch.

We cannot say that such eggs were infertile; in some the embryo had started to develop, then died. Most biologists believe chemical pollutants are involved, and so alarming are the implications that the U. S. Fish and Wildlife Service is investigating not only ospreys but also bald eagles, pelicans, and other fish-eating birds.

Science, though, does not jump to conclusions. The many ospreys on the mangrove keys of Florida in Everglades National Park seem to have been raising the proper number of young despite the "blessings" of progress. A study now under way will tell us if this really is the case and may also tell us why. And how do we explain the Maryland ospreys, which have also been successful in raising families? Could Maryland be less exposed to contamination than nearby Connecticut? Is there a difference in the food supply or are the Maryland birds simply better parents?

Operation Egg Switch

To try to find the answers, the U. S. Fish and Wildlife Service assigned William Krantz of the Patuxent Wildlife Research Center and one of our neighbors, Paul Spitzer, a student at Wesleyan University, to carry out further studies. What would happen, they wondered, if Maryland eggs were placed in Connecticut nests and Connecticut eggs put in the care of Maryland ospreys?

Bill and Paul made an egg switch in the spring of 1968, exchanging 21 Connecticut eggs for 22 Maryland eggs. Eight of the Maryland eggs hatched in Connecticut nests—roughly 36 percent, somewhat less than the percentage that had been hatching all along in Maryland but significantly better than the Connecticut record. However, only one of the

Troubled species under study: William Krantz, right, of the U. S. Fish and Wildlife Service, with Gerald Mersereau and Phyllis Armstrong, bands seven-week-old birds at the mouth of the Connecticut River. A drastic decline in osprey population here—from 150 nests in 1954 to 31 in 1962—prompted the National Geographic Society to contribute funds for 21 nesting platforms. The metal-sheathed posts thwarted predatory raccoons, but production of young continued low. Analysis of unhatched eggs revealed the presence of pesticide residues.

In solitary majesty, an osprey patterns a Florida sky with a distinctive silhouette. Sometimes mistaken for the bald eagle, the osprey—not nearly as large—has angled wings and white belly in contrast with the eagle's straighter wings and dark body (left).

PAINTINGS BY FREDERICK KENT TRUSLOW © N.G.S.

Connecticut eggs hatched in Maryland. The difficulty therefore seemed to be something intrinsic in the egg, and not in any aberrant behavior of the Connecticut parents. It appears significant that two-thirds of the Connecticut eggs sent to Maryland broke under the sitting birds.

About two weeks after the eggs hatched, Bill and Paul tested another point, the capacity of the Connecticut food supply to sustain a normal brood. A batch of young ospreys was brought by plane from Maryland so that every nest on Great Island held a full complement of three. The foster parents readily accepted them, and in the weeks that followed all the babies save one grew fat, eventually fledged, and flew.

Death Creeps From Bug to Fish to Bird

Thus it would seem that environmental pollution affecting the eggs through the food chain may be the basic problem, and not the behavior of the adults, inadequate food supply, or such other local factors as disturbance of the nests. But which pollutants are critical and what are the mechanisms?

We know that DDT and other chlorinated hydrocarbon pesticides sprayed widely over farms and orchards persist in the environment a long time. Insects poisoned by these chemicals are consumed by fingerlings; these are eaten by larger fish, which in turn are caught by the osprey. The concentrated poisons are then, presumably, transferred to the osprey's own tissues.

Recent studies at the University of Wisconsin by Professor Joseph J. Hickey and Daniel W. Anderson show a definite relationship between the presence of DDE, a derivative of DDT, in the eggs of certain fish-eating birds and the thickness of the eggshells. Osprey eggshells examined in New Jersey weighed 25 percent less than those collected before the use of chlorinated hydrocarbons. (Significantly, shells from the more stable Maryland population have changed much less.) The presence of DDT and related compounds could explain the high percentage of egg breakage and egg disappearance in our Connecticut nests.

Actually, DDT is only one of many pollutants coursing through our rivers. Research will pinpoint the problems and cures. With rare insight, young Paul Spitzer remarked to me, "Ospreys are more than just birds to be enjoyed. They are an alarm system of things gone haywire in the river, the estuary, and the sound. They are sensitive indicators of the environment."

That is precisely why *all* birds are important.

But one who loves birds as exemplars of nature's wild beauty finds much sadness in the peril of a species. Almost as dependable as the tides, our Connecticut ospreys return to our estuary during the last 10 days in March. But one year soon, I fear, I shall go down to Great Island at the usual time of their spring arrival, and there will be no ospreys—not one. Part of the lovely Connecticut River will have died.

THE END

Switzer

EUROPE'S

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SINCE THREE IN THE MORNING we had been climbing steadily. Our goal, the summit of the towering Matterhorn, gleamed just above us.

The first hour had been miserable as we crawled cautiously up steep granite with flashlights, over a thin coating of ice that made climbing treacherous. Finally the stars had faded as the first red of dawn outlined—then kindled—some of Switzerland's highest peaks around us: Monte Rosa, Weisshorn, Dent Blanche. For an instant our Matterhorn had glowed like a giant torch against the purple sky, before the sunlight washed yellow and warm downhill to greet us.

Blessed by the beauty of such a day, I moved upward more easily now, each step putting the familiar world farther behind. The trip was routine for my companion Werner Perren, a professional guide from Zermatt. He had climbed the Matterhorn nearly 300 times. But as we stopped just above the snow line to strap spiked crampons onto our boots, I noticed that his mood, too, was lighter.

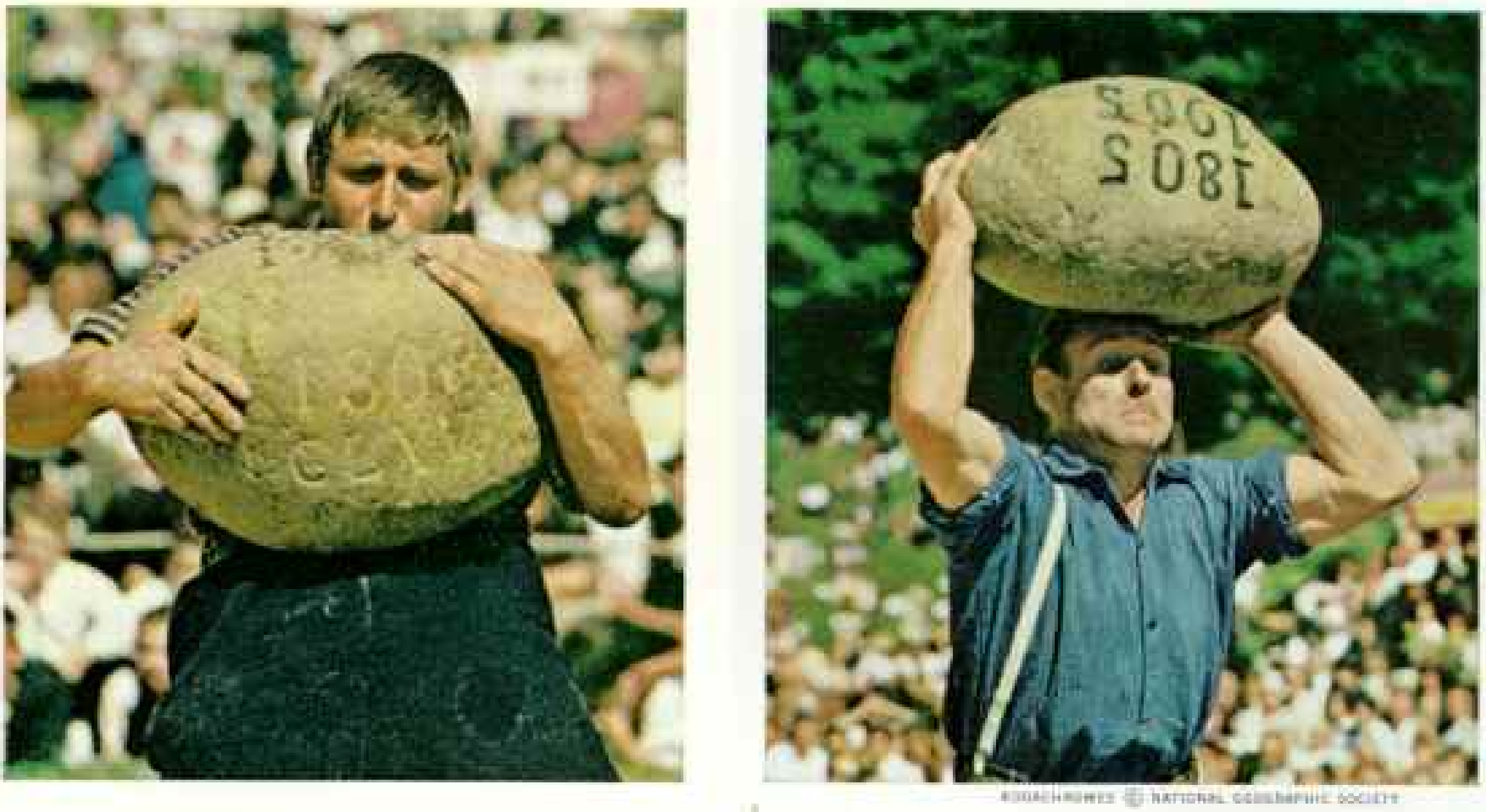
"If there is any view more beautiful than looking up to the Matterhorn from Zermatt's green hills," he said, "I can't imagine what it would be—unless it's looking down *from* the Matterhorn."

From then on we spoke little. Werner's eye was on the looming summit, and he kept the rope tight with his impatience. By midmorning

Transfigured night: Set aglow by floodlights, the hilltop castles of Tourbillon, left, and Valère cast a fairy-tale spell over Alp-cradled Sion, capital of Valais Canton. A delightful blend of medieval and modern, snow-laden peaks and winding valley, Sion typifies the Switzerland so beloved by visitors. Of all the world's countries—according to a U. S. survey in 1968—Switzerland holds the strongest appeal as a vacation mecca for Americans.

HIGH-RISE REPUBLIC

Article and photographs by
THOMAS J. ABERCROMBIE
National Geographic Foreign Editorial Staff



Every muscle strained to the limit, Swiss yeomen strive to toss a 184-pound boulder —the Unspunnen stone—at the *Unspunnenfest* near Interlaken last August. Some 25 contestants managed to heave the huge stone, which bears chiseled and painted dates marking previous competitions. The winning throw measured 3.02 meters—9 feet 10.9 inches—a new record. Held approximately once a decade, the contest and festival were first staged in 1805 to rally patriotic spirit.

we walked up along the last sharp snow ridge onto the top.

Here, nearly three miles high, the air was crystal clear. With my binoculars I could easily see details on the slopes of Mont Blanc in France and make out Monte Viso rising above Italy's Po River a hundred miles away. To the north lay the jumble of peaks and plateaus called Switzerland. Switzerland is not large—all of it would fit easily into Vermont and New Hampshire, with room left over. It seemed as if I could see the whole country down there between my boots.

Misty Hills Hide Humming Cities

The view of Switzerland from the Matterhorn is mostly sweeping glaciers and jagged peaks, the roof and ramparts of this Alpine republic. Her tidy villages and humming cities are hidden in steep valleys and behind misty hills. But to know Switzerland you must first know her mountains—these giants that shaped her perspective and left their indelible stamp on her character, her culture, and her history. The same Alps that divided Europe united Switzerland.*

The Matterhorn is not a difficult climb for experienced Alpinists. It was first scaled in 1865 by a party of Englishmen and their guides; now, in a good year, as many as 2,500 climbers reach the top. But along the way I saw small markers to some of the 125 climbers who have been killed on this giant arrowhead of a mountain (page 108).

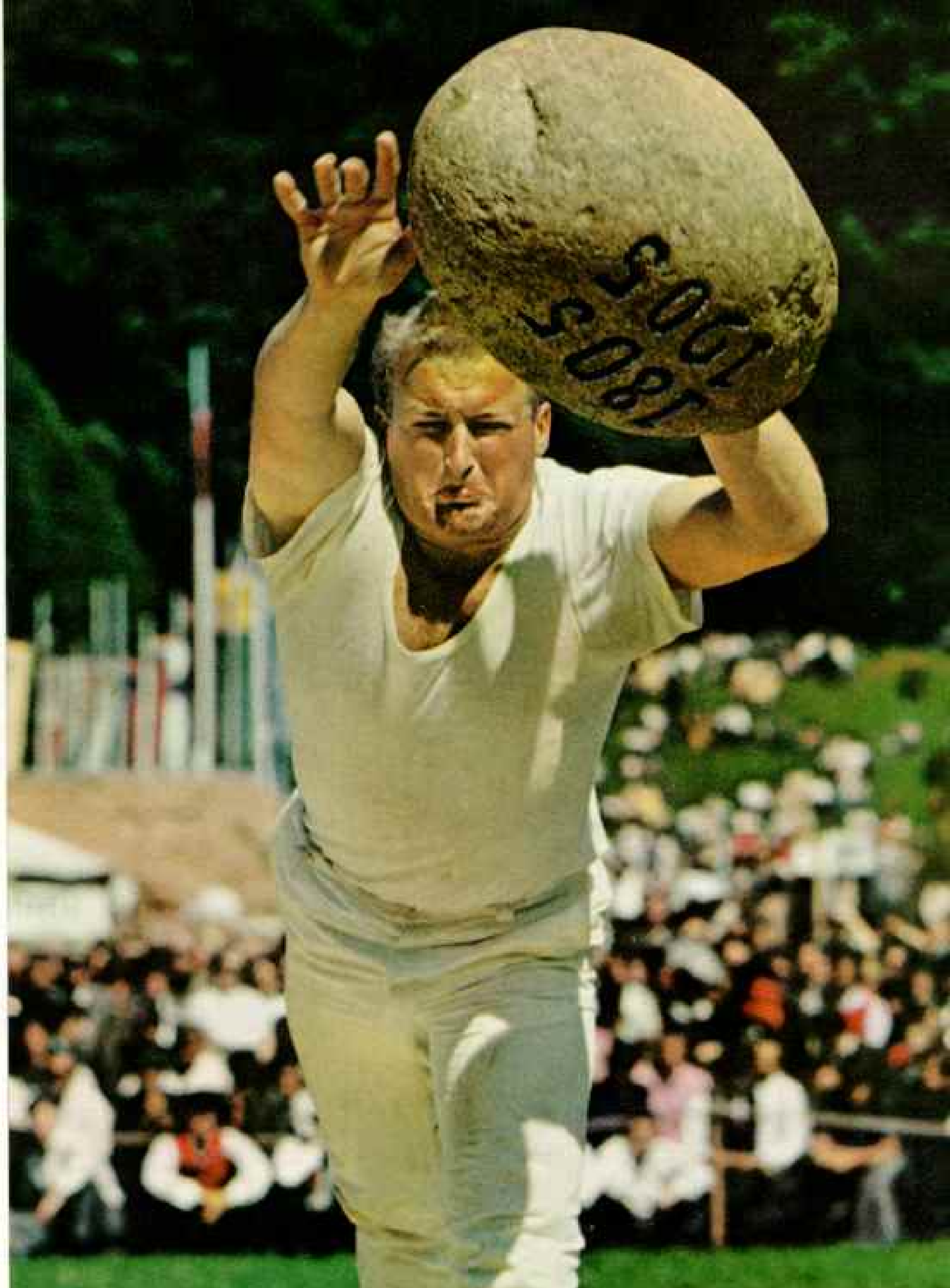
Down past the snow line and ridges of rock the climb unwound, past the hut where we had spent the night and along the moraine to the upper meadows bright with gentians and buttercups. The rest was a walk.

I looked back. The Matterhorn was now spewing clouds from its sharp point. A late afternoon blizzard was raging on the summit we had left so sunny. But here, a mile lower, the air was thick and warm and fresh. Soon we were walking through the first bent shrubs, then forests of pine, and finally the friendly stir of the village.

Often had I visited Switzerland, drawn mainly by these mountains. Yet like many of the millions of tourists who arrive each year, I had neglected the Swiss. It's easy to do. They are an unobtrusive people not given to mixing with strangers. This time I would stay longer and try to learn more about my hosts.

Altogether I spent three months poking into every one of the cantons (map, page 72),

*See, in NATIONAL GEOGRAPHIC: "The Alps: Man's Own Mountains," by Ralph Gray, September 1965; "Surprising Switzerland," by Jean and Franc Shor, October 1956; and "Switzerland Guards the Roof of Europe," by William H. Nicholas, August 1950.



Switzerland

LOFTY SWITZERLAND, with altitudes ranging from 633 feet to 15,203 feet above sea level, looks down from its ramparts on France, Italy, West Germany, Austria, and tiny Liechtenstein. Across the country's waist sweeps a broad plateau. Here lie most major cities: Geneva, Lausanne, Bern (the federal city), Lucerne, and Zürich.

Sources of the Rhine and Rhône Rivers are only 15 miles apart in the central Alps.

Switzerland's flag (left) dates from the 13th century. In 1863 the International Red Cross, to honor its Swiss founder, adopted the banner with colors reversed.

Forty-one of the 50 United States are larger than Switzerland. Many cantons (below) are no bigger than a small U. S. county. Residents have a fierce loyalty to their local districts, claiming first to be Ticinese or Appenzellers and second Swiss. Any national threat, however, instantly melts all differences and welds the polyglot Swiss into a patriotic unit.

AREA: 15,941 sq. mi. **POPULATION:** 6,071,000. **GOVERNMENT:** Confederation. **LANGUAGE:** 69 percent speak Swiss German, 19 percent French, 10 percent Italian, .9 percent Romansh, a Latin dialect. **RELIGION:** 53 percent Protestant, 45 percent Roman Catholic. **ECONOMY:** Almost half of world's watch production. Exports precision tools, diesel engines, chemicals, fabrics, cheese, and chocolate. Tourism, banking, and insurance also important. Salt is chief mineral; some iron, coal, asbestos. Abundant hydroelectric power for processing imported raw materials.

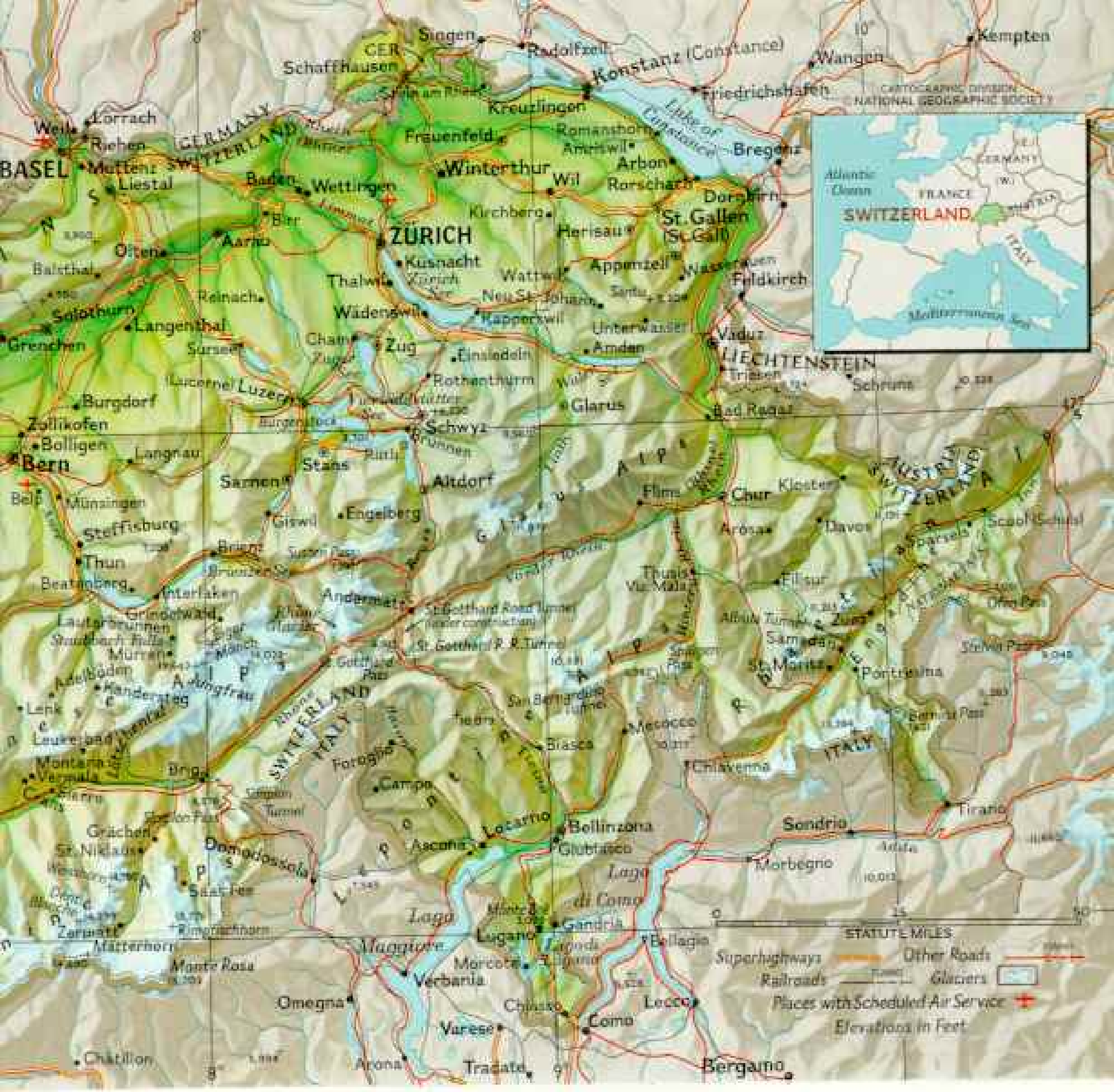
PREDOMINANT LANGUAGES

- GERMAN
- FRENCH
- ITALIAN
- ROMANSH

CANTONS AND DEMICANTONS WITH THEIR CAPITALS

1	Aargau	Aarau
2	Appenzell-Ausser Rhoden*	Herisau
3	Appenzell-Inner Rhoden*	Appenzell
4	Basel-Basel Land*	Liestal
5	Basel-Basel Stadt*	Basel
6	Bern	Bern
7	Fribourg	Fribourg
8	Genève	Genève
9	Glarus	Glarus
10	Graubünden	Chur
11	Luzern	Luzern
12	Neuchâtel	Neuchâtel
13	St. Gallen	St. Gallen
14	Schaffhausen	Schaffhausen
15	Schwyz	Schwyz
16	Solothurn	Solothurn
17	Thurgau	Frauenfeld
18	Ticino	Bellinzona
19	Unterwalden-Nidwalden*	Stans
20	Unterwalden-Obwalden*	Sarnen
21	Uri	Altdorf
22	Valais	Sion
23	Vaud	Lausanne
24	Zug	Zug
25	Zürich	Zürich

*Demicantons



climbing up and down the countryside by Volkswagen, electric train, and cable car, as well as on foot. The longer I stayed, the more I became impressed by the diversity of the Swiss people and their ability to make the best of difficult situations.

Consider this small, landlocked nation surrounded by Europe's giants. About half its land is farmable—if you include near-vertical grazing grounds—but Switzerland depends on imports to feed its population: six million and growing. Its principal natural resource is water.

The Swiss are split almost equally between the Catholic and the Protestant faiths. Nor do they have a common language. They constantly scramble three: German, French, and Italian—four counting Romansh, an ancient Latin dialect spoken by less than 1 percent of the people but recognized as one of the national languages. Some linguists, in fact, have listed more than 70 dialects; they vary from one valley to the next—together with food, climate, architecture, and temperament.

At Interlaken, toward the end of the summer, I ran head on into the full spectrum. Thousands of Swiss from all over the country gathered, as they do once a decade, for a week of folk dancing and Alpine sports. My day began early when Frau Frei burst into my room loaded down with flags.

"*Sie haben Glück, dass Sie das Unspunnenfest fotografieren können*" ("You are lucky to be able to photograph the Unspunnenfest"), she reminded me as I helped hang the banners between the boxes of geraniums that lined

my balcony. I agreed that I was lucky indeed, and she added, "*Ja, denn es findet nur* every 10 years." Remembering I was American, she switched to English in midsentence—though it cost her half a German verb.

Frau Frei and her husband Willy run Interlaken's Bären Hotel, a small place and one of my favorites. Not that the big hotels are not superb—but the Freis lend me books, sew loose buttons, invite me to home movies, and know what wines I like. I feel like one of the family. Besides, the larger hotels are full of foreigners like me. Most of the Bären's guests were from Zürich or Bern or Geneva. Today many were in costume for the big parade.

The bright midmorning sun had dried the puddles of yesterday's rain by the time I made my way up Höheweg and found an opening in the crowd. "*Entschuldigung,*" I murmured in German, squeezing in. "Excuse me."

"*Je vous en prie*—By all means," the man replied in French, making room politely. I had guessed wrong again. But then the game of Swiss-watching was still new to me.

"*Dov'è la sfilata, mamma?*—Where's the parade, mama?" children underfoot were asking impatiently in Italian.

After the first flags came a herd of bleating sheep and cows. Costumed hausfraus followed with giant bouquets of sunflowers and baskets of lettuce, turnips, melons, and grapes. Girls in peasant skirts danced around a portable maypole. The street rang with music: yodeling from Appenzell, waltzes from Unter-

walden, folk tunes from Bern, polkas from Vaud, and a fife-and-drum march from Valais.

No matter that most of the "peasant girls" and "herdsmen" were really typists and teachers, chemists or bank tellers—even the city Swiss are never far from the land. Throughout his life a Swiss remains a citizen of the community of his ancestors.

Nation's Mightiest Stone-tossers Compete

After the parade I borrowed a motorbike from Herr Frei's daughter Annalise, to beat the milling crowds to the ruins of Unspunnen Castle just outside town. The highlight of the festival is the *Steinstossen*, the throwing of the Unspunnen stone, a tradition since the festival was first held in 1805. The round glacial boulder weighs 184 pounds —I could barely roll it—but 25 husky contestants from all over Switzerland lined up for a chance to see who could heave it the farthest (pages 70-71).

The crowd held its breath when champion Karl Reichlin from Beatenberg stepped up to the stone. He spat on his hands and easily scooped it chest high, then jerked it arm's length above his head. His face reddened under the strain as he rocked forward three steps to the foul line.

"Aauughhhh!" he exploded, launching the stone into a short arc. It landed with a thud in the soft meadow. Committeemen rushed out with their tapes. They announced a new record: 3.02 meters—9 feet 10.9 inches.

The music and dancing lasted well into the night;

Money speaks in strident tones during trading at Zürich's stock exchange, where bankers serve as brokers. Swiss financiers have often been called "the gnomes of Zürich" because of their behind-the-scenes influence on international affairs. They are frequently credited with helping to prop the shaky currencies of other nations.

Glittering lode: Swiss 20-franc gold coins spill from a bag in a Zürich bank. Because the value of their gold content far exceeds their face value of $4.60, they are no longer in general circulation.

Horseshoe curve of the Aare River loops around the stately Old Town section of Bern, seat of the federal government and capital of the Canton of Bern. In a land that has historically shunned centralization of power, Bern performs its key political role

ENTWORFEN BY CONZETT+HUBER AG ZÜRICH © B.S.K.

with a minimum of fanfare. The cautious Swiss, rather than have too many federal branches in one city, maintain their Supreme Court at Lausanne. Each of the 25 cantons and demicantons (map, page 72) jealously guards its autonomy and separate identity.

Famed Zytgloggeturm, or Clock Tower, has been giving Bernese the time of day—plus hourly displays of moving statues—for more than 400 years. On either side of the Old Town's arcade-lined Kramgasse, regional flags of Switzerland add a festive and patriotic air. In 1353 Bern became the eighth canton to link its destiny to the Swiss Confederation. It was designated the federal city by the Constitution of 1848.

Before a fitting backdrop depicting historic Rütli meadow, the 200-member Nationalrat—Swiss counterpart of the United States House of Representatives—convenes for last year's opening session in Bern. In 1291 the founders of the Swiss nation met at Rütli, on the shore of the Lake of the Four Forest Cantons. Here they signed an "eternal pact" of independence and mutual assistance. The three original districts—Uri, Schwyz, and Unterwalden—formed the nucleus of modern Switzerland. Lucerne, the fourth of the forest cantons, became a member in 1332. Other cantons gradually joined the confederation—the last three, Valais, Neuchâtel, and Geneva, in 1815.

The spirit of Rütli pervades today's political system. Constitutional safeguards prevent any one man, group, or canton from becoming too powerful. Laws passed by the federal government can be forced to a popular referendum at the insistence of only 30,000 voters. The Swiss president serves a one-year term and may not immediately succeed himself. Such restrictions assure that sovereignty remains at all times in the people's hands.

yodeling clubs roamed the streets. Back at the Bären I found the doorway blocked by a brass band from Lucerne. Herr Frei, in chef's whites, stopped leading the music long enough to pour me a glass of white wine. But before I could taste it, a little old lady whirled me out among the dancers who filled the street.

Rarely did I witness such unabashed revelry on the part of the shy, wholesome Swiss; many even stayed up past midnight. Why, I asked Herr Frei, did they have the Unspunnenfest only once a decade?

"Surely you can guess," he answered. "It takes us 10 years to recover."

Sedate by contrast is Bern, the orderly federal city of the multicultural Swiss. It dates from 1191, when Duke Berchtold V of Zähringen built a wall across the narrow head of land moated by a tight bend of the Aare River. The city's influence grew steadily. In 1353 it joined the Swiss Confederation, and by the 1500's ruled much of present-day western Switzerland.

Old and New Blend in Bern

As capital of the Canton of Bern and seat of the Swiss federal government, burgeoning Bern has leaped the banks of the Aare (pages 76-7). But the river has held the line against the glass-and-concrete façades of offices, factories, and apartments sprouting in the suburbs. The central Old Town still manages a good bit of medieval charm. Despite the traffic and trams, the motorbikes and miniskirts,

Duke Berchtold might still find, as I do, a certain joy in strolling below the Gothic spires of the Münster church.

Geraniums brighten the balconies of thick-walled stone houses that line the cobblestone streets. Under vaulted arcades stores display the finest watches, clothing, books, wines, leather goods, and antiques to tempt well-dressed crowds of window shoppers.

Strict laws limit buildings to four stories, so merchants have gone two and three levels underground. Several "cellar theaters" have opened beneath the streets. One, the Klein Theater on Kramgasse, was presenting *Faust* in a former coal cellar furnished with church pews. The whole theater measured no more than 25 by 60 feet.

Brightly painted statues decorate the dozens of 16th-century fountains spouting in the center of many streets. One is dedicated, of course, to the good duke; others honor Moses, musicians, and marksmen. One depicts Justice with her sword and scales. At her feet are the great of the earth: the Emperor, the Pope, the Sultan—and the Mayor of Bern!

On Tuesday morning the farmers' market filled the Bundesplatz. I walked past stalls of flowers and vegetables and up the steps of the Parliament Building (pages 78-9). Engraved above the high stone portico is "Curia Confoederationis Helveticae." The Latin name for Switzerland, Helvetia, is also used on her money and stamps, a useful compromise since her modern name is different—Schweiz, Suisse, or Svizzera—in each of the three official languages.

Unemployed Remain a Tiny Minority

"And not only do Swiss speak several languages," Walter Jaeggi, a friend in the Department of Foreign Affairs explained, "but their individual cantons guard their sovereignty more jealously than your states. A man calls himself first of all an Aargauer, or a Genevois, or a Ticinese—and second a Swiss. His roots are in his commune, and he is suspicious of centralization. Switzerland has no capital; we call Bern our federal city. But our Supreme Court convenes in Lausanne, 50 miles away."

Herr Jaeggi took me to the *Zeitungs-Zimmer*, literally the "newspaper room," a coffee bar for government officials in the Parliament Building. On the walls hung many of Switzerland's political journals. The Swiss are avid newspaper readers; for the six million people—about the same number as in greater Chicago—there are 400 newspapers, including more than 100 dailies.

Economics Minister Hans Schaffner was

Ghost troops—with very real bullets—materialize in the white wilds of the Swiss Alps. All able-bodied men between 20 and 50 spend two to three weeks a year on military maneuvers. Should an emergency arise, some 600,000 armed men could be mustered within 36 hours to defend their homeland.

The Swiss firmly believe their neutrality must be backed by strong military force to dissuade potential aggressors. Swiss threats to destroy major tunnels and bridges and to fight to the last man are credited with staving off an invasion by Hitler in World War II.

Not since the end of the Napoleonic wars in 1815 has Switzerland been engaged in armed conflict.

Mists of morning recede from the eastern shore of Lake Geneva, unveiling the 13th-century castle of Chillon, in whose dungeons the Dukes of Savoy once held Swiss political and religious leaders. The castle stirred English poet Lord Byron to write "The Prisoner of Chillon," recounting the supposed laments of one François de

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Bonivard, who was imprisoned in "the damp vault's dayless gloom" from 1530 to 1536. In the poem, Bonivard climbs up to a barred dungeon window and peers out yearningly at a vista much like this—looking south past Grandchamp to the Rhône Valley and beyond to the serrated, snow-crowned peaks of the Dents du Midi.

meeting with aides at the corner table. I was surprised to learn from their conversation that unemployment is not among their problems, although the number of Swiss jobless did rise last year—from 123 to 128! They must cope instead with too many jobs. Some 800,000 outsiders now fill them.

The executive branch of the Swiss Government is the Bundesrat, the Federal Council of seven elected by the Parliament. Switzerland's president, chosen from the council, serves only a one-year term. Many Swiss I asked didn't even know the name of the man then serving as president.

In his modest office in the west wing of the Parliament Building I met him, Bundespräsident Dr. Willy Spühler. A pale, soft-spoken man, he has spent his life serving his country with quiet efficiency, in Parliament and as foreign minister.

"Most visitors to Switzerland see us as an idyllic land," said Dr. Spühler, "but we face the same problems that plague other highly industrialized nations—growing traffic jams,

ROSACHROME (ABOVE) AND EKTACHROME © N.G.S.

smog, water pollution—all these are more critical to a small nation.

"If our villages, towns, and cities keep expanding," the president continued, "we face the danger, in the near future, of seeing one giant megalopolis stretching 180 miles from Geneva to Lake Constance."

Marksmen Meet at Historic Meadow

Far from any kind of megalopolis or traffic jams, I took a paddle-wheel steamer from Lucerne early one Sunday morning across the Vierwaldstätter See, the Lake of the Four Forest Cantons. The lake reaches many arms into the misty, pine-wooded mountains of Switzerland's heartland. Our boat was full of tweed- and corduroy-clad gentlemen carrying briefcases and club banners. More boarded at Brunnen.

"We're all headed for the shoot at Rütli," a man explained as we stood by the rail. Shoot? "Surely. Every St. Martin's Day our pistol clubs get together, from all over the country."

He told me that he was Fritz Demmer, a house painter from Zürich. His hat jingled with pins and medals, souvenirs of other shooting contests; in his briefcase he carried his pistol and ammunition. From the landing at Rütli we could hear that the firing had already begun up on the meadow.

Traditionally, it was at Rütli meadow that men from three forest cantons—Uri, Schwyz, and Unterwalden (map, pages 72-3)—met the first of August in the year 1291. Here they swore an "eternal pact" that formed the seed of the present Swiss nation. They pledged themselves to defend each other, and from their Habsburg overlords demanded the right to be judged by men of their own valleys. The parchment pledge, lettered in Latin and hung with wax seals, still

Four exposures on a single frame re-create the psychedelic phantasmagoria that assaults the senses at Montreux's hard-swinging Strobe Club, where young Swiss gyrate to the recorded rhythms of musical groups such as Canned Heat and the Grateful Dead. Jean-Pierre Kolly (right) manipulates projectors, flashing lights, and other devices to create his weird "mind-flowing" effects. Downstairs, in the Pavillon, more sedate audiences attend classical-music concerts.

rests in the archives of nearby Schwyz, the canton that later gave its name to the growing confederation.

These hardy mountain men had experience in democracy. They met regularly to vote on pasture rights or community irrigation canals. In five of the Swiss cantons, men still gather every spring for the open-air Landsgemeinde, to vote on issues by a show of hands. But the main reason Switzerland survived the tumultuous centuries after Rütli was that it was constantly ready to fight for its freedom.

Army Trains in Rugged Mountains

"We have always believed that bearing arms is a free man's basic right—and duty," Herr Demmer said. Striking a kitchen match, he blackened the sights on his Luger while we awaited his turn at the target range. "William Tell was a man of courage and integrity —and he was a good shot!"

For centuries Swiss soldiers were considered the best in Europe. Until a hundred years ago Switzerland's chief export was men, fighting men, hired soldiers for the armies of Europe—France, Savoy, the House of Habsburg, and many another. Only one holdover from her mercenary days remains, the Swiss Guard at the Vatican. But at home she has never lowered her guard.

Every able-bodied man is called for basic training when he reaches 20 years of age. Throughout his adult life—until he is 50—he trains with the militia forces several weeks each year. Between courses he keeps his uniform, rifle, and ammunition at home ready for any emergency. On only 36 hours' notice the Swiss can put 600,000 men in the field—approximately one-tenth of the nation's entire population.

Visitors to Switzerland are often surprised to find traffic slowed by columns of tanks while an infantry battalion "takes" a village or a hill and Mirage jet fighters scream overhead. I spent two days on maneuvers with a company of young officer candidates high in the mountains near St. Gotthard Pass. In command was Col. Peter Baumgartner, a tough, rawboned man in a gray wool uniform. He carried a rucksack and a coil of olive-drab rope.

"Many of our troops get mountain training," the colonel said, setting a brisk pace up through the snow and rocks. "The Alps make a natural fortress—but you have to know how to man it."

We reached a chasm more than 50 feet wide, cut by a roaring stream. Men had already rigged a rope. Following the colonel, I hooked my legs around the rope, fastened a snap ring through a belt sling for safety, and slid across the chasm hand over hand. On the other side infantrymen in camouflage suits were already dug in (pages 80-81).

"If an enemy ever invaded, every major bridge and tunnel in his path would be blown up," Colonel Baumgartner said as we crouched behind a boulder waiting for the mock battle to begin. "They would have to make it through the mountains on their own. We would be waiting."

The colonel nodded a signal. With a grunt an officer candidate near us heaved the first grenade. A few seconds of silence, then barrrooooom! Beyond the smoking snow ahead of us, machine guns opened up, adding their staccato to the growing din. Off to our left a platoon of Alpinists, roped by twos, edged down a sheer granite cliff to join the attack. Still higher, skiers, nearly invisible in white parkas and helmets, glided into firing position. Echoes multiplied the ear-splitting barrage.

In 15 minutes it was all over. The soldiers faded back into the silence of the mountains from which they came.

Soldiers Rescue a Stranded Hiker

The skill and stamina of these men were impressive. But, as I pointed out to Colonel Baumgartner, in the event of war they would be heavily outnumbered. He recalled the story of Kaiser Wilhelm's visit to Zürich shortly before World War I. Inspecting a turnout of the Swiss Army at a review in his honor, the Kaiser was impressed. But he stopped, and in a jocular manner asked one soldier, "What could you really do if the great German Army were to invade your country—with a force twice as strong?"

"In that case, sir," the soldier replied, "each of us would have to fire twice."

It was late afternoon and trying to snow when we hiked across the Rhône Glacier after the day's exercises. Suddenly we heard a distant call for help. We took a squad of men and worked back across the glacier, then down through a jumble of giant sapphire slabs at its edge. Now we could see a man, maybe 600 feet up on the crumbling moraine. The soldiers began cutting steps up the steep bank of snow below him. Half an hour later they led a grateful tourist back to safety.

"On nearly every training course a real, live tourist gives us a chance to practice our rescue techniques," the colonel said with a smile. "It's all part of the job."

Switzerland was last involved in armed conflict at the end of the Napoleonic wars. Since then it has been invaded regularly—by armies of tourists. In many areas, like the Canton of Ticino, tourism has become the largest industry.

I drove south over St. Gotthard Pass for a weekend of rest and a change of pace. After bucking steep rock and icy winds of the high Alps, how pleasant it was to stroll under the palm trees along the shores of Lake Lugano.

In the town of Lugano, the traffic was thick with thousands of other visitors, come to cruise to scenic fishing villages like Morcote and Gandria, or to ride the funicular to the top of Monte Brè to watch a golden dusk play on the lake below.

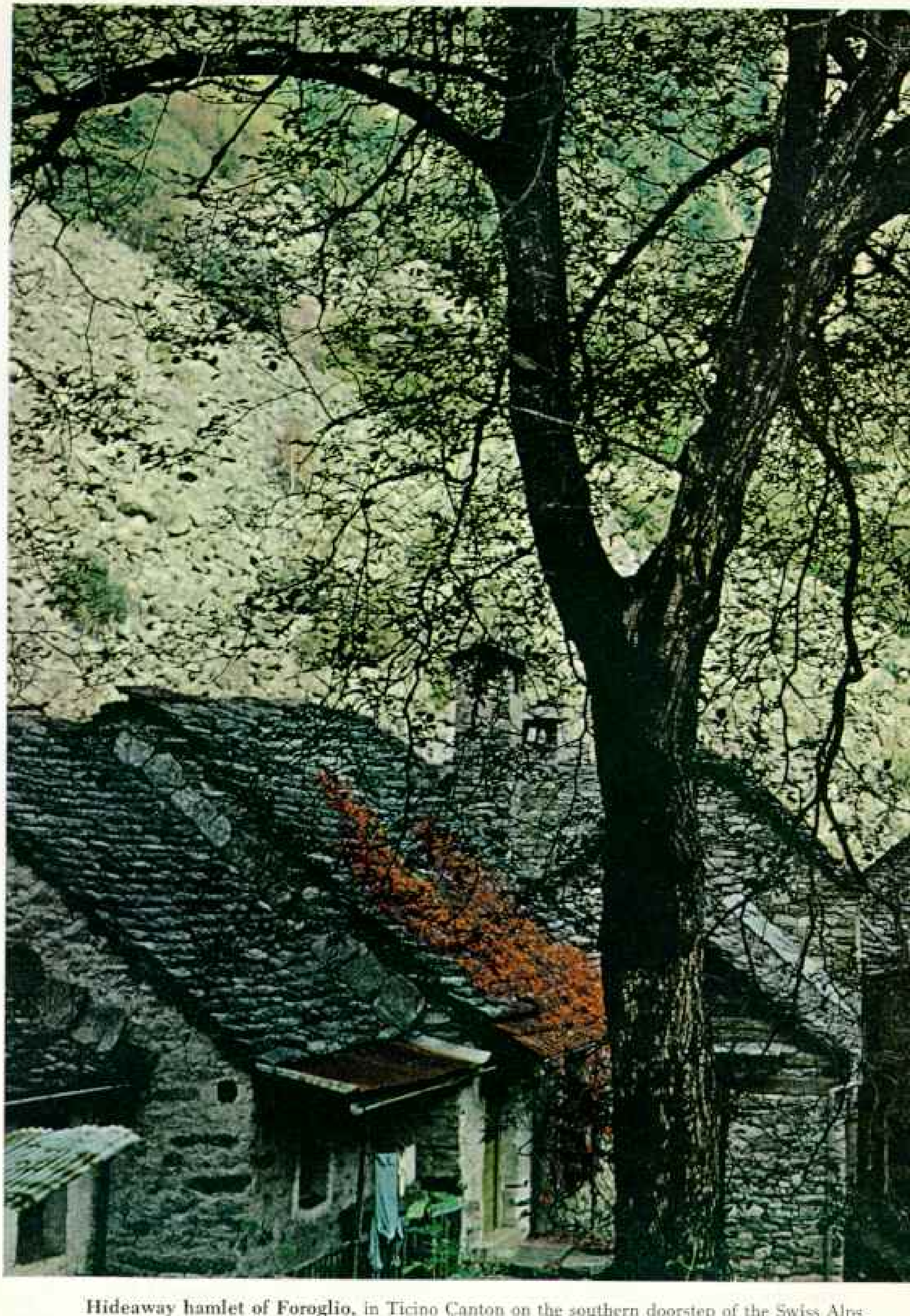
But the tourist's Ticino is no longer centered only around the lakes. Wherever I drove, I found builders at work. Empty lots advertised *"Terreno da Vendere*—land for sale." The whole canton was booming.

Flower-framed kiss reaffirms the vows of newlyweds in Sparsels, a village in Graubünden Canton in eastern Switzerland. Medieval Tarasp Castle stands guard above a sleeping villager.

"Ticino builders and architects were always in demand," said Signor Pietro Bindella, director of the Associazione Ticinese per il Turismo. "No one could fit stone or vault an arch as our masons could. Many left home to build in foreign lands. Today they are busy here—the foreigners come to them.

"Some complain the outsiders are 'taking over' in Ticino," Signor Bindella added. "Along the street you hear almost as much German and English as our own Italian dialect. But if the land has changed, it's for the better. We may be losing some of our peaceful rural atmosphere—but we are also losing the poverty it masked."

In the hills north of Lake Maggiore I visited one of the few folds of Ticino still unmarked by the 20th century, the narrow, wooded valley of Bavona. I paused at Foroglio, a stone village set in a grove of chestnut



Hideaway hamlet of Foroglio, in Ticino Canton on the southern doorstep of the Swiss Alps, breathes an air of unspoiled rustic simplicity. Beneath a spreading chestnut, vines on the roof slates of a house of hand-hewn granite blaze at the first hint of autumn. Most of Ticino's 232,000 people speak Italian and maintain close cultural ties with Italy, yet their land has been Swiss terri-

KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

tory since the 16th century and became a full-fledged canton in 1803. Once largely dependent on the stubborn Alpine soil for their livelihood, the canton's residents turn increasingly to tourism for their income. The beauty and near-tropical climate of the lake country along the Swiss-Italian border draws great crowds of visitors to Ticinese resort towns such as Lugano and Locarno.

trees (preceding pages). There was not a gas station or a souvenir shop in sight, not so much as one billboard or no-parking sign. It was the kind of unspoiled spot travelers seek but seldom find.

Hard Life in a Granite Village

Foroglio is a compact settlement, built to last. Its houses stand straight and true along a short, steep street leading up to the church. The steps, the walls, the streets, and the fence posts are all of the same granite. Even the shingles were sliced from the neighboring quarries. The speckled gray cotton skirts worn by the village women reflect the color of the stone.

Behind the village a waterfall thundersover a towering cliff, and a steep path leads up to higher pastures where village sheep graze.

"In our village, farming is hard—it's a rich man who owns cows," said Remo Tonini. We sipped small glasses of red wine at the Ristorante alla Cascata, the hamlet's only private enterprise. Signor Tonini was a small man, but hard as rock. His sun-scorched face, his hands, rough and scarred from years of work in the quarries, made him look older than his 31 years.

"Here a man can't live by farming alone," he explained. "I worked two years on the new valley road, later in the quarry. Now I have my own business, cutting and selling stone.

"Every year more tourists visit the village," Signor Tonini said. There were a few hikers now, with their rucksacks, sitting in the little ristorante. "Most are just looking for scenery,

EKTACHROME (ABOVE) AND KODACHROME © N.G.S.

Bringing Africa to the Alps, the traveling Circus Knie features a bareback rider on a lumbering rhinoceros—an astonishing sight for children and grownups alike in the Gruyère area, where horned animals are considerably more docile and produce some of the world's most famous cheese. A clown (above) strives to elicit a response from a stubborn sousaphone.

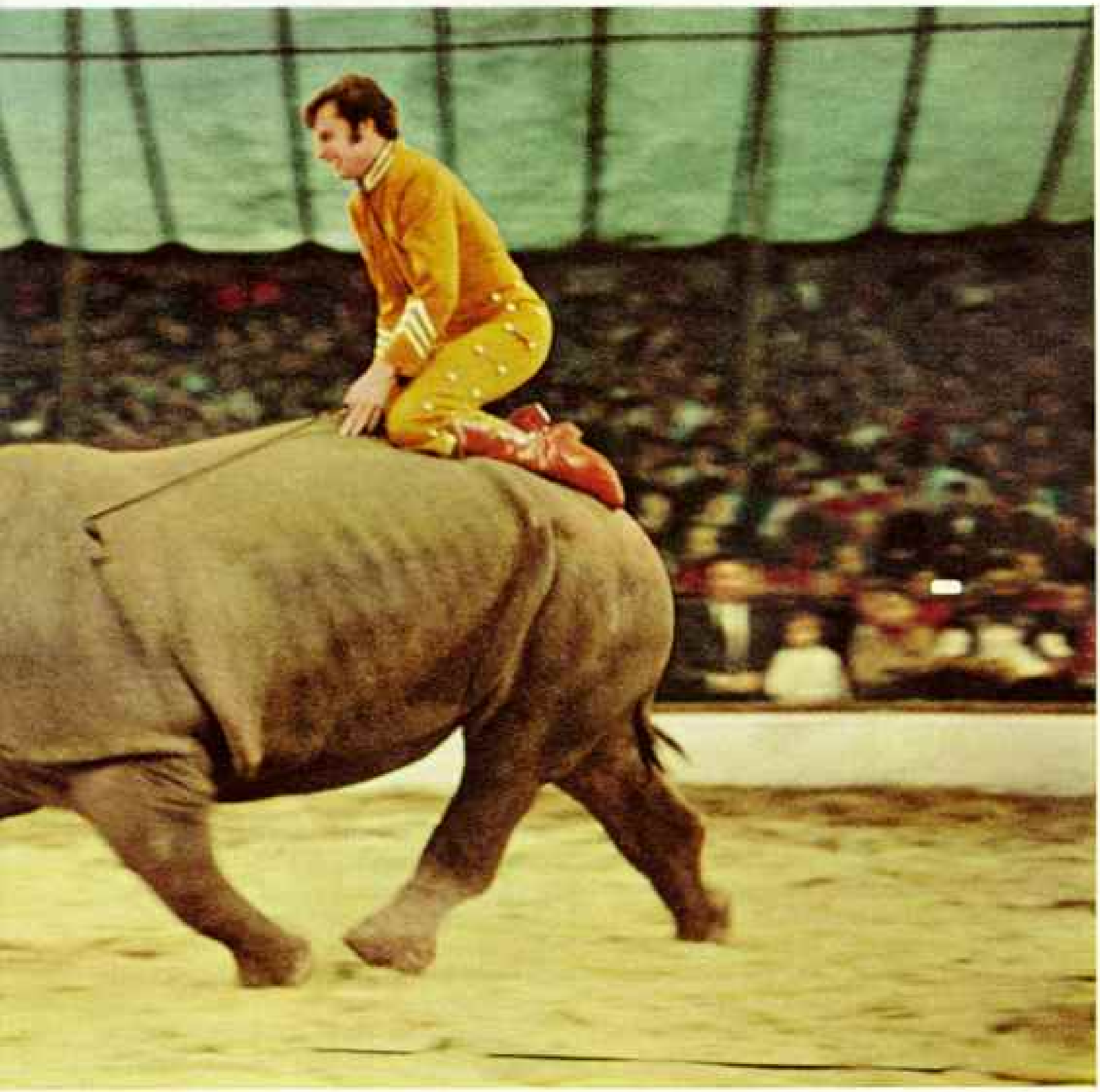
but some stop to ask about land for sale. Foroglio will change, like the rest of the country. As for me, I'm in no hurry for it."

Few places in the world can rival Switzerland's splendid scenery, but most tourists are not content just to admire the view. To help them keep busy last year, the Swiss National Tourist Office published a list of some 1,200 events scheduled for the summer. Included were a six-day bicycle race, judo matches, crossbow shoots, art shows, sheep-dog trials, rowing contests, yodeling rallies—everything from grape festivals to grand opera.

During the summer along the shores of Lake Geneva there is at least one concert every night. Whenever I had a free evening, I took advantage of such musical offerings as a performance of the Orchestre de la Suisse Romande in Lausanne or a string concert in the courtyard of Geneva's Town Hall. One I'll never forget was an impromptu recital under a street light in Geneva's Parc des Eaux-Vives. A group of seven musicians, dressed in bright-red riding habits and playing hunting horns, outnumbered the audience —a friend and myself.

The turnout was more enthusiastic at the packed Pavillon in Montreux when the New York Philharmonic soared through Mahler's Fifth Symphony, coaxed and driven by conductor Leonard Bernstein. Every year Montreux's music festival brings renowned orchestras and soloists from all over Europe and America to join leading Swiss groups for a solid six weeks of music.

"Our 25 performances cover a thousand



years of music," said Monsieur Raymond Jaussi, a member of the festival committee. "Everything from seventh-century religious music to avant garde electronic pieces."

After the Bernstein concert a more earthy beat drew me upstairs over the Pavillon to the Strobe Club, a swinging discotheque catering to Swiss youth. In the dim room, lights flashed and images pulsed to the recorded rhythms of far-out groups like Canned Heat and the Grateful Dead (pages 84-5).

Directing the pandemonium from a booth in the center of the room was a young Swiss, Jean-Pierre Kolly. He manned record players, tape recorders, and a battery of projectors that splashed war photographs, nudes, medical drawings, and Charlie Chaplin movies on the walls. In one slide projector he was cooking a transparency, soaked in dye, with a small blowtorch. The result, magnified a thousand times on the walls and ceiling, gave the dizzying effect of someone peeling a phosphorescent rainbow.

"So far, the Swiss hip scene has only a small tribe," said Jean-Pierre over the din. "I'm sort of their medicine man."

His eyes flashed as he flipped switches and pulled levers. Changing colors reflecting from his serious, bearded face made him look something like the Wizard of Oz. During a break in the bedlam we sought a quiet corner. The crowd around us looked like hippies anywhere: miniskirts, sheepskin coats, bell-bottoms, square glasses, guru beads.

"Many who come to the club are foreigners, but more and more young Swiss are turning on and waking up," Jean-Pierre continued. "Switzerland is so over-organized and predictable the fun's bugged out of it. The *Bünzlis*—our 'squares'—run the country a penny at a time. Man, like there's no place to go if you don't want to play the money game."

Livestock and Family Under One Roof

The average hard-working, early-rising Swiss villager finds little time for nightclubs. His social life is confined to Sunday afternoons. At the Vanil-Noir Hotel in Grandvillard, I joined the village men after church to drink red wine and play jass, a pinochle-like card game. Many wore traditional Sunday best, skull caps and short-sleeved blue denim jerkins embroidered with edelweiss.

"Evenings are short here in Grandvillard," farmer Noel Raboud assured me, laying out a winning hand on the table. The others in our group smiled agreement. "Our days begin too early," one said.

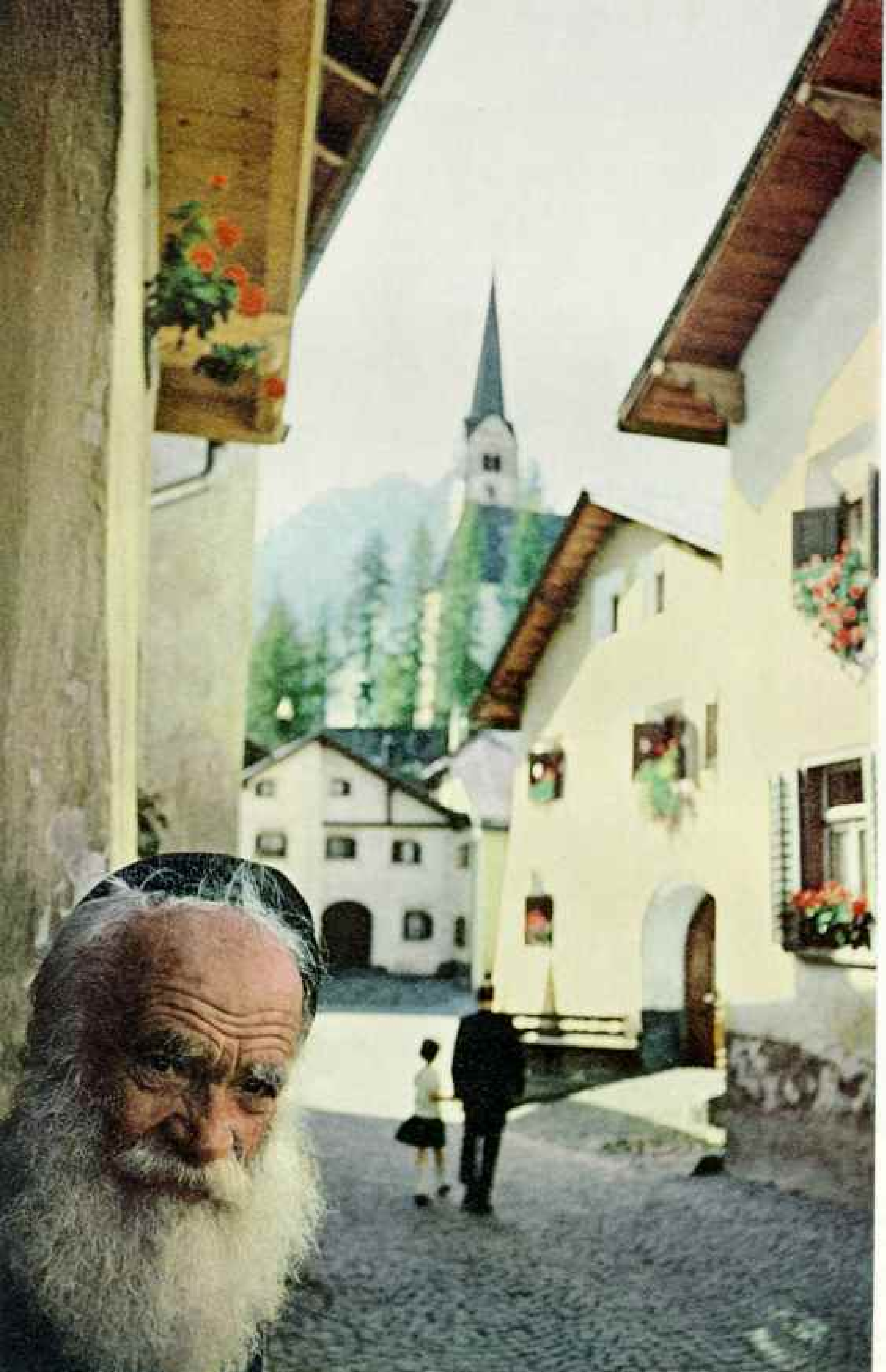
The clock in the church tower struck six as I walked next morning to Monsieur Raboud's home at the edge of the village. It was a sturdy half-timbered house with a hip roof and sheltering eaves. Like many Swiss farmhouses, with barns and sheds attached, it took on the proportions of a mansion.

"Three generations of Rabouds live under this roof—plus 17 cows and 2,000 chickens,"

Monsieur Raboud told me, as he finished the milking. He unbuckled the one-legged stool strapped to him, and I helped him load milk cans into the cart behind his tractor for the short trip to the village *fromagerie*.

While Monsieur Raboud's milk was being strained and weighed, I watched the cheese makers cooking batches of the rich milk in giant vats and cutting the curds with wire

Literary treasures of 1,600 years fill the 18th-century Abbey Library in St. Gall. Visitors, required to wear felt slippers to protect the parquet floors, view books ranging from a fourth-century fragment of Virgil to a personally inscribed volume by Pope John XXIII. The Latin inscription on the ceiling reads, "Behold I am with you" (Matthew 28:20).



paddles that looked like harps on a stick. Later they would hoist out the curds in huge cheesecloth nets and mold them under pressure into 90-pound cakes. After two weeks of daily washing with brine, the wheels of Gruyère cheese would travel to the nearby town of Bulle for six to ten months of curing in an underground warehouse.

I joined the Raboud family for a day of harvesting in their fields. Noel's brother Casimir drove the tractor that pulled a rotary potato digger. Riding the big machine, I helped the women sort out stones and weeds as the potatoes rolled down the conveyor belt into sacks. The youngest boys ran along behind with plastic pails, picking up small potatoes the machine had missed. The whole family worked together.

Even so, it would be eight in the evening before the last chores were finished. Well, I thought, harvest is almost in, winter's not far off. Things should slacken a bit then.

"*Mais non,*" Monsieur Raboud corrected me. "As soon as snow falls, we will drag our big sleighs up to the high pine forests behind the village and start cutting timber."

Yodelers Harmonize With Cowbells

The Swiss continually break their hard routine with fetes and holidays. I was in Appenzell-Inner Rhoden in September when the Johann Sutter family and friends celebrated the *Alpabfahrt*, the annual descent of livestock from the upper pastures at the end of the summer season (pages 98-9). Herr Sutter breeds Brown Swiss cattle—in demand all over the world—and maintains his herd at about 120. Today he had traded his working clothes for yellow leather breeches, buckle shoes, and a red waistcoat with silver buttons —the traditional Appenzeller costume.

Frau Sutter cooked lunch for us all at the small herdsman's cabin near Wasserauen, four miles uphill from the Sutter home in the village of Appenzell. We dipped oven-warm bread into a common pot of fondue made from melted cheese, eggs, and spices, and helped ourselves to thin slices of *Moschtbröckeli*—cider-soaked, air-dried beef—washing it all down with huge bowls of steaming *café au lait*.

After the meal the men finished polishing giant cowbells on the porch of the rustic cabin. Herr Sutter and three of his farmhands each hefted one.

"Ding! Deng! Dang! Dong!" the bells pealed in perfect harmony, and the quartet began to yodel and sing:

"*Appenzell, Ländli du. . . .* Appenzell, you little land. . . ."

The demicantons of Appenzell cover only 160 square miles. Even the people are small. Many of the men around me were less than five feet five inches tall. Because of this they bear the burden of many Swiss jokes. "Appenzellers never have fleas," goes one, "but some fleas have Appenzellers."

We buckled the bells on the lead cows and started the descent. Sutter's five-year-old daughter Cordelia led the procession, driving a herd of shaggy white goats. The handsome Brown Swiss followed, clanging and mooing, through the wooden gate and down the narrow mountain road.

How pleasant the two-hour walk downhill. Appenzell is the Switzerland you see on travel posters, a magic land, unbelievably green, unrolling gently beneath the slopes of snow-covered Säntis mountain. Oaks and maples, in bright autumn leaf, shaded the tiny roads lacing back and forth up the pastures to vividly painted farmhouses decked with flowers. Here and there hamlets huddled among the hills around tall church spires.

In Appenzell village our menagerie stopped the traffic in the narrow streets—big diesel trucks, soldiers on bicycles, kids wheeling milk carts, and tourists with packs on their backs. A pretty waitress from the Hecht Hotel followed us with a tray of cool wine and glasses. "*Prosit!*" As we walked we toasted the end of a good summer.

"Delivering livestock, I've traveled a good bit of the world—Persia, Greece, South Africa —but I'm always glad to get back," Herr Sutter sighed. "We have an old saying: God

"***Bun dì!***" In the Lower Engadine village of Scuol, a 78-year-old patriarch named Not Tall says "Good day!" to visitors in his native Romansh tongue—spoken by 54,600 Swiss. Of Latin origin, the dialect has been designated a Swiss national language along with German, French, and Italian.

"**Perfect Swiss vista,**" the author called this view of the village and valley of Lauterbrunnen and 984-foot Staubbach Falls. After trekking up and down precipitous trails in search of such a scene, he snapped this picture from the window of a train in the Bernese Alps.

Gaily garbed quartet, in the traditional male costume of Appenzell, stage an impromptu concert of singing and yodeling as they celebrate the *Alpabfahrt*, the late-summer descent of cattle and herders from high Alpine pastures to their farms thousands of feet below.

King-size cowbell, borne by a lead animal, announces the herd's return with its deep tolling. Embroidery and a decorative metal plate adorn the leather strap. One of the men smokes a *Lindauerli*, a topsy-turvy pipe with a trapdoor on the bowl to prevent spilling.

KODACHROMES © N.G.S.

created the world in six days and on the seventh—just for fun—he made Appenzell."

I believe it!

Appenzell is one of the last areas in Switzerland where most people still work the land. Despite their pastoral image, only one Swiss in ten is a full-time farmer. Even here, with winter a few snowflakes away, many families would be turning to seasonal work at small embroidery factories in town.

Country Famed for Craftsmanship

Skills built up in cottage industries and small factories formed the framework of Swiss industry. With scant coal, iron, and other metals, the Swiss learned early in the game to apply a maximum of ingenuity to a minimum of raw materials.

Craftsmen began building clocks and watches in Geneva more than 400 years ago, and by the early 1700's the industry had spread throughout the Jura Mountains. Despite the trend toward mergers and mass production, many of Switzerland's 515 watch-assembling plants are small and scattered. Today they produce some 67,000,000 watches a year—almost half the world's total.

I visited one of the newest factories, the Rolex headquarters in Geneva (page 102). When Rolex began selling wrist watches just after the turn of the century, few of its competitors worried. After all, what man would give up his cherished pocket watch for a "bracelet"? But history proved Rolex was right. Later it introduced the first waterproof wrist watch and the first practical rotor self-winder.

"Accuracy, not quantity, has always been our first concern," said René Jeanneret, a director of the firm. "Less than 1 percent of all Swiss watches come from our factory, yet we make nearly 40 percent of the chronometers—the fussy breed of timepieces built to observatory standards. To maintain consistently high standards, we still do a lot of our most exacting work by hand."

Upstairs I peeked into one of the hospital-like work rooms. The sign on the door read *Pièces Compliquées*. Department head Roger Fallet was using complex electronic equipment to check a new wrist stopwatch.

"It takes a great deal of patient work to assemble the 300 parts of this watch—and many days to regulate the movement," Monsieur Fallet explained. "We're constantly working to the limit of the materials—to the nearest 1/25,000 of an inch."

Even on assembly lines there is no compromise with precision. At the Omega factory in Bienne I was fascinated by a room that held 200 automatic lathes. I watched one for several minutes. It whirred and clicked and pumped oil—but nothing happened.

"You must look closely," explained Henri Zürcher, one of the expert machinists. He reached a finger into the oil stream, caught an almost invisible speck, and set it under an inspection microscope for me.

"Voilà! C'est ça!" Monsieur Zürcher smiled. "The lathe automatically cuts 10 different diameters on each of these balance staffs. The smallest diameters, the ends that rotate on the jeweled bearings, are only about 1/300 of an inch."

Each lathe turns out two microscopic parts per minute. At that rate, I calculated, half a year's production would barely fill a coffee cup.

Near the end of the assembly line, bent to the small world between her fingertips, Frau Elizabeth Soder tackles the most delicate step—inserting the balance wheel unit, the heart of the watch. Then, with a tiny spank of her tweezers it ticks to life—and another watch is born (page 103).

A good Swiss wrist watch is accurate to within a few seconds a day. Not bad, considering its size and the stresses and temperature changes it goes through on the wearer's wrist. But not good enough for the Swiss.

Quartz Crystal Controls Wrist Watch

In 1962, Swiss watchmakers opened the Centre Electronique Horloger in Neuchâtel, a research organization serving the industry. When I called on its director, Dr. Max P. Forrer, he was wearing the prototype of the world's most accurate wrist watch. I asked how it worked.

"Basically, it's driven by electricity from a tiny battery," Dr. Forrer explained. "But a quartz crystal is the real key to its accuracy. You see, an electrically charged crystal vibrates with a regular and steady rhythm which we have harnessed to the watch movement."

He opened the back of the amazing electronic timepiece to show the maze of circuitry within. The result is a wrist watch that is accurate to within one second a month.

Were these, then, to be the watches of the future?

"Most probably," Dr. Forrer answered. "It should not be too long before you see them in your jeweler's window. We still have a few problems. The batteries we are currently using last only about a year, but we are working on ways to extend their life span. We also have to develop still smaller electronic circuitry to bring the watch down to competitive size."

Not every Swiss-made machine is assembled under a magnifying glass. Brown, Boveri & Company Ltd. in Baden, a few miles northwest of Zürich, is dramatic proof

Four-legged traffic, escorted by a lovely young maiden and her dog, wends through Neu St. Johann during the Alpabfahrt. When snowflakes start to fly, the sturdy Brown Swiss dairy cattle come indoors—often occupying enclosures under the same roof as the family dwelling. In spring, winter-weary herders and cattle again climb to cloud-high pastures.

that Swiss industry also thinks big. The firm was founded in 1891 by Charles Brown, born in England, and Walter Boveri, of German origin. By 1899 they had built Europe's first electric standard-gauge locomotive, two years later its first steam turbine. Today the company and its subsidiaries employ 85,000 people in more than 100 countries.

I toured the Baden plant, a 43-acre complex of sprawling, clanging factories grown up around the original partners' small workshops. My guide was electrical engineer Harry Buchter.

In one building we watched men test a 90-ton shunt reactor used to limit overloading on high-voltage lines. They hooked a heavy wire to the 30-foot-high insulator and boosted the load until loud blue lightning exploded through the room. The unit would carry its rated 765,000 volts—and then some. Next door an army of workmen was assembling a transformer as big as a house.

"We could build them bigger," Herr Buchter said, "but we're limited on this one by the size of bridges and tunnels between here and Finland, its destination."

Brown Boveri has already outgrown Baden, and is still expanding. The modern plant at Birr could easily swallow a whole Swiss village, including the steeple.

Great spirals of blue and violet steel spun off a huge lathe-like machine, run by master machinist Willy Loertscher. The turbo-generator casing he was turning was 12 feet in diameter. With the help of closed-circuit television he guided the travel of his tool blade, 30 feet away. Willy had been 27 years learning his trade.

Now he earns a little more than 20,000 Swiss francs a year, about $4,600, good by Swiss standards—better than the national average.

"It's a responsibility cutting steel this size," Willy said. "We're working to a tolerance of 1/1000 of an inch. On a piece like this even a slight difference in room temperature can change its size. And if we ever made a mistake," he wiped his forehead with the back of his hand, "well, I wouldn't even want to think about that."

In 1967, outbidding two American firms, Brown Boveri signed contracts with the Tennessee Valley Authority to equip a new power station 50 miles northwest of Nashville. Herr Buchter showed me a model of the giant turbine generators.

Furry hitchhiker watches from a safe perch during Alpabfahrt festivities in Appenzell. The fine embroidery and delicate lace of its mistress's costume are typical of world-famous Appenzeller needlework. During the winter, members of many local farm families boost their income by working on a part-time basis in the town's small embroidery factories.

"**Weightless**" **statuary** by Swiss artist Hans Erni graces the modern Rolex headquarters (left) in the watchmaking center of Geneva. The Swiss, who excel at doing small things in a big way, produce some 67,000,000 watches a year. Switzerland's shortage of natural resources such as oil, iron, and coal has forced her to develop the art of precision craftsmanship.

"They will be the biggest turbine generators ever built, 1,300,000 kilowatts each," he said. "Five of them could light up all Switzerland. To assemble these enormous units—each 115 feet long and weighing some 3,100 tons—we are building a special addition to our factory."

Next to machinery, Switzerland's most important export is chemicals. Headquarters for the industry is Basel, the nation's largest "seaport," straddling the mighty Rhine River at the junction of Switzerland, France, and Germany.* Along the river, high above the red-sandstone Gothic of the city, loom the great glass towers of Basel's "Big Four": Geigy, Ciba, Sandoz, and Hoffmann-La Roche.

Medicine Men for Millions

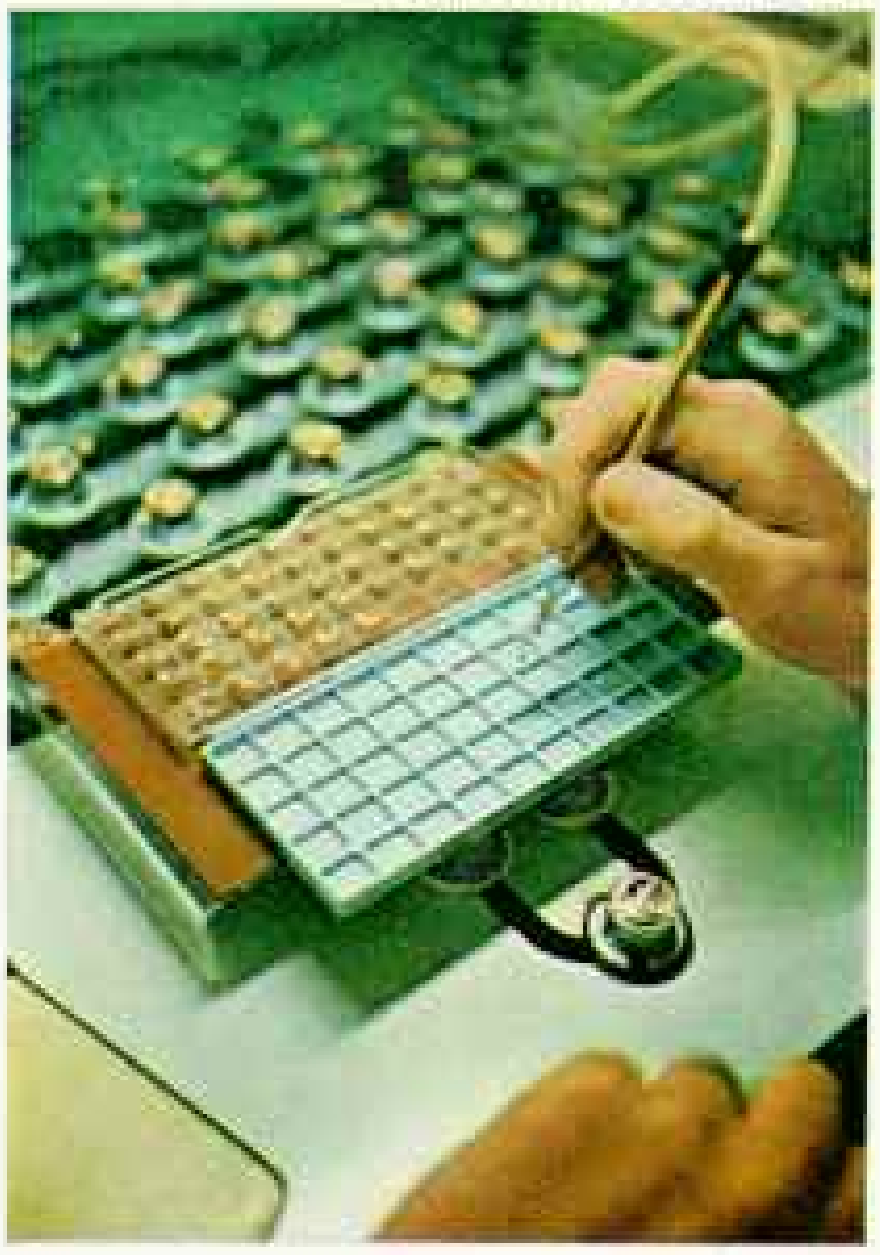
"Basel's first chemists were dyemakers for European textile mills," said Dr. Raeto Schett, in charge of production and technical development for Hoffmann-La Roche. "Since the turn of the century the industry has branched into all aspects of chemical production—dyes, drugs, pesticides, plastics, inks, and rare metals."

Hoffmann-La Roche is the youngest of Basel's giants, and one of the fastest growing. Its founder, Fritz Hoffmann-La Roche, began making cough syrup and a powder for wound treatment in an abandoned ink factory in 1896; the firm has specialized ever since in pharmaceuticals and medicines.

During the 1930's it pioneered development of synthetic vitamins, and today is by far the world's largest producer. Dr. Schett showed me the impressive vitamin-A plant, a hissing, five-story maze of silvered vats, towers, and pipes. To me, the vitamin's structural formula, on the main control panel, was no less bewildering.

*See "The Rhine: Europe's River of Legend," by William Graves, NATIONAL GEOGRAPHIC, April 1967.

Sugar-coating vitamin pills, a workman tends copper kettles at the Hoffmann-La Roche pharmaceutical plant in Basel. Profits from the export of everything from giant electric generators to Swiss cheese combine with income from banking and tourism to keep the nation's economy prosperous.



World of precision: A skilled hand at the Omega plant in Bienne installs a balance wheel unit in a lady's wrist watch. More than 200 parts go into such a watch, which keeps time to within a few seconds a day. New generations of Swiss learn the latest techniques in the time-honored art of watchmaking at special training schools.

Man-made geyser, the 425-foot Jet d'Eau towers over the skyline of 2,000-year-old Geneva. The French-speaking city of 172,500 hugs the shore of Lake Geneva where the Rhône River flows from the lake's southwest end on its way to nearby France and the distant Mediterranean.

Moulin Rouge dancer epitomizes the sophisticated night life and cosmopolitan ways of Geneva. Beneath the gloss and glitter lies a public-spirited "city of the world"—seat of peace and disarmament conferences and home of the International Committee of the Red Cross and 130 other global organizations.

EXTACHROME (RIGHT) AND KODACHROME © N.G.S.

Flock of white-winged dinghies on Lake Geneva races by the headquarters of the former League of Nations, now the European seat of the United Nations. The neutral Swiss have not joined the UN, but they play an active role in its humanitarian agencies.

"It's a complex process. We must mix dozens of different chemicals with the utmost care," Dr. Schett said. "But now most of the processes are highly automated; in one, for example, two men can produce 15,000 pounds of vitamins a day."

Much of the output goes in intermediate form to La Roche's affiliates in 27 countries for final processing to suit local markets.

"Americans, for instance, seem to prefer their medicines in capsule form," Dr. Schett said. "Europeans prefer pills. In our finishing plant we have a full-time confectioner in charge of sugar-coating the pills" (page 103).

Swiss Scientist Discovers LSD's Effects

In another glass skyscraper across the city, at the offices of Sandoz Chemical Company, I called on Dr. Albert Hofmann, a mild-mannered but intense scientist who looked the part in eyeglasses and white lab coat. His office had a special flair. In the window a stained-glass panel depicted Asclepius, ancient Greek deity of medicine, with a snake and rooster. On his desk was a sprig of rye preserved in Plexiglas, a 300-year-old encyclopedia of herbs bound in brass and leather, and a statue of the Aztec mushroom god.

Dr. Hofmann (one *f*—and no relation to the Hoffmann-La Roche firm) holds an important title—chief of the natural products division. But history will remember him for his successful synthesis, back in 1938, of an obscure drug. Five years later, while repeating the synthesis, Dr. Hofmann accidentally got a microscopic amount of the substance into his system—and took the world's first "trip" on LSD.

"Fortunately my laboratory assistant was with me," Dr. Hofmann recalled. "Fantastic images and kaleidoscopic colors surged in upon me. I decided I had better go home.

"As I pedaled furiously along on my bicycle, the world looked like a reflection in a curved mirror. I couldn't seem to make any speed, though my assistant later told me that we were really racing. Somehow we survived the Basel traffic.

"LSD has become an important tool in experimental psychiatry," Dr. Hofmann added, "but it's a potentially dangerous drug. Certainly it's no toy."

Though Switzerland exports almost four billion dollars' worth of machinery, chemicals, watches, and textiles every year, its imports are always greater. To balance the books, the country relies heavily on its banking empire. The Swiss are notoriously thrifty folk. I was told there are more savings accounts in Switzerland than there are people. The currency they do spend is one of the world's most dependable—backed 104 percent by gold.

In Zürich, Switzerland's biggest city, I visited the headquarters of one of the country's

Snow-sweetened pastures, moist with the runoff from Alpine slopes, sprout a lush green carpet for munching sheep in Valais. Their thick fleece helps feed the looms of Switzerland's textile factories. Fine fabrics have been a Swiss export for centuries. The need for textile dyes gave rise to the modern Swiss chemical industry in the 1850's.

oldest and largest banks, the Swiss Credit Bank. An imposing Victorian fortress of gray limestone, Swiss Credit, founded in 1856, counts assets today of nearly four billion dollars. An officer of the bank, Herr Rudolf von Reding, cordially showed me around.

In the foreign exchange section teletypes clattered, while a dozen buyers with direct lines to London, Rome, and New York bargained for blocks of sterling, lira, and dollar currencies. On electronic calculators they quickly computed rates to six decimal places.

Gold Gleams in Underground Vaults

We took an elevator, operated by a special key, to a sub-basement vault. There a lone teller, filling a withdrawal request, counted out gold ingots, each about the size of a cake of bath soap. On metal shelves lining the walls gleamed stacks of bullion and bars of platinum and palladium. Never had I seen so much wealth in one place—$25,000,000.

"This is just our *täglicher* supply—for the daily transactions," Herr von Reding explained. "Our main vault is farther down."

Swiss bankers are constantly under fire from critics of their policy of banking secrecy. The "gnomes of Zürich" have often been accused of helping tax evaders, deposed dictators, and gangsters to hide their loot behind nameless numbered accounts.

"Too many people confuse the idea of privacy with secrecy," said Dr. Hans J. Mast, manager and chief economist of Swiss Credit. "What you discuss with your doctor or your lawyer is not secret, but it *is* private.

"Our banking law, enacted in 1934, forbids bank employees to reveal information about depositors. It was mainly to protect the Germans who defied Hitler's currency controls.

"The name of a numbered-account depositor is known only to two or three of the bank's top officials. But we would never open a numbered account with anyone until his personal background had been investigated thoroughly. Certainly we would never knowingly accept stolen money.

"In criminal cases a court can order release of information on persons under suspicion, whether they have numbered or regular accounts."

As I left Dr. Mast's office, I noticed the only decoration on his desk was a small statue of the three monkeys: Hear No Evil, Speak No Evil, See No Evil.

The city of Zürich is a joy, whether one comes here to make money or to spend it. Few streets in Europe can compete with the beautifully decorated shop windows of Bahnhofstrasse that leads from Lake Zürich to the Bahnhof, the railroad station, in the center of

the city. One needs blinders to get that far.

It's hard to resist the *haute couture* of Grieders, No. 30, the expensive diamonds and jewelry of Gubelin, No. 36, the cameras of Koch's, No. 17, or that incredible department store, Jelmoli, No. 69, that sells everything from hatpins to house trailers and will change money for shoppers, fix rundown heels, send telegrams—even rent you a cabin cruiser.

As for me, I rarely get past No. 62, Franz Carl Weber's toy emporium—five floors of dolls, huge giraffes, precisely scaled electric trains, steam rollers, radio-controlled airplanes, and model-making sets with which a young engineer can design and build his own clocks or automobile transmissions. Salespeople are ready to help in many languages, and whether you spend a franc or a fortune, they walk you to the door and wish you a polite *"Auf Wiedersehen!"*

In Zürich I always stay at a small hotel across the Limmat River in Niederdorf, the city's Bohemian quarter. Its cozy, narrow streets have echoed to the footsteps of some

famous expatriates. On Spiegelgasse stands the gray stucco house where Lenin lived; the Odeon Cafe nearer the river has enshrined the table where James Joyce sipped coffee while he worked on *Ulysses*. Up the hill, at the University of Zürich, Einstein took his Ph.D. and later lectured. Walking through Niederdorf's avant garde crowds, I would often wonder if a future Einstein or Lenin was there, waiting for his time.

Red Cross Born of Battle

French-speaking Geneva is Switzerland's wide window on the world; nearly a third of its people are foreigners. Since the 16th century, when thousands of English, Italians, and Spanish Protestants fleeing the Inquisition were welcomed here, Geneva has been called the "city of refuge."

Later came the Huguenots, and in our own century the homeless of two world wars. Nowadays, when droves of summer tourists mill through the lakeside Jardin Anglais and delegates to countless conventions clog the cafes along Quai du Mont Blanc, it's difficult to spot a real Genevois.

The independent Republic of Geneva joined the Confederation in 1815, blending traditions of tolerance with Swiss neutrality. And in 1863 a Geneva man, Henri Dunant, shocked by the suffering and dying at the Battle of Solferino four years before, organized the International Committee of the Red Cross to provide relief for wounded soldiers.

Later its scope was broadened to include civilian casualties and prisoners of war. National chapters of the Red Cross were formed to cope with earthquakes, floods, and other natural disasters. Switzerland's own national chapter in recent years has helped resettle a new wave of refugees—citizens of mountainous Tibet, flown to this Alpine land to escape the Chinese Communists.*

ICRC headquarters is a former luxury hotel above Lake Geneva. I was impressed by the calm that prevailed there despite a growing crisis. Just off the lobby a conference room had been converted into an "action center." With a minimum of talk men worked at desks under a large map of Nigeria and Biafra. I caught Charles Ammann, Director of the Relief Department, when he hung up his phone.

"That call was from your AID people. They offered us trucks," said Monsieur Ammann. "Biafra is probably the biggest tragedy since World War II—thousands are dying every day. We have some 8,000,000 Swiss francs pledged, and more than 170 volunteers. But we're having problems over safe passage. . . ."

The phone again. It was Rome. An Italian Red Cross plane was arriving in Geneva tomorrow with a load of medicine. The task force was taking shape.

In an adjacent building sprightly Lizette Reymond showed me the archives of the ICRC's Central Tracing Agency.

"We have more than 15 million names,

*See "Little Tibet in Switzerland," by Laura Pilarski, NATIONAL GEOGRAPHIC, November 1968.

Stairway to the sky: Climbers toil up the 13,776-foot Rimpfischhorn. One pauses to contemplate the abyss below. Behind them rears 14,690-foot Matterhorn, first scaled in 1865 and now conquered by some 2,500 guide-led tourists each year.

Still ready to help—though their aid is rarely needed in this age of helicopters—a St. Bernard dog and his trainer, an Augustinian monk, keep watch atop Great St. Bernard Pass. Most travelers today use the tunnel under the pass, opened in 1964.


BANK

KODACHROME (ABOVE) AND EKTACHROMES BY THOMAS J. ABERCROMBIE © N.G.S.

Snowtime playground

LIKE A GLITTERING LODESTAR, St. Moritz entices European royalty, Hollywood stars, and jet-setters to the slopes of the Upper Engadine Valley. Until the late 19th century, only a handful of sedate vacationists came to this Alpine eyrie each summer to take the mineral waters; few stayed for the "awful winters." But later the rising popularity of winter sports, encouraged by local entrepreneurs, brought a new prosperity. Plush hotels sprouted, together with bobsled and toboggan runs, ski jumps, and facilities for the whole gamut of snow-and-ice sports—making St. Moritz, with its superb natural setting, a queen among the world's winter resorts.

Today its shop-lined streets bristle with skis. A pretty devotee (left) returns from an afternoon on the slopes, eager to begin the après-ski activities that will keep hotel lights (above) glowing from dusk to dawn. A goggled daredevil on a small sled (right) streaks down the famed Cresta Run, site of international toboggan races when St. Moritz hosted the Winter Olympics in 1928 and 1948.

Sunset-crowned monarchs—the Jungfrau, right, and neighboring peaks Mönch, center, and Eiger—reign high above Bern Canton. For visitors not content merely to view these Alpine wonders from below, steep railways, precipitous tunnels, and chasm-leaping bridges make all but the

mostly from World War II, cross-filed here on 45,000,000 cards," Mlle Reymond explained. "It was a tedious job tracking them down. For example, we have more than 30,000 Jean Martins in the French section; 70,000 Müllers in the German." During World War II the ICRC kept track of captives, making contact with next of kin and forwarding mail. Cards —pink for Germans, white for Americans, blue for British—overflowed boxes stacked from floor to ceiling. "We simply can't have another war," Mlle Reymond said. "We just don't have the room!"

Following the precedent of the Red Cross, other international organizations gravitated to Geneva. After World War I it was a natural choice of the League of Nations. The League disbanded in 1946 and its marble headquarters became the European office of the United Nations (pages 104-105).

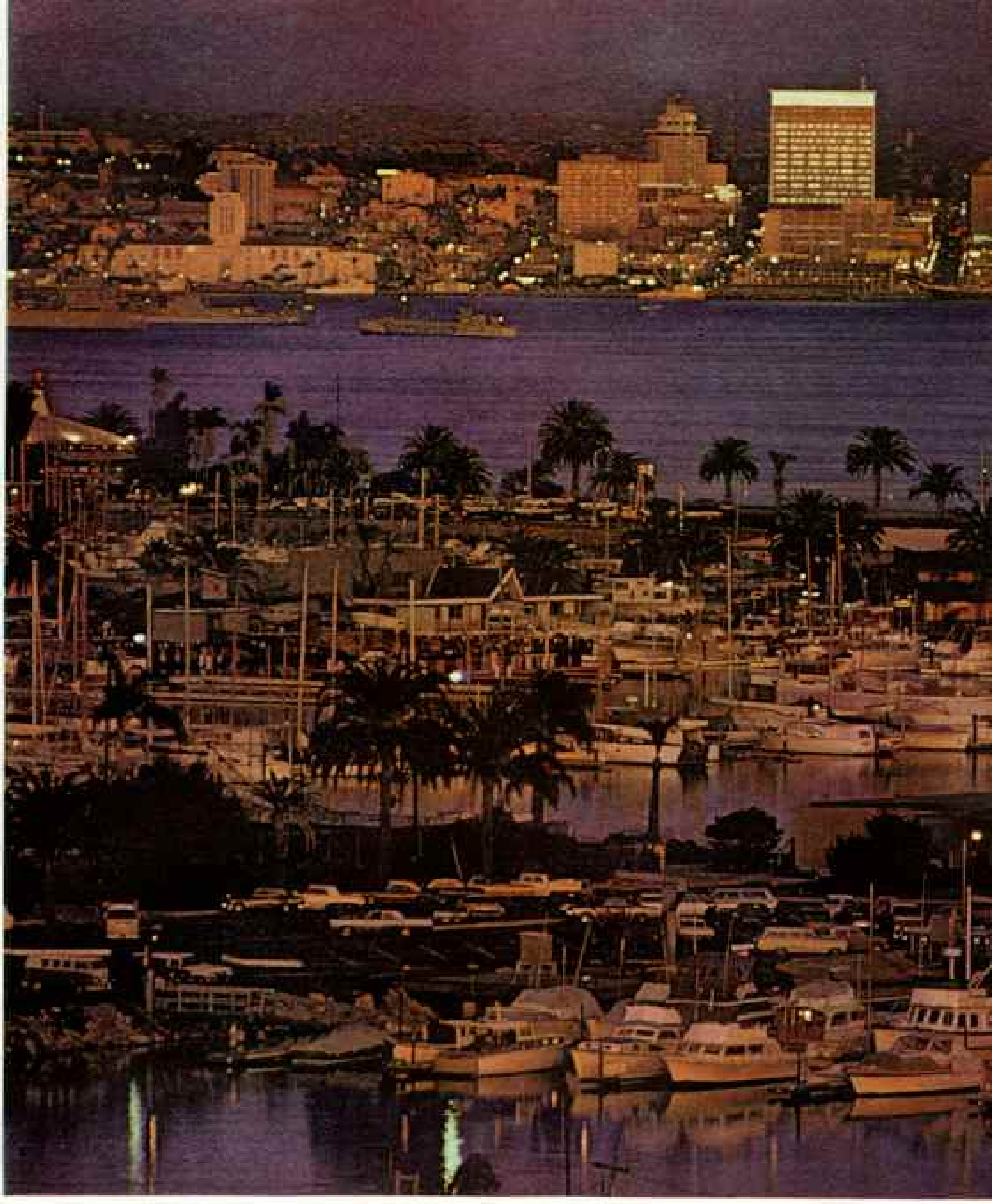
[illegible] © NATIONAL GEOGRAPHIC SOCIETY

loftiest reaches accessible. Europe's highest railway station perches barely 2,300 feet below Jungfrau's 13,642-foot-high peak. Forbidding ramparts that for so long repelled invaders have thus been transformed by the ingenious Swiss into a sky-high pleasureland for armies of vacationists.

Today 151 international bodies have headquarters in Geneva: the International Bureau for the Suppression of Traffic in Persons, the World Water Ski Union, the International Narcotics Control Board. There's an organization to fight tooth decay, another to encourage Esperanto. To keep them all straight, there is a Union of International Organizations.

People the world over continue to look toward Switzerland's example. Few of man's covenants appear as frail as the "eternal pact" sworn by the handful of herdsmen at Rütli, few gardens as stony as the Alps. But for nearly 700 years this determined democracy has been turning adversity into profit. By living small but thinking big, it has forged people of many tongues, diverse cultures, and conflicting faiths into one nation.

And from Switzerland's lesson there is much that all of us can learn. THE END



Like giant candles on the city's 200th birthday cake, San Diego skyscrapers dazzle at dusk. View

By ALLAN C. FISHER, JR.
Senior Assistant Editor

Photographs by
JAMES L. AMOS
National Geographic Staff

San Diego

CALIFORNIA'S PLYMOUTH ROCK

from Point Loma looks past the San Diego Yacht Club and man-made, palm-dotted Shelter Island.

NOT OFTEN DOES MAN the builder improve upon a great work of nature. But it can happen, and I know such a place. It lies on the southernmost shore of an old-new land called California. There the Pacific Ocean has thrust a huge blue scimitar into the ribs of the land, and on the shores of this curving bay, like a well-fitting tiara, rises a city of uncommon handsomeness and promise.

One can view the scene to best advantage from high atop Point Loma, the steep-sided promontory that forms San Diego Bay's northern- and westernmost confines. As dusk approaches, a dying sun washes the spires of the city of San Diego with molten gold, gilds the normally drab naval vessels at their anchorages and the astounding armada of yachts clustered in the lee of Shelter Island, and spreads prodigally on the surface of the bay (above). As if not to be exceeded by the sun in richness of display, the city's myriad lights

become lambent jewels when the gold is gone.

Dusk induces reverie, and it isn't hard to imagine that scene as it once was. The bay is there and the sweep of shore, but the scrubby land lies parched and desolate and sun-bleached. On a small hill back from the water, a steely-willed little Spanish priest, Father Junipero Serra, speaks beside brushwood huts and a crude cross (painting, page 118). Only a handful of his countrymen hear him; many of their party are dead or dying of scurvy. But Father Serra talks hopefully of God's work to be done as he dedicates California's first mission and first European settlement. The date: July 16, 1769, birthday of San Diego and of California itself.

Two days before that dedication, a small group under Don Gaspar de Portolá, Spanish governor of Baja California, had pushed on in search of the lost Bay of Monterey, described in earlier journals of Spanish explorers. Indeed, it had been so fulsomely and inaccurately described that Don Gaspar didn't recognize it when he walked by. Instead, on November 4, 1769, he discovered something bigger and better, San Francisco Bay. Spanish padres eventually built 20 more missions in California, bringing civilization to what would become the Golden State.

Juan Rodriguez Cabrillo had discovered California for Spain more than two centuries before his countrymen settled there. He sailed into San Diego Bay in 1542 and explored the coast. Through the long years, landing parties from various Spanish ships made forays ashore in California. But the first permanent settlement was not begun until the Serra-Portolá expedition came overland and by sea, just 200 years ago this month.

City Plans a Birthday Party

In this, of all years, San Diego is not disposed to let the world go unmindful of its role as the Plymouth Rock of California. Throughout 1969 the community is celebrating its 200th birthday—and California's—in some fashion every day. It's a real swinger of a party, and if the city exhibits more than a little narcissism and brashness in the course of this marathon celebration, it must be forgiven.

San Diego wants everyone to realize that it is no longer the overcrowded, Navy-dominated "Dago" of World War II. Nor is it the one-industry, boom-and-bust town of the aircraft and missile builders' salad days in the 1950's. Even less can the city be likened to its old image of a Mexican-style village filled with retired military people, all dozing in the sun in the spirit of *mañana*.

San Diego County, an area almost as big as Connecticut, now boasts a population of more than 1,300,000 (map, page 120). This includes some 700,000 in San Diego itself, making it the nation's 14th most populous city. Although the Navy still has a powerful economic impact on the area, contributing an estimated 25 percent of the economy, the city has been planing along in recent years atop a non-military wave of prosperity.

Sun Plus Sea Equals Money

The San Diego area always has enjoyed an exceptional climate, with an average high of 71 degrees and a low of 55. That alone would entice visitors, but the area has combined its celebrated weather with the lure of some of the world's finest facilities for water-oriented recreation, such as the city's Mission Bay, a 4,600-acre aquatic park. Now visitors spend more than $355,000,000 a year.

Recently San Diego began referring to itself as "the oceanographic capital of the world," a claim based upon the presence of nearly 100 companies and institutions engaged in ocean studies or their support. The intellectual climate, not just sea and sun, attracts these organizations and numerous others, such as new electronic firms and research groups. The city's colleges and universities enroll 70,000 students, providing a constant supply of well-honed brains for employers. Indeed, higher education itself has assumed big-business status in the community.

All of this composes what city fathers refer to as the contemporary look in business development. Today many new businesses tend to put down roots where people want to live. They depend more upon the resource of people than upon raw materials.

Frank Curran, the city's well-liked mayor

Room for one more? A pygmy goat in the children's section of San Diego's famed zoo appears to be posing the question to a young rider on a giant land tortoise from the Indian Ocean island of Aldabra. Encountering animals both rare and familiar, youngsters may romp with a guanaco, feed a fawn, or pet a lamb. Spread across 128 acres of Balboa Park, San Diego's zoo houses the world's largest collection of mammals, birds, and reptiles—some 5,000 specimens.

PAINTING BY LLOYD HARTING FROM *The Call to California*; RESEARCHED BY JAMES L. AMOS © N.G.S.

California's cradle of Christianity

JULY 1769. Franciscan Father Junipero Serra stands at an improvised altar while Spanish soldiers raise a crude cross on Presidio Hill overlooking San Diego Bay. Indians watch from their huts in this painting by artist Lloyd Harting. The founding of Mission San Diego de Alcalá, named for a Franciscan lay brother of the 15th century, marked the first in a chain of 21 California missions established by the Franciscans. The Serra Museum (below) stands near the site of the first chapel; palms and pepper trees ring the commemorative cross erected in 1913. In 1774 Father Serra moved his mission six miles up the San Diego River, where the water and land were better. Today, in a church completed on the second mission site in 1813, Monsignor James T. Booth, J.C.D. (right), holds Mass daily except Monday.

and a former longshoreman (page 121), reflects the prevailing civic ebullience when he discusses the future.

"San Diego is the eighth largest city in the United States in land area, yet less than 45 percent of that area is developed," he told me. "With good planning we can make this the kind of community our descendants can live with 100 years from now."

Bold words indeed, but typical. San Diegans see themselves as a new, trend-setting force in a California that is both wonder and enigma to the rest of the Nation.

If California were an independent country, the gross product of its economy would be exceeded only by that of the United States, the Soviet Union, West Germany, Japan, the United Kingdom, and France. Its per capita income of $3,850 is higher than that of any nation, including the United States. Only the U. S. has more automobiles, only three countries—the U. S., Japan, and Britain—more telephones. California contains more people than 112 nations, more area than 96.

It would seem to be a land where you can have your lotus and eat it too. But the state's dynamic growth has exacted a price—in urban sprawl, smog, mud slides, floods, and the tensions of high-pressure living.* San Diego hopes to avoid these dangers.

More Grace, More Leisure

"This city attracts a less intense, a less driven person," said Neil Morgan, columnist for the San Diego *Evening Tribune* and author of such influential books as *Westward Tilt* and *The California Syndrome*. "You don't move here if you have to beat the world tomorrow; you go to Los Angeles or San Francisco. So San Diego has a little more grace, a little more leisure. The climate, pace, and life style here all come closer to what people think southern California should be."

This rather relaxed approach to life has long been typical of San Diego. Years ago residents divided into two camps, "geraniums vs. smokestacks." The flower people frowned on heavy industry; smokestack advocates

*See "California, the Golden Magnet," by William Graves, NATIONAL GEOGRAPHIC, May 1966.

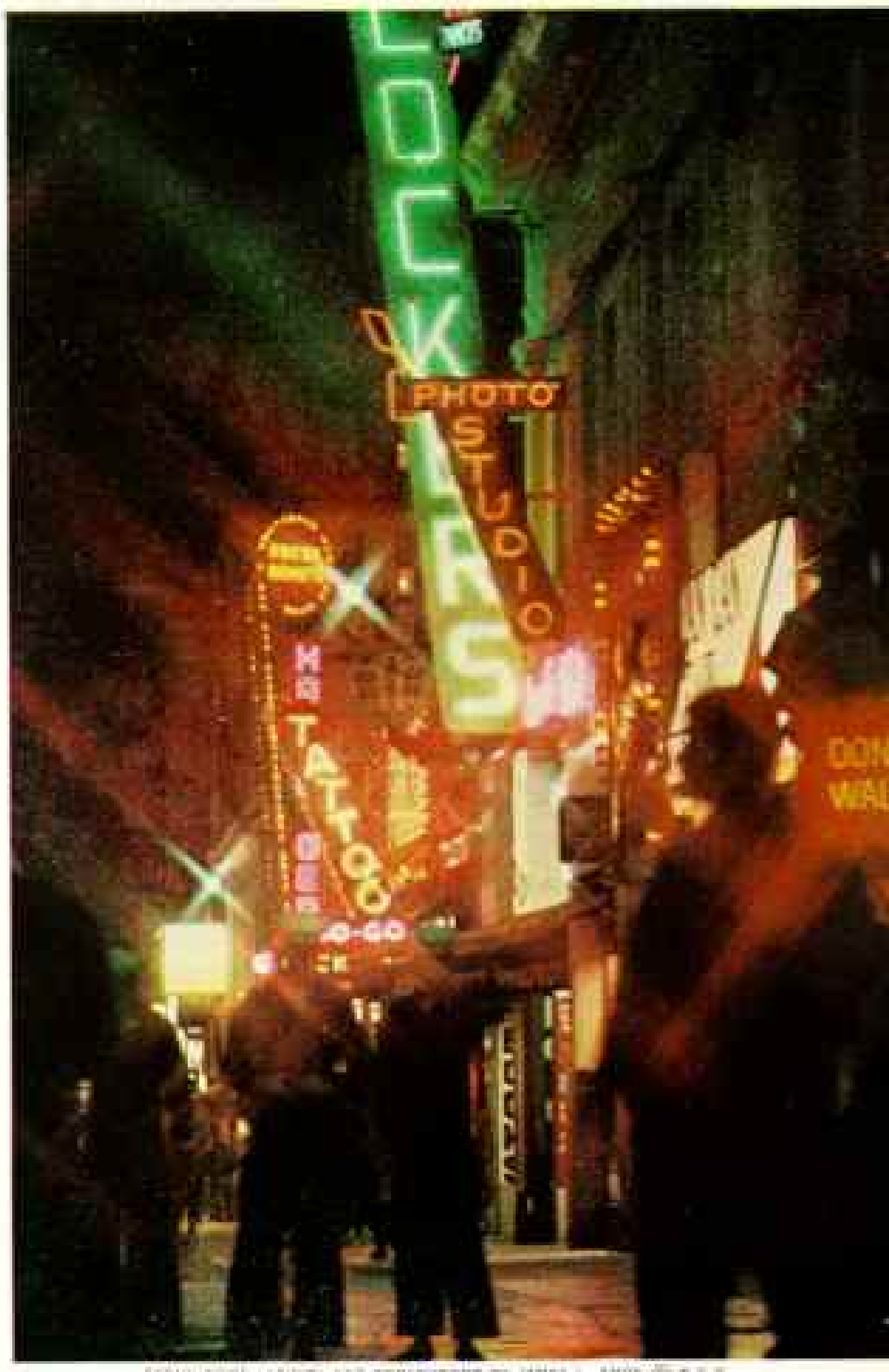
San Diego

CALIFORNIA'S OLDEST CITY this year celebrates her 200th anniversary. Commemorative silver and bronze medals carry a relief of Father Junipero Serra and Governor Gaspar de Portolá on the obverse to symbolize the blending of church and state during the early days of California's colonization. The reverse bears a design honoring the early settlers and the inscription "San Diego —Established 1769."

AREA: 312 sq. mi. **POPULATION:** 700,000 in city proper, 1,300,000 in metropolitan area. **ECONOMY:** Aeronautics, astronautics, electronics, shipbuilding, fishing. **RESEARCH:** Scripps Institution of Oceanography, Salk Institute for Biological Studies. **CLIMATE:** Semi-arid; rainless summers, wet winters. Average daily temperature 63° F.

In a lively radio "talk" show, San Diego Mayor Frank Curran, right, discusses issues ranging from drug addiction to the Viet Nam war with a group of the city's "Now Generation." Serving his second four-year term as mayor, the 55-year-old onetime longshoreman has lived in San Diego since 1935 and has seen it grow from sleepy town to thriving metropolis. Keenly interested in underprivileged youngsters—the "less-chance kids," he calls them—Mayor Curran developed a summertime employment program that burgeoned into the highly successful Mayor's Council on Youth Activity. "Our greatest asset in the final analysis is the character of today's youth," he says.

"Bag Town," once a sobriquet for San Diego, stemmed from the familiar sight of sailors on shore leave, backs bent under the weight of sea bags as they trudged from the waterfront. In this headquarters city for the Pacific Fleet, seamen and Marines still frequent downtown Broadway (right), but the military no longer dominates the San Diego scene. Scores of new industrial and commercial enterprises have diversified the economy; naval operations now account for only a quarter of the city's income. With an average of 100,000 visitors a day, income from tourism alone exceeds $355,000,000 annually.



EKTACHROME (ABOVE) AND KODACHROME BY JAMES L. AMOS © N.G.S.

courted it. Then both sides found that their city, tucked away as it is in the southwestern corner of the state, lay too far off the beaten path of commerce to attract heavy industry. Transcontinental railroads terminated to the north, and arch-rival Los Angeles had been smart enough to build itself a port. So San Diego embarked upon a more thoughtful and leisurely development, much of it centered upon the magnificent 14-mile-long bay.

Man-made Isles Yield a Bonanza

Dredgers deepening the harbor dumped their spoil on a mudbank, building Shelter Island. The Harbor Department, predecessor of today's Unified Port District, tidied up the island with streets and utilities and launching ramps for small boats; then private investors poured in $16,000,000. Today Shelter Island is Tahiti with plush plumbing, a resort area of motels, marinas, and ship chandlers in something called "South Seas" architecture.

This venture proved so profitable that dredgers built Harbor Island, now being developed with motels and marinas. Here most everything will have a contemporary look. Meanwhile, down on the southern part of the bay, where the shoreline is only 50 percent developed, builders are putting in still more marinas.

I like to sail, and in San Diego I had to admonish myself repeatedly, "Covet not thy neighbor's boat." My room on Shelter Island overlooked a small-boat harbor with 2,300 yachts, part of the nearly 5,000 kept in San Diego Bay. Some 20,000 additional yachts tie up elsewhere in the county.

Friends eased me through the impressive portals of the San Diego Yacht Club, thence into the cockpit of Bob Phillips's 50-foot Kettenburg sloop *Mickey*. The tolerant skipper let me keep the tiller as we sliced through a forest of kelp off Point Loma and went romping on a reach out into the Pacific. Each afternoon the breezes come alive in and around the bay, and so do the sailors. Little boats, big boats—yachts of every size ride the long ocean swells, born thousands of miles beyond on the other side of the world.

Where sailing knows no season, yachts run out of San Diego Bay past Point Loma with spinnakers set. Average daily temperatures vary from 55° F. in January to 72° F. in August. Said one young Navy lieutenant: "I brought my overcoat when I came here two years ago, and I haven't put it on yet."

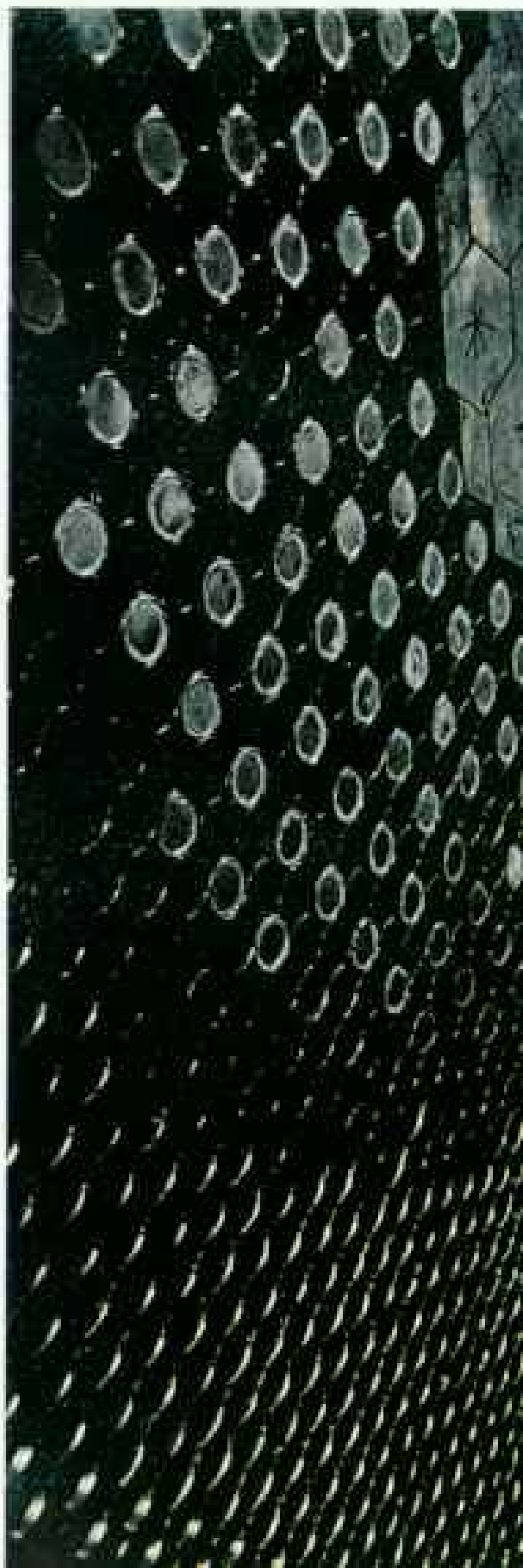
Any visitor can enjoy a memorable boat ride in San Diego Bay. For modest cost, you can take either a one-hour or a two-hour cruise on excursion boats operating from the Embarcadero. It's the best way of all to see a big harbor at work and at play.

Passengers Share Skipper's Enthusiasm

Capt. Don Gwathmey, who takes sightseers out on the *Marietta*, fits well into the relaxed San Diego pattern. "I like to watch the big ships, and so do the passengers; so sometimes I just pull over for a while and look," he told me. "Maybe a big one is docking, or maybe a drydock is being flooded. Once I stopped to watch the Blue Angels, the Navy's precision flying team. The passengers didn't mind a bit, even though the trip lasted longer than scheduled."

Many of these sightseers also clamber aboard that magnificent relic, the iron-hulled, 106-year-old bark *Star of India*. Now a maritime museum, she floats at a dock alongside the Embarcadero but still looks capable of making another circumnavigation of the world—it would be her twenty-second. Sails are now being made for her in the expectation that San Diego sailors will take her briefly (and very cautiously!) to sea this summer as part of the anniversary celebration.

Pilotless planes take shape at the Ryan Aeronautical Company. Used as targets, these Firebee drones simulate enemy aircraft in the training of fighter and missile crews. Ryan radar systems have directed five Surveyor landings on the moon, and this summer, if all goes well, Ryan's Lunar Module radar will enable Apollo 11 astronauts to touch down on earth's satellite.



In California, most tidelands, including land reclaimed from tidal water, belong to the counties or municipalities, not to the state. For years San Diego and four other bayside municipalities—National City, Chula Vista, Imperial Beach, and Coronado—administered their waterfronts separately (map, page 120). It didn't work very well, so now they do it together through the Unified Port District.

Motels, marinas, other businesses, if they are on the bay waterfront, pay rent to the Port District. Its tenants range from a popcorn stand to Convair, the missile maker. Bay rentals are increasingly profitable. The five communities used to give one cent of each tax dollar to the district for port maintenance and development; now they give half a cent.

"We hope that within two years we will be off the tax rolls forever," said Port Director Don Nay.

He and his staff take great pride in the cleanliness of the waters in their charge. No municipal sewage enters the bay. San Diego treats it, then pipes the effluent 2½ miles out to sea. Tests show that the thousands of yachts contribute negligible amounts of waste, and laws against littering and dumping are strictly enforced. As a result, the bay meets the highest health standards.

The Port District also administers several

Between honeycombed halves of a test model of a nuclear-reactor core, a gloved technician secures strips of copper foil in a laboratory of Gulf General Atomic. The foil's reaction during fission to various blendings of uranium and thorium helps scientists determine the most efficient fuel mix for nuclear power plants developed here.

Tears of joy climax the return of the men of the U.S.S. *Pueblo* in one of the most dramatic episodes in San Diego's long history of homecomings. For 11 months the crew had been imprisoned, tortured, and terrorized after North Korea seized their ship in January 1968. Waiting to greet Comdr. Lloyd M. Bucher and the 82 surviving crewmen were parents, wives, and children.

BOOKKEEPING BY JAMES L. AMOS © N.G.S.

The Navy flew the families to San Diego for a Christmas reunion; city residents spearheaded a drive that raised $52,000 to pay for hotel rooms and other expenses.

large docks where ocean freighters call. Yet, despite the magnificent harbor and good facilities, San Diego ranks only twelfth in cargo tonnage among West Coast ports.

"Our growth is in the higher-value commodities, not in bulk," Mr. Nay said. "But we are developing as a distribution center; for example, raw materials go out to Japan, and manufactured items come back. Still, we have to face it—we are not the mercantile center of the West. But there will be an important place for us."

U. S. Navy: an Old Friend

The bay's biggest user, of course, is the United States Navy. It and San Diego have been inseparable ever since a coaling station was established on Point Loma in 1901. Between 1846, when the U.S.S. *Cyane* sailed into the bay, and the turn of the century, Navy ships had called at San Diego in increasing numbers.

More than 200 naval vessels and 150,000 sailors and Marines now list San Diego as their home port. Many shore facilities, such as the Naval Air Station on North Island, the Amphibious Base at Coronado, and the Training Center and Fleet Anti-Submarine Warfare School, both in San Diego, line the bay front. Any day of the year you can see an array of vessels ranging from captain's gigs to supercarriers.

In some ports the Navy and civilians mix about as badly as fuel oil and bilge water. But San Diego and the Navy always have carried on a love affair of notable fidelity. Rear Adm. Marshall E. Dornin, Commandant of the 11th Naval District, gave me an example. Seated in his office on the Embarcadero, we were talking about the U.S.S. *Pueblo*, whose crew had recently returned to San Diego after release from captivity in North Korea.

"We knew there would be a great influx of dependents and relatives to greet these men on their return," said the admiral. "We also knew we couldn't use Government funds for the care and assistance of these civilians. I talked to Clayton Brace, head of the Chamber of Commerce, and he got the chamber and the Copley Press behind a fund-raising campaign."

Admiral Dornin paused a moment, then continued with obvious feeling. "In a week's time the people of San Diego helped raise $52,000 to care for *Pueblo* families. Every relative of a crewman who came here was lodged and fed as a guest of the city."

I had been told that 25,000 former members of the Navy and Marine Corps liked the San Diego area well enough to live there in retirement. But how about Admiral Dornin himself? Would he like it that well?

I never saw an admiral quit a chair so fast. He sprang up, grabbed a pair of binoculars from a drawer, and led me to a window. "That's Point Loma over there. Now—see that broad concrete street leading down? To the left . . . there. My house. I bought it recently, and that's where I intend to retire."

Many of the area's Navy retirees live in Coronado, a quiet bywater of a town across the bay from San Diego. It can generally be counted upon to take a jaundiced

High in the sky—the equivalent of 22 stories above the bay—steelmen maneuver a crane hook on the San Diego-Coronado Bay Bridge, scheduled for completion this summer. The two-mile-long, five-lane span will have a concrete railing only 34 inches high, sufficiently low for motorists to see the view but strong enough to prevent a car from crashing through.

view of change. For example, it fought inclusion in the Unified Port District all the way to the Supreme Court of the United States before coming into the fold. It also battled unsuccessfully against the huge bay-spanning bridge now nearing completion from San Diego to Coronado (right).

No one thinks Coronado will ever be the same after that high-rise for automobiles opens. The beloved, privately operated ferry boats that have long plied between the two cities will stop service, and visitors will flow across the bridge like an army of motorized ants. Real estate values in Coronado are rising in anticipation of the invasion.

For a time the Navy also took a dim view of the bridge. If it were bombed and knocked down, many warships in the southern part of the bay could be trapped behind a barricade of debris. North Island is not an island. A skinny peninsula connects it with the mainland, so the bay has but one entrance, to the north.

That may change. A second entrance has been proposed. It would be cut through the peninsula, known poetically, and with more than a little license, as the Silver Strand. Initial studies by the Army Engineers indicate the project probably is feasible.

Little Coronado long has regarded San Diego with the icy suspicion it reserves for shapers of the future. That suspicion was exacerbated in 1960 when the mother city, in a great burst of energy, began building high-rises. To date 13 have been constructed, with more contemplated. Most impressive of the lot is a rectangular column that keeps lights on in each room all night and a veritable torch of golden lights blazing at its top. My wife worried about the poor soul paying the electric bill until she found out who owned the building—the Gas and Electric Company.

Behind that construction spree lies a story of civic courage and faith.

In 1959 giant Convair, the city's biggest industry and employer, began laying off 21,000 workers. With the failure of its 880 and 990 jet-transport programs, General Dynamics, Convair's parent company, had sustained the largest single corporate loss in history.

"San Diego was being called a 'bust town,'" said Mayor Curran. "The exodus from here looked like the crossing of the Red Sea."

City Workers Own City Hall

City fathers vowed that never again would they depend so heavily upon one industry. By levying a 4-percent tax on hotel and motel rooms, they financed a promotion program to attract more visitors. This helped revive the economy. But more was needed—some dramatic move, something that would give a lift of the spirit to the entire community.

Thomas W. Fletcher, then San Diego's city manager, now the Deputy Mayor of Washington, D. C., came up with a highly original idea. The city long had wanted a community

PHOTOGRAPHED BY BOB CHURCH © N.G.S.

center, but in five referendums voters had failed to approve the necessary bond issues. Each time a majority had voted yes, but not the required two-thirds. Very well, let's borrow the money from the retirement fund of city employees, Mr. Fletcher said, and give them a mortgage on the buildings.

"The fund had about twenty-five million dollars," Tom Fletcher recalls, "all invested in stocks and bonds around the country—none in San Diego. Employees were getting a 4-percent return. It was a bit complicated, but I figured the city could pay them 5 percent and it would be no more expensive for us than a bond issue—provided we could raise a million and a half in cash."

So he requested a meeting of San Diegans, Inc., a civic-minded group of top businessmen. "Within thirty minutes, after several members had made some key phone calls, we had half a million," says Mr. Fletcher. "The rest of it came along quickly."

With local architects and builders, the city then put up four of the handsomest municipal buildings I have seen anywhere: a civic theater, convention center, government office high-rise, and parking garage. San Diego may be the only place in the Nation where city employees don't want to fight city hall—they own it!

This plan worked so well that 15 neighborhoods formed their own mini-copies of San Diegans, Inc., and launched development projects. Also, private enterprise's downtown building boom began, and is still going strong.

City fathers are the first to admit that their current prosperity is partly fueled by Mexico's Tijuana, only 15 miles to the south. More

On a sparkling winter's day, an aerial panorama brings into sharp focus San Diego's intimacy with the sea. Docks and shipyards line the blue hook of the bay. In its midst are the Naval Air Station and Coronado. Mission Bay (upper right), a

AUDACHROME BY JAMES L. AMOS © N.G.S.

swampy marshland 20 years ago—today a 4,600-acre aquatic playground—lies at the mainland end of Point Loma. Interstate 5 weaves through the city, linking it with Los Angeles, 110 miles to the north, and Tijuana, Mexico, 15 miles south.

than 12,000,000 *Americanos* a year visit that border city. Its residents, plus some from farther down in Baja California, spend in excess of $94,000,000 a year shopping in San Diego, and 5,000 Tijuana residents commute daily to work in the United States.

Mexico permits U. S. firms to ship materials into Mexico duty free if they are destined for export. Firms making things that have a high labor cost in the States —toys, transistors, semiconductors, clothes, capacitors —ship components into Mexico, have them assembled and packaged, then re-import them for sale in this country. U. S. Customs charges duty only on the increased value resulting from the assembly and packaging, not on the total value. It's a profitable exchange —and it's growing rapidly.

Missile Maker Still No. 1 Employer

Convair, though no longer the giant it once was, is still San Diego's largest private employer, with 12,800 on its payroll. Its Atlas missile powered a succession of astronauts into earth orbit, beginning with John Glenn. Its Centaur upper-stage rocket, the first to use high-energy hydrogen fuel, has thrust many satellites into orbit.

More recently, Convair began to look not only up but down. Entering the growing field of oceanography, it designed and developed two huge automated devices, one a weather station for the Office of Naval Research, the other a navigational aid for the Coast Guard. Both are pieplate-shaped buoys that can be moored at sea.

The colorful Maj. Reuben Fleet, President of Consolidated Aircraft Corporation, the company that eventually became Convair, moved his enterprise to San Diego from Buffalo, New York, in 1935. He sought better weather for testing Consolidated's big flying boats. Already on the scene was another aviation pioneer, T. Claude Ryan, who had founded Ryan Airlines, Inc., in 1922 on a bandbox field adjoining the waterfront. It was this firm that built what is probably the most famous airplane of all time, Charles A. Lindbergh's *Spirit of St. Louis*.

Major Fleet, now 82, lives in retired seclusion in San Diego. Claude Ryan, at 71, continues active as Chairman of the Board of Ryan Aeronautical Company. This firm manufactures a diversified array of products ranging from jet-powered target drones to vertical-take-off aircraft, from remote-sensing devices to the Apollo mooncraft's landing-radar system.

I lunched with Mr. Ryan one day in a rooftop restaurant overlooking part of his company's huge parent plant and the waterfront site where he had gotten his start. Perhaps the view, as much as my questions, directed his thoughts back across the years.

"There is a special spirit among San Diegans—always has been," he mused. "One way it manifests itself is in a friendliness and helpfulness to new ventures. I benefited by that when I first came here. There

KODACHROME (ABOVE) AND EKTACHROME BY BOB CRUNCH © N.G.S.

Young voices resound in the night at a bonfire-lit songfest on the sands of the Hotel del Coronado, a famed western resort since 1888. Thomas A. Edison supervised the installation of all-electric lighting in 1894, making it the first hotel so equipped.

"Go Padres, Go!" Exuberant fan exhorts the city's new National League baseball team to score against the San Francisco Giants. They play in a new 50,000-seat stadium, also used by the San Diego Chargers of the American Football League.

was a city official named Joe Brennan—he's still living—who controlled waterfront property. Joe gave me an airstrip to use when I was only 24 and trying to get established.

"He knew I had no money, and he said, 'We like to help new people. We'll discuss your rent after you have gotten started.'"

The spirit of Joe Brennan endures. Up at Torrey Pines the city made available 300 acres of land to Gulf General Atomic for a research laboratory (pages 124–5) and nearly 1,000 acres for the campus of the new University of California, San Diego.

I met three people in particular (and what a contrasting trio they were) whose devotion to civic projects has won them the respect and affection of their fellow San Diegans: diminutive, gray-haired Mrs. Bea Evenson, burly Archie Moore, former light-heavyweight boxing champion of the world, and a slender patrician, Philip Gildred.

Spanish Landing, a new and delightful little waterfront park, is strictly the brain child of housewife Bea Evenson.

I found that out one day when I congratulated Carl Reupsch, the Port District's Director of Planning, on the success of his park.

"Oh, no!" he said. "It's not mine, not even ours—I mean, we did the work, paid for it, and own it, but it's really Bea Evenson's park."

It seems this determined little woman got the idea, and then permitted officials no peace until they built it. Now everyone is delighted with Spanish Landing.

One night, as we looked down upon San Diego from the patio of her home atop Point Loma, Mrs. Evenson talked about her new project. I had been seeing city lights below us, but Mrs. Evenson had been visualizing something quite different.

"A birthday building for San Diego," she said suddenly. "We passed a bond issue to get it. A good fight. Our opponents were modern architects and the like. You see, the building will be almost a duplicate of an ornate Spanish-colonial structure left over from the 1915 Panama-California Exposition held here. We razed the old one to make room for this new arts center.

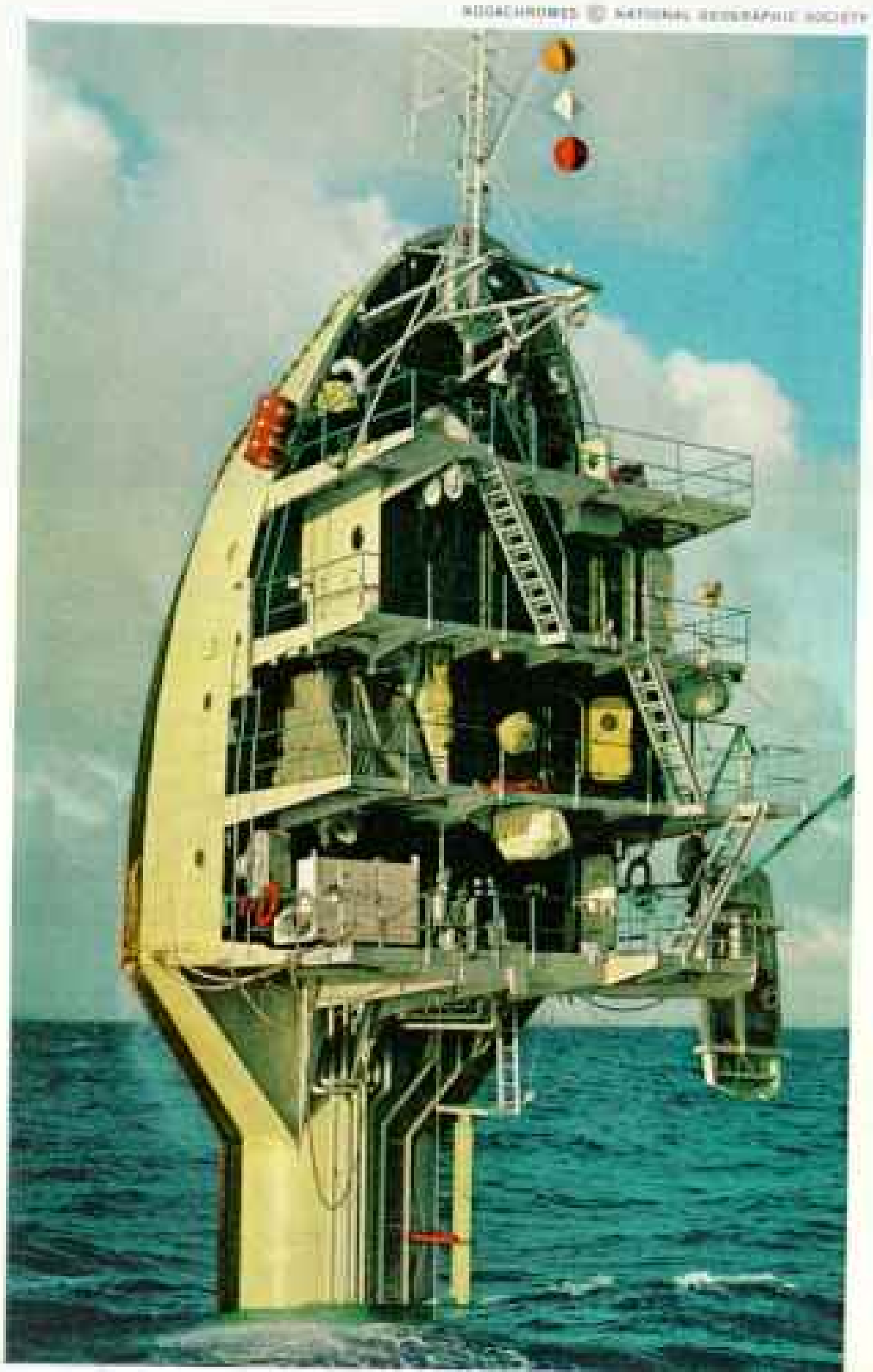
"I can just see the ground-breaking ceremonies in September . . . Governor Reagan here . . . the Navy . . . the Marine Corps . . ."

Listening to Mrs. Evenson, I felt as if I should be standing at attention.

Archie Moore, the Old Mongoose, one of the all-time greats of the prize ring, at 55 now devotes his life to helping boys from the ghetto. He conceived and operates the ABC Club—short for "Any Boy Can"—where youths from 8 to 15 acquire hope and pride and self-discipline, as well as boxing skills (page 136).

San Diego's minority groups total 22 percent of the population, and the number is about equally divided between Negroes and people of Mexican descent. Generally speaking, race relations have been good, although the city has its share of problems. To "cool it" between the races, the city sponsors a Citizens Interracial Committee, headed by a Negro psychologist. It meets twice a month to air disputes and complaints.

Many of San Diego's black citizens live in the Logan Heights section. It contains comfortable homes, and much of it can't be regarded as a slum. But it *is* a ghetto, and there Archie Moore lives and works, trying to make



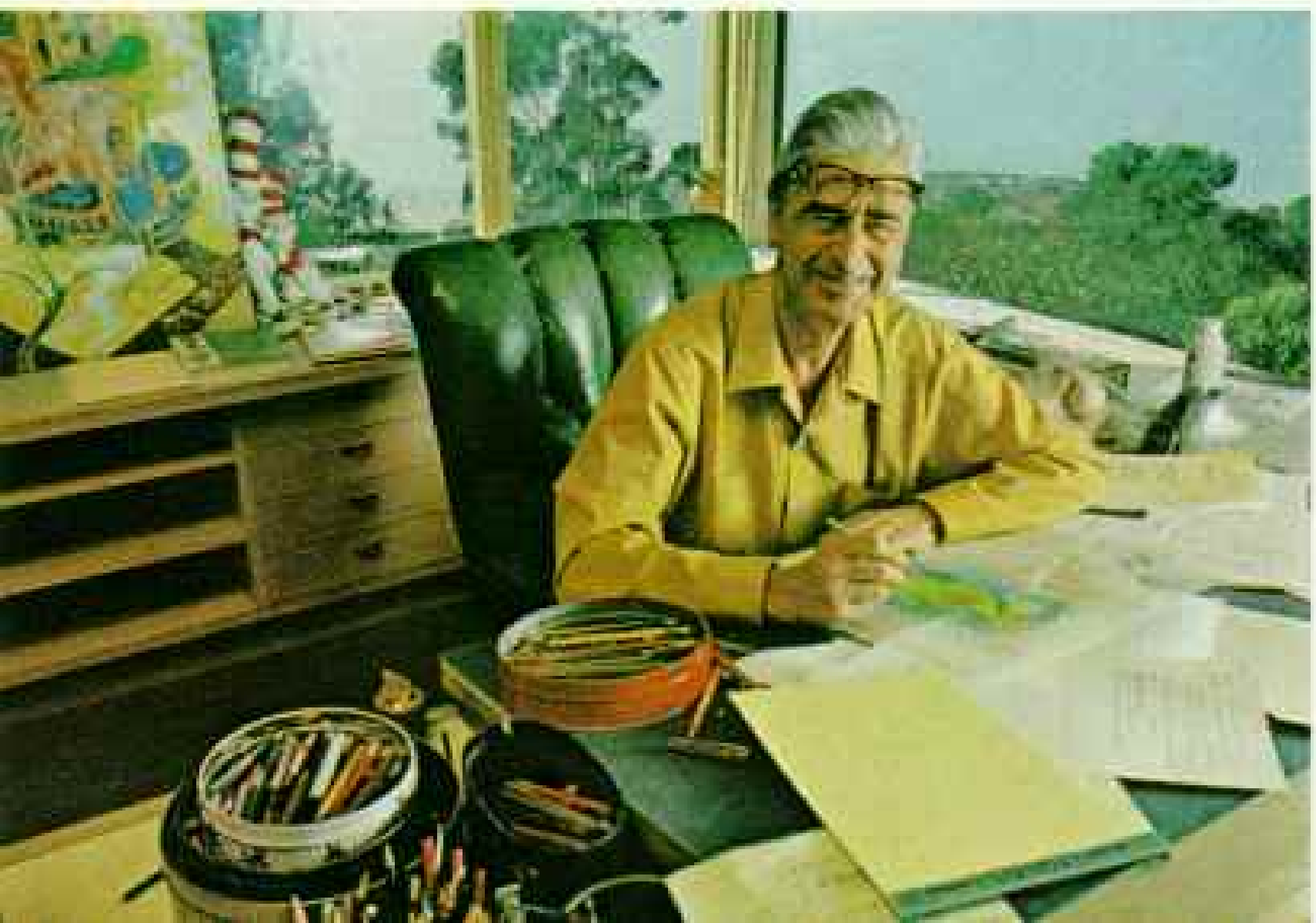
FLIP ship—developed for the Navy by the Marine Physical Laboratory of the Scripps Institution of Oceanography at La Jolla—can be towed like a log, then flooded and turned on end with only 55 feet of her 355-foot length above water. World's largest seagoing buoy, the Floating Instrument Platform helps scientists measure ocean currents, temperatures, and pressures. Future plans for its use include marine biology and weather studies.

Oceanographic branch of the University of California, Scripps has earned an international reputation as a center for research and graduate training in marine sciences.

Frozen board-stiff, yellowfins taken by the tuna fleet head for the cannery of the Westgate-California Corporation on the San Diego waterfront. The boats with their 14-man crews, most of them of Portuguese or Italian extraction, range Pacific waters as far south as Chile. They seine schools of yellowfins, bluefins, and skipjacks, hook albacore, and bring home 35,000 tons of tuna a year.

Conqueror of polio, Dr. Jonas E. Salk confers with distinguished colleagues at the institute bearing his name in La Jolla. Dr. Renato Dulbecco, left, is a prominent cancer researcher. Dr. Robert W. Holley, right, earned the 1968 Nobel Prize in medicine for work on RNA, a key to the genetic code. Some 150 scientists working in the Salk Institute's modern laboratories seek other breakthroughs.

ABC—"Any Boy Can." That's the inspiring name bestowed by Archie Moore, second from left, on a youth program he conceived and supervises. The Old Mongoose, as Moore is affectionately known in boxing circles, was light-heavyweight champion of the world from 1953 to 1960. He emphasizes character building and physical fitness for his young club members, many of them from broken homes and underprivileged families.



Literary Pied Piper, Theodor Seuss Geisel charms children the world over. Better known by his pen name—Dr. Seuss—this New England-born San Diegan has written and illustrated 30 books that have sold millions of copies. He works in the studio of his La Jolla home, built on the site of an old observation tower 700 feet above the town.

successful men of boys who are, as he puts it, "the cream of the ghetto, which is as good as the cream of anyplace else."

I spent a memorable day with Mr. Moore and his boys. An anonymous benefactor had turned over to them a store in a shopping center, and the city provided pool and table-tennis equipment; friends of the champ donated a regulation boxing ring and gloves. More than 200 boys belong to the club, and they hold their memberships only so long as they stay in school and pass their studies. Archie Moore doesn't believe in rewarding quitters.

Champion Gives Boys Self-respect

Offhand I can't recall ever being treated more politely by children. They even proved indulgent toward my complete ignorance of pool. George Montello, white principal of the nearby Emerson School, dropped in with more club members, and soon the lot of them performed for me their ritual, written by Archie Moore.

It's a long and elaborate ritual in which the boys say what they will *not* do (smoke, drink, lie, hit their teacher) and what they *will* do (stay in school, study, respect their parents, keep clean). It also includes a demonstration of jabbing with their fists, and I was amazed at how swiftly such little fellows could strike.

"I don't want to see your hands," said Instructor Moore, as he is called, and we very nearly didn't.

"He gets to these boys in a way we can't," said George Montello. "He reaches them when their parents fail. We are eternally grateful to Archie Moore."

The old champ, himself a reform school graduate, doesn't claim to be a miracle worker. "I have never said that I had utopia in hand or the complete answer, just a foundation step," he told me. "This is an anti-vandal and anti-delinquent program. Vandalism is a base root of the trouble boys get in; it leads to other things, from smoking a cigarette to other crutches, such as marijuana and worse. We try to develop mutual respect."

Philip Gildred, in contrast, is a wealthy businessman who has lived with and for beauty all his life, developing a connoisseur's eye for art. But, more remarkably, he is also a man with an intense desire to help others know and enjoy beauty, particularly the people of his beloved San Diego.

It was Phil Gildred, as a key member of San Diegans, Inc., who showed me about the Community Concourse (the civic center), with its jewel of a theater, home of the San Diego Symphony Orchestra. And it was Phil Gildred again, as President of the Fine Arts Society, who led me with great pride through its gallery and the adjacent Timken Gallery, and who waited with wordless understanding while I spent long minutes in front of El Greco's "The Penitent St. Peter" and Titian's "Portrait of the Doge Francesco Donato."

"Every community has a pattern, and this community has a good one," Mr. Gildred later observed. "San Diego is not a crossroads; the people here are permanent, not floaters. San Diegans love their museums, their parks, their harbor, their city, and they make use of these things, just as you make use of your home."

Much of this activity centers upon the varied attractions of Balboa Park. San Diego has staged two expositions there, in 1915-16 and in 1935, each time erecting handsome buildings in Latin American and Southwestern architecture. Now these house some of the city's showplaces, such as the Fine Arts Gallery, the Museum of Natural History, and the Aerospace Museum, which features a meticulous reproduction of the *Spirit of St. Louis*.

Zoo Offers Visitors a Bird's-eye View

Balboa Park's most beloved institution, however, is the celebrated San Diego Zoo. Its 128 acres contain some 5,000 specimens, the world's largest collection of mammals, birds, and reptiles. Nearly all these creatures live outdoors all year long in enclosures tucked away among woodsy canyons and mesas. A bus will take you right through the collection, or you can ride an aerial tramway and look down on the animals.

Properly speaking, this magnet for young and old is the Zoological Garden, for it contains an exotic collection of thousands of subtropical plants. Cascades of jacaranda and hibiscus line walkways that entice visitors into areas not seen from bus and aerial tram.

Dr. Charles R. Schroeder, the zoo's long-time director, is not a man for small dreams. His latest is an 1,800-acre vision, comprising a city-owned plot of vacant hill and canyon in the San Pasqual area, 30 miles northeast of downtown San Diego. Here the Zoological Society intends to build a reserve filled with animals from many parts of the world, all roaming free but with inimical species separated from one another—and from the people who come to see them—by hidden moats.

Riding two tons of killer whale, trainer Jim Richards thrills spectators at Sea World, a 50-acre oceanarium and marine circus in Mission Bay. Eight-year-old Shamu stretches 16 feet in length. Pretending sickness, Shamu visits "Doctor" Richards (below). After examining her—putting his head in her mouth—he pronounces her cured. Shamu rewards him with a kiss.

One afternoon I stood with the zoo chief atop a barren hill overlooking a portion of the proposed reserve where animals from East Africa would live. Behind us lay irrigated fields of alfalfa; to the front—wilderness, nothing but stark, brushy, boulder-strewn, hilly, soul-satisfying wilderness.

"You would enter the area by the main street of Nairobi as it looked early in the century," said Dr. Schroeder. "We'd re-create it, even to the front of the old Norfolk Hotel. You would view the animals from a narrow-gauge railroad.

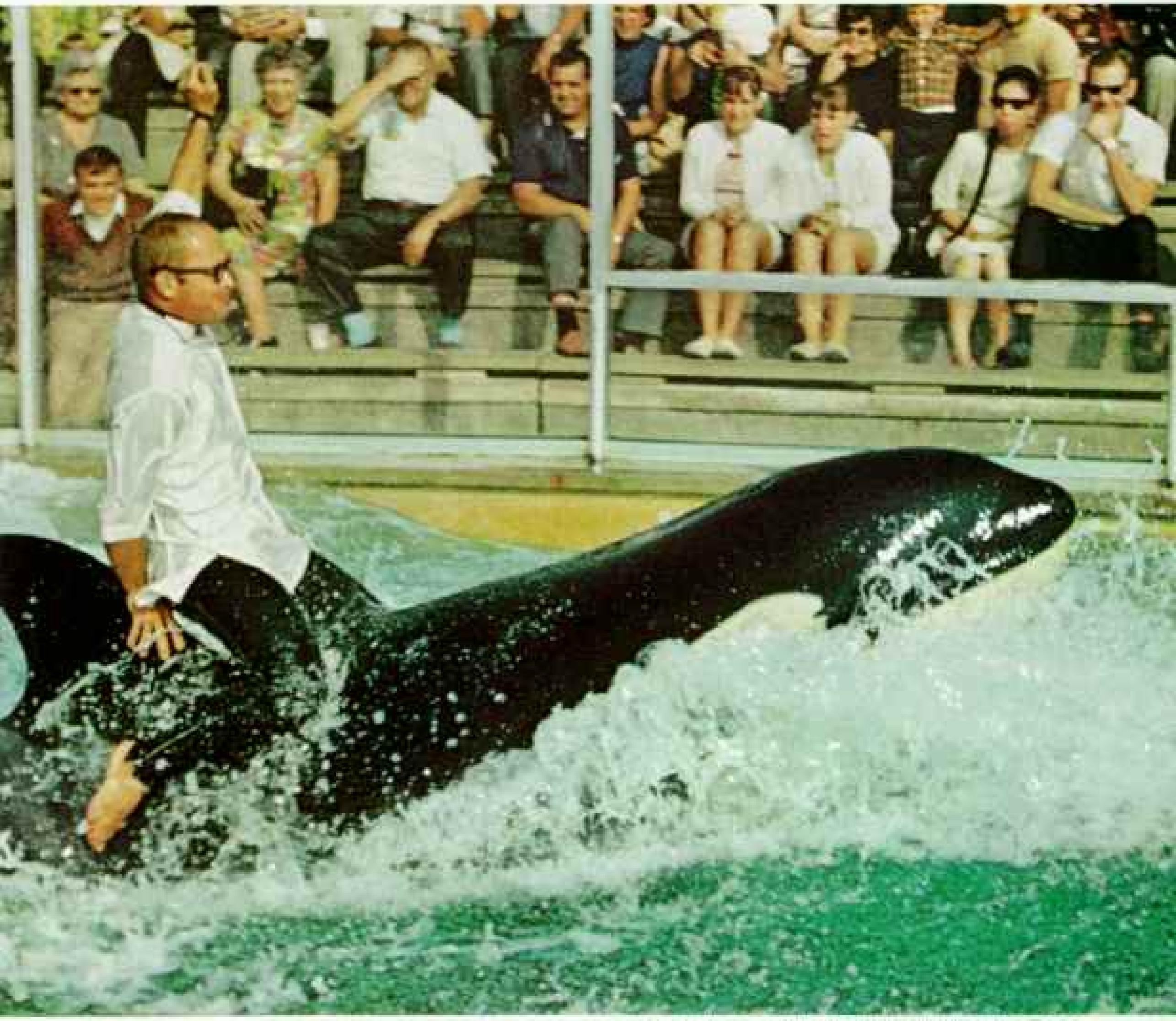
"We've had people here from East Africa who felt right at home," he added. "Looks like parts of Kenya, doesn't it?"

"The animals won't even realize they've left the East African bush," I assured him.*

Father Junipero Serra, too, would have felt right at home in that stark setting, I reflected later. The hill where he raised his cross in 1769 and built his mission must have looked much like the proposed reserve: dry, rugged, with little tillable land. The choice had been one of expediency. Most of the Spanish colonizers had been sent by ship, and more than half had died of scurvy. Father Serra and Portolá arrived by land, but their men also were in poor shape. So they picked a convenient hill to build on—and fortify.

This site is now a handsome park, with the Serra Museum on its crest and a concrete-and-tile cross marking the point where the Franciscan is believed to have raised his wooden one. Nothing above ground remains of the old mission, though excavations now are uncovering parts of the foundations. At the foot of the hill lie many interesting buildings, most

*See "Kenya Says *Harambee*," by Allan C. Fisher, Jr., NATIONAL GEOGRAPHIC, February 1969.



BLEACHBONES BY KATES LITTLEHALES (ABOVE) AND JAMES L. AMOS © N.G.S.

of them former residences, that date back to Mexican occupancy. They lie in an area of urban blight, but the State of California has recently taken over Old Town, as it is called, and will restore it.

Mother Mission Still Lives

In 1774 the Franciscans moved their mission six miles to a new site in a valley, where there was an Indian village and better land. The following year Indians destroyed the mission and killed Father Luis Jayme, California's first martyr.

A new mission was damaged by an earthquake in 1803, and remodeling continued until 1813. This building still stands—not a museum but a living church, San Diego de Alcalá, with priest and parishioners, justly famed as California's mother mission (pages 118-19).

The day I visited it, I had just come from the 200th Anniversary Headquarters. There Director Hugh A. Hall had gone to great pains to tell me what a financial success the celebration had become; he even produced a financial statement. Why, every franchise issued by the committee in its merchandising program —commemorative medals, pennants, neckties, sweatshirts, postcards—made money. So, quite naturally, I expected San Diego de Alcalá, where it all began, to be sharing in the windfall. No doubt it had been repaired and repainted for the flood of visitors?

My question brought a most peculiar expression to the face of Monsignor James T. Booth, the church's priest. He must have been torn between laughter and tears.

"Few people come here; they simply can't find it," said Monsignor Booth. "See that superhighway down there? I begged them to put in an exit ramp for this church, and mark

EXTACHROME (ABOVE) BY BATES LITTLEHALES, ASSIGNMENT BY RON CHURCH (C) N.G.S.

"Get any abs today?" That oft-asked question at San Diego marinas refers to the abalone, a shelled delicacy that divers pry loose from rocks off the California coast. In San Diego seafood markets, abalone sells for $3.50 a pound. Sliced thin, pounded, breaded, and sautéed, it is a menu feature in many city restaurants.

In search of updrafts, a sailplane soars above Pacific surf and the 300-foot bluffs of Torrey Pines north of La Jolla. The annual Pacific Coast Midwinter Soaring Championships held here attract glider enthusiasts from across the Nation. Launched by a high-speed winch and 1,500-foot steel cable, the planes lift off from a strip atop the mesa at 60 miles an hour, disengage, and swoop back and forth on updrafts formed when wind from the sea strikes the bluffs.

it properly. They said no, it was too near the exit ramp for the stadium, and they wouldn't put in both ramps. Now motorists just rush by. It's very difficult to get here without special instructions or a guide."

He looked at the busy highway with a rueful smile. "I don't really think anti-Catholicism had a thing to do with it," he said. "The devil himself took a hand."

San Diego de Alcalá has only 35 member families, many of them poor. They can't afford to keep the church in showplace condition. Monsignor Booth used to depend on visitors to do that, charging them a modest 50 cents each for a tour. Before the freeway obliterated the well-marked old road, he got enough visitors to maintain the premises and put 26 girl tour guides through college.

"But last week we took in only $28.50, including income from our little gift shop," said the man who holds in trust California's oldest and noblest shrine. "I'm not crying for money from the Anniversary Committee. I just want visitors."

Most strangers assume the mother church is on Mission Bay—hence the name. However, Mission Bay is a label of modern vintage; old Spanish explorers called the place False Bay because they sometimes confused it with the bigger and much deeper inlet to the south, the now-famous harbor. When Juan Rodriguez Cabrillo discovered this larger bay in 1542, he named it San Miguel. Sebastián Vizcaíno, who entered the harbor in 1602, changed the name to San Diego, and it was so known for more than a century and a half before the Spanish finally got around to settling there.

Mission Bay used to be a tidal flat, odoriferous and spectacularly ugly. Then, 20 years ago, the city began dredging mud out and pouring money in. Today $65,000,000, much of it from the city, has gone into the bay's development, with the prospect that the total eventually will reach $100,000,000. Hotels, marinas, picnic grounds, golf courses, restaurants, an oceanarium—Mission Bay has them all in unequaled array.

Thanks to careful zoning, all sorts of water activity can be carried on simultaneously. Sailing, powerboat racing, swimming, waterskiing, fishing—each has its own area, free from interference by some conflicting pursuit. Good planning has eliminated power poles and advertising signs.

With the exception of the zoo, the 50-acre oceanarium, Sea World, probably is San Diego's most popular single attraction (cover and pages 138-9). It offers no fewer than six shows, so allow yourself four or five hours to see them all.

Every window frames a seascape in a mushroom-shaped beach house at La Jolla. Caretakers for owner Samuel H. Bell, newlyweds Lynn and David Moon admire the view (left), before entertaining dinner guests (right). A 320-foot funicular-type elevator gives access to the town above and ensures privacy. But when it breaks down Mr. Moon must hike along the rocky beach and climb a steep path to the hilltop to make repairs.

To the north of Mission Bay, the coastline takes on the ruggedness of cliffs and hills, culminating in the spectacular backdrop of Soledad Mountain. On this hilly peninsula, squeezed between Soledad and the sea, lies La Jolla, a very special part of the city of San Diego (map, page 120). In Spanish, La Jolla means "The Jewel," and the name is very apt, for this is one of the most beautiful communities in all California.* Many of its homes are imaginative and unique in architecture, conveying a sense of complete harmony with their precipitous settings.

Here the sea, its long combers battering

*See "La Jolla, a Gem of the California Coast," by Deena Clark, NATIONAL GEOGRAPHIC, December 1952.

endlessly against the cliffs and curling frothily on the magnificent beaches, is the dominant factor in one's way of life. Swim in it, sail on it, surf on it, dive under it, or just look at it—you do one or more of these if you live in La Jolla, every minute you can spare.

Since 1912 La Jolla, fittingly enough, has been the home of the Scripps Institution of Oceanography, one of the most distinguished and influential research organizations in the undersea field. At present it has nearly 200 research projects underway. Perhaps the most intriguing is the Deep-Sea Drilling Project supported by the National Science Foundation. Scripps is the lead institution, or manager, of this project, which also includes Columbia University's Lamont-Doherty Geological Observatory, Woods Hole Oceanographic Institution, the University of Miami Institute of Marine Sciences, and the University of Washington.

Scientists aboard the drilling ship *Glomar Challenger* bore holes in the ocean floor at depths of 3,000 to 20,000 feet. The holes themselves may go down another 1,000 or 2,000 feet. Cores taken from these abyssal depths tell scientists much about the age of the earth and how it was formed.

In the "conversation pit," a new classroom concept, students sit at the feet of the teacher and exchange views with him, as pupils did with Socrates in ancient Greece. Professor Lawrence McCafferty conducts this philosophy class on the Elliott campus of United States International University, one of San Diego's five major colleges and universities.

Bouquet of ballerinas: Members of the San Diego Ballet rehearse the "Waltz of the Flowers" from *The Nutcracker* in the new 3,000-seat civic theater.

EKTACHROME (ABOVE) AND KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

I suggested to Dr. William A. Nierenberg, director of Scripps, that there seemed to be an upwelling of interest in the sea by average folk, not just students.

"There is a tremendous interest," he agreed. "It is something that has developed rapidly in the past five years. People have gotten emotionally involved with oceans. This is true all over the world. Perhaps this is because our world suddenly has become global. Until ten years ago we seldom thought of the earth as a whole, but now, increasingly, we are concerned about it as a resource.

"Moreover, most people like the ocean; they want to live beside it or near it. The conquest of space may be a great national or individual achievement, but it is not part of the average man's world."

Dr. Nierenberg paused, then continued musingly: "To oceanographers the sea is an enormous and restless antagonist. The work is nowhere near as glamorous as it's supposed to be—it's tough, rough, very difficult. But, for the average man, there is the ocean—empty, beautiful, available, and infinitely appealing."

New Campus Grows in San Diego

Scripps is also a teaching institution, with 180 graduate students. For many years it has been affiliated with the University of California; this was a factor in the university's decision to build a campus in San Diego. The beautiful site adjoins Scripps, and two of the planned 12 colleges have opened their doors. Present enrollment of 3,800 is expected to grow to a maximum of 27,500 by 1995.

At present the area's educational giant is

When the surf's up and big ones break on Boomer Beach in La Jolla, sun-bronzed body-surfers catch the combers far from shore and ride them in. Cars canopied with boards line the 70 miles of coastline in San Diego County, rated California's best by many surfers.

San Diego State College, with 23,000 students. In addition, there are three other colleges or universities and seven junior colleges.

"Higher education contributes more than $100,000,000 a year to the economy of San Diego," said Dr. Malcolm A. Love, President of San Diego State. "And how can you measure the intellectual impact? Why, there are 2,800 Ph.D.'s in this city."

It was this sort of intellectual climate that brought the renowned Dr. Jonas Salk into the area after he had developed the vaccine for poliomyelitis (page 136). He built near Scripps the Salk Institute, a concrete pile that looks like a fortress but houses distinguished researchers who ask themselves such questions as: How did life begin? What causes cancer? How do we learn? Where does violence start?

One could hardly imagine questions more difficult and complex. Yet the San Diego I had come to know and respect—bold, progressive, self-confident, energetic—seemed to me a particularly fitting place in which to ask them. I only hoped the city could attain for itself the heights its leaders talked about with such assurance.

State's Oldest City—and the Newest

That hope brought to mind something my friend George J. Mitchell, Jr., a San Diego businessman, had said to me weeks earlier. George and columnist Neil Morgan yield to no one in their love of the city, but they like to get together occasionally and take a long, critical look at San Diego. It was at such a critique that George voiced what became a fitting summation of so much that I saw.

"In our 200th year, the city faces the greatest challenge of its history," he said. "It is the oldest city in California, but thanks to the past five years, it is also the newest. If we do nothing, highway planners may soon turn San Diego into a concrete maze. If we are not careful, we could soon face the social malaise now so characteristic of many cities.

"So in numerous respects, we hold the future in our grasp. San Diego can become the first city of tomorrow or just another monument to yesterday. This is the challenge we face."

THE END

New Guinea Festival of Faces

Article and photographs by
MALCOLM S. KIRK

Vivid paint and hypnotic stare create a memorable visage at the annual agricultural show in North-East New Guinea. Some 60,000 tribesmen attend the "sing-sing," a combination festival and educational show organized by Australian administrators. Their aim: to help ease these highlanders—many of them just steps away from the Stone Age—into the 20th century.

Ghoulish mud man from the Asaro River Valley dons a helmet of dried clay and smears mud over his body to portray an evil spirit. Bamboo stick represents a spear. In a macabre dance with fellow tribesmen he will step to the rhythm of leaves struck against thighs.

THE GRAY-HAIRED LADY had just flown in from Sydney, and we strolled along the main street of Mount Hagen. We had both come to this township in North-East New Guinea to attend the South Pacific's greatest "sing-sing," featuring 60,000 grotesquely painted tribesmen in a two-day extravaganza of sound and color.

The lady adjusted her bifocals as she confronted a dozen half-naked highlanders wearing brilliant headdresses of bird-of-paradise plumes. Their bulging muscles glistened with pig grease.

"Goodness me!" my companion exclaimed. "They certainly do look primitive, don't they?"

Not understanding her words or resenting her stare, they stared right back with equal fascination.

Once-hostile Tribes Join in Merriment

On a 600-mile foot and canoe trip across Australian New Guinea, I had visited scores of natives in their jungle homes, marveling at their Stone Age way of life.* Now I would see highlanders from the Mount Hagen area enjoy their annual loud and happy agricultural show.†

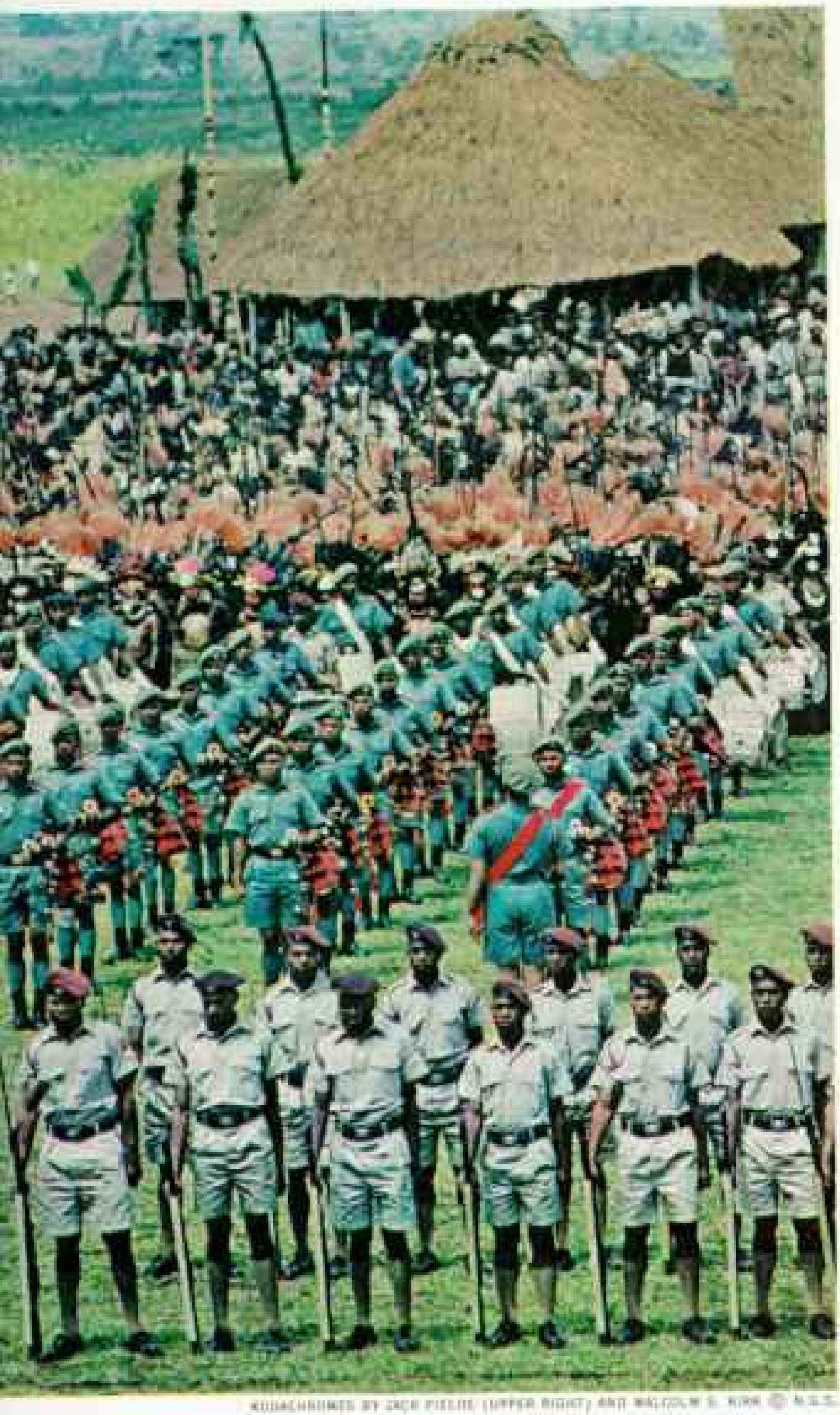
These hill people were virtually unknown to outsiders until the 1930's, when prospectors venturing into the rugged central highlands in search of gold discovered the lost world of the Wahgi Valley (map, page 151). Surprisingly, this remote area turned out to be one of the most densely populated parts of all New Guinea.

For many years thereafter, the tribes remained separated by clan enmities, diverse languages, and natural barriers imposed by the Central and Bismarck Ranges. Today, encouraged by the Australians, some have banded together in a farm cooperative, growing coffee; others raise tea and pyrethrum—a type of chrysanthemum used to make insecticides. Tribespeople are also learning about voting, education, and hygiene. The Western Highlands District, which

*"Journey Into Stone Age New Guinea," by Malcolm S. Kirk in the April 1969 NATIONAL GEOGRAPHIC, included the first photographs ever made of a Biami death ritual.

†John Scofield described the Mount Hagen festival in "Australian New Guinea," in the May 1962 issue.

Warriors new and old parade on opening day. In snappy berets, rifle-bearing warders of the Mount Hagen Corrective Institution line up before Australia's Pacific Islands Regiment Pipe Band. Spear-carrying tribesmen, under flaming bird-of-paradise plumes, congregate near thatch-roofed huts exhibiting farm tools and native crafts.



Mustache of shell and cassowary quills adorns a Wahgi tribesman. He wears a bib of tree kangaroo tail.

ADDACHROMES BY JACK FIELDS (UPPER RIGHT) AND MALCOLM S. KIRK © N.G.S.

Bows and arrows and bellicose looks belie the happy intent of these tribespeople, who trudged for a week to the show. Clad in bark-string skirts and festive headdresses, many of the men will compete in archery and dancing contests. Some onlookers dress in modern shirts and *lap-laps*—wrap-around skirts. A Meldpa man, at left, carries an umbrella, a popular trade-store item.

Highland fair has two homes: Mount Hagen and Goroka alternate as host for the annual festivities.

covers almost 10,000 square miles and includes Mount Hagen, now boasts a remarkably fast-growing economy.

The agricultural show has done a great deal to speed this process. It has helped unify many once-warring tribes and instructed them in the benefits of civilization. To make the serious purpose—education—more appealing, the administrators have stressed the carnival atmosphere.

It is obvious that the tribesmen gather mainly for fun, but most of them tour the exhibits and watch movies and filmstrips on farming techniques.

Happily, progress has not deprived them of their joy in simple pleasures. To them, the agricultural show is a combination of Christmas, a county fair, and the Fourth of July.

Their exuberance was evident as they streamed into Mount Hagen. Some had walked more than a hundred miles. They were resplendent in wigs and feathers, and some wore apronlike *bilums* of woven casuarina fiber with sprays of leaves tucked through their belts at the rear.

Lucky ones rolled past in mud-spattered trucks, chanting and pounding drums. As each vehicle reached the town, the tribesmen leaped off and raced down the main street,

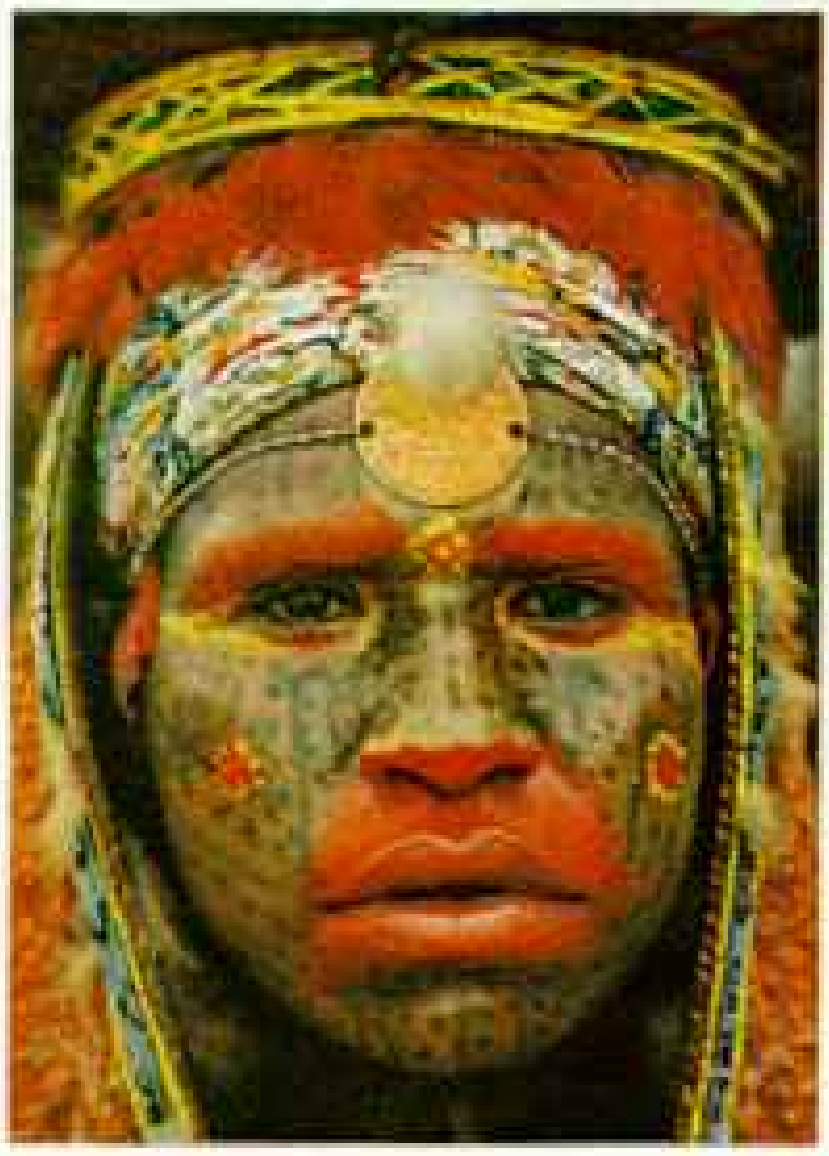
(Continued on page 156)

Every highlander a style-setter

POLKA-DOT MAKE-UP, shoulder scars, and pig grease enhance the appeal of a Minj clanswoman in the eyes of men of her tribe. Her facial design copies the pattern of a tree python. Trade-store items—beads, arm bands, and the label from a cigarette pack on her forehead adornment—join traditional finery: a bailer-shell pendant, woven-cane belts, and feathered crown.

An Enga tribesman (right), wearing a harlequin-like gourd mask, struts under a wig of cassowary plumes in imitation of the bird.

Teen-age girl (below) wears carmine and gold paint over her tattoos. The



medal on her forehead once identified a *tul-tul*, or government-appointed leader, whose office is now being replaced by elected councilmen as Australia prepares the territory for self-government.

Bewhiskered visitor from Wabag (right) blackens his face in a fashion that betokens endurance, strength, and manliness.

Costumes and cosmetics once differentiated tribes at local sing-sings celebrating initiations, pig exchanges, and marriages. But as many tribes meet—some for the first time—at the agricultural show, ideas for decoration jump from man to man. Self-adornment becomes more individual than tribal.

BOOMERANGS BY JACK FIELDS (OPPOSITE) AND MALCOLM S. KIRK © N.G.S.

CHORUS LINE OF WARRIORS *rises and dips, sending heavy bark-string* bilums *curling like a breaking wave. An eerie "shhh" rushes through clenched teeth with the sound of a locomotive chuffing out of a station. Under a treasury of shimmering plumes—blue King of Saxony and other birds of paradise—drum-pounding Enga men from west of Mount Hagen perform their proud dance.*

Chuckling with delight, a tribesman admires the result of hours of primping. Like all Duma men, he is an excellent archer. Pelts of cuscus and striped possum—both marsupials—hang from his elaborate wig. A valuable possession, it is worn only at festivals. The neck plate was cut from a gold-lip pearl oyster shell.

howling and shaking wooden spears. Waiting to accommodate this horde was an astonishing structure: three huge grass huts arranged like the spokes of a wheel and totaling almost five miles in length. Here, amid tons of sweet potatoes—a staple of their diet—the celebrators would bed down on earthen floors beside open fires.

Mount Hagen's only hotel and a motel had been booked for months. Schoolhouses had become temporary dormitories for visitors, many from Australia. The local airfield, which usually handles about 100 landings and take-offs a day, braced itself for a weekend increase of 650.

Cold Treat Wins a Convert

At dawn of the opening day—Saturday—leaders shouted orders to their fellow tribesmen to move onto the show grounds. Off they went, dancing, chanting, and drumming. By midday 20,000 were massed in the arena—a heaving sea of brown bodies painted in reds, yellows, and blues.

Soon stalls and open spaces around the arena hummed with activity, exhibiting everything from oil paintings to livestock. Several mystified natives watched tourists buying and eating strange objects—ice-cream cones. One warrior (right), unable to contain himself, stepped forward and ordered a cone. He put his tongue to it, as he had seen others do, but immediately recoiled from the coldness. Ignoring the guffaws of his companions, he gingerly tried again. This time he found both taste and temperature to his liking.

On Sunday evening the show closed on a dramatic note. Flames from an unwatched fire began licking at one of the big huts. Pandemonium ensued, and all three housing units seemed doomed. But groups of excited natives quickly doused the blaze with buckets of water, saving all but a small section of one building.

Next morning knots of tribesmen began their long trek home. As I watched them, I hoped that the lessons they had learned at the Hagen show would be put to good use. One thing was certain: They had all had a wonderful time.

Chilly novelty passes the taste test. An ice-cream cone—his first—brings a smile from this young Meldpa man of the Mount Hagen area. He earned the five-cent price by posing for a tourist's camera in his cap of cuscus fur and cockatoo feathers.

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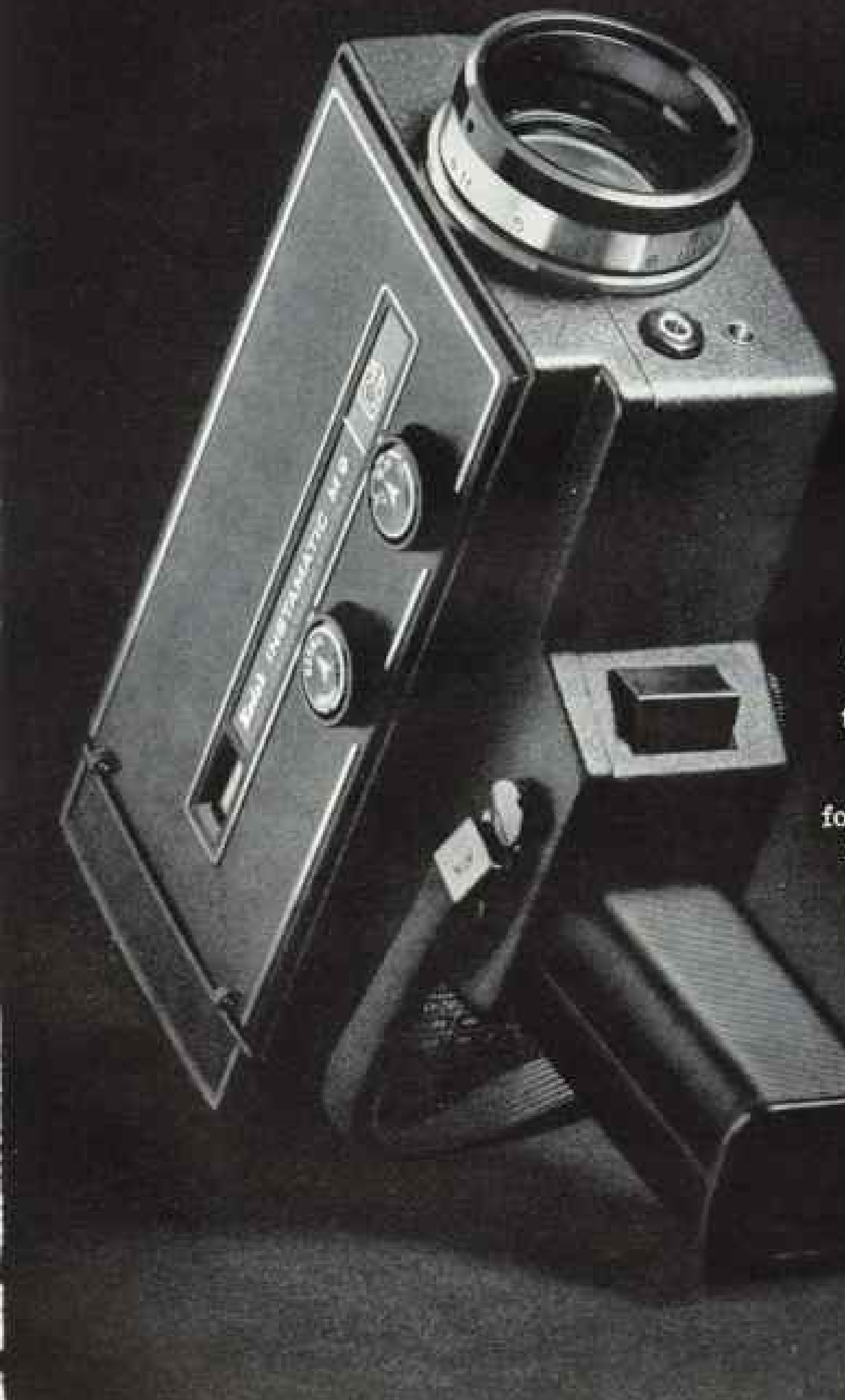

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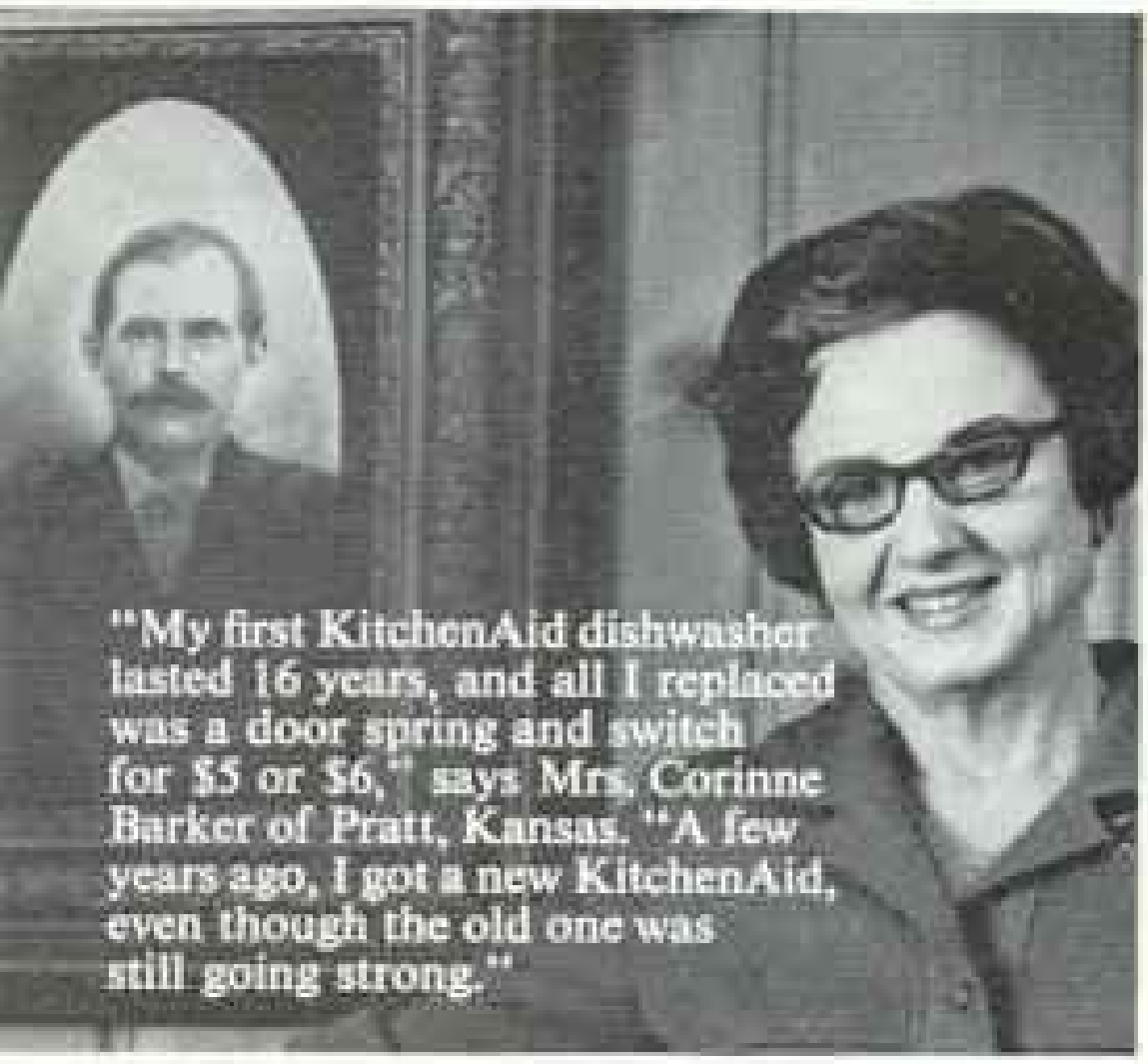
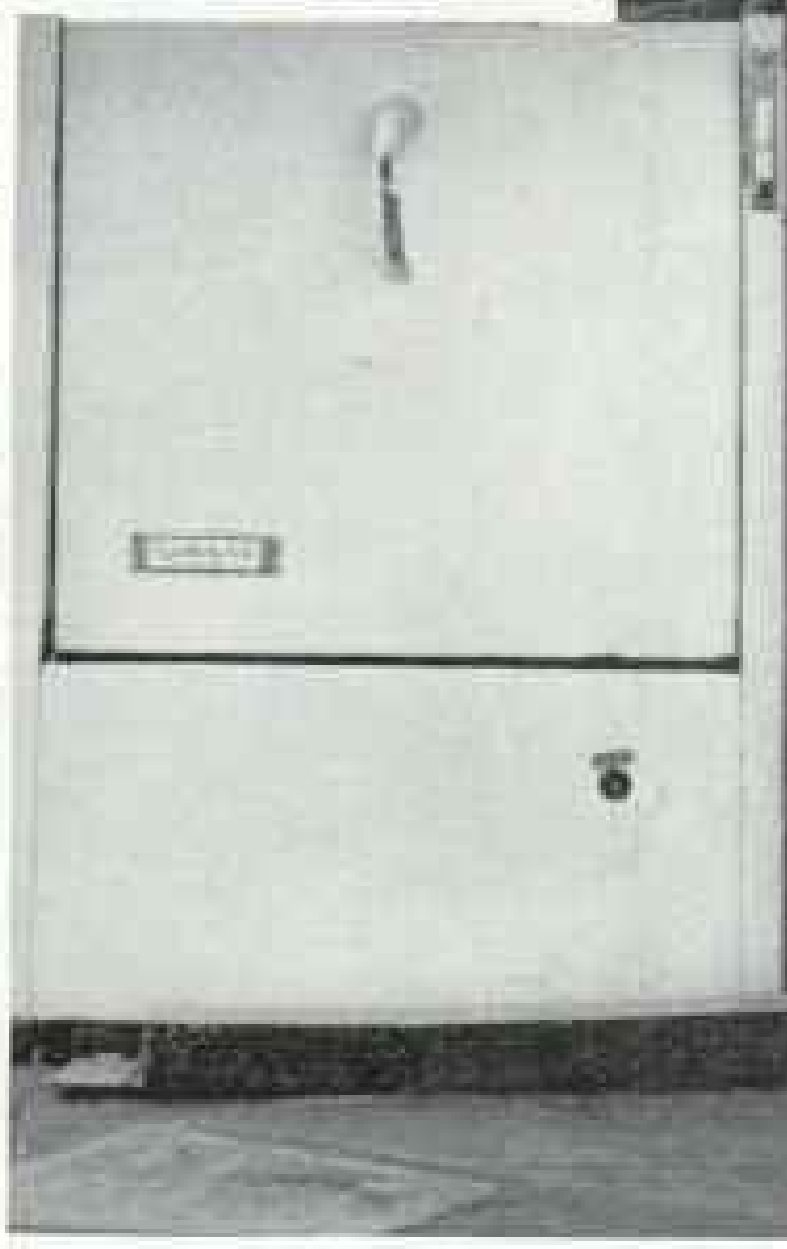
"We bought a portable KitchenAid dishwasher in 1962 and haven't spent a nickel for repairs," says Mrs. Pauline Curtis of Ferndale, Michigan. "By the way, we have 5 children and we've run our KitchenAid at least 4 times daily for the past 7 years."



"My first KitchenAid dishwasher lasted 16 years, and all I replaced was a door spring and switch for $5 or $6," says Mrs. Corinne Barker of Pratt, Kansas. "A few years ago, I got a new KitchenAid, even though the old one was still going strong."



Back in 1951, E. L. Briggs of Burnsville, North Carolina, bought this KitchenAid dishwasher. "It was in constant use every day," he said. "During those 18 years, all I ever had to do was replace a 60¢ light bulb."

3 happy families. 41 years of dishwasher use. $6.60 for repairs.

Who wants a dishwasher that's always breaking down?

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That's why they all bought KitchenAid dishwashers many years ago. In a total of 41 years, they spent a grand total of $6.60 for repairs.

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For all the details on how a KitchenAid is built better to work better and last longer, see your dealer. (He's listed in the Yellow Pages.) Or write KitchenAid Dishwashers, Department 9DNG-7, The Hobart Manufacturing Company, Troy, Ohio 45373.

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4 ounces orange or tomato juice

1½ cups (1 ounce) Special K with 1 teaspoon sugar and 4 ounces skim milk

Black coffee or tea

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