VOL. 129, NO. 2

FEBRUARY, 1966

NATIONAL GEOGRAPHIC

FLAMBOYANT IS THE WORD FOR BOLIVIA
LOREN McINTYRE 153

ST. AUGUSTINE, NATION'S OLDEST CITY, TURNS 400
ROBERT L. CONLY 196

"THE ALICE" IN AUSTRALIA'S WONDERLAND
ALAN VILLIERS 230
JEFF CARTER
DAVID MOORE

GIANT COMET GRAZES THE SUN 259

SAGA OF A SHIP, THE *YANKEE*
LUIS MARDEN 263

DICKEY CHAPELLE KILLED IN ACTION 270

WATER WAR IN VIET NAM
DICKEY CHAPELLE 272

SEE "VOYAGE OF THE BRIGANTINE *YANKEE*" FRIDAY, FEB. 11, ON CBS TV (page 265A)

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

February
1966

NATIONAL
GEOGRAPHIC

THE NATIONAL GEOGRAPHIC MAGAZINE VOL. 129, NO. 2
COPYRIGHT © 1966 BY NATIONAL GEOGRAPHIC SOCIETY, WASHINGTON, D.C.
INTERNATIONAL COPYRIGHT SECURED

Flamboyant is the word for BOLIVIA

Article and photographs by
LOREN McINTYRE

OUR FIRST NIGHT together in Bolivia, my wife Sue and I slept in a graveyard overlooking the legendary birthplace of the Incas, Lake Titicaca.

We huddled in our car on a hillside, watching the wind blow blossoms from withered wreaths and scatter them among the adobe tombs. Moonlight glittered on the Strait of Tiquina, near the southeastern end of the big lake Bolivia shares with Peru. We had left Peru's capital, Lima, five nights before.

After ten years in Peru, I was on my way to join the U. S. Operations Mission to Bolivia, one of the aid programs now under the Alliance for Progress. Having left our two sons with missionary friends in the Amazon headwater country, my wife and I were now only two hours' drive from La Paz, the Bolivian capital that was to be our new home.

Ferrymen Halt Traffic at Nightfall

But first we had to cross the Strait of Tiquina on a wind-driven ferry. Earlier that evening we had arrived at the lake shore, to find the Aymará Indian ferryboat crew busy hoisting sail. When I asked the helmsman to ferry us, he refused flatly:

"Not after dark, for any price."

Any price? I offered double fare. No. Triple? No. The boat slid away into the night.

Parked on the stone jetty in the bitter cold, we wondered glumly if we should have driven south around the lake instead (map, page 160). But there, too, we might have been caught, for iron gates at both ends of the border bridge slam shut before nightfall.

We were not alone. Hundreds of human shapes lay rolled up in ponchos on the rocky beach. Some of them got up, and soon dozens of staring faces pressed against our windows.

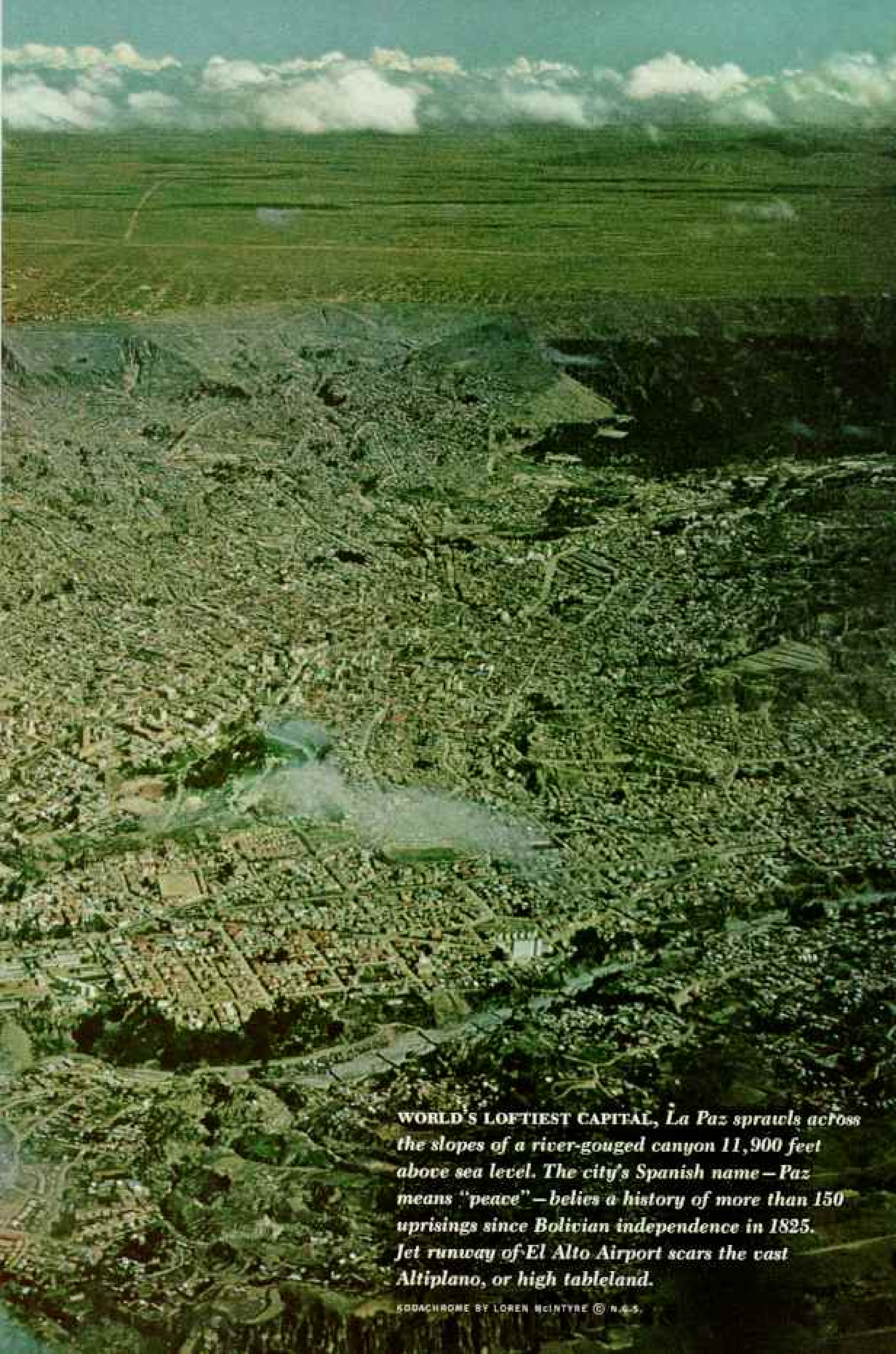
Locking the car, we pushed our way through crowds of muffled figures to a little red hotel on a hill. Its dim halls were packed with travelers. Clearly, there was no room for us.

"Pilgrims," explained the innkeeper. "It is Holy Week, and this is a stopping-off place between La Paz and Copacabana.

"Usually they have prayed for a great favor, like the recovery of a loved one from illness. They promise the Virgin of Copacabana that

EKTACHROME © N.G.S.

Derby on her head and doll on her back, an Aymará Indian girl copies her mother. But old customs fade as change sweeps Bolivia. This youngster, who goes to school near La Paz, will be able to vote when she grows up, a right granted women after 1952's revolution.



WORLD'S LOFTIEST CAPITAL, *La Paz sprawls across the slopes of a river-gouged canyon 11,900 feet above sea level. The city's Spanish name—Paz means "peace"—belies a history of more than 150 uprisings since Bolivian independence in 1825. Jet runway of El Alto Airport scars the vast Altiplano, or high tableland.*

KODACHROME BY LOREN McINTYRE © N.G.S.

they will walk the hundred miles to her shrine. Here they rest after crossing by the ferry."

Finally we found a pilgrim-free resting place: a hillside graveyard. Sue shuddered. "You didn't warn me it would be this rugged."

"*No seas kkaima,*" I said. "Don't be wishy-washy."

Bolivians use "kkaima," an Indian adjective for tasteless food, to describe weak opinions, flaccid politics, and lackluster personality.

In Bolivia, I reminded my wife, very little is kkaima. Flamboyant is the word for Bolivia. Mountains leap sharper and higher, colors are brighter, people tougher, revolutions bloodier. "And visitors sleep in graveyards," Sue added grimly.

At daybreak I shaved in Titicaca's chill water, and then drove our car aboard a ferry. Our crossing was a brisk one, under a wide sail. Soon we were driving into La Paz, highest capital city in the world.

The Author: Seattle-born Loren Alexander McIntyre, a 48-year-old officer of the U. S. Agency for International Development, has spent 17 years in South America—as a naval adviser in Peru, as a private film producer, and as an audiovisual expert for the U. S. foreign aid program. For 3½ years he worked and lived in Bolivia, taking his cameras and a scholar's knowledge of Latin American culture to all parts of that sky-high land.

All Ways in La Paz Lead Down

I had seen La Paz many times before. But Sue's first view of the city, sprawling across a canyon 11,900 feet above sea level, took her breath away. Beyond the far side of the canyon towered the triple peaks of Illimani, more than 21,000 feet high.

"It's impossible to get lost in La Paz," I told Sue. "You simply walk downhill. All the city is a funnel, with a single main thoroughfare running out the bottom toward the residential districts in the lower valleys."

I pointed out two boys riding a homemade coaster wagon. "They can coast 12 miles without a stop. They whiz down 2,300 vertical feet so fast it makes their ears pop, to the end of the road in Calacoto, down in the valley to the right. There's where we'll live."

We drove over the canyon rim and snaked down a concrete boulevard in wide, sweeping curves. We inched through a religious procession that wrapped the roadway like a bright scarf. A herd of llamas watched us haughtily. Halfway down, in the middle of the city, the funnel was clogged. The Sunday morning promenade filled the Prado, the main thoroughfare of La Paz.

The institution of the promenade—an occasion for boys to eye girls, and vice versa, while circling a plaza—has become mechanized in La Paz. The young men promenaded

KODACHROMES © NATIONAL GEOGRAPHIC SOCIETY

Sail-driven ferries shuttle cars and people across the three-quarter-mile-wide Strait of Tiquina in Lake Titicaca. Deckhands pole the stern-loading craft to and from the landings. Bolivia and Peru share this highest of the world's navigable lakes, at 12,506 feet. The Incas revered Titicaca as sacred, claiming it as their birthplace.

Shopwindow wonders and the velvet lights of La Paz delight a Bolivian of mixed Indian and Spanish blood, who cradles her infant against evening chill.

FARMAC
TURNO

in sedans, jeeps, and pickup trucks, creeping around the Prado.

We lived down in Calacoto five and a half years. With red cliffs and desert-dry air surrounding us, it was like living at the bottom of the Grand Canyon. Our sons used to ride horseback into a primeval wasteland riddled with secret caves—only five minutes from the house.

A block uphill from us, in a rented house, lived the President of the Republic, Hernán Siles Zuazo. When President Víctor Paz Estenssoro succeeded Siles, he lived about four blocks downhill.

Calacoto had neither stores nor offices. They were in La Paz, back up that roller-coaster road.

Trouble Stalks the City of Peace

The city of Nuestra Señora de la Paz, Our Lady of Peace, has seldom lived up to its name since its founding in 1548 by order of Pedro de la Gasca, an envoy to whom the King of Spain had entrusted the rule of the empire seized from the Incas.

Conquistador Francisco Pizarro, his companions-at-arms, and their sons and brothers and heirs had slain one another in senseless civil wars during the 16 years following the conquest. Then they were all gone, the last eliminated by de la Gasca.

Presiding from Lima, de la Gasca marked this moment of peace by founding the new city. He delegated Alonso de Mendoza, a Spanish captain, to find a site. Mendoza became the first "mayor" of the town, a position henceforth granted only by the Spanish monarch and apparently much in demand.

In 1590, a council, acting for the crown, denied the job to Miguel de Cervantes Saavedra, who had yet to write *Don Quixote*. I once heard a Bolivian schoolteacher tell his class that, but for this dastardly denial by the king, the literary classic would have been published in La Paz instead of in Madrid.

Revolts troubled the nearly three centuries of Spanish rule. Hordes of Aymará Indians under Tupac Catari besieged La Paz for six months in 1781, a year when uprisings of latter-day Incas extended from Cusco, Peru, to Tucumán, Argentina.

Pride of heritage draws a capacity crowd to a folk-dancing festival at the national stadium in La Paz. Sponsored by the education ministry, the show featured performers from every part of the nation, rewarding city-dwellers with reminiscences of rural childhood days.

"We want our sea—*Queremos nuestro mar*," chant parading women of the Seamstresses Union as they carry a 100-foot Bolivian flag past La Paz's Plaza Abaroa. Held each March 23, the procession honors national hero Eduardo Abaroa, who died in 1879 in the War of the Pacific, when Bolivia lost its seacoast to Chile.

KODACHROMES BY LOREN MC INTYRE © NATIONAL GEOGRAPHIC SOCIETY

PRODUCED BY
NATIONAL GEOGRAPHIC SOCIETY
CARTOGRAPHIC DIVISION
Railroads
Roads
Places with Scheduled Air Service
Oil Fields
Oil Pipe Lines
Dry Salt Lake
Glaciers
Elevations in Feet
Soundings in Fathoms
0
100
200
STATUTE MILES
68°
64°
12°
20°
B R A Z I
P E R U
B O L I V I
P A N D O
B E N I
L A P A Z
C O C H A B A M B A
S A N T A
O R U R O
P O T O S Í
C H U Q U I S A C A
T A R I J A
A R G E N T I N A
P A R A
CORDILLERA DE CHILE
ANDES
Serra dos Parecis
Esperanza
Rio Branco
Bom Comércio
Rio Negro
Canamari
Villa Bella
Cachuela Esperanza
Santa Rosa
Xapuri
Bolpebra
Brasiléia
Cobija
Iñapari
Porvenir
Humaitá
Las Piedras
Riberalta
Moreno
Puerto Rico
Iberia
Filadelfia
San Miguelito
Sena
Concepción
San Lorenzo
Bolívar
Fortaleza
Puerto Maldonado
Puerto Pardo
Chive
Puerto Heath
Madre de Dios
Madidi
Lago Rogoaguado
Lago Rogagua
Lago de los Arroyos
Puerto Siles
San Joaquín
Exaltación
San Ramón
Magdalena
Huacaraje
Baures
Lago de San Luis
Santa Ana
Principe da Beira
Pedras Negras
Mategua
Puerto Villazón
Piso Firme
Puerto Alegre
San Cristóbal
Porvenir
Puerto Saucedo
Huachi
Laguna Concepción
Puerto Frey
Pensamiento
Perseverancia
Cururu
Quince Mil
Astillero
Marcapata
Ixiamas
Macusani
Sandia
San Buenaventura
Reyes
Rurrenabaque
Apolo
Pelechuco
San Borja
San Ignacio
Trinidad
San Pedro
San Andrés
Loreto
San Francisco
San Lorenzo
Limoquije
Sécure
Asillo
Putina
Ayaviri
Cojata
Huancané
Mocomoco
Chuma
Mapiri
Guanay
Santa Ana
Lampa
Juliaca
Puerto Acosta
Sorata
Lago Titicaca
Caranavi
Puno
Copacabana
Yunguyo
Coroico
Chuspipata
Chulumani
San Pablo
Ascensión
El Puente
Concepción
San Javier
San Ignacio
San Miguel
Todos Santos
Pto. Villarroel
Villa Tunari
Puerto Grether
Portachuelo
Montero
Buena Vista
Warnes
Santa Cruz
Cotoca
Paurito
El Cerro
L. Concepción
Grande
BOUNDARY UNDEFINED
PAN AMERICAN HWY.
La Paz
Illimani
Desaguadero
Mazo Cruz
Moquegua
Comanche
Luribay
Inquisivi
Independencia
Cochabamba
Quillacollo
Punata
Arani
Tarata
Totora
Capinota
Mizque
Aiquile
Pampa Grande
Samaipata
Quirusillas
Vallegrande
Pucará
Cabezas
Tarata
Tacna
Charaña
Curahuara de Carangas
Oruro
Challapata
Poopó
Uncía
Lago Poopó
Corque
El Choro
Huachacalla
Sabaya
Orinoca
Arica
Chacalluta
Azapa
Codpa
Cuya
Camiña
Pisagua
Negreiros
Huara
Humberstone
Iquique
Pozo Almonte
Pintados
Victoria
Collaguasi
Punta Lobos
Laguna
Salar de Llamara
Quillagua
Rica Aventura
Tocopilla
Toco
María Elena
Vergara
Calama
Chuquicamata
Pedro de Valdivia
Mejillones
Unión
Salinas
Antofagasta
La Chimba
TROPIC OF CAPRICORN
Salar de Coipasa
Salinas de G. Mendoza
Salar de Uyuni
Uyuni
Río Mulatos
Potosí
Porco
Puna
Sucre
Ravelo
Poroma
Padilla
Sopachuy
Villa Serrano
Tomina
Yocalla
Betanzos
San Lucas
Vitichi
Tupiza
Cotagaita
Camargo
Villa Abecia
Atocha
Río Grande
Villa Martín
Chiguana
Oro Ingenio
San Pablo
Pan de Azúcar
Santa Catalina
Mojo
Moraya
La Quiaca
Puesto del Marqués
Abra Pampa
Cochinoca
Humahuaca
Susques
Tilcara
Salinas Grandes
Cobres
Calilegua
San Ramón de la Nueva Orán
Embarcación
Hickmann
Morillo
Los Blancos
Capitán J. Page
La Estrella
Tartagal
Ciro Echesortu
Pocitos
Yacuiba
Itaú
Tarija
Entre Ríos
Villa Montes
Camatindi
Carandaití
Huacaya
Boyuibe
Camiri
Cuevo
Monteagudo
Lagunillas
Charagua
Gutiérrez
San Francisco
Yuti
Fortín G. Mendoza
Fortín Coronel E. Garay
Puerto Estrella
Cañada Oruro
D'Orbigny
Santa Victoria
La Esmeralda
Ballivián
Puerto Irigoyen
San Pedro de Atacama
Toconao
Salar de Atacama
Laguna Colorada
Pimenta Bueno

BOLIVIA

TOWERING PEAKS, bleak tableland, tempestuous politics—these are the trademarks of the land called the tin roof of the Andes. From its mountains have come fortunes in silver and tin, lead and zinc. Deep Andean valleys yield coffee, grain, and fruit. Lowland jungles grow Brazil nuts and rubber; on wide grasslands graze half-wild cattle.

AREA: 424,163 sq. mi., four times the size of Colorado. **POPULATION:** 3,668,000, more than half Indian, one-third mestizo, remainder largely of Spanish descent. **LANGUAGE:** Spanish, Quechua, and Aymará. **RELIGION:** Roman Catholic. **CHIEF CITIES:** La Paz (pop. 355,000), highest capital in the world; Cochabamba, agriculture; Santa Cruz, oil; Sucre, legal capital.

In 1809, the colonists of Alto (High) Peru, as Bolivia was then called, became the first South Americans to proclaim independence from Spain. They were the last to achieve it, on August 6, 1825.

Simón Bolívar, liberator of northern South America, became the first leader of the country named for him. He resigned a year later, in 1826, and was succeeded by six presidents in the next three years. During the following 126 years, 50-odd men held the top spot. Fifteen of them lasted only days or weeks, tumbled by one or another of more than 150 uprisings in this period. Ten were assassinated.

Browsing through musty records, listening to old scholars, or questioning young students, I reached the conclusion that political conspiracy is part of the fabric of Bolivian life. One phrase I read in an old manuscript said: "Presidents do not know how to step down in time; they have to be shot out of office."

Opposite Palacio Quemado (Burned Palace), often ravaged during its 120-year history, two soldiers stand guard by a lamppost where the mutilated body of President Gualberto Villarroel was strung up by a mob in 1946. Every day, as he enters the palace, the current president sees this reminder.

Revolution Breaks Political Pattern

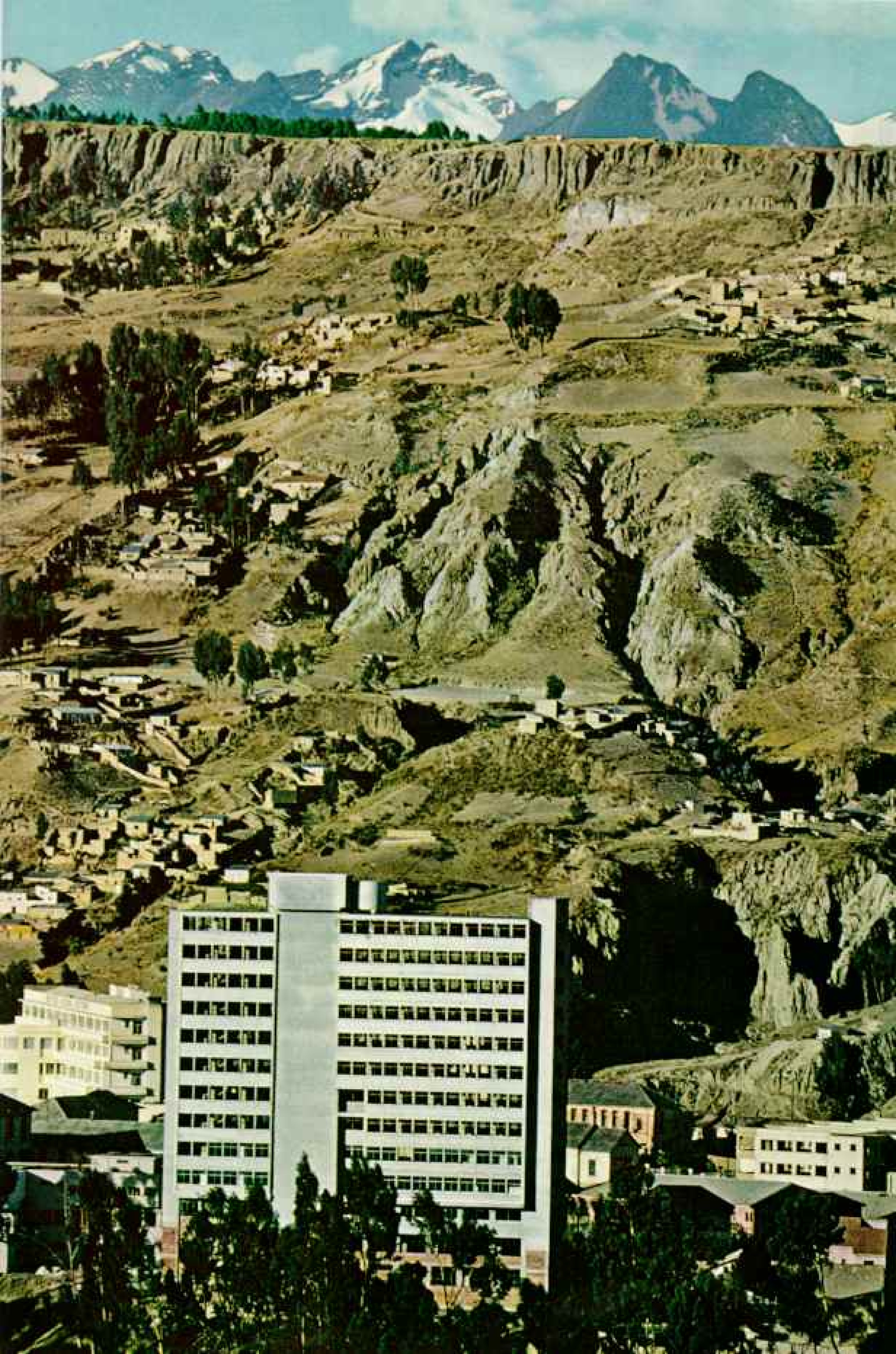
In 1952 the usual pattern of politics and recurrent palace revolt was shattered in Bolivia by a major social upheaval. Its leader was Víctor Paz Estenssoro.

Before his own sudden ouster in 1964, I called upon President Paz in his office. Land titles lay heaped on his desk. As we talked, he signed them. Beginning a third four-year term, President Paz looked as peaceful as his name, although his personal history has been as turbulent as that of the city of La Paz.

"For ten years we fought the tyranny of tin barons, underground and above ground, in the mines and at the ballot box," he said. "The MNR [National Revolutionary Movement] party did not conspire to make a mere *motín*. Your word is mutiny, a good word to describe what happens in most Latin American countries where they do not make real revolutions. Our goal was to overthrow the entire social order. To win, we had to destroy the army. And we did. Then our MNR government nationalized the three big tin combines and diversified the economy. We decreed universal suffrage and forced agrarian reform."

"Your enemies make many charges, Your Excellency," I pointed out.

"That may be." He picked up a land title. "But no one denies that we gained the dignity



of citizenship for more than half the Bolivian people, the Indian farmers who had been serfs for centuries."

In November, 1964, only some seven months after this interview, President Paz was overthrown, victim of a classic motín and of the army, which he had permitted to be rebuilt as a deterrent to Castro-communist insurgency. He fled the country.

The inheritor of the Palacio Quemado was Paz's newly elected vice president, Gen. René Barrientos Ortuño, who three years earlier told a U. S. military observer: "My followers will thrust me into the presidency some day." His non-followers cherished other hopes. The bold young air force general's body bears scars from repeated attempts on his life.

President Barrientos quickly granted voice and action to elements of Bolivian society that had been suppressed by the one-party MNR regime. His supporters looked to him to rescue the nation from revolutionary excesses before complete collapse of the economy. He has concentrated on streamlining the tin-mining industry—heart of Bolivia's economy—and controlling repeated uprisings among the country's tough, discontented miners. In May, 1965, Gen. Alfredo Ovando Candia, commander in chief of the armed forces, joined Barrientos as co-president in an effort to bring order out of the years of chaos.

Gunfire Adds Zing to Political Parade

The sound of gunfire became a familiar experience during our residence in La Paz. I remember its effect on a visiting minister of a new nation who shared the palace balcony with the president one ninth of April, anniversary of the 1952 revolution.

From a palace window above the presidential box, I was photographing the parade of MNR adherents, including miners in yellow raincoats packing loads of dynamite on their backs or strung like leis around their necks.

KODACHROMES © NATIONAL GEOGRAPHIC SOCIETY

Crisply modern, the new Faculty of Medicine building adds to the stature of San Andrés University in La Paz. Indian and mestizo homes cling to the slide-prone slope below the Altiplano and peaks of the Cordillera Real.

Highland tunes set costumed dancers whirling in a La Paz park on Bolivia's Independence Day, August 6. Lampshade hats, embroidered ponchos, and multilayered skirts—*polleras*—bedeck the spirited performers.

Soldiers in Germanic helmets goose-stepped past in review. Behind them limped veterans of the Chaco War, a bloody territorial dispute with Paraguay in the early 1930's which resulted in the loss of more than 50,000 Bolivian lives and most of the Gran Chaco—a sparsely settled scrubland in the southeast.

Then a contingent of MNR youth loosed a few bursts of automatic-weapons fire into the air. Bullets brought down masonry from the cornice above my head. Others felled a 6,600-volt power line, which lashed about in the street like a Chinese dragon, scattering sparks with reports as loud as the gunfire.

Spectators reeled back, the marchers detoured, and somehow everyone escaped electrocution. The president remained imperturbable. But one figure on the balcony had crumpled—the visiting minister.

Moments later I was asked to vacate my window in the palace because a certain foreign dignitary had to be carried into the room.

"Has he been shot?" I asked in alarm.

Heiress of the conquistadors: Ana Taborga de la Quintana, of Spanish descent, attends La Paz's Convent of the Sacred Heart. Although Spaniards in 1624 founded one of the Western Hemisphere's first universities in Sucre, only one Bolivian in three can read.

Morning to evening, La Paz's main boulevard teems with activity fostered by shops, hotels, and crowded sidewalk cafes, such as this at Hotel Copacabana. The broad Avenida 16 de Julio, commonly called "El Prado," honors the date of Bolivia's armed revolt against Spanish rule in 1809.

On Sunday mornings a modernized version of the old-fashioned Spanish promenade circles the tree-lined mall: Girls parade on foot, while ogling young men ride countercurrent in a slow procession of jeeps, trucks, and automobiles.

"Happily not, *caballero*. He has been struck by *sorojche* [altitude sickness]."

Well, it might have been sorojche. I remember when the National Symphony Orchestra of Washington, D. C., performed at the La Paz Municipal Theater in 1959. Howard Mitchell, the director, told me: "Many members felt ghastly that first night. Some of the string instrumentalists would never have lasted the performance without whiffing from portable oxygen tanks. The wind section seemed better adjusted."

Planes Play Tag Below Andean Peaks

I once discussed the hazards of high-altitude take-offs, landings, and parachute jumps with Gen. Javier Cerruto of the Bolivian Air Force. The general suggested, with a twinkle in his eye, that I join a flight of Military Air Transport (TAM) planes to Tipuani.

"Why Tipuani, *mi general?*" Tipuani, 70 air miles north of La Paz, is a jungle village on the other side of the Cordillera Real (map, page 160), where an American mining company dredges for gold. I had no particular desire to go there.

"Well, on the Tipuani flight you will learn very quickly about the agricultural diversification made possible by varieties of climate," said General Cerruto. "You will see all the world's latitudes, from the North Pole to the Equator, in less than four vertical miles."

I planned to forget the offer. But the general declared, "You shall go as soon as the weather clears." Two days later he announced that the moment had come. Three Douglas DC-3's took off, with me in the copilot seat of the lead plane, TAM 06.

We leveled off at 17,000 feet. I knew that snow peak after snow peak towered above our flight path. On better days they thrust above the clouds like a slalom course for Andean deities, but now they lurked in torn vapors through which we raced.

During the next five minutes of blind flying, I wanted to go to Tipuani less than ever.

EKTACHROME (OPPOSITE UPPER) AND KODACHROMES © N.G.S.

Abruptly we burst into clear afternoon sunshine, followed by the other two DC-3's.

The commander pushed his wheel forward and pointed the plane at the rain forest far below. He shouted in my ear, "Have you ever seen TAM 05?" I shook my head. "Then let me show you." He flew parallel to a high jungle-clad ridge. "There is TAM 05." Strewn all over the crest of the ridge glittered bits of aluminum that had been a DC-3.

"Perhaps now you would like to see TAM 07?" shouted the commander.

"Not this time," I replied. I remembered we were flying TAM 06.

The two other planes now led us toward Tipuani, veering through the steep green valleys like great silver condors. Suddenly the lead plane flipped into a vertical bank and disappeared to the left. Moments later, the second plane followed.

Our turn came. We sank into a canyon between cliffs so close together it seemed the wings could not pass. Then we snapped into a left turn. I caught a fleeting glimpse of a rope suspension bridge over a gorge. We flipped back to horizontal, and there ahead stretched a grassy meadow. But less than a thousand feet of meadow . . . not enough!

We dropped fast, bumped over a hump, and more runway appeared. We braked and could have stopped with plenty of grass to spare, but the commander rolled to the end of the runway. I peered over a precipice to a coffee-and-cream river far below.

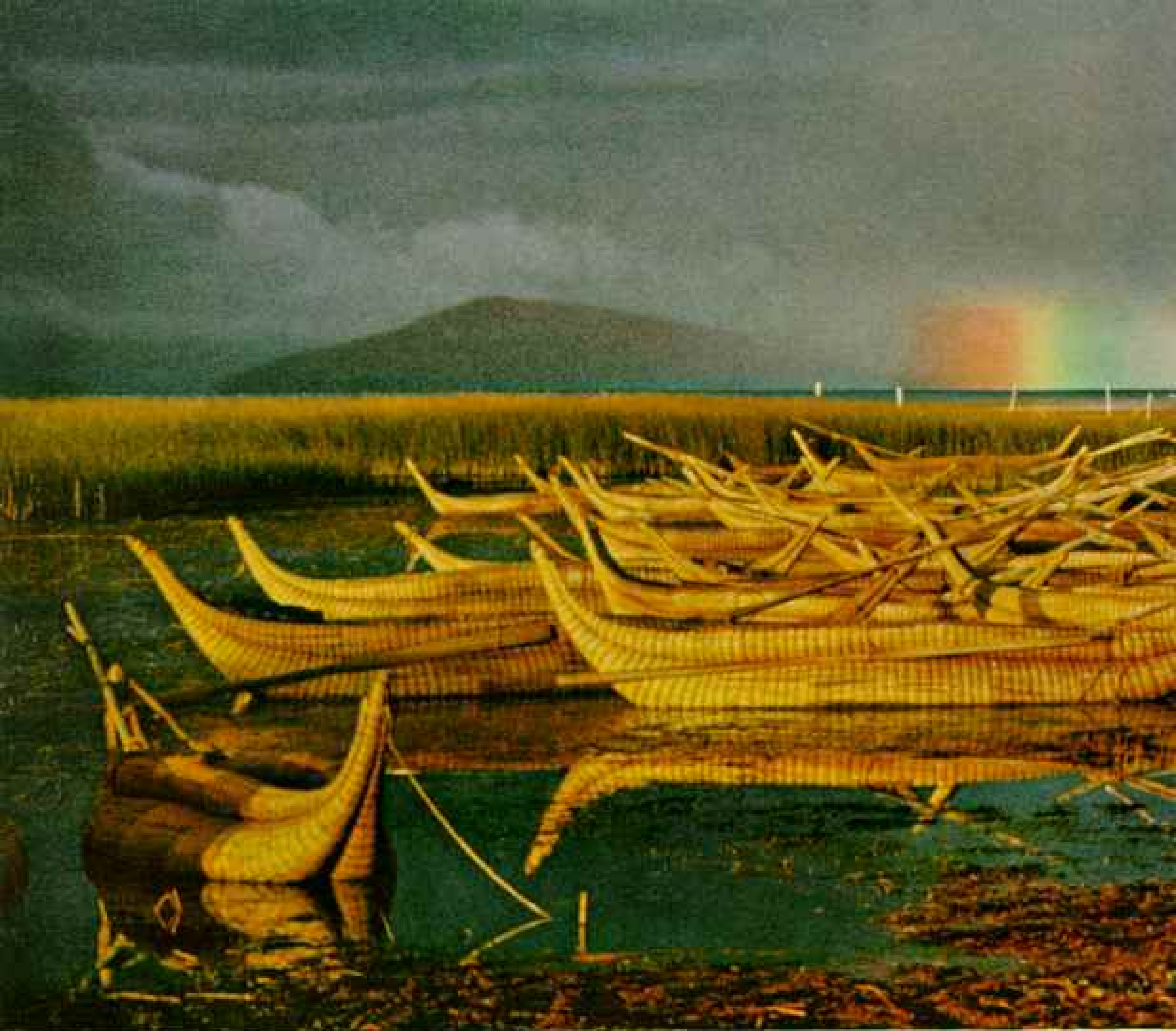
"You are perspiring," observed the commander. "It is very hot here in the jungle, no?"

Silver heirlooms arranged in a ceremonial arch welcome worshipers at the door of the centuries-old Church of San Francisco in La Paz. Parishioners beautify the temple with treasured possessions on Corpus Christi and other religious feast days. Beneath the gleaming array, vendors—whose Indian ancestors carved the church's baroque reliefs—unwrap trinkets for sale to churchgoers.

Cliff of death: Five alleged political conspirators, including Chaco War hero Lt. Gen. Demetrio Ramos, were shot and tossed over this awesome precipice in 1944. A cross marks the spot at El Balcón (The Balcony), where the road turns right.

A truck filled with migrants twists toward the valleys of Alto Beni—the upper Beni River area. Since 1954, that fertile region has undergone development through a government-sponsored land-settlement program.

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



Lacquered in gold by the rising sun, a fleet of new reed boats awaits fishermen on Lake Titicaca.

Tipuani itself was little more than a cluster of grass shacks. Crewmen unloaded the supplies we had brought and put our return cargo aboard: sacks of empty beer bottles destined for refilling at the brewery in La Paz. Within 15 minutes the daily air circus flew off the Tipuani strip the same way it had come in.

The commander piloted me on a short flight to the Yungas, the steep, humid valleys descending eastward from La Paz. Tiny towns brightened the summits of hills like white spume on the crests of gigantic green billows. A tenuous net of roads linked the towns.

Along such roads, bordered by wild orchids, trudge Indian girls so shy they turn their backs on passing vehicles. Narrow terraces on the steep Yungas slopes grow coca plants (page 178), whose dried leaves are chewed by many Andean peoples for narcotic effect.

The pilot put me down at the village of Caranavi, where the government spearheads a massive attempt to resettle highlanders in the fertile tropical lowlands. A road built with U. S. assistance carries migrant farm workers downhill and ripe fruit back up to La Paz. I joined a truckload of farmers to ride up this road, from the Amazon jungle to the roof of the country, in eight hours by night.

Mountain Driving Safer After Dark

It was safer in the dark. The cliff-hanging road is too narrow for vehicles to pass, except on occasional shoulders. By day it can be fatal to meet a truck suddenly coming around a hairpin turn. By night the lights of approaching vehicles at least flash a warning on the canyon walls.

On our right, a river rushed toward the Amazon, wasting its untold energy like a thousand other rivers along the eastern slopes of the Andes. On our left the piercing notes of crickets and other night creatures sounded

KODACHROME BY LOREN McINTYRE © N.G.S.

From a dark summer squall, a rainbow drops a luminous foot on the western horizon.

from dripping ferns and mosses. Sometimes we passed a candle-lit hut. Our headlights picked up a hitchhiker's beckoning thumb. A flashing smile brought us to a brief halt.

Our new passenger was 14-year-old Teófilo. "Sí, caballero," he told me. "I go to look for work in La Paz. No, caballero, I have never left home before. Sí, caballero, my mother gives permission."

A voice came from among the passengers. "That boy's ancestors were African slaves."

"True," said another. "They came to this valley three centuries ago. My grandfather used to tell of their small kingdom over yonder, and of their last king, Bonifacio."

We climbed until the vegetation thinned, the engine faltered, and jungle-born Teófilo gasped for oxygen. Dense clouds muffled the road, and we could not see the brink. No human lived nearby to note our passing, were we to fall into the forest a mile below.

At the summit, new snow mantled the road. A sign advised that the elevation was nearly 16,000 feet. Minutes later we broke free into a clear, moonless Andean night. We paused in the sterile silence while I helped the driver finish a thermos of coffee. So much of the earth's atmosphere lay below us that the stars shone almost as crisply as if seen from a spaceship.

We rolled swiftly downhill, while Teófilo huddled in a blanket, awaiting but not believing in the spectacle that I told him lay just ahead. Then, suddenly, we rounded a bend and looked down upon La Paz, glittering like a chest of jewels in a pirate's cave. Towering Illimani stood guard in the starlight.

"*Mamitay*—Mother of God," whispered Teófilo. He made the sign of the Cross.

On our journey we had passed hundreds of roadside crosses marking the deaths of earlier travelers. One huge concrete cross stood atop

the most awesome cliff of all, The Balcony, near Chuspipata (page 167). The cross bore the date 1944 and five names, not of luckless motorists but of victims of politics.

I learned more about this tragedy on New Year's Day, 1960, when I was returning to La Paz from a seaside holiday at Arica, Chile, where Bolivians have free-port privileges.

Tale Unfolds Aboard "The Smuggler"

On a train nicknamed *"El Contrabandista"* I shared a seat with a small, proud, elderly lady with threadbare clothing, a pasteboard suitcase bound with twine, and a paper bag of lunch.

As the train labored up into the Andean foothills, it lurched and the paper bag spilled its contents. I retrieved an orange for the señora. Soon we were friends.

Most Latin Americans are extremely nationalistic, and I was surprised when she said: "I am sorry to say that I am Bolivian. I live in Santiago, Chile. Like 30,000 of my countrymen, I am an expatriate. I go now to La Paz only because I need money. I have to sell my little house there. That's the only thing in life that matters. Money!" She snapped her fingers derisively.

Hours later, while attendants were offering oxygen, my companion pointed from her window to a distant snow-capped peak. "That looks like a Bolivian mountain."

"No, señora, that is the Volcán Tacora, in Chile. Bolivia lies a little farther on."

A while later she spied grazing llamas and clutched my arm. "There are no llamas in Chile. Now we are in Bolivia!"

"No, señora. But soon. . . ."

At sunset the train slowed at the border village of Charaña. The señora peered at huge scrawls on an adobe wall: "Up with Paz" and "Down with Arce."

"Ah," she said, "now we come to my country."

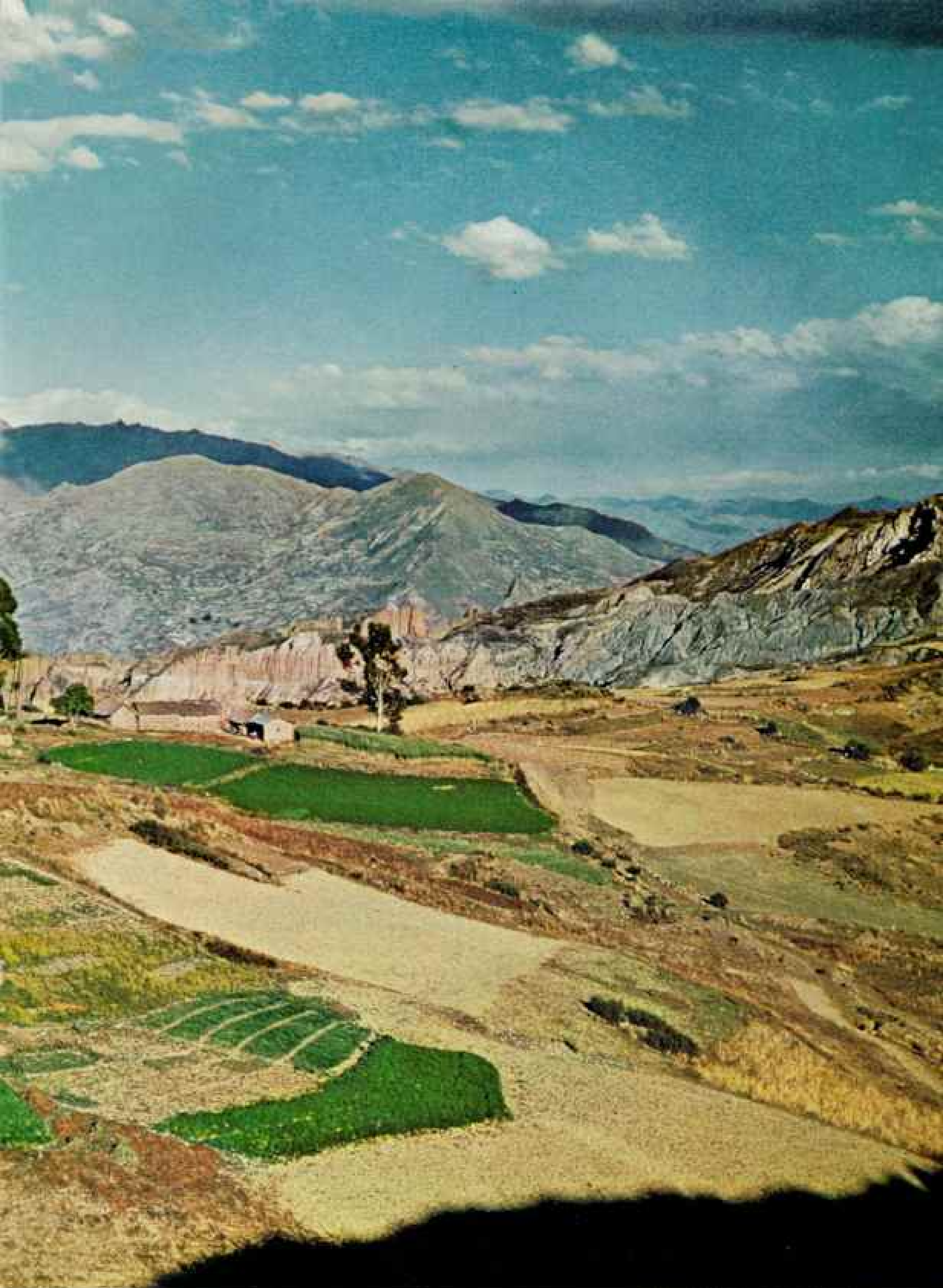
The train wheezed to a stop. A bugle call sounded. A red-yellow-and-green Bolivian banner sank down a flagstaff for the night. The

[illegible] (ABOVE) AND KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

Jam-packed pilgrims, many from foreign lands, crowd Copacabana each year to honor her famous Virgin. A copy of the Virgin's statue rides in procession amidst the noise of firecrackers and the prayers of the pious. The original, carved by the Indian Francisco Yupanqui in 1576, never leaves Copacabana's basilica; tradition forbids its movement lest the waters of Lake Titicaca rise in flood.

A trudge up a hill called Calvario highlights the three-day August fiesta, Bolivia's foremost religious event. Some pilgrims make the climb on their knees, carrying small stones from the bottom as proof of their devotion. They deposit the stones around hilltop shrines that depict the Virgin Mary's seven sorrows.

Illimani's frosted splendor towers over Indian farms on the soil-poor Altiplano, the Andean high plateau. Green plots of beans patch the tawny landscape. Living proves



EKTACHROME BY LOREN MCINTYRE © N.G.S.

harsh in this cold, unyielding country, but Altiplano Indians resist leaving their rocky acres for the tropical lowlands, despite the government's promise of an easier life.

KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

señora, suddenly sobbing, pressed her face against my sleeve.

Darkness obscured the arid plains of Charaña. A customs official opened the pasteboard suitcase, shrugged, and went on through the train.

Softly I chided the señora: "Why were you not truthful with me? Why did you say that nothing matters but money?"

She lifted her face. Her eyes flashed.

"You have traveled to the North Yungas, no? And you have seen a great cross at the most fearsome cliff, no? Marking that spot where the circling vultures betrayed an evil secret 15 years ago? And have you read the names on that cross?"

"I have read them, señora, but I do not remember them."

"Then remember one the rest of your life. The name of a hero of the Chaco War. A gentle man, laughing when they took him away, because he knew he was innocent of any conspiracy. They said they were taking him to exile in the jungle. But they stopped by that cliff and shot him with the others. He was my husband, Lieutenant General Demetrio Ramos!"

A few days later, in La Paz, I dialed the number of the Señora de Ramos. An unfamiliar voice answered.

"Ay, but the señora left this life only yesterday. Her heart was tired."

It could have been the altitude.

Two-mile-high Lake Holds Monster Trout

During our years in La Paz, we roamed our flamboyant world from the ski lift at Nevado Chacaltaya (90 minutes from home and 17,536 feet high) to the jungles of the Zongo Valley (two hours' drive beyond the snows and two vertical miles lower). To me, the best place of all was Lake Titicaca.

As a schoolboy in Seattle, Washington, I used to write about imaginary adventures sailing reed boats on Titicaca, the sacred lake of the Incas (pages 168-9). Thirty years later I set sail there in my own 18-foot reed boat, new and golden green. It cost $15.

Within a year my boat turned black with rot. My next craft was a homemade twin-outboard cruiser, which generated only half its 120-horsepower rating at the 12,500-foot elevation, but was nevertheless the fastest craft on the lake.

I explored almost every cove and inlet of this 3,200-square-mile lake, partly for the

EKTACHROMES BY LOREN McINTYRE © N.G.S.

Rare lifelike head, a pre-Inca Tiahuanacan jar, shows the long nose typical of today's Andean Indians; some anthropologists consider it the mark of a people adapted to breathing the thin, cold air of their lofty land. The five-inch ceramic effigy wears an ornamental plug through its lower lip.

His face a look-alike of his ancestor's portrait in clay, an Aymará Indian squats by remains of a wall at Tiahuanacu. The monoliths were hewn by his forebears, who flourished here from 600 B.C. to A.D. 1200.

Flowery exclamation point, a *Puya raimondii* punctuates an isolated granite height. Only after 150 years of growth does this world's tallest herb, an Andean cousin of the pineapple, shoot skyward from a spiny base.* It dwarfs in age even the largest of Mexico's agaves, popularly called century plants. Atop a ladder, a man plucks one of the 8,000 blossoms on the 30-foot-high spire, which dies even as it blooms.

joy of adventure and discovery, and partly in search of the big rainbow trout.

In 1959 I found them. During the next three years my boat and its crew won all nine Bolivian sport-fishing trophies. My biggest rainbow weighed 26 pounds. The largest caught by rod and reel in Titicaca, to my knowledge, weighed 34 pounds, and was taken in 1956 by Iowa's Senator Bourke B. Hickenlooper.

Before 1939, only small fish inhabited Titicaca. Then U.S. specialists introduced trout into many Andean lakes and rivers to improve the protein content of highlanders' diets. Titicaca's rainbows throve and grew to sizes equaled only in Pend Oreille Lake, Idaho.

The Isla del Sol—Island of the Sun—rises out of Lake Titicaca like the spine and limbs of a sea monster held motionless by some forgotten enchantment. Legendary birthplace of the Incas and shrine of the earlier Colla peoples, the Island of the Sun bewitched me with its abandoned stone temples, crystal lagoons, white beaches, and lofty cliffs from which one can see across the lake to Peru.

Lake Titicaca has a living monster—or so some highland folk believe. The monster has

*See "Puya, the Pineapple's Andean Ancestor," by Mulford B. Foster, GEOGRAPHIC, October, 1950.

KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

been reported swimming with its nose above water, creating great waves and a frightful noise, leaving lacerated gill nets in its wake.

But it did not come home the night I spent at its supposed lair. The creature has been sighted only on Sunday evenings at twilight. That is when the alcoholic weekend fiestas of the lake-shore people draw to a close.

"Easy" Sightseeing Trip Almost Fatal

South of the lake stretch vast wastelands, remote and risky to traverse by car. I had long wanted to see them the easy way, by air. The day I succeeded, I nearly died.

At El Alto Airport, I engaged a light plane with eight hours' fuel capacity. I asked the pilot to remove the door so that I could take pictures. He complied, with some misgivings, and I strapped myself into the rear seat.

As soon as we were airborne, I knew I was in serious trouble. A 100-mile-an-hour gale tore through the doorway, whipping mercilessly under my parka, stealing my body heat, whirling it out the door and into the Andean sky. By the time we leveled off at 18,000 feet, with no oxygen bottle and the temperature below zero, I was almost insensible from the cold. Yet I had seven hours of flying ahead, unless I chose to abandon the long-awaited flight. Up front, the pilot was more protected from the frigid blast.

We followed the railroad tracks across the Altiplano from La Paz to the mining and railroad center of Oruro. Thousands of flamingos rose from the marshes, scattering coral reflections like Oriental fireworks.

I envied the pilot in his many layers of clothing, although he too was shivering. We flew over Challacollo, an adobe Venice, whose children fish from their doorsteps with conical nets. Their elders pole reed boats along flooded streets leading to fields of *quinoa*. This nourishing grain, with potatoes (native to the Andes), forms a staple of the highland diet.

We crossed the Desaguadero (Drainage) River, which carries the overflow from Lake Titicaca 200 miles southeast across the flatlands to Lake Poopó, where much of it evaporates. Over Lake Coipasa we looked down upon 200 square miles of saturated brine in a

Plumed headdresses of flamingo and rhea feathers nod above a band at an Altiplano festival. A trumpeter signals dancers with a blast on the *pututu*, a bull's horn at the end of a hollow cane. In bygone days, Indians blew pottery pututus from summits to rally warriors. Other musicians play reed panpipes called *sicuris*, Indian instruments since pre-Columbian times. Unlike lowlanders, whose festive songs shimmer with fiery Spanish rhythms, these highlanders keep cadence with an austere beat.

Black-braided grape peddler weighs her wares at Tarija, a town near the Argentine border. Her wide-brimmed derby, like other regional hats, takes shape from soaked wool, pounded to a cardboard texture and starched.

Vegetable vendor binds her child in a woven *cinturón*, a decorative belt. She tends her curbside grocery in the colonial city of Sucre, still Bolivia's legal capital.

Shy sloe-eyed bride wears wedding-gift money pinned to her shawl by guests, an Altiplano custom. Of sturdy Aymará stock, she walked 20 miles with her husband to her new mountain home.

EKTACHROME (BELOW) AND KODACHROMES © N.G.S.

KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

salt flat seven times larger. Nearly 9,000 square miles of salt deposits occupy this end of the Altiplano. The largest, the Salar de Uyuni, glistened ahead. I was glad to be flying above Uyuni and not adding my brine-bleached skeleton to those of lost travelers.

We might have been flying over Antarctica, it was that cold. By the time we turned for home, I could feel consciousness slipping away. Although I didn't quite pass out, they had to carry me from the plane after six hours aloft. A doctor took my temperature.

"Only four degrees Centigrade below normal," he said—92° Fahrenheit. An hour in a hot tub fixed that.

My icy ride was a minor ordeal compared to the adventures of Portuguese explorer Aleixo Garcia, believed to have reached Bolivia in the early 1520's. Marooned on the coast of Brazil, he recruited hundreds of Indian followers as he pushed west across an unknown continent a decade before the Spaniards rode up the Inca road from Peru.

Garcia's expedition was comparable to a trek across North America from Cape Cod to the Rockies, and occurred a century before the Pilgrims landed at Plymouth Rock.

The barrier of the Andes and the Inca warriors turned the Portuguese adventurer back just short of fabulous riches and a place in history. It was the Spaniards who won the golden goblets and silver mountains.

Llamas Grace Bolivia's Highlands

In 1964 I made a long swing around the country with a young Bolivian named Napoleón Vilela. Near Oruro and the big tin mines, despite the huge increase in truck traffic over roads improved through U. S. assistance, we saw pack llamas everywhere—

Indigo-shadowed valleys, the Yungas enfold terraces of coca. Mother and daughter fill their aprons with the pain-killing leaves, revered for centuries by highlanders who recognized their narcotic properties. Used in manufacture of cocaine, the dried herb when chewed can dull the pangs of cold and hunger or quiet a crying baby. A dampened wad stuck to the forehead cures a headache, Indians believe. Attributing sacred powers to the plant, superstitious Aymarás offer it in a ritual to mountain deities.

Spinning yarn as she walks, a barefoot Aymará twirls magenta-dyed wool around a spindle. Years before the Spanish conquistadors overran Bolivia in the 16th century, Indians wove colorful textiles from the wool of alpacas and llamas. Today's highlanders, like their ancestors, wear garments made from yarn produced while sitting in the market, tending flocks, or even dancing. Many multicolored Andean creations now reach stores in the United States.

Across the valley cling white-roofed houses near Sorata, where in 1780 leaders of 100,000 Aymarás vowed to exterminate the Spaniards. After damming mountain rivers, they released backed-up waters that swept away the town and thousands of its inhabitants.

KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

stately in stance, regal in coats of grays or tans or crazy-quilt hues (pages 184-5).

In a meadow by the highway, we watched a pure white llama being born. He got up and teetered proudly on soft hoofs. A shepherd came to kill him for his pelt. Quickly I asked, "What price will the pelt bring?"

"White pelts make choice quilts. Sixty thousand bolivianos." Five dollars. We lifted him into the jeep, and I sewed a strand of colored yarn into his ear to mark him mine, as the peasants do. At the next village, I bought a nursing bottle and a can of evaporated milk. But my llama would drink only while standing up. We stopped driving. When we started again, he got carsick.

We saw a little boy crying by the roadside. His kite had caught in a telegraph wire. He stopped crying when I gave him my llama.

I've often read that llamas spit at people. I have never seen one do so. But I have seen herdsmen spit at llamas. As we neared Colquiri, a mining town north of Oruro, 20 runaway llamas came galloping into a village. An Indian stopped them in their tracks by standing in their way and spitting furiously at them.

The llamas were loaded with *ttola*, an aromatic shrub used as domestic fuel. The springy ttola has another use. When a tire went flat, a truck driver showed us how to stuff it with ttola. It carried us comfortably into Colquiri.

Tin-mine Tío Bedevils Picture-takers

Minerals, principally tin, account for 94 percent in value of Bolivia's exports. To see how men wrest the ore from deep inside mountains, I followed an engineer more than a mile into the main tunnel at Colquiri.

Several miners said Tío would spoil any pictures I made inside the mine. Tío is an

LIFEBLOOD OF BOLIVIA, *tin ore flows by narrow-gauge railroad from deep galleries within snow-shrouded Huayna Potosí to the refinery at Milluni (foreground). The metal, which brings in three-quarters of the nation's foreign exchange, stains the valley orange where tailings have been dumped and imparts a metallic taste to lake water that helps supply La Paz, ten miles away.*

KODACHROME BY LOREN MCINTYRE © N.G.S.

idol, the painted image of a mischievous devil, seated in a niche in one of the mine galleries. As we walked, the temperature soared.

"The miners spend a great deal of their lives, besides working time, in the mine," the engineer told me. "They cook here, eat, conduct meetings, and set aside one day of each work week for recreation." "Recreation" in the mine, I learned, amounted to drinking astonishing quantities of fiery *aguardiente*—raw cane alcohol.

In a cloudy cavern hotter than a steam bath, shaken with unnerving noise, we found Pedro Salas and Juan Condori, clad in breechclouts, attacking the tin lode with a compressed-air drill.

With sweat streaming into my eyes and down my back, I set up my camera. Then I realized that Tío was up to his tricks. Humid air was condensing on the cold lenses. Water ran off in trickles. Wiping was useless until the camera warmed up. Previous photographers must have tried to take pictures with lenses clouded or film streaked with moisture. I thwarted Tío's "ghosts" by cooking my camera and lenses under floodlamps until they were warm and dry.

Miner's Redoubt: His "Skyscraper" Home

Pedro Salas invited me to share dinner with his family in Rascacielos (Skyscraper) No. 547, his house high on the mountain above the mine. Pedro's wife rose from her treadle sewing machine to greet me. His Quechua mother was busy in the kitchen, a small sooty alcove. His daughter put away her primer and stood at attention with her baby brother.

Pedro removed his home-study books on automotive engineering from the table to make room for supper. He offered me his only chair.

Adobe walls were papered with pages from a magazine story about a sick boy in the slums of Rio de Janeiro. "My wife and I are very sorry for this boy," said Pedro. "We tried to send him some money."

Supper was mostly rice. Afterward, Pedro played the guitar, talked about politics and child rearing, and questioned me about opportunities for work, both in his country and in mine.

I slept at Colquiri in a sleeping bag at Pedro Salas's home. More than a home, the single room at No. 547 was Pedro's redoubt. His troops were his wife and the boy and girl. His secret weapon was faith in the individual's ability to make his own future. His flag was hope.

Few miners have a redoubt like Pedro's. Some seek substitutes in alcohol and coca. Most have learned they now have a voice in national affairs. Sometimes they try to magnify their voice with Mausers and dynamite. The men who mine tin are the most combustible element of Bolivian society.

Stair-step eyries climb a mountainside at Colquiri, where families of tin miners cook, eat, and sleep in one-room homes, roofed with corrugated-iron sheets. Adobe bricks wall off front-yard garden plots and play areas for children.

Bundled against cold and damp, miners at Milluni pierce a vein of tin ore beneath a glacier. Raincoats shed water used to control dust as the pneumatic drill hammers and bores into solid rock. In hotter and deeper mines, drillers wear only breechclouts.

Nationalization of major mines in 1952 provided benefits for the miners: low-cost commissaries, medical aid, and a shorter work week. But production declined because of politically inspired work stoppages, inexperienced management, and rundown equipment—problems the present government strives to solve.

EKTACHROME (BELOW) AND KODACHROME BY LOREN MCINTYRE © NATIONAL GEOGRAPHIC SOCIETY

After Colquiri, Napoleón and I headed for Potosí, where mining in the New World began in April, 1545. Along the shore of Lake Poopó, we passed mine after deserted mine.

Each dilapidated processing plant was marked by steel towers that carried high cables from abandoned borings in the distant mountains. When the industry was nationalized after the 1952 revolution, many mines shut down abruptly and remain closed today.

Rusty buckets still swung from aerial cables. I climbed a tower to try to photograph some of the buckets with the ramshackle buildings in the background. All the buckets were full of ore, left there when the last crew walked away years before!

Long hours from Poopó, beyond the crumbling arches of Romanesque aqueducts built by 16th-century Basque engineers who settled in Potosí, we sighted the cone-shaped mountain that has yielded nearly two billion dollars' worth of silver (page 189). After the precious artifacts of the Incas and Aztecs had been melted down to finance the rise of Spanish power, this was where the subsoil of the New World was first and most massively exploited, to catapult the kings of Castile into pre-eminence among Europe's monarchs.

Art Survives in Remote Mining City

We drove into a city little changed from the age when it was the largest and richest in the New World. Potosí, highest and one of the most remote cities ever populated by Western man, has few equals as a repository of Spanish colonial art and architecture.

Little or nothing remains of the old city's eight fencing schools and 36 gaming houses. But we stood on balconies and walked across ballrooms where, in 1616, the year Shakespeare and Cervantes died, the ladies of Potosí danced at 13,600 feet altitude. They wore silks from Cathay and pearls from Isla de Margarita, off Venezuela. Meanwhile, inside the mountain chambers, unnumbered Indians worked, died, and were buried.

When adjacent populations became depleted, miners were conscripted by a Spanish adaptation of the *mita*, a system the Incas had used to resettle huge numbers of their conquered peoples. Records show that caravans of as many as 2,500 conscripts, with 5,000 members of their families and 30,000 animals, were sent yearly to Potosí from Peruvian towns as far away as 400 miles. How many completed their period of service and returned? The records do not say.

Even with conscript labor, it took 20 years to construct the Casa de Moneda, which was the mint, the prison, the Bastille of Potosí. A massive building occupying a city block, the Casa de Moneda now houses the finest museum in Bolivia. Director Don Armando Alba opened its doors with a huge ring of keys.

"The four great wooden machines which rolled silver bars into long strips are still in working condition," he declared. "Only we no longer keep convicts in our dungeons to turn the shafts of the presses and to strike coins from the silver strips."

Since the exciting days of three centuries ago, the population of Potosí has fallen from 150,000 to one-third that number. The rustle

Nuzzling her newborn calf, a mother llama welcomes it into a world of toil. Llamas provide highlanders with wool, milk, meat, and transport. Ancient Andean peoples domesticated this cousin of the camel.

Pack train of llamas, loaded with dung for fuel, picks its way across the crumpled, treeless highlands. Bearing an equal burden, the herder hisses commands to his sole companions on the trek. Such caravans also freight grain, tin ore, and blocks of rock salt.

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

KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

of silk is gone, but the glottal chatter of the woolen-shawled women in the marketplace goes on as before. The silver lodes are exhausted, and now the smell of sulphur from processed tin ore pervades the streets.

The mountain is almost all hollowed out. Its entrails clog the valleys: Indian women sift through them ceaselessly, seeking chunks of tin ore. There is no money today to keep up the buildings and repair the furniture left behind when the conquerors went home to Spain. Rain splashes through the rotting roofs of churches and dribbles over huge sooty paintings hanging awry on the adobe walls.

Asian Immigrants Find a Good Life

Following a side trip to the red-roofed city of Sucre, we drove south to Tarija, a miniature of old Spain near the Argentine border. Then we turned north to follow the trans-Andean pipeline through oilfields marking the easternmost spurs of the Andes.

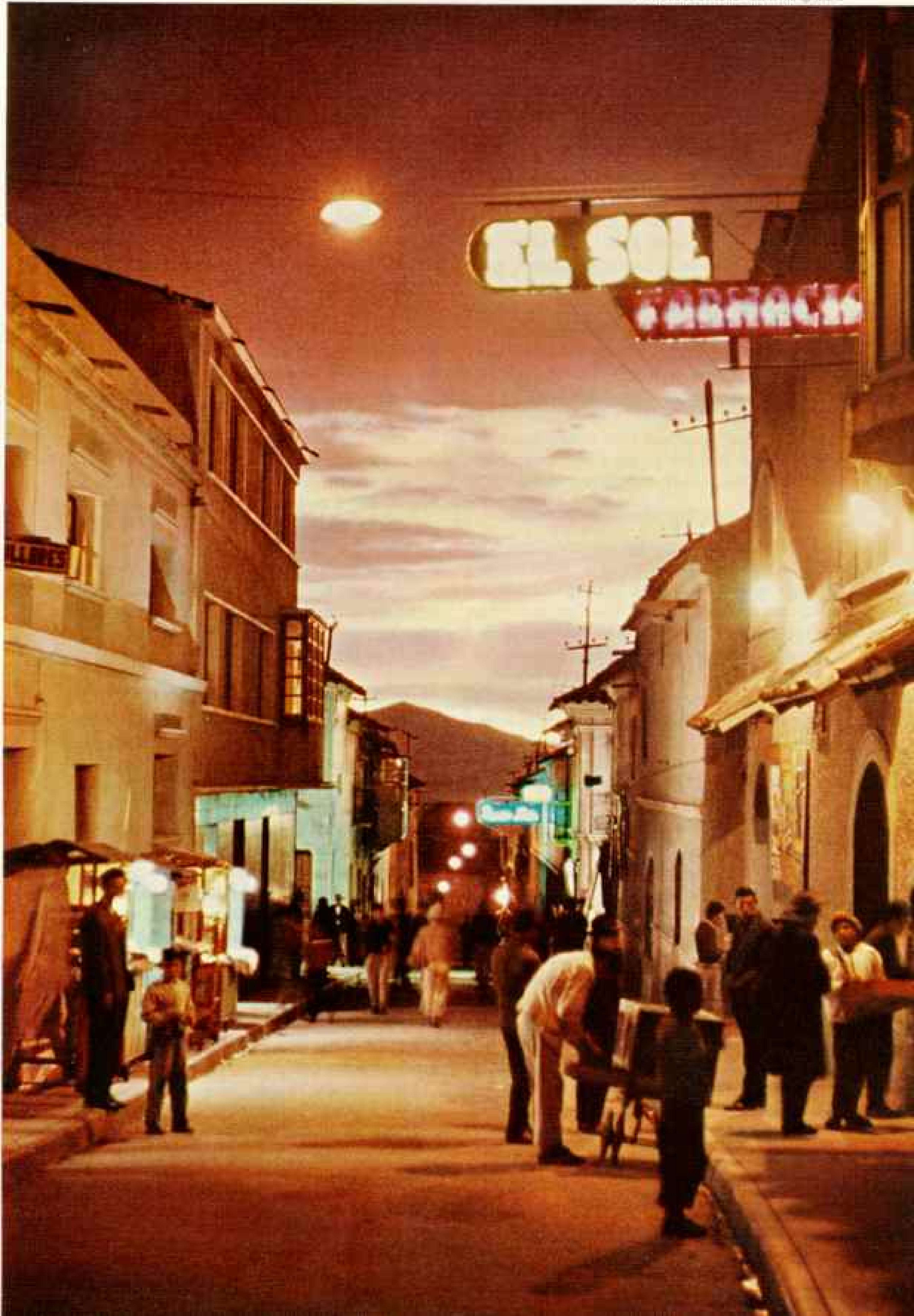
After two weeks of travel on dirt and gravel, we finally reached the only paved highway in Bolivia, which runs 300 miles between Cochabamba and Santa Cruz and then 40 miles north to Montero (map, page 160). But only minutes later we rolled off the pavement into an incredible quagmire of city streets.

This was Santa Cruz, a booming center of oil-field development, sugar mills, cotton farms worked by migrants from the highlands, and rice plantations cultivated by Japanese and Okinawans. Gradually these agricultural enterprises are swinging the national economy from importation to exportation of such staples as sugar and rice.

Massive castlelike buttresses anchor a suspension bridge across the Pilcomayo River between Sucre and Potosí. Nearly empty truck rolls over the one-lane wooden roadway; a light pickup will shuttle the truck's cargo across to avoid overloading the old bridge. In astonishing feats of engineering, the Incas likewise once conquered major river barriers with suspension spans.

For an instant at sunset, Potosí—a city that silver built—seems to regain its long-vanished grandeur. In 1545 the Spanish began mining Cerro Potosí, beyond the end of the street; it came to be known as Cerro Rico, the Hill of Riches. Before its lode ran out, it yielded an estimated two billion dollars in bullion and transformed a treeless mountainside into the largest and wealthiest city in the New World.

EKTACHROME BY LOREN McINTYRE © N.G.S.



Most of Santa Cruz's people are descendants of Spaniards who arrived half a century before the first Englishmen settled in North America. Among more recent immigrants we found Ng Pak See, from Communist China. He had been spirited out through Hong Kong in 1963 by the World Council of Churches, which has settled many refugees in Bolivia.

Mr. Ng, patriarch of a four-family colony composed of his sons and their wives and children, served us a lunch of chicken, eggs, and rice while telling us of his new life.

"What good fortune touched us, out of millions of people!" exclaimed Mr. Ng. "Here we have all the land we can manage, with grapefruit and corn and oranges and rice and pigs and chickens. And we have freedom!"

I met only one settler who wanted to go back home, a Spaniard who tried unsuccessfully to sell me his 21-acre farm, complete with tomatoes ready to harvest, for $1,500.

Aid Program Transforms an Economy

Santa Cruz's prosperity illustrates the high rate of return that comes of a well-invested Yankee dollar. Under the United States Point Four aid program, the impact of more than 300 projects in one area over a ten-year period has completely transformed the economy.

A tale of one project, livestock improvement, was given world-wide publicity by critics of the U. S. foreign aid program. It seems a prize Texas bull was flown to Santa Cruz at a cost of several thousand dollars to better the breed of local cattle. But shortly after its arrival, the bull was barbecued by the Bolivians, who held a fiesta to thank the United States for this fine gift.

The fact is that the Point Four livestock specialists authorized slaughtering the bull because it had tried to hurdle a barbed-wire fence and was permanently incapacitated.

To get from Santa Cruz to Puerto Suárez, where the easternmost bulge of Bolivia meets Brazil, Napoleón and I considered a quick, $20 flight on Bolivia's national airline, Lloyd Aéreo Boliviano. But a four-day, $4 train trip suggested greater possibilities for adventure.

Our third-class accommodation was a few square feet of an open flatcar, where we rigged an awning against sun and rain. It was preferable to second class, the gloomy interior of a stifling boxcar. For two dollars more, we might have traveled first class—a wooden seat in the one wooden coach.

The train started like the fall of a stick of bombs, the bursts beginning in the distance, bracketing each car in turn, right up to the inevitable detonation under our seats. It braked with a shudder, hesitated, started again with a neck-snapping jerk, gathered steam to crack the whip around the next turn, lurched along the straightaways, wrenched to a stop once more, then simmered on sidings for hours while the engine crew hunted for firewood. We became grateful for these delays, the only time sleep was possible.

Most of our fellow passengers were *comerciantes,* small merchants on their way across the continent by rail with suitcases of Bolivian curios for sale in São Paulo, Brazil.

"We should have come fourth class," said Napoleón. "I met some nice people up there."

"You're joking. Where?"

"On *top* of the boxcars."

I tried it. The footing was tricky but the scenery was better, and the roof was uncluttered by women, children, domestic animals, baggage, and the inevitable types bound for Brazil to escape arrest.

Cowboys Populate South America's Heart

Finally we reached Puerto Suárez—in five days, not four. Here we were close to the geographical center of South America and, at 440 feet, nearly at Bolivia's lowest elevation.

A port? I saw only a dusty frontier town, bleached under the sun, not dead but apparently moribund. I had the feeling that any moment a stagecoach might come careering up to the hotel; an eastern lady, gathering her skirts fastidiously in a gloved hand, would be helped down by a dude; and a gunman would come busting out of a bar.

Cowboys we found, tough hombres, but they were up to their necks in flowers. They were swimming their horses deep into a profusion of water hyacinths, rounding up their herds of zebu cattle.

My map said Puerto Suárez was a port on sizable Lake Cáceres, with access to the sea via the Paraguay and Paraná Rivers. But

Onetime El Dorado of silver, Potosí's Hill of Riches looms over the city it spawned and the cemetery it filled with those who extracted its wealth. Today miners work tin veins that still thread the mountain; women sift the tailings in search of ore.

Grinning Bacchus, god of wine, watches over a courtyard of Potosí's Casa de Moneda. In this "House of Money," now a museum, colonials minted gold and silver coins for the Spanish Empire. Coinmakers in Madrid sent "samplers" to the New World to illustrate the coin markings of Spain. The model above, with a 1770 Madrid mint mark, shows alphabet, numbers, and symbols around a Spanish crown. Potosí minters transferred letters and designs to their own coin dies. After nearly 400 years the mint stopped work in 1951, when paper money replaced the last of the hard currency.

EKTACHROME (ABOVE, RIGHT) AND KODACHROMES © N.G.S.

EKTACHROME (OPPOSITE, LOWER) BY ROBERT F. SISSON, KODACHROME

the decayed dock now led only to a vast meadow where cattle grazed belly-deep in the mud. The lake had all but dried up; its channel was choked with water hyacinths.

We soon learned that the streets were quiet because all the activity was indoors. And when we found out what was going on inside, we began to understand why illiteracy, so commonplace in the highlands, is rare in many Bolivian lowland communities.

All the children and many adults were in school. Their drive for learning derives from generations of missionary schooling.

Bomber Becomes Flying "Meat Wagon"

We flew back along the edge of the great rain forest stretching 2,000 miles from the Andes to the Brazilian coastline. Our plane touched down at some of the oases in that green desert, towns with names like Concepción or Ascensión, bestowed centuries ago by the Jesuit founders. In them dwell white descendants of the early Spaniards, many with daughters so pretty that it has long been the custom for gentlemen from the highlands of Bolivia to look for wives there.

We saw cargo planes bring in cabinet ministers and missionaries, barbed wire and beer, nylons and cement. In San Ignacio they had unloaded a bullet-riddled command car that once served Rommel's Afrika Korps and is now an ambulance driven by an Austrian nun.

Napoleón and I traveled to Bolivia's north-central savanna, in the Beni region, in an empty "meat wagon," a converted B-17 bomber used to fly beef to Altiplano markets.

For 100 miles the pilot hedgehopped at 200 feet. We flushed rheas—South American ostriches—deer, and a jaguar roused from its siesta. Occasionally we stampeded cattle.

"There's a lot of cattle rustling in the Beni," said Napoleón. That was understandable. We saw no fences, nor any human beings.

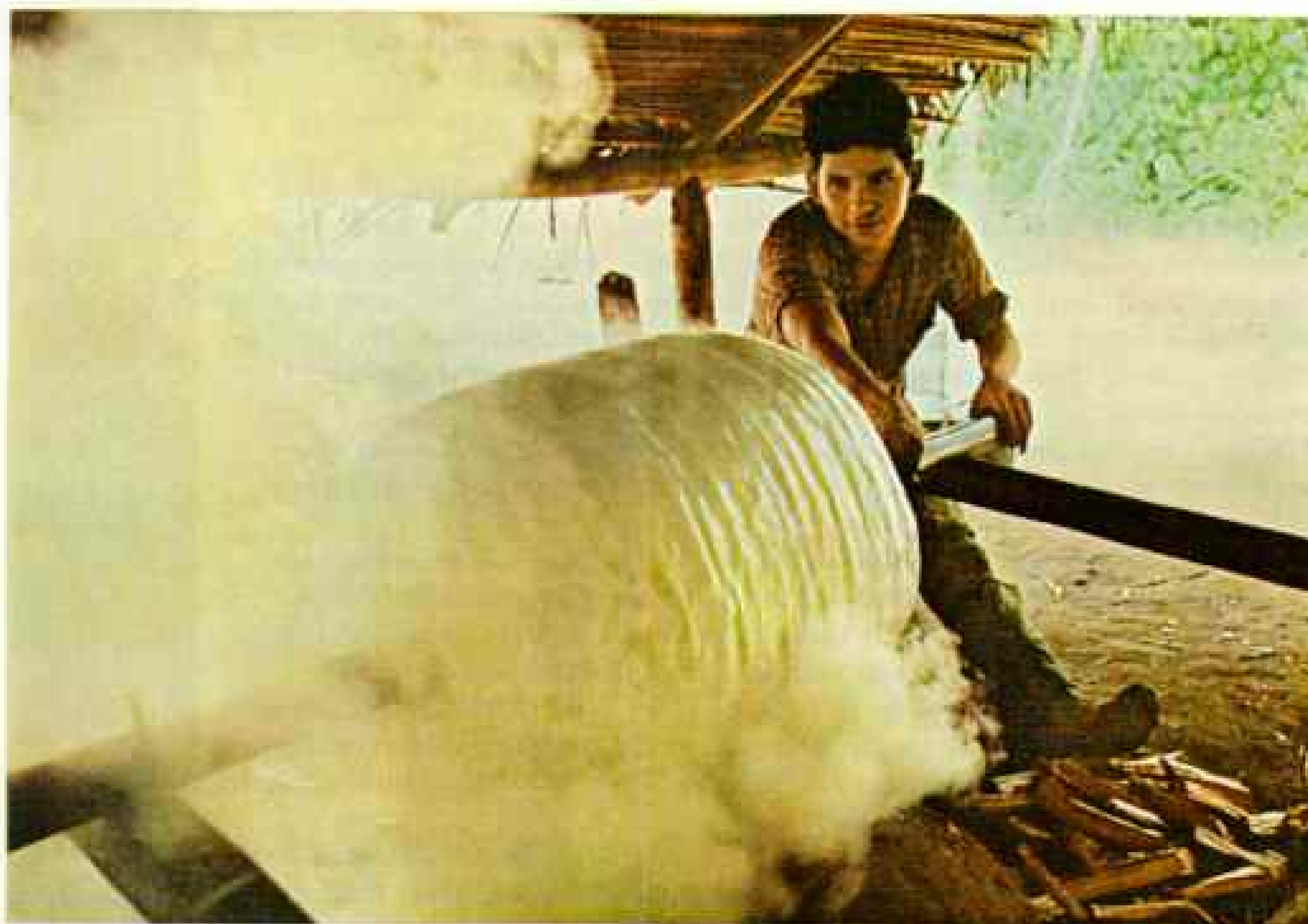
"The only way to find a ranch is to follow the wagon tracks," explained our pilot. Changing course, we followed two parallel ruts nearly 30 miles before we flashed over a grove of trees and a ranch house.

BY LOREN MCINTYRE © NATIONAL GEOGRAPHIC SOCIETY

Go east, young man! And Bolivians do, east of the Andes, where lies 70 percent of the nation's land. Here, as in the American West, pioneers find a future in cattle raising, in planting cotton, sugar, rice, and citrus fruits. These vaqueros (left) herd zebu and *criollo* cattle near the eastern border town of Puerto Suárez. In the north-central Beni region, boundless grasslands could feed 25 million head.

Cotton-picking migrant, a mestizo from Cochabamba, labors on a wide-spreading plantation near Santa Cruz.

Ball of latex from the far-northern jungle cures over a smoky fire. Bolivia profited from rubber in the early 1900's, but no longer ranks as an important producer.



Fangs bared, glass eyes glaring, a devil dancer personifying evil flails his arms in a threat to good during the Diablada, Oruro's annual pageant. Silver coins on his girdle jingle to the blare of a brass band. Catholic priests nearly 200 years ago introduced the morality play to converts, whose descendants continue to make costumes and choreography more elaborate. Lucifer emerges from a mineshaft at midnight. He meets the archangel Michael, who battles seven devils, the deadly sins, into submission. Master craftsman Trifón Quiroga (below) paints a dragon face on a devil mask.

KODACHROMES BY LOREN McINTYRE © N.G.S.

North of the grasslands lies more jungle, merging into Brazil, threaded with broad rivers like the Beni. Life along the rivers is much like that along the Mississippi a hundred years ago—perhaps easier, because the waters and the woods provide abundant natural foods, as well as cash crops such as rubber (preceding page), quinine bark, and Brazil nuts.

Rivers Patrolled by "Fluvial Fleet"

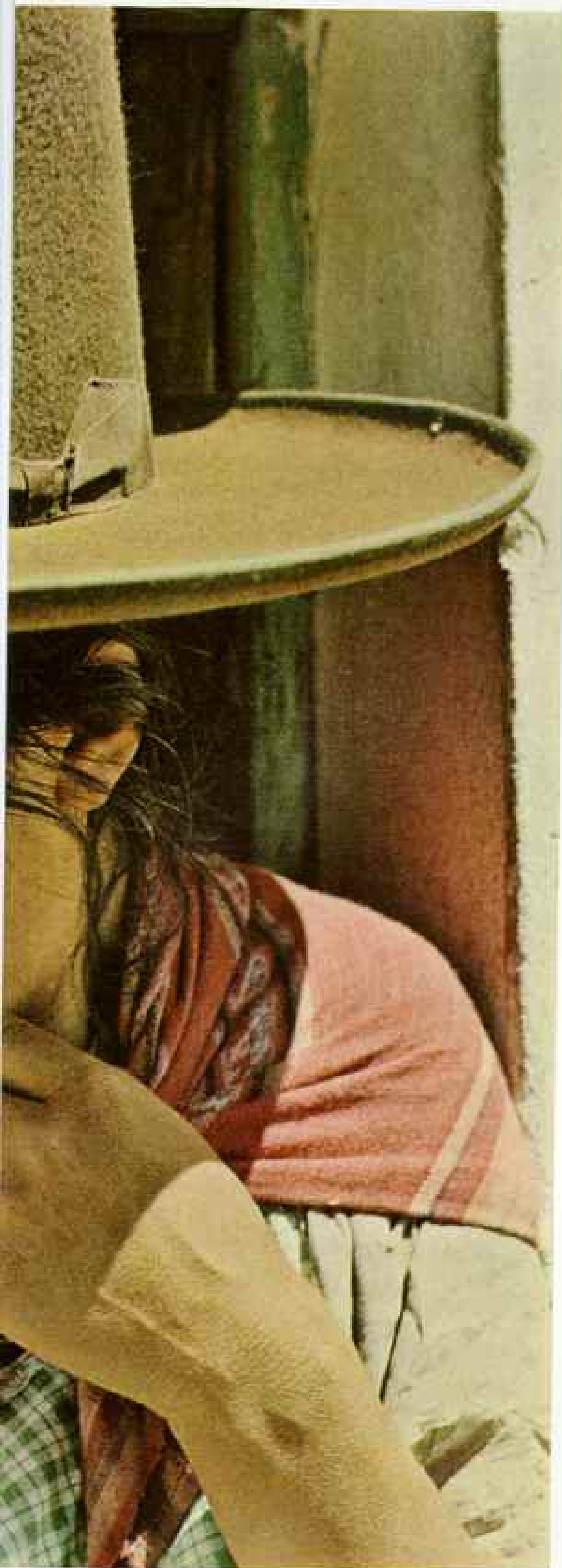
In the port of Riberalta, on the northern reaches of the Beni River, I learned that the United States Army has recently helped give birth to a Bolivian river-and-lake force. Gutemberg Barroso, a Bolivian army major, told me, "I will soon command our 'fluvial fleet,' the boats your army has supplied to patrol the jungle against Cuban-inspired guerrillas. My commission is being changed, and soon I'll be on my way to study at the Peruvian naval academy on the Pacific coast near Lima."

When I replied that I had once taught gunnery there, he fired eager questions about blue water and tall ships. For the commander of Bolivia's navy had yet to behold the sea.

As in the eastern lowlands, most of the children of the northern Bolivian jungle communities were in school. Except for isolated and extremely primitive Indian tribes, there seemed to be little illiteracy. But up in the highlands, three-fourths of the adults remain illiterate. Like Ignacio.

When Sue and I rented our home in Bolivia, an Aymará Indian boy came with the house. Ignacio had no schooling and could not write his own name. In atrocious Spanish he said he was 19, and waved a tattered pink card. "My army discharge," he explained.

My elder son offered to teach him to read and write. Ignacio showed no interest. He would sit for hours in the kitchen, when his work was finished,



KODACHROME BY LOREN McINTYRE © N.G.S.

with a kitten or a puppy in his arms. Sue and I became, in a sense, his foster parents.

One day in 1962, several years later, my son asked Ignacio when he expected to marry. "Not yet. I'm only 19—too young for girls." What's more, observed Ignacio, getting married required "papers."

Still 19? I asked again to see his documents. He produced only the pink card. "Does it not say I am 19?" It did, but it was dated 1954.

No Identity Card, No Identity

Without an identification card, Ignacio could not seek formal employment. He could not stay at hotels. He could not vote or marry. His freedom of movement and choice was completely circumscribed by society's demand that he have paper proof of his existence as a human being.

I ventured the first step of a bureaucratic minuet. First, Ignacio would need a birth certificate. At a tiny municipal court, a judge helped me—as he had legally helped thousands before me—to invent the birth of a child in a certain Altiplano town, to such-and-such parents. We dated it August 6, 1935.

To obtain the ID card which all Bolivian males should carry, Ignacio would also need a military service record. With his tattered pink card, I applied to army headquarters.

"I'm sorry," said the clerk. "This is a weekend pass."

Ignacio had been given the card one day in 1954 and told he could "go home." He had never returned; unknowingly, he had deserted.

So I paid a fine, and Ignacio re-enlisted under his new surname. A week later, I paid a mustering-out fee to buy him out of the service. However, when Ignacio went to pick up his discharge papers, he stood in the wrong line and unwittingly re-enlisted for a two-year hitch. I paid again.

On August 6, 1962, Bolivia's Independence Day, we gave Ignacio his first birthday party, with 27 candles on the cake.

The next day he strutted a bit as he chatted with the door-to-door fruit vendor.

"Do not doubt my age," said Ignacio. "I have papers to prove it."

"Ay . . . and how old are you?"

"Nineteen!"

THE END

Smiling with love, a Quechua mother in Potosí finds pleasure in the nearness of her baby, strapped to her back in a shawl. For such little ones Bolivia struggles to improve its economy, establish schools, and raise standards of health.

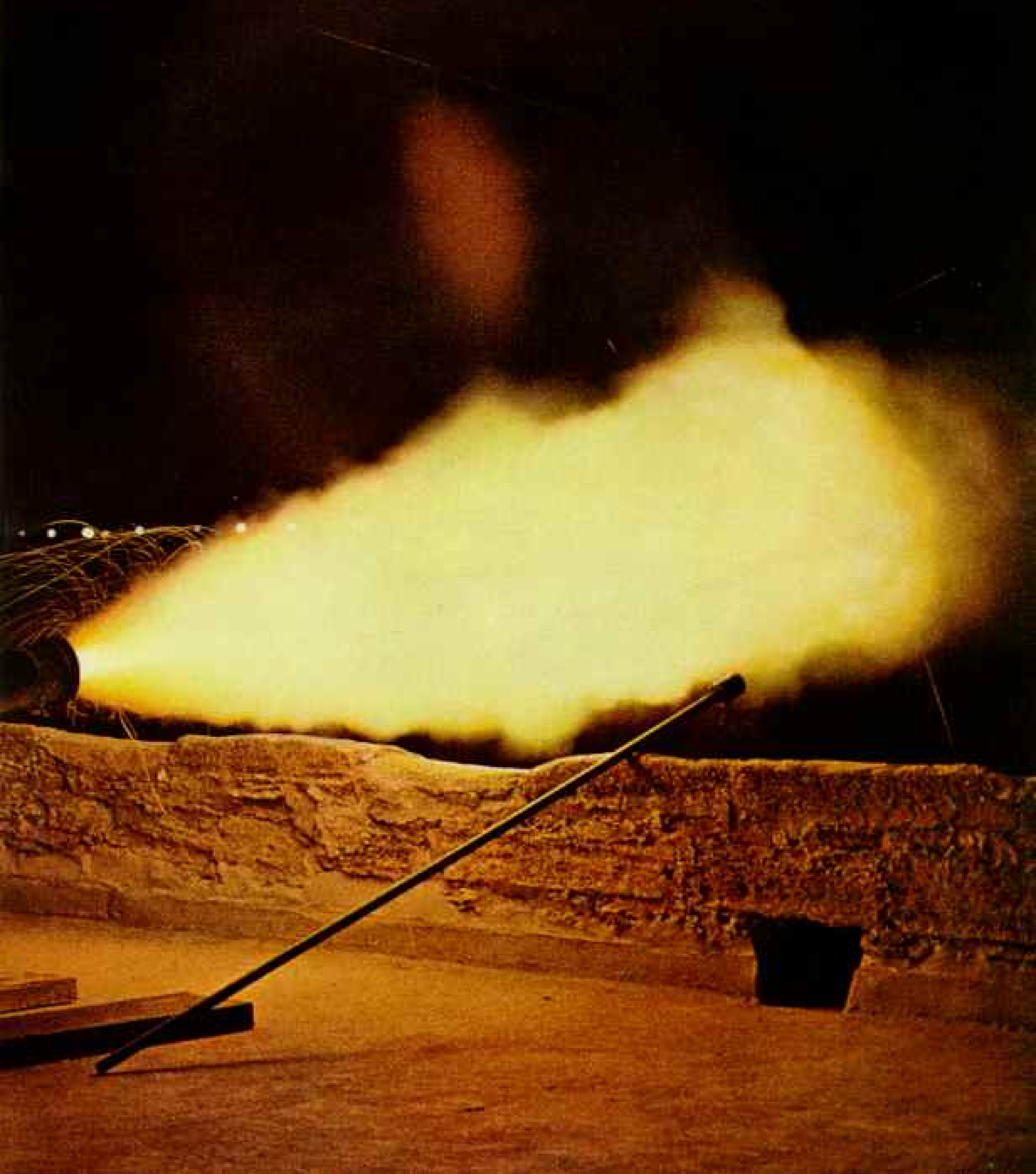
St. Augustine, Nation's

THUNDER FROM THE PAST: ***Spanish cannon "La Sibila"—the fortuneteller—fires atop Castillo de San Marcos, a 17th-century citadel administered by the National Park Service. Surviving the plagues of war and famine, this Florida city, oldest European settlement in the United States, welcomes the world to its year-long fourth centennial.***

KODACHROME BY NATIONAL GEOGRAPHIC PHOTOGRAPHER ALBERT MOLDVAY © N.G.S.

Oldest City, Turns 400

By ROBERT L. CONLY
Assistant Editor



ALL YOU NEED is an ounce of imagination and half an ounce of luck. Armed with these, stroll at dusk or dawn to St. Augustine's waterfront. Choose one of the quiet streets, arched by ancient live oaks and Spanish moss. Then sit down where you can look out over the gentle blue harbor and watch the birth of the oldest city in the United States.

Off to the right the massive gray bulk of the Castillo de San Marcos broods over the town and the waters it has guarded since the 1670's. But for the moment we must pretend it does not exist, for the event we are about to see took place much earlier, and in those days the oaks and the cedars grew right down to the waterfront.

Galleons Anchor Outside the Bar

As you look out across the bay, you will see dimly, through the half-light, the white breakers where the Atlantic Ocean pours through a narrow inlet into the bay. And, if you are lucky, you

PAINTING BY STANLEY MELTZOFF © NATIONAL GEOGRAPHIC SOCIETY

"With many banners spread, to the sound of trumpets and salutes of artillery," the Spaniards dedicate St. Augustine on September 8, 1565, as their chaplain recorded. One of Spain's foremost admirals, Pedro Menéndez de Avilés, kneels to kiss the Cross and possess the land in the name of King Philip II. "A large number of Indians watched these proceedings and imitated all they saw done," wrote the priest. "All the captains took the oath of allegiance to him [Menéndez] as their general and governor." A French fortification on Florida's St. Johns River spurred Spain to plant a colony in the land claimed 52 years earlier by Juan Ponce de León. St. Augustine became capital and chief stronghold of Spanish Florida.

Specially commissioned by NATIONAL GEOGRAPHIC, the paintings accompanying this article bring to life St. Augustine's early history. The city's 400th-anniversary celebration extends to September, 1966.

will glimpse, as I did one evening, the lights of a boat coming through this inlet, bobbing, disappearing, reappearing as it rides the rollers that carry it over the shallow bar.

Now imagine that these are not the electric lights of a modern boat. They are ship's lanterns shining 400 years in the past, on September 6, 1565. The ships—there are three of them, and two more out of sight beyond the inlet, galleons too big to cross the bar—are loaded with Spanish soldiers. They have been two months at sea, dispatched by King Philip II of Spain to occupy La Florida and drive out an impudent band of French Huguenots who have settled there. For Florida is, by Papal decree, Spanish territory.

The men wear steel helmets, breastplates, and chain mail, and they are armed with arquebuses, steel-tipped pikes, and swords. The shore they approach is crowded with Indians who have also seen the lights come through the inlet. The Spaniards are not worried about the Indians. Their real peril is approaching from behind them—and not far behind, either.

The Spaniards beach their boats and disembark, led by two captains. The chief who approaches them, a tall Indian named Seloy, is friendly and turns over to the visitors a large house near the waterfront.

Now the Spanish soldiers, on orders of their captains, spring into a frenzy of activity. They have perhaps a day or two—they hope!—to fortify the house against a French attack they know is coming. For they have found the Huguenots, and learned to their dismay that the French colony, only a few miles away, has a strong fort already built, more soldiers than they do, more and better ships, more arms.

This Spanish landing was the beginning of St. Augustine, and in a very real sense the start of the first chapter of the Nation's history. The city, now celebrating its 400th anniversary, was founded in haste and fear in three days—September 6 to 8, 1565. This was 42 years before Jamestown and 55 years before the Pilgrims reached Plymouth. Thus St. Augustine is easily the oldest surviving European settlement in the United States.

When I visited the city, I found that it was, in a commercial sort of way, very much aware of its antiquity. As I drove in, a maze of advertisements urged me not to miss the Old Jail ("authentic, educational"), the Old Sugar Mill, the Museum of Yesterday's Toys, and the Oldest Wooden Schoolhouse, to mention just a few. During my stay my shirts were washed with modern efficiency by the Ancient City Laundry & Dry Cleaners, and on the radio a singing commercial advertised "the Oldest Bank in the Oldest City."

In the middle of all this decrepitude it is amusing to find, of all things, the Fountain of Youth, where—who can prove otherwise?—Juan Ponce de León may have paused on his exploration of Florida in 1513, more than half a century before the founding of St. Augustine. Here any visitor can get a lecture tour and a paper cup of spring water (from a well, not a fountain) for a mere $1.00. Long ago there was a rival Fountain of Youth on the other side of town, but it closed down for lack of business.

All this is a surface phenomenon, mainly aimed at prying a dollar or two out of the one-day tourist. And who can criticize that? Well, I can. Garish billboards make the approach to St. Augustine ugly, and, I suspect, encourage many travelers to speed on rather than to stop.

And that is a sad thing, for St. Augustine, if you stay awhile, will tell you its own story, one of the most important and dramatic in the history of the New World. I have seen no other place in the United States where history is so visible and touchable.

There are several ways to get a quick survey of the city and a capsule of its history. One is to visit the Oldest House, a handsome restored Spanish dwelling maintained as a museum by the local historical society. Another is to take a short tour—by boat, by small rubber-tired train, or by horse and carriage—each with a guide who gives you his own story of St. Augustine.

Traditionally, the most lurid accounts are given by the carriage drivers, mostly elderly Negroes in derby or top hat. Their red-and-yellow buggies sparkle in the sun; their horses are tasseled. I took one of these. The driver said his name was Major; he had been driving a carriage since 1910. No, he had never been in any army—Major was his Christian name. His mare was named Jezebel. He flicked her reins, and off we went.

KODACHROME BY ALBERT MOLDVAY © N.G.S.

KODACHROMES BY NATIONAL GEOGRAPHIC PHOTOGRAPHERS ALBERT MOLDVAY (ABOVE) AND WINFIELD PARKS © N.G.S.

Four flags that have flown over St. Augustine—Spanish, British, Confederate, and United States—flutter from the city's Oldest House, which dates from the 1720's. Hand-hewn beams support low ceilings of the venerable structure.

Page from the past, a worm-eaten document lists one of the earliest recorded weddings in the United States: Vincent Solana to Maria Viscente, July 4, 1594. Some 20 Solana families still live in the city. Father Michael V. Gannon, director of the Mission of Nombre de Dios, examines the entry in the parish register, oldest surviving U.S. record of baptisms, marriages, and burials.

When he saw me taking notes, he asked, "You going to write this up?" I said yes.

"To be printed?" I said yes.

He said: "Well, now, don't you believe everything I say. You just believe about *half* what I say, then you safe."

He thought this over, and added reflectively, "I talk long enough, there bound to be *some* truth in it."

Cars Thread Streets of Spanish Days

Actually, Major's discourse on St. Augustine was reasonably accurate. I learned that the city was founded by the Spaniards, who held it for two centuries, then taken over by the British, then by Spain again, and finally, in 1821, by the United States.

We clip-clopped along the pleasant waterfront, past the massive old Spanish *castillo*, through the stone City Gate and along streets with Spanish names—Cordova, Sevilla, Granada, Cadiz. Some of them seemed too narrow for cars (though cars nosed through most of them anyway), and balconies leaned out overhead from the two-story Spanish houses. Other streets were wider, and these were walled and roofed by giant shade trees; here the houses were big, square, opulent—reminders of the end of the last century when wealthy Americans "discovered" St. Augustine and made it a fashionable spa.

St. Augustine today is a city of 15,000. The old town faces the Matanzas River, part of the Intracoastal Waterway that links Florida and New England. The Bridge of Lions spans the river and lets the city expand on Anastasia Island, where modern houses line the waterfront. A few miles down the island there are ocean beaches, but the city itself is not, strictly speaking, a seaside resort.

It is customary for visitors to call St. Augustine a sleepy Spanish town, and parts of it are. On the edge of the business district, in fact, the townspeople and the State of Florida

On the sea road from the Spanish Main, the Florida peninsula saw riches flow past in Spain's treasure fleets. With gold to be plundered—and protected—Spain established St. Augustine to guard her galleons against corsairs. Today history embellishes the old town; suburbs spill across the river.

Swathed in satin, her mantilla-draped head bowed behind a fan, Nancy Russell adds Spanish elegance to St. Augustine's Easter Week Festival. She traces her ancestry to Minorcans who came to the town in the 1770's.

are spending millions of dollars to bring back this Old World atmosphere by reconstruction, restoration, and preservation of several blocks of old Spanish houses.

Downtown St. Augustine, however, is quite wide awake. It crawls with traffic; there are modern shops, restaurants, office buildings, parking meters, and motels, motels, motels. The city has a small fishing industry; it was once a major center for shrimping, but that has dwindled as new and more productive grounds have been found in the Gulf of Mexico and farther south.

As we drove around the central plaza, laid out in Spanish style, I saw another modern phenomenon: pickets—young people, some Negro, some white, carrying signs protesting segregation. St. Augustine was undergoing a period of racial strife which brought it unhappy nationwide publicity.

French and Spanish Vie for Treasure

But the city's main products are antiquity and history. They bring in visitors by the hundreds of thousands and provide St. Augustine with three-fourths of its income.

Furthermore, the history has a hero, a strong, audacious, contradictory figure whose life is only vaguely known to most historians. Before saying goodbye to Major and Jezebel, I drove with them along the wide avenue that bears his name—Avenida Menendez.

Don Pedro Menéndez de Avilés founded St. Augustine as the capital of La Florida—which at the time meant capital of much of North America. For to the Spaniards, Florida extended all the way north into Canada and west beyond the Mississippi.

Menéndez, before our story opens, had been captain general of the Spanish treasure fleet, whose ships were carrying millions of dollars' worth of gold, silver, and other riches from the New World to Spain.* Now the

*See "Drowned Galleons Yield Spanish Gold," by Kip Wagner, NATIONAL GEOGRAPHIC, January, 1965.

"Little city of the deep," as Ralph Waldo Emerson called St. Augustine, lies in the lazy embrace of meandering tidal rivers, guarded by the massive walls of Castillo de San Marcos. Travelers who enter through the City Gate at lower right ride into the restoration area on St. George Street (pages 208-9). Spanish Renaissance towers spring from the red tile roof of the Hotel Ponce de Leon, opened by Henry M. Flagler in 1888 to help develop Florida's east coast into an "American Riviera."

EKTACHROME BY ALBERT MOLDVAY © N.G.S.

French Huguenots, led by a bold captain named Jean Ribault, were threatening this fleet. The French had built their new colony, Fort Caroline, on the St. Johns River—a perfect spot from which to pounce on Spanish ships sailing north along the Florida coast.

King Philip of Spain had protested angrily to the French court; then he summoned Menéndez, appointed him *adelantado* (commander) of Florida, and told him to drive the heretics out and occupy the land for Spain.

His were the ships that sailed through St. Augustine's inlet that September day 400 years ago. They had left Cádiz two months earlier and had run into a storm so fierce that less than half of Menéndez's original fleet was still with him. A special disaster was the disappearance of his supply ship. He had started with 1,000 soldiers and settlers; now he had 600.

He had found the French the day before, 35 miles up the coast—well entrenched, better equipped and manned than his own tattered remnant. After a skirmish at sea (below), he retreated to St. Augustine, the nearest suitable harbor. But he knew Ribault would not be far behind. The enemy he had come so far to demolish now threatened to demolish him.

PAINTING BY HERBERT GARRETT SMITH © N.G.S.

A few days after the Spaniards had dug in as well as they could, Ribault's ships, as expected, did appear outside the inlet. They did not attack, however, for just then Menéndez had a stroke of luck. According to his chronicler, Gonzalo Solís de Merás, "... God Our Lord performed a miracle; for the weather being fair and clear, suddenly the sea rose very high, and a strong and contrary north wind came up. ..."

Miracle for the Spaniards, perhaps, but ruin for Ribault. The "contrary north wind" drove his ships irresistibly southward and wrecked them on the sands near what is now Daytona Beach.

Menéndez, having seen the French fleet running south, reasoned that Fort Caroline must now be weakly garrisoned. With 500 men he set out on foot through the wind and rain, across swamps and swollen rivers, to attack it (pages 212-13).

It took four days to make the march. At dawn on the fifth day the Spaniards fell on the fort. They found it defended by only 150 French soldiers, a few artisans, some women and children. It was all over in an hour: more than 130 Huguenots killed, not a Spaniard lost. Menéndez renamed the fort San Mateo, garrisoned it, and marched back to St. Augustine in triumph.

How to Bring History to Life

In introducing Don Pedro Menéndez, I said that historians know little about him. But I found in St. Augustine a studious yet genial man named Albert Manucy, a historian with the National Park Service, who has studied Menéndez's life, off and on, for 20 years. When I met him, he was typing away at a biography, but did not yet have much down on paper.

"The way to bring this history to life," he said, "is to see it for yourself." So we got into a car the next day and set out to follow Menéndez to Fort Caroline. It isn't much of a trip in a modern car over a fast road, and this seemed to worry Mr. Manucy, who felt the need to explain why it took Menéndez four days.

As we approached the St. Johns River, he pulled the car off the road, and we climbed out. Off to the right lay an evil-looking swamp, waist-deep muck and water, a place for snakes, leeches, mosquitoes, and spiders. Behind it lay a thick pine grove, and all around us an impenetrable thicket of brush. It was typical of the country we had been driving through.

Storm-crippled flagship of Governor Menéndez, the *San Pelayo*, fires futilely at the fleeing French; another Spanish ship stands by, foreground. Near the mouth of the St. Johns River, Menéndez spied enemy galleons anchored off Fort Caroline. Despite loss of spars and rigging in an Atlantic storm, he attacked. But the French, after shouting "many shameless and insulting words against the King," cut anchor cables and escaped into the night.

"Look at that," said Mr. Manucy. "Saw palmetto. Feel the edges of the stems." They felt like sharp saws. Other bushes had thorns like needles. "Try walking a few feet through that stuff." I was wearing a new pair of slacks, so I declined. But it was easy to see why Menéndez and his men, carrying heavy battle equipment, took so long to make the march—especially through a storm.

We got back in the car and drove on to see Fort Caroline (upper map, page 202). We couldn't really see the original settlement, for the land on which it stood has been washed away by the St. Johns River. But the National Park Service has established a memorial a thousand feet or so from the original site, and when I got there they were finishing a reconstruction of the old French fort (pages 214-15).

"It's as accurate as we can make it," said Superintendent John DeWeese. "A few Frenchmen escaped Menéndez, and one of them was an artist, Jacques le Moyne. Later a book of his pictures was published. One shows the fort quite clearly."

Invasion Threatens Grassy Earthworks

We strolled down a shady trail through the woods to the reconstructed fort itself, a pretty spot overlooking the quiet river. As we inspected the newly built earthworks,

Fort Caroline was suddenly reinvaded—by two busloads of schoolboys. They swarmed over the grassy earthworks in a way that would have put the Spaniards to shame.

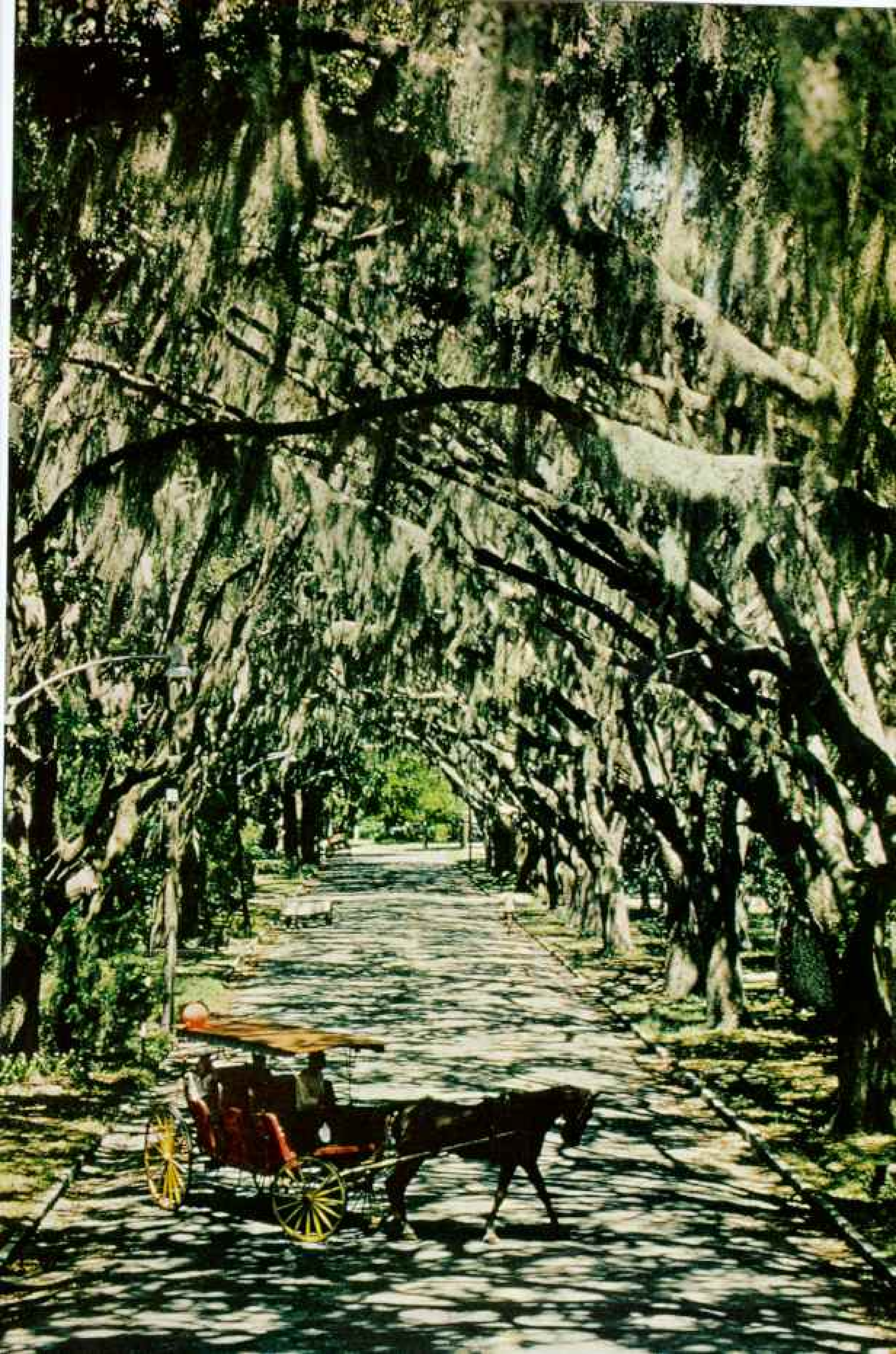
"With invasions like this," said Mr. DeWeese, "it's hard to keep grass growing."

Well, maybe so. But what's the use of rebuilding a fort if small boys can't recapture it now and then? I asked one of them what he thought of it. "It's neat," he shouted, and clambered up the wall.

Another day, again with Mr. Manucy, I set out for Matanzas Inlet, 14 miles south of St. Augustine, to see the horrifying end of this particular portion of Huguenot history.

Aged stone walls bask in the golden glow of lamplight on St. George Street, a thoroughfare of colonial days. Here cars pass under balconies where mantilla-draped señoritas once gossiped; the Old Spanish Inn transports visitors into the past. During a festival last September celebrating the city's 400th anniversary (below), celebrants sing and dance down St. George Street. Crumbling in decay only a decade ago, this section of the city provided a pilot project for the St. Augustine Historical Restoration and Preservation Commission, headquartered in the balconied Arrivas House at left center.

EKTACHROME (BELOW) BY EMORY KRISTOF, KODACHROME BY ALBERT MOLDVAY © N.G.S.



KODACHROMES BY WINFIELD PARKS (BELOW) AND ALBERT MOLDVAY © N.G.S.

Moss-hung tunnel of live oaks, Magnolia Avenue makes a dappled way for Major, a carriage driver (right), and Jezebel, his horse. The good-natured driver regales visitors with his own blood-and-thunder version of St. Augustine's stormy history.

A few days after Menéndez returned to St. Augustine, he got word from friendly Indians of many white men farther south. Some of Ribault's men had survived the wrecking of the French ships and marched up the beach, hoping to return to Fort Caroline. They were blocked by an inlet too deep for them to ford. Menéndez took 60 soldiers and a boat and pushed south.

So did Mr. Manucy and I. There is a bridge across Matanzas Inlet now, and the sand has shifted over the years, but the scene must be approximately the same. We stopped the car short of the bridge and climbed a dune—as Menéndez also did when he got there.

Across the water he saw the pathetic group of 200 French soldiers. They had salvaged some weapons, but they were starving—some, in fact, were searching for shellfish when he spotted them.

"You have to remember," said Mr. Manucy, "that Menéndez had only 60 men with him. Also that he was under orders to kill all heretics. It was a tricky situation."

It was, and criticism of what Menéndez did next still goes on after four centuries.

Menéndez Delivers an Ultimatum: Surrender or Starve

Don Pedro had some of the French leaders brought over in his boat. He fed them, but he offered no compromise. They could either surrender or stay where they were and starve.

Finally the Frenchmen gave up. They handed over their few weapons and their banners. The Spaniards ferried them over the inlet ten at a time and tied their hands, telling them they were to be marched to St. Augustine. Instead, as each group passed behind a dune, they were slaughtered.

A few days later the rest of the French force—some 350 men led by Ribault himself—reached the inlet. The same bloody scene was re-enacted, except that this time perhaps 200 of the Frenchmen decided to walk south, taking their chances with the Indians. (Menéndez captured them later near Cape Canaveral, today's Cape Kennedy.)

The others gave up, were ferried across the inlet and killed (pages 216-17). Menéndez spared only the trumpeters, fifers, and drummers, plus a few soldiers who professed to be Catholics. That was on October 12, 1565.

Today small red flowers grow near the water's edge at Matanzas Inlet, and in the dunes there are thousands of tiny shells of a mollusk, *Donax variabilis,* which give the sands a reddish hue, as if even four centuries of sun and rain

have failed to bleach them clean. And the name the Spaniards gave to the inlet and to the fort they later built there perpetuates the deed, for the Spanish word *matanza* means "slaughter."

So the French threat was destroyed; Spain secured control of Florida and held it for the next two centuries. But it was a precarious control, and St. Augustine, the capital, could hardly be called a successful colony. It produced no silver or gold, and the Spaniards had little luck in their attempts to farm its sandy soil.

Menéndez himself sailed back to Spain and died there in 1574. His colony remained an outpost, and because it had no adequate fortification for the first 100 years, it was vulnerable to raids by every passing pirate and privateer.

Lookout Tower Lures an English Sea Dog

One of the passing privateers was Sir Francis Drake. By this time (1586) England's sea power was growing fast; Queen Elizabeth I sat on the throne, and with her blessing Drake was joyfully looting Spanish settlements in the Caribbean. St. Augustine was scarcely worth looting and might have escaped entirely, except for an ironic twist.

According to Drake's own chronicler, here is what happened: ". . . wee descried on the shore a place built like a Beacon, which was in deede a scaffold upon foure long mastes. . . ." Drake looked at the tower and decided "to see what place the enemie held there: for none amongst us had any knowledge thereof at all." The "scaffold" was a lookout tower—built to warn the citizens of approaching pirates.

Poor St. Augustine! It had 150 soldiers; Drake had some 20 vessels and 2,000 men. The Spaniards fired a few shots and fled. After Drake had burned the town to the ground and sailed away, they crept out of the bushes and rebuilt on the ashes. They hung on, but just barely.

Parish records dating back to 1594, the oldest written records in the United States, are still kept by the Mission of Nombre de Dios in St. Augustine. One day I went to see them—worm-eaten, tattered, almost indecipherable: *Bautismos, Matrimonios, Entierros*—baptisms, marriages, burials (page 201). Judging by the baptisms, a score or more babies a year were born in the early days. Population was probably less than 600.

One of the earliest marriages shown is that of a Vincent Solana, on July 4, 1594, to Maria Viscente. St. Augustine's telephone directory today lists more than 20 Solanas, and their genealogy has been traced back to this wedding. They are the oldest surviving United States family on record.

I talked to some of the Solanas. One is a priest, another a postmaster; another, Carl Solana, was maître d'hôtel at a restaurant where I ate frequently.

I asked him, "How does it feel to be a member of the oldest family in the United States?"

He shrugged: "When you've known it all your life, you get used to it."

His reticence was typical of the town's old Spanish families, but once a year, at Eastertime, they show their pride of ancestry. Out of trunks and cedar chests come costumes and heirlooms—mantillas, tall combs, jewelry—and there is an Easter parade which makes St. Augustine's plaza look again the way it looked centuries ago (page 203).

In a Hurricane's Fury, the Spanish March on France's Fort Caroline

PAINTING BY BIRNEY LETTICK © NATIONAL GEOGRAPHIC SOCIETY

"God Our Lord performed a miracle," wrote Gonzalo Solís de Merás of a violent storm that drove French commander Jean Ribault's ships southward, away from a planned attack on St. Augustine and far from their harbor at Fort Caroline. Realizing the enemy fortress would be undermanned, Governor Menéndez and 500 soldiers struggled for four days through "great darkness and the great tempest of wind and rain." Surprising the French, drenched pikemen and arquebusiers captured the stronghold without losing a man.

The rest of St. Augustine's early history reflected what was taking place in Europe. As a sea power and a colonial empire, Spain was going down, England coming up. By the middle of the 17th century, Boston was a thriving port of 15,000 people; St. Augustine had fewer than 1,500.

In the early 1600's the King of Spain, now Philip III, seriously considered abandoning St. Augustine entirely. One strong factor in saving it was that at last it began to produce a successful crop: not gold, not silver, but souls—Indian converts.

The Franciscan missions in St. Augustine's early years are perhaps its chief success story. The humble friars had a peculiar ability for making friends with the Indians and winning them over to Christianity.

Perhaps it was because they were willing to endure hardship, poverty, and even martyrdom, to move out into the woods and live among the savages. As one historian relates, "A lone Franciscan, with no weapons other than his Cross and Bible, could do more with the Indians than 100 men-at-arms."

The first handful of Franciscans reached Florida in 1573. By 1606 a visiting bishop from Cuba was able to confirm 2,000 Indians as Catholics, and that was only a beginning. By 1655 the Franciscans had established more than 30 mission centers, stretching north to what is now Georgia and South Carolina, and west beyond Tallahassee. They had some 26,000 converts.

Sea-shell Fortress Survives the Centuries

Yet despite its success as a missionary headquarters, St. Augustine as a military outpost continued to teeter on the brink of oblivion. There were more raids, and the early wooden forts continued to be overrun; they were burned down, or they rotted away and had

to be rebuilt. The early records indicate a succession of nine forts built and destroyed. Meanwhile the danger grew worse. The English, like a dagger pointed at St. Augustine's throat, were moving south. In the 1670's they settled in Carolina, only 225 miles north.

Then a great event took place in St. Augustine. By order of the crown, work was begun in 1672 on a massive and impregnable fortress that would defy the most powerful cannon, big enough to shelter the entire population of the town in an emergency. It was called the Castillo de San Marcos; it took 24 years to build; it still stands today, and it has never yet been taken by assault. The most remarkable fact about it, however, is that it is made of sea shells.

Beneath the sands of Anastasia Island the

Green walls of Fort Caroline, near Jacksonville, memorialize France's brief hold on the peninsula. Two and a half years after the Spanish massacre of the colony in 1565, vengeful Frenchmen returned to the St. Johns River and wiped out the Spanish garrison. This National Park Service reconstruction of the stockaded earthwork stands near the original site, which washed away in the 19th century.

Cross and Sword, a symphonic drama by Pulitzer Prize-winner Paul Green, portrays St. Augustine's early years. In the finale, colonists bid farewell to their governor as he sails for Spain. "Yea, our city lives!" exults Menéndez. "For here we did our best."

EKTACHROMES BY ALBERT MOLDVAY (ABOVE) AND EMORY KRISTOF AND JOHN E. FLETCHER © N.G.S.

Dune of doom crests above the sea as steel-willed Menéndez orders the execution of the red-bearded Frenchman Ribault and his soldiers, shipwrecked south of St. Augustine during the hurricane (pages 212-13). Finding a large force of Frenchmen marooned on a peninsula, Menéndez divided the enemy into groups of ten and ferried each small party across an inlet. Then they were bound and marched behind a dune, to be put to the sword. The massacre ended the French threat to Florida but gave the inlet its grim name—Matanzas, meaning "slaughters."

Halo of vines crowns a quiet chapel at the site of St. Augustine's Mission of Nombre de Dios, founded by secular priests in 1565. A century later, Franciscan friars had built chains of Indian missions westward and northward, and could count 26,000 converts to Christianity.

KODACHROME BY ALICE SCHLER; PAINTING BY STANLEY MELTZOFF © N.G.S.

Spaniards discovered a substance they called *coquina*. Made of countless tiny shells of *Donax variabilis* (the same mollusk that tints the sands at Matanzas Inlet), stuck together by time, lime, and their own weight, coquina is softer than most stone, easy to quarry and shape, but resilient. As the English learned, firing cannon balls at a thick coquina wall is like throwing pebbles at a rubbery round of cheese. They either bounce off or are absorbed, and the wall remains intact.

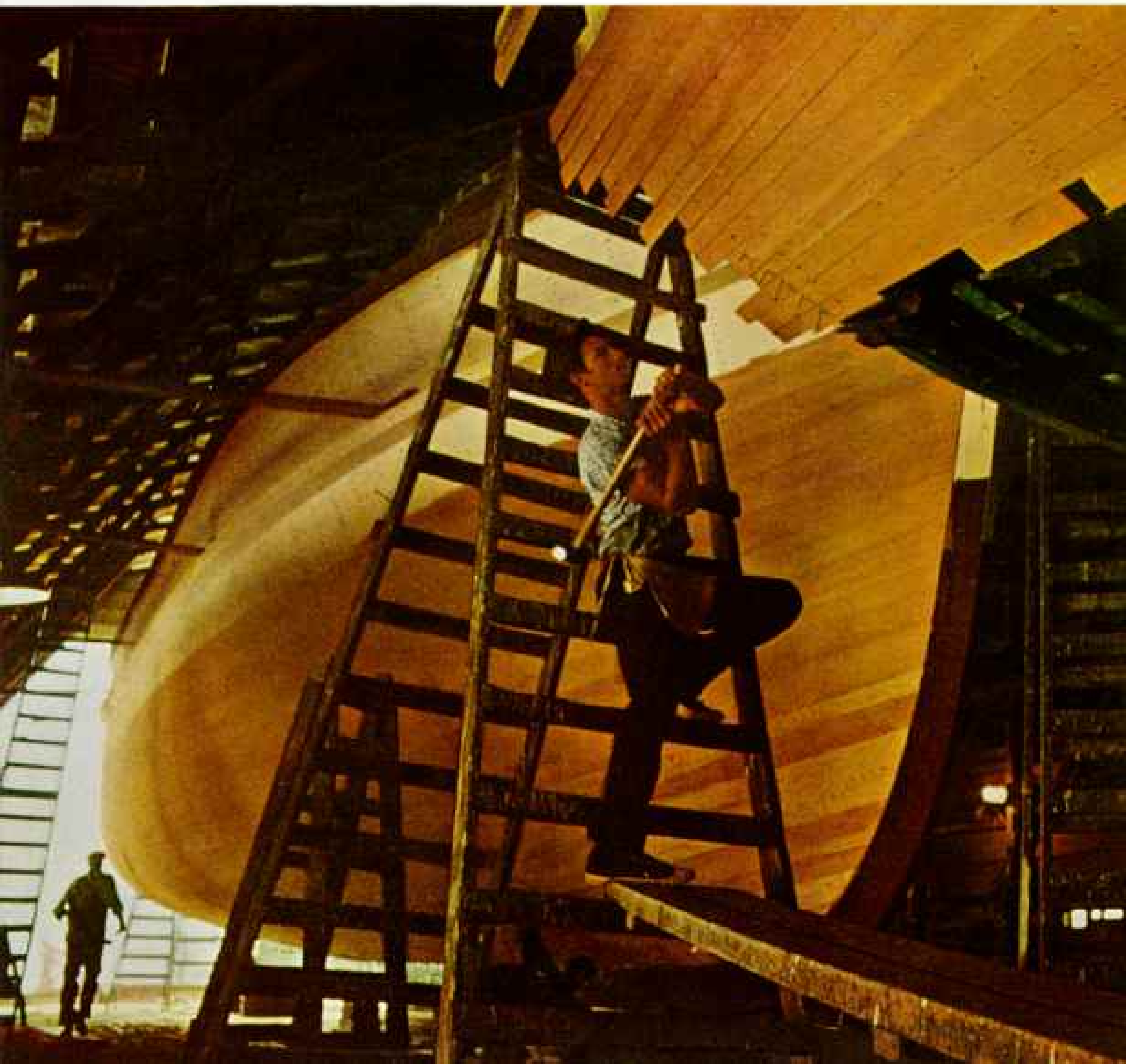
The castillo, now administered by the National Park Service, is St. Augustine's greatest historic attraction. Close to half a million visitors a year come to marvel at it, for even by modern standards it is a fantastic piece of engineering (pages 222-3). I spent hours roaming its ramparts and the dark chambers that lie between its inner and outer walls.

My best visit, though, was with a man named Luis Arana, like Mr. Manucy a historian for the National Park Service. The fort is his specialty.

On a sunny spring afternoon I walked with Mr. Arana across the greensward that now surrounds San Marcos. A

With solid blows, planker Michael Hall sinks a nail into a wooden hull at the DESCO boatyard in St. Augustine. World's largest manufacturer of commercial shrimp boats, the company turns out 100 vessels a year. Shrimpers from Kuwait to Borneo, British Guiana to Italy, work from the Florida-built trawlers.

Powdered with dust from sanding a trawler's hull, yard worker Lee Green wears a mask to protect his lungs.



EKTACHROMES BY WINFIELD PARKS © N.G.S.

flotilla of ducks swam in the Matanzas River, which laps a stone seawall a few yards from the fort, and at the water's edge a few fishermen dozed in the sun.

Along the walkway through the park some old iron cannon have been set up—just for atmosphere—and there were a few dozen tourists strolling about. I noted that each male tourist between the ages of five and eleven, as he passed a cannon, stared hopefully into the barrel, as if half expecting to see a cannonball coming out.

"Doesn't it scare you to have a big gun pointed at your head?" I asked one of them.

"It didn't," he said. "I pointed my head at it."

Castillo's Court Offered Haven to 1,500

The pastoral surroundings make the castillo itself look, by contrast, incredibly menacing. Its massive gray walls, studded on top with heavy guns, loom 30 feet high; a moat makes them look even higher. During siege its inner court has sheltered as many as 1,500 people.

Luis Arana and I crossed the moat over a wooden bridge and entered an office. Mr. Arana picked up a pencil and a pad of paper. I quickly learned that as a bird cannot fly without wings, neither can Mr. Arana expound and explain without drawing and writing.

"The outer walls are 14 feet thick at the base," he said, "tapering to 9 feet at the top." He drew a cross section of the wall, wrote "14" at the bottom, "9" at the top.

"The fort was remodeled, starting in 1738. At that time they moved the inner wall back and added the arched coquina ceilings to the chambers between the walls." He wrote down "1738" and sketched a coquina arch.

Several hours later Mr. Arana's scratch pad was full, and so was my head. We had walked over every square foot of the place, and I wished I had coquina arches in my feet. Mr. Arana explained how the first big attack was made on the fort.

That was in 1702. England and Spain were at war, and Governor James Moore of Carolina swept south with ships, cannon, and perhaps 1,000 men. Occupying the town, he bombarded and besieged the fort for nearly two months, then gave up and went home.

Although the battle ended in victory for the castillo and its defenders (pages 224-5), it was a sad two months for the town itself. Moore, as he retired, destroyed most of the buildings left standing. Later he also systematically burned the Franciscan missions in western Florida.

There is no structure in present-day St. Augustine—except the castillo—that dates from earlier than 1702. The city's Oldest House is a sturdy coquina building that can be traced to 1727 (pages 200-201). But of the original settlement, only archeological fragments and documents remain.

I talked to the manager of the St. Augustine Historical Society, Mr. J. Carver Harris, about this. He said, rather wistfully: "You'd think that the oldest house in the oldest city would have to be the oldest house in the United States. We used to think so, too, but when the historians went to work, they found it just wasn't so. There are quite a few older houses in New England, for example. The *towns* aren't as old—they just weren't burned down so often."

Eventually the British flag did fly over the Castillo de San Marcos. In 1762 a British force captured Havana; the following year Britain and Spain signed a treaty which, in effect, traded Florida for Cuba.

When word of this treaty reached St. Augustine, the citizens—numbering more than 3,000—were horrified. They had worked for 200 years to keep the English out. Almost to a man they moved away, taking their belongings with them but abandoning their homes (some of them by this time handsome coquina houses), their churches, and their castillo. The real irony was that in a mere 20 years, Britain gave Florida back to Spain.

Minorcans Came Under British Flag

I had not been in St. Augustine many days when I began hearing a phrase that puzzled me. When someone's name (Mr. Manucy's, for instance) was mentioned to me in conversation, it was very likely to be followed by the

PAINTING BY NORTON KUNSTLER © N.G.S.

Built from the bounty of the sea, Castillo de San Marcos rises in the 1670's. Spanish masons shape blocks of coquina, sea shells cemented by their own lime, and set them with mortar made from oyster shells. Indians (far left) raft blocks from quarries on Anastasia Island. The resilient walls frustrated attackers; the rock "will not splinter," complained an Englishman, "but will give way to cannon ball as though you would stick a knife into cheese. . . ."

comment, "He's a Minorcan." I met a man named Mr. X. L. Pellicer, a bank official, who told me that he was a Minorcan. Why so many Minorcans?

"While the British occupied Florida," Mr. Pellicer explained, "they brought one of my ancestors, Francisco Pellicer, and more than 1,400 others from the Mediterranean, mostly from Minorca, to start a colony at New Smyrna. That's about 60 miles south of here. The colony failed, and its people gave up. About 600 survivors walked to St. Augustine and settled here."

When Britain failed to quell the American Revolution and gave Florida back to Spain, most of the British moved out, but the Minorcans stayed on. Their descendants are still in St. Augustine, many of them leading citizens. One local Minorcan family produced a couple of America's best writers and poets—Stephen Vincent and William Rose Benét.

The Second Spanish Period (as the historians call it) in Florida did not last very long. St. Augustine itself, with its garrison, fort, and walls, did relatively well. But the rest of Florida under Spain became a lawless place, a hideout for escaped slaves and fugitive Indians who eventually banded together under the name Seminole, which means "wild."

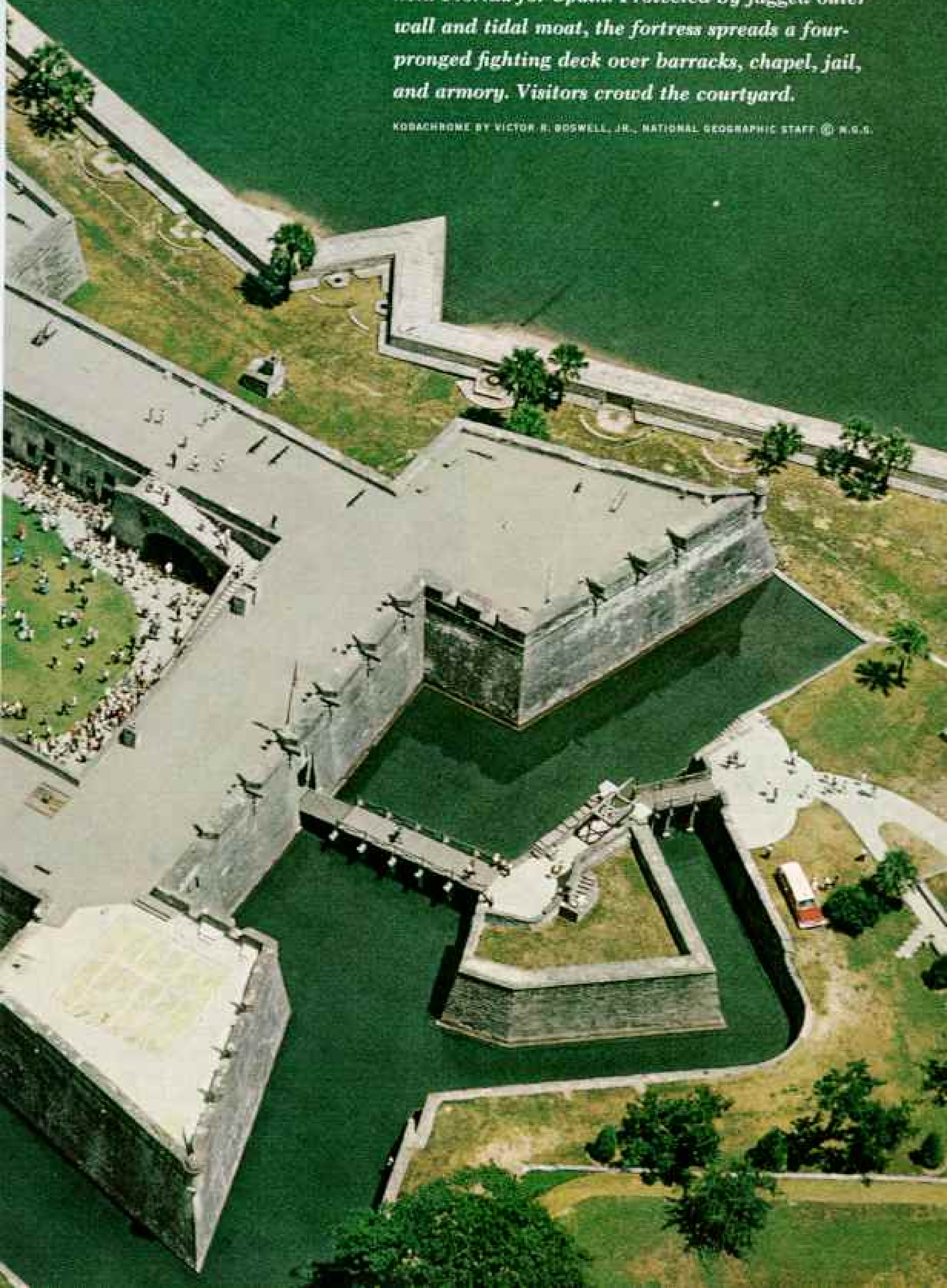
Trouble led to trouble, until in 1818 Gen. Andrew Jackson led American troops into the territory in a punitive campaign, destroying several Seminole villages. Finally Spain ceded all of Florida to the United States. In 1821 the Stars and Stripes at last flew over the Castillo de San Marcos.

Wildcat Breaches Fort From Within

During the Seminole War of 1835-42, San Marcos served as both a headquarters and a prison. To it in 1837 were taken a group of Seminoles, including two famous leaders, Osceola and Coacoochee, who had been captured by treachery under a flag of truce. Osceola fell sick, but Coacoochee (also called Wildcat), locked up in a dark, high-ceilinged chamber, plotted an escape.

According to Coacoochee's own account, he and a companion, Talmus Hadjo, made ropes out of their bedding and waited for a moonless night. Then Wildcat somehow scaled his dungeon wall and squeezed through a tiny window. From the window he dropped one end of the rope inside for Hadjo to climb; on the other end he slid down the outer wall into the moat. Hadjo followed. All told, 20 Seminoles escaped that night (page 226).

Coacoochee rejoined his tribesmen to lead



IMPREGNABLE THROUGH THE CENTURIES, *Castillo de San Marcos and its bristling bastions held Florida for Spain. Protected by jagged outer wall and tidal moat, the fortress spreads a four-pronged fighting deck over barracks, chapel, jail, and armory. Visitors crowd the courtyard.*

KODACHROME BY VICTOR R. BOSWELL, JR., NATIONAL GEOGRAPHIC STAFF © N.G.S.

Agony of a town aflame: Spanish Governor Joseph de Zúñiga y Zerda, right, watches cannoneers fire from the Castillo de San Marcos, trying to stop St. Augustine's spreading blaze by concussion. The night: December 29-30, 1702. But the town burns on, as the forces of England's Carolina colony give up a futile seven-week siege of the fort.

further resistance. Though most of the Seminoles were eventually resettled in the West, they have never signed a peace. More than a thousand still live in southern Florida.*

St. Augustine remained remote and relatively quiet until a hurricane struck it in the 1880's. Unlike 1965's Hurricane Betsy, this was a human hurricane named Henry M. Flagler. He was a multimillionaire, a partner of John D. Rockefeller, and he had decided to turn Florida's east coast into an "American Riviera." Before he left St. Augustine, it had acquired two enormous new hotels and a railroad—the Florida East Coast line.

The grandest of the hotels, the Ponce de Leon, is still open in the winter, and no visitor should leave town without at least seeing it. It's built in the style of a Spanish Renaissance castle. When it opened in 1888, the Ponce was described as the world's finest hotel, and I can believe it. The ceiling in the main dining room arches 68 feet high; balconied guest rooms overlook a walled Spanish patio full of flowers and palm trees, with a fountain splashing in the middle.

New Viewpoint for a New England Family

St. Augustine now gets half a million visitors in a good year. I talked to a lot of them, asking them why they had come and what they thought of the place.

"The golf course is great," some of them said. Or, "We're on our way home from Miami, and we got tired of driving."

But many knew exactly why they had come, and what the city symbolized. My favorite tourists were a family from Connecticut—Mr. and Mrs. Max L. Kopko and their daughters, Gail, 11, and Cynthia, 9. Gail told me, quite seriously, that she had come to write a history of Florida. I thought she seemed a bit young for such an enterprise, but her father explained.

"We're from New England," he said. "When I went to school, I was taught that the Pilgrims settled this country in 1620. It wasn't until I came to St. Augustine a few years ago on business that I learned the Spaniards got here first. This time I brought my family along to see it for themselves. Gail has to write a report about it for her history class."

The Kopkos had visited the historic sites, including the Oldest House and the castillo. When I last saw them, they were preparing to relax by seeing Ripley's Believe It or Not Museum, which has nothing much to do with St. Augustine except that it's there, but contains a charming collection of shrunken heads, an Egyptian mummy case, and, quite naturally, a model railroad bridge made of more than 31,000 toothpicks.

*See "Florida's 'Wild' Indians, the Seminole," by Louis Capron, NATIONAL GEOGRAPHIC, December, 1956.

PAINTING BY MORTON KUNSTLER © NATIONAL GEOGRAPHIC SOCIETY

Gail promised to send me her history of Florida after the teacher got through with it, and she did. It's an *illustrated* history, with flags and flowers on the covers, and pictures of oranges, lemons, scenic views, and even a clump of Spanish moss. At the end of it Gail's teacher had penciled in "V.G.," which I presume means Very Good, and is an understatement, but that's the way teachers are.

The text ends: "The place that I liked best was the first church. I liked the church because it was so peaceful."

I was glad Gail felt this way, because I did, too. What she saw was not really the first church, but a small chapel standing on the site of the first mission, the Mission of Nombre de Dios, founded by Menéndez and his priests to convert the Indians. The original buildings have long since been destroyed, but the grounds are kept much as they must have looked 400 years ago, with great shade trees, quiet paths, and votive candles flickering. There is an outdoor altar, and in the chapel (page 216) rests the wooden coffin of Menéndez, a gift from Spain in 1924, when his body was reinterred in Avilés.

To mark St. Augustine's 400th birthday, the Catholic Church is building near the old

mission a new research library, a church, and at the water's edge, a Beacon of Faith—a 200-foot-high illuminated stainless-steel cross. For all this the church was raising $3,000,000, part of which will also be used to sponsor research into Florida's early history.

This is only one of many ways in which the city is celebrating its 400th anniversary year, calling attention to its Spanish heritage and entertaining visitors who come to join its year-long birthday party.

Wooden Guns for *Cross and Sword*

In a basement workshop I met a man named Tom Rahner, who was making guns by the dozen. He was also making a cannon about eight feet long, with a metal lining so it could actually be fired. With him was another man named W. I. Drysdale, who had just bought 2,000 chairs. The chairs and the guns and the cannon were part of a plot to lure visitors to town and make them stay longer. The guns were authentic-looking 16th-century arquebuses made of wood.

With Mr. Drysdale and Mr. Rahner, I drove across the Bridge of Lions to Anastasia Island. There, in a quiet wooded setting near the sea, stood a splendid 2,000-seat amphitheater, still under construction but nearly complete.

"Isn't it a beauty?" said Mr. Drysdale. "It ought to be. It's costing us $325,000 to build." To fill it, the St. Augustine town fathers commissioned Pulitzer Prize-winning playwright Paul Green to write a symphonic drama telling the story of the founding of the oldest city. It's called *Cross and Sword*.

Mr. Drysdale, a leading local businessman, was in charge of construction; his 2,000 chairs were just being installed. Mr. Rahner, an actor with several years' experience in another outdoor drama (North Carolina's *Unto These Hills*), is general manager of the production. The arquebuses? The cannon? "Props," he said. "I enjoy woodworking, so I'm making them myself."

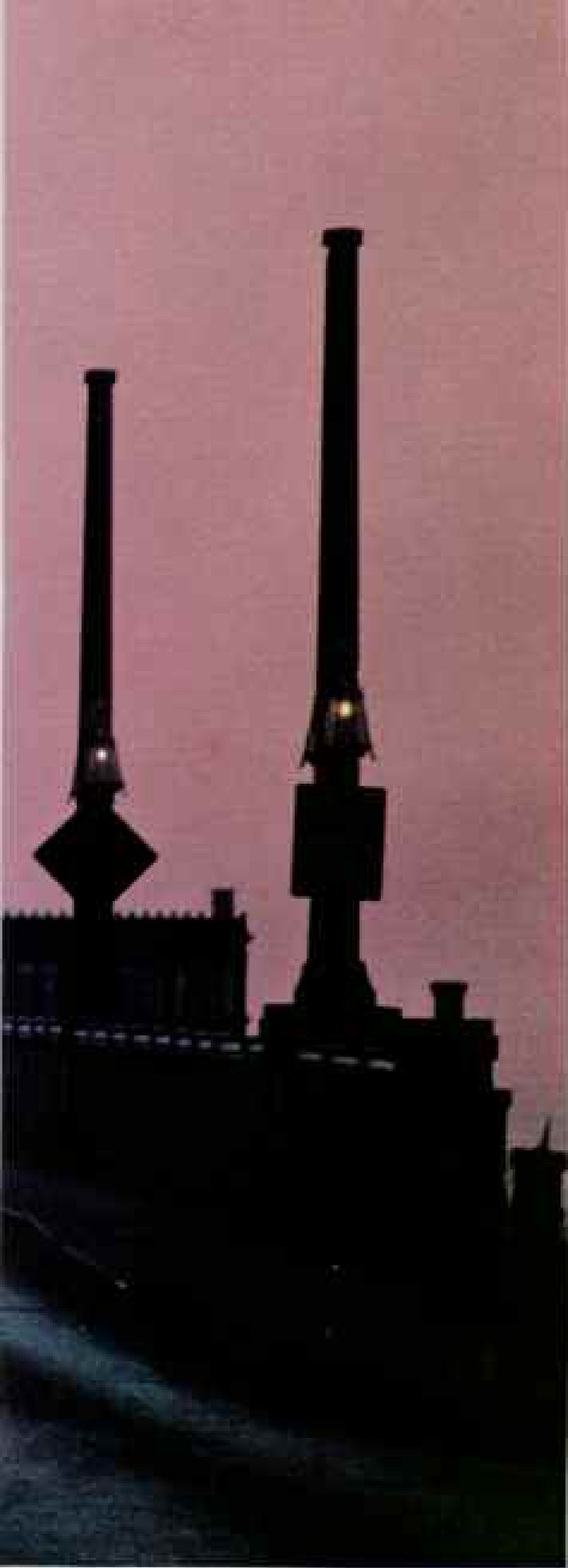
Later, when the 400th year was getting under way last September, I went back to St. Augustine and saw the finished product: a fine, exciting, two-hour show with never a dull minute (page 215). Its cast of 100 includes beautiful Indian maidens, stalwart conquistadors, and saintly priests; and in the final battle scene Mr. Rahner's cannon is fired with a tooth-rattling boom, and clouds of white smoke fill the stage. *Cross and Sword*, in its outdoor theater, is on only in the summer months; children under 12 get in free and will love it as much as grownups.

KODACHROME BY ALBERT MOLDVAY; PAINTING BY KENNETH RILEY © N.G.S.

In dark of the moon, Seminoles led by chief Coacoochee, known as Wildcat, escape from the castillo. Twenty Indians—captured by the U. S. Army in 1837—scaled the interior wall, squeezed through a small window, and let themselves down on a rope made from bedding. They fled across the marshy moat, now filled with water (right). Later Coacoochee related, "We had been growing sickly . . . and we resolved to make our escape or die in the attempt."

Rejoining his tribesmen, Coacoochee became a scourge and thorn to the Army. His leadership revived the waning spirits of other chiefs, prolonging the Seminole War for five years.

EKTACHROME (BELOW) BY WINFIELD PARKS, KODACHROME BY ALICE BIRLEY © N.G.S.



"**Farewell;** and fair befall thee, gentle town!" wrote Ralph Waldo Emerson, when he left St. Augustine in 1827 after regaining his health. Today, retired citizens come to stay; some spend the afternoon in the Public Market, enjoying a game of cards. At dusk, the streets grow quiet and traffic no longer crowds the Bridge of Lions, connecting Anastasia Island to the mainland. Now the span's light poles seem to change into Spanish pikemen, standing guard over the Nation's oldest city.

St. Augustine's biggest effort, not strictly part of the 400th anniversary but important to it, is a $20,000,000 restoration program. Financed by state and local funds, it aims for something like Williamsburg, Virginia, but with Spanish architecture instead of Georgian. This is under the direction of Earle W. Newton, the same historian who guided the reconstruction of Old Sturbridge village in Massachusetts.

The restoration is a 20-year project, slow-moving because, as Mr. Newton points out, "You can't just tear down a living city of 15,000 people and rebuild it. Williamsburg didn't have quite the same problem."

Even so, the city has completed a section equivalent to several city blocks. Here, along narrow St. George Street, just inside the old City Gate, St. Augustine looks much the way it did during its Spanish heyday. (Earlier, I complained about billboards. In the restoration area, not only are billboards banned and signs strictly regulated, but even the parking meters are being removed.)

"Contrary Wind" Helps Mark an Anniversary

When I returned to St. Augustine to see the 401st year in, I watched the dedication of the beautiful Casa del Hidalgo (house of the nobleman), built in 16th-century Spanish style by the Government of Spain as a permanent showplace in Florida. Another dedication, across the street, opened El Centro Panamericano, to which Latin American countries will send exhibits of their art, crafts, and culture.

Climax of the anniversary celebration was to be a High Mass, offered by Archbishop Joseph P. Hurley of St. Augustine and eight other priests simultaneously. Since one of the first things Don Pedro Menéndez did when he landed was to hear Mass at an outdoor altar on September 8, 1565, the priests in St. Augustine decided to have theirs outdoors, too, at an altar on the old mission grounds.

But on September 8, 1965, by a 400-year coincidence, the sky turned to lead and once again "suddenly the sea rose very high, and a strong and contrary north wind came up. . . ." It was the gale fringe of Hurricane Betsy, and it blew the outdoor Mass indoors. The congregation, incidentally, included distinguished delegates from Spain who flew across the Atlantic to visit their former colony on her birthday.

"All this," said Mr. Newton, "the visitors, the restoration, and the rest, are to emphasize America's Spanish heritage, which is so often neglected in our history books. St. Augustine was, and in a sense still is, the northeastern corner of Latin America."

If we do not read much about our Spanish heritage in history books, perhaps it is because, as someone has pointed out, "the winner writes the history." But the heritage is here, in our art, our music, our literature, and our architecture, and it spreads far beyond the little settlement Don Pedro Menéndez founded 400 years ago.

THE END

"The Alice" in Australia's Wonderland

By ALAN VILLIERS

Photographs by
JEFF CARTER and DAVID MOORE

"YOU'LL LIKE ALICE," they all said, with a special note in the voice. Everyone I met throughout Australia told me the same thing, whether or not they had ever visited Alice Springs. Ah, the Alice, or just Alice—never its full name—*that's* the place!

As I flew north from Adelaide over the arid zone of South Australia, I wondered what any town in such a hinterland could possibly have. Below, the country looked like a red-brown nowhere. Large lakes, marked in blue on the map, turned out to be dry salt pans. Waterless rivers scribbled twisting gray lines across the red landscape. In the dim past this had been a seabed. Now everything appeared barren, burned, useless.

The airplane began to descend. A brown

scar marked the railroad that snaked in from the south. We skimmed above blue-gray scrub—saltbush, mulga, and spinifex. In the distance the corrugated, sun-burned earth heaved itself into the fantastic shapes and colors of the Macdonnell Ranges (page 244).

"I love this land!" said a young woman, her lively eyes glued to a window. I looked out at the red, parched terrain, wondering what she found to admire.

Here, centered in the lower third of Australia's Northern Territory, lay the geographic heart of the continent (map, page 233). I am Australian-born but, like many others, I knew little about this vast red-rock highland, girt by fearsome deserts, that sprawls out and away from Alice Springs in every direction.

CROWNING A REALM *of vast distances, waterless rivers, and pioneer living, a diadem of stone glows in the first rays of dawn. A fantasyland five miles across, the domes of the Olgas rise 3,507 feet above sea level, keeping lonely vigil over a sandy plain in the remotest outback.*

EKTACHROME BY DAVID MOORE © NATIONAL GEOGRAPHIC SOCIETY

KODACHROME BY JEFF CARTER © NATIONAL GEOGRAPHIC SOCIETY

Could I, in a few weeks of roaming this region, come to know it, respect it—even love it, as my plane companion did?

My first sight of the town of Alice Springs gave no clue. It was a sunny winter's day, the sky a Mediterranean blue, the sun warm but not hot. The airport bus rolled to a stop between a large gum tree and the airlines terminal. Nearby I noted a "stockmen's shop," which could at a quick glance have been a cowhands' store in Cheyenne, Wyoming. It carried much the same shirts, boots, headgear, even the chaps. But the cowhands lounging outside were Australian aborigines—a characteristic feature of the Alice scene (above).

Bombs and Bitumen Help Alice Grow

The growth of Alice Springs in recent years has astonished inhabitants of the Northern Territory and some officials in Canberra as well. In the 1920's the population numbered fewer than 100; by World War II, it had risen to only 1,000. But after the Japanese bombed Darwin, territorial offices moved temporarily to Alice. Stuart Highway—still called simply "the bitumen"—was completed from Darwin to Alice, a distance of 954 miles.

Now a prosperous town of 6,000, Alice attracts hordes of tourists; they come especially for the fine winter weather (June-September), to see the spectacular scenery and the famed aboriginal artists centered in Alice, and to visit surrounding cattle stations—ranches—some bigger than Rhode Island.

Alice was born in the mid-19th century after discovery of a sheltered, watered plain amid the Macdonnell Ranges. By 1872 a telegraph station had been built at a water hole beneath a rocky hill. It was called Alice Springs, for the wife of Charles Todd, superintendent of telegraphs back in Adelaide.

Next came the prospectors looking for any metal—preferably gold—and finding little. They left a ghost town at Arltunga, not far from Alice. Once, back in the 1880's, they thought they had found rubies by the carload. Jubilant prospectors loaded camels with sacks of them. Soon 24 companies were at work. But the "rubies" proved to be cheap garnets, not worth transporting.

Cattlemen soon followed, for much of "the Centre," as Australians call the area, is not desert but marginal land that provides good feed when it rains. They knew the rains would be far between, but when rains came, cattle fattened quickly and kept their condition on the long stock drives. If a route had growing feed, it didn't matter how long the cattle took to walk it. The pioneers felt that one good season could carry five bad ones. But it has often had to carry six—even eight.

I first visited the Centre in 1962 and returned in 1964. Although a few spasmodic showers fell here and there, on both occasions

Stone Age blends with 20th century in Alice Springs, as aborigines gather to swap yarns before a bank. The 6,000 people of this urban outpost, only town in a raw interior region one and a half times the size of Texas, think of it as "the Alice."

Windmills whirring beside them, homesteads merit spots on a map of the untamed Centre, as Australians call the arid heart of their continent. So-called lakes and rivers stand dry most of the time. Aborigines wandering the sparsely settled land recognize "soaks," where water lurks just below ground, but cattlemen must depend on water pumped by the wind from bores hundreds of feet deep. Just a few inches of rain a year can keep sandy wastes abloom with wildflowers, grasses, and shrubs. But eight years of drought has reduced the area to a dust bowl of starving cattle. For the future, residents look to promising mineral resources and growing numbers of tourists lured by the open spaces and rugged beauty of the Macdonnell Ranges.

Oasis of civilization in the harsh red heart of Australia, Alice Springs sprawls near Heavitree Gap, gateway to the south in the Macdonnell Ranges. Anzac Hill (center) raises a white monument to Australian and New Zealand dead of two World Wars.

A telegraph station in 1872, Alice grew slowly until a railroad linked it to Adelaide in 1929. The dusty, tin-roofed town often exploded with the revelry of cattlemen and miners. World War II put it on the map as a military base.

To Centre dwellers, Alice is THE city. It offers hotels, night spots, and smart shops like those in Gorey's Arcade (right). Nevil Shute captured its flavor in his book *A Town Like Alice*, published in the United States as *The Legacy*.

EKTACHROMES BY DAVID MOORE (ABOVE) AND JEFF CARTER © N.G.S.

I found general conditions very poor. By mid-1965, over a great deal of the area the situation had deteriorated into the "worst drought in living memory"—which in central Australia is saying something.

Rain is spotty and at no time abundant. Records at the Alice—where ten inches a year is average—show that just under seven inches fell during 1958, when the surrounding district nourished 353,000 head of cattle. After several poor years, almost eight inches fell at Alice in 1962, but stock by then had dwindled to 176,000. In 1963 rainfall was four inches; in 1964 just under five; through October, 1965, just over one inch. This was disastrous. Barely 136,000 head of livestock remained.

Conservationists, agricultural economists, botanists, and Alice old-timers fear that the whole area may turn into a huge dust bowl, an Australian Sahara.

"Dust is mentioned now in almost every weather forecast," wrote a friend in July, 1965. "I had to drive 40 miles southeast from Alice the other day, toward Simpson Desert. The whole way I could barely see my own radiator because of a dust storm. This place isn't going to be much use again until it really gets a soaking rain and then is left to recover, ungrazed, for many years."

Biggest "Pebble" Towers 1,143 Feet

One answer to the region's economic woes may lie deep underground. Engineers report discovery of the continent's largest known gas field in the Lake Amadeus area, and have concluded that a major oil deposit lies close by.

District Officer Dan Conway sees a bright future in the tourist business: "Thousands of visitors a year, and they all find plenty to interest them."

From my earlier trip, I already knew several of the attractions. Like Standley Chasm, a cleft in the Chewings Range, 24 miles west of town, where the dirt track suddenly becomes the stony bed of a waterless creek, and the noon sun, striking almost straight down, changes the red canyon face to a burnished gold (page 238). Or Simpsons Gap, 10 miles out, with the smallest cattle station in the Alice Springs District: only 120 square miles!

Then, a 90-minute flight from Alice—or nine hours by bus—looms the tremendous monolith of Ayers Rock, called Uluru in aboriginal myth and legend (pages 239-41). Terra-cotta red, fiery crimson, and delicate mauve by turns in the shifting sun, Uluru towers 1,143 feet above the plain and is six miles around—the biggest "pebble" in the world, dropped in a desert as flat as the sea.

Out Ross River way is a dude ranch in colorful red hills. Up at Alcoota lies a mound littered with fossils of giant marsupials and emu-like birds as tall as 10 feet.

Yes, there was plenty to see.

On the main street of Alice itself stands a memorial church to the man who pioneered the famous Royal Flying Doctor Service—a missionary named John Flynn, born in my home state of Victoria in 1880, died 1951, buried by the roadside outside Alice. A stone cairn calls him simply "Flynn of the Inland."

At a time when radio and flying alike were primitive

When wind sweeps the Centre, dust churns into clouds that obliterate the sun. Even with headlights burning, drivers can see only a few yards ahead. Grit sifts through windows and doors. Dirt roads disappear overnight beneath drifting dunes.

No sensible motorist ventures into the wastes without maps, compass, water, and four-wheel drive. A breakdown can bring death, as a grim prankster reminds with a makeshift monument of the bones of a horse, behind the wheel, and a cow. Even on good days, tires bog in talcum-fine red dust. Iron oxide gives the soil its striking rust color. Dust storms increase as years-long drought lingers. Denuded of plant cover by grazing and lack of rain, topsoil blows away. Conservationists fear that even the return of average rainfall—ten inches a year—will not rejuvenate much of the lost grazing land.

KODACHROMES BY JEFF CARTER © NATIONAL GEOGRAPHIC SOCIETY

and far from accepted, tough John Flynn used both and urged his reluctant countrymen to spread them over the whole of the outback. There is no telling how many lives have been saved since the R.F.D.S. was begun in neighboring Queensland in 1928.*

Every day physicians at 13 centers such as Alice Springs hold radio "clinics," giving instructions for treatment to isolated stations and camps—each equipped with standardized medicine chests containing more than 80 items. In emergencies a nurse or doctor flies to the patient (page 243).

I walked from the Elkira Court motel in the sunshine of Bath Street toward R.F.D.S. headquarters. Aboriginal children played with hoses that revived lawns with water from the town's deep wells. A four-wheel-drive vehicle, red with the sand of the desert, drove by, its canvas water bag slung on the front bumper. Big diesel trucks were loading from freight cars in the railroad yard—building materials, drums of oil, live sheep.

Help Never More Than Hours Away

At R.F.D.S. headquarters—a pleasant bungalow in the shade of Billygoat Hill—I met Base Director George Brown, ex-radio officer in the British Merchant Navy.

"People come to Alice on a visit, like it, and stay. That's what I did," he told me.

"Before this service operated, the patient had either to be brought to the doctor, or else the doctor, alerted by a messenger, traveled overland to the patient. At times distances of hundreds of miles were involved, and local pioneer residents can recall journeys of 14 days over rough bush tracks, by horse-drawn buggy, to reach the nearest busy hospital. Nowadays we can bring skilled medical help to any outpost on the network within three hours."

We thumbed through a file of flight

*For more on the flying doctors see "Australia," by Alan Villiers, GEOGRAPHIC, September, 1963.

Fingers of gold fleetingly probe Standley Chasm, a day-long round trip from Alice Springs. Only at noon does the sun dip into the shadowy cleft whose walls, 20 to 30 feet apart, tower 23 stories.

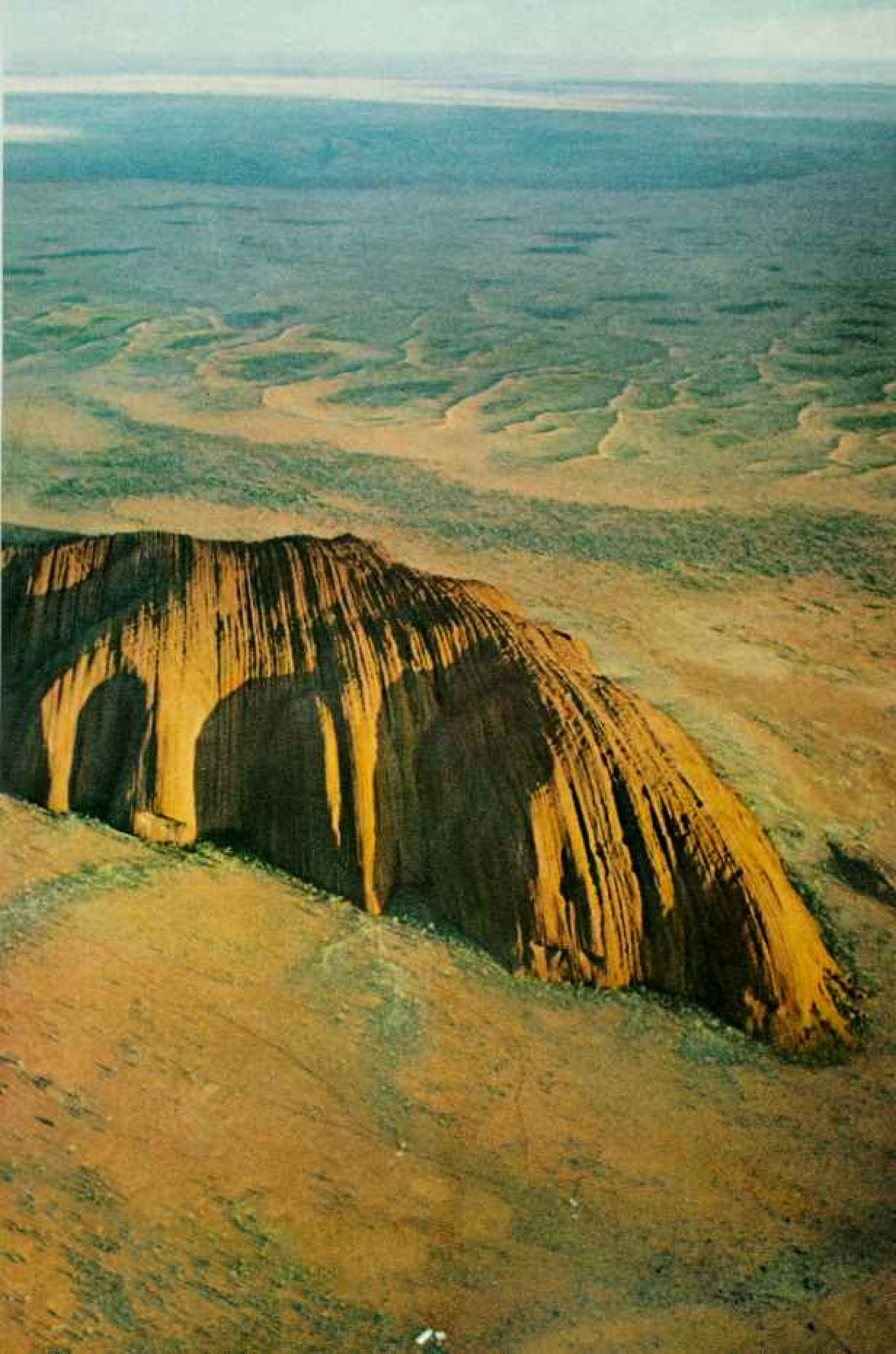
Answering the challenge of Ayers Rock, sightseers attack the west ridge, a safety line their sole aid on the steep ascent. "I climbed Ayers Rock" badges reward the hardy ones who reach the top.

EKTACHROME (OPPOSITE) BY DAVID MOORE; KODACHROME BY JEFF CARTER © N.G.S.

EKTACHROMES BY DAVID MOORE © N.G.S.

MONUMENT TO CREATION *in aboriginal minds, Ayers Rock springs 1,143 feet above a scrub plain. Tribesmen cloak the 2¼-mile-long monolith in legends of the "Dreamtime," their version of man's beginnings. And how did this mammoth boulder come to lie in the middle of a plain? It fell from the sky, one legend says. Religious symbols smeared in ocher and splashes of human blood drawn from arm veins decorate caves riddling the rock's base.*

Visitors line Sunset Strip, a sand ridge, to see Ayers Rock turn deep gray in cloud shadow (top, left), then burn red in the setting sun.



records, open on a side table, while the pretty girl radio operator monitored a call about a stockman on a station hundreds of miles away who had been found unconscious in a gully an hour or so earlier. Pursuing stampeding cattle in the night, he had apparently ridden into the low bough of a tree.

There was also a problem with a dehydrated baby having a convulsion near Ayers Rock.

In cool, reassuring tones the voice of a nurse could be heard dealing with these more or less routine matters, while a messenger was bringing the doctor—an Englishman—and mechanics warmed up a plane at the airport to fly him to a patient.

Drama leaped from the flight report pages:

> Alice Springs to Mount Davies. Aboriginal infant. Complaint not ascertained. Sister [nurse] Keady traveled to attend infant. Sister and Pilot Donnard had considerable trouble to get wild bush mother, a desert woman, into the aircraft. Cost, £90.
>
> Male aborigine age about 30. Severe wound in arm and fractured elbow in boomerang fight over a lubra [woman]. Cost, £35.5.0.

Government funds and public contributions defray the costs of the R.F.D.S. For the fiscal year 1964-65, the service's Cessnas, twin-engine Beechcrafts, and four-engine Herons logged 91,000 miles on 255 emergency flights out of Alice Springs. They brought in 320 patients for hospitalization.

"You should hear the 'galah sessions,'" said Mrs. Nan Brown, the director's wife. The galah is a bush cockatoo much given to noisy chatter (page 245). Mrs. Brown explained that now and again the R.F.D.S. throws its network open to the outback women for a sort of free-for-all chat. And how they chat! As if they were all in the same room instead of scattered over an area one and a half times the size of Texas. The greatly enjoyed galah session shatters isolation. But it ceases the second an emergency call comes in.

KODACHROME BY JEFF CARTER © N.G.S.

Conga line of fuzzy caterpillars migrates from tree to tree to feed on leaves. Girls keep their distance, since stinging hairs inflame the skin. Playing follow-the-leader, these larvae of the bag-shelter moth earn the name "processionary caterpillars."

Light Planes Link Cattle Stations

The flying from Alice is done by an extraordinary group of bush pilots supplied by Connellan Airways. In addition to its R.F.D.S. flights, Eddie Connellan's airline covers by scheduled bush-mail flights more than 120 stations in a 600,000-square-mile area. Its little planes take off day after day for places as far away as Wyndham in Western Australia or Maningrida on the north coast.

The pilots usually put down at station strips, but they will obligingly land any place that provides a wind sock, a once-whitewashed stone or two to locate the landing spot, and—most important—radioed confirmation that the strip is serviceable.

"Our primary purpose is service to the territory people—at the remote cattle stations, the mining fields, and the native welfare settlements and missions," Damian Miller, the airline's director of training, told me. "But if we have a spare seat, we'll always try to fit in

KODACHROMES BY ROBERT B. GOODMAN (ABOVE) AND JEFF CARTER © N.G.S.

Crisis in the bush: Ambulance plane rushes an ailing aborigine to a hospital. Family physician to the outback, the Royal Flying Doctor Service ministers to isolated homesteads, camps, and missions for aborigines. Doctors diagnose ills by radio and prescribe for minor ones from standardized medicine chests stocked by every station.

Vital to the Centre way of life, the R.F.D.S. radio network also relays messages (right), instructs pupils of the School of the Air, and permits gossip sessions by housewives.

Parrots of the outback, rose-breasted cockatoos called galahs flock to their daily feeding at Pitchi Ritchi, a bird and flower sanctuary near Heavitree Gap. The spirited chatter of the noisy birds has led homesteaders to call housewives' radio gossip fests "galah sessions."

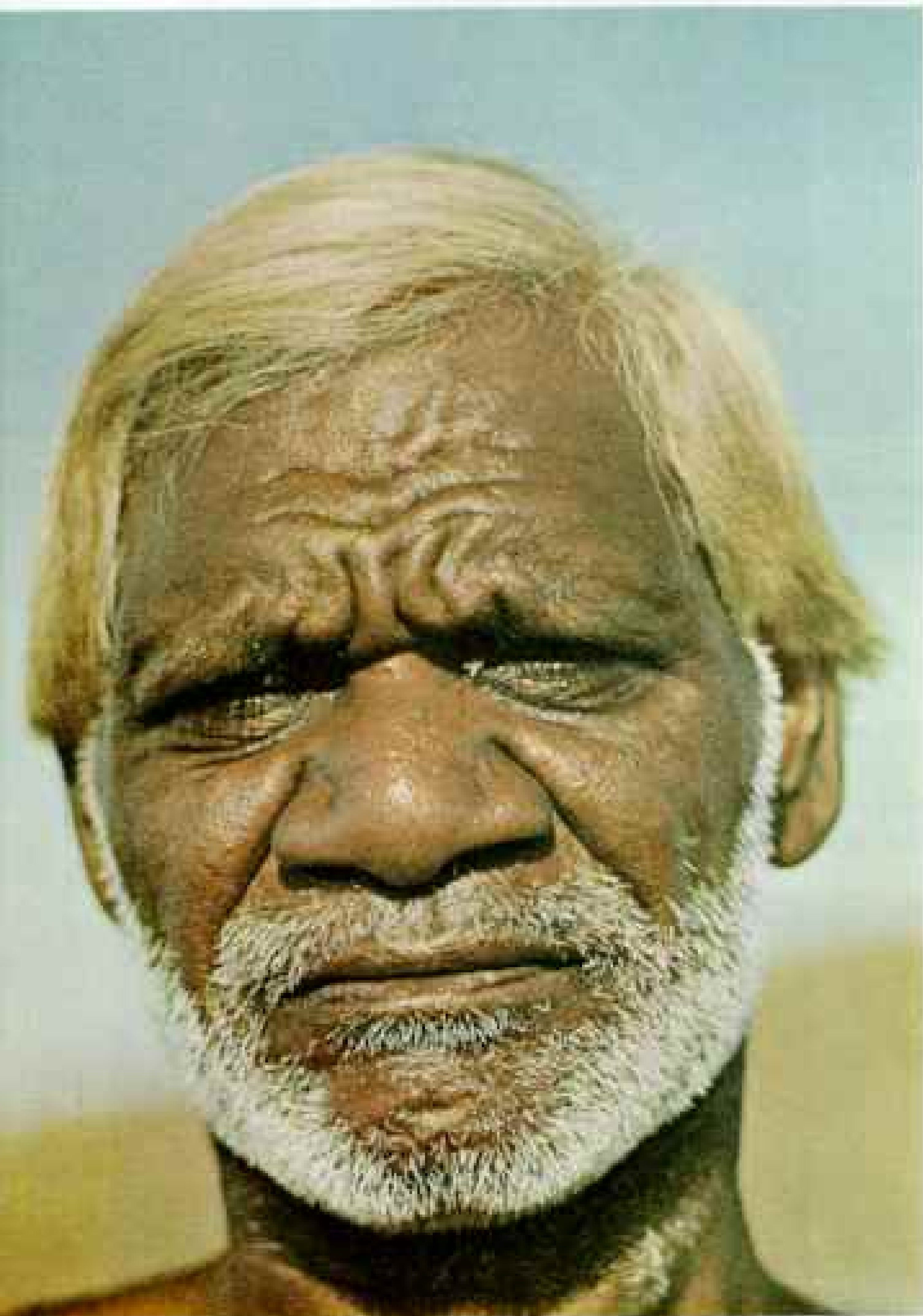
Worn and polished by time, the Macdonnell Ranges furrow the Tropic of Capricorn. Their vivid stripes—ancient sediments tilted vertically in a fold—ripple 250 miles across Australia's abdomen.

Wielding cruel claws, the perentie stalks other reptiles and even small kangaroos. The huge Australian lizard grows as long as eight feet.

EKTACHROMES BY DAVID MOORE © N.G.S.

an interested visitor. It's a good way to see Australia's Centre."

I joined Damian on one of Connellan's regular mail runs from the Alice airport. On the return flight we were to bring back a sick aboriginal child from the Ernabella Mission, 210 miles to the southwest, across the border in South Australia.



KODACHROME BY JEFF CARTER © N.G.S.

Aboriginal elder faces the future with stoic calm, characteristically ignoring the bush fly in his eye. Many aborigines earn their way as stockmen, but efforts to turn nomads into landholding pastoralists have met with little success (page 255).

The control tower gave us our weather forecast: dust squalls and—surprisingly—rain, light and localized.

Our take-off resembled a grasshopper's jump. A burst of power, the briefest of full-throttle runs, and our twin-engine craft was in the air. Moments later the runway of Alice airport was still below us, for it is long enough to handle the biggest jets. After that, the red-brown nowhere stretched for miles.

Twenty minutes of flight and Damian began coming down. At first, I couldn't see why. After much searching, I noticed an old wind sock, a few white rocks, a waiting truck. A gray-bearded aborigine with a couple of big cattle dogs in a truck accepted mail and parcels without a word. We roared off again, climbing above a roughly fenced corral and the tin roofs of the homestead.

"Palmer Valley," said Damian.

At Eridunda, the next station, there was no one in sight at all. We waited for ten minutes, then put out the mail, and took to the air again.

I asked Damian where all the livestock was.

"The stock's run down because of the drought," he said. "A lot of it is dead. Even the kangaroos have died on some stations."

Next stop was a place called Kulgera, 145 miles from Alice toward the South Australian border. In a small garden, its wooden fence thatched against sand, a few optimistic tomatoes showed red badges of courage in their unequal fight against the drought.

Ominous clouds of approaching dust squalls darkened the skyline to the north and east. The big corral was empty, and diesel road trains—trucks that have several livestock trailers—stood idle in the yard.

"It hasn't really rained here for almost five years," station owner Len McConville told me over coffee and cakes. "We're down to 300 head of stock. I don't know that I care to hang on here much longer."

Soon the plane was refueled and we were airborne once more, headed toward the next station, called Mount Cavenagh.

"Do you see what I see?" asked Damian. "It's been *raining*. This place is actually wet!"

In we came, flaps down. Up rushed the brown earth, marked with dark boggy streaks. Damian skillfully sought and found firm ground—except for one deceptive soft patch. Down plopped the nose wheel, right in it. Over nosed the plane, starboard propeller

biting the earth. But our seat belts held us.

We climbed down, dug out the nose wheel, and examined the hopelessly bent prop.

"There's still that sick child at Ernabella," said Damian. "I'll have to get another airplane to fly him out."

The radio at the station homestead was occupied with the School of the Air, conducted by Mrs. Nance Barrett in her studio classroom at the high school in Alice. Childish voices piped up from remote homesteads and camps all over the 125,000 square miles of Mrs. Barrett's "classroom." They answered questions on Australian history with assurance. They fired back answers to awkward arithmetical problems in pounds, shillings, and pence—a difficulty that should end in February, 1966, when Australia is scheduled to convert its currency to a decimal system. The session ended with a song to the notes of Mrs. Barrett's piano, hundreds of miles away.

Sun Shrouded by Swirling Dust

Damian soon has another Connellan airplane winging out from Alice toward nearby Kulgera strip, where the rain hasn't struck yet. We go there and watch as the plane makes several passes before landing. A turbulent crosswind catches it in gust after gust, and it is hard to see how the craft can escape being dashed to the ground. The pilot nurses it with bursts of power just off the runway, to touch down perfectly at last and stay down.

The young pilot jumps out smiling. This is all in the day's work. I climb aboard, strapping myself good and tight in the seat.

We get up all right, but the weather deteriorates. We can see dust squalls, some so dense they look solid, and the sun glints like a pale red moon through the lighter dust high up. When the strong winds want to pick up dust anywhere around this area, they have plenty to work on (pages 236-7 and 254-5).

For a while we dodge the squalls, the aircraft pitching and tossing like a yacht fighting a strong gale. The air hits us like pieces of invisible mountainside. Sometimes, with no warning, the plane leaps vertically, then shakes its wings and drops again. At other times the pilot, flying on instruments, throttles back and glides over the humpback of five thousand feet of what looks like solid dust.

We toss and pitch over the foothills of the Musgrave Ranges. Below, with the air clear of dust at last, the red granite mountains and valleys make a terrain ferocious and challenging. Who, I wonder, would want to live in this wild place?

"It is the land of the Pitjantjara tribe," says my pilot friend.

We fly over the Ernabella Mission—some well-kept buildings with shining tin roofs, a cement-brick church, a garden decking the red earth with pale green. Beyond is the strip. The wind sock is distended straight across it, denoting a stiff crosswind.

Coming in, we rush above a knot of aboriginal wurlies—rough huts of bark, branches, twigs, and leaves—at the end of the red runway. We touch, bounce, touch, bounce. The strip is long, and I am glad of that. We touch again, and the wheels stay. We are down.

No time is wasted. With his dark, bearded kinsmen gathered compassionately around, a little boy with a chest infection is lifted aboard and strapped in the rear seat with another patient—a thin young woman—beside him. We roar once more into the sky, to buck the turbulent air 210 miles to Alice.

We skid through hail, lurch along the edges of rain squalls. Some have left pools of water on the ground—but not for long. The sun's evaporation and the rain-hungry earth will soon see to that. The little boy and the young woman sit wide-eyed, silent, accepting the gyrations of the airplane, I suppose, as another oddity in the white man's way of life.

At last the runways of the Alice airport show up ahead. The little airplane lands on a tenth of one strip; we taxi, it seems, for miles. An ambulance waits, with Sister Joyce Ellis—a stately brunette from Queensland dressed in white—ready to receive the little boy.

"Nice flight?" she asks.

Outback Colors Inspire Aboriginal Artists

I had tasted the violence the Centre can brew. But it can also be astonishingly colorful, with brilliant reds and purples. No wonder it is the home of Australia's amazing aboriginal art movement. Long ago, observers noted that the aborigines possessed an extraordinary flair for producing abstract designs in color. But only anthropologists and primitive-art enthusiasts paid much attention.

Then came Albert Namatjira.

Everybody in Australia knows something of the Namatjira story—how Albert, an aborigine reared at Hermannsburg Mission, 70 miles from Alice, became an artist of world stature. His is not an isolated case. Albert Namatjira went on to inspire a school of Aranda tribesmen artists (following pages). Now some of his sons are becoming equally famous, and Gabriel, his grandson, is following in their footsteps.

The great artist's grave lies just outside Alice. The headstone bears a text from the First Book of Corinthians 15:10—"by the grace of God I am what I am"—in Albert's own language, and the simple inscription:

ALBERT NAMATJIRA
BORN AT HERMANNSBURG, JULY 28, 1902
DIED AT ALICE SPRINGS, AUGUST 8, 1959

I found Rex Battarbee, the artist who fostered the Namatjira art movement, in a pleasant house in a wide street by the side of the Todd River. His house overlooks the gum trees that crowd the dry riverbed. Inside, the rooms shine with his own glowing water colors alongside those of native artists.

Rex Battarbee, born at Warrnambool in Victoria, severely wounded fighting as a member of the Australian Imperial Forces in France in World War I, told me that he started coming to the Centre to paint during the 1930's. He took Albert Namatjira as his camel boy. Albert developed a great interest in the white man's paintings of the color-splashed Centre.

"Then one day," Rex told me, "Albert said very quietly, 'I could do that. Just teach me how to prepare the paints.' I showed him. He learned fast. We used water colors—no oils; the dust and the bush flies stick to oils here. Within a fortnight he was painting tolerably well, and he went on from there."

Gradually Albert's gift found appreciation beyond Hermannsburg Mission. At a 1938 exhibition in Melbourne, his paintings sold for as much as six guineas (then $25).

Now many are worth thousands of pounds.

"The Australian aborigine can be a talented and an able man," said Rex Battarbee. "For years we thought him capable only of scrawling rough totemic designs—circles, spirals, bird tracks, animal footprints—on bits of bark or the dark walls of caves. Look at this work by Ewald, Albert's son."

We looked at a striking painting of a mountainous landscape after a rain squall, with an astonishing quality and amazing light.

"No artist could have done better in this manner," Battarbee concluded.

This awareness of the natives' artistic ability is relatively new. For decades they have been regarded mainly as convenient stockmen on cattle stations, or useful trackers for the police. Their practiced eyes can trail lost persons and criminals over deserts and through the bush with the baffling skill they began to acquire in earliest childhood.

Some trackers still work at Alice Springs, though Police Inspector G. L. Ryall told me that the automobile and the bitumen had largely done away with the need for them. I met the inspector's two trackers—quiet, taciturn men in khaki uniforms.

"Yes, I can tell all the tracks," tall Walbiri tribesman Larry Jabaljari admitted, as if the skill were so commonplace as not to be worth mentioning. "They're different."

His mate, Willie Martin, nodded approval.

One Track May Tell a Whole Story

I gathered that to them a track—whether of lizard, snake, wallaby, emu, aborigine, white man, or child—was not just a blur left uselessly in the bush. It was a picture story.

The local tribe is the Aranda, or Arunta. To the southwest and over the South Australian border live the Pitjantjara. Northwest of these, on two government settlements and a few cattle stations, are the Walbiri. They

With a bold brush Gabriel Namatjira portrays the ghost gums and dramatic terrain of his native land (left). Landscapes by Albert Namatjira, his grandfather, won world acclaim and inspired fellow tribesmen to paint.

Second-generation Namatjiras, Oscar and Keith (below), turn out quick sketches that tourists buy at Alice Springs for $15 apiece. But the brothers amass little wealth; tribal law demands they share earnings with their many relatives. They work in water colors because dust and flies stick to oils.

KODACHROMES BY JEFF CARTER © N.G.S.

and other area tribes all speak similar dialects, and all have complex social organizations, and a rich heritage of myth, ritual, and beliefs in magic. Strict tribal laws control every essential activity and relationship. Transgressors are severely dealt with, even to the death. Some are punished by "pointing the bone"—execution by psychic magic: Executioners point a bone at an offender and sing the prescribed chant; if he believes, he may give up his will to live, wither away, and die.

"Simple" Nomads Command 40,000 Words

Australians—both officials and plain citizens—are trying to understand the Stone Age viewpoint. But no one regards it as easy.

"The aborigine is still a wanderer in body and in mind," said Father Summerhayes at Santa Teresa Mission when I visited there. "Perhaps it is his greatest failing."

The Commonwealth Government's Welfare Department declared: "Assimilation is our policy. But it will take a long, long time." The government's goal was to grant Australian aborigines full citizenship—a step since taken. Eventually, officials expect, aborigines will enjoy the same manner of living and accept the same responsibilities as white Australians. But everyone agrees it will take a long time.

Pastor F. W. Albrecht, former superintendent of the Finke River Mission at Hermannsburg, has spent most of his life among the aborigines.

"You can't turn a food gatherer into a food producer overnight," he told me. "The aborigine is not a simple nomad searching for a way of life. He is an efficient collector of his needs, with a social system that suits him, disciplines him, and is workable.

"To survive in a country like this and bring up a family in it, to have a language of at least 40,000 words, a culture, a social system, a religion and philosophy suited to him—these are hardly the achievements of a dull and stupid nomad. The more we get to know about their system of life and themselves, the more we admire them. But we have to train them in a new sort of responsibility.

"The aborigine is a good stockman," Pastor Albrecht pointed out. "In that work he feels, and is, responsible. He knows he has a place in the community. He feels he belongs."

Thereafter I looked at the dark stockmen of the Alice with new eyes. I went out along the bitumen 30 miles or so north to meet a gang droving their livestock down the old cattle route, not far from the road. Although the diesel road trains carried a lot of cattle, a good deal of bush droving was still going on. I was fortunate to see this spectacle, for the drought has left most of the surviving cattle

EKTACHROME BY DAVID MOORE © N.G.S.

Learning to sew, aboriginal women at Amoonguna settlement make hospital caps. Such way stations between nomadic and settled living, run by government or church, help aborigines adjust to modern ways.

Primitive Pintubi tribespeople find food, clothing, and nursing care at Papunya settlement. Crude windbreaks shelter family groups on the reserve's fringes.

Aborigines who demonstrate a willingness to learn win permanent housing in Papunya. Those who find the new life lacking may return to the old whenever they wish. Until recent years, few of the desert-dwelling Pintubi had seen a white man.

too weak to walk to the railhead at Alice.

Just north of McGrath Creek in the low scrub country, with lots of flowers about, we met the mob of cattle—big, nervous beasts plodding along behind a tough-looking boss steer. Mick Wagoo, the chief drover, told me that a mob always has a sort of born leader that takes over the job by natural right.

Mick was just about to bring the mob to a halt for the night. It was around four in the afternoon. I stayed, fascinated, for I had never seen anything like this before.

Mick was a fine-looking aborigine, on a sturdy horse. He wore high-heeled boots and dusty old clothes, with a colored kerchief bound around his head beneath his bashed-up, wide-brimmed hat—a more or less standard outfit. His crew numbered eight other aborigines. They had 40 horses, no wagon.

The mob settled down, two or three of the horsemen still watching them, always ready for a "rush"—Australian for stampede.

"We lost 30 beasts in a rush three nights ago," said Mick. "We'll pick most of them up again when we bring in another mob."

There were, I gathered, four more such mobs to be brought to Alice during that season. This was the third. They'd come about 150 miles and had already been three weeks on the road, he thought. (Mick wasn't very good on time.)

Trail Dinner: Damper and Kangaroo Stew

The cattle stood watching us, looking now and again at their leader. Big and wild, they seemed to me ready to rush at any moment.

"How do you cope with a rush?" I asked.

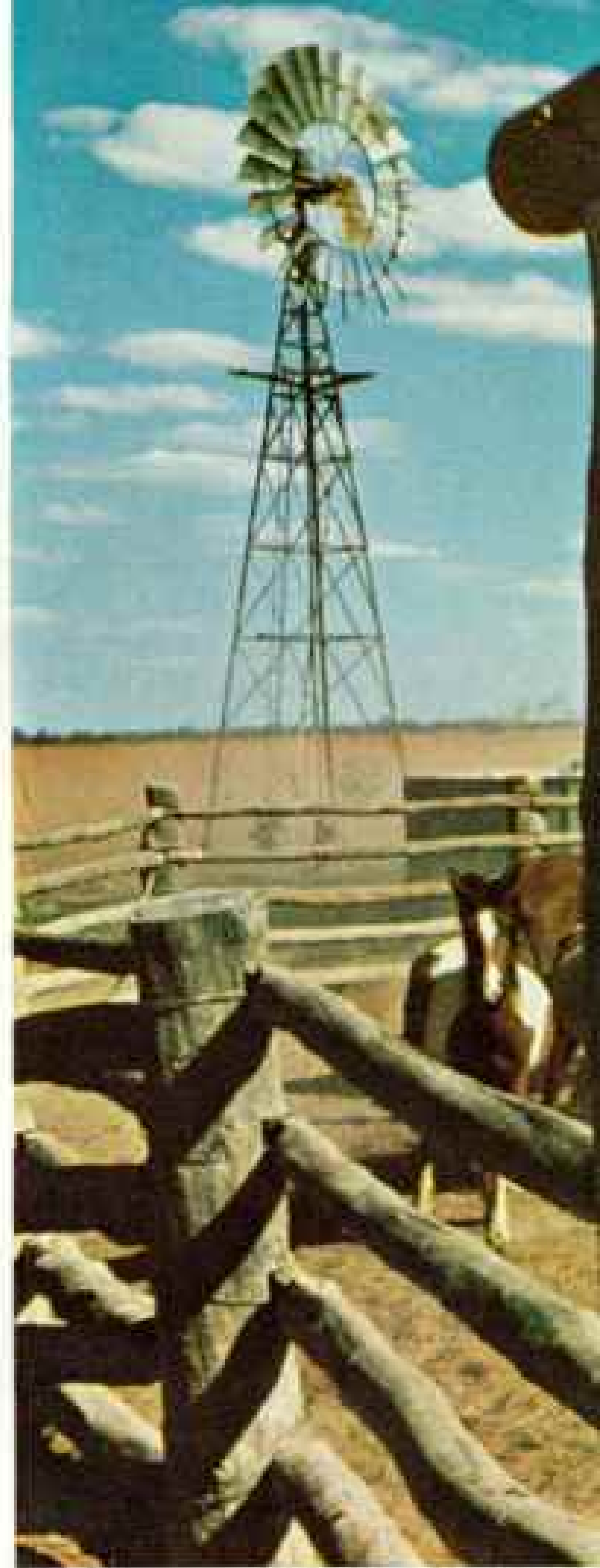
"We try to head them off and get around them," he said. "We try to get them into a ring. Then they rush around and around. They get tired and stop."

I stayed while the drovers made camp, hobbling the pack horses, putting bells on them, and letting them go.

KODACHROME BY JEFF CARTER © NATIONAL GEOGRAPHIC SOCIETY

Unbowed victim of drought, Central Mount Wedge station-owner Bill Waudby corrals horses used to work 300 cattle he hopefully keeps as breeding stock. Once his Rhode Island-size spread supported 2,000 head. From Alice Springs, 150 miles away, he hauls beef for his family and feed for the remnant of his herd.

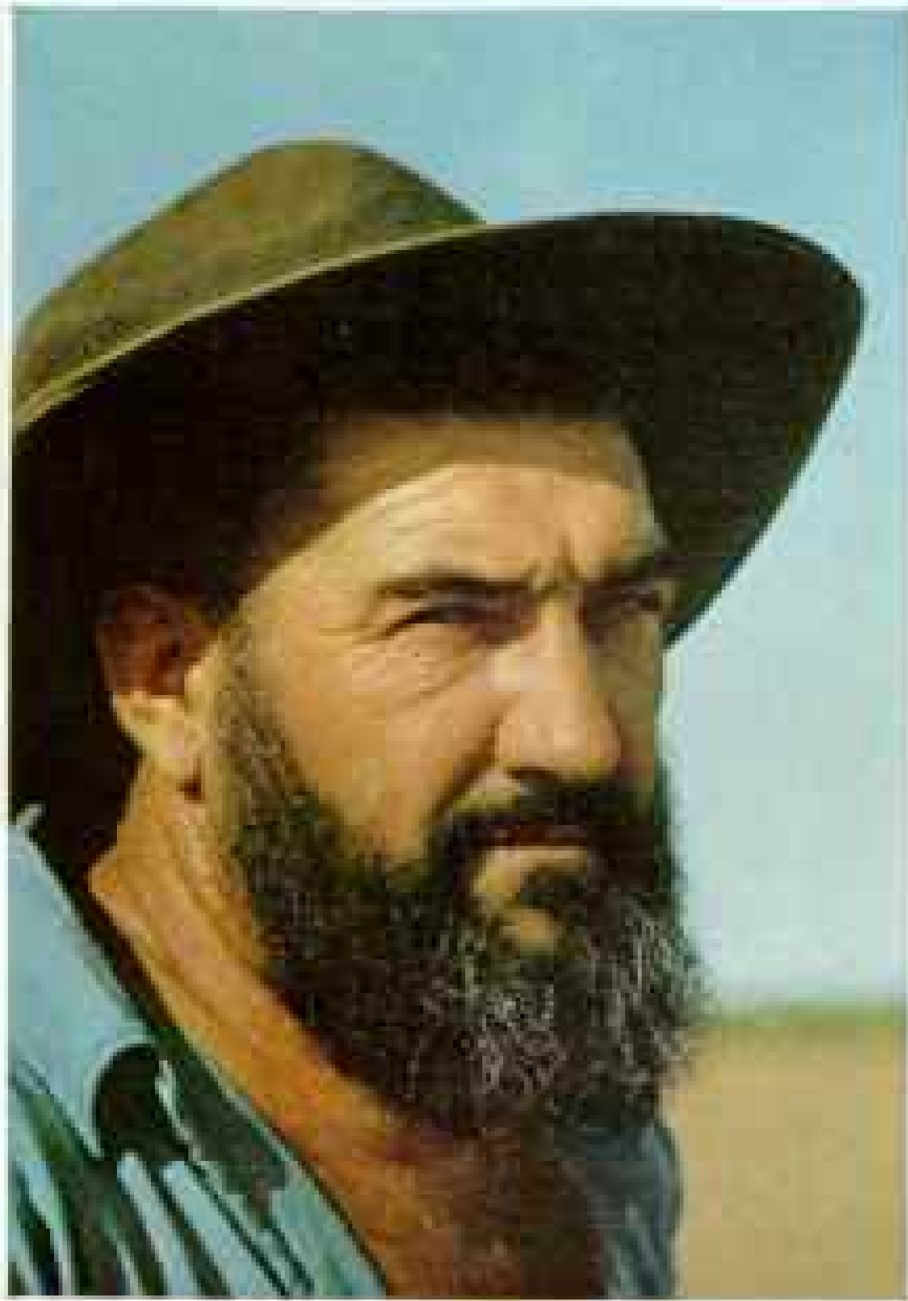
Striking contrast drawn by a barbed-wire fence: land on the left retains cover and will spring to life with rain. Starving cattle stripped the other side bare; it may never recover.



Cowboy ballads, down-under style, waylay tourists. Aranda tribesmen will offer curios for sale following their concert, performed beside the road to Palm Valley, where a freak of geography permits palm trees to grow. Aborigines in cattle country so admire American movie cowboys that they wear wrangler's clothing whether they work stock or not.

EKTACHROME (ABOVE) BY DAVID MOORE; KODACHROMES BY JEFF CARTER © N.G.S.

Astride a wild cow, a daredevil of the Hermannsburg Mission shows his skill at an annual rodeo that attracts spectators from hundreds of miles around. Founded in 1877, the Lutheran settlement, 70 miles west of Alice Springs, offers a permanent home for Aranda tribesmen who work the mission's 1,500-square-mile cattle station.



"Things will get better," insists cattleman Bill Waudby. Accustomed to periodic drought, cattle-station managers normally anticipate only one good year in five. But the current drought began in 1958. Some cattlemen, located near scenic attractions, now cater to tourists by providing guest-houses. A few operate dude ranches.

Specter haunting the Centre, a dust squall rips into Undoolya station. It gobbles up topsoil, containing grass seeds waiting to germinate, then redeposits the load in arid wastes elsewhere. Dust storms may occur every few days during droughts.

"We have to work a shift system," Mick explained to me. "We can't just leave the mob. At least two or three of us must always be on our horses, keeping watch. We have special horses trained for night work. These cattle have never seen anybody but us, and they're easily scared."

The stockmen listened silently and settled among their packs, almost blending into the bush—at home here and quietly competent, ready for anything. Bush flies flocked in from nowhere, as they always do, and settled on men's and horses' faces, and in their eyes. Accustomed to this from birth, neither man nor beast paid much attention.

The shadows lengthened and the fire crackled for the simple evening meal of kangaroo stew and unleavened bread called "damper," baked roughly in the wood ashes. The stew smelled good. The damper tasted wonderful. It wasn't hard to brush the bits of ash from it.

The stars began to come out, lovely in the dark velvety blue of the tropic night. We yarned along, about dingoes and kangaroos, about the aborigines' life. Mick didn't volunteer anything, but he answered questions well. The others said nothing whatever.

In the lull I thought I heard voices singing. Singing? I was fooling myself. Singing out there, in the wilderness?

But someone *was*—chanting, sometimes in a way I'd never heard before; sometimes humming, quietly and continuously. Who and why?

KODACHROMES BY MRS. TED HAYES, JR. (ABOVE) AND JEFF CARTER © N.G.S.

I asked Boss Mick. He seemed surprised at my ignorance.

"The boys sing for the cattle," he explained. "It quiets them. We always sing—all night, where the cattle can hear. We ride slowly round and round, stop often. And always we must make a little noise. So they know that we are there."

Children of the Past Ignore the Future

The stockmen rolled into their blankets, still in their clothes minus only their big felt hats. Soon they would be sleeping soundly, ready for their turn, before the morning came, to sing and chant softly from the saddle to their beasts. Before sunup the mob would be on the way again. They'd be another week or so to Alice, rest there a while, and be freighted away to the stockyards in Adelaide. Then the dressed beef would be shipped—perhaps halfway around the world.

I wondered why men so good as stockmen could not progress a little further and become station managers and owners themselves? After all, no one could have more right to some of this land.

I asked Pastor Albrecht about it when I returned to Alice Springs.

"We've tried that," he told me. "In 1944 we settled some of our good stockmen as pastoralists in their own right. We started a concern that we called the Hermannsburg Aboriginal Pastoralists Association. We financed experienced family men, with repayment to

be made within a certain time. The idea was to give them a feeling of social responsibility, pride of ownership, a sense of ambition. All this would help assimilation.

"We found they just weren't interested in what we thought of as their economic rehabilitation—just couldn't see the sense in any such thing. To people who never had accumulated anything, property ownership meant less than nothing. They ran the stock all right. They paid off their debts. But they could not get hold of our idea of providing for the future, of working now to profit later.

" 'You white people always worry, worry, worry—about clothing, about money, rain, cattle,' one of them said to me. 'We never worry. In this country it is no use.'

"Back for thousands of years," Pastor Albrecht continued, "they had seen this harsh land defy them with prolonged drought, time and time again. Why develop what certain drought must certainly destroy?

"We stuck to the experiment for years. It didn't work. Their past was too strong in them. They gave up, and drifted back to the mission.

"It will take time and patience to change these attitudes. But we must press on."

I thought of Mick and his fellow tribesmen coming down the droving track from

the north, his stockmen singing lullabies to the cattle through the tropic nights. These men live in the open, free and simple, their wants taken care of, their families sharing the communal life of the tribe. They would deliver the mob at Alice and go back with their horses for more.

A strange town, Alice. It gets hold of you. Late that night I walked along the streets thinking about it all. It was a soft night with the southern constellations glowing. I nodded a greeting to a group of barefoot aborigines on the sidewalk, one of them with a handful of spears. The night was heavy with the scent of flowers.

Next morning I caught an airplane for Adelaide. As Alice faded behind and below, I stared at the fantastic red landscape slipping by—the dry, harsh heart of the continent. But somehow it no longer seemed a dead, forbidding place.

There *was* life down there: people. They were tough, tenacious people; scattered all over the outback, many of them, and perhaps a bit lonely. Some were black, older than history, wise in the ways of survival. Others were white, with courage and patience and faith in a stern, raw land.

I knew now how they could grow to love it.

THE END

Kangaroos diminish during the drought, adding to the problems of aborigine food hunters, but the Centre, despite its empty appearance, supports many forms of life. Lizards scurry about, and dingoes—wild dogs—howl dismally at night. Eagles and ostrichlike emus range the area. Moisture-craving bush flies plague eyes and mouths of men and animals, but they do not bite.

KODACHROMES BY JEFF CARTER © N.G.S.

Clinging to bush life and the company of his dogs, an aborigine carves boomerangs, spears, and woomeras (spear throwers) for sale. He offers camel rides to sightseers who stumble onto his camp. Imported a century ago from India, dromedaries packed supplies before motor vehicles outmoded them. Today the beasts rove in wild herds, and many have perished in the drought. Aborigines use them to haul gear on walkabouts.

Giant Comet Grazes the Sun

By KENNETH F. WEAVER

National Geographic Senior Staff

I AM A SEA-BRED THING. When I feel happy, or lonely, I come down to the sea, for it fills my heart with deep emotion. That night I was dreaming of the sea. I was walking along the shore. . . .

I do not know why, but on that night my wife woke me, very faithfully. Usually she discourages me from observing the stars. Exposing myself to the night dew, she thinks, cannot be any good for my health. Still, she woke me.

At four o'clock I climbed up to the observing stage on the roof of a storehouse in my courtyard. The starry sky was beautiful, transparent, as though swept clean by the typhoon two days before. Fine weather! I put my eye to the telescope.

At a quarter past four something refracted through my lenses—a queer, pale celestial body. My heart shook. I broke the stillness before the dawn:

"A new comet!"

Thus does Tsutomu Seki, writing to NATIONAL GEOGRAPHIC, recall his discovery.

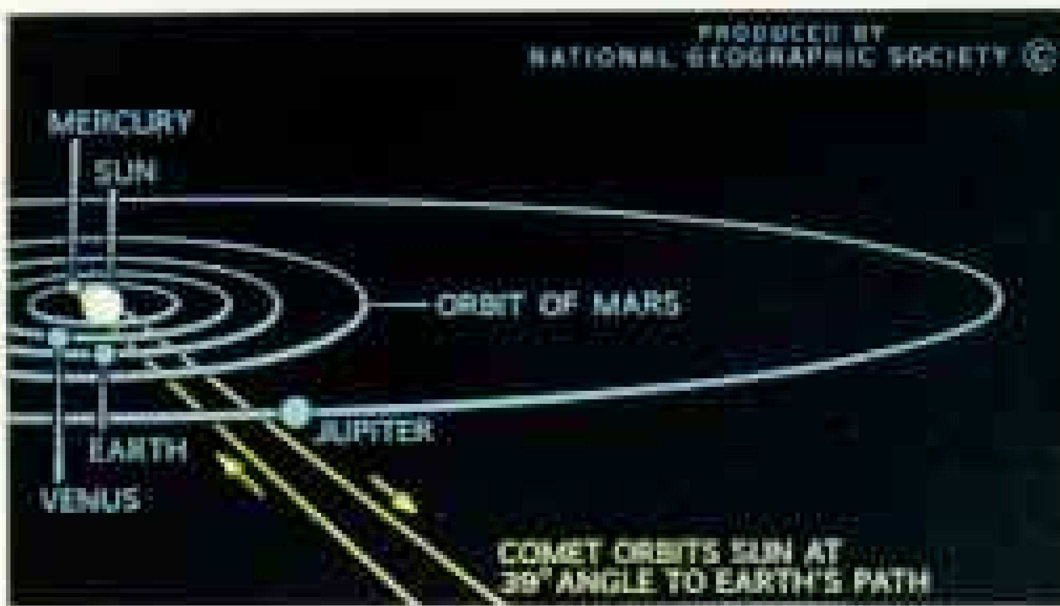
Yet, even as Seki, in the Japanese city of Kôchi, was exclaiming with delight over his find, another young comet hunter, Kaoru Ikeya, was poring over star charts in Benten Jima, 250 miles away. Ikeya, too, had seen the fuzzy object, "shining like a street lamp on a misty night." Nowhere could he find it on the charts.

"From my experience observing," he said later, "I judged the image to be real, and not merely the reflection of some city light, some ghost image in my eyepiece, or a fleck of cloud." His experience was not negligible: Since the age of 13 he had been making telescopes and watching the heavens. At 22, he already had two comet discoveries to his credit.

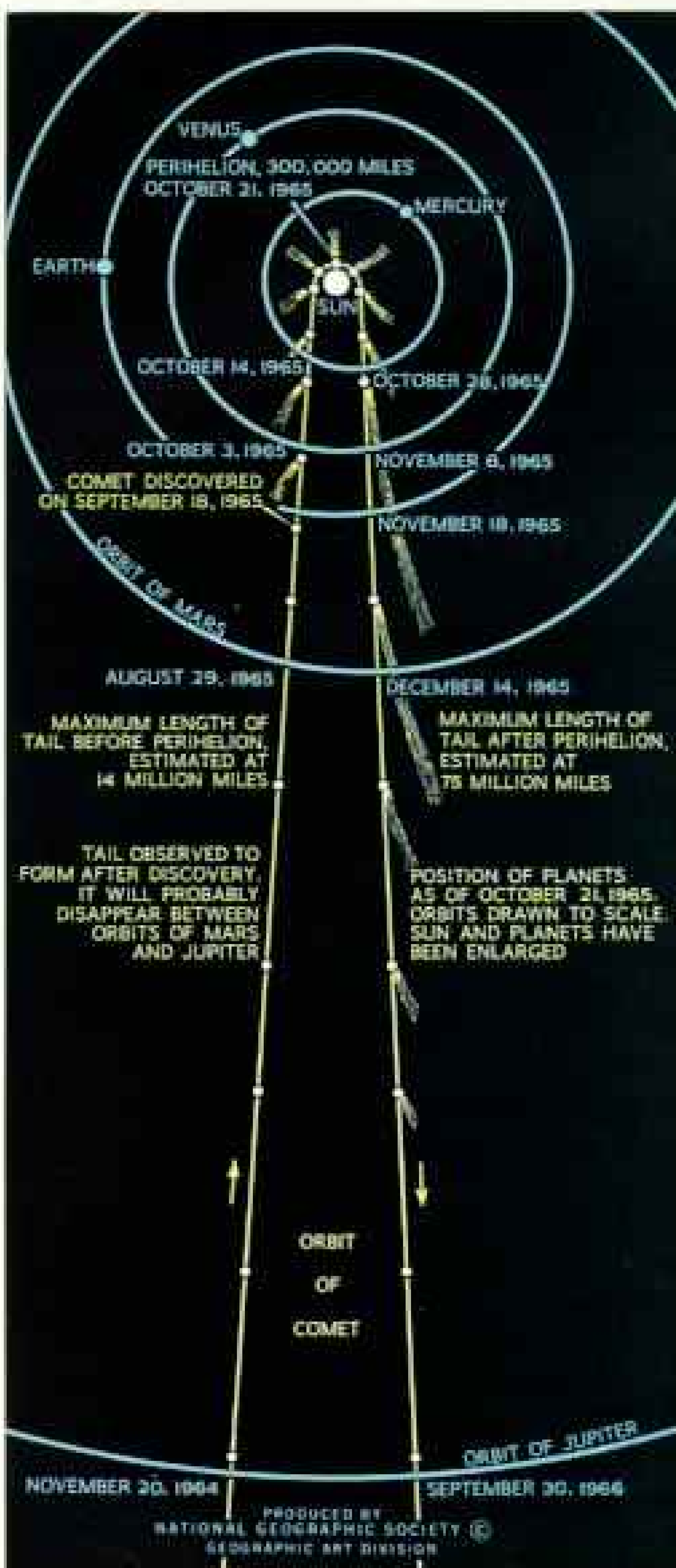
Hastily, Ikeya climbed down from his corrugated

Ghostly searchlight against a dawning sky, Ikeya-Seki flaunts a 75-million-mile tail flowing away from the sun. Luminous gas and dust torn from the glowing head form the transparent streamer. GEOGRAPHIC photographer Victor R. Boswell, Jr., made this remarkable Ektachrome near Beltsville, Maryland, on October 30, 1965.

© NATIONAL GEOGRAPHIC SOCIETY



Diving in from space, Ikeya-Seki sweeps past earth, wheels around the sun, and streaks away. At its closest approach to the sun, the comet misses by a mere 300,000 miles. Solar wind—a steady blast of electrified particles—blows the tail ahead of Ikeya-Seki as it recedes. Dates in blue show when the comet passes below the planets' orbits.



roof, jumped on his bicycle, and rode three miles through the still-sleeping streets. At the post office he sent an urgent telegram to the Tokyo Astronomical Observatory, reading simply: "4 A.M. 19TH. COMET? MAGNITUDE SEVEN. 0845 SOUTH 0837. IKEYA."

Translated, the cryptic message meant: "I think I discovered a comet at 4 o'clock this morning, September 19 [it was still September 18 in the Western Hemisphere]. Its brightness is 7th magnitude [just one step below visibility to the naked eye]. Its location in astronomical coordinates is right ascension 8 hours 45 minutes and declination minus 8 degrees 37 minutes. Ikeya."

Unmistakably it was a comet, quickly confirmed by the international clearinghouse for such matters at the Smithsonian Astrophysical Observatory in Cambridge, Massachusetts. These scientists enrolled it as Comet 1965f, signifying the sixth comet spotted that year, and named it for Ikeya and Seki. For each man, it was the third comet to bear his name.

Tail Grows as Comet Nears Sun

As September gave way to October, Ikeya-Seki, suddenly world-famous, hurtled on toward the sun. The glowing ball expanded hugely. Visible to the naked eye now, it trailed an ever-lengthening tail so transparent the stars shone through it undimmed (page 258).

In its flight, faster and faster as it neared the gravitational heart of the solar system, Ikeya-Seki at first seemed destined to plunge into the sun. But its path through space saved it; on October 21, barely 300,000 miles out, it skidded around the sun in a hard crack-the-whip turn, changing its direction by 130 degrees within six hours.

At perihelion, point of closest approach to the sun, the comet reached a speed of a million miles an hour. Under the intense gravitational force of the sun, its nucleus split into three parts. Then the broken comet swung away, traveling now against the sun's pull. It embarked on the outward leg of an enormous cigar-shaped orbit that will take it far beyond the outermost planet.

By February, 1966, still visible to a telescope, this comet will have lost 95 percent of its speed. In several hundred years it will have slowed down so much that it can no longer resist the sun's pull. Once more its parts will plunge sunward, to be rediscovered perhaps a millennium from now.

Comets are so common that the orbits of some 870 have been computed, yet so rare that only about eight a year are spotted, half

KODACHROME (LEFT) BY THOMAS W. DECKS, NATIONAL GEOGRAPHIC STAFF, AND EKTACHROME BY EIJI MIYAZAWA © N.G.S.

"I wanted to see the sky, so I built a telescope to look," says 22-year-old Kaoru Ikeya of Benten Jima, Japan, who began observing the stars at 13. Ikeya, a piano-factory worker, discovered Ikeya-Seki last September 19 (Japan time).

"Sky hunter," as Tsutomu Seki, 34, calls himself, teaches guitar at his home in Kōchi, Japan. Like Ikeya an amateur astronomer since youth, he spied the comet the same night. Each found two earlier comets, credited to them by name.

of them newly known. On infrequent occasions—fewer than ten times a century—a truly brilliant one blazes in the daytime sky to fill the superstitious with awe and terror.

Halley's comet, most celebrated of all, has returned to frighten the world approximately every three-quarters of a century for at least 2,200 years. The Chinese recorded it in 240 B.C., and history has noted every return since then. Its next coming is expected by astronomers in 1986.

Halley's visits coincided with the Jewish revolt of A.D. 66 and the last great battle of Attila the Hun against the Romans in 451. Halley's glared in English skies in 1066, just before William the Conqueror defeated King Harold and his Saxons at Hastings.

In 1910, Haitians freely bought "comet pills" to protect themselves from Halley's poisonous gases. They need not have feared. Scientists say the earth has passed through hundreds of comet tails without mishap.

Actually, Ikeya-Seki's tail and coma (the luminous head) are about as near to nothing as they can get and still be something. They probably contain less than an ounce of matter to the cubic mile.

The only part of a comet with any real substance is the nucleus, measuring from one to perhaps fifty miles in diameter. According to the widely accepted theory developed by Dr. Fred L. Whipple, Director of the Smithsonian Astrophysical Observatory, this nucleus is a "dirty snowball" of frozen water and gases, such as methane and ammonia. It is mixed, like a raisin pudding, with bits of porous, fragile, earthy material.

When Ikeya-Seki swept near enough to the sun to become heated, the outer layers of the nucleus vaporized. The intensely luminous gas and dust thus released formed the comet's glowing head, which expanded till it was larger than a planet, and the tail, which reached the enormous length of 75 million miles. It is the tail that gives comets their name: *komētēs*, in Greek, means "long-haired."

Where did Ikeya-Seki come from? Dr. Whipple suggests that billions of comets may have condensed out of gas and dust at the same time and in much the same way as the sun and planets.* Those that survived collision with the planets were thrown far out to the fringes of the solar system, where they circle as outriders of the sun.

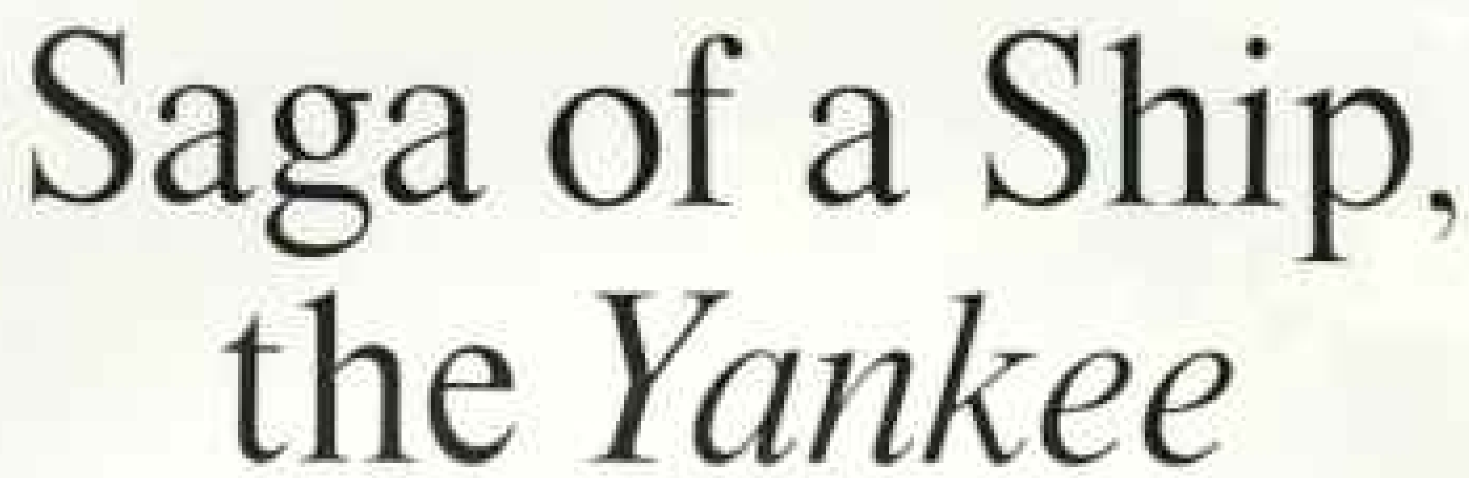
Occasionally a passing star disturbs their motions and throws some of the comets toward the sun. These eccentric wanderers, like Ikeya-Seki, come unheralded and mysterious, to remain visible for a few weeks or months, then vanish again into darkness.

Every two years or so, a comet can be seen with the unaided eye. But even before the dim patch of light becomes visible, some lonely stargazer such as Kaoru Ikeya or Tsutomu Seki will find it with a telescope. And he will feel the surge of joy that Keats described when he wrote:

Then felt I like some watcher of the skies
When a new planet swims into his ken....

THE END

*See "The Sun," by Herbert Friedman, NATIONAL GEOGRAPHIC, November, 1965.



Saga of a Ship, the *Yankee*

By LUIS MARDEN

National Geographic Senior Staff

ON FEBRUARY 11 a lovely lady—the world-wandering brigantine *Yankee*—stars in the National Geographic Society's third nationwide television program in color on the Columbia Broadcasting System network. Here a veteran member of the GEOGRAPHIC's far-ranging staff tells of *Yankee's* 54 years of life—from pre-World War I duty in the North Sea to a coral reef off Rarotonga.—THE EDITOR

I WELL REMEMBER the first time I saw her. Like a vision from the heroic days of sail, she rose up from the dark-blue shield of the Pacific. Topgallant, topsail, stunsails, bellying forecourse, and the gleaming triangles of headsails, staysails, and the main grew slowly upward from the horizon until the whole vessel lay on the hard edge of the sea. From the top of solitary Pitcairn Island, almost in the exact center of the South Pacific, I looked down on an immense circle of white-flecked cobalt and watched the brigantine *Yankee* sail over the rim of the earth.

At dawn that morning the long-drawn-out cry of "Sail ho-o-o!" had sounded from the lookout high above Bounty Bay, and five strokes of the island bell, the signal for a ship sighting, had clanged out again and again.

Pitcairners were about to welcome an old friend: Capt. Irving Johnson, the crack New England shipmaster who once every three years took an amateur crew round the world under sail. For nearly 25 years Captain Johnson had been a good friend to the people of Pitcairn, bringing them mail-order parcels, carrying them more than a hundred miles to another island to cut wood, and even on one occasion dynamiting the rocky bottom of Bounty Bay to make a safer entrance for the longboats that traded with passing ships.

Captain Johnson had promised me passage to Tahiti, and I was in the first longboat that pulled out through the white breakers to the brigantine. As we climbed out of the trough, I saw suddenly revealed the 96-foot-long vessel straining at her anchor chain as she rose and fell with the scend of the sea.

My eye ran down the graceful curve of her clipper bow, then aloft to the crossed yards glistening in the sun, and I felt as if I had gone back in time to the day in 1790 when the forebears of the Pitcairners, the mutineers in the *Bounty*, had brought their little ship here to her last resting place.

Free as the wind, the brigantine *Yankee* slices through a long Pacific swell as brisk trades fill her outstretched wings. *Yankee* cruised four times around the world under Capt. and Mrs. Irving Johnson; youthful crews shared labor and expenses. Topgallant carries the Johnson family emblem.

KODACHROME BY WILLIAM L. NEWTON III © NATIONAL GEOGRAPHIC SOCIETY

PRODUCED BY
NATIONAL GEOGRAPHIC SOCIETY ©
GEOGRAPHIC ART DIVISION
DRAWN BY JOHN W. LOTHERS, COMPILED BY JOHN F. WOOD

North Sea
Schleswig
Emden
Brixham
Calshot
EUROPE
ASIA
AFRICA
Bangkok
Angkor Wat
Davao
EQUATOR
Singapore
Borneo
Zanzibar
Djakarta
New Guinea
Ascension
Christmas Island
Cocos or Keeling Islands
Bali
St. Helena
Rodrigues
Indian Ocean
AUSTRALIA
Durban
Cape Town

Brigantine *Yankee*

SUPER ANSCOCHROME BY THOMAS J. ABERCROMBIE © N.G.S.

Shooting the sun, Capt. Irving Johnson navigates the brigantine *Yankee*. He gave the same proud name to her predecessor, a schooner, and to her successor, a ketch.

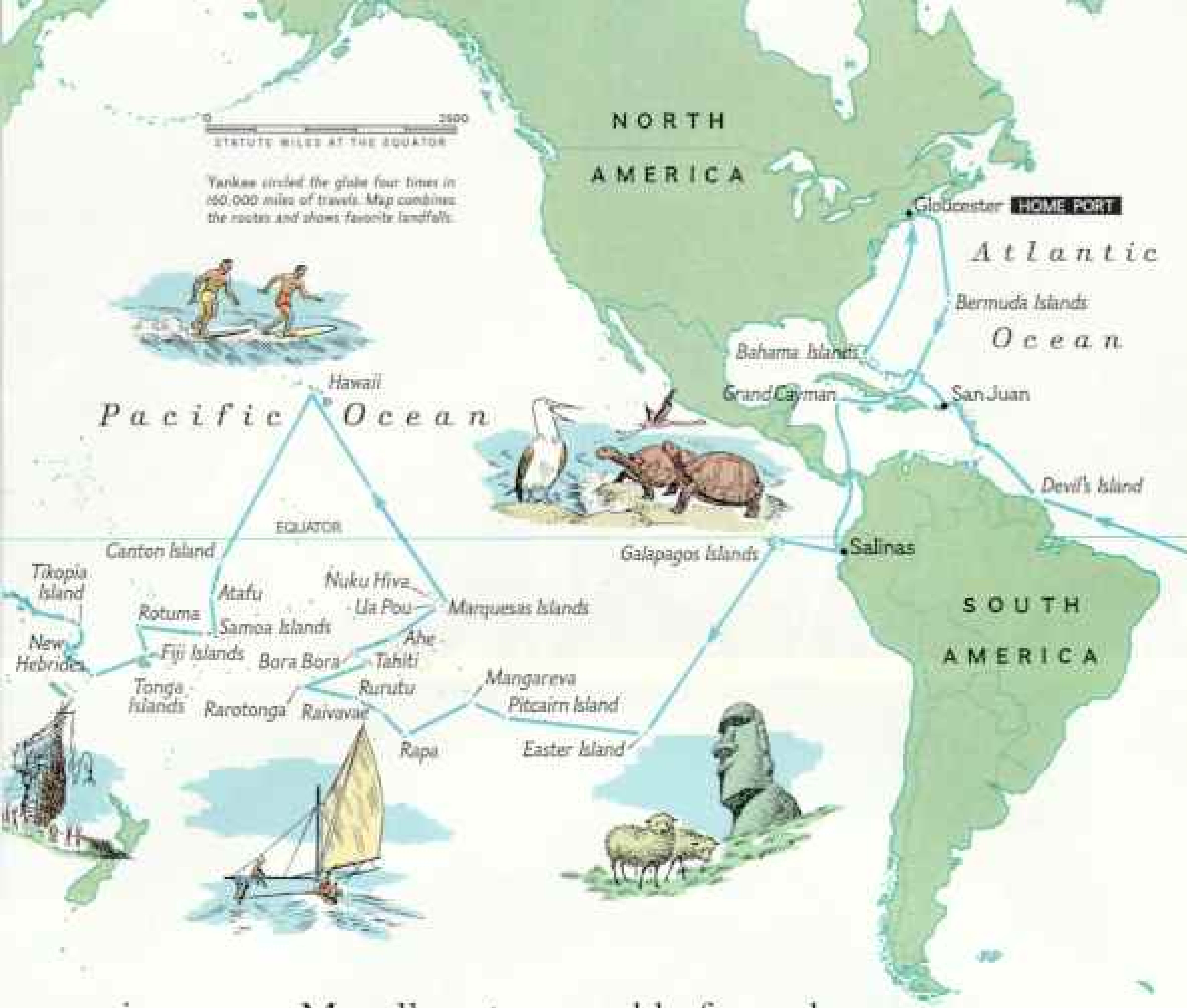
With the islanders I went aft to shake the hand of Irving Johnson, a broad-shouldered, powerfully built man with piercing blue eyes and an aquiline nose shaped like a well-cut jib, and of his wife Electa, "Exy" to *Yankee* crews and friends in many ports of the world.*

Before the second World War, Irving Johnson had sailed his first *Yankee*, a schooner, three times around the world, each time with an expense-sharing amateur crew.

All during the war Johnson, then a lieutenant commander in the U. S. Navy, took the survey vessel *Sumner* through the waters he knew so well, charting and sounding. His intimate knowledge of the reefs, currents, and coasts of the Pacific was invaluable.

After the war the Johnsons received proof of this from a friend in the Tonga Islands to whom they had sent a copy of their book

*See, in NATIONAL GEOGRAPHIC: "New Guinea to Bali in *Yankee*," December, 1959; "Lost World of the Galapagos," May, 1959; "South Seas' Incredible Land Divers," January, 1955; "*Yankee* Roams the Orient," March, 1951; "The *Yankee*'s Wander-world," January, 1949; and "Westward Bound in the *Yankee*," January, 1942—all by Irving and Electa Johnson.



carries young Magellans to a world of wonders

describing a voyage aboard the first *Yankee*.

"American ships touched at our island frequently during the war," said the man. "One day one of your admirals called on us, and seeing your book, asked if he might borrow it. I couldn't refuse him, but I said to my wife, 'That's the last we'll see of that book.'

"However, about five weeks later the admiral—his name was Halsey—unexpectedly strode into the house and tossed down the book, saying, 'Thanks very much for the book. It won me a battle.' I asked how, and he said, 'When Irving Johnson said he could take a big ship through a certain channel, I believed him. Evidently the Japanese didn't, and I got round behind them. Thanks very much.'"

At war's end, Johnson's first thought was to obtain another sailing vessel, so he could return to the life he loved. Sterling Hayden, later a well-known actor, had sailed with Johnson on his second world cruise, and at Schleswig, Germany, Hayden found the right ship for his former skipper. She was claimed as a war prize by the British and taken to Calshot in southern England.

Master mariner Alan Villiers saw her there, with her stumpy steel masts and decks littered with loose gear, and later he told Irving:

"She looked like a treasure the dog brought in, not knowing its value."

Like the previous *Yankee*, this one began life as a German North Sea pilot-training ship, the schooner-rigged *Duhnen*. Built at Emden in 1912, she was the last of the German pilot-training boats to operate under sail. She served as a school ship for the Hitler Youth, and in World War II she became a radar target vessel for the Luftwaffe.

Built of steel with high bulwarks and no portholes, *Duhnen* was designed to stay dry in boisterous North Sea waters. Her only deck openings ran down the 'midships line, so that she would not fill in case of a knockdown. She was a safe ship.

TELEVISION ANNOUNCEMENT
on the attached pages may be torn out,
folded, and kept as a reminder
for members and friends to watch
***"The Voyage of the Brigantine* Yankee."**

Friday, February 11, 1966, *Yankee* sails the Seven Seas—to exotic adventure

© NATIONAL GEOGRAPHIC SOCIETY

CIRCLE FEBRUARY 11 on your calendar and stand by to board a blue-water sailing ship. Destination: the Seven Seas. On that Friday evening, switch on your television set and ease into your armchair. High adventure awaits in visits to faraway ports.

You'll enjoy "The Voyage of the Brigantine *Yankee*," third in a series of hour-long TV true-life adventures produced by the National Geographic Society in association with David L. Wolper. The Columbia Broadcasting System televises this unique color film (see station listings on back page) under sponsorship of Encyclopaedia Britannica, Inc., and the Aetna Life and Casualty Insurance Companies.

Orson Welles narrates the thrilling around-the-world voyage of Capt. Irving Johnson (at wheel, above), his wife Electa, and 22 young men and women. You'll watch them put in to Pitcairn Island (above, left) and meet descendants of the *Bounty* mutineers. You'll witness New Hebrides islanders proving their manhood by hurtling headlong 73 feet from a tower. You'll mingle with Stone Age aborigines in a primeval New Guinea jungle. And you'll sail in the graceful 96-foot *Yankee* as her youthful crew learns the many ways of a ship and the sea. Your Society proudly presents *Yankee*'s memorable voyage.

Welcome aboard!

KODACHROMES BY ALAN PIERCE (TOP), GILBERT M. GROSVENOR (ABOVE), AND LUIS MARDEN © N.G.S.

WATCH "THE VOYAGE OF THE BRIGANTINE *YANKEE*"
ON MOST OF THESE CBS TELEVISION STATIONS

(A few stations may schedule the program at a later date. Check your newspaper for day and time.)

ALABAMA
Birmingham WAPI-TV (13)
Dothan WTVY (4)
Huntsville WHNT-TV (19)
Mobile WKRG-TV (5)
Montgomery WCOV-TV (20)
ARIZONA
Phoenix KOOL-TV (10)
Tucson KOLD-TV (13)
Yuma KBLU-TV (13)
ARKANSAS
Fort Smith KFSA-TV (5)
Little Rock KTHV (11)
CALIFORNIA
Bakersfield KBAK-TV (29)
Chico KHSL-TV (12)
Eureka KIEM-TV (3)
Fresno KFRE-TV (30)
Los Angeles KNXT (2)
Sacramento KXTV (10)
Salinas-
Monterey KSBW-TV (8)
San Diego KFMB-TV (8)
San Francisco KPIX (5)
COLORADO
Colorado Springs-
Pueblo KKTV (11)
Denver KLZ-TV (7)
Grand Junction KREX-TV (5)
CONNECTICUT
Hartford WTIC-TV (3)
DELAWARE*
DIST. OF COLUMBIA
Washington WTOP-TV (9)
FLORIDA
Fort Myers WINK-TV (11)
Jacksonville WJXT (4)
Miami WTVJ (4)
Orlando WDBO-TV (6)
Tallahassee WCTV (6)
Tampa-St. Petersburg WTVT (13)
GEORGIA
Atlanta WAGA-TV (5)
Augusta WRDW-TV (12)
Columbus WRBL-TV (3)
Macon WMAZ-TV (13)
Savannah WTOC-TV (11)
Thomasville WCTV (6)
IDAHO
Boise KBOI-TV (2)
Idaho Falls KID-TV (3)
Lewiston KLEW-TV (3)
Twin Falls KMVT (11)
ILLINOIS
Champaign WCIA (3)
Chicago WBBM-TV (2)
Peoria WMBD-TV (31)
Quincy KHQA-TV (7)
Rockford WCEE-TV (23)
Rock Island WHBF-TV (4)
INDIANA
Evansville WEHT (50)
Fort Wayne WANE-TV (15)
Indianapolis WISH-TV (8)
Lafayette WFAM-TV (18)
South Bend WSBT-TV (22)
Terre Haute WTHI-TV (10)
IOWA
Cedar Rapids-
Waterloo WMT-TV (2)
Des Moines KRNT-TV (8)
Mason City KGLO-TV (3)
Ottumwa KTVO (3)
Sioux City KVTV (9)
KANSAS
Ensign KTVC (6)
Goodland KLOE-TV (10)
Hays KAYS-TV (7)
Hutchinson-
Wichita KTVH (12)
Topeka WIBW-TV (13)
KENTUCKY
Lexington WLEX-TV (18)
Louisville WHAS-TV (11)
LOUISIANA
Baton Rouge WAFB-TV (9)
Lafayette KLFY-TV (10)
Monroe-West
Monroe KNOE-TV (8)
New Orleans WWL-TV (4)
Shreveport KSLA-TV (12)
MAINE
Bangor WABI-TV (5)
Portland WGAN-TV (13)
Presque Isle WAGM-TV (8)
MARYLAND
Baltimore WMAR-TV (2)
Salisbury WBOC-TV (16)
MASSACHUSETTS
Boston WHDH-TV (5)
MICHIGAN
Cadillac-
Traverse City WWTV (9)
Detroit WJBK-TV (2)
Kalamazoo WKZO-TV (3)
Lansing WJIM-TV (6)
Marquette WLUC-TV (6)
Saginaw-Bay
City WKNX-TV (57)
MINNESOTA
Duluth KDAL-TV (3)
Mankato KEYC-TV (12)
Minneapolis-
St. Paul WCCO-TV (4)
MISSISSIPPI
Columbus WCBI-TV (4)
Greenwood WABG-TV (6)
Jackson WJTV (12)
Meridian WTOK-TV (11)
MISSOURI
Cape Girardeau KFVS-TV (12)
Hannibal KHQA-TV (7)
Jefferson City KRCG (13)
Joplin KODE-TV (12)
Kansas City KCMO-TV (5)
Kirksville KTVO (3)
St. Joseph KFEQ-TV (2)
St. Louis KMOX-TV (4)
Springfield KTTS-TV (10)
MONTANA
Billings KOOK-TV (2)
Butte KXLF-TV (4)
Glendive KXGN-TV (5)
Great Falls KFBB-TV (5)
Helena KBLL-TV (12)
Missoula KGVO-TV (13)
NEBRASKA
Lincoln KOLN-TV (10)
Omaha WOW-TV (6)
NEVADA
Las Vegas KLAS-TV (8)
Reno KOLO-TV (8)
NEW HAMPSHIRE*
NEW JERSEY*
NEW MEXICO
Albuquerque KGGM-TV (13)
Carlsbad KAVE-TV (6)
Roswell KSWS-TV (8)
NEW YORK
Albany WTEN (10)
Binghamton WNBF-TV (12)
Buffalo WBEN-TV (4)
Carthage-
Watertown WWNY-TV (7)
New York WCBS-TV (2)
Rochester WHEC-TV (10)
Syracuse WHEN-TV (5)
NORTH CAROLINA
Charlotte WBTV (3)
Durham-Raleigh WTVD (11)
Greensboro WFMY-TV (2)
Greenville WNCT-TV (9)
NORTH DAKOTA
Bismarck KXMB-TV (2)
Dickinson KDIX-TV (2)
Fargo-
Valley City KXJB-TV (4)
Minot KXMC-TV (13)
OHIO
Cincinnati WCPO-TV (9)
Cleveland WJW-TV (8)
Columbus WBNS-TV (10)
Dayton WHIO-TV (7)
Steubenville WSTV-TV (9)
Toledo WTOL-TV (11)
Youngstown WKBN-TV (27)
OKLAHOMA
Oklahoma City KWTV (9)
Tulsa KOTV (6)
OREGON
Klamath Falls KOTI (2)
Medford KTVM (5)
Portland KOIN-TV (6)
PENNSYLVANIA
Altoona WFBG-TV (10)
Erie WSEE (35)
Harrisburg WHP-TV (21)
Johnstown WARD-TV (56)
Lancaster-
Lebanon WLYH-TV (15)
Philadelphia WCAU-TV (10)
Pittsburgh KDKA-TV (2)
Scranton-
Wilkes-Barre WDAU-TV (22)
York WSBA-TV (43)
RHODE ISLAND
Providence WPRO-TV (12)
SOUTH CAROLINA
Anderson WAIM-TV (40)
Charleston WCSC-TV (5)
Columbia WNOK-TV (19)
Florence WBTW (13)
Spartanburg WSPA-TV (7)
SOUTH DAKOTA
Rapid City KOTA-TV (3)
Sioux Falls KELO-TV (11)
TENNESSEE
Chattanooga WDEF-TV (12)
Jackson WDXI-TV (7)
Johnson City-Bristol-
Kingsport WJHL-TV (11)
Knoxville WBIR-TV (10)
Memphis WREC-TV (3)
Nashville WLAC-TV (5)
TEXAS
Amarillo KFDA-TV (10)
Austin KTBC-TV (7)
Beaumont KFDM-TV (6)
Bryan KBTX-TV (3)
Corpus Christi KZTV (10)
Dallas-Ft. Worth KRLD-TV (4)
El Paso KROD-TV (4)
Harlingen KGBT-TV (4)
Houston KHOU-TV (11)
Laredo KGNS-TV (8)
Lubbock KLBK-TV (13)
Lufkin KTRE-TV (9)
Odessa KOSA-TV (7)
San Angelo KCTV (8)
San Antonio KENS-TV (5)
Sweetwater-
Abilene KPAR-TV (12)
Waco KWTX-TV (10)
Wichita Falls KAUZ-TV (6)
UTAH
Salt Lake City KSL-TV (5)
VERMONT
Burlington WCAX-TV (3)
VIRGINIA
Bristol WJHL-TV (11)
Harrisonburg WSVA-TV (3)
Norfolk WTAR-TV (3)
Richmond WTVR (6)
Roanoke WDBJ-TV (7)
WASHINGTON
Bellingham KVOS-TV (12)
Pasco KEPR-TV (19)
Seattle KIRO-TV (7)
Spokane KXLY-TV (4)
Yakima KIMA-TV (29)
WEST VIRGINIA
Charleston WCHS-TV (8)
Clarksburg WBOY-TV (12)
Oak Hill WOAY-TV (4)
Wheeling WSTV-TV (9)
WISCONSIN
Green Bay WBAY-TV (2)
La Crosse WKBT (8)
Madison WISC-TV (3)
Milwaukee WISN-TV (12)
Superior KDAL-TV (3)
Wausau WSAU-TV (7)
WYOMING
Casper KTWO-TV (2)
Cheyenne KFBC-TV (5)
Riverton KWRB-TV (10)
*See neighboring states

NATIONAL GEOGRAPHIC
Voyage of the Yankee

SEE IT ON TV
Friday, February 11

Like floating jackstraws, slender Tikopian outriggers cluster about *Yankee*'s awninged afterdeck. A Solomon Islands chief and his aide climb aboard seeking gifts. Others bring pandanus mats to trade for tobacco.

Robed in radiant saffron, Buddhist priests stroll through the massive ruins of Angkor Wat. Khmers, ancestors of today's Cambodians, built the temple in the 12th century; its lower gallery extends for half a mile.

Volcanic spears pierce the sky above Ua Pou in the Marquesas. Only these giant lava plugs remain of an ancient volcano that eroded away. Crew members keep watch as *Yankee* noses toward shore.

Skipper's wife, Mrs. Electa Johnson, embroiders in the captain's cabin; her needlework map depicts the vessel's adventures.

It took three months of negotiation to purchase the ship, and when finally she was his, Captain Johnson sent her round for refitting to the yard of J. W. and A. Upham at Brixham.

There Devon shipwrights, whose ancestors had sailed with Drake against the Spanish Armada, went lovingly to work on *Yankee*. Topmasts and yards were dubbed out of North American pitch pine by old-timers with adzes, a tool, says Exy Johnson, which "no one under 60 seems qualified to handle."

Mrs. Johnson loved listening to the yardmen talk among themselves of "t' *Yank*." She heard one old boy say to another, "Her'll take a heap o' drivin'." "Aye," replied his mate, "her'll go. Ain't nothin' to stop she."

Years of sailing had taught Irving Johnson what was needed in a ship to circumnavigate the world with an amateur crew in comfort and safety. *Duhnen*'s schooner rig had been best for coastwise navigation, variable winds, and handling with a small crew. But as *Yankee* she would sail for long periods in the steady, unvarying trades. For running before a stiff breeze, square sails are more efficient as well as safer, as there is no danger of an accidental jibe. On the other hand, for beating to windward, fore-and-aft sails are superior, as they permit the ship to sail closer to the wind. To have the best of both worlds, Johnson rerigged her as a brigantine.

Here again Johnson's original thinking baffled some observers, though not the experts. When I showed a photograph of *Yankee* under full sail to Howard Chapelle, the Smithsonian Institution's authority on sailing ships, he said, "She's a brigantine, all right, but. . . ." It is this "but" that gives pause to others who know only conventional rig. For example, her foremast should have one more yard, which

Memento of a mutiny: *Bounty*'s anchor, found by *Yankee* crewmen, emerges from 50 feet of water off Pitcairn Island. Earlier, author Luis Marden had discovered *Bounty*'s lime-encrusted remains close inshore.

KODACHROMES BY THOMAS J. ABERCROMBIE (UPPER) AND LUIS MARDEN © N.G.S.

Irving Johnson omitted to simplify sail handling. Her topsail is smaller than her topgallant, the next sail above, the reverse of the usual practice, and so on. Nevertheless, "She's a brigantine, all right."

In all, *Yankee* could set 11 sails, totaling 7,775 square feet of canvas. Often we sailed at 10 knots. When the brigantine was heeled down in a breeze, I sometimes braced my arms against the lee bulwarks and looked down at the sea rushing and hissing by. It seemed we were going fast enough, I can tell you.

During the passage from Pitcairn to Mangareva, on a damp night of distant electrical storms, I saw a phenomenon I had only read about. As the ship drove through the moonless and starless night, there blossomed at the tip of each stunsail boom a plume of pale-blue lambent light. This discharge of atmospheric electricity is called St. Elmo's fire, after the patron saint of sailors.

I was aboard *Yankee* some five weeks in all. At the island of Nuku Hiva, in the Marquesas, we found an old Scot standing on the foreshore with tears streaming down his cheeks.

"It's the first time since I jumped ship forty years ago that a vessel with square sails has entered this harbor on wind alone," he said.

In *Yankee* I approached Tahiti as God intended that fair island to be approached—by sea.* I went ashore, but *Yankee* continued around the world, returning home to Gloucester, Massachusetts, after 40,000 miles.

To me, the achievement of the Johnsons in picking congenial and able crews was no less impressive than the consummate seamanship with which they sailed seven times around the world without a single serious mishap. Picking a crew of high-spirited boys and girls was almost as delicate a matter as selecting a crew for a submarine. Yet not only did Captain Johnson's crew invariably end the voyages as friends; shipboard romances blossomed into as many marriages as cruises.

At the end of her fourth voyage—the Johnsons' seventh world cruise—the *Yankee* was sold. Irving and Exy Johnson had always wanted to sail across Europe through its rivers and canals. Obviously *Yankee* was too big for this; so, reluctantly, the Johnsons parted with her, to build a new *Yankee*, a 50-foot ketch, in Holland.†

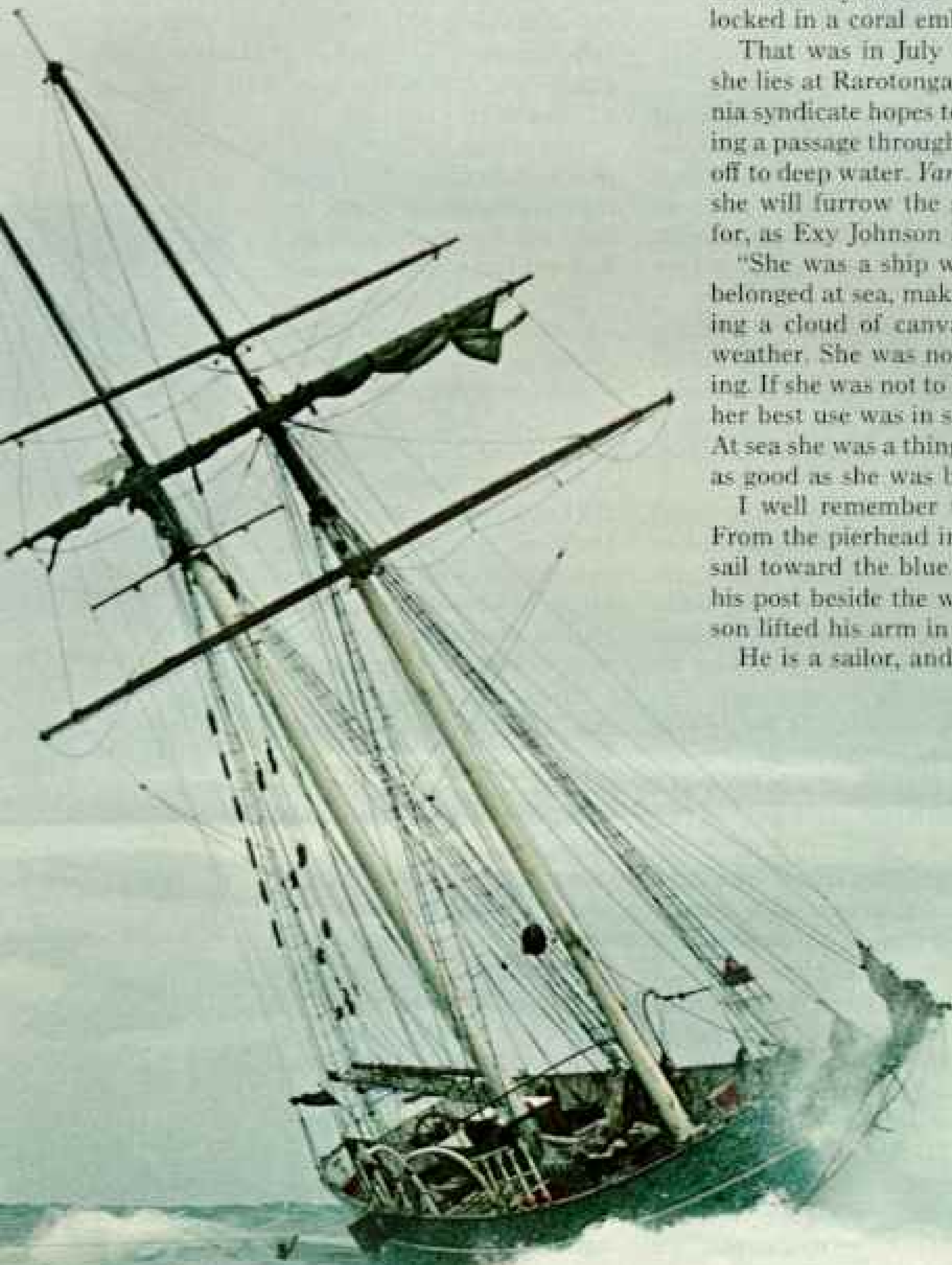
The brigantine *Yankee* then changed hands three times. Under the third owners, she sailed once around the world, then set out on another world voyage—an ill-starred one.

*Luis Marden's many GEOGRAPHIC articles include "Huzza for Otaheite!" April, 1962; "Tahiti, 'Finest Island in the World,'" July, 1962; and "I Found the Bones of the *Bounty*" (Pitcairn Island), December, 1957.

†In NATIONAL GEOGRAPHIC the Johnsons wrote "Inside Europe Aboard *Yankee*," August, 1964; and "*Yankee* Cruises the Storied Nile," May, 1965.

MAJESTIC EVEN IN DISTRESS, Yankee *lies at the mercy of pounding surf at Barotonga. Braving the sea, one member of a boarding party works his way to the ship while companions pull taut a lifeline. On a world cruise under new owners,* Yankee *broke adrift from her anchors off this South Sea isle and drove helplessly on to the reef.*

EKTACHROME BY FRANK J. DUNN © NATIONAL GEOGRAPHIC SOCIETY



Yankee was anchored off the reef at Rarotonga when a gale struck. Unfortunately her batteries were dead, and her auxiliary engines would not start. First the chain of one anchor parted, then a fluke sheared off the other, and *Yankee* drove stern first on to the reef. Seas smashing broadside forced her higher until she lay 60 feet from deep water, tightly locked in a coral embrace.

That was in July of 1964. At this writing she lies at Rarotonga still, although a California syndicate hopes to refloat her by dynamiting a passage through the reef and pulling her off to deep water. *Yankee's* many friends hope she will furrow the seas of the world again, for, as Exy Johnson has written:

"She was a ship worth all our efforts. She belonged at sea, making long passages, carrying a cloud of canvas, meeting any kind of weather. She was not built for weekend sailing. If she was not to lie neglected at the dock, her best use was in sailing around the world. At sea she was a thing of beauty. And she was as good as she was beautiful."

I well remember the last time I saw her. From the pierhead in Papeete I watched her sail toward the blue peaks of Moorea. From his post beside the wheel, Capt. Irving Johnson lifted his arm in farewell.

He is a sailor, and she was a ship

THE END

What was a woman doing there?

A RAINBOW decorated the western sky that early morning of November 4—the second day of Operation Black Ferret. Action began at 0745 when American Marines moved toward a cane field surrounding a village held by the Viet Cong near Chu Lai, South Viet Nam.

A foot brushed a concealed nylon fishing line, a booby trap roared, and shrapnel shredded the damp foliage, felling six Marines and a lady from Milwaukee, Georgette Louise ("Dickey") Chapelle. She died moments later, half a world from home.

What, you might ask, was she doing there? Dickey, a veteran war correspondent, had asked that same question in her autobiography, *What's a Woman Doing Here?* Her mother had taught her that "violence in any form is unthinkable." But she came to believe we could have peace only by being strong.

She became a correspondent in World War II to be near her husband, Navy photographer Anthony Chapelle. Perhaps it was the shock of photographing the death and horror of Iwo Jima and Okinawa that led her to dedicate her life to "telling the folks back home" how cruel war can be. Almost a quarter of a century later, her byline now famous, this remarkable woman is mourned in a dozen languages.

Because I knew and loved Dickey from working beside her in Cuba, Viet Nam, northeast India, and Ladakh, word of her death shocked and sorrowed me—but it did not surprise. Dickey and danger were never far apart.

The evening before her death, she dug her own foxhole and huddled under a poncho as a light rain fell through the glare of aerial flares. Though I wasn't there, I'm sure she opened her breakfast of cold C-rations with the Swiss Army knife she always carried.

Staff Sergeant Albert P. Miville told me later what had happened next.

"She asked if she could go with us. I said, 'Sure, Dickey, fall in behind me.' Five seconds later she was hit. I was only a step away. Some brush saved me. I yelled for a corpsman. He looked at her and told me, 'Sergeant, there is nothing I can do.' "

The sounds of the violence she had been raised to abhor became the siren song that lured Dickey to every scene of political mayhem since World War II: Korea, Cuba, Quemoy, India, Algeria, Lebanon, Laos, Viet Nam, and the Dominican Republic. While helping smuggle penicillin to Hungarian Freedom Fighters, Dickey was captured and spent six weeks in solitary confinement, with terrifying interrogations, before the United States consul was able to free her. "Thank God I'm an American," she said.

One recent winter Dickey lived in Florida near Cuban exiles. She stored their nitroglycerin in her icebox. Her brother, Professor Robert Meyer, didn't approve.

"But I sent her two Du Pont handbooks on high explosives," he told me. "I thought if she was going to be fooling with the stuff, she should know what she was doing."

Personal integrity forced Dickey to write only stories she had "eyeballed"—to use her phrase. Official government handouts, complained Dickey, "have all the authenticity of patent-medicine ads."

From 1935 when, at age 16, she entered Massachusetts Institute of Technology on a scholarship, Dickey became part of a man's world. She married at 22 and then became a pilot, a parachutist, and a combat photographer. Between wars, Dickey and her husband covered the work of a dozen relief agencies over the world. They reported in NATIONAL GEOGRAPHIC on locust plagues in Iraq (April, 1953) and village life in India (April, 1956).

To her death, Dickey and Tony remained friends, though their marriage was dissolved in 1956. A lone red rose at her gravesite in Milwaukee carried the one word "Tony." Nearby was a bouquet, also of roses, from the Hungarian Freedom Fighters.

Never did Dickey tolerate favors in the field because of her sex. She hid her figure in loose khakis and bandoliers of cameras and film cans. Her long blonde hair, rolled into a bun, nestled in a floppy Australian bush hat. Makeup was not part of her field kit.

In 1962, after five weeks with the Indian

Army on the Chinese front, Dickey and I were flown directly to Calcutta, still in field gear. She excused herself at the airport, but returned almost immediately, laughing as she told me, in her gravelly, drill-sergeant voice, how successful her disguise had been: "I just got thrown out of the ladies' room."

In the field her only jewelry was the military insignia presented to her by fighting units. She fell wearing the globe and anchor of the Marine Corps Commandant, Gen. Wallace M. Greene, Jr., who took the insignia from his own uniform and gave it to Dickey before her departure for Viet Nam last fall.

To keep in condition and not be a burden on the men she photographed and wrote about, Dickey ran two miles a day when in New York between assignments.

In a lecture to Midwestern high-school students, she accused them of being "baby-soft teen-agers whose idea of exercise is to switch channels on the idiot box. . . ." Two boys challenged her to a 25-mile hike the next day.

"You know," she reported, "those kids were delighted when we finished. I knew I could do it, but they weren't sure they could."

Of her many honors, I suppose Dickey most treasured the Overseas Press Club's award for "reporting requiring exceptional courage and enterprise." When she wasn't with her adopted military families, she worked for the club, serving on its Board of Governors.

Some who knew Dickey were ill at ease in the presence of her nervously loud voice and exuberant manner. But these characteristics stemmed from an enviable enthusiasm for life, and a dynamic mind and heart. Dickey found an identity and purpose in life we all envied. It freed her of inhibitions and fears.

She knew the odds against a moth that flies too close to the flame, but for years she beat those odds. She lived the hundreds of lives of the men she wrote about and photographed. Life was precious to her; her own was taken too soon. But she had used it well.

As a free lance writer-photographer, she had gone often to Viet Nam. Now, in the pages that follow, we present the last article for the GEOGRAPHIC by the courageous lady who always went where the action was.

W. E. GARRETT
Assistant Illustrations Editor

KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

War reporter Dickey Chapelle, born Georgette Louise Meyer in Milwaukee, Wisconsin, March 14, 1918, became the first American woman correspondent to die in action when she fell in South Viet Nam on November 4, 1965. Dickey was not on assignment for the GEOGRAPHIC when killed, but had been a contributor since 1953, and the article that follows was awaiting publication. Here, in the field in Viet Nam, she wears insignia earned by jumping into battle with U. S. and Vietnamese paratroopers.

WATER WAR IN VIET NAM

Article and photographs by DICKEY CHAPELLE

"AS SOON AS THE LIGHT GOES, so will our patrols." In the tropical twilight, the words sounded softly at my ear.

Lt. Harold Dale Meyerkord, United States Navy, was too professional a fighting man to dramatize his statement. But it was enough to disquiet me, to remind me that today we had already buried a comrade, exchanged fire with Viet Cong, and twice set out fruitless ambushes.

"We" meant River Assault Group 23, one of the Vietnamese Navy's daring gunboat forces. Each group, known for its initials as a RAG, operates a miniature fleet of shallow-draft patrol craft.

FLAMING INFERNO, *ignited by a South Vietnamese patrol, flushes Viet Cong from a hut. "Night fighting is sudden, vicious, deadly," wrote combat correspondent Chapelle. During this action she crouched behind barbed wire on the bank of a canal, one in a maze of Mekong Delta waterways patrolled by River Assault Groups.*

EKTACHROME © N.G.S.

Each is commanded by a Vietnamese lieutenant and advised by an American naval officer—in this case, Lieutenant Meyerkord.

The RAG forces constitute the military presence of South Viet Nam on thousands of miles of waterway spanning the vast delta region of Indochina's Mekong River (map, page 281). Together with militia on fixed posts and infantry flown into the area, the little boats are trying to keep for the free world the coveted rice bowl of Southeast Asia.

One RAG Patrols Three Provinces

The delta is as rich in people as in rice: Five million of the 15,700,000 South Vietnamese live here. I had waded its fields three years before, photographing Vietnamese paratroopers and marines in action.* Water-borne forces were also fighting here, and now I'd come back to witness their operations. One of these, the Vietnamese Navy's so-called junk fleet, patrolled the coasts of the South China Sea and the Gulf of Siam. The river gunboat groups, the RAG's, operated across the broad flood region between the two coasts.

RAG 23 was responsible for safeguarding three of the 13 delta provinces—Vinh Long, Vinh Binh, and Kien Hoa. These are crisscrossed everywhere by majestic rivers, meandering streams, straight canals. The way of travel and even the way of life here is water-borne, aboard sampans and junks. Most people rarely see or use the few highways.

On this tense twilight we were in the heart of the delta, some 20 miles south of our RAG's home base at the provincial capital of Vinh Long, and more than 75 miles southwest of Saigon. We had swept

*Dickey Chapelle's first-person account of the grim and gallant "Helicopter War in South Viet Nam" appeared in NATIONAL GEOGRAPHIC in November, 1962. Continuing to risk her life in combat, she took part in December, 1964, in the river and coast patrols she describes here. Since then American commitment to the Viet Nam struggle has increased markedly, and many more U. S. Navy and Coast Guard men are fighting side by side with Vietnamese water-borne forces against the Communists.

KODACHROMES © NATIONAL GEOGRAPHIC SOCIETY

Packaged death—a Viet Cong mine—may lurk under any water weed. Here a canal's surface erupts, but harmlessly, as South Vietnamese crewmen of River Assault Group (RAG) 23 set off a charge to detonate hidden mines. A few hours earlier, a mine destroyed a gunboat and killed two men. Seven assault groups, each with 19 boats of various types, combat the Viet Cong in thousands of miles of river and canal lacing the vast rice bowl known as the Mekong Delta.

"**In this deadly game** of hide-and-seek . . . [you] feel joy at simple survival," wrote one who did not survive—Dickey Chapelle. Another who gave his life, United States Navy Lt. Harold Dale Meyerkord, here returns VC fire with an automatic rifle from the deck of his command boat.

Ramming the canal bank, gunboats land South Vietnamese infantrymen to battle a Viet Cong detachment. Red-scarfed fighters of the Popular Force (below) embark for a foray. This barefoot, lightly armed group functions much like a volunteer fire company in the United States. Farmers and merchants by profession, its members go into action only when the enemy threatens their villages.

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

down the Mang Thu River the previous night to aid an embattled district headquarters, Cai Nhum. The Viet Cong had broken off their assault as we arrived.

But neither we nor the other Vietnamese forces here then were winning. For months Viet Cong strength had been outgrowing ours. And turmoil in Saigon was sapping the confidence of the fighting men.*

I could not think of the canal banks beside us as details on the map of the free world. Instead, like the lieutenant and the RAG sailors, I considered them suspect places from which at any time, without warning, we might be shot at. My misgivings applied particularly to the American beside me.

The Viet Cong were shifting their priority target from Vietnamese to Americans. A few days earlier I had learned just how grimly successful the drive to kill Americans had been in this province. Of 40-odd American military men in Vinh Long—naval and infantry advisers, helicopter pilots, supply and maintenance experts—the enemy had killed or wounded 18 in the field and hit one, with a grenade, in his shower. The casualty rate for this single group of Americans was running at more than 40 percent.

Viet Cong Rule by Kidnaping or Killing Anti-Communist Leaders

True, this was not the kind of big action in which countries crumble overnight. But the Viet Cong tactic of kidnaping or killing local anti-Red leaders, now openly aimed at Americans, was as deadly as any tactic in any war we had ever fought.

Perhaps that was why the surviving Americans were so determinedly cheerful; why they so often joked about themselves. For example, Lieutenant Meyerkord's radio code name always drew a chuckle. It was "Hornblower," after the spirited hero of C. S. Forester's novels.

Now, telling me about the patrols, he held his chin pugnaciously high. I tried to imitate his discipline, to mask what I, too, felt. I fixed my eyes on the low silhouette of huts and bushes marking the canal bank beyond the rail of our 60-foot command gunboat.

Despite myself, I tried to slow the setting sun, to hold back the dusk now purpling the muddy fields and so delay the patrols. But I knew better than that. Their purpose was to safeguard our gunboats from mines. Unless our little landing teams did go, there was a

*See "Saigon: Eye of the Storm," by Peter T. White, NATIONAL GEOGRAPHIC, June, 1965.

good chance that more of RAG 23 might be destroyed. Its survivors might once again fish from the turbid water more bodies like the one retrieved earlier in the day—a RAG gunner killed by a Viet Cong mine at the canal junction where we were now anchored.

The mine had been no crude gadget, but an electrically fired device big enough to shear off the heavy bow of the 56-foot launch and kill two of the crew.

A furtive villager had crept aboard our boat to report seven more mines in position in the 300 yards of canal behind us, rigged to wreck us as we returned after arranging the burial. If true, that meant there were at least seven Viet Cong hidden on the canal bank at this moment, one to detonate each mine, together with an ambushing force.

Our RAG commander, Vietnamese Navy Lt. Nguyen Van Hoa, briefed the little landing force, sending his instructions in shrill whispers over an American field radio.

Half the men, under a veteran Vietnamese officer, were to scour the east canal bank for the mines' detonating wires. The other half, under a Vietnamese ensign, were to patrol the west bank with Lieutenant Meyerkord. If either patrol force found a target too big to handle, the boats would come up to help. One comfort was the firepower of the RAG—20-mm. and 40-mm. cannon, .30- and .50-caliber machine guns, even an old 81-mm. mortar.

Isolation Favors the Viet Cong

Still, it would be a nervous business, with the odds favoring the enemy. Vinh Long Province, like the rest of the delta, had never been truly a part of any Indochinese state.

Here Khmer control ebbed centuries ago. The French, a generation back, sometimes taxed, but never ruled. Before River Assault Group 23 appeared, many villagers had not seen a representative of Saigon since the 1950's. Local warlords, river pirates, and now the Viet Cong had installed themselves without hindrance from any central government.

For two small bands of government troops to try to make their way in darkness, for hundreds of yards past houses and fields and jungle familiar to the enemy, was an act of daring. And an act of necessity.

Lieutenant Hoa, slight and erect, summed it up in his precise English: "Now that we have lost one boat, I could not tell my conscience or my admiral that I had sailed others into the same trap. The patrols will go first, the boats will follow."

I watched Lieutenant Meyerkord count ammunition clips into his pockets. Yet somehow it seemed unreal that I was going with him, and was slipping extra clips into my own pocket.

The war in Viet Nam marked the first time in more than twenty years as a war correspondent that I had carried a weapon in the course of my work. I'd begun it at the urging of the men I photographed, who reminded me that civilians were treated as spies when captured by the Viet Cong. Now, like most reporters covering combat operations in Viet Nam, I went armed.

Tense Patrol Begins With a Jest

"Where do you want to walk on this hike?" Lieutenant Meyerkord asked.

"Right behind you—you have the broadest shoulders, so you make the best bullet stop." I tried to make it sound light, but the words rang shrill.

The lieutenant abruptly dropped his stern-faced pose. With his normal gaiety he said, "Never thought I'd see the day when I'd have a *woman* behind me with a loaded carbine. Fire it one shot at a time, will you?"

I started to say I wasn't planning to fire it at all, but I started to chuckle instead. The lieutenant laughed frankly at his own joke. The Vietnamese sailors around us, caressing their own guns, laughed with him as if they'd understood.

"Nothing like something funny to settle them down, is there?" murmured the lieutenant fondly.

The first man climbed up to the bow where it pressed into the bank, jumped down, and disappeared. A second followed. The slight figure of the ensign disappeared next. Then it was Lieutenant Meyerkord's turn. When I reached the bow, the last sunset glow glinted on the mud surface as I jumped.

As I fell into the hypnotic rhythm of the patrol—we were moving between trees and

In a moment of serenity, while tides of terror rise and fall around them, Vietnamese youngsters play in a sampan. Strife seems far away; yet the deadly war inflicted upon the country by the Communists may destroy their village and snuff out their lives at any time. For the future of innocents like these, Americans fight and die in Southeast Asia.

EKTACHROME BY DICKEY CHAPELLE © NATIONAL GEOGRAPHIC SOCIETY

cane fields, stepping high so we would not trip and clatter on the uneven ground—I was obsessed by a question that had plagued me on other walks in other wars: Why?

Why was it that humans still got along so badly that conflicts were settled like this, by young men betting their lives at hide-and-seek? Did I truly think I could, with the camera around my neck, help end the need for the carbine on my shoulder? Did I think I could make plain how warring really was, how quickly the cutting edge of fear excised every human virtue, leaving only the need to live? Here, now, the supreme virtue was the ability to shoot fast. Or first.

And why were Americans like Meyerkord here? They had brought all their expertise and dedication and raw nerve from the security of their home towns to the ultimate insecurity of guerrilla warfare as far from home as it was possible to go.* Was that the American idea of global leadership? I knew it was at least one American's idea—mine.

Lieutenant Meyerkord halted and gestured toward a dark mass on our left. It was a building too big for a house. I remembered something Lieutenant Hoa had told us: The earlier mine had been assembled in a little factory of some kind on the canal bank.

What we were passing was such a place, perhaps a sugar-cane mill. Half our file already had passed. No one had fallen out to search the building for Viet Cong. Was the little factory really deserted?

I heard the snick of the safety catch on Meyerkord's rifle; my carbine's safety clicked in turn. He led a squad from the rear of the line around the dark reed-wall structure.

*See "American Special Forces in Action in Viet Nam," by Howard Sochurek, GEOGRAPHIC, January, 1965.

RAG rescues a village. For three days Cai Nhum, a district headquarters, lived in fear. Encircling Viet Cong lobbed in mortar shells. The market closed. Cai Nhum radioed for help, and RAG 23 responded with enough force to scatter the enemy. Now, with the protective fleet standing by, farmers in sampans come to reopen the market.

Ragged coast and river-laced tip of Viet Nam offer hideouts and highways for the Viet Cong. Junks and river boats patrol thousands of miles of shore and waterway, from 1954's demarcation line to the Mekong Delta and the Gulf of Siam. (An indexed map of Viet Nam in color, 11½ by 20½ inches, is available for 50¢ from the Society, Washington, D. C.)

Starlight glinted on several huge metal pots. Then we could make out what might have been a press. The building seemed to have only three walls. The lieutenant decided it was empty and took up the patrol again.

He murmured, "They don't know they must search *every* building—we've just begun to train them for shore parties."

"Will they do whatever they see you do?"

"This is where we find out." He pointed to a row of huts ahead.

At each he led the men through the palm-sweating, knee-weakening, heart-stopping routine of stepping into the total blackness inside, finger on the trigger. The huts had been deserted—hastily, judging from the warm embers. By the time he approached the ninth hut, I knew the answer to my question.

Lieutenant Meyerkord had a team of Vietnamese searchers behind him. Two riflemen had figured out how it was done. They first kept the lieutenant covered; then they themselves began to search, passing the word to the men behind to cover them in turn.

"Now they *are* going through each hut," said the lieutenant, beaming.

Village Woman Warns of Viet Cong Hiding Place

The last hut was not deserted. We found the Vietnamese ensign in whispered conversation with a group in the entrance. He explained in fragments of English what a woman there had told him: No mine wires had been rigged from this side of the canal today. But the woman thought that some probably led from a house on the other side.

The lieutenant offered the woman a wad of currency. Vehemently she refused. He chuckled as he came back to the path. "Even in the Viet Cong's territory, not everyone hates the American adviser."

As we walked on, it grew terribly still. Or maybe it only seemed quiet in retrospect because of what came afterward—the sudden crash and chop of machine-gun fire.

But we were not the targets.

Crouched, we could see through a screen of grass that our patrol across the canal was firing at a hut from which streaks of tracer came at them. The sound echoed in short professional bursts, stuttering against a counterpoint of single shots. Then there were too many shots to count. Finally a finger of flame ran up one wall and turned to follow the roof line. The hut burst into flame. The firing stopped.

By the light of the burning hut, we took stock of our position. There was a barrier of looped barbed wire a little way up the canal bank; soon we were crowded behind it (pages 272-3). The Vietnamese ensign squatted to the lieutenant's left; I sat on my heels to his right. A soldier from the rear guard ran up, bringing word that the lady in the last house said there

Gagging smoke from a white phosphorus shell envelops an island of trees suspected of harboring the enemy. RAG troops advance through a field; moments later their gunboat will fire high-explosive shells into the woods.

Fallen comrade, a South Vietnamese rifleman killed by Viet Cong machine-gun fire, goes to his grave. Buddhist flags flutter above the mourners, who bear a model of a Vietnamese house and offerings of food, money, and candles for use by the departed in the hereafter. Even at a funeral service, armed guards (left) must protect the people.

EKTACHROME (BELOW) AND KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

were 30 Viet Cong in a cane field at our back.

"If they charge through the cane, we'll hear them in time," the lieutenant said. "But if they set up a machine gun and sweep their fire. . . ." He looked up and down the line of crouched figures.

I knew what he meant; we ought not to be huddled where one long burst could hit most of us. Reluctantly I moved back a few yards. Immediately three Vietnamese riflemen filled the space between us. They, too, wanted to be warmed by Dale Meyerkord's assurance.

Patrol Cannot Radio Its Danger

Now I could hear the ensign whispering frantically to his radioman. He seemed to be asking whether anyone remembered the radio frequency of the boats. No one replied.

This was not a simple matter, like remembering one's telephone number. The Viet Cong used captured American radios and usually listened in. So new channels were chosen by the Vietnamese just before each operation and confided only to its commanders. Somehow, nobody tonight had noted the frequency on which the boats would be listening for us.

A new fear gripped me. The RAG commander would know from the firing that there were Viet Cong about, and he might decide to move in, guns blazing at the area from which the enemy had fired on the other patrol. The canal curved gently here; this meant we were now halted close to what could become the boat's line of fire. Lacking radio contact, we could not tell the commander that. Would he guess in time?

With all the resignation I could summon, I rolled half to my knees and tried to recheck camera settings by feel. The next sound I heard was what I wanted most to hear: approaching boat engines. Just engines, not guns. The Vietnamese skipper had concluded correctly, from the end of the firing and the dying hut blaze, that no Viet Cong remained to detonate mines here. In ten minutes he had located and picked up the patrol on the far bank and our own.

We found the skipper studying maps under a flashlight aboard the command boat. The

Metallic eagle lifts a wounded brother high above the fertile rice fields of the Mekong Delta. Pilots of the twin-engine helicopters refer to themselves as a "road-service company," but their job of rescuing smaller choppers downed by the enemy brings them under fire on nine out of ten missions.

KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

Death rides their shoulders; dawn calls them to duty. South Vietnamese marines march past

light reflected on his composed, ivory-skinned face; he did not look his age, which I knew to be 30.

"Our landing party must have driven the enemy away, carrying their mines," he told Meyerkord. "Since they did not keep firing, it must have been only a rear-guard action. *If*, of course, our information was correct in the first place. . . ." His voice trailed off.

Lieutenant Meyerkord had regained his usual ebullience. He grinned. "Well, as the newspapers tell us, it's a frustrating war."

Junk Navy Creates Its Own Legends

How to deploy small forces over large areas is the eternal problem of the Viet Nam war. It is true of the RAG's and equally of the Hai Thuyen, the armed junks guarding 1,200 miles of seacoast against the infiltration of men and guns from North Viet Nam. Some 500 little boats, operating out of a score of bases, must police tens of thousands of boat movements and check the identity of a million people afloat every year.

Since 1960, the junk force has spawned almost as many legends as it has missions. I had heard that every junk-force sailor could sail and fight expertly, that each was tattooed with his oath to kill Communists (page 288)—and hence would be shot if captured—and that each wore only the civilian garb of black pajamas on both land and sea.

The last tale, I quickly learned, was no longer so. But after several weeks with the "junkies," I came to accept all the other stories. Later I retold them myself, proudly wearing the force's unique silver twin-sail insignia. But the junkies had not let me wear it till I had been shot at with them several times.

When I first joined them, such an experience did not seem very probable.

"We just don't come under fire every day, as we used to," was the first thing told me by Lt. James Monroe Vincent, USN. I was unpacking cameras in a reed building at the junk-force base near Ap An Thuan village, at the mouth of the Ham Luong River some 60 miles south of Saigon.

The sturdy lieutenant sat cross-legged on the bare wooden boards he used for a bed. He was one of four Americans serving on roving duty to all the junk divisions of the Third

EKTACHROME BY DICKEY CHAPELLE © NATIONAL GEOGRAPHIC SOCIETY

shell-tattered trees in an eternal silhouette of war, here reflected in the water of a rice field.

Coastal District, Vietnamese Navy. (The South Viet Nam coastline is divided into four such districts, roughly matching the corps areas of the army.)

My briefing by Lieutenant Vincent ended with a characteristic understatement: "The junk divisions' function simply is to check every coastal boat that comes or goes, to be sure it's not serving the Viet Cong. We try not to do any more fighting on land. All those stories about land raids we've made—sure, a lot of them are true, but we made them only to secure our own bases."

He pulled out a well-creased map. The junk bases nearby all lay at the eastern edge of the delta, an area traditionally under Viet Cong control. Within a day's walk of where we sat, it was believed, enemy units were so deeply entrenched as to operate a rest camp, a hospital, and an officer training center.

"I know they're there," Lieutenant Vincent said. "Every time we sail past those beaches, somebody shoots at us."

He explained that neither type of operating junk—a motorized 50-footer and a motor-sailer 45 feet long—carried any armor plate. He finished generously, "To take pictures, you can sit anywhere you like. There's no safe spot aboard, anyhow."

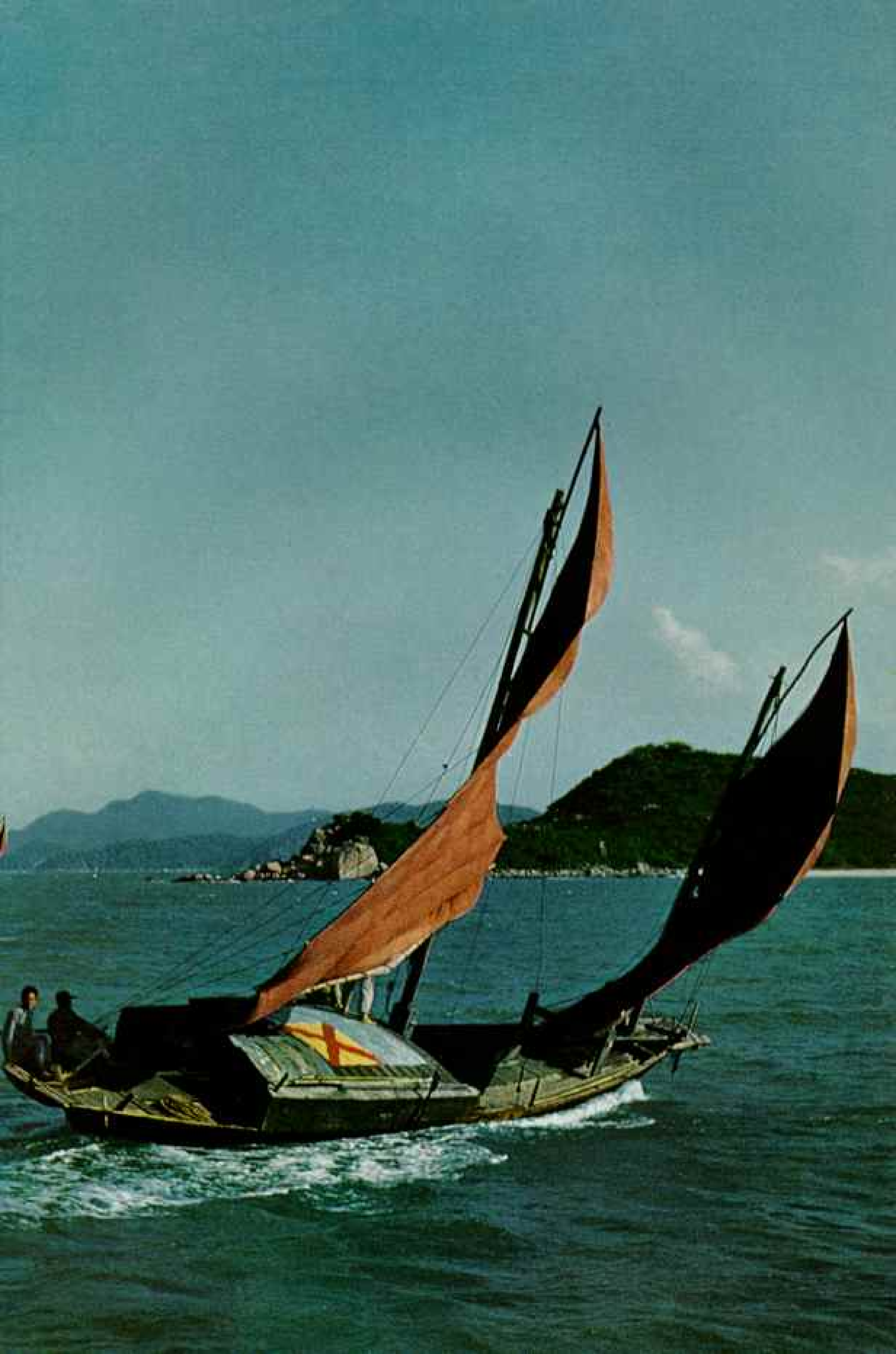
On my first few patrols, there were no bullets. Our most hazardous mission, it seemed, was our daily showing of the flag in Ap An Thuan village, whose huts came up almost to the earth wall of the base. The base had been situated here because of the proximity of the village market and its food supply.

Viet Cong Set a Trap for Americans

One morning an informant brought word that two Viet Cong agents had been planted in the village to kill the American advisers at the junk base, Lieutenant Vincent and Chief Gunner's Mate Edmund Canby. The VC were not bluffing with such threats. A few months earlier, a mine detonated at the village gate had missed other Americans for whom it was intended, but it had blown legs off four junk sailors who had come in their place.

Also while I was there, Ap An Thuan faced another threat: mortar fire at night. No artillery is more dreaded, for a mortar shell—which can kill up to 40 yards from point of

SAILOR OF THE JUNK FORCE *wears the Vietnamese words for "Kill Communists!" tattooed over his heart. With his comrades, he cruises the coast in these light, fast-sailing vessels. The armada's goal: to deny the Viet Cong use of the sea as a supply route. Needing no fuel, the craft circle offshore near Binh Ba. If they spy suspicious traffic, they radio to better-armed motorized junks. Navy destroyer escorts and Coast Guard cutters from the United States recently reinforced the fleet.*



impact and wound much farther away—gives no warning. It can easily be lobbed over earth walls like those around the junk base.

"Now, if we're mortared, it may mean they'll try to overrun us," Lieutenant Vincent said. "We'll have to start shooting. The enemy uses the village as a shield. They know we try not to shoot toward the huts, no matter where their fire comes from. We'll have to go into the village again, and we don't want to spend the rest of our lives wondering who hit the women and children."

Three days later, I found out what he meant. The lesson came at high noon when, just back from a sea patrol aboard a motor junk, I had felt so secure that I'd taken off my boots and was wearing rubber shower shoes while sorting film. At first, I didn't believe my ears. I knew there were a dozen local militiamen in position nearby; could the stuttering shots I heard be the test-firing of their weapons? I went outside to hear better.

I had heard well enough. Those shots were fired from at least one American-made submachine gun and two automatic rifles, and the *zing-zing* of the bullets was coming in over our heads from the marketplace. The weapons obviously had been captured and were now being turned on us by the Viet Cong.

The incoming fire grew to a roar. I threw myself into a position on the base wall nearest the village, holding camera and carbine tightly because my hands suddenly were slippery. I saw that Lieutenant Vincent was in the next position along the earthwork. Here we were shielded—bullets don't go through earthworks. But I wondered: Since we had to turn back the Viet Cong somehow and they were shooting from inside the village, would our sailor-riflemen fire into the huts after all?

Junk Fleet Counterattacks—on Foot

Not for 12 minutes did the fire slacken. But I never saw one of our men aim toward a hut.

During a break in the firing, a sergeant ran in through the gate in our barbed wire. He said his dozen men had returned the fire from beyond the village until their ammunition ran out. He was telling Lieutenant Vincent and the officer commanding the junk division that we were still in deep trouble.

The enemy force—40 in all? More? He did not know. Still breathless, he told us three of his men were wounded.

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

Silently slipping from dark-sailed junks, Vietnamese sailors train near Cam Ranh Bay. Later the author joined a real assault in Phuoc Tuy Province, where a Viet Cong contingent had wiped out half of another battalion.

Baleful eye on the bow wards off demons, but the .30-caliber machine gun proves more effective against the VC. American naval architects helped design this command craft, one of 250 boats built in Viet Nam for the junk force.

Hope in a box: Hungry for learning, Vietnamese youngsters solemnly accept CARE kits containing notebooks, pencils, and rulers from the hands of a U. S. Strike Force officer in Kien Phong Province. American infantryman at Cai Nhum (right) shows a mother with a sick—and scared—child how to use a medicine dropper. Both scenes illustrate a conviction of Dickey Chapelle's. "Perhaps some-

day," she wrote, "compassion as an infantry tactic will be taught to every American soldier. He will still need to know his rifle number, his general's name, and how to kill.... And, when he kills, he will ask ... if it is necessary. It will be that last reflex—the wondering why, the compassion for others ... that may someday be America's unique contribution to the history of force."

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

I don't remember that anybody used the word counterattack. But a few minutes later I was moving through the empty market square, running to keep up with the figures around me. Ahead was the junk division's junior officer, Thanh Phu, carrying a grenade launcher; Lieutenant Vincent with an automatic carbine; and a dozen others. I looked back and saw perhaps 40 more. Our base was emptying itself of every able-bodied man.

The two lieutenants, one American and the other Vietnamese, led us through a paddy field, across a patch of jungle, and up a steep sand hill. I could see now that we were heading toward the next village, from which our patrol junks often were fired on. Past another high ridge, I heard firing on the left—the inland side. At first I was not sure it was incoming, but Lieutenant Vincent was wiser; when I squinted into my camera's view finder, he grunted, "Don't stop for any reason on this high ground. You'll be silhouetted against the sky. An easy target."

"I won't," I assured him fervently, and ran on.

Fleeing Enemy Drops List of Weapons

The firing sputtered out, and I found myself in a little glade just behind the Vietnamese lieutenant. He was bending over to pick up some things the Viet Cong obviously had dropped in haste. They proved our run in the sun had not been in vain.

The lieutenant was holding a fistful of enemy papers and insignia. One neat, ink-written notebook page listed the weapons of our attackers, including captured American-made ones. Also in the glade were many empty cartridges and a few unfired ones which I pocketed. They proved to be Chinese.

Then I was running again over the uneven ground, toward

the first huts of the village. Firing burst out to our right. I could see several of our men, small in the distance, shooting deliberately. I fixed my eyes on the huts and prayed our momentum would not carry us—barely a reinforced platoon—straight into a whole Viet Cong village.

Lieutenant Vincent threw back over his shoulder at me, "How many clips you got? I only have ten." I wondered what kind of battle he expected; his clips held 180 rounds.

"I've got four," I replied. "But can't they support us from the base with the big mortar?"

"Not much help if this thing goes hand to hand," he answered. "You know, *we* can be cut off from our base, too, just as we've been trying to cut off the VC. Though I think they've gotten clean away."

Just then the Vietnamese officer seemed to realize how far we had charged. He waved

"He was a *man*," said Dickey Chapelle of Lieutenant Meyerkord (above). It was her highest accolade. Automatic rifle in hand, Meyerkord directs fire from his gunboat. "Doughty but aging," the author described this craft, called FOM after the initials of the former French colonial administration in Viet Nam. Lightly armored, it carries one turret-mounted .50-caliber machine gun and three of .30 caliber.

EKTACHROME (RIGHT) AND KODACHROME BY DICKEY CHAPELLE © N.G.S.

in all his men except two flanking parties.

One junk sailor said he had been fired on from an adjoining hut. A petty officer and four riflemen searched the building and came out carrying a shiny brass Viet Cong grenade, its casing obviously cast from a mold of an old U.S. grenade. The sailors at first proposed to set fire to the house. But a militiaman objected that he had a friend who lived in the neighboring reed house, and if one burned, the second would, too.

Lieutenant Phu ordered us to start back on a cart trail circling toward the beach. Every 20 yards or so along its drainage ditches we saw a deep-dug rifleman's hole.

Lieutenant Vincent came alongside. "If they try to ambush us, you know enough not to jump into one of those holes, don't you?"

"Booby-trapped, maybe?"

"Good girl," he grunted, and again took his place in our rear guard, nearest the enemy.

His warning made me so sure we'd be ambushed that a sensation of relief flooded me when we reached Ap An Thuan. The deserted marketplace, bullet-crossed two hours before, now seemed as secure as the Pentagon.

A few minutes later, back inside the base, Lieutenant Vincent stared at my feet in their thonged rubber shower shoes.

"We must have covered five miles. Did you wear those foolish things all the way?" he asked incredulously.

"That's right," I answered. "You said there wouldn't be any more land operations—remember?"

We laughed too much at the joke, because it felt so good to laugh at all.

Laughter—and Death—on the Delta

But laughter seldom lasts long on the delta, where sailors fight a strange kind of war—as much on land as on the water.

Shortly after I returned home, there appeared on the casualty lists another name: Harold Dale Meyerkord. Audacious, ebullient Lieutenant Meyerkord of River Assault Group 23, once of St. Louis. Dale Meyerkord, husband, father, leader and teacher of men, dead of a bullet in the brain on a muddy canal 9,000 miles from Missouri.

EKTACHROME BY PAUL KNITTEL © N.G.S.

"Great personal risk . . . was routine" for Lieutenant Meyerkord, Secretary of the Navy Paul H. Nitze declares as he presents the Navy Cross—its highest decoration—to the officer's widow, the former Jane Schmidt. His parents, Mr. and Mrs. Harold E. Meyerkord of St. Louis, hold the Air Medal, also awarded the officer posthumously on November 9, 1965. Wounded from ambush, Lieutenant Meyerkord continued firing until a second shot killed him.

NATIONAL GEOGRAPHIC SOCIETY

WASHINGTON, D. C.

Organized "for the increase and diffusion of geographic knowledge"

The National Geographic Society is chartered in Washington, D. C., in accordance with the laws of the United States, as a nonprofit scientific and educational organization for increasing and diffusing geographic knowledge and promoting research and exploration.

Since 1890 the Society has supported more than 285 explorations and research projects, adding immeasurably to man's knowledge of earth, sea, and sky. It diffuses this knowledge through its monthly journal, NATIONAL GEOGRAPHIC; more than 28 million maps distributed each year; its books, globes, and atlases; 30 School Bulletins a year in color; information services to press, radio, and television; technical monographs; and now a nationwide series of programs on television.

Articles and photographs of travel, natural history, and expeditions to far places are desired. For material used, generous remuneration is made.

MELVILLE BELL GROSVENOR, President and Editor
MELVIN M. PAYNE, Executive Vice President and Secretary
ROBERT V. FLEMING, Vice President and Treasurer
FREDERICK G. VOSBURGH, Vice President and Associate Editor
LEONARD CARMICHAEL, Vice President for Research and Exploration
ROBERT E. DOYLE, Vice President and Associate Secretary
THOMAS M. BEERS, Vice President and Associate Secretary
VERNON H. BREWSTER, HERMAN J. A. C. ARENS, WM. T. BELL, HERBERT T. HENDERSON, C. VERNON SANDERS, Associate Secretaries
ARTHUR B. HANSON, General Counsel

COMMITTEE FOR RESEARCH AND EXPLORATION

LEONARD CARMICHAEL, Chairman

ALEXANDER WETMORE, Vice Chairman
MELVIN M. PAYNE, Vice Chairman
Rear Adm. L. O. COLBERT
CARYL P. HASKINS
A. REMINGTON KELLOGG, Research Associate, Smithsonian Institution
Vice Adm. EMORY S. LAND
T. DALE STEWART, Director, Museum of Natural History, Smithsonian Institution
MATTHEW W. STIRLING, Research Associate, Smithsonian Institution
JAMES H. WAKELIN, JR.
CONRAD L. WIRTH
PAUL A. ZAHL

and the Senior Officers of the Society

BARRY C. BISHOP, Secretary

BOARD OF TRUSTEES

GILBERT GROSVENOR, Chairman of the Board, formerly President, National Geographic Society, and Editor of its magazine (1899-1954)

THOMAS W. McKNEW, Vice Chairman of the Board, formerly Executive Vice President and Secretary (1932-1962)

LEONARD CARMICHAEL, Vice President, National Geographic Society
LEO OTIS COLBERT, Rear Admiral, U. S. Coast and Geodetic Survey, Retired
ROBERT V. FLEMING, Advisory Chairman of the Board and Chairman, Executive Committee, Riggs National Bank
CRAWFORD H. GREENEWALT, Chairman of the Board, E. I. du Pont de Nemours & Company
MELVILLE BELL GROSVENOR, Editor, National Geographic
CARYL P. HASKINS, President, Carnegie Institution of Washington
EMORY S. LAND, Vice Admiral, U. S. Navy, Retired, formerly President Air Transport Association
CURTIS E. LeMAY, Former Chief of Staff, U. S. Air Force
H. RANDOLPH MADDOX, Vice President, American Telephone & Telegraph Company (Ret.)
WM. McCHESNEY MARTIN, JR., Chairman, Board of Governors, Federal Reserve System
BENJAMIN M. McKELWAY, Editorial Chairman, Washington *Star*
MELVIN M. PAYNE, Executive Vice President, National Geographic Society
LAURANCE S. ROCKEFELLER, Chairman of the Board, Rockefeller Brothers, Inc., and President Jackson Hole Preserve
JUAN T. TRIPPE, Chairman of the Board, Pan American World Airways
FREDERICK G. VOSBURGH, Assoc. Editor, National Geographic
JAMES H. WAKELIN, JR., Former Assistant Secretary of the Navy for Research and Development
EARL WARREN, Chief Justice of the United States
ALEXANDER WETMORE, Research Associate, Smithsonian Institution
LLOYD B. WILSON, Honorary Board Chairman, Chesapeake & Potomac Telephone Co.
CONRAD L. WIRTH, Former Director, National Park Service, U. S. Department of the Interior
LOUIS B. WRIGHT, Director, Folger Shakespeare Library

Asst. Secretaries: OWEN R. ANDERSON, CHARLES P. BIXEL; Asst. Secretary and Asst. Treasurer: HILLEARY F. HOSKINSON; Asst. Treasurer: WM. H. McCAULEY

HERMAN J. A. C. ARENS, *Executive Assistant*, LEONARD J. GRANT, Editorial Assistant, and Judith N. Dixon, Secretary to the President and Editor; Sibyl Peck, Assistant to the Chairman of the Board; Lenore W. Kessler, Secretary to the Vice Chairman of the Board

COVER: Wide-brimmed derby shades a vendor weighing her grapes at Tarija in southern Bolivia (page 177).

NATIONAL GEOGRAPHIC MAGAZINE

MELVILLE BELL GROSVENOR, *Editor*
MELVIN M. PAYNE, *Executive Vice President*
FREDERICK G. VOSBURGH, *Associate Editor*
FRANC SHOR, *Associate Editor*
JAMES M. DARLEY, *Cartographer Emeritus*

EDITORIAL STAFF

Assistant Editors: Newman Bumstead, James Cerruti, Robert L. Conly, Allan C. Fisher, Jr., Gilbert M. Grosvenor, Kenneth MacLeish, Carolyn Bennett Patterson, John Scofield, Howell Walker
Issue Editor: Samuel W. Matthews
Senior Staff: Lonnelle Aikman, Jules B. Billard, Andrew H. Brown, William Graves, Stuart E. Jones, Robert P. Jordan, Nathaniel T. Kenney, Howard La Fay, Edward J. Linehan, Luis Marden, Bart McDowell, Kenneth F. Weaver, Paul A. Zahl (Natural Sciences)
Foreign Staff: W. Robert Moore (Chief); Thomas J. Abercrombie, David S. Boyer, Helen and Frank Schreider, Volkmar Wentzel; Kip Ross (Research)
Editorial Staff: Wayne Barrett, Thomas Y. Canby, Rowe Findley, Louis de la Haba, Joanne M. Hess, Werner Janney, Jay Johnston, Elizabeth A. Moize, Frank Sartwell, O. Mac White; Winifred M. Myers, Betty T. Sanborne (Assts.); Dorothy M. Corson (Indexes); Rosalie K. Millerd (Files); Arnvid Nygaard (Chief Translator); Mary Webster McKinney
Editorial Layout: Howard E. Paine (Chief); Charles C. Uhl
Book Service: Merle Severy (Chief); Edwards Park (Assoc. Chief); Seymour L. Fishbein (Asst. Chief), Ross Bennett, Anne Dirkes Kobor, Patricia Coyle Nicholson, John J. Putman
Geographic Art: Newman Bumstead (Chief); William Palmstrom (Asst. Chief). *Artists:* Irvin E. Alleman, Joseph E. Barrett, Lisa Biganzoli, Gilbert H. Emerson, Victor J. Kelley, John W. Lothers, Robert C. Magis, Robert W. Nicholson, Isaac Ortiz. *Research:* George W. Beatty, Walter Q. Crowe, Dorothy A. Nicholson, Eugene M. Scheel
Editorial Research: Margaret G. Bledsoe (Chief); Ann K. Wendt (Asst. Chief), Edith C. Berg, Margery G. Dunn, Mary Ann Harrell, Jan Holderness, Levenia Loder, Frances H. Parker, Patricia Rosenborg, Elizabeth C. Wagner
Geographic Research: George Crossette (Chief); Newton V. Blakeslee (Asst. Chief), Leon J. Canova, Margaret Ladd, Virginia A. LeVasseur, Jean B. McConville
School Service: Ralph Gray (Chief); Lea Ridgley Fuller, Arthur P. Miller, Jr., Charles H. Sloan, Janis Knudsen Wheat
News Service: Windsor P. Booth (Chief); Matt C. McDade (Asst. Chief), Edw. Cornish, Sabin Robbins, Paul G. Sampson; Isabel Clarke (Asst.)
Television Service: Robert C. Doyle (Chief); Guy Blanchard, David Cooper
Phototypography: Robert C. Ellis, Jr. (Chief); John McConnell (Asst. Chief), Elizabeth L. Donley
Library: Esther Ann Manion (Librarian Emeritus); Virginia Carter Hills (Librarian); Margery K. Barkdull (Asst. Librarian), Vera Cassilly, Katharine P. O'Donnell
Editorial Administration: Patricia M. Watkins

ILLUSTRATIONS STAFF

Illustrations Editor: Herbert S. Wilburn, Jr.
Art Editor: Andrew Poggenpohl
Asst. Illust. Editors: Robert L. Breeden, W. E. Garrett, Mary S. Griswold, Thomas R. Smith, Charles Allmon (Incoming Photographs)
Director of Photography: Robert E. Gilka. *Asst. Director:* Joseph Baylor Roberts. *Chief of Film Review:* Richard H. Stewart
Photographers: B. Anthony Stewart (Chief); James P. Blair, Dean Conger, Bruce Dale, John E. Fletcher, Otis Imboden, Bates Littlehales, George F. Mobley, Albert Moldvay, Thomas Nebbia, Winfield Parks, Joseph J. Scherschel, Robert F. Sisson
Picture Editors: Lee E. Battaglia, Donald J. Crump, O. Louis Mazzatenta, Charlene L. Murphy, Robert S. Patton, Arthur A. Terry; Geraldine Linder (Asst.). *Librarian:* Alan J. Lessel
Photo Lab: Edwin L. Wisherd (Chief); Milton A. Ford, Donald McBain, Robert S. Oakes, Claude E. Petrone, Carl M. Shrader, Guy W. Starling
Pictorial Research: Walter Meayers Edwards (Chief)
Artists: Walter A. Weber (Naturalist), Peter V. Bianchi
Engraving & Printing: Dee J. Andella (Chief); Joe M. Barlett, Frank S. Oliverio, William W. Smith

CARTOGRAPHIC STAFF

Chief Cartographer: Wellman Chamberlin
Associate Chief Cartographer: Athos D. Grazzini
Asst. Chief: William T. Peele. *Base Maps and Revisions:* Charles L. Stern (Supervisor); David W. Cook, John F. Dorr, Harry C. Siddeley. *Map Drawings:* Douglas A. Strobel (Supervisor); John J. Brehm, Robert W. Northrop, Thomas A. Wall. *Geographic Names:* Richard J. Darley (Supervisor); Carol Cunningham Foley, Donald A. Jaeger, Manuela G. Kogutowicz, George E. Stuart. *Oceanography:* Apphia E. Holdstock. *Map Editing:* Ted Dachtera (Supervisor); Russel G. Fritz, Richard K. Rogers. *Administrative Assistant:* Catherine M. Hart

SECRETARY'S STAFF

Administrative: Edwin W. Snider, Raymond T. McElligott, Jr., Richard E. Pearson. *Accounting:* Jay Givans, George F. Fogle, Martha Allen Baggett. *Cashier:* Frank S. Delk. *Statistics:* Everett C. Brown, Thomas M. Kent. *Procurement:* J. P. M. Johnston, Robert G. Corey. *Payroll and Retirement:* Joseph B. Hogan. *Membership Research:* Charles T. Kneeland. *Membership Fulfillment:* Roy J. Klockenbrink. *Promotion:* Stan Jennings, E. M. Pusey, Jr., Gordon Young, Phyllis Greene. *Personnel:* James B. Mahon, Frank A. Holman, Adrian L. Loftin, Jr. *Medical:* Thomas L. Hartman, M.D. *Explorers Hall:* T. Keilor Bentley, Curator-Director

EUROPEAN OFFICE

W. E. Roscher (Director), 11 Stanhope Gate, Mayfair, London, W. 1

ADVERTISING

Director: Harley L. McDevitt, New York
Managers—Eastern: William A. Boeger, Jr.; *Asst. Eastern:* John R. Weist, New York. *Midwestern:* William Turgeon. *Los Angeles:* Jack V. Sheehan. *San Francisco:* Thomas Martz. *Automotive:* Joseph T. Feeney, New York. *Travel:* Robert W. Horan, New York

Copyright © 1966 National Geographic Society, 17th and M Streets N.W., Washington, D. C. 20036. All rights reserved. Reproduction or use of the whole or any part of the contents without written permission is prohibited. Printed in U.S.A. Second-class postage paid at Washington, D. C. and at additional mailing offices. Cover design and title protected by international trademark.

SOME OF OUR BEST FRIENDS ARE CHAUFFEURS. And there are a number of reasons why: the car's exceptional comfort, its great interior luxury, its new smoothness and quietness of operation, the marvelous ease provided by Cadillac's new steering and handling, and, of course, the car's impressive new stature and beauty. No wonder that wherever you find Cadillac chauffeurs—professional or amateur—you find a solid body of praise for the 1966 Cadillac, the world's most highly regarded luxury car. Drive it soon at your authorized dealer's. You'll discover why Cadillac makes friends so easily. *New elegance, new excellence, new excitement!*

You can telephone all over the world

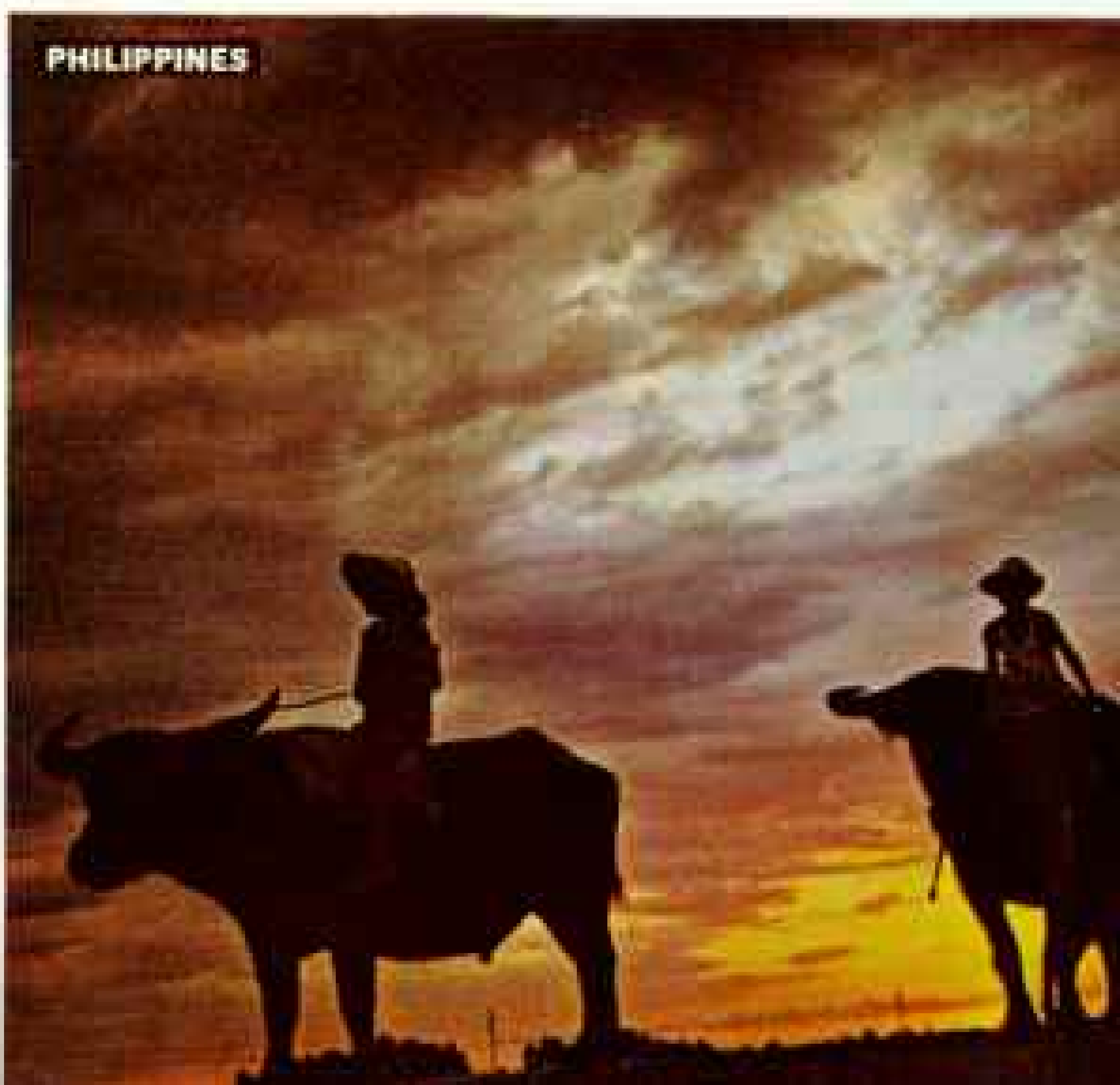
For business . . . for pleasure

Today you can reach 96.8 percent of the world's telephones by Long Distance. You can ask questions, talk things over and get the answers . . . quickly and conveniently.

And the cost is low. For only $12, plus tax, for the first three minutes, you can call almost anywhere in the world. At night and on Sunday you can call many overseas points for even less.

Whenever you want to keep in touch with anyone, the world over—telephone. It's the next best thing to being there.

Bell System
American Telephone & Telegraph
and Associated Companies



They met in Mongolia

"EAST IS EAST, and West is West," as Kipling said, but NATIONAL GEOGRAPHIC changes the epigram to end, "and often the twain shall meet." In Outer Mongolia, landlocked by China and the U.S.S.R., staff photographer Dean Conger visited the Gobi with his driver Damba, ate mutton Mongol style (right), and photographed the country for the March, 1962, issue.

On a return visit last year with his wife Lee, Dean presented a copy to the astonished Damba (above, right) at Ulan Bator. The reunion followed Dean's camera coverage of Moscow for next month's magazine.

NATIONAL GEOGRAPHIC brings you the East—and the rest of the world. Nominate your friends now, and they can still receive all 12 exciting issues for 1966.

NATIONAL GEOGRAPHIC SOCIETY MEMBERSHIP

Mail to: The Secretary, National Geographic Society
Washington, D. C. 20036

$6.50 CALENDAR YEAR 1966 MEMBERSHIP DUES INCLUDE SUBSCRIPTION TO THE NATIONAL GEOGRAPHIC.

Annual dues in the United States and throughout the world are $6.50. To compensate for international postage differentials, remit in U.S. funds or equivalent, $7.00 for Canadian membership; $8.00 for all other countries. 80% of dues is designated for subscription to the magazine.
Life membership for the U.S., its outlying areas, and Canada is $150; elsewhere, $200. Remittances should be sent direct to the National Geographic Society in U.S. funds or equivalent. 2-66

CHECK ONE

I NOMINATE for Society membership the person named at left. (Use separate sheet for additional nominations.) ☐

(GIFT MEMBERSHIP) I nominate and enclose $______ for dues of the person named at left. Send gift card signed: ☐

....

I DESIRE INFORMATION concerning membership and the NATIONAL GEOGRAPHIC. (Fill in at left.) ☐

NEW MEMBER ______________________
PRINT NAME OF AN INDIVIDUAL ONLY (MR., MRS., MISS)

____
STREET

____
CITY, STATE, ZIP CODE

MY NAME ______________________
PLEASE PRINT (MR., MRS., MISS)

____
STREET

____
CITY, STATE, ZIP CODE

Mont St. Michel is 1000 years old.

Next year. Next year. Next year. What's wrong with this year?

Go ahead. Do it. Do it all. And do it now.

Do Paris in the spring. Paint London Town red. Get carried away by Rome. Because this is *your* year for Europe.

And we can take you to gardens, to galleries, to festivals galore. To casinos, to cafes, to Cannes. To beaches, to ballets, to Basques in Bayonne.

Consider how easy we make it all. We take off for Europe from 17 U.S. cities, coast to coast. We fly straight through to 27 European cities, twice as many as anyone else. We can give you as many as 20 cities for the price of one, with our Extra Cities Plan. And once the season's under way, we'll fly to Europe as many as 23 times a day.

En route, you can enjoy Theatre-in-the-Air. Ten great shows in one, including a fine film, it's now playing on most of our flights to Europe. You get all this, and cuisine in the grand manner of Maxim's of Paris, too.

So see a Pan Am Travel Agent or call on us. And enjoy the good feeling that comes from flying the best there is. All the way to Europe.

World's most experienced airline

FIRST ON THE ATLANTIC
FIRST ON THE PACIFIC
FIRST IN LATIN AMERICA
FIRST 'ROUND THE WORLD

Your wife will be twice as safe this winter with 'Jeep' 4-wheel drive.

In a 'Jeep' Wagoneer with 4-wheel drive, she's got twice the traction of ordinary station wagons…twice the "bite" in deep snow. And she's twice as safe on slippery streets. That same extra grip will take you off the road…up onto the ski slopes, hunting, or just plain exploring. Choice of engines: 'Vigilante' V-8, or new Hi-Torque 6. Turbo Hydra-Matic* automatic transmission, other power options. Your family will be safer on the highway…on city streets…or off the road…have more fun this winter, in a 'Jeep' Wagoneer with 4-wheel drive.

NOW! THESE 10 SAFETY FEATURES ARE STANDARD:

- ☐ Seat belts front and rear
- ☐ Padded sun visors
- ☐ Padded dashboard
- ☐ High-impact windshield
- ☐ Outside rear-view mirror
- ☐ Dual brake system
- ☐ Self adjusting brakes
- ☐ 4-way warning flashers
- ☐ Back-up lights
- ☐ Windshield washer and dual-speed wipers

KAISER Jeep CORPORATION

'Jeep' Wagoneer

You've got to drive it to believe it. See your 'Jeep' dealer.

One Blue Dot Flashcube lets you take 4 snapshots. How does GT&E fit into the picture?

Perfectly. It was one of GT&E's family of companies, Sylvania, who introduced the Flashcube. And ours is a family that grows on innovation.

Take the Flashcube. With it, you get the great pictures that used to get away. Photo sequences never before possible.

It's a beautiful invention and a major advance in a field where Sylvania is already number *one* with the famous Blue Dot Flashbulb.

This kind of innovation is basic to the GT&E family of companies. Expect it anytime from any member of the family: General Telephone Operating Companies • General Telephone Directory Company • Automatic Electric • Lenkurt Electric • Sylvania Electric Products • GT&E Laboratories • GT&E International.

We're 116,000 strong and dedicated to Total Communications.

GT&E

Old Russian Church, Sitka

How do you get a shot like this?
F-11, 1/50, Kodachrome II with Nikon F.
Oh, yes. You must go to Alaska.

Any red-blooded American camera buff can have a field day in Alaska. The land, the colors, the people cry for the snap of a shutter. A hundred times each day.

Too far, you say? Not so. From Seattle, 90 minutes by jet, three days by highway and smart new ferry-liners. Two days via luxury cruise ships from Vancouver, Canada.

Take a week or a month, Alaska is not too far to go for 360,000,000 acres of unspoiled scenery. Just ask your travel agent.

Alaska Travel Division
Box N-6, Juneau, Alaska, U.S.A.

I'M SOLD! (Well, almost)

Please send me all the maps, information on prices, what to wear, transportation routes, and places to go and things to do.

NAME

ADDRESS

CITY STATE

The Thunderbird Touch:
A speed control conveniently located on the steering wheel

1966 Thunderbird Town Landau

Relax! Thunderbird's new 1966 Highway Pilot Control option makes long drives almost effortless. It lets you set, retard, and resume your cruising speed with just a flick of your finger. This unit is thoughtfully located within the spokes of Thunderbird's swing-away steering wheel.

Other Thunderbird personal touches for 1966: a new Stereo-Sonic Tape option; new overhead Safety-Convenience Panel on Town Hardtop and Landau models; a more powerful, standard V-8 engine; and all the craftsmanship that has made this car a classic in its own time!

Kodak
TRADEMARK

And instant loading is only the beginning...

Load instantly with a drop-in KODAPAK Movie Cartridge . . . and go on from there to take some of the most exciting zoom movies you've ever seen. The new KODAK INSTAMATIC M6 Movie Camera's *f*1.8 focusing lens zooms from 12 to 36mm. Extra-bright reflex viewing—*through* the lens for accurate framing. The battery-powered CdS electric eye operates through the lens, too, for high-exposure accuracy. And battery power drives the film through its full 50 feet *automatically*, roll after roll. No winding. No film-flipping. No interruptions at all! *Plus:* Automatic film-speed setting. Low-light-level indicator. Convenient fold-away pistol grip. And many other features that make this KODAK INSTAMATIC Movie Camera a very fine camera indeed. Less than $160. KODAK INSTAMATIC Movie Light (not shown) snaps on quickly, easily for indoor shooting. Less than $20. *Prices subject to change without notice.*

New KODAK INSTAMATIC M6 Movie Camera

Designer, 1980
A Boy with Cars in His Eyes

Today, he designs and builds his own precisely conceived model of the car of the future.

Tomorrow, the boy grown to manhood may well take advantage of his early opportunity and graduate into a profession that can make valuable use of his creative talents.

He is a member of the Fisher Body Craftsman's Guild—one of more than eight million boys who have joined since 1930.

The Guild is founded on the premise that creativity has no minimum age level, and that stimulating the inventive young mind is, in itself, a worthwhile objective. Since its establishment 35 years ago, almost two and a half million dollars in cash and college scholarships have been awarded to boys aged 11 through 20 who produced the best of the many thousands of models submitted for judging. And the best are always original and imaginative achievements.

Designers of the future? Industry needs them badly. General Motors is proud to have given early encouragement to many who will become the most skilled among them.

General Motors Is People...

making better things for you

The skirl next door.

You're at the Highland Games at Maxville, Ontario. The air trembles with the sweet, sad breath of the pipes. And the athletes and the sword dancers and the bands all compete for your attention. It's all very un-North American. Which is refreshing. Because you can hop in your car at any time and drive a little deeper into Canada and see more sights you wouldn't find anywhere else this side of the Atlantic. So even if the bagpipes aren't quite your cup of tea, Canada could be. There's always something exciting going on.

CANADIAN GOVERNMENT
TRAVEL BUREAU, OTTAWA, CANADA

Please send the Trans-Canada Highway Package to:

MR.
MRS.
MISS ....
(Please Print) 0021-01-6
ADDRESS ....
CITY ....
STATE .... ZIP CODE ....

Canada!

Only Motorola offers Stereo in a cabinet from Drexel's Triune Grouping.

Phase II in Solid-State Stereo technology

Now solid-state circuitry really means something in stereo. Motorola brings you the reliability, the professional quality, the design advances you would expect from one of the world's largest producers of solid-state devices. By using miniaturized solid-state components (no tubes), we were able to put all the tuning controls in the new Audio Master Control Center. It's inside the lid, up high, easy to get at. These solid-state components were then carefully matched with others throughout the system for remarkably smooth audio response. There's a solid-state cartridge with a see-through head—also a powerful solid-state dual amplifier and even solid-state drivers for the exponential horns. Sound good? The sound's excellent. Hear the X-300 or X-100 series of solid-state stereo, it's at your Motorola dealer's now.

new leader in the lively art of electronics

Award of Excellence

From *Los Angeles* Chamber of Commerce for the design of this Audio Master Control Center.

1966 Caprice Custom Wagon at the Biltmore House and Gardens in Asheville, N.C.

Elegant '66 Caprice Custom Wagons—priced the Chevrolet way

Every inch new, from headlights to taillamps. *On the outside:* bold smartness of gleaming wood-like paneling.
On the inside: luxury vinyl upholstery, deep foam cushioning, lush deep-twist carpeting. Instrument-panel inlays with the customized look of hand-rubbed walnut. Seat belts front, rear and in the third seat in three-seat models. (Ask passengers to fasten them before taking off. You, too—get the habit!)
On the practical side: over 100 cubic feet of easy-loading cargo space. There's a smooth sedan-like ride from big coil springs and new softer shock absorbers at each wheel. And a selection of V8 power available: a 396 Turbo-Jet at 325 hp—or 427-cubic-inch Turbo-Jet engines at 390 and 425 hp.
On the price side: much less than other cars this elegant. They're altogether new, altogether luxurious, altogether Chevrolet. A new standard in ride, in power, in comfort. 1966 Caprice Custom Wagons—at your dealer's now.
. . . Chevrolet Division of General Motors, Detroit, Michigan.

Caprice
CHEVROLET

"Don't do me any favors. I'd rather earn your insurance!"

If you split your insurance among several agents, you may *think* you are doing them a favor, but actually you're not. And you're doing *yourself* a disfavor. When you divide your business, no one agent knows all the facts — so *no one* can be sure you have the protection you need.

The businesslike solution is to put complete responsibility in the hands of *one capable, professional agent*. A man like the Ætna Casualty agent. He'll *earn* the right to handle *all* your insurance.

He'll start by making a thorough analysis of what you need. Then he'll match your *present* insurance against this analysis and recommend a program that fits your requirements exactly. Thereafter, his periodic reviews will keep your insurance in line as conditions change.

In case of trouble, he'll be right there in your corner ready to help . . . with Ætna Casualty backing him up. If you want a man like this to *earn your insurance*, look in the Yellow Pages. Talk with an Ætna Casualty agent. You'll find out quickly what we mean by P.S. — Personal Service.

Conserve your working capital with *Budget-Rite*, Ætna Casualty's new, low-cost monthly payment plan. It's simple, convenient — the finest plan of its kind in the industry. Be sure to ask for details.

Ætna
LIFE & CASUALTY

Don't miss "National Geographic: Voyage of the Brigantine Yankee" on CBS-TV, Friday evening, Feb. 11

ÆTNA CASUALTY AND SURETY COMPANY, Ætna Life Insurance Company, Standard Fire Insurance Company, Hartford, Conn.

Stately Government House in Nassau.

In the Bahamas, even the police make beautiful music.

Happy sounds are everywhere in the Bahamas. Even the constabulary get in the act. Every other Saturday morning they swing along in their starched white tunics, splitting the air with martial music to set your pulses pounding.

Here you'll cavort in the world's most transparent waters. Stroll pink beaches. Sip cool drinks. At night, go "over the hill" to the native goombay clubs.

You can be here in just 2½ air hours from New York, only 30 minutes from Miami. Please mail the coupon for more details. Then see your Travel Agent.

Bahamas Ministry of Tourism
1701 First National Bank Building
Miami, Florida 33131 BF

Please send free vacation literature to:

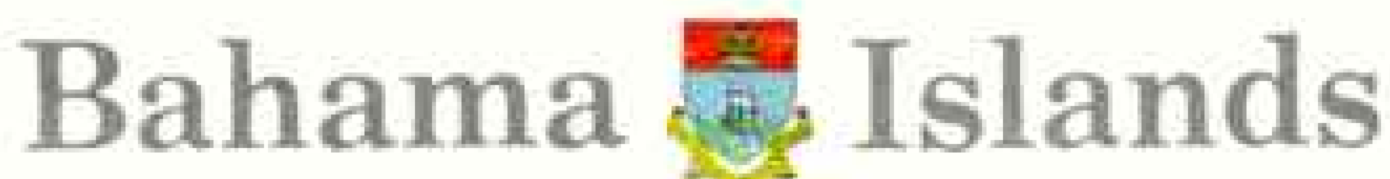
Name________________

Street________________

City________________

State________ Zip Code________

BY SEA: *From New York*—S.S. Homeric sails Sats. at 4 P.M. 7-day cruises from $185. Home Lines, 42 Broadway, New York, N.Y. *From Miami*—S.S. Bahama Star sails each Mon. and Fri. at 4:45 P.M. 3-day weekend cruises from $59. 4-day cruises from $74. Eastern Steamship Lines, Miami, Fla. BY AIR: Direct service from New York, Miami and other principal Florida cities, Toronto and Montreal. No passport or visa needed for U.S. citizens; some proof of citizenship recommended.



Come where the elephants, giraffes, klipspringers, and tsessebes play.

There's no other playground like it.

Hop on a Boeing 707 Stratojet and hold your breath. You're on your way to the breathless excitement of South Africa. Photograph the lion, the rhino, the leopard, the elephant running free and untamed.

When you've had your fill of jungle life, head for Durban. Plop yourself down on a lazy beach. Or take in the scenic beauty of Cape Town's mountain backdrop. Or the vibrant sophistication of Johannesburg.

When you fly South African Airways' superb Boeing 707 Stratojets to South Africa from Europe, you pay little or no extra fare for stopovers in Europe's finest cities.

And when you tour by Sarbus—South African Railways' comfortable motor coaches—you'll see this incredible land through the eyes of people who know it best.

Talk to your Travel Agent. He'll tell you the price of a super South African vacation for you and your family. It's much less than you think. And more fun than you ever thought.

Or write to Dept. NG 3, SAA/SAR in New York for more detailed information and brochures.

SOUTH AFRICAN AIRWAYS

3 EAST 48 ST., NEW YORK CITY (212) 421-6477

323 GEARY ST., SAN FRANCISCO (415) 392-9023

SOUTH AFRICAN RAILWAYS

605 MADISON AVE., N.Y.C. (212) 838-1700

When fishermen build fishing motors...they're bound to be different

1966 STOWAWAY (3 hp) — the new folding motor in a case — for the man who has never had a place to keep a motor before.

1966 ANGLER (5 hp) — an Evinrude quality "twin" at the price of bargain priced "singles" — the most fishing motor for the money.

1966 FISHERMAN (6 hp) — the smallest Evinrude made with full gearshift and full motor quieting, and all of the big-motor features.

1966 SPORTWIN (9½ hp) — the sporty little shorty — most popular fishing motor made — now even smoother and quieter and more reliable.

Fishermen aren't alike. Neither are fishing techniques. Why should fishing motors be?

That's why the fishermen who design and build Evinrude motors build **all kinds** of fishing motors—long motors, short motors, folding motors, weedless motors, motors with gearshift and separate tanks, and without.

Four of the most popular 1966 "take along" Evinrudes are shown here. All are light and compact, smooth and whisper-quiet "twins." All are "one-pull" starters and steady mile-an-hour trollers. All are built for round-trip reliability.

All are made **by** fishermen — **for** fishermen.

Your Evinrude dealer can show you these four—and up to 11 more. He's displaying the full line of new 1966 Evinrudes right now.

SEND COUPON FOR FREE CATALOG

EVINRUDE MOTORS, 4274 N. 27th St., Milwaukee, Wis. 53216

Send free Evinrude Motor and Boat Catalog for 1966 to:

Name..

Address.......................................

City.................State.................Zip Code......

Buick '66 Electra 225. The one car Buick owners look up to.

You can't buy a better car than a Buick.

And you can't buy a better Buick than a 1966 Buick Electra 225.

When you consider that every Buick gets the best of everything, you can imagine what the best of Buicks gets.

Not that we tune the Electra more carefully than other Buicks. Everything on every Buick has to blend with everything else. Performance. Styling. Ride. Handling. Everything.

Now consider a few things that make the Electra 225 what it is today. The majestic Super Turbine transmission. A massive 401-cu. in. Wildcat V-8. A suspension that takes the rough edges off the world. Luxury, luxury everywhere. (The following safety items are standard on all Buicks: front and rear seat belts, inside and outside rear view mirrors, padded dash and sun visors, dual-speed windshield wipers and washers, back-up lights. Our suggestion on the subject of front and rear seat belts? Use them.)

Money? Some think a man who can afford a Buick Electra 225 is above thinking about money. We tend to doubt it. (After all, thinking about money is how Electra owners get enough of it to become Electra owners.) So Electras are tuned to last. And cost less than you might have thought in the first place. (With us, green is more than the color of envy. Or grass.) There now. Things are looking up already, aren't they?

1966 Buick. The tuned car.

Want big dig, tall top speed and authentic fuel efficiency? Plus a 2-year warranty? Choose from five new Sea-Horse V4's

Start with the new 100hp Sea-Horse Golden Meteor. With its new high-thrust, low-drag lower unit, this most powerful Johnson ever built is a breathtaking performer on any outboard boat.

100hp more than you need? Choose from two new 80hp models (Electramatic and Electric) both with the same new tuned exhaust as the V-100. Or, there are two new, economy V-60's (one high-speed model, one high-thrust for houseboats).

Fuel economy? Wonderful! On regular grade fuel! The new V-100, for example, uses no more fuel than 2-cycle outboards of substantially less horsepower—in fact, we'd like you to compare it with *any* 4-cycle outboard, inboard or stern drive. Remember, too, all of these engines use a 50 to 1 gas-oil mix. This not only dramatically lengthens piston, bearing, and spark plug life, it saves you enough on oil in one year to pay for your oil the next. In all, there are 16 new models in 10 power classes. For the right engine to fit your boating needs, see your Johnson dealer. He's listed in the Yellow Pages. To avoid mutiny, why not bring the whole crew. P.S. Johnson also makes a full line of Johnson Boats and the new Johnson Skee-Horse snowmobiles.

From 3 to 100hp: every 1966 Johnson features:

- Famous two-year warranty*
- Full corrosion protection
- 50 to 1 gas-oil mix

*For 24 months after purchase, Johnson Motors will replace, without cost to the original purchaser, any part of its manufacture which upon inspection proves to have failed in normal use due to faulty material or workmanship.

Johnson Motors, 2163 Pershing Rd., Waukegan, Ill. Division Outboard Marine Corporation

The Society of Gourmets* tardily discovers Fort Lauderdale

Recently The Society of Gourmets advised in its newsletter to members—"You can dine better, for less, in Fort Lauderdale than in any other resort we have visited lately in the south or Caribbean."

This flattering comment makes handsome amends for a tardy discovery. Yet it scarcely hints at the range of gustatory pleasures that add to the fun of a Fort Lauderdale holiday.

Dine *à la francaise* in elaborate skyroom restaurants where choice viands and fine vintages are exciting as the spectacular vistas. Adventure in authentic Polynesian fare and the foods of many lands, as well as the best of regional American.

Savor the international repertoire of master chefs in elegant hotel dining rooms. Try their enormous buffets at luncheon or dinner. You'll find them lavish and priced incredibly low.

Many succulent sea foods are at their best here, where indigenous cookery fully captures their ocean-fresh flavor.

Add to the palate delights of dining out in Fort Lauderdale the appealing decor of its 236 highly recommendable eating places. Each vies for your favor not only with quality foods, but with atmosphere uniquely in keeping with its cuisine. And the keen competition keeps pricing all in your favor. Just one more of many good reasons to visit . . .

FORT LAUDERDALE
the Place to go in Florida

*The Society of Gourmets is a non-profit group of 10,000 members fostering gastronomic knowledge. National Headquarters, 654 Madison Ave., N. Y.

For FREE color booklet describing a Lauderdale holiday, write City Information Dept., P. O. Box 1181-G-15, Ft. Lauderdale, Fla. 33302

Bermuda's a never-ending cycle of pleasure. You'll have a picnic!

Bermuda picnics have a way of leading you to unexpected delights. Your hotel packs a box lunch. Stow it in your rented bike and set out for the unknown!

Perhaps a wide beach—public, yet uncrowded. A lighthouse over a hundred islands. A grove of whistling pines, a cliff high above the surf.

Bermuda blooms year round.

Just buzz along and let your fancy dictate—Bermuda has more picnic spots than even Bermuda knows!

Other activities suggest themselves on the way. Golf courses. Tennis. Sailboats to charter. Skin diving, water skiing, game fishing.

You'll bike by dozens of places worth a long stop. Lush tropical gardens. Old churches. The Aquarium, with its fantastic fish and Spanish treasure. The Carriage Museum.

Shops, of course. Large ones in town. Small ones in the country. No one presses you to buy—the bargains speak for themselves.

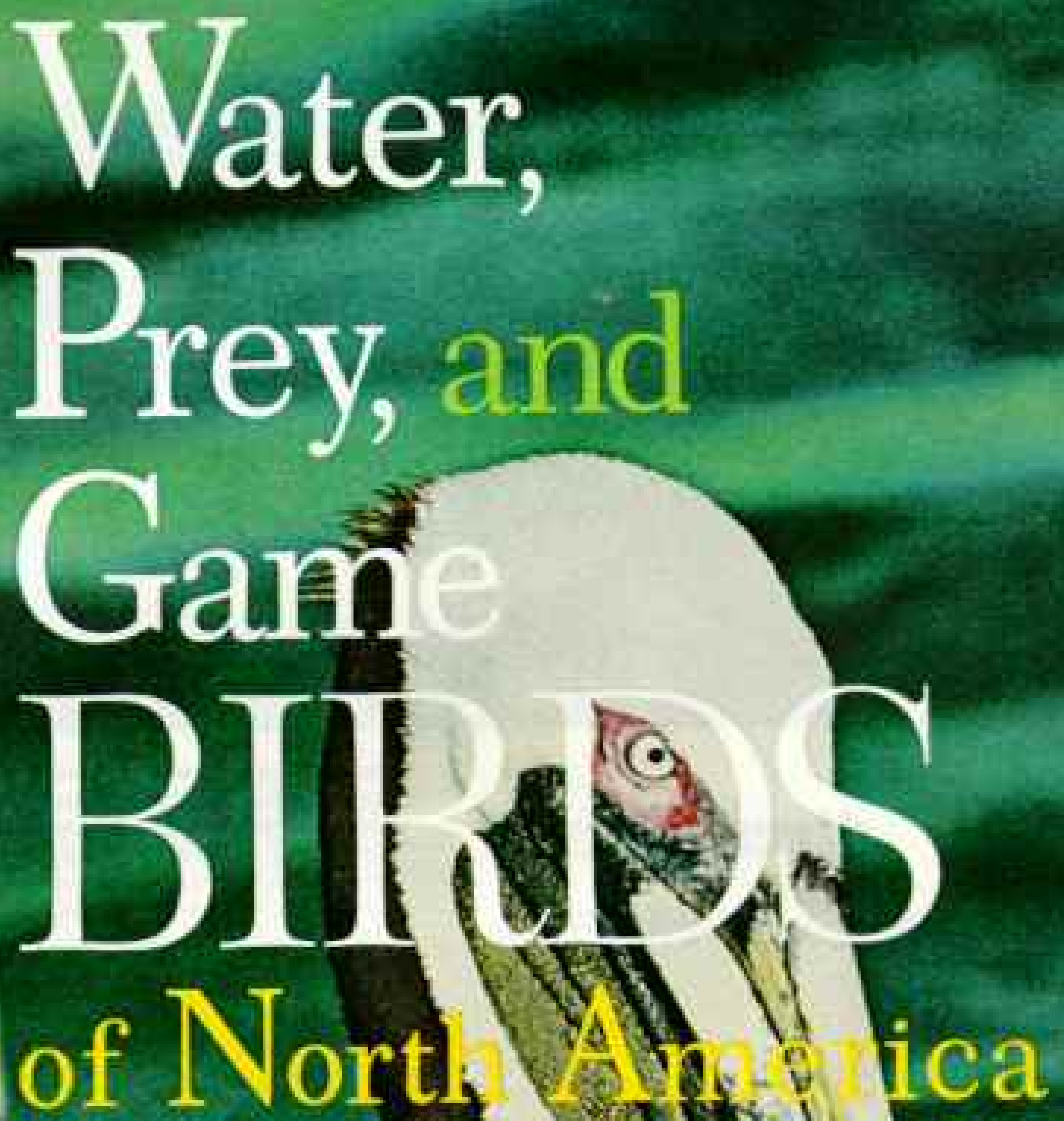
Evening plans occur as you pass cozy pubs. Inns serving native dishes. Waterfront restaurants, where you dine on *haute cuisine.*

Calypso and steel bands may lure you later. Or well-known entertainers from abroad. Or dancing by starlight. You may discover a swinging spot few tourists know, just by asking!

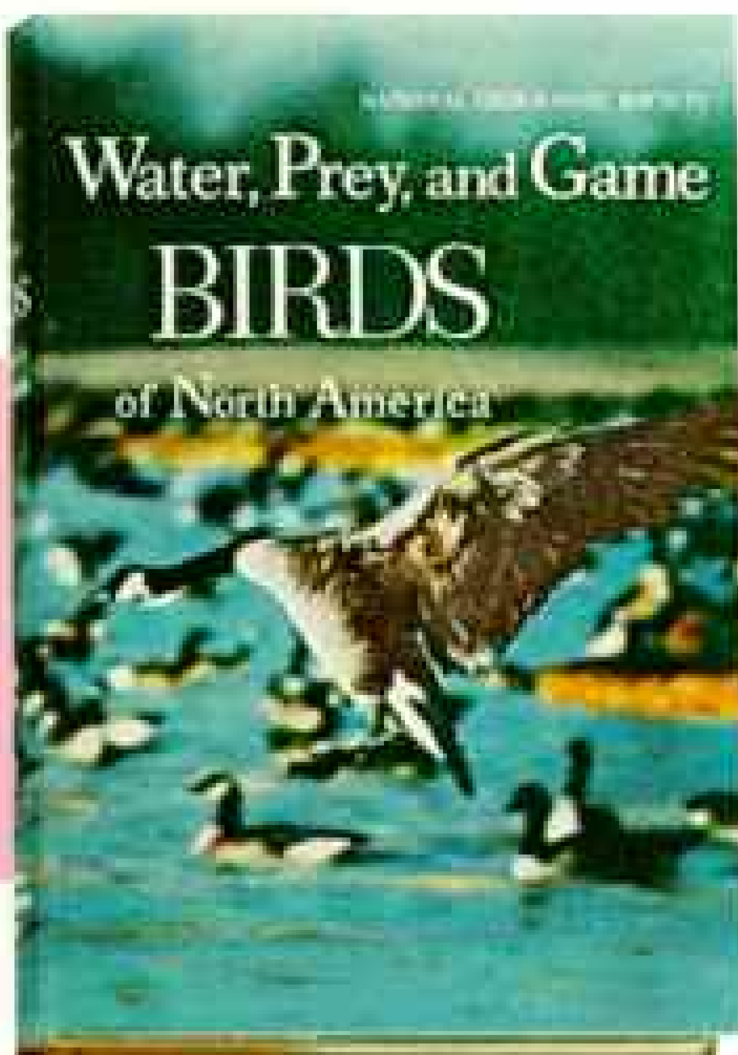
Bermuda has as many vacations as it has places to stay. Hotels, large and small. Unique Bermuda guest houses. Housekeeping cottages. Cottage colonies. Each is different, special and charming.

Bermuda commutes by ferry or bike.

Plan your Bermuda "picnic" soon. The island is small (21 square miles), and early reservations a must. Ask your travel agent. Or write Bermuda: 610 Fifth Avenue, New York, New York 10020 • 6 North Michigan Avenue, Chicago 60602 •



Full of color, action, and *sound*, this 464-page treasury of wild birds will be the jewel of your family library. 329 species are photographed in color and fully described. You'll actually hear many of them, for an album of the recorded calls and cries of 97 birds is included with this magnificent volume. Order it now. (Also available as a boxed set with SONG AND GARDEN BIRDS OF NORTH AMERICA.)



NATIONAL GEOGRAPHIC SOCIETY
Department 279, Washington, D. C. 20036

Send me, postpaid, _______ copies of the books checked below. Bill me at time of shipment:

☐ WATER, PREY, AND GAME BIRDS—$11.95 ☐ SONG AND GARDEN BIRDS—$11.95
☐ Both books in deluxe slip case—$25.00

NAME ____________________
(PLEASE PRINT)
ADDRESS ____________________
CITY, STATE, ZIP CODE ____________________

discover real travel adventure

Want to explore the mysterious pyramids of Old Mexico? Or maybe you'd prefer sun-bathing in Florida or relaxing beside some inviting stream? Perhaps you know a road somewhere you'd like to follow to the end. It's all the same with an Airstream Land Yacht . . . good beds, bathroom, hot and cold water, refrigeration, heat and light independent of outside sources wherever you go — for a night, a week, or a month. Airstream Land Yachting means real travel independance — no time-tables, tickets, packing. You just tow your Airstream lightly behind your car and follow your travel whims wherever they urge you to go. Yes, it's the exciting, better way to to travel here in North America or anywhere in the world.

write for interesting free booklet "World At Your Doorstep"

AIRSTREAM INC.

10 CHURCH STREET, JACKSON CENTER, OHIO • 12804 EAST FIRESTONE, SANTA FE SPRINGS 60, CALIFORNIA

And the Vichyssoise is out of this world.

Some people — we know this to be true — are reluctant to visit India for fear of not enjoying the more civilized comforts.

They stare open-mouthed at pictures of our beautiful country. They speak wistfully of one day seeing the Taj Mahal, and the Caves of Ellora, and the great Himalayas. But they never pick themselves up and go.

We hope these people are reassured by the next few paragraphs.

There are hotels in India. Fine, sensibly-priced hotels all across our country, with air-conditioned rooms, sumptuous beds, courteous valets, and ever-so-gifted chefs.

There are restaurants in India. Delightful, spotlessly-clean restaurants offering a wide variety of tempting Indian and continental favorites.

There are fine roads. For the price of a rented car, which in India includes a chauffeur at virtually no price at all, you can drive almost anywhere. You can also get about very nicely by jet and train. We boast the largest domestic airline in the world. And the fourth-largest railroad system.

Want to play a little golf? There are excellent courses all across our country. And splendid tennis courts too. If you'd rather be a spectator, you can watch the cricket and field hockey matches. They go on all the time. In Bombay and Calcutta, you can even manage to lose a few rupees at the races.

Our point is this: See the wonders of our ancient, colorful land. The India of venerable monuments. The India of orchid-studded mountains. The India of sleepy blue lakes. The India time can't budge.

But, at the same time, feel quite confident that when you come to our unique and fascinating country you'll enjoy all of the modern amenities of life.

If you would like more information about our country, see your travel agent or write: Government of India Tourist Office; New York, 19 E. 49th Street; Chicago, 201 North Michigan Avenue; San Francisco, 685 Market Street. And also in Canada.

India

How come 1 out of every 4 physicians in the U.S. is insured by Metropolitan Life?

When a doctor diagnoses a case, he studies every available fact. Then he puts his insight and experience to work to draw a conclusion.

It stands to reason that most physicians use equally careful judgment in choosing an insurance company. Which is probably why more than one out of four—90,000 in all—have chosen Metropolitan Life.

With Metropolitan, many doctors start out at the *receiving* end of a diagnosis—one given by a trained representative. It's called Metropolitan's Family Security Check-Up, and you can have one tomorrow from *your* Metropolitan adviser.

He'll help you list your assets (including a few you may have overlooked) so you can see, in plain terms, what you're really worth and how your family's financial security stacks up for the future.

You'll find it helpful.

Why not call your Metropolitan adviser today? There's no obligation . . . *except to those you love.*

More choose Metropolitan Life
millions more than any other company

Today Ford is a lot more than cars…
it's a Control Center for astronauts circling
the earth…an electronic machine
that reads 36,000 zip-coded addresses an hour.
The Mariner IV antenna sending back
the first pictures from Mars…
a laser beam that creates 10 million volts
out of thin air…Philco refrigerators…
medical research…guided missiles.
It's a company that goes where good ideas take it.

"And to think I started all that."

Having trouble with weight control?

The Special K Breakfast can help you reach and hold the line

This is the famous low-calorie breakfast that helps you reach and hold the line—so overweight never becomes a problem. It has everything. Good protein nourishment. Crisp, delicious taste, day after day. When you eat sensibly like this in the morning, it's easier to eat sensibly at noon and night. You look better. Feel better. Don't put it off. Let Kellogg's Special K Breakfast help you reach and hold the line.

© 1966 by Kellogg Company

The Special K Breakfast
Only 240 Calories

4 ounces orange or tomato juice —or half a medium-size grapefruit

1 ounce (1½ cups) Special K with 1 teaspoon sugar

4 ounces skim milk

Black coffee or tea

(99% fat-free)
(Only 0.62 grams of fat)

The Nutrition Story of Kellogg's Special K

One serving of Special K (1½ cups with ½ cup skim milk) supplies 14% of the recommended daily protein allowance for an adult man, and approximately these percentages of his minimum daily requirements as established by the Food & Drug Administration:

Thiamine (B_1)	44%
Riboflavin (B_2)	60%
Niacin	51%
Vitamin C	38%
Vitamin D	50%
Calcium	22%
Phosphorus	22%
Iron	36%

Kellogg's
SPECIAL K

Arrogant split grille. Sleek sculpturing with no chrome coverup. Rich walnut paneling, elegantly enveloping buckets, windshield washers to help you see your way clear in any weather. And underneath it all, a driving machine: up to 376 horsepower tied to a silky automatic or fully synchronized manual transmission and wedded to a sporting Wide-Track chassis. The classic Grand Prix formula for success. Notice how so many 1966's are attempting to follow it? And failing?

1966 Pontiac Grand Prix. Obviously.

SEND 360 YEN 20 TICALS OR $1.00 U.S.

We'll send you the Pacific by return mail. Our Pacific Explorer's Kit is a capsule of the vast Pacific. Table of contents:

A splendid Rand McNally map of the Pacific to keep you on course.

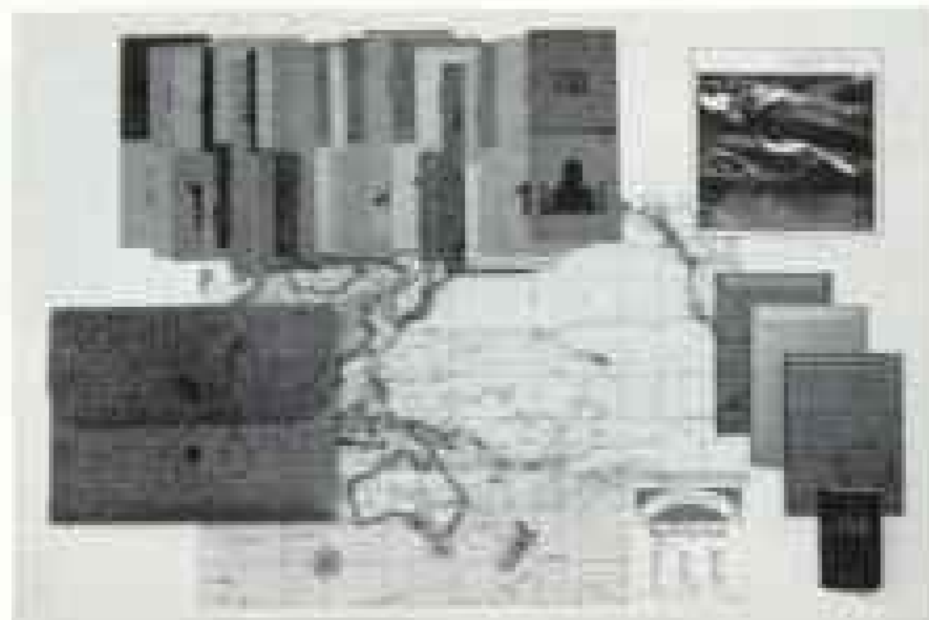
A trip planner to help plot main routes and regional side trips.

A currency converter that makes American dollars and sense out of mysterious foreign money.

Booklets detailing what to eat, what to pack and what to buy where.

Pacific Specifics—detailed data on how best to go, plus tips on visas and passports.

25—count 'em—25 handsome brochures, one on each country in the vast Pacific.



ALASKA, AUSTRALIA, BURMA, CANADA, CAMBODIA, CEYLON, FIJI, GUAM, HAWAII, HONG KONG, INDIA, INDONESIA, JAPAN, KOREA, MACAU, MALAYSIA, NEPAL, NEW CALEDONIA, NEW ZEALAND, PHILIPPINES, SAMOA, SINGAPORE, TAHITI, TAIWAN, THAILAND, UNITED STATES, VIETNAM.

I enclose one U.S. dollar. Please send me the Pacific (the Pacific Explorer's Kit) by return mail.

Name____________________

Address____________________

City________ State________ Zip______

Mail to: Department NG-2
PACIFIC AREA TRAVEL ASSOCIATION
442 Post Street, San Francisco

Don't Climb Stairs

Put an end to climbing stairs. Ride safely, effortlessly from floor to floor in a Sedgwick home elevator or Stair-Chair®. Quickly, easily installed, electrically operated. Nationwide service.

RELAX...RIDE A SEDGWICK ELEVATOR

Sedgwick MACHINE WORKS
259 West 14th Street, New York 11
ESTABLISHED 1893

FREE 400 GENUINE POSTAGE STAMPS

A Stamp Collector's Bonanza! from: **AFRICA—EUROPE—ASIA** & the **BRITISH EMPIRE** worth **$10.00** or more at catalogue prices. A fascinating mixture from foreign monasteries—convents—banks—etc. Lots of pleasure & adventure—who knows what you will find! All yours as our get acquainted gift and furthermore you will receive a BOOK OF SPECIAL OFFERS worth $ $ $ to you. Offer to ADULTS ONLY. A fine selection of stamps for your inspection will also be enclosed.

FRASEK CO. NG, WHITE PLAINS, N.Y.

In handy Folbot YOU GLIDE smoother, faster & NOISELESS with paddles, oars, or sails and ride safely w. 1 to 10 HP. motors. Many styles & sizes from 1 to 4 seaters. FOLDING or rigid PORTABLE come in

PREFAB from $55

or expertly Factory finished Folding from $179

TRAVEL CRAFT FOLBOT

fits in every home or car

Now complete DACRON Sail Rig $99

BIG NEW Fabulous 16 foot $119 Factory BUILT

FREE ACTION CATALOG

Mail coupon or address ©

to: FOLBOT CORP. G2
Charleston, S. C.

Name____________________

Address____________________

City________ State________

LINCOLN-MERCURY DIVISION

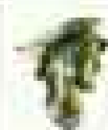
MERCURY COLONY PARK. COURTESY CAR FOR SPECIAL GUESTS AT THE RACQUET CLUB, PALM SPRINGS, CALIF.

More beautiful, more useful than ever | Mercury wagons | with the tailgate that turns into a door.

First, consider the rich warmth of this Colony Park's walnut-toned paneling. And the classic, sweeping lines that give this Mercury a distinction unmatched in its field. Drive one—experience a true sedan ride. Now, about that Dual-Action Tailgate. Swings down like a regular tailgate for cargo. Or swings aside like a door for people. Nothing to it really. Nothing, that is, except special hinges and our everlasting aim to keep on bringing you the newest, most beautiful, and most useful thing for wagon living.

It's a tailgate It's a door. At no extra cost!

Move ahead with



Mercury

in the Lincoln Continental tradition

TUCSON

Enjoy 9 Sunny Vacations for the Price of 1

High Adventure! Visit the Nation's clearest mountain top, Kitt Peak National Observatory . . . or, the world's highest radar station atop Mt. Lemmon . . . or, bird watching in mile high Madera Canyon.

Like Luxury? Stay at world famous resorts, hotels, motels, and guest ranches, enjoy fine nightclubs, dine at international restaurants.

Like Action? Watch Major League Spring Baseball, rodeos, or even bullfights in hour away Mexico.

Do it all under Tucson's warm, brilliant sun. 86% of the daylight hours are bright and cloudless . . . that's more than any place in the Nation . . . maybe the world!

P.S. Don't forget your sunglasses!

FREE COLOR BOOKLET, Write Dept. NG26
Sunshine Climate Club, Tucson, Arizona

Western Gateway to Mexico

BARGAIN FROM LONDON

Battle of Britain Set

ALL 24¢

Plus 103 DIFF. BRITISH COLONIALS

Historic 25th Anniversary set of 6 provocative designs commemorate 1940 Battle of Britain! Action scenes of Spitfires and Nazi raiders! You also get giant parcel of 103 diff. British Colonials, including **Rhodesia** Golden Jubilee, **Tonga** Coat of Arms, **Tristan da Cunha** Map, many others. All yours for just 24¢—bargain export price to introduce overseas approvals.

FREE if you act now! 125-year-old Queen Victoria penny red imperforate. Third stamp ever issued!

IMPORT DIRECT. SAVE 20-60%. Buy direct—where dealers buy. Exciting selections, low prices the easy 14 day approval way.

SEND 24¢ IN UNUSED U.S. STAMPS (NO COINS). ASK FOR LOT YZ-10

BROADWAY APPROVALS, LTD., 50 Denmark Hill, London S.E. 5, England.

Blaze new travel trails on Maupintour's

Eastern Europe

Adventure Tour for 1966!

Grand escorted tour from the Danube and Adriatic to the Black Sea, Volga and Baltic. Includes Dubrovnik, Golden Sands, Transylvanian Alps, Karlovy Vary and much more. June and July departures. 56 days, $2237 via Sabena. **Write today for Maupintour's new 1966 Eastern Europe folder.**

Maupintour
270 Park Ave., New York City 10017.
See your Travel Agent for reservations.

BOOKS . . .

published by and available only from the National Geographic Society

WATER, PREY, and GAME BIRDS with record album	$11.95
SONG AND GARDEN BIRDS with record album	11.95
Water, Prey, and Game Birds & Song and Garden Birds combined in deluxe slipcase	25.00
WONDROUS WORLD OF FISHES	8.75
GREAT ADVENTURES	7.95
MEN, SHIPS, and the SEA	9.85
AMERICA'S HISTORYLANDS Landmarks of Liberty	11.95
WILD ANIMALS of North America	7.75
INDIANS of the Americas	7.50
EVERYDAY LIFE in Ancient Times	6.00

The above is a partial listing. Write to the Society for a free catalog of all publications. United Kingdom members may obtain the Society's publications from its office at 11 Stanhope Gate, Mayfair, London, W. 1.

Order from Department 242:

NATIONAL GEOGRAPHIC SOCIETY
WASHINGTON, D. C. 20036

A modern Shirley in Hollywood

Wilshire Blvd.: shopping subtropical style

Winter poinsettias, 10 feet tall

See oranges grow next to snow

Modern citizen meets prehistoric one

Can this be the desert? It is!

Moment of magic: as sunset fades, the rugged Pacific coastline lights up

All this at hometown prices

There's no "best" season in Southern California. No "stay-home" season, either. With year-around vacation weather (and attractions that are attractive every month), we have a year-around stream of visitors. So we can afford to be reasonable — lodging, meals and other expenses average about the same as at home. Remember, too, you'll see the U.S.A. on the way! Mail coupon.

Southern California

Free: Official Vacation Guide.
Color pictures, sightseeing map, dozens of Southern California attractions.

ALL-YEAR CLUB, DEPT. NG-2
[illegible] WEST SEVENTH STREET, LOS ANGELES, CALIFORNIA [illegible]

NAME ______________________
Please Print

ADDRESS ______________________

____

[illegible]

Boys' Schools

ADMIRAL FARRAGUT ACADEMY Fully accred. Grades 7–12. Prep. for all colleges, gov't. academies. Naval science. Guidance. Near Gulf beaches. Pool, gym; boats, bands. Catalog. **Admiral Farragut Academy, Prin., Box 11448, St. Petersburg 33, Florida**

AUGUSTA MILITARY ACADEMY
Fully accredited preparatory school features counseling, small classes. ROTC training, sports. Noted as "The Friendly School." Grades 7–12 & P. G. New Junior School barracks, science & language labs. Tuition $1500. Nonmilitary Summer School. Catalog: **Superintendent, Box N-2, Fort Defiance, Virginia**

BOLLES OF FLORIDA
Fully accredited. Sound basic academic preparation. Grades 7–12. Developmental Reading. Study Skills. College Boards. Advanced Placement in English, Math. & Biology. Guidance. Varsity and intramural sports for all. Year-round golf, tennis, sailing. Outdoor swimming pool. Catalog. **Director of Admission, Box 10169-N, Jacksonville, Florida 32207**

BORDENTOWN MILITARY
Fully accredited. College preparatory. General courses. Grades 8–12. Outstanding record of college entrance. ROTC. Boys taught how to study. Small classes. Sports for all. 91st yr. Summer session. Catalog. **Registrar, Box 652, Bordentown, N. J.**

CARDINAL FARLEY MILITARY ACADEMY
College prep. Grades 9–12. Conducted by Irish Christian Bros. Accred. NDCC Honor School. Indiv. guidance. Good college admissions record. New field house, pool, sc. bldg. Sports, activities. Catalog: **24 Morton Rd., Rhinecliff, N.Y. 12574**

CARSON LONG
Military School. Educates the whole boy—physically, mentally, spiritually. How to learn, how to labor, how to live. Prepares for college and life. Grades 6–12. 130th year of character building. Overall charges $1700. **Box 21, New Bloomfield, Pa.**

CASTLE HEIGHTS MILITARY ACADEMY
Founded in 1902. Traditional ROTC honor school in delightful Andy Jackson country. 200-acre campus, 22 bldgs., golf course, radio station. Guidance program. Every cadet in athletics, taught to study and excel. Jr., Sr., Post-Grad schools. Accredited summer program. Graduates to all leading colleges. Write
Castle Heights, Box 266N, Lebanon, Tenn.

COLUMBIA MILITARY ACADEMY
Combines academic excellence with stress on character, leadership. Accredited prep for College, Gov't Academies. Beautiful campus. ROTC. All sports. Junior School. Summer School.
Catalog. **CMA, Dept. N, Columbia, Tenn.**

CULVER On Lake Maxinkuckee. Develops initiative, self-reliance, courtesy, poise. Grades 8–12. Thorough college preparation. Accredited. Exceptional facilities. Leadership training. Black Horse Troop. Artillery. Infantry. Band. ROTC. Sports. Scholarships available. Catalog. **29 Pershing Way, Culver, Indiana**

ADMIRAL FARRAGUT ACAD.
Fully accredited. Grades 5–12. Preparation for all colleges, gov't academies. Testing, guidance for college, career. Naval science. Pool, gyms; boats, bands. Summer camp, school. Catalog. **Adm. Farragut Academy, Box L, Toms River, N.J.**

FISHBURNE MILITARY A Small academic school offering complete preparation for college—90% of graduates accepted. Grades 8–12. Fully accredited. Fine military tradition. Sports. Tutorial Summer School June 27–Aug. 13. Catalog:
Col. E. B. Young, Box N, Waynesboro, Va. 22980

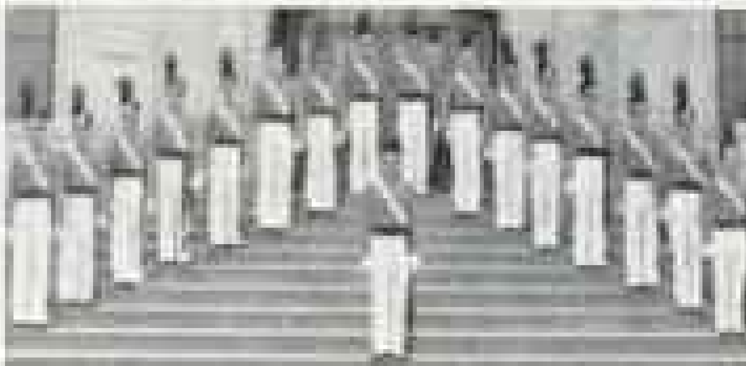
FLORIDA AIR ACADEMY
New color catalog shows academic and extra curricular plan. Accredited college prep. Grades 10–12 at Melbourne . . . 1–9 at Ft. Lauderdale. Sports. Flight optional. Small classes.
Florida Air Academy, Melbourne 1, Florida

Florida Central Academy

Grades 7–12. Small classes. "In the land of the sun" 20 mi. north of Orlando. Fully Accredited College Prep. 30 acre campus. Outdoor Pool. Golf course. Athletics for all. Expert coaching. Experienced instructors. Colorado Summer School. Catalog, write, Dean, Box 38, Sorrento 4, Fla.

FLORIDA MILITARY SCHOOL
Grades 7–12. Boarding students only. Accredited. Honor rated. Academic program stressed. Athletics. Intramurals. Help class. Remedial reading. Pool. Band. Riflery. Qualified faculty. Catalog. **Col. Carl Ward, Headmaster, DeLand 4, Fla.**

FORK UNION MILITARY ACADEMY



Our ONE SUBJECT PLAN of study in Upper School (grades 9–12) has increased honor roll 50%. Develops concentration. Fully accredited. 17 modern bldgs., 2 completely equipped gyms, 2 indoor pools. Splendid environment, excellent health record. **Junior School (grades 5–8) has separate buildings, gym, pool. Housemothers.** 68th year. For ONE SUBJECT PLAN booklet and catalog write: **Dr. J. C. Wicker, Box 302, Fork Union, Virginia 23055**

GREENBRIER MILITARY SCHOOL
154th YEAR
The School of Achievement
A Superior college preparatory school. Grades 7–12 and P.G. Fully accredited. College Boards. Learning How to Study emphasized. Small classes. Responsibility & leadership developed. Business. Public Speaking. Band. Excellent Success records in College & Life. Athletics for all. 2,300 ft. Elev. Summer camp. Catalog, write: **GMS Admissions Director, Box M-302, Lewisburg, W.Va.**

HARGRAVE MILITARY ACADEMY
Military training. Fully accredited. College preparatory, general courses. Grades 8–12. How-to-study training; remedial and developmental reading. All sports. Summer School. Est. 1909. Catalog: **Col. Joseph H. Cosby, Box N, Chatham, Va.**

HOWE MILITARY SCHOOL
Separate Jr. & Sr. Schools, grades 6–8 & 9–12. Thorough academic training in spiritual environment. Accred. prep. Sr. Basic ROTC. Jr. sports, dorm. Episcopal. Est. 1884. Summer Camp. Catalog. **B. B. Bouton, 52 Academy Pl., Howe, Ind.**

KEMPER MILITARY SCHOOL AND COLLEGE
Fully accredited boys' prep, Jr. College. Small classes. Fine faculty. Counseling. How To Study Program. Jr., Sr. ROTC. Sports for all. Social activities. Flying Club. Education for leadership since 1844. Catalog: **799 Third St., Boonville, Mo.**

KENTUCKY MILITARY INSTITUTE Lyndon, Ky. In winter at Venice, Fla.
Preparation for college under ideal climatic conditions. Two complete school plants. Fully accredited. Grades 9–12. Small classes. Special reading course. ROTC. Sports for all. Oldest private military prep school in United States. Catalog.
Director of Admissions
Box N, Lyndon, Kentucky 40222

MARINE MILITARY ACADEMY Grades 8–12. College prep. High academic standards. Training based on Marine Corps traditions. **Gen. Vernon Megee, USMC (Ret), Supt.; Dr. Wm. D. Masters, Lt. Col. USMC (Ret), Dean. Catalog: 326 Iwo Jima Blvd., Harlingen, Texas**

MILLER SCHOOL OF ALBEMARLE
Military. Grades 5–12. College preparatory plus industrial arts, iron & woodworking, auto mechanics, machine shop & electricity. Sports. 88th yr. Catalog. **Col. W. H. Flannagan, Dept. N, Miller School P. O., Charlottesville, Virginia**

MASSANUTTEN MILITARY ACADEMY
In the Beautiful Shenandoah Valley
90 Mi. S. W. of Wash., D. C.–U.S. Route 11
NATIONALLY ACCREDITED — ROTC
GRADES 8–12 & PG · SMALL CLASSES
Prof. Guidance — Reading Courses
Special College Entrance Program
Sports · Riding · Band · Pool · Gym
67TH YR. — PICTORIAL CATALOG
Write Col. R. J. Benchoff, Pres.
Box 12, Woodstock, Virginia

MIAMI MILITARY ACADEMY
Fully accredited. NDCC Honor School. College Prep & General. Grades 6–12 & Post Grad. 41st yr. Class average 16. Guidance. HOW TO STUDY. Honors Courses. Flight training. Band. All sports. Pool. 30 acres. Moderate fee. Also Summer School & Camp. Catalog: **10607 Biscayne Blvd., Miami 38B, Fla.**

MISSOURI MILITARY ACADEMY and Separate Junior School. 77th yr. Fully accred. College Prep. Grades 4–12. Small classes, finest teachers. Individual achievement stressed. Guidance. Sr. ROTC. All sports. Riding, golf. 226 acres. 7 new bldgs. in 8 yrs. Catalog: **Col. C. R. Stribling, 925 Main, Mexico, Mo.**

N. Y. MILITARY ACADEMY
Accredited prep school. Grades 5–12 & P.G. Expert faculty, challenging curriculum. Reading, small classes. New Science bldg., advanced courses. Sports. Riding. 3 pools. Band scholarships. **72 Academy Ave., Cornwall-on-Hudson, N.Y.**

NORTHWESTERN MIL. ACAD.
Lays a solid foundation for a successful college career in a challenging, Christian atmosphere. Accredited. Grades 9–12. Est. 1888. Basic Sr. ROTC. Small classes. Guidance. Sports. Catalogs. **52 S. Lake Shore Road, Lake Geneva, Wis.**

OAK RIDGE MILITARY INSTITUTE 118th yr. College Prep & Post Grad. Enrollment 250. Small classes. Individual atten., supervised study. Reading development. Sports. Band, ROTC. Address: **Col. W. J. Chandler, Supt. Box N-66, Oak Ridge, North Carolina 27310**

ONARGA MILITARY SCHOOL
Trains for character. Individual study program; homelike living. Accredited. College preparatory, business. Small classes. Guidance. Grades 8 to 12. Music. Pool. Moderate fee. Chicago 85 mi. Catalog: **Col. L. W. Adams, Box W, Onarga, Ill. 60955**

EDUCATIONAL TROUBLE SHOOTERS
Individualized Plan— Each Student a Class
For those with educational problems—successful college preparation and general education. **Our tests discover causes of difficulties** and we (1) devise individualized program to overcome difficulties; (2) make up lost time; (3) instill confidence; (4) teach the art of concentration, and science of study. *Faculty 14; Enrollment 40; 57 years' experience.* Write Edward R. Knight, Ph.D., Headmaster
OXFORD ACADEMY
Box G-55, Pleasantville, New Jersey

PEEKSKILL MILITARY ACADEMY
College preparatory school with military training. Grades 7–12. Graduates successful in college. Advanced studies available. Sports. Pool. 50 mi. from New York City. 134th yr. Enroll now for mid-year. Catalog: **Box N-7, Peekskill, N. Y.**

PERKIOMEN Graduates attend leading colleges, universities. Homelike atmosphere. Grades 8–12. Sports, activities for all. Near New York City and Philadelphia. 81st year. Coed summer school. Write for catalog. **Dr. Stephen N. Roberts, Headmaster, Pennsburg, Pennsylvania 18073**

PINE CREST SCHOOL Academic excellence in Florida. Fully accred. prep. Boarding grades 7–12. Grads enter leading colleges. Sports; pool. Beautiful new campus. Coed. 22nd yr. Summer school, camp. Catalog: **Dir. of Adm., Box N, Pine Crest School, Ft. Lauderdale, Fla. 33308**

RANDOLPH-MACON ACADEMY MILITARY. ACCREDITED. 78th yr. In beautiful Shenandoah Valley at Skyline Drive. College prep. Small classes. Intensive study methods. SUMMER SCHOOL. Catalog. **Dr. Robert P. Parker, Pres., Box E, Front Royal, Va.**

RIVERSIDE MILITARY ACADEMY

A DISTINGUISHED MILITARY PREPARATORY SCHOOL

Fully accredited college preparatory. Grades 8-12 and P. G. **Weekly reports.** Non-sectarian. Two completely equipped schools provide ideal change of climate for health, interest and year-round sports. Constant association with selected teachers who live and eat with cadets.

College counseling. ROTC develops self-discipline and good study habits. 2nd new Gymnasium & Activities Bldg. Boys from 37 states. All-inclusive School fee $1894. Catalog. Write: **GEN SANDY BEAVER, Pres. Box 302, Gainesville 3, Ga.**

WINTER IN FLORIDA
FALL & SPRING IN BLUE RIDGE MOUNTAINS

St. John's MILITARY ACADEMY

Distinguished prep school where boys are individuals. Grades 7-12. Accredited. Dynamic teaching system stresses scholarship, leadership. Christian character. Experienced faculty. Special reading program. Sports for all. Indoor pool. Summer camp, school. 26 miles from Milwaukee. 83nd year. Catalog: **Dir. of Admissions, Box 1326, Delafield, Wis.**

SAINT THOMAS ACADEMY Grades 9-12. Prep for leading colleges & universities. Roman Catholic. Small classes. ROTC. Distinguished faculty. Academic, career & spiritual guidance. Sports. 83nd yr. Catalog. **Box 2, Hdm., St. Thomas Academy, St. Paul, Minn. 55116**

THE SANFORD NAVAL ACADEMY

Florida's Outstanding Private School

Selective enrollment. Small classes. Annapolis personnel. Guidance program. Every midshipman taught to study and excel. All-sports program on lakefront campus. Jr. and Sr. schools. Outstanding housing and academic facilities. Write Box 396N. **The SANFORD NAVAL ACADEMY, Sanford, Florida**

SEWANEE MILITARY ACADEMY Fully accred. college preparatory. Grades 9-12. Small classes, indiv. attention. Episcopal. ROTC highest rating. Sports; gym, pool. 10,000 acres, U. of South affil. Summer School-Camp. Est. 1868. Catalog: **Hdm., Box N, Sewanee, Tenn. 37375**

SHATTUCK SCHOOL Boys, Grades 9-12. Balanced educational, religious, military. Accredited college prep. General courses. Small classes. Sr. Basic ROTC. Sports. Gym, pool, golf. Episcopal. Est. 1858. Summer School. Catalog: **Dir. of Admissions, 661 Shumway Hall, Faribault, Minn.**

STANLEY COLLEGE, DERBY (Boys 11-16). Private school ideally situated in the heart of England. Accredited college. An English education in a disciplined, yet friendly and hospitable, atmosphere. Small classes; specialist teaching. Excellent cuisine; much home-grown food.

STAUNTON MILITARY ACADEMY

In Beautiful Shenandoah Valley. Thorough college preparation; fully accredited. Individual guidance. Band. All sports. 2 gyms. Pool. Fine health record. Fireproof buildings. Separate Junior School. Illus. Catalog write Supt. S.M.A. Box D3, Staunton, Va.

LEADERSHIP, CITIZENSHIP & SELF DISCIPLINE STRESSED. Founded 1860

TENNESSEE MILITARY INSTITUTE Boys need thorough preparation for engineering schools & leading colleges. Over 90% of grads enter colleges. Grades 8-12. Postgrad. Summer School. 93rd yr. Catalog: **Col. C. R. Endsley, Jr., Box 147, Sweetwater, Tenn.**

VIRGINIA EPISCOPAL SCHOOL Est. 1916. Grades 8-12 & P.G. Fully accredited. Thorough preparation for college. Religious instruction. Small classes. Daily athletics. In foothills of Blue Ridge Mts. Write: **Austin N. Montgomery, Jr., Lynchburg, Va. 24505**

VALLEY FORGE MILITARY ACADEMY

"At the Nation's Shrine"

Valley Forge, hallowed shrine of American freedom, has loaned its cherished name to this fully accredited, distinguished military academy and Jr. College. Small classes, highest academic standards. Prep. School, grades 9 thru 12 and Junior College, regional accreditation. Personalized guidance and instruction in Reading and Speech Clinics. All varsity sports. 82 modern fireproof buildings, including two gymnasiums and hospital. Motorized Artillery, Cavalry, Infantry, Band, Senior Division ROTC. Send for Catalog. Box M, Wayne, Pa.

WENTWORTH MILITARY ACADEMY Preparation for the rigors of business or higher education. Accred. 4-yr. High School, sep. 2-yr. College. Sr. ROTC. New million-dollar field house. Golf. FAA flying. Summer School, younger boys camp. 88th year. Catalog: **Col. Wikoff, 826 Wash. Place, Lexington, Mo.**

WESTERN MILITARY ACADEMY Emphasis on self-confidence, self-direction, how-to-study. Small classes, guidance. Grades 7-12. Career analysis. Jr.-Sr. R.O.T.C. Athletics; riding, pool. 89th year. Near St. Louis. Catalog: **Col. Ralph B. Jackson, Supt., Box N-2, Alton, Ill.**

Secretarial Schools

KATHARINE GIBBS Outstanding secretarial training for high school, private school graduates. Special course for college women. Resident facilities. Catalog: **Asst. Dean, 21 Marlborough St., Boston 16, Mass.; 200 Park Avenue, New York 17; Montclair, N.J.; 77 S. Angell St., Providence 6.**

Colleges

TRI-STATE COLLEGE Start your career here. Graduates in important posts in engineering and business administration. Placement outstanding. Professionally-oriented. Excellent faculty. Small classes. Four-quarter year permits degree in three years. Catalog. **1426 College Ave., Angola, Ind.**

Girls' Schools

CHAPEL HILL SCHOOL Est. 1860. Boarding & Day. Gr. 7-12. Col. Prep. Gen. Courses. World-wide enrollment of 165. "How-to-Study." College Board Review classes. Country atmosphere. Boston-10 mi. Also, Summer Session. Catalog: **327-N Lexington St., Waltham, Mass. 02154**

HOWARD 81st yr. Accredited college prep. for girls. Grades 8-12 and P.G. Art, Music, Speech, Dramatics, Typing. Small classes. Supervised study. Advanced science and math. courses. New classroom bldg. incl. science, language labs. All sports. Riding. Near Boston. **Mrs. John O. Vandemoer, W. Bridgewater, Mass.**

KINGSWOOD - CRANBROOK Day, grades 7-12. Boarding, grades 9-12. Thorough college preparation. Unusual opportunities in weaving, other arts, sciences, music, sports. 50-acre campus. Descriptive literature on request. **885 Cranbrook, Box 156, Bloomfield Hills, Mich.**

McConnell Airline School Be an Air Hostess. Romance! Travel! Adventure! Fun! Train for exciting flight and ground positions. Airline-trained teachers. Free placement service. 23rd year. Write for catalog (give age). **1030 Nicollet Ave., Room N-26, Minneapolis, Minn.**

VERNON COURT JUNIOR COLLEGE 2-yr. women's college. Transfer, terminal. Program planned to develop intellectual curiosity. Lib. arts, music, art, retailing, home ec., sec'l, med. sec'l. Sports. Beautiful campus. **President's Secretary, Bellevue Avenue, Newport, R.I.**

Home Study

CALVERT SCHOOL If you plan to live abroad, you can educate your child with approved Calvert home-study courses. Kindergarten—8th grade. Step-by-step teaching manual. Used by tens of thousands. Ideal for superior child. Non-profit. 60th year. Catalog. **32 W. Tuscany Rd., Baltimore 10, Md.**

Camps

ADIRONDACK WOODCRAFT Fun and adventure for boys 7-18. Six age groups. 2 private lakes near Old Forge. Pack-horse & canoe trips. Riding. Forestry, riflery, fishing. Tutoring. Mature counsellors. Nurses. 41st year. Booklet. **Wm. H. Abbott, Box 2374, Fayetteville, N.Y.**

BRUSH RANCH Girls & boys. Separate camps. On Pecos River, 18 miles from Santa Fe, N.M. Mountain climate. Riding (Western & English). Swimming. Pack trips —Drama, Dance, Art, Fencing—All Sports. Individual attention. Brochure. Write: **Mr. & Mrs. Newcomb N. Rice, Tererro, New Mexico. 87573**

NAVAL SCHOOL

SAILING, WATER AND LAND SPORTS

Exciting worthwhile summer for boys 14-18 on beautiful 1400-acre campus on Lake Maxinkuckee. SCUBA, water skiing, swimming. U.S. Navy-Honor ROTC training. Golf, tennis, baseball, basketball, track, other sports. Optional academics, reading, typing, driver training. Emphasis on initiative, promptness, courtesy. Scholarships. Catalog: **275 Lake Shore Way, Culver, Indiana 46511**

CULVER

FARRAGUT NAVAL CAMPS Summer of adventure on Toms River for boys 8-16. Sailing emphasized. 56-boat fleet incl. 33 sailboats. Trips on 63-ft. flagship. Music, 2 gyms, athletic fields. Pool. Appr. summer school. Ctlg. **FarragutNavalCamps, Box LC, TomsRiver, N.J.**

THE HOSTEL TRAIL To England and Scotland. A summer of bicycling fun and adventure. Separate groups for boys, girls. Ages 14-18. Interesting, capable British leaders. Sixth year. Brochure: **Leonard Haertter, 600 S. Price Road, St. Louis, Missouri 63124**

CAMP NAGAWICKA Girls 9-16. A happy, healthful, instructive experience. 19 sport, camp activities. Riding, sailing, diving. Tennis, golf. Arts, crafts. Ballet. Accredited summer school. Guest house. Brother camp. Catalog: **Camp Nagawicka, Box N-11, Delafield, Wisconsin**

CAMP ST. JOHN'S Boys 8-16. Riding, swimming, sailing, canoeing, golf, tennis. 27 sports, camp activities. Physical fitness program. Accredited summer school. Reading laboratory. All facilities of St. John's Military Academy. Sister camp. Catalog: **N-112 DeKoven Hall, Delafield, Wisconsin**

TED WILLIAMS BASEBALL CAMP

Boys 8-19. Various Clinics & Programs Featuring Baseball & Basketball. Write **BJ Cassidy—Dept. NG, Lakeville, Mass.**

Coed Schools

ELGIN ACADEMY Grades 7-12. Coed. Accredited. Personalized guidance with individual PAR goals stimulates academic progress. Modern dormitories, gym, indoor pool, art gallery. Developmental reading. Est. 1839. Catalog: **Director of Admissions, 117 Academy Place, Elgin, Illinois 60120**

Interlochen Arts Academy Accred., coed college prep. Grades 8-12. Equal emphasis on arts & academics. Music, Art, Drama, Dance. Small classes. Academy affiliated with National Music Camp. Catalog. **Dir. of Adm., Rm. 28, Interlochen Arts Acad., Interlochen, Mich.**

JUDSON SCHOOL Coed Ranch School. Grades 1-12 (boarding 3-12). College preparatory. Healthful, warm climate, near Phoenix. Small classes. Accredited. Riding included in tuition. Tennis, swimming, pack trips, riflery, music. 28th yr. Brochure. **David N. Wick, Headmaster, Scottsdale, Ariz.**

USNSA-Educational Travel Excellently led European travel programs and French study program for pre-college and high school students. An enjoyable and rewarding experience for any student at reasonable cost. Write: Dept. G1.2, 265 Madison Ave., N.Y., N.Y. 10016

WEST NOTTINGHAM ACAD. Fully accred. Coed. College Prep. Grades 8-12, Postgrad. Advanced math, English, science, history avail. Guidance. Sports, golf. Between Phila.-Balto. Est. 1744. Camp & Summer School. Catalog. **N. C. Farnlof, Hdm., Box 31, Colora, Md.**

WESTTOWN A Friends' school. Prepares boys and girls for college under the moral and spiritual standards of Quaker education. Grades 9-12. Apply now for 9th or 10th grade, September 1967. Established 1799. Catalog. **J. Kirk Russell, Dir. of Admissions, Box 662, Westtown, Pa. 19395 (near Philadelphia)**

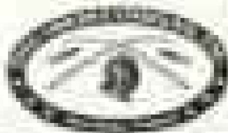
Every Fisherman Dreams of Owning a Rod Like This!

MIDGE IMPREGNATED BAMBOO FLY ROD BY ORVIS

A masterpiece of fine craftsmanship. If he doesn't get one as a gift, sooner or later he will buy one for himself. Two-piece Midge Model . . . . 7½-feet of feather-light (3-¾ oz!), powerful casting equipment. Designed for extra fine leaders, lightest possible fly line and tiniest flies. Provides the trigger-sensitive touch that every earnest fisherman demands.

Complete, with extra tip, sack & aluminum case
Satisfaction guaranteed. . . . . . **$110** postpaid

free Write for famed ORVIS catalog . . . . an encyclopedia of fishing equipment and outdoor sporting needs.



THE ORVIS CO., Inc.
Manchester 10, Vt.

Ceylon
The Peaceful Island

Ceylon, vest-pocket wonderland of Asia, known to the Greeks and Romans as the Isle of Delight, welcomes you to its peaceful palm-fringed shores. Cool ocean breezes make tropical Ceylon a year-round vacation paradise.

See your Travel Agent or write to: Ceylon Embassy, 2148 Wyoming Avenue, N.W., Washington 8, D.C., or Ceylon Government Tourist Bureau, Colombo 1, Ceylon.

AROUND AFRICA UNDER SAIL

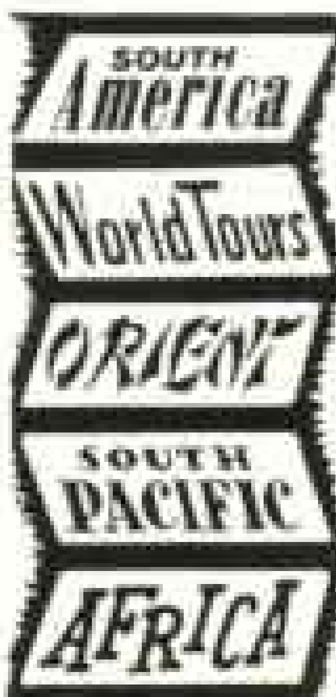
July 15, 1966 the barquentine VERONA leaves Portugal for a ten month 20,000 mile passage through the Mediterranean, Red Sea, around Africa, and across the Atlantic to the Caribbean and U.S. She will stop at the most interesting and out-of-the-way places, such as Yugoslavia, Greek Islands, Istanbul, Seychelles, Kenya and Tanzania with time out for a safari, Mozambique, South Africa, Angola, Nigeria, Ghana, and the best of the Caribbean Isles.
The 131' teak VERONA is one of the finest sailing vessels in commission today. She has been completely refitted during the past three years with new machinery, electronics, and equipment. She is commanded by Christopher Sheldon, Ph.D., who has sailed more than 125,000 miles in square-riggers throughout the world. The voyage offers young men, women, and married couples a unique opportunity for deep-water sailing, skindiving, travel, adventure and education. Cost: $3,750.00

THE OCEAN ACADEMY - 137 ROWAYTON AVE., ROWAYTON, CONN.

STAMPS FREE

New Issues—New Countries—Triangles
ROCKETS—OLYMPICS—SCOUTS
BIRDS—FLOWERS—ANIMALS—
ALSO Old Canadian and U.S. postage stamps. All genuine. Plus complete illustrated Canadian Stamp Catalog. All the above FREE. Please write.

GRAY STAMP COMPANY
Dept. N5 — Toronto, Canada



TRAVCOA
Deluxe Escorted Tours

SO. AMERICA 31 to 51 days from $1495
East & West coasts, Cartagena, Amazon, Surinam

AROUND THE WORLD 58 days $3195
Incl. Khyber Pass, Swat Kingdom, Ceylon, Nepal

TOUR OF THE LOST WORLDS
81 unusual days for experienced travelers . . . $4820

ORIENT 35 days $1995
Incl. Inland Sea, Angkor Wat, Kuroshiki, Beppu

SOUTH PACIFIC 37 days $2390
Incl. great Australian Outback, Bora Bora

AFRICA *with White Hunters* 58 days $2858
Incl. East & West coasts, Tree Tops, Ngorongoro

TOURS LIMITED TO 24 PERSONS
Write Dept. G. for Descriptive Folders

TRAVCOA 27 E. Monroe • Chicago • DE 2-0950

MY LAWN USED TO DRIVE ME CRAZY

By Mike Senkiw, Agronomist

For years I was like nearly everyone else with a lawn. I spent more time on it than anything else around the house. It was weed, feed and re-seed — there was no end to it. Every summer I fought to keep my lawn green through heat, dry spells and water bans.

I was ready to rip it out, concrete the area and paint it green! Instead, I plugged in Amazoy Zoysia Grass. Those plugs grew into solid turf that stayed green thru heat and drought. When insects, disease and weeds ruined nearby lawns, mine was untouched. I haven't used crab-grass and weed killers for years. I mow half as much as my neighbors, and I've never seeded my lawn again. If you're tired of lawn drudgery, send for Free, interesting facts: prices, plugging in Amazoy, how it chokes out crabgrass, Pre-Season Bonus Offer. Send name and address to:

Dept. 228, AMAZOY, 8414 Reisterstown Rd., Baltimore, Md. 21215

JIM WOODMAN

AIR TRAVEL BARGAINS

1966 WORLDWIDE GUIDEBOOK

Airline executive tells secrets how to get lowest jet fares on all leading airlines. 148 pages loaded with pictures, maps, round-trip fares from U.S. (Europe $257, South America $125). Also complete lowest fare information on all airlines serving Mexico, Caribbean, Bahamas, Pacific, U.S.A., Around-the-World. Also lists best Tour and Hotel Bargains. Used by Travel agents. Endorsed by leading airlines. Send $2. Guaranteed to save you money or your money back.

AIR TRAVEL BARGAINS, Box 408-G, Coconut Grove, Miami, Fla.

send $2 today
Name__________
Address__________
City________ State______ Zip____

CHANGE OF ADDRESS?

ATTACH YOUR NATIONAL GEOGRAPHIC LABEL HERE, print new address below, clip and mail to National Geographic Society, Washington, D.C. 20036. (Have a question about your magazine? Attach label to this form, and clip to your letter.)

NAME__________

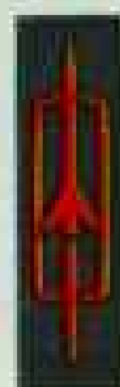
NEW ADDRESS__________

CITY________ STATE______ ZIP CODE______

STEP OUT FRONT IN '66... in a Rocket Action Olds!

You'd expect a wagon this big and beautiful to cost a bundle more. But that's Oldsmobile's Vista-Cruiser for you. Full of surprises.

Oldsmobile Division • General Motors Corp.



First Surprise: Vista-Cruiser's distinctive look. Downright extravagant. Next: Room. Loads of it. Over 100 cubic feet of it! Next: Comfort. Foam-padded Morocceen seats —all facing forward. Then: Ride. Like a glide. Four coil springs. Full 120-inch wheelbase. Performance? Rocket V-8 action all the way. Best surprise of all: Price. Mighty low for such a mighty big wagon! LOOK TO OLDS FOR THE NEW!

This year take a jet vacation.

You're only young once.

This could be *the* year.

The whole country — the whole world, in fact — is within quick, comfortable reach by Boeing jets.

Boeing jetliners can take you to 269 cities in 113 countries. They fly you as far in an *hour* as you can drive in a day.

And if you've never flown before, you'll discover that your flight aboard a Boeing jetliner is one of the most exciting parts of the whole trip.

Boeing jets have carried more passengers than any other jets — over 100 million. They've had far more time in the air — over 5½ million hours (627 years).

This year, take a *jet* vacation. Remember you're only young once!

Now flying Boeing jets: *Air Congo, Air France, Air-India, Air Madagascar, All Nippon, American, Ansett-ANA, Avianca, BOAC, Braniff, BWIA, Continental, Eastern, El Al, Ethiopian, Flying Tiger, Indian, Iran Air, Irish, JAL, LIA, Lufthansa, National, Northeast, Northwest, Pacific Northern, PIA, Pan American, PSA, Qantas, Sabena, Saudi Arabian, South African, TAA, TAP, TWA, United, Varig, Western, World.* In service later with: *Aerolineas Argentinas, Alaska, Braathens (Norway), Caribair, Frontier, Japan Domestic, Mexicana, Olympic, Pacific, Wardair/Canada.*

BOEING JETS

English Country Model 655, in Maple or Cherry, only $398.50

Until you hear magnificent Magnavox Astro-Sonic stereo you have no idea how beautiful music can be

Astro-Sonic Stereo brings you the full beauty of music with unequaled tonal dimension and fidelity from your records, or stereo FM and FM/AM radio. This superb performance is maintained with lasting reliability because advanced solid-state circuitry replaces tubes; eliminates component-damaging heat.

Exclusive Micromatic record player completely eliminates pitch distortion. Featherlight 1/10-oz. tracking touch banishes record and stylus wear so your records can last a lifetime.

And every authentic style is a furniture masterpiece you will admire and enjoy for years.

French Provincial 629 in Cherry or Ivory, only $398.50

Magnavox is sold *direct* through franchised dealers (listed in the Yellow Pages) saving you middleman costs. Solid-state stereo console radio phonographs from $198.50 and portable stereo from $65.

Contemporary 620 in Walnut, only $298.50

the magnificent
Magnavox
270 Park Ave., New York 17, N.Y.