ATLAS MAP SUPPLEMENT: HOLY LAND TODAY (Page 856)

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NATIONAL GEOGRAPHIC

TRIUMPH OF THE FIRST CRUSADE TO THE HOLY LAND

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COVER: Turkish walled city of Nicaea surrenders to Byzantine soldiers during the First Crusade (page 803).

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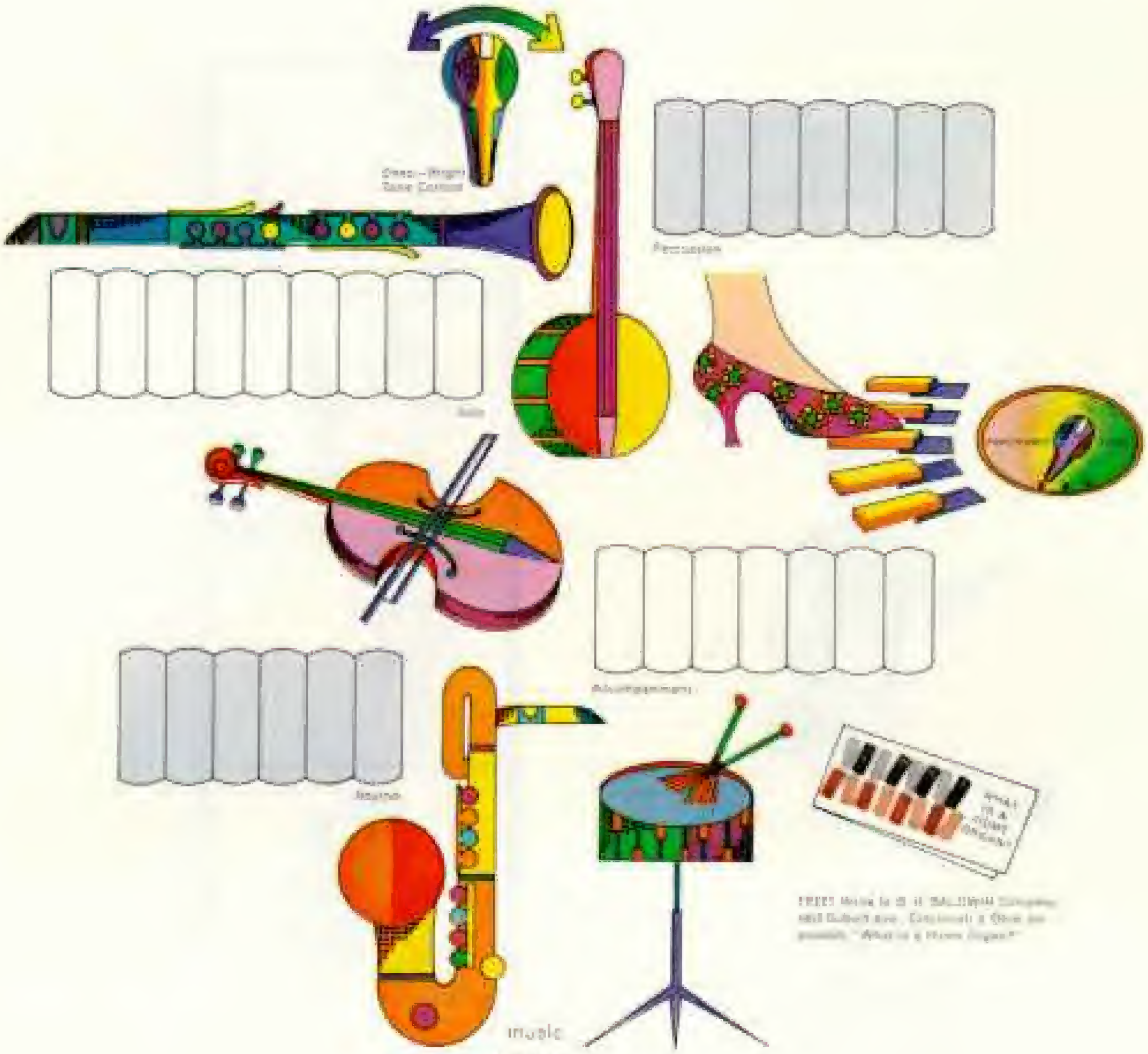

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Above: Revolutionary electronic tuning fork movement of ACCUTRON seen through transparent dial of "Spaceview" model. 14-Kt gold case, $300*

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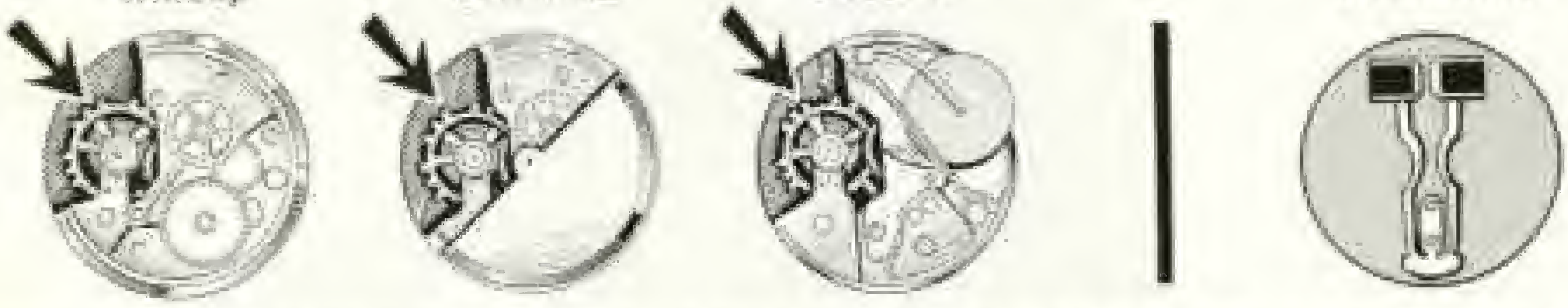

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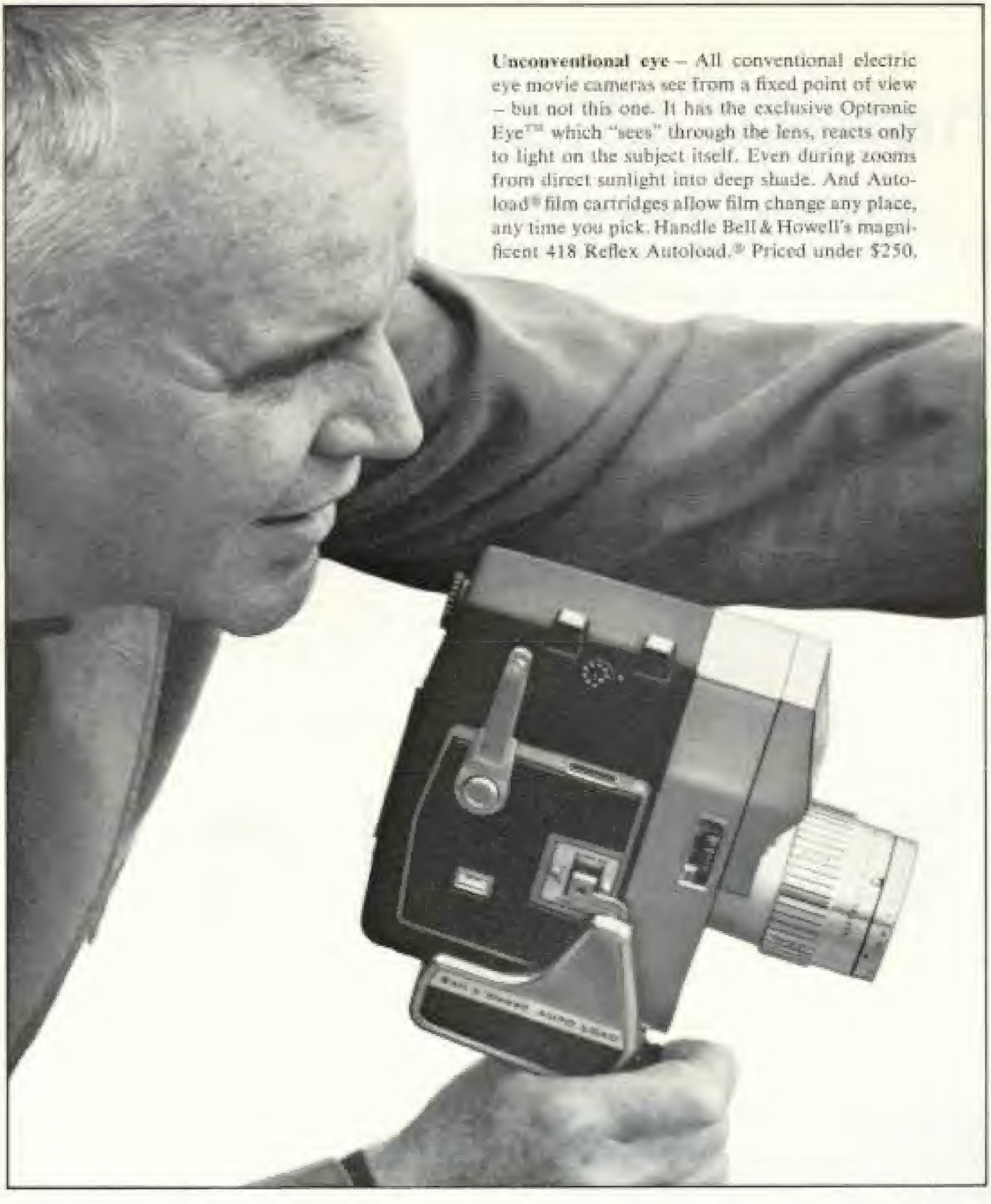

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Sentry reports

on how to be a smart (if not positively brilliant) insurance buyer

Because nobody gets rich by being dumb about money, we're addressing this message about smart buying to you as a (presumably) affluent —or soon to be affluent—reader of *National Geographic.* Being a somewhat unorthodox insurance company, we suspect that even smart people secretly wonder if they're being as bright as they might be about their insurance. Again, being somewhat unorthodox, we presume to tell you that your secret thoughts are right.

In fact, you're exceptional if your homeowners insurance would replace more than a few rooms . . . if your life insurance would replace more than a year of your present earnings . . . if your personal liability protection would pay even a third of the typical jury awards being socked against people in upper income brackets today.

It's strange but true *that a man whose liability insurance is so dangerously thin he could be a pawnbroker's pigeon the rest of his life, will boast about how his insurance paid for a cigarette burn in his cashmere jacket.*

The secret of being a smart insurance buyer is to put your insurance dollars against the really big risks . . . and to *insure yourself* against those financial risks that might be a little painful but wouldn't really break you. For instance, take a look at your auto policy. Does it give you protection for all your collision damage after the first $50.00, but only $50,000 protection for your personal liability? It would make sense to insure yourself for the first $100 of collision damage . . . and use the money you save to buy liability limits of $300,000 or even $500,000, which is none too much for a successful man today.

This is the modern approach to insurance *that typifies the Sentry Insurance idea: whether it be protection for your life, home, personal possessions, car or boat, Sentry Insurance programs are geared to provide big basic benefits for the major needs and to stretch insurance dollars for the policyholder far enough to cover such a program. Frills, petty claims, coverage of minor risks can only run up your cost of insurance. We eliminate them for the smart buyer.*

Like more information on being a smart (if not positively brilliant) insurance buyer? We have a lively little booklet called "Thrift Tips" that's packed with approximately 100 specific suggestions on getting more for your insurance dollar. For your copy, just drop a postcard to Sentry Insurance, Stevens Point 4, Wisconsin. Or call the Sentry Insurance man in your locality. He's in the yellow pages.

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December, 1963

NATIONAL GEOGRAPHIC

Crusader Road to Jerusalem

Traveling from İstanbul to the Holy City, a Geographic editor completes his tracing of the route of the First Crusade

By FRANC SHOR
Senior Assistant Editor

Photographs by THOMAS NEBBIA, National Geographic Staff

HEAT WAVES TORTURED the horizon of the flat Anatolian plain, and teasing mirages like pools of water spotted the parched road ahead. I put my hand on the fender of my disabled car—and snatched it back in pain.

I had waited two hours for another motorist to pass and give me a lift, but none had appeared. My efforts to fix the car were fruitless. I was hot, but most of all I wanted water.

The speck on the horizon became a Turk, riding one donkey and leading another. He slid from the haunches of his beast and smiled. We touched hands.

I know little Turkish, but I could muster what I needed most to ask at that moment:

"*Su!*" I said. "*Su nerede?*"

It was easy for him to understand "Where is water?" but the answer wasn't that simple. Shaking his head, he pointed back the way he had come. "*On beş kilometre*," he murmured. Fifteen kilometers—nine miles.

Not a pleasant prospect. Three hours' walk in that blazing sun. But my own discomfort brought sharply home to me the plight of the men whose road I followed—the princes and paupers of the First Crusade.

They had passed that way in 1097, fresh from a victory over the Turkish hordes at Nicaea but still harassed on every hand by roving guerrilla bands.

Crosses of Christendom at Tyre marked graves of Crusaders who fought and died there. Modern maps show the little seaport as Ṣūr, Lebanon.

LEGACY OF FAITH-FIRED LEGIONS, *Krak des Chevaliers lifts its massive towers at Qalaat el Hosn, Syria. The Castle of the Knights, started by the Crusaders about a decade after the fall of the Holy City, guarded the northern approach to the Kingdom of Jerusalem. Knights Hospitalers raised the citadel where a Moslem fortress had stood; Saracens recaptured it in 1271, in the twilight of the kingdoms established by the Crusaders. Syria preserves the Krak today as a national antiquity.*

Bagging sun-dried corn on a rooftop, Turkish farm girls wear the dress of yesteryear. They hastily veiled their faces when a camera appeared.

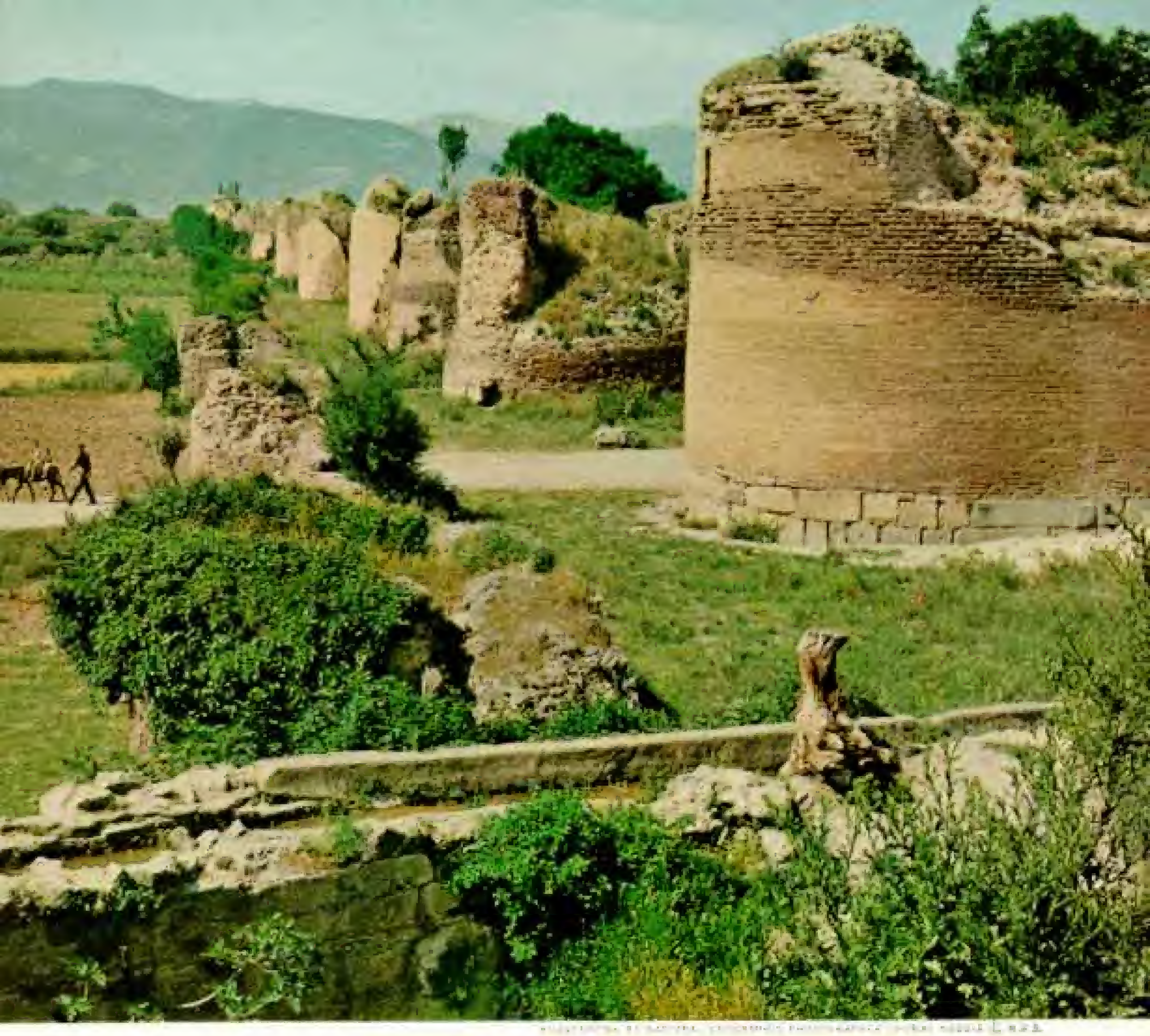
Lathering the groom, members of a wedding party prepare to shave him in public. The author took part in this ceremony in the Turkish village of İznik, built atop the ruins of ancient Nicaea.

Nicaea's ancient walls saw besieging

"We scarcely escaped and came out alive," wrote the anonymous author of the *Gesta Francorum*, one of the great source books of the Crusade. "Hunger and thirst pinched us on all sides, and there was absolutely nothing for us to eat except grain which we tore from the stalk and ground in our hands."

Hunger and heat and mountain passes, barbed arrows and the terrible curved Turkish swords, all these and more the Crusaders faced and overcame. Many had left on their pilgrimage inadequately armed, and others threw away their armor in the desert heat and on steep trails. But the faith which had set them upon the road to Jerusalem bore them to victory atop its walls.

It was one of the great epics of our history, that First Crusade. Pope Urban II had preached it at Clermont, in France, in 1095.



Crusaders hack apart a relief army of Turks. The city finally fell by intrigue (page 803).

His words, burning with the fervor of his own devotion, swept Europe like a holy flame. Princes called for followers; common men took arms and sought out leaders. Western Christendom, torn for generations by political differences, suddenly found a cause to inspire unity. "God wills it!" men cried, and set out upon the road.

A Turkish truck driver solved my own problem. I was still talking with my donkey-borne acquaintance when a huge transport slowed to a halt in a cloud of dust. The driver and his assistant leaped down from their high seat.

"Need some help?" asked the driver, a lithe, hawk-nosed youth with a gleaming smile beneath a crescent mustache. He spoke English.

"If you're a mechanic, I sure do," I replied. "And do you have any water?"

The assistant reached into the truck for a canvas water bag. I took a long draught, and the bag went the rounds.

"Every truck driver in Turkey has to be a mechanic," laughed the driver. "There aren't many repair shops in this part of the country."

Half an hour later my car was purring smoothly. Neither the driver nor his helper would take any payment. We shook hands and resumed our journeys.

Thousands Answer the Pope's Appeal

Pope Urban's appeal saw armies organized in almost every area of Christian Europe to march to Constantinople, modern Istanbul, where Urban had suggested that the Crusaders assemble.* By early 1097 more than

*In an earlier article, "In the Crusaders' Footsteps," NATIONAL GEOGRAPHIC, June, 1962, Frank Shor follows the cross-bearers' route across Europe to Istanbul.

60,000 pilgrims were gathered in the environs of the capital city of the Byzantine Empire.

Emperor Alexius Comnenus had asked Urban for help against the Turkish forces that were threatening his empire, but he had expected no such response as this. Mercenary troops he had wanted; the arrival of entire armies was quite another thing. He viewed them, his daughter Anna noted, as a threat equal to that of the Turks.

"He heard a report of the approach of innumerable Frankish armies," wrote Princess Anna, "[and] he dreaded their arrival for he knew their irresistible manner of attack, their unstable and mobile character . . . and he also knew they were always agape for money."

Anna's estimate of the numbers of the crusading armies appears to have been magnified by her father's fears. "The whole of the West," she wrote, "and all the barbarian tribes which dwell between the further side of the Adriatic and the Pillars of Hercules, had all migrated in a body and were marching into Asia . . . with all their household."

The Princess had a certain respect for the humbler Crusaders, but very little for their leaders. "The simpler-minded were urged on by the real desire of worshiping at our Lord's Sepulcher, and visiting the sacred places," she went on, "but the more astute, especially men like Bohemond and those of like mind, had another secret reason, namely, the hope that . . . they might by some means be able to seize the capital [Constantinople] itself."

Anna's opinion of the leaders of the Crusade was uncharitable, but there were reasons for her skepticism. The armies which had arrived in Constantinople had been unruly; they had pillaged the outskirts of the town when they ran short of supplies, and Godfrey of Bouillon had actually attacked the imperial forces—and on a holy day, at that.

Part of the trouble stemmed from the fact that Urban had never appointed a military leader of the Crusade. Adhemar of Monteil, Bishop of Le Puy, was the Pope's representative in religious matters, but the princes who had taken the Cross were in constant competition for military control. (See "The Men Who Led the First Crusade," page 804.)

Ambitious Princes Bound by Oath

The Emperor Alexius treated the leaders with considerable diplomacy, generosity, and with firmness when he found it necessary. His primary concern was to make sure that in the process of liberating former areas of the Byzantine Empire from Turkish control, the Western leaders did not simply transfer control to themselves.

With this in mind, he made magnificent gifts of gold and jewels to the leaders, asking in return that they take an oath of allegiance to him, including a declaration that any Byzantine cities taken from the Turks would be returned to his control. All but Raymond of Toulouse swore to the pledge, and Raymond accepted a modified version.

Alexius gave each of the Crusade leaders a warm reception, but none was encouraged to prolong his stay in Constantinople. The Byzantine Emperor provided guides and transportation and moved the armies across the Bosporus as rapidly as possible.

The departure of the Crusaders from the environs of Istanbul back in 1097 was an international affair: there were Normans and Franks, Germans, Lombardians and Burgundians, some English, and a few Greeks. My own leave-taking in 1962 also involved a number of nationalities.

Turkish, of course, because I had left my

(Continued on page 807)

Author's Note

The historian of the First Crusade is fortunate in having available an unusual number of graphic eyewitness accounts of the expedition. Most of this story is told by the men who lived it.

Some of the best translations of these documents appear in the University of Pennsylvania's series of Translations and Reprints from the Original Sources of European History. The compilation of August C. Krey in *The First Crusade* is also of great interest.

Sir Steven Runciman's *A History of the Crusades* and the University of Pennsylvania's new *History of the Crusades*, edited by Dr. Kenneth M. Setton, have been invaluable in putting these dramatic first-person stories into proper perspective.

To illustrate the Crusaders' march to Jerusalem, the National Geographic Society commissioned eight special paintings. The first appears at right.

By Torchlight, Byzantine Soldiers Steal Into the Walled City of Nicaea

For six weeks in 1097, Crusaders besieged the fortress. Nicaea's fall was imminent when Emperor Alexius Comnenus, eager to save the city for himself, negotiated a secret treaty with the defenders. Here, in the predawn hours of June 19, the Emperor's commander Butumites brings his soldiers to the lakeside gate. When the knights prepared to attack at dawn, they saw to their astonishment the Byzantine standard floating atop the towers.

The Men Who Led the First Crusade

POPE URBAN II, who organized the First Crusade, never named a commander in chief of the Christian armies. Members of many of the great families of western Europe led their own troops, but the Crusade had no supreme commander.

ADHEMAR OF MONTEIL, BISHOP OF LE PUY, was the religious leader of the Christian armies. As the Pope's personal representative, he had great influence and, until his untimely death at Antioch, did much to control the political aspirations of the nobles. Member of a titled family, Adhemar was a brilliant and courageous fighter.

GODFREY OF BOUILLON, DUKE OF LOWER LORRAINE, was a descendant of Charlemagne. Tall, blond, and handsome, he had great prestige among the Crusaders, but his younger brother **BALDWIN,** who accompanied him, proved a more effective military leader.

HUGH, COUNT OF VERMANDOIS, younger son of King Henry I of France, was the first Western prince to reach Constantinople. He "sent a ridiculous message to the Emperor," wrote Anna Comnena, daughter of Byzantine Emperor Alexius.

"'Know, O Emperor, that I am king of kings and the greatest of those under heaven, and it behooves you to meet me . . . with all pomp and in a manner worthy of my nobility.'"

Hugh's arrival was not as impressive as he had planned. A storm caught his fleet and cast him ashore, barely alive and half naked. The Emperor's envoys found him, clothed him, and escorted him in state to Constantinople.

RAYMOND OF TOULOUSE, also known as the **COUNT OF SAINT-GILLES,** accompanied Adhemar of Le Puy on his journey to Constantinople. Ruler of the richest area in France, Raymond had perhaps the best relations with the Byzantine court of any Western leader.

ROBERT, DUKE OF NORMANDY, eldest son of William the Conqueror, led the Normans of northern France, with his cousin **ROBERT II, COUNT OF FLANDERS,** and his brother-in-law **STEPHEN OF BLOIS.**

BOHEMOND OF TARANTO led the Normans of southern Italy. Member of a noble family but with scant resources, he had ambitions of founding a state of his own in the East. His nephew **TANCRED,** one of the boldest of the crusading captains, had similar aims.

PETER THE HERMIT had brought a disorganized army of pilgrims across Europe in 1096. Ambushed by the Turks near the Bosporus, the army was destroyed. Peter himself escaped and accompanied the Crusaders to Jerusalem.

THE FIRST CRUSADE

CONSTANTINOPLE TO JERUSALEM

Sea

Sinope (Sinop)

Amasea (Amasya)

Castra Comnenon (Kastamonu)

Amisus (Samsun)

Pharnacia (Giresun)

Trapezus (Trabzon)

Dorylaeum (Eskişehir)

Gordium

ASIA MINOR

Cappadocia

Singanis

Lake Tatta (Tuz)

Caesarea Mazaca (Kayseri)

Göreme

Urgüp

Polybotus (Bolvadin)

Philomelium (Akşehir)

ANATOLIA

Coxon (Göksun)

Anti-Taurus Mts.

10138

Lake Pousgouse (Beyşehir)

Iconium (Konya)

Tyana

1235

Marash (Maraş)

Baldwin's forces quit the main army east of Heraclea, and establish a Christian state in Edessa, February 1098

Edessa (Urfa)

Bira (Birecik)

To avoid another Dorylaeum, the Crusaders travel in a single band across the parched Anatolian plateau

Heraclea (Ereğli)

Cilician Gates

ANAZARBUS (ANA)

Adana

Tarsus

Mamistra

Attalia (Antalya)

Taurus Mts.

Alexandretta (İskenderun)

Syrian Gates

Aleppo (Halab)

Euphrates

Gulf of Attalia

CAMARDESIUM

Seleucia (Silifke)

St. Simeon, Seleucia (Samandağ)

Antioch (Antakya)

Simeon, exiled Patriarch of Jerusalem, supplies the army besieging Antioch with food and wine from Cyprus

Antioch's heavy fortifications resist assault, but on the night of June 3, 1098, an Armenian betrays the Turks, and the Knights occupy the city

Marra (Ma'arrat an Nu'mān)

Latakia (Al Lādhiqiyah)

Hamath (Hamāh)

Massiaf (Masyāf)

Tortosa (Tartūs)

CHASTEL BLANC DES CHEVALIERS

Homs (Hims)

Arqa Arca

Tripoli (Trablus)

LE MONESTIER

Baalbek (Ba'labakk)

Byblos (Jbaïl)

Beirut (Bayrūt)

'Abayh

Sidon (Sayda)

Damascus (Dimashq)

TYRE

Tyre, Tyrus (Sūr)

BELFORT

Caesarea Philippi (Bāniyās)

Sea of Galilee

Acre ('Akko)

Caiffa (Haifa)

Mt. Carmel

CHASTEL PÈLERIN

Samaria

Genoese and English ships put into Joppa with supplies that make possible the final assault on Jerusalem

Jordan

Knights lay siege to Jerusalem on June 7, 1099. After a fierce battle, they scale its walls on July 15. Christians capture the Holy City, goal of their crusade

Joppa, Jaffa (Tel Aviv-Yafo)

Ramlah (Ramlat Rames)

Mountain 2909

Emmaus

Jericho

Jerusalem

Bethlehem

BLANCHEGARDE

Judaea

Gaza

Beersheba

Dead Sea

ISRAEL

JORDAN

EGYPT

SYRIA

IRAQ

0 100 200

STATUTE MILES

Elevations in feet

Present-day spellings in parentheses

Crusader Castles

Main body of Crusaders, 1097-1099

Tancred, 1097

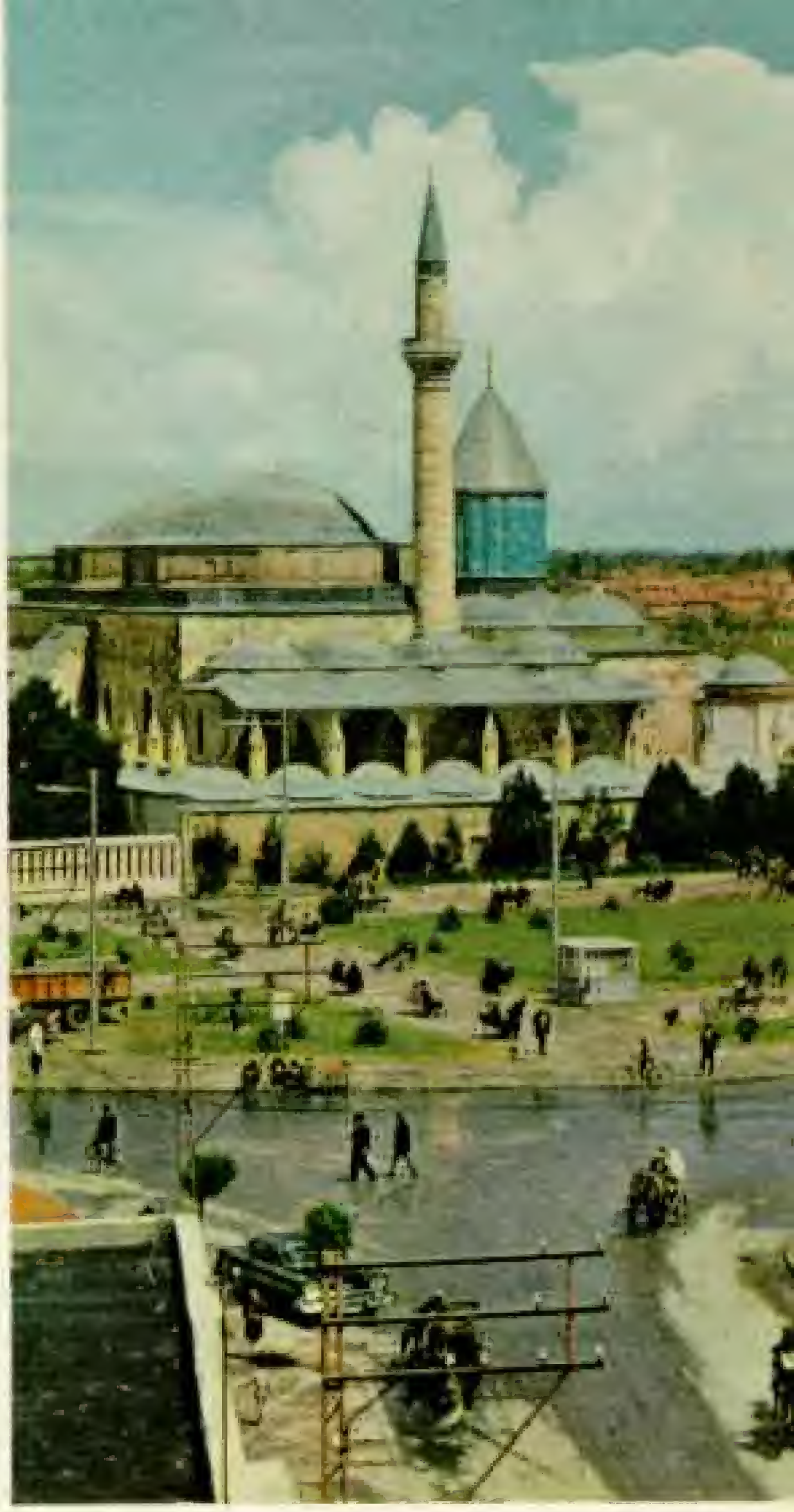
Baldwin of Boulogne, 1097-1098

Godfrey of Bouillon and Robert of Flanders 1097

Breadbasket on her shoulder, a Turkish girl heads home from market in Konya.

Spearlike Minarets Stab the Sky Above Konya's Domed Mosques

Known then as Iconium, the city of the Anatolian plateau was occupied briefly by the Crusaders in 1097. Later it served as capital of a Seljuk sultanate. Mevlâna Mosque, distinguished by its fluted blue cupola, houses the tomb of the poet and mystic Jalal-ud-Din Rumi, who founded the order of Mevlevis, or whirling dervishes. Selemiye Mosque rises across the rain-wet square at right.



Horse and cab bearing Turkish flag splash through a flooded Konya street. Record rains drenched this arid region in 1963.

car in Turkish customs when I retraced the first part of the Crusade the previous year. American, because the U. S. Consul General's office made it possible for me to get through the formalities involved. Canadian, because a Canadian friend in Paris shipped me emergency spare parts for my French car.

And British, because when a dead battery and assorted other problems kept the car from starting in the shed where it had been stored at the Istanbul airport, a laconic gentleman named Ronald Pain, supervisor of maintenance for British European Airways, lent me a mechanic and a battery charger, and sent me along with a pleasant "Cheerio."

There was another similarity about my departure. The Crusaders had been urged and nudged out of Istanbul by the Byzantine Emperor Alexius, who wanted no large and undisciplined armies camping on his home grounds. The gentleman who hastened me on my way was the Director General of Istanbul Customs.

"Just how quickly can you get out of the country?" the Director General asked. Then, noting the look on my face, he laughed.

"Not that we don't want you in Turkey," he explained. "Just that there is a limit on how long a vehicle technically in transit can remain in the country. Your car has already been here four months too long, and unless you want to pay duty of about $1,500. . . ."

"Stop right there," I said. "How long may I have?"

"Could you get across the Syrian border within ten days?"

"It took the Crusaders a couple of years," I laughed, "but I've got the Turks on *my* side, so that should make the difference. Thank you. I can make it."

The road to Iznik, the Nicaea of ancient times, made me wonder if I had been overly

optimistic. East to İzmit, on the eastern shore of the Sea of Marmara, runs a well-paved highway (map, pages 804-5). Thence it goes back along the south shore to Civetot, where the crusading army of Peter the Hermit had been wiped out; this is a dusty but level road. Then it turns south, a narrow winding track over roller-coaster hills. And suddenly the modern Turkey of automobiles and Western-style shops and dress disappears.

Here was a different world: tiny farmhouses with mud walls and thatched roofs; small truck plots and little orchards; men in baggy pants guiding wooden plows behind oxen; women in brightly colored cottons with equally baggy pants, their hair tightly twisted in scores of braids, hanging tobacco on farmhouse walls to dry. Take away the tobacco, and the Crusaders might have seen identical sights when they plodded this way.

Villagers Gather to Greet a Guest

But there was a difference, as I found when I stopped in a tiny hilltop village with Turgay Aran, my guide and interpreter. I wanted to photograph girls sacking corn on the roof of a house (page 800). When we stopped, they drew veils over their faces, but Turgay introduced us to their father, explained our mission, and the answer was "Yes"—but first we must come in for a cup of tea.

In five minutes half a dozen men had just happened to drop in. Western visitors are not common in Semetler. To my surprise, one of the neighbors spoke English.

"I'm the schoolteacher," he explained. "We only have eight grades so far. But in this village, and within a five-mile distance, there are 72 families, and every child is in school."

"And every child can read," interjected our host, "which is a good deal more than can be said for their parents—including me."

It was dusk when we came to the shores of the lake upon which İznik dozes, dreaming

Merciless midsummer sun beats down on thirst-crazed soldiers of Christ marching across the steppes of Asia Minor in 1097. In a nightmare of heat and dust, they fling aside arms, helmets, and coats of mail.

The artist consulted eyewitness accounts and leading scholars for accuracy of costumes and other details of the grim passage.

Centuries later, heat, dust, and mirage remain as in Crusader times. Man and donkeys, traveling a shimmering road in southern Turkey, seem to walk on water.

PAINTING BY STANLEY MEISLER AND REPRODUCED BY NATIONAL GEOGRAPHIC PHOTOGRAPHER THOMAS NEBBIA © N.G.S.

perhaps of the past glories of Nicaea. For this pleasant little village, in its history of 2,200 years, had been the capital of great empires, the scene of historic religious debates, and a world-famed art center. The Seljuk Turks made it their capital in the 11th century. It became the center of the Byzantine Empire after the fall of Constantinople to the Crusaders in 1204. The first ecumenical council in 325 here fixed the date of Easter and forged the original Nicene Creed, which reaffirmed the divinity of Christ.

And it was here that the organized armies of the First Crusade had their initial taste of battle with the Turks. Here, too, Moslem defenders learned that the rabble of Peter the Hermit, which had fallen such easy prey, was no fair sample of the Western fighting man.

Historians have speculated that it was just that easy destruction of Peter's followers in October of 1096 that led the Seljuk Sultan, Kılıç Arslan I, to pay so little attention to warnings of the coming of the crusading army in May of 1097. Busy in the east subduing the rival Danishmend dynasty of what is now central Turkey, he took most of his army with him and left his wife, his children, and his treasury within the walls of Nicaea.

The Crusaders had learned from Peter's debacle. Fulcher of Chartres, writing of the march on Nicaea, laments:

"Oh, how many severed heads and bones of the dead lying on the plains did we then find beyond Nicomedia [İzmit] near that sea! In the preceding year, the Turks destroyed those who were ignorant of and new to the use of the arrow. Moved by compassion . . . we shed many tears there."

By early June the entire crusading army was arrayed before the walls of the Seljuk capital (page 801). Godfrey and Tancred, Bohemond, Robert of Normandy, and Stephen of Blois were there, and Raymond of Toulouse had arrived in time to blockade the southern wall before the appearance of the first Turkish reinforcements. Kılıç Arslan had learned of his mistake, but too late.

The *Gesta Francorum* describes Raymond's repulse of Kılıç's relief attempt: "The Count . . . found the Turks coming against us here. Armed on all sides with the sign of the Cross, he rushed upon them violently and overcame them. They turned in flight, and most of them were killed. They came back again, reinforced

Sacred art survives in a rock-cut chapel at Ürgüp, Turkey, where early Christians hollowed cells, shrines, and even churches in volcanic cones. They decorated walls and ceilings with glowing Biblical scenes and likenesses of angels, archangels, apostles, prophets, and martyrs.

Turkish herders drive their goats through the Cilician Gates, a sharp defile in the Taurus Mountains. The main army of the First Crusade bypassed this route, fearful of ambush in the narrow canyons, whose limestone walls fling up crags like natural fortresses. Only the more adventurous Tancred and Baldwin of Boulogne dared lead their forces through passes that even today are barely wide enough for road and stream.

by others, joyful . . . and bearing along with them the ropes with which to lead us bound. . . . As many as descended remained there with their heads cut off at the hands of our men: moreover, our men hurled the heads . . . into the city."

Crusader losses were heavy, but the knights turned eagerly to an attempt to undermine and burn the walls of the city. Little was accomplished, however, and the besiegers were
812 further discouraged by the discovery that the Turks were receiving supplies and reinforcements from the lake gate. They asked Emperor Alexius for a flotilla to stop this, and he furnished the necessary vessels.

Emperor Negotiates a Secret Surrender

The Emperor was deeply concerned with this first major battle of the Crusaders against the Turks. He had crossed over to Pelecanum to be more closely in touch. His daughter, the Princess Anna Comnena, says he "would

Cappadocian villagers herd flocks home near Göreme, where Christian hermits found haven

really have liked to march with the Latins against the impious Turks, but . . . as from long experience he knew the Latins' fickleness, he desisted. . . ."

The Princess's own account, however, indicates that the Byzantine court was itself capable of fickleness—and even of massive intrigue. For when the Crusaders had destroyed the Turks' last hope of reinforcement, and the defenders of Nicaea decided to surrender, the Emperor ordered Manuel Butumites, commander of his lake flotilla, to get in touch with the Turkish commander.

Alexius wanted the city taken from the Turks, but he had no wish to see it sacked and possibly burned. The majority of its citizens were Christians, and it would be a useful part of his empire—if it remained intact.

Butumites "showed them [the Turks] the document sealed with gold which the Emperor had entrusted to him . . ." Anna wrote, "by which the Emperor promised not only

in caves a millennium ago. Telephoto lens shortens perspective, making hills appear closer.

immunity, but also rich awards of money and honors, to the Sultan's sister and wife . . . and to all the barbarians in Nicnea."

It was important to the Byzantines, however, that the Crusaders not know of the deception. To make the Westerners believe that Alexius' forces had taken the city by assault from the lake, the few vessels which stood at the water gate showed many banners, with a great blowing of trumpets.

The Turks admitted Butumites by the lake gate (page 803), and he promptly sent a message to the Byzantine representative in the Crusaders' camp, which Anna quotes:

"We already have the prey in our hands, and you must now get ready to assault the walls. Persuade the Franks to prepare for this too, but do not give them any further encouragement than to make an attack on the walls from all sides and . . . start the siege at sunrise. This," Anna adds, "was . . . to keep secret the drama of treachery the Emperor had arranged."

The Crusaders started the attack at dawn,

Verdant Mountain Oasis Gave Respite to Weary Crusaders

Near this village east of Göksun, friendly Armenians welcomed the knights' main army and showered it with provisions for the crossing of the Anti-Taurus Range, most arduous stage of the journey thus far. "The accursed mountain," as one chronicler called the range, exacted a terrible toll as the multitude struggled up steep inclines and skirted precipices in torrential autumn rains.

Shy smile lights the face of a girl near the town of Göksun. She cradles a pet kid

as arranged. But the first light of the sun showed the standard of the Emperor of Byzantium standing above the city, and Byzantine troops were within the gates.

Alexius Buys Off the Crusaders

The Emperor, it is true, made gifts of food to every Crusader, and the leaders were given gold and jewels from the Sultan's treasury in amounts beyond their expectations.

But the seeds of doubt were deeply sown. The "drama of treachery" was apparently not kept secret, and Raymond of Aguilers, who was chaplain and historian of Raymond of Toulouse, wrote that as long as Alexius lived, "the people will curse him and proclaim him a traitor."

My own reception in Iznik was somewhat mixed: Turgay and I were caught in a cloudburst which caused us to get involved in a wedding party which brought about my dancing an Osage war dance to the music of a Turkish drum and flute, and ended with our participation in the public shaving of the

ADDISON

Desert kaffiyeh shades a Turkish visitor to Iskenderun, near the Syrian border.

Aid from the West arrives at St. Simeon in November, 1097, as Genoese ships unload men and supplies for the attack on Antioch. Crusaders were heartened, but rations soon ran short. In the words of a chronicler: "Grain and all food began to be excessively dear before the birthday of the Lord."

bridegroom on his wedding day. Perhaps I should explain.

We arrived in Iznik after dark. Inquiry at the principal street corner under a bare electric bulb brought the information that there was one hotel in town. The hotel had four rooms: we were given one, and the manager obligingly hired a local fisherman to sleep in our car and guard it, since there was no locked garage and we had more baggage than would fit in the room.

Villagers Sing by Candlelight

We dined at a village restaurant on a bare wooden table beneath another naked light bulb. But we dined on fresh lake fish, an excellent lamb kebab, eggplant, a fresh salad, and a red wine called Sato Sarabi made from local grapes. The manager apologized for his inability to find us a table in the garden: a wedding party—really a bachelor dinner—was in progress, and there was no room.

Suddenly there was a terrific thunderclap and the skies opened. So did the doors from the garden, and the guests came streaming in—streaming. There wasn't much space in the low-ceilinged room, and the manager apologized for the necessity of seating four of the guests at our large table. They were young men, gay and cordial, and we were happy to have them join us.

Hunters on the heights look down on Antakya, the medieval Antioch, today a quarter the size

Another crash of thunder, a nearby bolt of lightning, and every light in town went out. No one seemed surprised. The manager and the waiter hurried with candles, and the party continued.

A flute player, a drummer who used his hands instead of sticks, and a tambourine player emerged from the kitchen where they had been drying their instruments near the open charcoal fire. They played, and we all clapped in rhythm, and the candles flickered, and the guests began to sing.

After perhaps half an hour two men in their sixties, both dressed in white blouses and the traditional baggy trousers of the Turkish countryside, got to their feet and everyone cheered. Tables were moved back to make a square and, without any self-consciousness, the elderly pair performed what Turgay told me was an ancient dance, spinning, bowing, but treading always with infinite grace.

War Dance for a Wedding Party

There were perhaps 40 of us in the little room and the candlelight was dim and the rain continued to pour down outside and the windows were steamy. Some of the older guests moved their chairs near ours, and we shook hands and had a glass of wine together.

Another pair danced, and someone sang a strange wailing song, and then one of the first pair of dancers came to my chair and spread his hands in a gesture that said plainly: "And what are you going to do for the party?"

of the city captured by the First Crusaders.

There was a crescendo of applause, and I would have given ten years from my life to be able to sing—or do card tricks—or even stand on my head.

Then I remembered. I grew up in Dodge City, Kansas, before television made it famous, and we spent our summers in the mountains above Manitou Springs, Colorado. There were Indian dances every afternoon and evening for the tourists. I used to be left to watch the dancers while my mother did her shopping. I got to know the Indians, and they taught me a few simple steps. What you learn at six you don't forget.

So I lumbered to my feet and showed the drummer the "Tum diddy dum dum, tum diddy dum dum, tum diddy dum dum DUM"

beat. He picked it up instantly; a little too fast at first, but slower when he saw my problem. And there, in the steamy candlelit room in İznik, I did both the Osage steps I knew—for the first time in 40 years. As I circled the little floor I realized they were not too unlike the dance the two oldest men had done.

They realized it too. For suddenly they were on the floor with me, and doing the steps far better than I. The room roared and the tempo quickened, and I knew I had exactly enough breath left for one great war whoop, and I threw my head back and gave it and collapsed in my chair.

The bridegroom-to-be, a handsome young man who is an official in the local school system, invited us to the wedding. It was the custom, he told us, for the groom to be shaved by his friends in a public place the morning of the ceremony. Then the groom and all his friends would go to the bride's house, stage a mock battle with her family and their guests, and "kidnap" the girl for the ceremony. We accepted.

The next morning, obviously embarrassed, the groom arrived at our hotel before breakfast. We would be most welcome at the shaving ceremony, he assured us, but his 16-year-old bride-to-be lived in a country village a few miles from İznik, and her family, which had already heard of the invitation, questioned it.

"It is not that you would be unwelcome," he said, "but village customs change slowly, and strangers—well, strangers—anyhow, people always fire guns into the air during those mock battles, and sometimes they don't aim high enough. So. . . ."

We assured him we understood perfectly, and anyway we really should be on our way. So we joined him and his friends at a barbershop, where he was lathered from the neck up and everyone took at least one scrape with the razor. I shot a few pictures of the shaving ceremony for the groom's party (page 800), and then we all shook hands and Turgay and I went our way toward Dorylaeum. I have 40 friends in İznik.

Armies Move Across Asia Minor

Heartened by their victory in the first full-scale encounter with the Turks, the Crusaders set out along the Byzantine road across Asia Minor. The plain of Dorylaeum lay on the way. The army divided into two groups, with Bohemond in charge of the first and Raymond of Toulouse leading the second, which followed a day's march behind.

Kılıç Arslan, Sultan of the beaten Turks,

was not yet finished. Gathering support from Emir Hasan of Cappadocia as well as the Danishmend forces, he set a trap for the Crusaders near Dorylaeum, today's Eskişehir.

Bohemond's forces, encamped on the Dorylaeum plain, bore the brunt of the first attack at dawn. Raymond of Aguilers says the Turkish forces numbered 150,000. Fulcher of Chartres, with even less restraint, tells us that "they numbered 360,000 fighters, all on horses and armed with bows."

"We were all huddled together," he recounts, "indeed, like sheep shut in a pen, trembling and frightened, surrounded on all sides by enemies, so that we were unable to advance in any direction. It was clear to us that this befell us as a punishment for our sins."

For six hours the vanguard held off the attackers, through shower after shower of Turkish arrows. There was no place to run, and capture meant certain slavery. Then, near noon, the second Crusader army came up.

The Turks, who thought they had entrapped the whole of the Crusader force, fell back for a moment. The two Christian forces made contact and took the offensive. As the battle hung in the balance, the Bishop of Le Puy, who had led a force over mountains to the rear of the Turkish army, attacked.

Pincer Attack Turns the Tide

Caught between the two lines, the Turks broke and fled. So complete was the rout that they left behind their tents with the treasury of the Sultan and his two Emirs. The Crusaders paid dearly in lives, but the victory broke the back of Turkish resistance in Asia Minor.

The Christian armies rested for two days, then set out on the long trail to Antioch. The Turks were beaten, but nature, the Crusaders were to discover, was an enemy equally to be feared.

"We suffered such extreme thirst," wrote Fulcher of Chartres, "that many men and women died from its torments. And we very often lacked bread and other food in these places, for the land was devastated and ravaged by the Turks."

More important than hunger and thirst, however, was the spirit of the army. With horses and oxen dead of starvation, they loaded their tattered possessions on the backs of sheep, goats, dogs, and even pigs. And in hardship they were drawn even closer together in spirit (page 808).

"Who ever heard such a mixture of languages in one army?" asks Fulcher. "There were French, Flemings, Frisians, Gauls, Allobroges, Lotharingians, Germans, Bavarians, Normans, English, Scots, Aquitanians, Italians, Dacians, Apulians, Iberians, Bretons, Greeks and Armenians. . . .

"But we who were diverse in languages, nevertheless seemed to be brothers in the love of God. . ." the Crusader historian adds. "If one lost any of his possessions, he who found it would keep it carefully . . . until he found the loser and returned it. This is fit and proper for those who make the pilgrimage. . . ."

Respite for a Tired Legion

Six weeks of privation and suffering brought the pilgrims to Iconium, today's Konya, which had been abandoned by the Turks (page 807). Surrounded by lush valleys and rich orchards, it offered a welcome haven to the weary armies. They rested for a few days, then set out again across Anatolia.

The great expanse of Turkey which the Crusaders found so inhospitable is still dry, but far from forbidding. Wheat fields stretch from horizon to horizon, broken by occasional patches of sugar beets. Young trees dot the stream beds, and extensive reforestation is under way.

I was astonished by the modernity of Eskişehir. A towering sugar mill, a modern hospital, and a new hotel of steel and glass break the skyline, and the streets swarm with new automobiles. There, for the first time in Turkey, I heard the muezzin's call to evening prayer—broadcast full blast over a public-address system.

Konya is equally busy. Its citizens are keeping up with the world, too, as I discovered one summer evening in a crowded cafe.

I was enjoying an excellent yogurt kebab

Guided by a Vision, Pilgrims Dig Up a Holy Relic in Besieged Antioch

Peter Bartholomew, a servant in the Crusader army, told the nobles that St. Andrew had revealed to him the hiding place of the lance that pierced Christ's side at the Crucifixion. Here, after a search beneath the Church of St. Peter, Crusaders gasp as Bartholomew uncovers a corroded lance head. Hope rekindled, the knights broke the Moslem siege.

with Turgay when I decided that the swarms of flies were more than I could stand. I went to our car and brought back a can of insect spray, which I started to squirt liberally beneath our table.

My thumb was still on the lever when a plump lady bounced up from a table across the room and made her way to my side.

"Haven't you read Rachel Carson's *Silent Spring?*" she demanded. "Don't you know how dangerous that can be? Do you want to kill us all?"

I apologized, put away the spray, and finished my meal with one hand, brushing away the winged hordes with the other.

Leaders Choose Different Routes

Southeast of Konya, at the city of Heraclea, now Ereğli, the Crusaders found a Turkish army blocking their path. Bohemond led the Christian forces in a headlong assault, and the Turks fled. The way to Antioch was open, but there was a choice of routes.

The most direct road lay south and east, through the towering Cilician Gates. But the pass is precipitous and narrow, easily defended by even a small party (page 811). And it was September, when the heat was at its peak.

The road north to Caesarea Mazaca (today's Kayseri) offered easier going. From there it would be necessary to turn south through the Taurus and Anti-Taurus Mountains, but the country was in the hands of Armenians, who could be counted on for supplies and support. The main body of the army took the northern route (map, pages 804-5).

Two of the leaders, however, decided to risk the Cilician pass: Godfrey's brother Baldwin, with a group of Flemish and Lorrainers, and Tancred, with a troop of Normans who had come with him from southern Italy.

The main body marched north through Cappadocia to Caesarea, thence south to Coxon (today's Göksun) where the Armenian population welcomed them with food and supplies (page 814).

Between Göksun and Maraş, however,

Braving a Rain of Arrows, Europeans Rout the Turks on the Plain of Antioch

"Priests and many monks, dressed in white robes, went in front of the lines of our knights," wrote Raymond of Aguilers, who here carries the Holy Lance mounted on a spear shaft. Vainly, the desperate enemy sets fire to dry grass in front of Raymond's line.

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they encountered formidable mountain passes. "We . . . entered a diabolical mountain," writes the anonymous author of the *Gesta Francorum*, "which was so high and steep that none of us dared to step before another through the pass. . . . There horses fell headlong, and one pack animal pushed over another.

"The knights . . . beat themselves with their hands for their great grief and sadness, uncertain what they should do about themselves and their arms, selling their shields and their best breast-plates, together with their helmets, for . . . whatever they could get. Those who could not sell them threw them away."

Sir Steven Runciman, one of the great historians of the Crusades, writes that "The mountains . . . took more lives than ever the Turks had done." It was a tired and depleted army which stood at long last before the walls of Antioch.

Once the third city of the world, Antioch in October of 1097 was still a formidable sight. Its walls supported four hundred towers. The city itself stretched three miles long and a mile wide, and a great fortress crowned a hill a thousand feet above the town.

Its history was meaningful to the Crusaders: tradition said St. Peter had founded his first bishopric here, and it was at Antioch that Christ's followers had first been called Christians. And now, most important, the road to Jerusalem could not be passed while the city remained in Turkish hands.

Crusaders Feast on Moslem Larder

Warned of the Crusaders' advance, Yaghi-Siyan, Turkish commander of the city, had sent messengers to Aleppo, Damascus, Mosul, and as far as Baghdad and Persia, asking reinforcements. At the same time he began gathering provisions to withstand a siege.

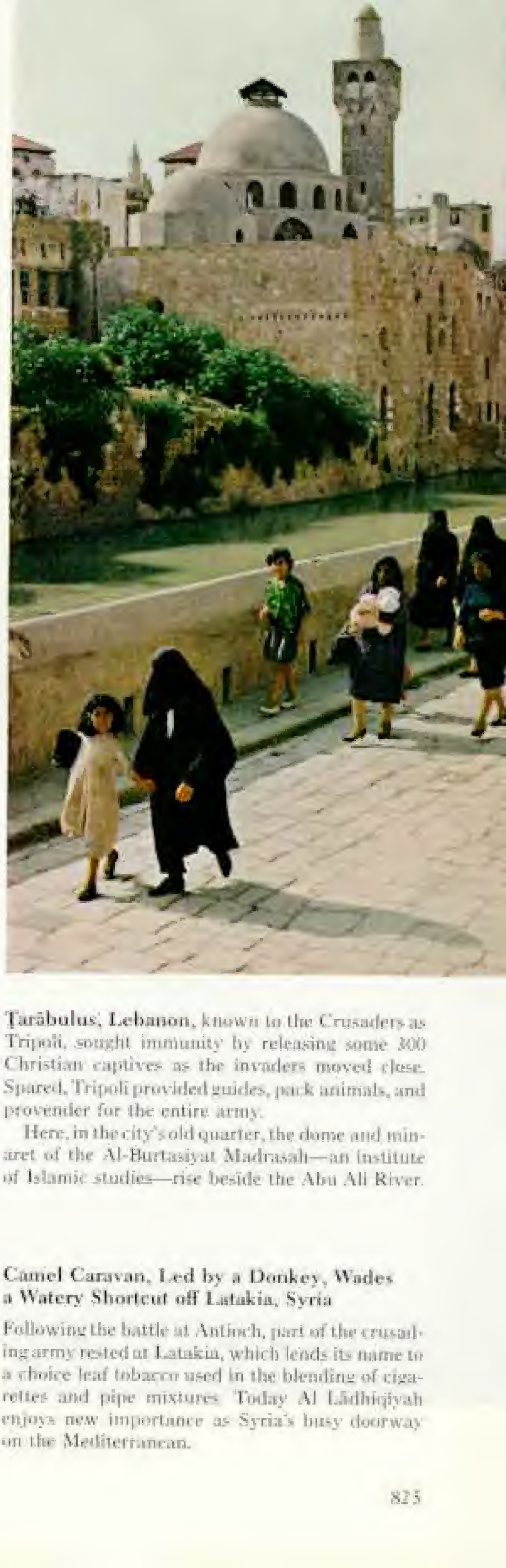
The crusading armies, coming up on Anti-

och, found Yaghi-Siyan's foresight a blessing. They encountered a huge convoy transporting corn, sheep, and cattle to the Turkish storehouses. The Bishop of Le Puy led a successful attack, and the Christian larder was filled to overflowing.

"Those in camp," wrote Raymond of Aguilers, "had such an abundance of food that they spurned anything but the haunches and loins of cattle, and only a few were willing to eat the breast; grain and wine . . . were taken with little regard."

At Antioch dissension between the leaders of the Crusade came into the open. Bohemond made no secret that he wished the city for his own. Strangely, only Raymond of Toulouse, the single leader who had not taken the full oath of allegiance to Alexius Comnenus, held out against this violation of the agreement to return all captured cities to the Emperor.

Raymond, too, was the sole leader to urge



Tarābulus, Lebanon, known to the Crusaders as Tripoli, sought immunity by releasing some 300 Christian captives as the invaders moved close. Spared, Tripoli provided guides, pack animals, and provender for the entire army.

Here, in the city's old quarter, the dome and minaret of the Al-Burtasiyat Madrasah—an institute of Islamic studies—rise beside the Abu Ali River.

Camel Caravan, Led by a Donkey, Wades a Watery Shortcut off Latakia, Syria

Following the battle at Antioch, part of the crusading army rested at Latakia, which lends its name to a choice leaf tobacco used in the blending of cigarettes and pipe mixtures. Today Al Lādhiqīyah enjoys new importance as Syria's busy doorway on the Mediterranean.

Yoked Cattle Turn a Tawny Meadow in Syria's Timeless Tillage of the Soil

More than eight centuries have elapsed since Crusader hosts swarmed across this countryside and

raised the distant Krak des Chevaliers (page 798). But the land and people remain unchanged; winter rains still bless the soil, and men in medieval garb still walk behind their wooden plows.

Crusader wall in the ancient city of Byblos was reared between 1103 and 1187. The word

an immediate assault upon the city. Raymond of Aguilers, his chaplain, writes that his master was confident that God, who had protected the Crusaders on the long march from their homes, would surely give them victory. But his colleagues did not share his faith.

Winter approached. In November a Genoese squadron of 13 ships appeared at the nearby port of St. Simeon, opening a sea lane to Europe and to nearby Cyprus (page 816). Overconfident, the Crusaders failed to conserve their supplies. By Christmas of 1097 they were almost out of provisions.

Hunger and Desertion Weaken Siege

In January, men driven by hunger began to desert the camp. Even Peter the Hermit fled and took the road home, only to be captured by Tancred and returned to the siege.

In February the Christian forces smashed a Turkish attempt to relieve the garrison, and in March the defeat of one of Yaghi-Siyan's raiding parties enabled the blockade of the city to be drawn tight. Spring and new crops, plus supplies from Cyprus and some sent by Alexius from Constantinople, eased the Crusaders' own commissary problems.

But as summer came on, a new threat loomed. Kerbogha, *atabeg* of Mosul, reinforced with troops from Persia, Baghdad, and Mesopotamia, was marching to the re-

Costumed folk dancers of Lebanon perform at a festival amid the ruins of Roman-built monuments in Baalbek (opposite).

Antiquity's bequest, Baalbek's magnificent but battered temples reminded Crusaders that other conquerors from Europe, the legions of Rome, had marched this way and stayed for a time to build. When the knights arrived in January, 1100, they found "a very strong city . . . surrounded by high walls." After driving off 400 Turkish troops, the Christians camped before the town.

"Bible" derives from the Greek *byblos*, meaning book, or papyrus, which the port shipped.

Prosperous Beirut, facing the blue Mediterranean, proves as attractive today as when the Crusaders passed

Crowds in busy Beirut

Glow of brass and sheen of brocade lure buyers to the Magasin Oriental in Beirut. Such sights, a glory of the East, dazzled the Western knights.

this way in 1099. Its citizens bought immunity for their orchards and vineyards by allowing the invaders free passage.

overflow clanging streetcars.

Father and son are Druses of 'Abayh, a village near Beirut. Their sect, an offshoot of Islam, has survived since the days of the Crusaders.

lief of Antioch. Unless the defenders could take the city quickly, they might be smashed between the garrison and the relieving army.

On the second day of June, as Kerbogha advanced, Stephen of Blois led a large contingent of northern French away from the city on the road back to Constantinople. His desertion was to have a powerful side effect: He encountered a relieving army led by the Byzantine Emperor, but told such a pessimistic tale of the Crusaders' plight that Alexius decided aid would be useless. He turned back, and the rupture between European and Byzantine was worse than ever.

"God Wills It! God Wills It!"

Stephen left a little too soon; unknown to him and the other Christian leaders, Bohemond had been in contact with one of Yaghi-Siyan's captains, urging him to betray the city. This man, Firouz by name, was probably an Armenian in Turkish service. And on the very night of Stephen's desertion, Firouz let a group of Bohemond's troops scale the wall at the tower under his command.

"Without delay," Fulcher of Chartres reports, "the gate was opened. The Franks shouted: 'God wills it! God wills it!' For this was our signal cry. . . .

"The Turks were terrified. Then, when the redness of dawn had paled, the Franks began to attack the city. When the Turks saw the Franks running through the streets with naked swords and wildly killing people . . . they began to flee. . . ."

Yaghi-Siyan fled on horseback, but fell from his mount and was beheaded by an Armenian. His son, Shams ad-Daula, managed to lead a small party of defenders up to the citadel, where he fought off Bohemond's attack. In the city below, Greek and Armenian inhabitants joined the Crusaders in massacring all the Turks they could find.

"By nightfall on 3 June," Sir Steven Runciman writes in his *History of the Crusades*, "there was no Turk left alive in Antioch. . . . You could not walk on the streets without treading on corpses . . . But Antioch was Christian once more."

Then suddenly the besiegers became the besieged. Shams ad-Daula still held the citadel, and Kerbogha's forces invested the walls. No supplies could enter the city. The Christians grew desperate as the Turks tightened the blockade.

"Those profane enemies of God," the *Gesta Francorum* recounts, "held us so enclosed . . . that many died of hunger because a little loaf of bread sold for a besant [a Byzantine gold coin]. . . . Horse and donkey flesh was sold and eaten. They cooked and ate the leaves of the fig tree, grapevine and thistle. . . . Others cooked the dry hides of horses, camels, asses, cattle or buffaloes. . . . Such tribulation, famine, and fears we endured for 26 days."

But while hunger was taking its toll, a new element entered the balance: A peasant reported a series of visions which were to change the course of history.

Pilgrim Finds the Holy Lance

Peter Bartholomew was his name, and he was the servant of a Provençal pilgrim. He came before the princes of the Crusade and the Bishop of Le Puy with an account of supernatural visitations from St. Andrew. Andrew had told him that the very lance which pierced Christ's side as He hung on the Cross was buried beneath the Church of St. Peter in Antioch.

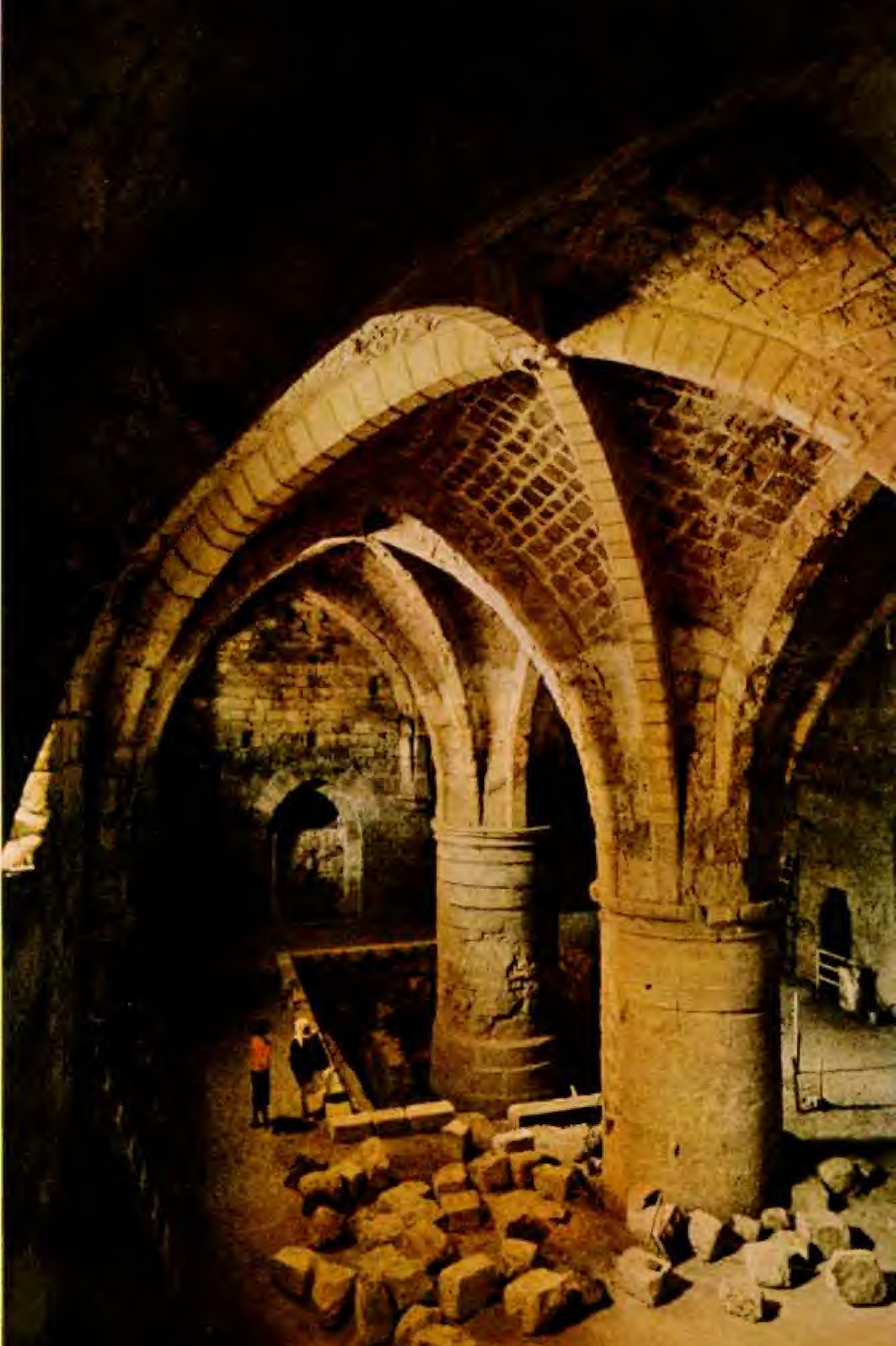
The leaders divided over the veracity of the vision. Peter Bartholomew's reputation was bad. But he persisted, and a priest of good repute came forward to report a similar vision. A search was ordered.

"After every one had been sent out of the Church of St. Peter," Raymond of Aguilers recounted, "twelve men, together with [Peter Bartholomew] began to dig. Among them were the Bishop of Orange and Raymond [of Toulouse] himself.

"After we had dug from morning to evening . . . the Count left, because he had to guard the castle. The youth who had had the vision of the lance disrobed and, taking off his shoes, descended into the pit in his shirt. . . . At length, the Lord was minded to show us His Lance [page 820]. And I, who have written this,

Gothic Ribs Arch a Hall at Acre Where Knight and Pilgrim Dined

First Crusaders bypassed Acre on the way to Jerusalem but returned in 1104 to capture the port. Cross-bearers lost the city in the Second Crusade, regained it in the Third. Thereafter the Knights Hospitalers of St. John made the city their headquarters and built this hall. When the Moslems laid final siege in 1291, the knights fought a desperate losing battle. As massacre began, these walls echoed to the clash of swords and moans of the dying. Reduced to rubble, the city lay dead for centuries.



Aglow with lights, Haifa sprawls beneath Mount Carmel (foreground), where Crusaders camped

kissed it when the point alone had appeared above the ground. What great joy and exultation then filled the city I cannot describe."

Shortly thereafter Peter had another vision. In this St. Andrew urged the Crusaders to fast for five days, as a penance for their sins, then attack the Turks. The fast was ordered, and on the morning of June 28 the Crusaders, formed into six armies, marched out against the Moslem horde. Raymond of Aguilers was given the honor of carrying the Holy Lance.

The Crusaders fought as men possessed (page 822). Kerbogha's emirs deserted him. Suddenly the whole Turkish army fled in panic. For the first time the Crusaders did not stay to loot the abandoned tents, but followed the fleeing enemy, slaying great numbers. Then they returned to collect the treasure abandoned by the Turks, many of whom had also left their families behind.

"When their women were found in the tents," Fulcher of Chartres reports with somewhat peculiar pride, "the Franks did nothing evil to them except pierce their bellies with their lances."

The citadel above the city was surrendered to Bohemond, and the leaders decided that the crusading army should rest at Antioch until November, avoiding the necessity of marching through the unknown desert in the heat of a Syrian summer. Too, the question of who was to control the captured city had to be settled.

Soldiers Force Their Leaders to March

In midsummer an epidemic swept Antioch. Perhaps it was typhoid—sanitary precautions were few in the crusading army. Whatever it was, it cost the life of the one man the expedition could least afford to lose—the Bishop Adhemar of Le Puy.

With his death on August 1, much of the bitterness between the leaders of the army came to the surface. Raymond, Bohemond, Godfrey, and Robert of Normandy led their own forces through the surrounding territory, seeking private conquests.

before storming the seacoast city in 1100.

Israeli girls in Haifa walk ground bloodied by Crusader conquest a year after Jerusalem's fall.

Bold and bare, a baby sets out to play in the shimmering Mediterranean at Tel Aviv, ancient Joppa.

In November they returned to Antioch and began a new debate. Bohemond wanted the city to himself; Raymond was unwilling to hand it over. Finally, Raymond of Aguilers reports, the soldiers took matters into their own hands.

"Since the princes . . . are unwilling to lead us to Jerusalem," he reports them as saying, "let us choose some brave knight in serving whom loyally we can be safe, and, if it is the will of God, we will arrive in Jerusalem with this knight as leader ... If this great dispute about Antioch is continued longer, let us tear down its walls. . .

"For these and other reasons," he concludes, "Count [Raymond] and Bohemond made discordant peace between themselves. So when the day had been fixed, the people were ordered to prepare for the avowed journey."

The discordant peace proved brief. It was not until January that Raymond led the Crusaders on the road to Jerusalem, and Bohemond remained in possession of Antioch.

The Crusaders' difficulty in reaching Anti-

och had been principally due to unfriendly terrain, but some of the leaders blamed it on the guides supplied by the Byzantine Emperor. I had a little trouble of this sort myself, but mine came from a road map provided by an over-enthusiastic oil company. It had little symbols where gas stations were supposed to be. The road from Adana to Antioch was liberally studded with them.

Some 50 or 60 miles from my destination I noted that my gas gauge read nearly empty, and suddenly realized that I had passed at least two symbols and found no stations. There were two more between me and the city, according to the map, so I took heart.

Unfortunately these turned out to be like the "Proposed Municipal Center" or "Proposed Public Swimming Pool" in a subdivision prospectus. Someday I am sure the company hopes to have them there; they weren't there when I was.

Two miles from Antioch the motor sputtered and died. I coasted as far as I could, then walked into the city. It happened to be the anniversary of the death of Mustafa Kemâl Atatürk, father of the Turkish Republic, and the city's lone gas station was closed. I had to wait until morning to fill up.

Changes Mark an Ancient Coast

Antioch today gives no clue to its former grandeur. It is a sleepy town where horses and donkeys amble casually down unpaved side streets. But south of the city the picture changes drastically.

From Antioch to Jerusalem at the time of the Crusades there were few cities of great importance. Today the area is developing at a furious pace (map, pages 804-5).

Latakia has become Syria's chief port, and the government has spent great sums on its development. It is so busy, in fact, that I got lost three times while trying to drive through it, and finally hired a taxi to lead me out of town. Tripoli, in Lebanon, while not so hectic, has become a popular resort area, and here too the traffic is formidable.

Beirut, of course, is the marvel of the Near East. New skyscrapers, hotels, and towering apartment buildings seem to spring up overnight (pages 830-31). Aluminum and glass and stainless steel have replaced goat hair, rough-hewn stones, and tent cords.

A number of well-paved highways skirt the Mediterranean, and only the citrus groves and the occasional camel train are left of the sights that Raymond and his followers must have seen as they marched south.

Blood of warriors fighting for their faiths once

Raymond's route led inland, past Ma'arrat an Nu'mān and Massiaf to the great fortress of Hosn al-Akrad, which he captured. On the site the Crusaders later built the Krak des Chevaliers, which stands today as a classic example of the medieval fortified castle (page 798). South, at Tripoli, he returned to the coast road, over which Godfrey and Robert of Flanders would travel through Latakia and Tortosa. A detachment under Robert of Normandy had already taken the latter port, opening a new sea gate for the Crusaders.

A futile siege of Arqa, northeast of Tripoli, delayed the army. It also brought about the death of Peter Bartholomew, who had announced another vision—this one demanding

stained the Holy Land. Today a red tide of poppies sweeps beneath olive trees near Acre.

an immediate attack on Arqa in early April. When his advice was ignored, he demanded an ordeal by fire and was given it. With Holy Lance in hand, he ran through blazing logs; he died of his burns.

Tripoli and Beirut bought immunity with supplies and gold. In June the Moslem town of Ramleh (Ramla), a few miles inland from present-day Tel Aviv, was occupied.

A few miles from Ramleh, in the village of Emmaus, men from Bethlehem met the Crusader princes with a plea that the birthplace of Christ be delivered from the Moslems.

"The following night," Fulcher of Chartres wrote, "one hundred of the truest soldiers mounted their horses . . . and hastened all the way to Bethlehem. . . . One was Tancred. . . . When the Christians found that the Franks had come, they were filled with great joy. . . .

"When they had taken up their crosses and banners they met the Franks with weeping and pious singing . . . because they knew those who had come would raise Christianity again to its proper . . . honor.

"A consecrated thanksgiving to God was performed there in the Church of the Blessed Mary. When they had visited the place where Christ was born . . . they returned quickly to [the siege of] the holy city of Jerusalem."

The birthplace of Christ was once again in Christian hands. Only one task remained: the capture of the Holy City. * * *

Conquest of the Holy City

By FRANC SHOR

"WE CAN'T GO ANY FARTHER on this trail," said my Israeli companion. "The Jordanian border is only a few hundred yards away. And there are too many loaded guns on both sides. We'll have to get back on the main road."

The moon rose as we walked the few miles to where we had left our car on the Ramla-Jerusalem highway. Nine centuries before, I recalled, an eclipse of the moon, regarded as an omen of good fortune, had put new heart into the weary armies of the First Crusade, struggling through these same Judaean hills.

Battle-worn and plagued with thirst, the thinning ranks of the Crusaders needed all the encouragement they could get. For months they had been sustained by little more than faith. Their leadership rent by jealousy and greed and suspicion, starvation their constant companion on the march, the fighting men had nevertheless pressed on. And now their goal seemed within reach.

All that night of June 6, 1099, they had slogged across that inhospitable terrain. "However," writes Raymond of Aguilers, "the word which Peter Bartholomew had commanded us—that we should not approach Jerusalem except with bared feet—we forgot . . . each one, from ambition

The Holy City at last! "Rejoicing and exulting," Crusaders reached Jerusalem's walls on June 7, 1099. But the long march had taken a fearful toll; scarcely 12,000 fighting men remained. "A canine breed," a Moslem wrote contemptuously.

Here at Damascus Gate, 864 years later, visitors see evidences of another conflict: the smoldering Arab-Israeli feud that has divided the city since 1948. Tempers flare often on both sides of the frontier. Sandbags protect Jordanian troops atop the 16th-century parapet, which overlooks Israeli territory just out of the picture at right. Arabs erected the wall below to shield passers-by from stray shots in case of renewed border violence.

to occupy castles and villas, wishing to go ahead of the next."

Morning had found the eager Crusaders urging their baggage animals—camels and oxen and horses—up the summit of the hill called Montjoie, past the mosque of the prophet Samuel. They topped the hill and before them, bright in the pitiless Judaean sun, was the goal toward which they had driven themselves for three relentless years—the walled city of Jerusalem.

"Rejoicing and exulting," writes the unknown chronicler of the *Gesta Francorum*, "we reached the city of Jerusalem . . . and began to besiege the city in a marvelous manner." But victory was not to come easily; long weeks of horror lay ahead.

Crusaders Outnumbered Five to One

Jerusalem is a natural fortress, difficult to invest. In a long history of battle, it has been a prize of conquering armies since the time of Nebuchadnezzar; today it is divided between Jew and Arab (see Inset B on the Atlas Map, **Holy Land Today**).

The walls confronting the Crusaders had been laid out in the second-century reign of the Roman Emperor Hadrian; succeeding de-

Testimony to the renewal of life, evergreens donated by Americans of B'nai B'rith honor Jews who died in World War II. Martyr's Forest grows in Israel, 20 miles west of Jerusalem.

Ageless aspect of an Arab villager inspires Jordanian artist-

fenders had added to their strength and kept them in repair. And they were ably defended.

The governor of Jerusalem, Iftikhar ad-Daula, commanded a well-trained garrison of Arab and Sudanese troops. Raymond of Aguilers—seldom one to understate the strength of the enemy—asserts that "according to our estimate and that of many others, there were sixty thousand fighting men within the city."

The depleted ranks of the Crusaders, Raymond adds, were vastly outnumbered.

"At the most we did not have more than twelve thousand able to bear arms," he reports, "for there were many poor people and many sick. There were twelve or thirteen hundred knights in our army, as I reckon it, not more. I say this that you may realize that nothing, whether great or small, which is undertaken in the name of the Lord can fail. . . ."

Raymond's confidence was based on hindsight. The first assault on the fortress city had been a failure, despite the valiant efforts of the attackers. As I stood on the crest of the road looking down at Jerusalem last summer, it was easy to see why.

Valleys offer natural defenses. To the southwest of the city lies the forbidding Vale of

Consecrated waters of the Jordan, where Christ was baptized, pour over a pilgrim in an act of blessing. For the Crusaders, during and after the weary siege of the Holy City, the river offered a similar boon. "We set out from Jerusalem to Jericho, took palms and went to the Jordan," wrote the chaplain Raymond of Aguilers. "We proceeded to dress only in a shirt and new breeches, as we had been commanded about baptism . . ."

Gehenna; the Valley of Kidron runs on to the east, between the city and the Mount of Olives. Another gully lay in front of me, along the western wall. Only to the south and along the northern bastion was the terrain favorable to an attacking army.

The lay of the land had not changed since the Crusaders came that way, but its appearance had. Apartment buildings mounted the hill across from where I stood, and a curving highway swarmed with automobiles. Even more notable was the green of the countryside. "Lacking in woods . . ." Fulcher of Chartres wrote, but that is not true of Israel today.

Green Is the Color of Hope

It had been 14 years since my last visit to the Holy Land. Israel was more a hope than a nation when I had seen it in 1948; there had been little time for development.

Now I was in a bustling, burgeoning country, deeply conscious of its traditions, proud of its recent past, and confident of its future. Nothing seemed more expressive of that confidence than the newly planted trees which cover once-gray hills from Tel Aviv—the ancient port of Joppa—to Jerusalem and beyond.

In the 15 years of its existence, Israel has planted an estimated 60 million trees and brought 700,000 arid acres into cultivation. Americans of Jewish faith have played a part in the great reforestation project: the B'nai B'rith organization alone estimates it has supplied 410,000 seedlings. In Israel, the color of hope is green.

The vista that lay before the Crusaders on that June evening in 1099, however, was a bleak one. Iftikhar had emptied the pastures around the city of their herds, blocked the springs, and poisoned the wells. The thousands of Christian residents of Jerusalem had been driven outside the walls, to compete with the Crusaders for scarce food and water. Within the city the Moslem defenders had warehouses heavily stocked with food; cisterns held enough water for a long siege. And a drainage system dating from Roman times minimized the danger of disease.

The plan drawn up by the Crusaders for besieging the city was dictated partly by a shortage of troops. Raymond of Aguilers gives us the details:

"Duke Godfrey [of Lorraine] and the Count of Flanders and the Count of Normandy besieged the city from the north side . . . from the Church of St. Stephen . . . southward to the angular tower next to the Tower of David. Count Raymond [of Toulouse] . . . settled

Kissing the Cross, a Greek Orthodox worshiper from Cyprus is sprinkled with water from the Jordan by a bearded priest. The sacred river flows here near Jericho.

down on the west . . . from the camp of the Duke to the foot of Mount Zion."

Raymond, however, found his position not to his liking. Against the wishes of his own men, and the bitter protests of his fellow leaders, he moved his army up the slopes of Mount Zion.

Hermit Urges Immediate Attack

Iftikhar's preparations, it soon became apparent, were all too effective. Only the Pool of Siloam, which still flows beneath the south wall of the city (page 845), was unpoisoned, and that was within range of the defenders' weapons. The countryside yielded little food, and the terrible heat took its toll of armored men. The Crusaders could not support a long siege; if Jerusalem was to fall, it must be taken by storm.

"It happened one day," writes Raymond of Aguilers, "that some of the leaders of the army met a hermit on the Mount of Olives, who said to them: 'If you will attack the city tomorrow till the ninth hour, the Lord will deliver it into your hands.' "

The knights protested that they did not have the necessary scaling ladders or towers.

"God is all powerful," the hermit replied. "If He wills, He will storm the walls even with one ladder. The Lord aids those who labor for the Truth."

"So, with such machinery as could be constructed during the night," Raymond says, "an attack was made on the city in the early morning, and it lasted till the third hour. The Saracens were compelled to retreat behind the inner [main] walls, for the outer wall was broken down by our men, some of whom even climbed to the top of the inner walls. Now when the city was about to be captured, in the confusion of desire and fear the attack was interrupted, and we then lost many men. On the next day no attack was attempted."

The assault that failed was made on the 13th of June. Two days later the leaders met in council and decided that no new attempt could be made until they had adequate supplies of siege machines, scaling ladders, and towers. Unhappily, there was no material with which to build them.

"For a period of ten days during the siege," the chronicler of the *Gesta Francorum* writes, "we were not able to buy bread at any price .... We also suffered greatly for thirst. In fear and terror we were forced to water our horses and other animals at a distance of six miles from camp. The Pool of Siloam... sustained us, but, nevertheless, water was sold among us very dearly."

Crusaders Spurred by Fleet's Arrival

Raymond's description of the scene at the Pool of Siloam is terrifying. The spring at the pool, he says, flowed only every third day.

"When the water did flow forth . . ." he recounts, "it was consumed with such great crowding and haste that the men pushed one another into it, and many baggage animals and cattle perished in it. And so when the pool was filled with the crowd and with the bodies of dead animals, the stronger, even at the price of death, forced their way to the very opening in the rocks through which the water flowed, while the weak got only the water which had already been contaminated.

"Many sick people fell down by the fountain, with tongues so parched that they were unable to utter a word; with open mouths they stretched forth their hands toward those who had water."

With the Crusaders seemingly halted at the very threshold of the Holy City, a Christian fleet came to their salvation. On June 17, a squadron of six craft sailed into Joppa harbor and found it deserted by the Moslems. Two of the vessels were Genoese, the others probably English.

(Continued on page 847)

Barefoot army with cross and banners marches around the Holy City in answer to a vision that promised victory for this act of penance. Siege tower, scaling ladders, and a mangonel for catapulting stones (left) line the route.

Atop the east wall, through whose Golden Gate the Crusaders believed Christ made His triumphant entry, stand derisive Moslems. "They placed many crosses on the walls in yokes and mocked them with blows and insulting deeds," a Crusader wrote.

painting by Tom Lovell and researched by Thomas Mayer © National Geographic Society

Pool of Siloam, only water near Jerusalem not poisoned by defenders, barely sustained the cross-bearers. Men and animals fought and died for a place to drink.

Crusaders scale the walls; Jerusalem falls

THROUGH WEARY WEEKS of hunger and thirst, the Christians prepared for assault. With wood brought from afar, they built siege equipment: mangonels to catapult boulders; towers to roll against the walls; scaling ladders and battering rams. But watching defenders, "noting the great number of machines that we had constructed, strengthened the weaker parts of the wall." To surprise the enemy, before dawn of July 15, 1099, Godfrey of Lorraine moved his siege machines to this point on Jerusalem's north wall. When the sun rose, the scream of battle began.

The painting, by NATIONAL GEOGRAPHIC artist Robert W. Nicholson, depicts the attack in extraordinary detail. Shields raised, Crusaders rush the walls with ladders. Others mount the siege tower, its protective hides ablaze from Greek fire poured down by defenders. (To test Greek fire, the artist himself successfully mixed some from naphtha, pitch, sulphur, and resin.) Bundles of wet straw cushion the walls against catapulted rocks; archers try to ignite the mats with fire arrows. At far right, a ballista with wooden springs is being cocked to hurl a blazing spear over the wall near Herod's Gate.

Eventually "this shower of fire drove the defenders from the walls. . . . The men began to enter Jerusalem. . . ." Thus did Christendom win the sacred prize.

OPPOSITE PAGE FOLDS OUT ▶

Barbed wire and mines still split Jerusalem between Arab and Jew. This dramatic view looks northwest. To see how little the city has changed since Crusaders attacked from the low hills beyond the Dome of the Rock, unfold the three-page painting that follows.

"All of our people rejoiced when they heard the news of the ships," exulted Raymond of Aguilers. "The leaders took counsel," says the *Gesta Francorum*, "and decided that armed men should be sent to guard the ships and sailors. . . . So one hundred men from the army of Raymond, Count of Saint-Gilles . . . left camp in the early dawn and started confidently toward Joppa."

The journey, however, was not to be uneventful. "Thirty of these knights," the *Gesta* continues, "separated themselves from the rest of the band and met seven hundred Arabs, Turks, and Saracens from the army of the Emir. The soldiers of Christ boldly attacked the enemy, whose force was so superior . . . that they soon surrounded us."

Several of the Crusaders were killed. But the balance of the guard detachment, hearing of the clash, rode to the rescue.

"Our men rushed upon the unbelievers, shouting the name of Christ, each determined to bring down his man," the *Gesta* recounts. "The enemy soon realized that they would not be able to withstand the bravery of the Franks, so they turned their backs and fled in terror. Our men, pursuing them a distance of four miles, killed many of them, but kept one alive to give them information. One hundred and three horses were captured."

Saracens Overwhelm Crusader Ships

The victorious guard detachment proceeded to Joppa, where the sailors received them with bread, wine, and fish—welcome fare indeed to men on the verge of starvation. The cargoes of food and even more important ropes, bolts, and other hardware needed for the manufacture of siege machines were unloaded. But more trouble was to come.

"The sailors, careless of their security, failed to post lookouts for the night," Raymond sadly recounts, "and in the darkness they were suddenly surrounded by enemies from the sea. When dawn came, they realized that the enemy was too strong to be resisted, and they abandoned their ships, carrying only the spoils. Thus our knights returned to Jerusalem after winning one battle and losing another."

It was not a total loss. The sailors, as well as the goods they brought, were valued reinforcements for the investing forces. Many were skilled workmen, and they fell to with a will at the job of building siege machines and scaling towers.

Wood, however, was still in short supply. Tancred and Robert of Flanders solved that problem, leading raiding detachments 40 miles to the forests around Samaria and returning in triumph with timbers loaded on camels and on Saracen prisoners.

Now work began in earnest. Wooden castles on wheels, fitted with catapults, were designed to be pushed against the city walls. Knights could leap to the attack from bridges near their tops.

But the heat continued, and grew worse, and the walls of Jerusalem which had earlier appeared as a long-sought goal now shimmered in the Judean summer as impenetrable obstacles. Then the dreaded sirocco came, and blew for days, and men went mad. Animals died from thirst, and men died too.

"Despairing of God's mercy," says Raymond of Aguilers, "[some of] the men went to the plain of the river Jordan, collected palms, and were baptized in its waters. They did so chiefly with the intention of


Robert W Nicholson
National Geographic Staff © N.G.S.

Candles glow in the Church of the Nativity at Bethlehem, taken on June 7, 1099, by "100 of the truest soldiers." Parts of the sanctuary added by the Crusaders still remain.

abandoning the siege . . . to return home by whatever means they could."

The bickering among the leaders mounted with the summer heat. Tancred insisted on his claims to Bethlehem, which he had liberated. The question of who should rule Jerusalem, when and if it should be conquered, brought other quarrels.

To deepen the despair in the Christian camp, news came in early July that an Egyptian army of overwhelming size was on its way to relieve Iftikhar's beleaguered troops. The princes of the Crusade knew that their army could never stand against such a force. Jerusalem must be taken at once, or the First Crusade would die at the foot of Jerusalem's revered walls.

And then, when all seemed lost, another Crusader presented himself before the leaders with the story of a miraculous vision. On the morning of July 6, one Peter Desiderius testified to a nocturnal visitation from the much-mourned Adhemar of Le Puy. The instructions which Adhemar had bade him pass on to the Crusaders, Raymond of Aguilers quotes Peter Desiderius as saying, were these:

"You who have come from distant lands to worship God and the Lord of hosts, purge yourselves of your uncleanliness, and let each one turn from his evil ways. Then with bare feet march around Jerusalem invoking God, and you must also fast. If you do this, and then make a great attack on the city on the ninth day, it will be captured. If you do not, all the evils that you have suffered will be multiplied by the Lord."

Vision Inspires an Awesome March

A fast was immediately proclaimed. On Friday, July 8, the Moslem defenders watching from Jerusalem's walls must have been astounded by the scene before them.

The bishops and the lesser clergy led the procession, bearing on high their crosses and sacred relics. Then came the knights and the able-bodied men, marching to the call of trumpets and bearing their standards and their arms. Barefoot, they made the circuit of the walls (page 844). On the ramparts above them the defenders moved with them, shouting their ridicule.

"When we reached the spot on the Mount of Olives whence the Lord had ascended into heaven . . ." said Raymond, "the following exhortation was made to the people:

" 'Now that we are on the very spot from which the Lord made His ascension and we can do nothing more to purify ourselves, let each one of us forgive his brother whom he has injured, that the Lord may forgive us.'

"What more?" asks Raymond. "All were reconciled to each other, and with generous offerings we besought the mercy of God, that He should not now desert His people, whom He had led so gloriously and miraculously to this goal."

The next two days were spent in feverish labor on the siege towers. They were covered with hides as protection from the Greek fire which the defenders showered from the walls. Smaller siege machines, including catapults, were rushed to completion.

"Duke Godfrey made a wooden tower and other siege devices, and Count Raymond did the same," records the *Gesta Francorum*,

PAINTING BY STANLEY MELTZOFF © NATIONAL GEOGRAPHIC SOCIETY

"Weeping for joy," victorious Crusaders fall to their knees in the Church of the Holy Sepulcher. "A new day [of] perpetual gladness, the consummation of our labor and devotion," wrote an eyewitness to this thanksgiving in Christendom's holiest shrine.

In tender sorrow, widows at the Church of the Holy Sepulcher in Arab Jerusalem caress the Stone of Unction. This worn slab is hallowed by the tradition that mourners here anointed the body of Christ, as the inscription in Greek proclaims. The women believe that by touching the holy spot they take its sanctity unto themselves. With such faith, medieval Europe's crusading hosts sought the Holy Land. Founding the Kingdom of Jerusalem, they saw for one shining moment a pious dream come true.

"The Count of Saint-Gilles erected his tower on the plain to the south of the city."

The towers were wheeled to their stations on July 10. The Saracens, seeing the great machines, strengthened and heightened the walls opposite them. The Crusaders countered, Raymond says, by moving the towers.

"The Duke [of Lorraine], the Count of Flanders and the Count of Normandy spent the night . . . moving their machines, mantlets, and platforms," he explains. "You who read this must not think that this was a light undertaking, for the machines were carried in parts almost a mile to the place where they were to be set up. When morning came and the Saracens saw that all the machinery and tents had been moved during the night, they were amazed. Not only the Saracens . . . but our people as well, for they recognized that the hand of the Lord was with us."

Battle Begins for the Holy City

The attack began the night of July 13, and the defenders countered with a hail of stones and rivers of liquid fire. By evening of July 14 Raymond's men had placed his tower against the south wall, but the defenders fought off every attempt to scale the ramparts. Next morning Godfrey's tower was wheeled against the north wall, near the present Herod's Gate. Godfrey and his brother Eustace of Boulogne were in the top of the structure.

The battle hung in the balance during the morning hours of July 15. Archers shot blazing firebrands to drive the defenders from the walls, but the siege towers were battered and burned. Toward the end of morning, it appeared that the attack was doomed.

"However, when the hour approached on which our Lord Jesus Christ deigned to suffer on the Cross for us," the *Gesta Francorum* exults, "our knights began to fight bravely in one of the towers—namely, the party with Duke Godfrey and his brother Count Eustace. One of our knights, named Lethold, clambered up the wall of the city, and no sooner had he ascended than the defenders fled from the walls and through the city."

Godfrey himself soon followed, and the pick of his army swarmed up scaling ladders and into the city (three-page foldout painting, pages 849-51). They opened the Gate of Columns (Damascus Gate, page 838), and the Crusaders' shock troops streamed through the streets. With the survivors of his bodyguard, Iftikhar took refuge in the Tower of David, whence he sent emissaries to Raymond of Toulouse offering a fabulous ransom for his life and the lives of his retainers. Raymond accepted, and Iftikhar and his bodyguard were escorted to safety outside the walls.

Few other defenders were so fortunate. Men, women, children perished by the sword

or by fire. Nor were the Moslem defenders the only victims: the Jews of Jerusalem had sought refuge in their chief synagogue. They were accused of having aided the defenders, the synagogue was put to the torch, and no Jew is known to have survived.

Daimbert of Pisa, who had replaced Adhemar as religious leader of the First Crusade, reported to the Pope:

"If you desire to know what was done with the enemy who were found there, know that in Solomon's Porch and in his temple our men rode in the blood of Saracens up to the knees of their horses."

And when the slaughter was over, reports the *Gesta*, ". . . the army scattered throughout the city and took possession of the gold and silver, the horses and mules, and the houses filled with goods of all kinds."

Toward evening the leaders of the Crusade, who only a week before had filed barefoot around the seemingly impregnable walls of the city to the jeers of the Moslem defenders, walked in solemn state to the Church of the Holy Sepulcher (page 853). There they gave thanks to God for their victory.

"It was well worth all our previous labors and hardships to see the devotion of the pilgrims at the Holy Sepulcher," wrote Raymond of Aguilers. "How they rejoiced and exulted and sang a new song to the Lord! For their hearts offered prayers of praise to God, victorious and triumphant, which cannot be told in words."

THE END

Holy Land Today

New map portrays crossroads of ancient conquest, modern conflict

THE TENSIONS that divide so much of the modern world are dramatized in an unusual feature of the Society's latest map, **Holy Land Today.** Not a highway or a road crosses the border between Israel and neighboring Arab lands. Every red line shows a complete break at the frontier.

"They are all dead ends," explains Chief Cartographer James M. Darley. "We can show them this way for the first time, thanks to a scale of only eight miles to the inch."

The new map, Plate 52, is the forty-second in the uniform-size Atlas Series issued since 1958. Distributed to 3,500,000 member families with this issue, it offers a fascinating course in Biblical history and geography, outlined in 135 descriptive notes.

Farmland Won From Swamp and Desert

That same wealth of detail brings to life many changes that have taken place in the seven years since the Society last issued a map of the Holy Land. The 1956 map showed Lake Hula, for instance—a malaria-ridden region in northern Israel where the River Jordan starts its journey to the Dead Sea.

On the new sheet, Lake Hula has disappeared. Israeli engineers, working often with armored bulldozers to protect them from Syrian rifle fire, deepened the river's channels to drain the swamps. Now the Jordan flows through a fertile, malaria-free valley where livestock, vegetables—and men—thrive.

The main irrigation system, still under construction, shows as a dashed blue line that branches from the Jordan north of the Sea of Galilee and runs southward all the way to the Beersheba of the Bible. Jordanians are at work on a similar project, the East Ghor Canal, indicated by a line paralleling the Jordan between Galilee and the Dead Sea.

Reversing the ordinary course of history, this new map records the transformation of ancient ruins into living communities. On the 1956 map, the Dead Sea site of En-gedi, south of the Israel-Jordan border, appeared merely as three dots, the symbol for abandoned ruins. On the new map the three dots are joined by a fourth and larger dot—the new Israeli *kibbutz*, or cooperative farm village, of Ein Gedi. To the southwest, the same transformation has taken place at Arad, where the tenth town in 40 centuries has begun to rise.

The map is also an up-to-the-minute guide to extraordinary work being done by archeologists in a land where excavators need "a trowel in one hand and a Bible in the other."

Throb of industry: Worker climbs an oil-refinery tower near Sidon, in Lebanon.

Most famous archeological site is Khirbat Qumrān on the northwestern shore of the Dead Sea, where in 1947 a cave yielded the priceless Dead Sea Scrolls. Not far away, at Nahal Hever, another cave has since produced invaluable records of a Jewish revolt suppressed by the Romans in the year 135.

A large inset on the new map details an area dear not only to archeologists and schol-

ars, but to the faithful of Judaism, Christianity, and Islam alike—the ancient, and now divided, city of Jerusalem. Here a continuing series of expeditions led by the distinguished British archeologist, Dr. Kathleen Kenyon, and sponsored in part by the National Geographic Society, seeks to establish an unbroken history of the city.

The inset of old Jerusalem, drawn on a scale of 6.3 inches to the mile, pinpoints one of the world's best-known crossings between enemy camps—the Mandelbaum Gate. Since the Arab-Jewish armistice of 1949, this checkpoint has been the only link between the Israeli and Jordanian sectors of the city. Named for a merchant whose house stood nearby, the "gate" offers free access to both parts of Jerusalem only to a handful of diplomats, priests, and United Nations truce observers. Tourists may pass from Jordan to Israel, but may not return. Christians from Israel may visit the holy places in Jordan at Christmas and Easter, but only for a few hours.

Another inset focuses on one of history's most inspired epochs—the era of the Crusades. In this issue, Senior Assistant Editor Franc Shor retraces the First Crusade's path from Constantinople to Jerusalem. The inset, with its Crusader routes converging on Jerusalem from Europe and Africa, gives graphic significance to the lines from Ezekiel: "Thus saith the Lord God; This is Jerusalem: I have set it in the midst of the nations and countries that are round about her" (5:5).

Like the Jerusalem of old, the Holy Land today stands "in the midst of the nations and countries," a land divided among warring states and feuding theologies. THE END

Fear of strife: Jordanian artillerymen direct fire on a practice range in the desert.

Glory of tradition: Government-sponsored Syrian folk dancers perform in Damascus.

Promise of education: Pool reflects a building of the Hebrew University of Jerusalem.

Florida Rides a Space-age Boom

By BENEDICT THIELEN

Illustrations by National Geographic photographers WINFIELD PARKS and JAMES P. BLAIR

IT IS ALMOST 25 YEARS since I decided that the snowy enchantment of northern winters was more agreeable to read about on a Florida beach than to take part in. Since then, except for the war years, I have made the annual journey back to my winter home in Key West with a regularity that some of my friends consider monotonous.

It has never seemed monotonous to me, for there is nothing static about the scenes to which I am returning. No state can grow from twenty-seventh to ninth in population in this brief time without such growth showing.

I have seen small towns like Orlando and St. Petersburg turning into big cities. Familiar pinewoods have given way to mile upon mile of tilled and planted fields. In the sky the flight of planes and missiles has become as commonplace as the slow soaring of buzzards and man-of-war birds used to be.

The Navy and Air Force, which swarmed into Florida during World War II, have remained and grown to such proportions that each year the Governor gives them a Military Appreciation Dinner. For them Florida is a

The Author: Free-lance writer Benedict Thielen lives half the year in Key West, Florida, the other half on the island of Martha's Vineyard, Massachusetts. A Princeton graduate (Class of 1923) and World War II Navy veteran, he has written four novels as well as numerous short stories and magazine articles.

year-round state. For more and more people the simple fact of air conditioning is making it so.

Florida ranks fifth in the Nation—after Texas, New York, California, and Illinois—in total number of dwellings with air conditioning. Indoor weather control has not only made homes livable through the hottest summer months, but has induced northern industries to move plants and even their headquarters here.

Key West Reacts to Cuban Crisis

These changes, though massive in the aggregate, have been gradual. Now and then—as when I saw the incredible havoc wrought on the Keys in 1960 by Hurricane Donna—they have been dramatic. None was more so than the swift change brought about by the Cuban crisis of October, 1962.

President Kennedy, in his nationwide television address of October 22, told of the offensive missile and bomber bases being built by the Soviet Union in Cuba, 90 miles from Florida. The President announced a quarantine and made it clear the United States was prepared to take military action.

When I arrived in Key West four days after the President's speech, the quiet, relaxed town I had left in the spring seemed an armed camp. Rolls of barbed wire shut off the main bathing beach. Ground-to-air missiles stood

Adventurous seeker of health and wealth, Spanish grandee Ponce de Leon discovered Florida 450 years ago. It was, he believed, an enchanted island rich in gold and possessed of a magic spring whose waters restored youth. The explorer found neither fountain nor riches, but millions who follow in his footsteps revel in Florida's true gold —its sunshine. De Leon's wildernesses have been transformed into gardens: millions of orange trees yield riches far beyond his dream. The Spaniard, who undoubtedly saw pelicans (center) and flamingos like those at Busch Gardens in Tampa, could scarcely have envisioned the bathing beauty on Miami Beach or the scuba divers in Silver Springs. Nor could he have imagined the campus of the University of Miami (above) or the mechanical hands employed in the Nuclear Reactor Building's "Hot Cave" at the University of Florida, Gainesville (opposite).

Eye-catching sign at Cocoa Beach reflects not only Florida's mainstays—the sea and tourism—but the new influence of nearby Cape Canaveral, which tests and launches world-girdling spacecraft.

Miami Beach's famed hotel row thrusts gleaming towers skyward from a splinter of sand separating Atlantic surf from placid Indian Creek. Here, where the Gulf Stream brushes the state's southeastern tip, lies some of the world's most expensive real estate: property along the eight-mile ocean front has sold for as much as $4,500 a front foot. Behind the Eden Roc Hotel rises the stark north wall of an addition to the crescent-shaped Fontainebleau. Beach-protecting jetties jut seaward across the sand.

High-kicking chorus girls entertain at the Cafe Le Can Can in the Carillon Hotel, Miami Beach.

poised on their launching stands. A picket boat rolled on the gentle blue-green swells beyond the Naval Base, but submarines, destroyers, and destroyer escorts had left their piers for patrol stations.

The sign at the entrance to Henry Flagler's elegant old Casa Marina hotel now read "U.S. Army." Overhead the sky was filled night and day with the scream of jet planes from Boca Chica Naval Air Station. There were so many that the problem was where to put them.

"Don't roll that one over here," one harried landing officer was quoted as saying. "You'll tip the island if you do."

All this was noisy but reassuring. The papers ran stories of panic buying in Los Angeles, but in Key West the manager of our supermarket glanced down at his well-stocked but deserted aisles and said, "If we don't get some more customers soon, we'll have to turn the place into a bowling alley."

Key West saw few tourists during those two or three tense months, but its military population rose suddenly and sharply.

Growth Rate Fastest in the Union

I thought I knew Florida well, but the state's role as a hot military base in the cold war came as a surprise. It made me wonder about other developments that are changing the conventional picture of Florida as only a winter playground. A fresh and more thorough look at the state seemed in order. Six weeks and 3,500 zigzagging miles later I realized the extent of my ignorance.

Florida is a big state. A tourist driving from New York may think he has arrived at his destination when he crosses its border. Actually, if he is bound for the southern tip at Key West, he still has 560 miles to go. At its widest point the peninsula measures only 145 miles, but it is 535 miles across the Panhandle from Pensacola on the west to the Atlantic Ocean on the east (map, pages 864-5).

It is a watery state. Measured generally, its shoreline extends 1,200 miles. If you reach

Rows of royal palms, green fronds rustling, divide Biscayne Boulevard in downtown Miami. It forms part of U.S. Highway 1, which begins at Fort Kent, Maine, and ends at Key West, southernmost city in the continental United States.

into all its bays and bayous the figure jumps to 8,500 miles. In its interior are some 30,000 lakes. Each day two and a half billion gallons of water gush from its 17 major springs. This plentiful supply of ground water is one of Florida's greatest riches.

It is a windy state, cooled by trade winds in summer, sometimes chilled by icy northers in winter. From time to time it is lashed by devastating hurricanes.

Florida proportionately is the fastest-growing state in the Union. Though more people moved to California than to Florida during the decade 1950-1960, Florida's percentage rate of increase was one and a half times that of California.

It is a state of often startling variety. Standing at night by the edge of the Everglades' primeval wilderness, you can look back and see the glow in the sky of Miami's lights. Not far from the missile pads of Cape Canaveral, archeologists have unearthed the bones of prehistoric man. A minute from the hurtling traffic of U. S. Highway 1, narrow roads skirt dense jungle.

Florida's variety extends as well to the way people make their living. In 1963 some 13 million tourists will have spent more than two billion dollars in Florida's 1,400 hotels, 5,700

From a helicopter above the 36th Street Interchange in northwest Miami, Patrolman Jack Milavic of the Public Safety Department broadcasts traffic conditions to radio listeners. On an average day, 117,560 vehicles cross this new three-layer intersection linking Miami and Miami Beach at upper left. Metropolitan Miami, with more than a million permanent residents and an annual tourist influx of two and a half times that number, has Florida's most crowded highways. Traffic engineering, law enforcement, and safety education produced a sharp drop in accidents in 1963.

Mangrove swamp 50 years ago, Bal Harbour, north of Miami Beach, now boasts luxury hotels towering beside terraces and pools

FLORIDA

ONCE KNOWN chiefly as a balmy peninsula where dwellers in harsher climates went to escape winter's ravages, Florida has emerged as a year-round state with dozens of new industries, many of them geared to the Government's vast missile and aerospace programs. In the past two decades the Sunshine State has climbed in population rank from 27th to 9th. **AREA:** 58,560 sq miles. **PEOPLE:** 5,460,000 in 1963. **ECONOMY:** Tourism leads. Florida grows three-fourths of U. S. citrus fruit, much of its winter vegetables. Major producer of beef cattle, seafood, lumber, naval stores, paper pulp, phosphate. Aerospace, electronics industries booming. **MAJOR CITIES:** Miami, Tampa, Jacksonville, Tallahassee (capital). **CLIMATE:** subtropical; temperatures from average highs of 81° F. to occasional freezes; days of rainfall range from 114 per year in the Pensacola area to 135 per year at Miami.

motels, and countless restaurants, shops, and roadside stands. Tourism is Florida's big business. But so is citrus fruit, in which it leads the world. Florida hauls in close to 190 million pounds of fish and shellfish in a year. From its pine forests come lumber, naval stores, and pulp for paper. It is an important beef-cattle state, and second only to California in growing winter vegetables.

One February morning, leaving the Keys behind, I drove through the town of Homestead and stopped by the side of the road. Green fields of beans and squash and tomatoes stretched to the flat horizon. Against them the red and blue and yellow shirts of West Indian harvest hands were bright specks under the high sky.

In the hot still air the crops gave a sense of springing growth born of an immensely fertile soil. Yet across the road I saw giant machines plowing what seemed to be pale gray rock from which nothing could ever grow.

Riches Flow From Infertile Soil

"Those were rock plows," County Agent John D. Campbell told me later. "We have little soil. We make it. We crush the rock, we fertilize, and we irrigate. It's climate—sun and water—that makes our agriculture."

This is land improvement on a grand scale. In the Redland district, of which Homestead is the market center, 50,000 acres are under this kind of cultivation. Sixty years ago Homestead was a tiny frontier settlement. Today it is a brisk town of 11,000, grown rich on the fruits of its infertile soil.

In some ways Miami and Miami Beach, only 25 miles from Homestead, retain a certain raw frontier quality in spite of their size and sophistication. They were nurtured in the wild boom-and-bust days of the twenties. The carnival atmosphere has mellowed with the years, but at any moment, you feel, the sky might again become the limit. This is especially true of that improbable palm-lined Broadway-on-the-ocean, Miami Beach.

Revisiting the Beach 20 years after wartime duty there, I gaped like any yokel at the gleaming glass-and-concrete hotels ranked

GEORGIA
Valdosta
Jasper
Hilliard
Yulee
FORT CLINCH
Fernandina Beach
Amelia Island
FORT CAROLINE NATIONAL MEMORIAL
LITTLE TALBOT ISLAND
MAYPORT NAVAL STATION
Mayport
Jacksonville
Jacksonville Beach
Ponte Vedra Beach
Orange Park
Macclenny
Live Oak
Lake City
Watertown
Green Cove Springs
Lake Butler
Mayo
Starke
CASTILLO DE SAN MARCOS NATIONAL MONUMENT
St. Augustine
ANASTASIA
FORT MATANZAS NATIONAL MONUMENT
Marineland
Animal Land
High Springs
Alachua
Hastings
Palatka
E. Palatka
Satsuma
Flagler Beach
Cross City
Trenton
Gainesville
Chiefland
Bronson
Crescent City
Williston
Ocala
Silver Springs
Holly Hill
Ormond Beach
Daytona Beach
Port Orange
New Smyrna Beach
Cedar Key
Yankeetown
Dunnellon
Orange City
De Land
Sanford
SANFORD N.A.S.
Wildwood
Eustis
Crystal River
Homosassa Springs
Homosassa
Leesburg
Mount Dora
Zellwood
Titusville
Mims
Indian River
Merritt Island
Cape Canaveral
PATRICK AIR FORCE MISSILE TEST CENTER
Banana River
Bushnell
Brooksville
Winter Park
Orlando
Winter Garden
Clermont
Weeki Wachee Spring
Merritt Island
Cocoa
Cocoa Beach
Rockledge
PATRICK AIR FORCE BASE
Dade City
Zephyrhills
Kissimmee
Eau Gallie
Satellite Beach
Indialantic
Melbourne
Melbourne Beach
New Port Richey
Tarpon Springs
Plant City
Lakeland
Auburndale
Haines City
Winter Haven
Dunedin
Clearwater
Tampa
Largo
Pinellas Park
St. Petersburg
St. Petersburg Beach
Mullet Key
SUNSHINE SKYWAY
DE SOTO NATIONAL MEMORIAL
Anna Maria Key
Longboat Key
Siesta Key
Ybor City
Cypress Gardens
Singing Tower
Lake Wales
Bartow
Frostproof
Fort Meade
Avon Park
Sebring
Wauchula
Zolfo Springs
Palmetto
Bradenton
Sarasota
Kenansville
Sebastian
Gifford
Vero Beach
McKee Jungle Gardens
Fort Pierce
SUNSHINE STATE PARKWAY
Indian River
Stuart
Hobe Sound
Jupiter Island
MISSILE TRACKING STATION
Jupiter
Okeechobee
Lake Placid
Brighton Reservation
Arcadia
Nokomis
Venice
Circus Winter Quarters
Englewood
Port Charlotte
Punta Gorda
Palmdale
Moore Haven
Lake Okeechobee
Pahokee
Bryant
West Palm Beach
Lake Park
Riviera Beach
Palm Beach
Lake Worth
Lantana
Clewiston
Belle Glade
Boynton Beach
Delray Beach
Boca Raton
Deerfield Beach
Pompano Beach
Oakland Park
Wilton Manor
Fort Lauderdale
Port Everglades
Andytown
Hollywood
North Miami
Hialeah
Miami
Miami Beach
Boca Grande
Pine I.
Captiva Island
Sanibel I.
Ft Myers Beach
Fort Myers
Lehigh Acres
Cape Coral
Estero
Immokalee
Bonita Springs
Naples
East Naples
Marco
Marco I.
Cape Romano
COLLIER-SEMINOLE
Everglades
Ten Thousand Is.
Westwood Lakes
South Miami
Coral Gables
Key Biscayne
Perrine
Goulds
Cutler Ridge
Homestead
Florida City
EVERGLADES NATIONAL PARK
Shark River
Royal Palm Station
JOHN PENNEKAMP CORAL REEF STATE PARK
Key Largo
Cape Sable
Rock Harbor
Tavernier
Plantation Key
Islamorada
Alligator Reef
Florida Keys
Long Key
Lower Matecumbe Key
Duck Key
Grassy Key
Key Colony Beach
Marathon
SEVEN MILE BRIDGE
Bahia Honda Key
Big Pine Key
Pine Islands
Sugarloaf Key
OVERSEAS HIGHWAY
KEY WEST NAVAL BASE
Key West
BOCA CHICA N.A.S.
Marquesas Keys
FORT JEFFERSON NATIONAL MONUMENT
Dry Tortugas
Straits of Florida
BAHAMA ISLANDS
Atlantic Ocean
Gulf Stream
Hollywood
Hollywood Beach
Miramar
Hallandale
SUNSHINE STATE PARKWAY
Gulfstream Park
Golden Beach
Carol City
North Miami Beach
Sunny Isles
Opa-locka Airport
Opa-locka
North Miami
Miami Shores
Bal Harbour
Surfside
Hialeah Park
Biscayne Blvd.
La Gorce I.
Hialeah
Miami Springs
Miami Beach
MIAMI
Miami International Airport
Coral Gables
Tropical Park
University of Miami
Coconut Grove
Key Biscayne
Virginia Key
Miami Seaquarium
Crandon Park
Key Biscayne
Cape Florida
Kendall
Parrot Jungle
Fairchild Tropical Garden

FLORIDA

Land of fun, sun, sand—and big business—Florida's peninsula reaches 500 miles toward the tropics. Its coastline exceeds California's by a third; its 30,000 fresh-water lakes outnumber Minnesota's three times.

almost solidly along the ocean front (page 861). Of all the places I had known, only Gatti's restaurant seemed relatively unchanged.

Next morning Joe Gatti called for me to take me on a tour of the Beach. Having lived there most of his life, he knows it intimately and regards it with the kind of mixed exasperation and love that a father feels for an adolescent son.

"Just look at the way they're crowding them in," he said as we passed the latest hotel-of-the-week being rushed to completion. "But I don't know," he added, "maybe people *like* to be crowded."

There is this Miami Beach of crowds and noisy amusement, of jai alai and dog tracks and horse-playing. Firms that specialize in renting mink and chinchilla wraps do a brisk business. Car-rental agencies report a heavy demand for pastel-colored Cadillac convertibles. Every hotel of any consequence has its own night club, featuring Broadway headliners to pull in patrons.

This is the Miami Beach of everyone's imagination, and, except for frequent occurrences of the unimaginable, it is just as imagined. But there is another Miami Beach.

With a kind of shy pride Joe pointed out the handsome convention hall, the garden center, the Lincoln Road shopping mall, the ingenious double-decked parking lots, the landscaping that makes ordinary streets restful and pleasing to the eye. Miami Beach is still fantastic and, in some ways, grotesque. But there are hints of approaching maturity.

Giddy Past Still Colors a Sober Present

Compared to the Beach, Miami itself is sober and serious minded, but its youthful antics were as zany. In the mid-twenties, during the great Florida boom, Miami could count 2,000 real-estate offices, staffed by 25,000 salesmen, where fortunes on paper were being made overnight. To lure prospective customers, jazz bands played in the streets and orators delivered harangues before their doors.

The city is still shaking off the aura of giddy nonsense created by those years. Only a short time ago a manufacturer refused to consider Miami as the site of a new plant. Asked why, he replied: "To bring it into perspective, do you consider that Atlantic City is a really suitable location for large, heavy industrial operations?"

Such a reaction is understandable, for the atmosphere of Atlantic City's annual beauty contest and that of Miami's Orange Bowl parade have much in common. But it would probably surprise the industrialist to learn that Metropolitan Miami now has more than 2,900 manufacturing plants. In place of the two banks that survived the bursting of the boom and the depression of the thirties, the Miami area now has 45, more than half established since World War II.

Televised science lecture takes place in the University of Miami's new Learning and Instructional Resources Center at Coral Gables. Students follow Prof Curtis F. Delchamps's talk on 10-foot-square projection screens in their classrooms.

Banded Shrimp, Photographed by Night in Tropic Seas, Has Peppermint-striped Claws

Wearing a headlamp, scientist Walter A. Starck II descends 20 feet off Alligator Reef in the Florida Keys to make flash photographs of reef fish, whose colors and patterns change by day and night. This coral shrimp (*Stenopus hispidus*) dines on parasites nibbled from the bodies of fish.

Mr. Starck's study is one of several being conducted by research scientists at the University of Miami's Institute of Marine Science on Virginia Key. In recent years the National Geographic Society has collaborated with the institute on several major research projects.

Fat parrot fish (*Scarus guacamaia*), plucked from a coral crevice, sleeps peacefully in the hands of diver Robert Schroeder. Mr. Schroeder's story of photographing reef life by night will appear in next month's GEOGRAPHIC.

Eighty years ago Miami was an outpost, a collection of tents and sun-warped wooden shacks by the muddy banks of a tropical river. Its inhabitants hunted, fished, and farmed.

Today it has 500,000 residents, and tall new buildings are still going up along the shining waters of Biscayne Bay. A new harbor is being dredged. To the south the string of 33 uninhabited islands that parallel the shore has been incorporated as the municipality of Islandia.

Refugees Flock to Freedom Tower

In Miami's downtown streets I heard more Spanish than English. A sign above a hot dog stand announced "*Perros calientes.*" Another read, "English Spoken."

The Spanish I heard was Cuban Spanish, and it made me remember Havana as it was before Fidel Castro took over.

In that copy of Seville's Giralda tower that once housed the *Miami Daily News*, I found the Cuban Refugee Center. The building's name has been changed to Freedom Tower.

Of the 158,691 refugees from Communist Cuba who had passed through the center when I was there last February, 54,520 had been resettled and found work in 1,089 cities in 49 states. The figures were at once a triumph and a continuing problem.

The problem was one of prejudice and the natural human tendency to find a scapegoat. Some have claimed that Cubans in the Miami area deprive native Americans of jobs. No official or private agency has been able to find an instance of this being true, but the fear of it remains.

Boatmen and water skiers find

Spinnakers ballooning in trade

Sitting in the concrete mouth of Lippo the Hippo, a young visitor wails his discontent at Miami's Crandon Park Zoo on Key Biscayne, south of Miami Beach.

"They are proud people," a staff member at the center told me. "To come here, to get away from Fidel, they give up everything. Many come in little boats, sometimes they are ten, twelve days at sea. Last week a baby was born in an open boat. A little boy died of starvation. But they keep coming."

As I walked out into the prosperous glitter of the city, I remembered the words on the pedestal of the Statue of Liberty: "Send these, the homeless, tempest-tost to me. . . ."

I had seen them.

Biscayne Bay ideal for sport. Many Miami Beach hotels offer guests skiing lessons.

winds, Raven-class sailboats race in a March regatta on sun-sheathed bay waters.

Among the 27 separate municipalities that make up Metropolitan Miami, one of the most agreeable is Coral Gables. Seeing it now —a quietly prosperous year-round residential community—you find it hard to realize that it, too, was conceived in the surrealistic atmosphere of the twenties.

George Merrick, the town's planner and founder, was an earnest and honest man, the son of a minister. His dream city was soberly planned and based on solid values. But Merrick knew the value of publicity.

To lure people to Coral Gables, Merrick bought a steamship and a fleet of buses in which he transported them cost-free from as far away as New York and Chicago. He provided room and board during their stay.

Around Merrick's Venetian Pool, prospective buyers listened to William Jennings Bryan extol the virtues of Florida real estate—especially Coral Gables real estate. At night Jan Garber's orchestra—and a hundred others across the country—played "When the Moon Shines on Coral Gables." A chorus from Earl Carroll's *Vanities* implied that they, too, were a permanent part of this dazzling new way of life.

Bubble Bursts With a Bang

With the devastating hurricane of September, 1926, the great Florida boom ended. Overnight a thousand gaudy projects collapsed into the swamps from which they were born. Merrick's Coral Gables survived,

Silvery pompanos get a fish's-eye view of visitors at the Miami Seaquarium. A hundred-odd

species of beautiful and bizarre tropical reef dwellers share the tank's briny water. 871

as did his other pet project, the University of Miami.

When the university's doors opened in the grim autumn of 1926, only $200,000 of the $15,000,000 that had been pledged to its support had materialized. Instead of an expected 5,000 students, only 711 registered.

Today Miami is the largest independent institution of higher learning in the Southeast. To its 10 schools come 14,000 students from every state and from 54 foreign countries. Because of its location, many students come from the countries to the south, and the university orients its program to Latin America. Its brightly modern buildings spread over 260 piny acres in Coral Gables. "Sun Tan U," as it has sometimes irreverently been called, has come a long way in a few years.

I could see what its president, soft-spoken Georgia-born Dr. Henry King Stanford, meant when he told me: "I've been impressed by the survival quality of the University of Miami: the boom and bust, a hurricane, and even bankruptcy during the depression. In a

way," he went on, "the university's history has been like a human life: a precarious infancy, an undernourished childhood, a lively adolescence, and now a gradual moving into academic maturity."

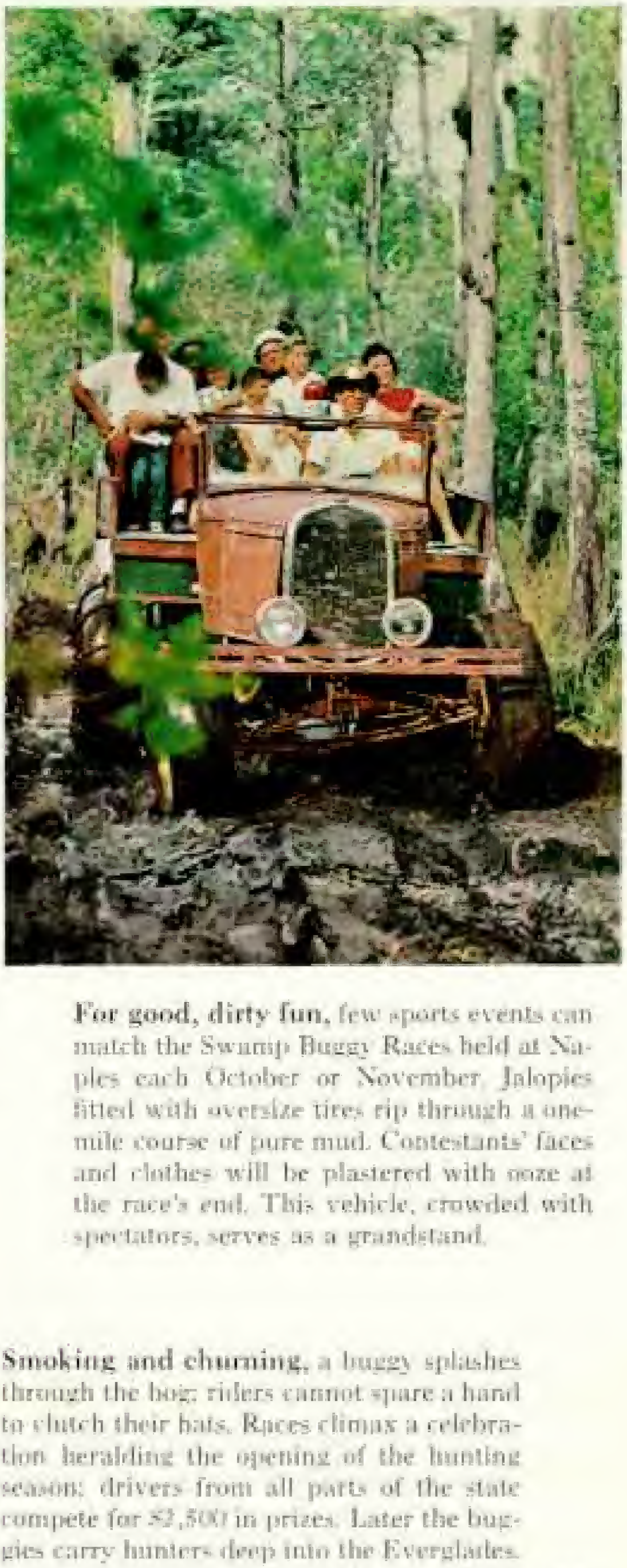
Coral Reefs Lure Marine Biologists

At the university's Institute of Marine Science, on Virginia Key (page 867), I gained the same impression of restrained satisfaction from the director, Dr. F. G. Walton Smith.

"This institute," he said, "has had a fantastic growth in size and scientific influence. In 1943 it was a one-man affair. Now we have 260 full-time employees.

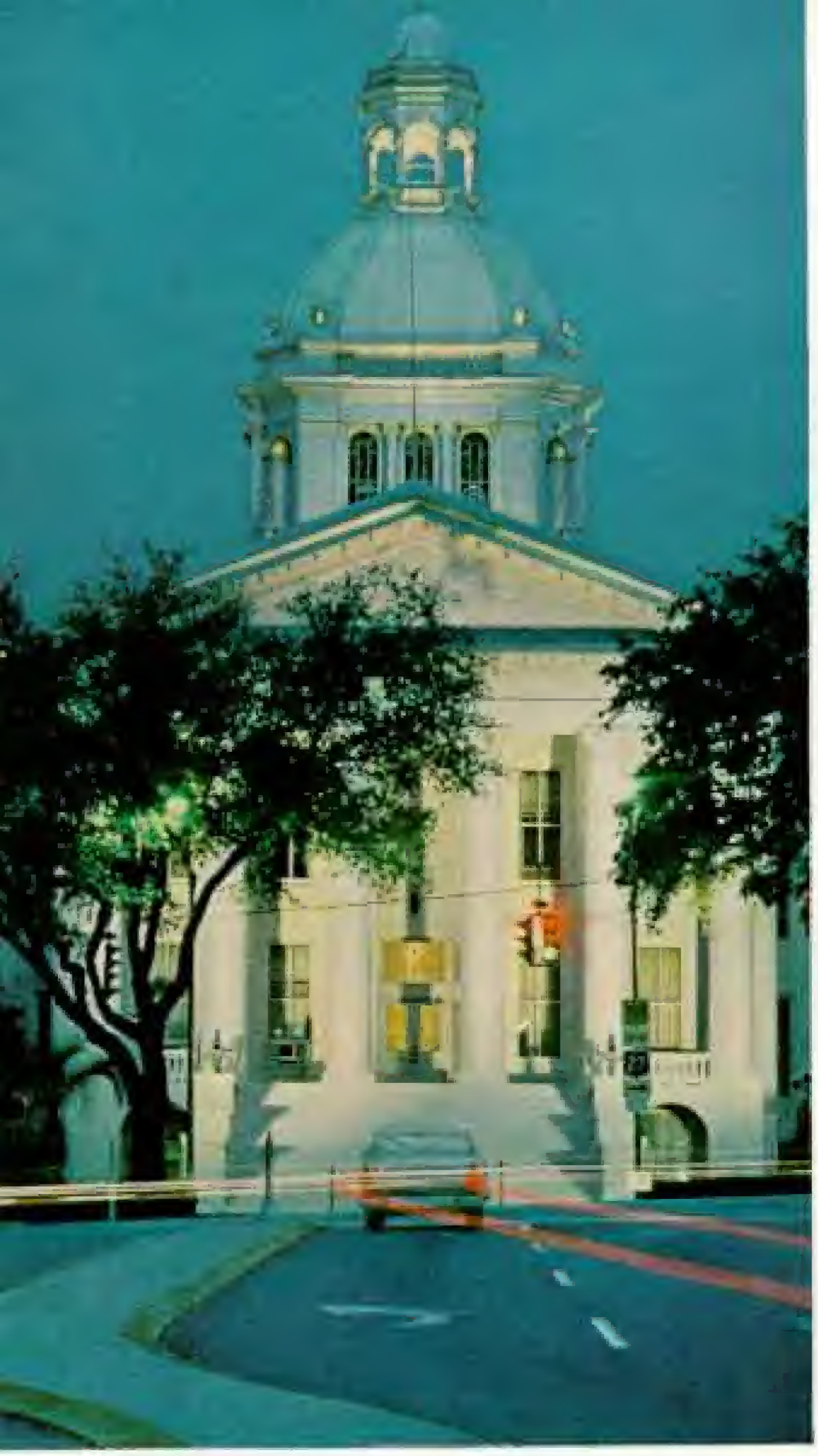
"Zoologically, we're in the tropics." He gestured toward the water beyond the window. "This is the only place in the country, other than Hawaii, where there are living coral reefs, and that's why we're here."

Grants from the National Geographic Society support the institute's work on plankton, pelagic fish, and the ecology of coral reefs. Another project, LOCO (Long Cores),



For good, dirty fun, few sports events can match the Swamp Buggy Races held at Naples each October or November. Jalopies fitted with oversize tires rip through a one-mile course of pure mud. Contestants' faces and clothes will be plastered with ooze at the race's end. This vehicle, crowded with spectators, serves as a grandstand.

Smoking and churning, a buggy splashes through the bog; riders cannot spare a hand to clutch their hats. Races climax a celebration heralding the opening of the hunting season; drivers from all parts of the state compete for $2,500 in prizes. Later the buggies carry hunters deep into the Everglades.



Lights wink on as soft southern dusk enfolds Florida's handsome capitol in Tallahassee: a time exposure.

Governor Farris Bryant took office in January, 1961. Andrew Jackson, first territorial governor, looks over the 40-year-old lawyer's shoulder.

will penetrate the sea's sedimentary layers in search of the history of the earth.

Near the institute the Miami Seaquarium attracts students as well as tourists (page 870). Like the older Marineland south of St. Augustine, the Seaquarium features performing porpoises, trained pelicans and sea lions, and tanks of darting fish, brilliant as jewels.

For those who like to observe nature in the raw, there is the feeding of the sharks. I stood beside the Shark Channel and looked down the throats of 10-foot monsters lashing the water as they tore at a huge chunk of meat dangling from a stout rope.

As a restful antidote, I drove out through the charming old suburb of Coconut Grove to the Fairchild Tropical Garden. Named for the late Dr. David Fairchild, whose introduction of exotic plants has left its mark on the entire United States, the garden is one of the loveliest in the world.

Along the paths, signs read "Please Walk on the Grass." I did, past glades of palms, among immense aerial-rooted banyans, under blossoming canopies of flowering trees. Finally, close by the place where overhead sprinklers create their own rain forest of orchids, giant philodendrons, and tree ferns, I stretched out in the shade and let the green quiet slowly surround me.

Cold Coast Warmed by Ocean River

From Miami Beach north for 63 miles to Palm Beach, the Gulf Stream hugs the shore closely before heading out to sea. Now and then you see it. At Fort Lauderdale the beach

Glassed-in Galleries Witness a Debate in Florida's House of Representatives

In April of every odd year the Legislature convenes for 60 days. Tallahassee, one of the Nation's most attractive state capitals, was founded in 1823, two years after the United States bought Florida from Spain. The capital rose on a site chosen because it lay midway between Pensacola and St. Augustine, Florida's chief settlements at that time. Tallahassee and Austin, Texas, were the only Confederate state capitals not taken by Union troops in four years of war. Today a city of 50,000, Tallahassee is the commercial center of a rich area growing wrapper tobacco, cattle, poultry, corn, peaches, and timber.

Photographs by National Geographic Photographer James P. Blair © N.G.S.

is long and open—unless you happen to be there during the Easter season, when collegians hold their annual tribal rites. But all along this stretch, more hotels, motels, and apartment buildings go up each year. They offer a preview of what this whole coast may someday be like.

Yet the Gulf Stream, the ocean river with the volume of a thousand Mississippis, is there. You feel its soft dampness warming the shore. This is the Gold Coast, and at its end, as if making a final respectful gesture to the richest of the rich, the stream almost touches their doorsteps at Palm Beach.

Like Miami Beach, Palm Beach is as people imagine it—only a good deal more so. Whenever I return there, I am again astonished by the clipped perfection of its estates. Not a blade of grass is out of place; leaves of shrubs and fronds of palms seem individually shined by hand. The imposing façades of the clubs—the Everglades, the Bath and Tennis—discourage any peering by outsiders into the mysteries within.

Worth Avenue is lined with branches of smart New York shops. Wandering off it are little Mediterranean-style alleys designed by the legendary Addison Mizner, whose word in the early Palm Beach days was regarded as architectural law.

For any woman who has ever heard of a budget, a glance into one of these shop windows can be a disheartening experience.

"Those little cottons!" I heard one woman gasp. "One hundred and twenty-five dollars,

(Continued on page 880)

HYDRAULIC DREDGE WIDENS *the Kissimmee River in a flood-control project by the U. S. Army Corps of Engineers. Pipeline floating on pontoons atop the stream gushes mud into the disposal area in foreground. Water will gradually drain off the new land.*

SHAFTS OF SUNLIGHT *burnish a few of the hundred-odd lakes ringing Winter Haven in central Florida, where water erosion pocked the land's limestone face ages ago. Young orange grove at lower right shows more sandy soil between rows than its older, denser neighbors.*

Golden citrus:

CHRISTOPHER Columbus brought citrus seeds to Haiti in 1493, and within the next century settlers at St. Augustine planted the first Florida groves. Today the state produces one-third of the world's oranges, grapefruit, and tangerines, and three-fourths of the entire United States crop. Small wonder that Floridians chose the fragrant orange blossom as their official flower. In central Florida

a 300-million-dollar crop

more than 600,000 acres of groves blanket the rolling dunes. Pickers harvest the fruit by hand in fall, winter, or spring, as different varieties ripen. Though highly mechanized, the industry has yet to find a substitute for the twist of the human wrist.

Some of the millions of boxes move to groceries across the country, but the majority go by truck (opposite, lower) to processing plants like that of the Florida Citrus Canners Cooperative (above) in Lake Wales. On this assembly line, 350 white-clad women section grapefruit with knives.

In other plants, machines squeeze citrus juice for frozen concentrates. The leftover pulp, sometimes mixed with chopped grass, makes excellent fodder for cattle.

Cowpuncher rounds up Braford cattle near Fort Pierce. Cross-breeding India's heat-resistant Brahman with Angus and Hereford (Brahman × Hereford = Braford) has helped Florida become an important beef-cattle state, ahead of Wyoming, Idaho, and New Mexico. A million and a half head roam the central ranges from Ocala to the Everglades.

and they're clustering around them as if they were bargains!"

In a state-wide survey of effective annual buying power per household, Palm Beach's $16,549 leaps out like a Roman candle from the long, monotonously similar columns of figures. Miami Beach's is a modest $7,295.

Money oozes from Palm Beach's pores, yet I have found it easier to eat well and cheaply here than in almost any other east-coast resort. For some time I was puzzled by this paradox. To whom were these restaurants catering?

Then, one evening, I became aware of people around me earnestly discussing problems of merchandising. At the same time I heard French and cockney accents. The women were well dressed and the men's jackets were of excellent tweed. It occurred to me that I was dining among Worth Avenue clerks and shopkeepers, among ladies' maids and valets who wore their employers' discarded clothing.

Less than 50 miles west of Palm Beach, on the shores of Lake Okeechobee, one finds another richness—a richness of nature, of black soil, the product of centuries of organic decay, the incredibly fertile Everglades muck.

The lake, which once overflowed its banks when the rains came, has been tamed with a remarkable system of dikes, gates, and canals. The land around its borders has been drained, and all winter long its dark earth is almost hidden by the green of celery and beans, radishes and lettuce, potatoes and corn.

Packing Plant Moves Into the Fields

From the little market town of Belle Glade I drove with Marvin Welfeld—a Chicago lawyer who avoids vacation boredom via agriculture—to one of the farms in which he has an interest. Bahamians, chanting work songs, were cutting celery stalks and dropping them on a conveyor that took them to an enclosed

platform to be packed into crates (page 885). Mounted on caterpillar tracks, this mobile packing plant inches down the rows, followed by trucks into which the crates are loaded, then driven to the cooperative for chilling and shipping.

Such a contraption, Marvin Welfield told me, may cost as much as $30,000. I said it seemed a lot of money.

"Well," he said, "when you have 280 acres of celery in cultivation and you sometimes can clear $750 per acre, it's not so very much. Of course," he added, "this is a small operation. The big ones run up to 2,000 acres."

Automation Rules in Sugar Mills

In a normal year the value of Florida's vegetable crops, harvested around the calendar, totals more than $175,000,000. As Eugene McCabe, who runs the Pioneer Growers Cooperative in Belle Glade, said to me, "People think Florida is beaches and girls in bikinis. There's a lot more to it than that."

There's also more to the Okeechobee region than vegetables. From a United States Sugar Corporation plane I looked down on some of the 154,000 acres of cane that will be harvested in Florida this year. A dozen mills will grind this into 500,000 tons of sugar. It was to one of the newest of these, at Bryant across the lake from U. S. Sugar's own town of Clewiston, that we were flying.

From the moment the newly gathered cane is dumped onto the first conveyor belts until the finished raw sugar is blown into boxcars for shipment to the refinery, the process is continuous and automatic. Electronic devices and a handful of men watch over the entire complicated process.

As they move about among the roaring, clanking, hissing machinery, these men seem insignificant and small as insects. Yet when I paused by the vacuum pans where the syrup is converted to sugar, the man in charge held up a slide and a magnifying glass and said, "Look at the beautiful crystals I made this morning." It was a small voice and it had to shout to be heard, but the pride of the individual was still in it.

North and west of Lake Okeechobee is the great Kissimmee prairie, where the cattle range. Officially there are 1,709,000 head of cattle in Florida.

"But it's a funny thing," a state official told me. "There's a tax on cattle, you know. I'd reckon there are hundreds of thousands more in the state. But when the time comes to count them, they seem to fade away."

In Miami I had talked with Harry Hood Bassett, bank president and owner of the Flying B Ranch north of the town of Okeechobee. He apologized for the modesty of his undertaking, "only 20,000 acres and 5,000 head."

Seminoles Play Stickball, a Game Akin to Lacrosse, at an Annual Festival

Once a powerful confederation, the Seminoles fought the United States in the War of 1812. In 1835 they stood off the Nation in a war that lasted seven years and cost 30 million dollars. When the Government moved the Indians to western reservations, a few hid in the Everglades. A thousand of their descendants remain in Florida today, most in reservations near Lake Okeechobee.

"We're small," he said, "but in the past 12 years we've undertaken most of the developments of the past 20. If people want purple animals with green spots and no legs, we'll try to produce them."

When Clarence Lofton, the Flying B foreman, drove me out on the range, I didn't see any such interesting variants. But I did see the new hybrid cattle that have made Florida a leader of the industry.

Importation of Brahman cattle from India revolutionized livestock raising in Florida. Their resistance to heat and pests makes them ideal for the blistering Florida summers. Crossed with Angus or Herefords, they produce strains known as Brangus or Braford, which combine the best qualities of both parents (page 880).

At noon steaks were sizzling over a barbecue pit filled with coals of cedar and cypress. The big mongrels they call "cow dogs"—gentle with humans but able to round up the fiercest Brahman bull—sniffed the air wistfully. Beyond the pines and live oaks that shaded the back yard of the ranch house, the range shimmered in the heat.

When I left the ranch I crossed Taylor Creek. Not far from here on Christmas Day of 1837, Col. Zachary Taylor fought the Seminole Indians in the last real battle of the Seminole War.

Defeated, the Indians turned to the guerrilla tactics which were theirs by nature. For five long and bloody years the war dragged on. Finally it ended, but no peace treaty has ever been signed between the United States and the Seminole Nation.

I drove through Brighton Reservation, where descendants of those Seminoles live in the palm-thatched, open-sided huts they call *chickees*. Cars were parked by them, and now and then, incongruously, a white refrigerator stood out beside a black-iron cooking pot. Otherwise there was little change from the ways of Seminole ancestors.

Hard Freeze Hits Citrus Belt

Down through the middle of Florida, for almost 200 miles, run the Central Highlands, studded with lakes and mile upon mile of glossy-green citrus groves. Mainly from here, from the Indian River section, and from groves near Tampa, come a quarter of the world's oranges and tangerines, three-fourths of its grapefruit. Fifty million trees planted on nearly 800,000 acres yield a crop worth, in an average year, about $300,000,000.

But the winter of 1962-63 was no normal

Spaceport, U. S. A. Cape Canaveral's launching complex crowds a thin strip of land between the Atlantic and the Banana River (upper left). Four Mercury-Atlas manned orbital flights vaulted skyward from Pad 14, fifth apron from the bottom. Its gantry has been pulled back, exposing the needlelike umbilical tower. This picture shows five Atlas, four Titan, and three Saturn pads (top), none holding a rocket.

With a triumphant roar, *Faith 7* blasts upward from Pad 14 on May 15, 1963, with Air Force Maj. L. Gordon Cooper, Jr., in the nose capsule. Some 34 hours and 550,000 miles later, Cooper splashed down in the Pacific after orbiting the earth 22 times—a record for United States astronauts. Liquid oxygen at 297° below zero F. frosts the rocket.

Sun-ripe tomatoes grown near Florida City will go directly to canneries; picked a bit earlier, they travel to northern markets by refrigerated truck and freight car. Six big Florida crops—tomatoes, white potatoes, celery, cabbage, sweet corn, and snap beans—help to satisfy the Nation's hunger for fresh winter vegetables.

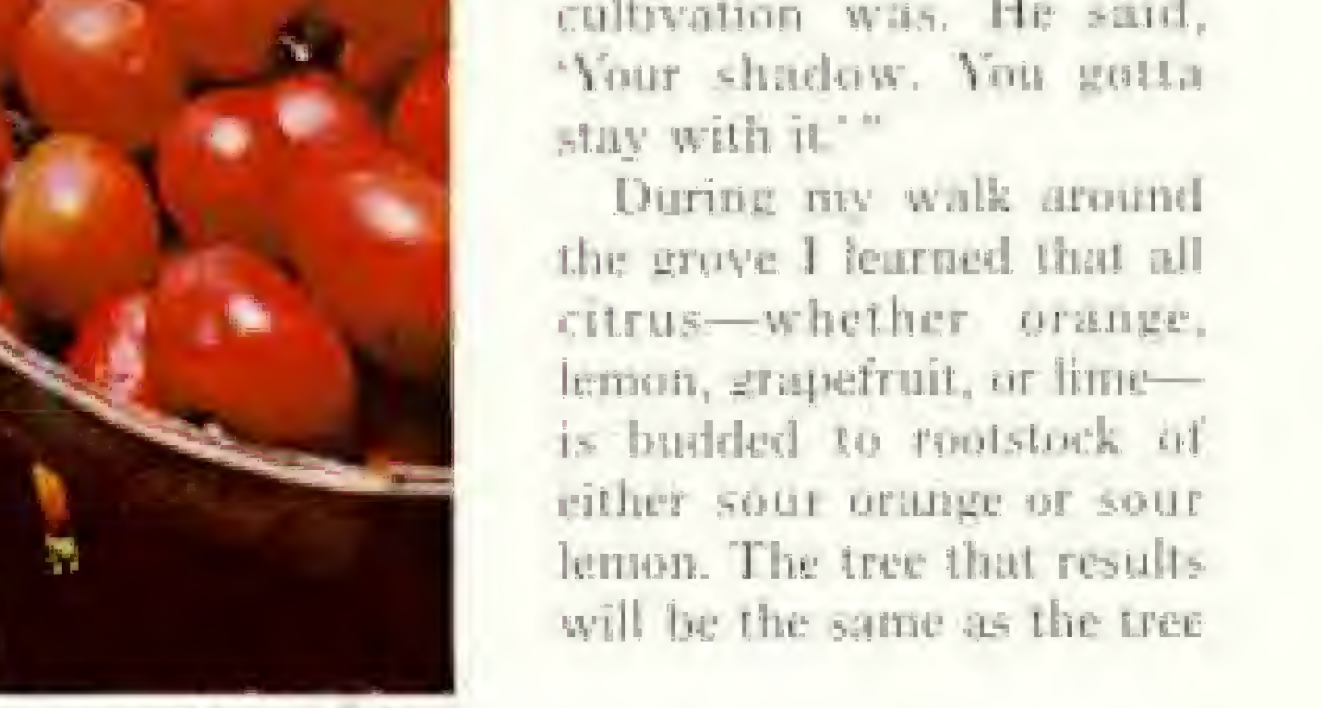
one. Not since the great freezes of the 1890's had temperatures fallen so low. In February the green leaves I had seen as I drove south in October were blackened as if a blowtorch had been turned on them. Fruit lay rotting on the ground.

Such disastrous freezes—the crop loss exceeded 55 million boxes of fruit—do not occur often. In time the citrus groves will recover or be replanted. But it was a sad sight, and I turned away and drove east to the coast.

Here the trees were untouched. Behind the town of Cocoa I strolled through a richly bearing grove with its owner, Mayo Hill.

"I've been in the business 27 years," Mr. Hill said, "and I still don't know anything about it. You ask any three growers how they do it, and you'll get three different answers. When I started in, I asked an old grove man what the best method of cultivation was. He said, 'Your shadow. You gotta stay with it.'"

During my walk around the grove I learned that all citrus—whether orange, lemon, grapefruit, or lime—is budded to rootstock of either sour orange or sour lemon. The tree that results will be the same as the tree



Ear-deep in watermelon, a boy attacks a juicy slice at a festival in Chiefland. Florida leads the 50 states in watermelon production.

from which the budwood was cut. If you wish, you can even bud half a dozen varieties of citrus on the same rootstock and produce a tree that will, at the same time, bear oranges and grapefruit, lemons and limes.

Mr. Hill went on to talk of soil problems, fertilizers, drainage, and freeze hazards. As we drove back to Cocoa, I considered the complexity of citrus growing and thought wryly of the real-estate ads that picture retired people dozing happily in the sun, waiting for the money to drop from their trees.

From Cocoa to Cocoa Beach it is only a few miles by causeway and bridges over the Indian and Banana Rivers. But even before you get to Cocoa Beach you can feel the difference. There is an air of increasing tension, of a faster pace.

"Just look at them," said the service-station man who filled my tank. "Driving as if they're trying to get into orbit."

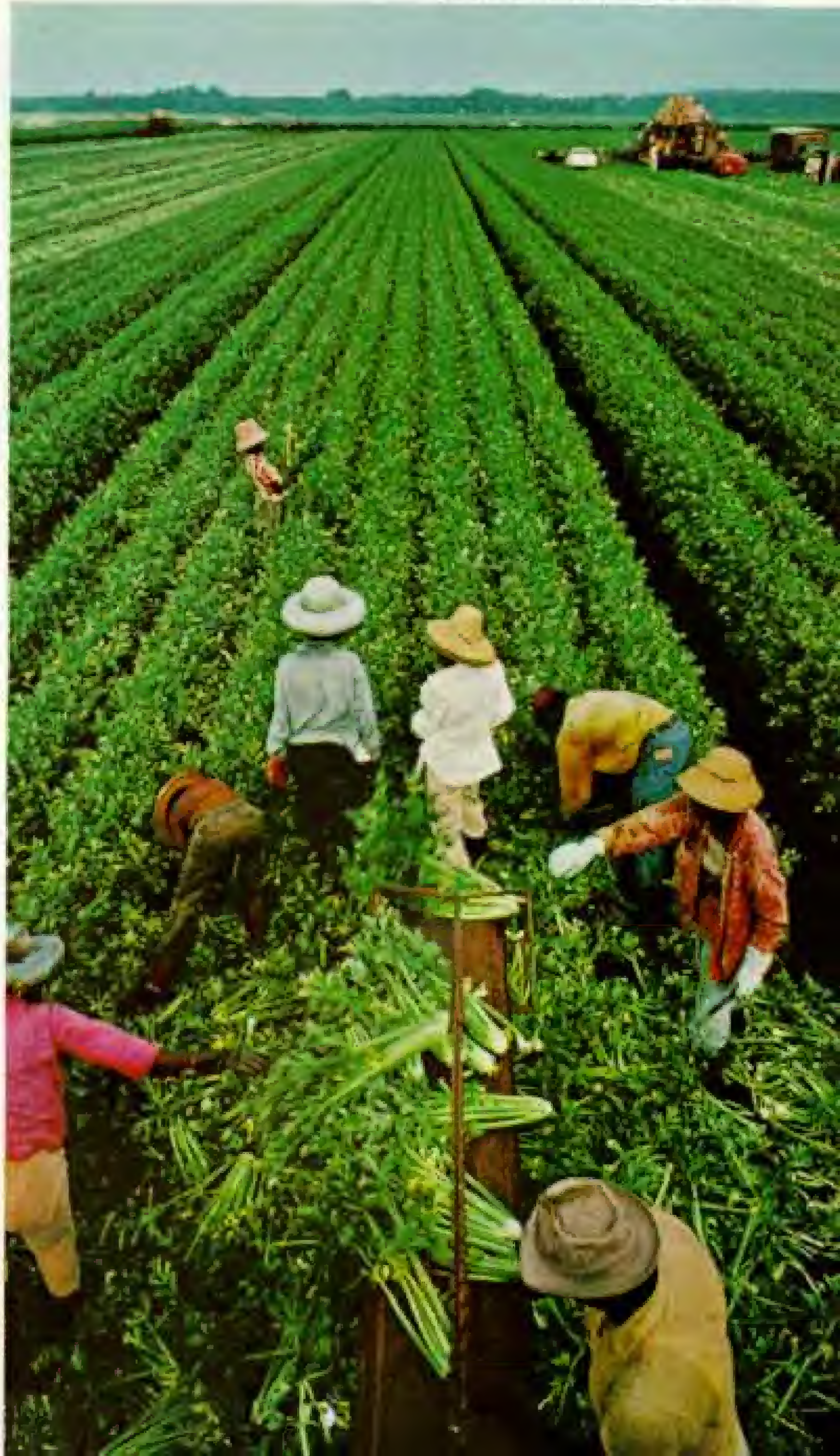
In the mornings and late afternoons the speeding traffic slows to an irritated, impatient crawl. Cars trying to join it, emerging from motels named Vanguard or Satellite or Polaris, wait for 10 minutes before they finally can dash for an opening.

Twenty-three years ago the official population of Cocoa Beach totaled 49.

"We used to have to drive bears out of the vegetable patch over where that fancy store is," an old-timer told me. He shook his head and gave a dispirited grunt. "I wish they'd all go home."

Missiles Create a New World

But the people are here to stay: 9,000 at the missile test center, 10,000 at Patrick Air Force Base. The impact of Cape Canaveral has made Brevard one of the fastest-growing counties in the land, with a population increase in the past 12 years of 371 percent.



Sea of Celery Garnishes a Field Near Zellwood

Cutting the stalks by hand, workers feed them to arm-like conveyors extending ahead of mechanical monsters called Mule Trains. Visible on a distant train at right, rolling down the rows at a yard a minute, are workers who trim, wash, grade, and crate the celery. Many harvesters come from the West Indies.

Classmates at "Port Charlotte U.," an adult education center for retired persons, admire their ceramic creation, a boldly sculptured horse's head.

Boat canals spread fingers into back yards of homes in Port Charlotte on the west coast. Grazing land six years ago, the town today has ten thousand residents, including two thousand children.

Standing on the hard-packed white sand of the beach, I could see through the salty air the dim towers of Canaveral (page 882).*

A woman I know who has lived at Cocoa Beach ever since the first missile was launched in July, 1950, said to me: "You either love this place or you hate it. To me it's the most exciting place in the world."

When I visited the base, I knew what she meant. As I moved among the missile complexes, it seemed to me that each was bigger than the last.

Atlas, which has four times taken a man into orbit, was far bigger than Redstone. The first Saturn was more than three times as powerful as Atlas—and they were already building a new complex for a new Saturn.

If all goes as planned in Project Apollo, Saturn V will take men to the moon. Its thrust will be 7,500,000 pounds compared to the current giant's mere 1,500,000. And Nova, with a thrust much greater than Saturn V's, is now in the planning stage.

That night I stood again on the beach,

*See "Cape Canaveral's 6,000-mile Shooting Gallery," by Allan C. Fisher, Jr., in the October, 1959, GEOGRAPHIC.

looking across the harbor entrance to the Cape. Below the beacon of Canaveral Light smaller orange lights were winking, warning that a shot would soon take place.

At exactly 8 o'clock there was a small spurt of flame, and then a blinding incandescence lit the sky. Presently there was a rumble like the sound of an approaching tornado. It lasted for eight or ten seconds, and then there was silence again.

One after another the stages of a Minuteman dropped away. Slowly, it seemed—though I knew it was soaring at 15,000 miles an hour to its apogee 700 miles above the earth—the speck of light arched upward, then became lost among the stars.

To look into the future is exciting. But, like looking into the sun, it can also be dazzling. Here, for better or for worse, is the future.

St. Augustine Has Known Four Flags

From Canaveral a leisurely drive of a few hours took me northward to Florida's—and the country's—earliest past.

On the surf-washed shore between present-day Daytona Beach and Jacksonville, on an April morning of 1513, Juan Ponce de Leon planted his banners in the warm sand and claimed all of North America for the Spanish crown. Here, 52 years later, Pedro Menendez de Aviles, under a royal contract, founded the village of St. Augustine. Since then the flags of Spain, Britain, the United States, and the Confederate States have flown over it. It has been besieged, sacked, and handed over by treaty many times.

St. Augustine is the country's oldest inhabited town. In its quiet, narrow streets I heard the lazy clop-clop of horses' hoofs. From the battlements of Castillo de San Marcos, the old gray fort whose guns once defended the city, I looked out at a changeless sea.

If St. Augustine is the past and Canaveral the future, Jacksonville, a little farther up the coast, is very much the present.

Third largest city in the state, after Miami and Tampa, Jacksonville is a financial, transportation, and distribution center for all Florida and southeast Georgia. It has become an important insurance city, a busy commercial port. The Navy's four installations pour a yearly payroll of $65,000,000 into its economy.

As I got out of a taxi in front of the 22-story Prudential Building beside the St. Johns River, the driver looked around and said: "A few years ago I used to carry folks out here to show them the 'gators. Used to be a little old pond here."

I remembered Jacksonville as a city of clotted traffic, dilapidated warehouses, and rotting piers. Now, looking down on it from the River Club on the Prudential's 19th floor, I saw a growing skyline of clean-edged, functionally modern buildings (right). Slashing through the city, 35 miles of expressways have siphoned off the traffic that used to jam its downtown streets.

The two Jacksonville men with whom I was standing by the window looked down with pride at their city.

"And except for a section of expressway," one of them said, "we did it all without a penny of Federal aid."

Test-tube Industry Comes to Florida

To the strictly bikini-oriented visitor, Florida's growing industrial importance comes as a surprise. He finds it hard to believe that the state has 7,300 manufacturing plants and that in the past year the establishment of 770 more was announced.

West of Palm Beach, where a few years ago there were only empty pinewoods, 5,800 people manufacture space-age hardware at the new Pratt & Whitney Aircraft plant. In St. Petersburg, Honeywell is turning out four million dollars' worth of parts for Minuteman. In Orlando the Martin Company, which makes a third of the missiles launched from Canaveral, employs 10,200 people.

"Our new industry," Florida's youthful Governor Farris Bryant told me in his office in Tallahassee (page 874), "is the industry of the test tube. It is based on physics, not on muscle power or natural resources. Our resource is brains."

Since the people whom industry has brought here must have places to live, the buying, selling, and developing of real estate is as important to Florida as ever. The voice of the bulldozer is loud in the land.

In Orlando I talked with Maj. Gen. John B.

Jacksonville, Florida's Gateway City, Straddles the Wide St. Johns River

North-south traffic on crowded highways and five major railroads funnels through Jacksonville. A major world port, it lies 21 miles upriver from the Atlantic. Here U. S. Highway 1 heads north across the John T. Alsop Bridge, named for a former mayor. The city is often called the Hartford of the South because of its many insurance companies.

Bananas from Ecuador go ashore at Tampa, the state's second largest city after Miami. Hernando de Soto explored the Tampa Bay region in 1539.

Flavor of Old Spain pervades Columbia Restaurant in Ybor City, Tampa's Latin quarter. More than a thousand guests can dine in nine rooms with lofty ceilings, arched balconies, and walls of hand-painted tile. They select dishes from a 28-page menu.

Skilled hands roll cigars in one of Tampa's 36 factories. Loss of Cuban tobacco has not hurt production; other imports and U.S.-grown leaves fill the demand.

Medaris (U.S.A. Ret.), then chairman of a large-scale development between Orlando and Cocoa known as Rocket City.

"The basic idea of major land development—an extensive area with preplanned lines of growth—is peculiarly suited to Florida," he said. "It can be a constructive scheme or a quick-buck one, depending on the people who are doing it. Our project is to create economic values by turning raw land into usable land."

Busy City, Quiet Towns

The 51 lakes that lie within Orlando's city limits give parts of it a pleasantly open, parklike aspect. But essentially it is a big and sprawling city, overtaken by spectacular growth and the dominating presence of Cape Canaveral to the southeast.

The city's tempo isn't hectic; it still attracts people who like to feed the swans of Lake Eola. But if I were looking for a really restful place in which to retire, I think I would head from Orlando toward a dozen places just to the north of it.

This tranquil country of lakes and low hills (page 877) has an intimate New England quality, and in little towns like Mount Dora and Tavares you can find many transplanted New Englanders. Outside the towns, back roads lead to fishing camps hidden in the trees and the cool gray of Spanish moss. The dedicated fisherman can find all the excitement he wants in waters filled with largemouth black bass.

Farther to the north Sanford and De Land have a certain busyness about them. But it is the relaxed busyness of market towns that know that the growth of the crops from which they make their living cannot be hurried. Here too there seems to be plenty of time to fish and look out at the water.

Southwest of Orlando, midway down Florida's west coast, the twin cities of Tampa and St. Petersburg face each other across the wide expanse of Tampa Bay. Tampa is Florida's second largest city, St. Petersburg its fourth. After Miami the area surrounding the two cities is the most thickly populated of the state, holding more than 800,000 people.

"Nothing like shuffleboard to keep you young," say senior citizens of St. Petersburg, the west coast resort city long a haven for older people. Florida, capital of the sport, has 7,500 courts, more than 300 in St. Petersburg alone.

Driving downtown in Tampa, I was stopped by a string of freight cars slowly clanking toward the waterfront. In the harbor a Japanese freighter was loading phosphate; small white-painted ships from Central America were unloading bananas. No longer picturesquely carried on the shoulders of stevedores, the green bunches, packed in clear plastic bags, glided along conveyor belts directly to waiting trucks (opposite, above).

Tampa has always had close links with the

In typical stoop, a shell collector combs the beach at Marco Island, south of Naples. Florida's west coast abounds in shells, cast up by each tide.

Wavelets wash a stranded moon shell on Marco's beach.

© NATIONAL GEOGRAPHIC SOCIETY

Performing mermaid at Weeki Wachee Spring poses for camera fans in an underwater theater. One hundred million gallons a day bubble up at a near-constant 74° F.

countries to the south. During the Spanish-American war it was the main embarkation port for troops bound for Cuba. In the back yard of what was then the Tampa Bay Hotel and is now part of the University of Tampa, Theodore Roosevelt trained his Rough Riders. During the 1962 Cuban crisis the city was again filled with the military.

Tampa Rolls Cigars by the Millions

When the cigar industry moved from Key West to Tampa in the late 1880's, its Cuban cigar makers came with it, and Tampa's Ybor City was established. Today what Cuban tobacco stock remains is limited, with other imports and domestic leaf largely taking its place. But Tampa still turns out 750 million cigars a year (page 890)

The skilled hand-roller has been giving way to the machine, as the reader who once read aloud to the workers around him has been replaced by the radio. But Ybor City remains a foreign enclave, holding 18,000 citizens of Spanish and Italian descent.

Across the bay from Tampa, St. Petersburg presents a split personality. Once known mainly as a winter resort where old folks spent their days playing checkers and basking in the sun, St. Pete has become brisk, progressive, and imbued with the youthful spirit of aerospace industries. Today it takes pride in being the year-round home of a major General Electric plant as well as the winter home of senior citizens.

On its main street I noticed that some of its famous green benches had changed color and were now yellow, violet, and pink.

"Yep," a spry old gentleman remarked,

"those Junior Chamber of Commerce fellows figured they'd pep things up. But after a while. . . ." He gave a pleased chuckle. "After a while they ran out of money. Still plenty of old green benches around."

In a way the Pinellas peninsula, of which St. Pete is a part, is a dividing point. To the south, across the Sunshine Skyway which spans the mouth of Tampa Bay, lie Sarasota, a curious mixture of simplicity and wealth, winter baseball and circus people; Port Charlotte and other new developments (page 886); and the shell-strewn beaches of Boca Grande and Sanibel Island and Naples.

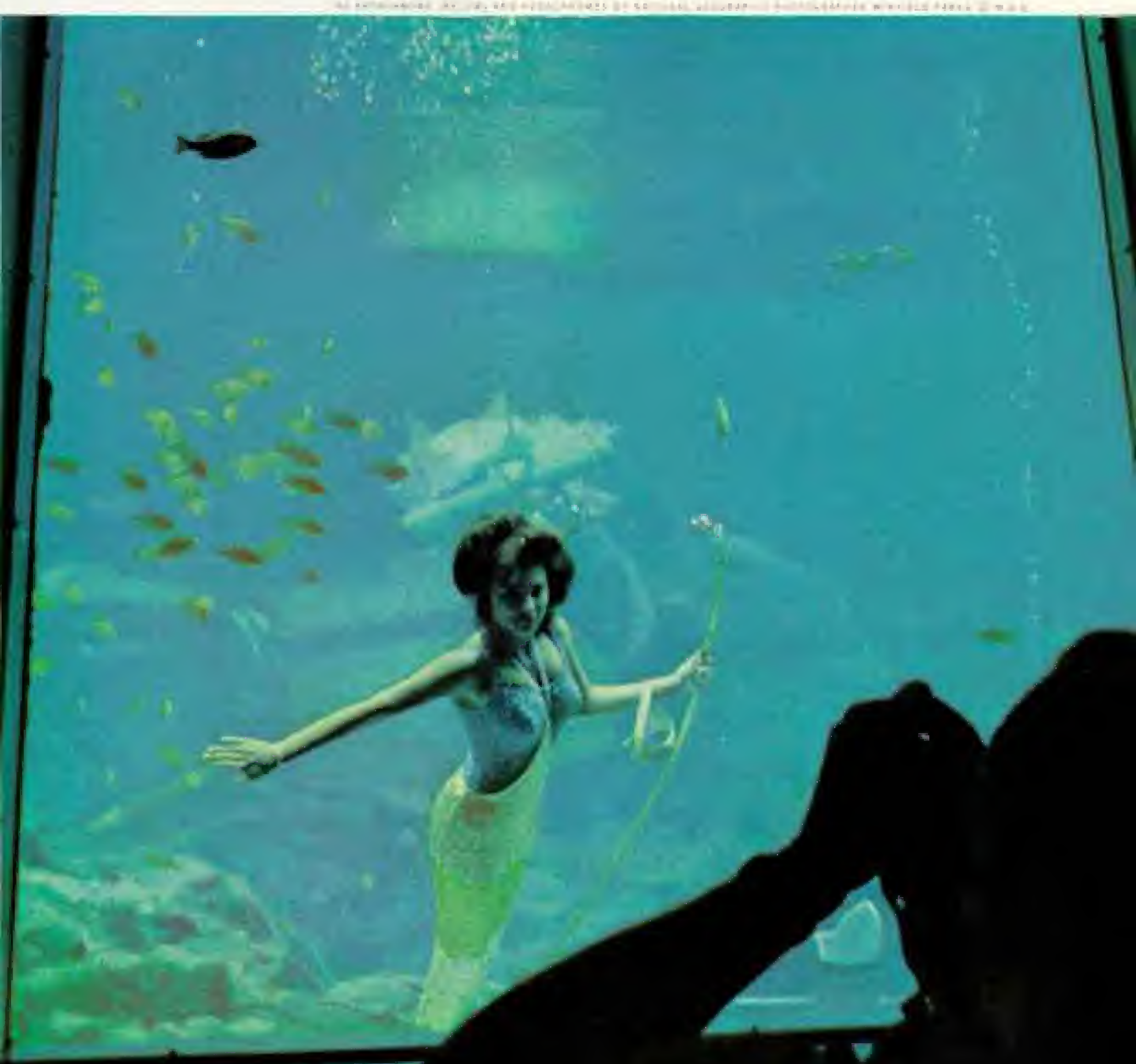
Thousands attend Sanibel's annual shell fair. At one of its motels you are handed not only your key when you register but a plastic bag so you can immediately begin collecting.

The towns of the lower Gulf Coast, though more conservative than their east coast counterparts, are still essentially resorts. But north of Pinellas County the roads turn inland, beaches disappear, and, aside from such major springs as Weeki Wachee, Homosassa, and Wakulla, tourist attractions thin out.

There were times, on this inland road that parallels the Gulf, when I drove for 20 miles without seeing a house. Endlessly the pine forests stretch on, waiting to be cut for the pulp mills of the northern Gulf Coast cities—Port St. Joe, Panama City, Pensacola.

More than three-quarters of Florida, I had read, is undeveloped land. In these long empty stretches I could well believe it.

At Panama City I again saw real beaches. Never a state to draw back from a superlative, Florida has named the blinding-white line of sandy coast that runs west toward the



Starch and shine of dress-white uniforms identify naval aviation cadets parading in Pensacola's Fiesta of the Five Flags. Banners of Spain, France, Britain, the U. S., and the Confederacy have flown over the city.

Banking at 500 miles an hour, the U. S. Navy's Blue Angels precision team flies near Pensacola as if controlled by a single hand. Wings of the Grumman Tigers overlap by 14 feet in this diamond formation.

Cradle of naval aviation, the air station at Pensacola houses cherished relics in its Naval Aviation Museum, opened in 1963.

Alabama border the Miracle Strip. Of the 246 miles of Florida beach open to the public, 93 miles are here. They are a major reason that more people come to Florida in summer than in winter.

The visitors come mostly from neighboring Deep South states to the resorts crowded around Panama City. It was winter when I was there. The merry-go-rounds were shuttered, and paint was peeling from the life-size plaster dinosaurs decorating the miniature golf courses. But you could tell that this place would be thronged in summer.

At a roadside diner I asked the counterman whether it was summer-resort country all the way along this coast.

"Farther west, around Pensacola Beach, yes," he said. "But out on this end of Santa Rosa Island, there ain't *nuthin!*"

Pensacola: Manufacturing and Matrimony

He was right. For 20 miles on Santa Rosa there was only the open Gulf, the high dunes with their grass-crowned crests, and the sea birds riding the wind. It took me a long time to get to Pensacola.

Paradoxically, the farther north you go in Florida, the more southern it becomes. The accent grows broader, slower, and softer. Sand gives way to the red clay of Alabama hills. From Pensacola it is only a few miles to the border. Pensacola girls are Alabama girls, and to the Naval Air Station's young flyers, their soft eyes and languid voices are often irresistible. Manufacturing and matrimony are both important in Pensacola.

Returning to the east coast on my way home to Key West, I turned off the Sunshine State Parkway at Fort Lauderdale and drove

Placid waters of Florida Bay lap the Visitor Center at Flamingo, at the southern tip of Everglades National Park. Flamingo is the only community in the wilderness preserve, whose 1,302,509 acres make it the third largest national park, exceeded only by Yellowstone and Mount McKinley.

Statue-still, a Louisiana heron waits for frog or fish in the Everglades.

Whitetailed deer, browsing beside the Tamiami Trail in the Everglades, catch the scent of the photographer.

inland to the little crossroads settlement of Andytown. With each mile the country grew more open, and I felt the Everglades beginning to surround me.

Nowhere else in the world is there anything quite like the Everglades. *Pa-hay-okee*, the name the Seminole Indians gave them, means "grass-water." Covering more than 2,500,000 acres, the Everglades are an immense and imperceptibly flowing river of grass. But this is no ordinary grass. Under the blazing Florida sun it shoots up 10 feet and more in height. Because the edges of its blades are barbed and needle-sharp, they call it sawgrass. The wilderness it creates is fierce and hostile to man, but filled with a strange beauty.

The best way to penetrate it is by airboat. At Andytown, officers of the Florida Game and Fresh Water Fish Commission were waiting for me with two of them. I climbed into the first one with Tom Shirley.

"Hold on to your hat," Bud Royals called from the other. Five minutes later we were roaring over the river of grass at 70 miles an hour. Five minutes after that we reached 100, and my hat was gone.

Dizzy Ride on a Film of Dew

Like the 'Glades themselves, the airboat is unique. A small flat-ended scow of light aluminum, it is driven by an airplane propeller mounted on its stern. It can almost liter-

ally go anywhere. Half an inch of water is a deep channel for it. A film of dew is enough for its bouncing, wildly skimming flight across the grass (below).

Skidding dizzily, we circled a running deer. A pair of raccoons cast angry looks at us over their shoulders. Solitary bitterns and white clouds of herons were flushed by the wind of our passing.

We paused for a while by a hammock, one of those islands of higher ground that dot the Everglades. Trees grew densely there—cabbage palms, wild tamarind, gumbo limbo, and strangler figs. In a clearing a few blackened stumps showed where a Seminole chickee had once stood. Sharp edged in the brassy sunlight, cloud shadows drifted across the vast wet flatness. Only the faint rustle of the grass broke the silence.

Because of their immensity, the 'Glades give a sense of great emptiness. Actually they are teeming with life—with alligators, snakes, deer, bears, panthers, and countless thousands of birds (pages 896 and 901).* Though you seldom see them, there are men there too.

"We have to have a fast boat like this," Tom Shirley said, "to catch those rascals."

'Gators Draw Poachers to Everglades

Poachers, he told me, work in teams of six to eight men, using airboats and communicating by radio as the wildlife officers do. Hunting is allowed in the 'Glades, but there is no open season for alligators.

"A five-foot 'gator," Tom said, "will bring $20. For the big ones—six feet or over—they'll get $3.50 a foot." He looked around him and sighed. "There are a lot of miles out here. And 85 percent of the time you go out on patrol you don't find anything."

*See "Wildlife of Everglades National Park," by Daniel B. Beard, NATIONAL GEOGRAPHIC, January, 1949.

Boats cruising up the Shark River in the Everglades navigate between dense mangrove thickets that stretch to the horizon. In places red mangrove towers 70 feet high.

Airboat skims at 70 miles an hour through the Everglades. Park rangers use these light, speedy scows—built with high bows to permit running over sawgrass flats—to round up wildlife poachers in marshes beyond the reach of roads and trails.

Subtropical foliage overhangs Gumbo Limbo Trail—named for a tree—at the Royal Palm Station in Everglades Park. A park naturalist identifies trees and birds as he leads visitors through sun-dappled jungle.

Everglades Alligator Lifts a Jawful of Car

Having captured the slow-moving fish, the reptile must surface and shift it in the mouth before swallowing it headfirst.

Hide hunters almost exterminated the Florida alligator; teeth alone brought $5 a pound for curios and jewelry. Several thousand of these saurians now find protection in the preserve.

"**Watch for the reddish egret** in Florida Bay," suggests Park Naturalist Richard L. Cunningham as he briefs a tour group before an early-morning walk at Flamingo. Several visitors carry binoculars for bird-watching.

Reproduced by National Audubon Society from Kodachrome © N.G.S.

An hour later I sat in the airboat and watched Shirley and Royals climb aboard a surveyor's rig we had seen churning through the swampy ground on wooden caterpillar tracks. Presently they handed down two open-topped five-gallon cans. There was a live baby alligator in each.

The two sunburned boys aboard the rig tried to look unconcerned as the officers continued their search. Soon after, I saw the flash of the sun on a pistol they had found, and then on a second one.

Possession of firearms out of hunting season in the 'Glades is illegal. So there were two charges against the boys. The airboats were rather crowded on our return trip. Mine ended where it began, at Andytown. Theirs continued by car to the Fort Lauderdale jail.

West of the open 'Glades the Big Cypress Swamp begins. Here the National Audubon Society, in its Corkscrew Swamp Sanctuary, has saved the last stand of giant bald cypress in the country. When I was there the black-and-white wood ibises were nesting high in their tops and the air was clamorous with the hoarse voices of their young.*

Floridians Must Make a Choice

Twenty years ago the distinguished naturalist Thomas Barbour wrote a book about Florida, *That Vanishing Eden*. Corkscrew Swamp and Everglades National Park are attempts to keep that ominous title from becoming irrevocable reality. Indiscriminate drainage of the 'Glades could well defeat those attempts. Drainage and flood control have saved lives and opened up vast areas to farming. But their dangers are great.

Speaking after an inspection tour of the Everglades, Under Secretary of the Interior James K. Carr said, "All of this area can be

*See "Corkscrew Swamp—Florida's Primeval Show Place," by Melville Bell Grosvenor, NATIONAL GEOGRAPHIC, January, 1958.

destroyed if for a short-time gain—by draining an area that should remain wet—we suffer a long-time loss. South Florida and the Miami area must decide now what sort of country they want this to be 25 to 50 years from now. Do you want to preserve this heritage, or do you want to destroy it by excessive drainage?"

When I finally started back down the Keys, six weeks of traveling had made me forget how intensely blue and pale lime-green their waters can be. Nowhere else in Florida are they like this. Nowhere else in the state can you take a boat, as I did from Key Largo, and look down at a living coral reef, now protected as a state park.* Like the cypresses of Corkscrew, its 75 square miles of waving sea fans and forests of coral have been saved.

Until 1912, when Henry Flagler completed the extension of his Florida East Coast Railroad from the mainland to Key West, the Keys were isolated from the world. Twenty-three years later the Labor Day hurricane of 1935 destroyed Flagler's railroad. But its 40 bridges—one spanning seven miles of open water—remained. Now the Overseas Highway runs over them, and a few hours' drive will take you from the mainland to Key West.

A day after I returned, I climbed to the top of one of Key West's handsome old houses with a friend who was remodeling it. We stood on the white-railed *mirador*, from which the first owner of the house watched for the wrecked ships whose cargoes made him rich.

"Every time I come back I realize Key West really is different," my friend said.

It is. It is the only truly tropical city in the continental United States. It is the only one that rides like a ship a hundred miles out at sea.

I looked down on the town's chimneyless, silver-painted metal roofs. Beyond was the harbor, filled with the shrimp boats that, along with tourists and the Navy, are Key West's principal source of wealth. It was dusk and other vessels were returning: submarines and destroyers, and charter boats laden with some of the hundreds of species of fish that make Florida, and especially the Keys, a fisherman's dream.

Long before there was a Miami there was a Key West. The residents prospered on salvaged cargo, fishing, sponging, and cigar making. In the 1830's it was judged the richest city per capita in the South. It no longer is, but its slender-columned old houses wear the dignity of age.

Somewhere below me, hidden in a dark-green sapodilla tree, a mockingbird was singing. As I listened to the extraordinary variety of his song, I remembered that this was the state bird of Florida. It seemed a good choice.

THE END

Key West lies in the path of the setting sun at the tip of a chain of coral-and-limestone islands dividing the Atlantic (left) and Gulf of Mexico. World's longest overseas highway, built on an abandoned railroad bed, runs 106 miles down the Florida Keys to Key West, a city of some 40,000 at road's end. In the early 1800's, Key West was headquarters for privateers and pirates; wrecking masters gleaned millions in salvage from foundered ships.

Shrimp cocktails by the thousands spill from a trawler's basket at Key West docks. Rich beds discovered in the Gulf of Mexico in 1950 yield these succulent pink shrimp.

*See "America's First Undersea Park," by Charles M. Brookfield and Jerry Greenberg, NATIONAL GEOGRAPHIC, January, 1962.

YWCA International Success Story

Three million strong in 76 lands, young women of the world join in "lighting candles to bring beauty and hope into the lives of those around them"

By MARY FRENCH ROCKEFELLER

Illustrations by National Geographic photographer OTIS IMBODEN

EGYPT Playing ball near the Pyramids.

HIGH AMID the galleries of 350-year-old Amber Palace near Jaipur, India, we were ushered into a dim inner chamber. The Indian who was showing us through the palace shut heavy doors and darkness closed around us.

He brought candles, lighting one for each of us in the party. "Look up!" he whispered. We raised our eyes.

Overhead the dark ceiling suddenly came alight in a shower of reflections. Our candle flames glittered in thousands of small mirrors set into the ceiling. Thousands of new beams were reflected again, until the dome above us seemed to pulse with the light of a million stars.

"Is it not marvelous, madam," he asked, "that only a candle or two can bring so much light and beauty out of darkness?"

We were in colorful Rajasthan State in northwestern India on an around-the-world trip, the first my husband and I had ever taken. We were to visit 18 overseas lands in all and see many of the fabled places we had longed to know: Bangkok, the Taj Mahal, the Pyramids of Egypt.

For me, however, it was a get-acquainted tour in my role as chairman of the Young Women's Christian Association's World Service Council, an opportunity to meet the women of the international association. I thought of

the author makes friends with Cairo youngsters at a family day-camp sponsored by the YWCA.

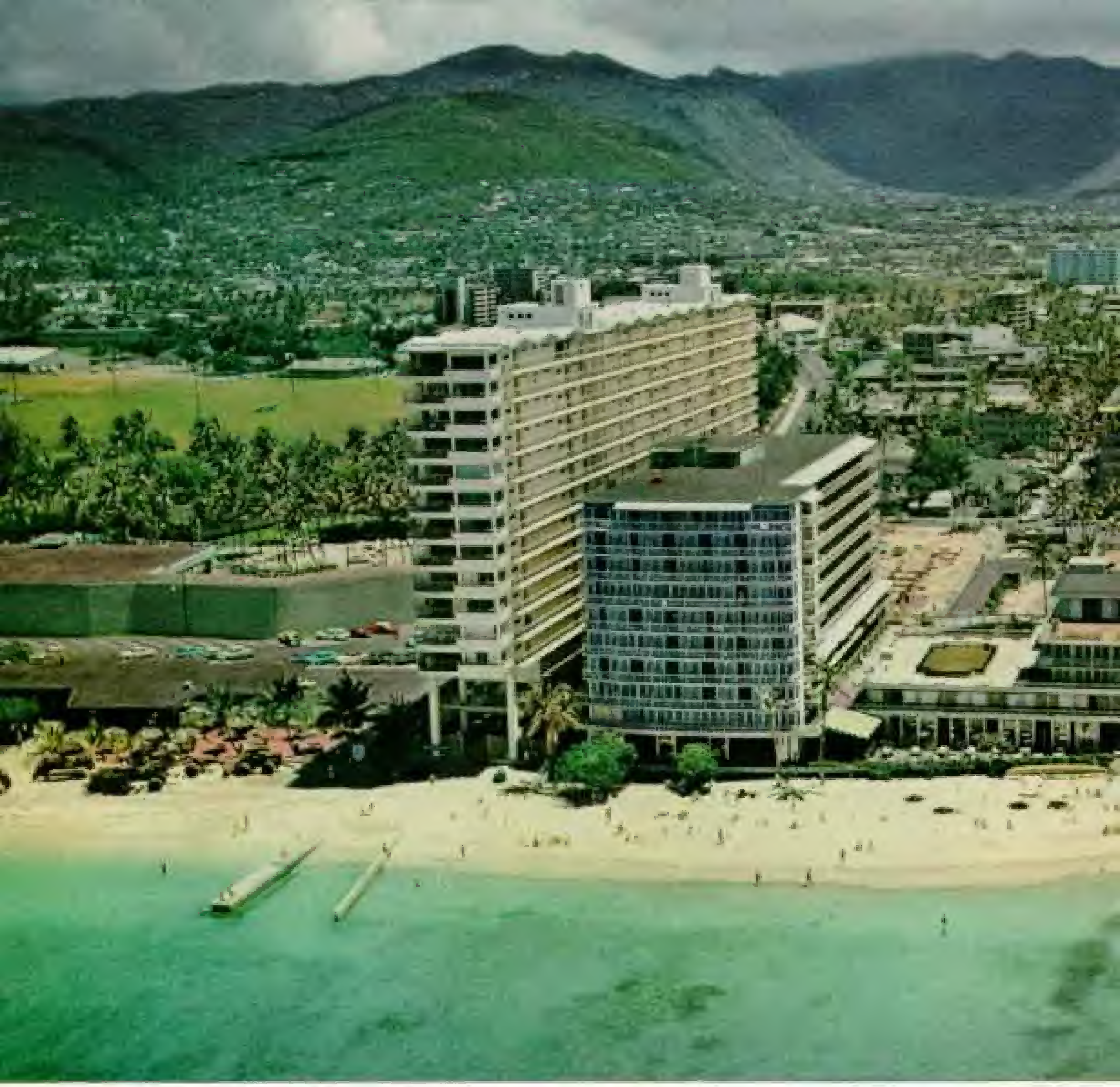
them when we saw in India how a single candle can spread its illumination, how its flame can be reflected and multiplied many times.

The women of the YWCA are lighting candles to bring beauty and hope into the lives of those around them. In youth centers and refugee camps, in nursery schools and universities all over the world, these women are working to help others.

Under the symbolic blue triangle of the YWCA, a professional staff of 11,000 serves more than 3,000,000 participants and members in 76 lands. The YWCA goes into a country only on a request from the people of that country. It never imposes programs, but instead seeks to help women and girls meet their own needs and, in turn, meet the special needs of their regions.

The YWCA's world-wide emphasis is on literacy and learning, health and nutrition, vocational training and the rights of women.

The Author: Service to the YWCA is a family tradition to Mrs. Laurance S. Rockefeller. In 1962 and '63 she traveled 53,000 miles with her husband, a National Geographic Society Trustee, to see the YW's world-wide activities. Her mother, Mrs. John French, was a member of the U. S. National Board of the YWCA for nearly half a century. Her mother-in-law, Mrs. John D. Rockefeller, Jr., also served as a board member.



Luxurious beach club called Humakolu Kai (Triangle by the Sea) offers Honolulu YW members an inexpensive doorway to fun and sun at Waikiki.

HAWAII

The Young Women's Christian Association, which came to Hawaii in 1903, uses the two lower floors; private apartments occupy the rest of the building. With seven locations and 11,000 members, Oahu's YWCA "exemplifies the friendship possible in a mixture of many races," says the author.

Hands wave as Y-Teens at Humakolu Kai demonstrate the hula for the author (left) and visiting girls from Phoenix, Arizona. Chairman of the YWCA's World Service Council, Mrs. Rockefeller circled the globe to make this survey of the association's international activities.

In each country these problems are different, and in each country the association's approach is adapted to that difference.

In Korea, scarred by the aftermath of war, the YWCA gives special attention to the vocational training of war widows, and, as one example, has set up a shop where the widows make caps and gowns for universities. In Uganda, women do much of the family farming, and so the association there has made it possible for women to be accepted in government agricultural schools.

I was eager to see such activities at first-hand, since the responsibilities of the council of which I am chairman include raising funds for similar programs around the world and interpreting them to YWCA groups and other women throughout the United States.

Hawaii: Window on the East

Our tour began with a 20,000-mile swing through Hawaii, Japan, Hong Kong, and the Philippines. On this first trip we were joined by our son Larry and his friend Gerry Reese, both college freshmen, and by NATIONAL GEOGRAPHIC photographer Otis Imboden.

We left in August last year—despite warnings from friends about summer heat in the Orient. But our luck proved good.

Hawaii was an excellent preface to the Far East. Oriental in flavor, it is also as American as a pineapple sundae. YWCA activities there are a wonderful example of the international mixture of races in an atmosphere of good will.

The association admirably demonstrates former Governor William F. Quinn's observation that Hawaiian statehood gives tangible evidence to awakening millions in Asia and Africa that the United States is no colonial power, but means what it says about equality of race and the democratic process.

East and West meet at the University of Hawaii, where the YWCA student center serves as a study hall and social center for students from the islands, the mainland, and all parts of the Orient. The YW also operates a Honolulu residence, called Fernhurst, for business girls from more than 50 countries.

"We're a sort of female version of the United Nations," said residence director Ann Watson, "but I think our girls are doing a better job of learning how to get along together." I was to see hostels like Fernhurst in many countries, helping to promote travel and international exchange among young people.

Mrs. James Wong, president of Oahu's YWCA, told us, "With seven locations, our

Girdling the World, YWCA Demonstrates Ideals in Action

In the mid-19th century the Hon. Mrs. Arthur Kinnaird established a London hostel where Florence Nightingale's nurses could stay on their way to and from the Crimean War. At the same time Emma Roberts, an English villager, wrote to 23 friends asking them to pray for young women around the world. Born of these two ideas, the Young Women's Christian Association works today in 70 lands. YWCA's blue triangle symbolizes the body, mind, and spirit of the individual.

island YW serves more than 10,750 members—plus thousands more who use our facilities. We offer everything from art to athletics, ballet lessons to conversational Japanese."

Of all YWCA facilities in Hawaii—or in the world, perhaps—the most unusual is Huinakolu Kai. This is the YW's beach club. In a towering apartment building, the club fronts on Waikiki's surf with a magnificent view of Diamond Head. Any member who enjoys the sun and the sea can use its facilities.

I lunched there with the Hawaii Y-Teen club and their guests, a group of touring YWCA girls from Phoenix, Arizona. I learned how to handle chopsticks and watched with awe as the Hawaiian girls expertly inducted their sisters from Phoenix into the mysteries of the hula (page 906).

Japan: Land of Courtesy

The next day we pursued the sun in a long day's flight toward Japan. When we crossed the Date Line, we lost a day—and it suddenly occurred to Laurance and me that the day we were losing was our wedding anniversary. To make up for it, the airline stewardess appeared with a tray of 28 bite-size pastries, each with a candle. So we had our anniversary cake—and ate it, too, with the help of the other passengers.

Two lasting impressions of Japan struck us even before we left the air terminal: One—so many people! And two—all so courteous. At the customs counter, returning Japanese passengers bowed low to the inspectors—and the inspectors bowed back. I thought, "What an amazingly different country."

In Tokyo, YWCA officials invited us to tea at national headquarters. Leaving our shoes at the threshold, we sat on cushions, *zabuton*, on a floor covered with straw mats, *tatami* (page 911). Around a low table, in a subdued light, we chatted in hushed voices. How could anyone raise her voice in a room like this?

"Some say our country is slow to change," said Miss Asa Ueki, member of the YWCA national staff. "But much has changed in only ten, twenty years. Notice how few women you see now wearing the traditional kimono on the streets. Twenty years ago it was just the opposite; then a Japanese woman in Western dress was unusual.

"But it is not merely clothes that have changed," she continued. "Today we women have political equality, and the YWCA is one of five active organizations encouraging Japanese women to use their votes.

"You must realize, of course, that we are a Christian organization in a Buddhist country, and many girls cannot participate in church

activities. But the YW enjoys widespread popular support. One of our YWCA youth conferences was held on the grounds of a Buddhist temple—and the monks made us feel very welcome."

Miss Teruko Komyo, who heads the YW in Japan, told me, "There are centers in 16 cities, with 12,000 members. They give all kinds of classes: typing in English, leathercraft, swimming for crippled children, ironing for mentally retarded girls. The Tokyo YWCA runs a day camp for underprivileged children."

We visited several of these facilities in Tokyo and then went on to the old city of Kyoto. Near the famous Nishijin weaving district the YWCA, in cooperation with the YMCA and various churches, is building a center where Kyoto's weavers can meet for education and recreation.

We visited the weaving factories and back-alley shops that produce intricate silk designs. The weavers showed us their fingernails, filed with tiny notches to separate and hold the fine threads. The daily output of a weaver creating an ornate *obi* (sash) may amount to only a few inches.

Although there are several large factories in Nishijin, much of the district is given over to small home-industry shops. We wound our way into narrow back streets and lanes to visit shops where clattering electric looms virtually fill the workers' crowded homes. A few square feet of straw mat are set aside for sleeping; a section of hallway may serve as kitchen, laundry, and dining room. Members of the family work by shifts—father weaving while sister-in-law sleeps, and so on.

Toshiko Finds a Wider World

How does the YWCA come into all this? Nineteen-year-old Toshiko Ohoda explained. Toshiko, a tall girl with a quick smile, is a millworker. She is like thousands of other girls of the factories—but with a difference. Several years ago, she saw an announcement in a Kyoto newspaper.

"It was a schedule of classes beginning at the YWCA," Toshiko told me through an interpreter. "I went to study cooking and stayed to learn about sewing and dressmaking. Afterward I helped to teach the younger girls. Now I hope to study English conversation, to be able to travel and meet people of other countries."

I think Toshiko will get her wish.

Hong Kong, our next stop, is an implausible city, not to say an impossible one—an immigrant city jammed with families fleeing the famine and unrest of Communist China.

JAPAN

Hand lifted in preaching, the Great Buddha of Todaiji Temple in Nara represents the dominant faith of the Japanese; Christians number only some 800,000 in a total population of 95,000,000. And yet, Mrs. Rockefeller discovered, Japan's YWCA "plays a vital role in the postwar emergence of women."

To strengthen the nation's new democratic processes, the YWCA sponsors a broad program of education in civic responsibilities. Association groups fight for enlightened social legislation, protection of women in the labor force, and preservation of the freedoms of speech and press.

"Japan no longer believes in the old adage that the saddest thing in life is to be born a woman," says Mrs. Rockefeller, "and the YWCA offers countless opportunities for joy." Eager to improve, girls flock to classes in typing, handicrafts, and dancing.

Teatime at Tokyo headquarters finds the author (center) conferring with Mrs. William P. Woodard (left), a member of the Tokyo YWCA board, and Miss Asa Uoki (foreground), of the national staff. Mrs. Hideko Sakaguchi (right) was Mrs. Rockefeller's guide in Japan.

Finding satisfaction in simple work, handicapped girls wrap boxes at the Izumi-ya cookie factory, Tokyo. Management offered them jobs in response to a YWCA appeal.

Hospitable tower in a tide of humanity, the Bonham Road hostel offers rooms to the Crown Colony's working girls as well as 24 small apartments for use by families.

HONG KONG

The Hong Kong YW has been helping immigrant families for 43 years, I was told by Mrs. S. K. Sung, its president. But never has it faced such an influx as in the past few years.

We climbed dark stairs to the top floor of a building in the teeming slums of the North Point section on King's Road. Here a YWCA center provides economical bed and board for girls, most of them refugees, who work in the city's textile mills and myriad small factories.

"These girls earn only about $20 a month," Mrs. Ellen Li, the YW vice president, explained. "Most have no family. When we get rice from CARE, we can offer meals for about ten cents a day."

Help for Working Mothers

The Kowloon side of the Crown Colony is the most crowded. For thousands of families, home is only a few packing cases pulled together or a space behind an advertising billboard. Here the YWCA has established play centers and nursery schools for children of working mothers.

At the Maureen Grantham Centre, one of 19 YW installations in Hong Kong, the children were getting their daily baths.

"Half of our 160 children are boarded by the week," said Ellen Li. "Some are from parents who have no regular home. They take the children only for visits on the weekend and leave them with us the rest of the week."

On our final evening in Hong Kong, we saw another side of the city. We dined in fairyland elegance at one of the floating restaurants of Aberdeen. This crowded village of fishermen is also a home of the water people, who dwell on junks and sampans moored in a tight logjam of humanity.

We were rowed out to the restaurant in a sampan by a mother-daughter team. During working hours their sampan is a water taxi, at other times a home.

We ate a delicious dinner of fried prawns and crab claws, seafood soup, and red snapper. Then our sampan women rowed us back across a sea dyed lavender, green, and scarlet by the city's neon lights.

Black storm clouds were gathering as our plane landed at Manila in the Philippines. But the weather could not dampen our welcome. We were surrounded by dozens of new friends who draped flower leis around our shoulders.

View of Victoria Harbour Enlivens a Bonham Road Room

Privacy makes YWCA living a luxury in overcrowded Hong Kong. This young business-woman pays about $30 a month for room with bath. She may eat inexpensively at a dining room or canteen on the ground floor. And in the evenings she may attend association-sponsored classes in languages, painting, yoga exercises, ballet, or cooking.

Although Bonham Road residents pay little, their money goes far; the hostel's profits contribute to a fund that promotes educational and recreational programs on the rooftops of refugee resettlement buildings.

Bright eyes and eager faces animate toddlers at the Faith Hope Nursery, a YWCA facility for 140 children of street vendors and other low-income families in the vicinity. Two substitute mothers, paid members of the YWCA staff, dress the youngsters after their daily bath.

This was our first experience of the warm Philippine spirit of "*mabuhay!*" The word means "long live!"—but, like the Hawaiian "aloha," its zestful spirit eludes translation.

Our welcomers included not only YW members, but also officials of the Ramon Magsaysay Award Foundation. We had timed our Manila stay to participate in the Magsaysay award ceremonies. The foundation, named in honor of the late Philippine President, was founded in 1957 by the Rockefeller Brothers Fund. It presents awards to outstanding leaders and humanitarians in Asia who best exemplify the spirit and democratic principles that guided Magsaysay.

President Magsaysay was a humble man who believed in the dignity of the humble people of his land. Today President Diosdado Macapagal is carrying on the tradition. We breakfasted with the President and Mrs. Macapagal at Malacañan Palace, and he spoke of the importance of simple living as a way to better standards of living for all.

Grow-your-own-pig Program

The YWCA in Manila takes an approach in keeping with the President's stress on the basic necessities. Volunteers invited us to see their community center in Barrio Fugoso—"Smoky Town"—near the heart of the city.

Artistic touch of master dollmaker Naci Sözer (center) inspires a handicraft class at the "American Language and Art Lesson House" in Istanbul. The 52-year-old Turkish center serves as a special school of languages, business skills, and hobbies. The center's dollmakers sell their works as souvenirs to earn money for other projects.

TURKEY

Golden Horn ferries dock at ramps beside Istanbul's commuter-crowded Galata Bridge.

At the thatch-roofed Community Welfare Play Center there, Mrs. Aurea del Carmen, YWCA national general secretary, introduced me to a young boy whose arms were full of squirming piglet.

"We're especially proud of our pig program," she said. "We give the shoats to young YW club members, and they raise them on kitchen scraps. When the pig matures they can sell it, or, if it's a female, they can start a herd of their own. One half of what they earn goes back to the club to buy more pigiets."

The center housed still another project keyed to making much from little. Neighborhood women displayed embroidered blouses and towels, mats and market bags, all attractively crafted from the simplest materials—flour sacks or burlap sugar bags. Their sale raises funds for other YW community-center projects in the Philippines.

Just before we left Manila, I attended an annual YWCA conference. As a finale, the Y-Teen girls placed me in a stage version of a Philippine thatched hut. Then, clasping hands, they serenaded me, and the crowd joined in the chorus. What a wonderful farewell! I know now what the Philippine people mean when they cry "mabuhay!"

Skies were clearing as our jet plane lifted from Manila on our homeward course, ending

Glory of the Parthenon gives prospective emigrants to Australia an abiding memory of their cultural heritage. Maria Tsakonakou (center), of the Greek YWCA, is the girls' guide for the excursion. Since 1960 the Athens YWCA has helped in preparing young women for jobs abroad. The Intergovernmental Committee for European Migration provides training in household arts, and the YWCA aids with recreational and cultural classes.

GREECE

the first phase of our travels. We had come nearly halfway round the world. Now we were reversing ourselves and would complete the trip later by circling the globe in the opposite direction.

As I explained to my patient husband, it is, as any YWCA member will agree, a woman's prerogative to change course in midstream.

We got under way again in mid-February. Our traveling companions were Mrs. John V. McTernan of the U. S. A. national YW staff and Otis Imboden of the GEOGRAPHIC.

"I've never flown before," Sally McTernan confided as the jetliner lifted from New York International Airport at Idlewild.

"You'll have plenty of time to decide whether you like it," said Laurance. He riffled through one of our tickets, a thick, stapled affair that looked like a mail-order catalogue. "You'll be a 33,000-mile veteran by the time we return to New York."

YWCA Born During Crimean War

England lay under a gray blanket of snow in Europe's most bitter winter of almost a century. The Hon. Isabel Catto, president of the World YWCA, welcomed us at her home, and we were all cheered by the great fire blazing on her hearth.

"I'm glad you've started this part of your trip with a visit to England," she said. "It all began here, you know."

The YWCA was founded in London in 1855 as a hostel for nurses traveling to and from the Crimean War. Joining with another English religious movement, the Prayer Unions started by Miss Emma Robarts, the association soon expanded to fill the needs of women and girls brought out of their homes by the Industrial Revolution. In 1858 a unit was established in the United States, and in 1894 the World YWCA was formed.

At London's Bedford House, headquarters of the British YWCA, we called on national general secretary Ruth Walder. She told us about plans for social and recreation activities in new outlying towns.

"We're working with the authorities," she explained, "to create a better life in the new towns. We'll have hostels for working bachelor girls and for young men. There'll be theaters-in-the-round, restaurants, craft and hobby shops—places, for example, where people can build boats—everyone's daft here on building boats."

Leaving England, we crossed by plane to Brussels. There, snow was falling, padding rooftops and highlighting the 17th-century

stonework of buildings in Grand'Place, the city's majestic central square.

As befits its location in the "capital" of the European Economic Community, the YWCA in Brussels stresses international themes. Mme Max E. Jottrand-Rey, the YWCA national president, explained to us, "Our young people want to learn languages, political science, and international economics. They want to be prepared to work and live in any of the European countries."

The Brussels YW aids such broad purposes, but like YWCA's around the world, it never forgets that young people also need recreation —dances, group sings, drama clubs.

"What do you do at the YW?" I asked a sparkling-eyed Belgian Girl Guide.

"We have fun!" she answered. It seemed a good answer to me.

Istanbul, City of Many Names

Modern air travel is a constant amazement. How did we get from Brussels to the Near East? We flew to Vienna and turned right, paused for a cup of coffee in Athens, and—before we realized it—we were in Istanbul!

LEBANON

Tawny flock of sheep drifts across a plain beneath the snow-helmeted Lebanon Range. En route to the Roman ruins of Baalbek (page 829), the author saw scenes such as this—a pattern of life little changed from ancient times. But in Beirut she found the YWCA hard at work to give women a secure place in the 20th century.

Founded in 1911, the Lebanese YWCA did much to help Armenian refugees left homeless in World War I. During the 1920's the association conducted night schools for working girls of the Moslem, Jewish, and Christian faiths.

In today's stepped-up program, YWCA classes in language and office practices enroll some 270 students, and YWCA committees work for child-labor laws and better job opportunities for women.

Word-building game gives Beirut Y-Teen members a chance to practice English.

"Istanbul is a book of history," a Turkish acquaintance told us, "a very old book, ragged and torn, and with many pages missing."

As we drove from the airport, he pointed out crumbling walls that protected the city when it was known as Constantinople.

"Our city has had many names," he said—"first, Byzantium, later Constantinople, and now Istanbul, its official name since 1930."

The view from our hotel balcony embraced two continents, Europe on the near side and, across the narrow Bosporus, Asia. The Bosporus gleamed in sunlight. Heavy-laden tankers with names in Cyrillic letters plowed north toward the Black Sea and Russia.

We left the hotel and were swept into clattering morning traffic. Peddlers and horse-carts jostled through masses on foot. Our auto maneuvered into narrow lanes where men and boys climbed steep cobbled slopes under loads of wool, leather, or household wares.

We stopped before a gray building encircled by a wrought-iron fence. A simple sign identified the Amerikan Lisan ve San'at Dersanesi, or "American Language and Art Lesson House." No symbol, no blue triangle or other sign suggested the YWCA.

Moslem Girls Join YW Classes

Eleanora Davis, advisory secretary of the center, explained. "We are not permitted to use the symbol of the YWCA, but as a social-welfare and service organization we receive full government cooperation. Turkish women have had the vote since 1930, and in the past few decades they have been taking up careers outside the home."

Miss Davis led us to a classroom where 20 girls were taking typing lessons.

"Our business classes are the only ones for girls that are accredited by the Ministry of Education," she went on. "I think everyone

Smiles brighten faces of girls learning to sew at the YWCA in Jerusalem's Arab sector. More than 100 girls take the dressmaking course.

JORDAN

Mount of Temptation looms above a Jordan refugee camp, home of 40,000 families. Signs in both English and Arabic announce that the Young Women's and Young Men's Christian Associations sponsor vocational training centers.

Afternoon sun gilds the mosaics of Jerusalem's Basilica of the Agony; at left, the

walled Garden of Gethsemane shelters centuries-old olive trees. Above, on the Mount of Olives, onion domes mark a Russian Orthodox church. Jewish cemetery blankets the hillside at right.

has come to realize that we are interested primarily in giving Turkish girls a better chance in life."

That afternoon we visited Istanbul's famed Blue Mosque and saw Moslem women kneeling on the floor absorbed in prayer. In woven-straw shoe covers, we padded through a hushed world of reverence and dim mosaics. Stained glass in tall lacework casements cast a chinaware-blue tone over the interior. Turkish rugs carpeted the floor. Overhead the huge dome seemed to float—as if supported only by the dense blue light.

Our next stop was Athens. We arrived in February, a few days before carnival. Costumes and masks were beginning to appear on the streets. Children tested their kites for Clean Monday, the first day of the Greek Lent, traditional day for kite flying in Greece.

We drove through Piraeus, the seaport of Athens, to the village of Perama. Here, in a community center sponsored by the government and staffed by YWCA social workers and teachers, we found girls learning to weave. Their looms are like those their great-great-grandparents might have used, but their lovely rug designs are modern.

"When a student completes the course, she is given the loom to keep," their teacher explained. "We sell enough rugs to pay for a new loom for the next girl."

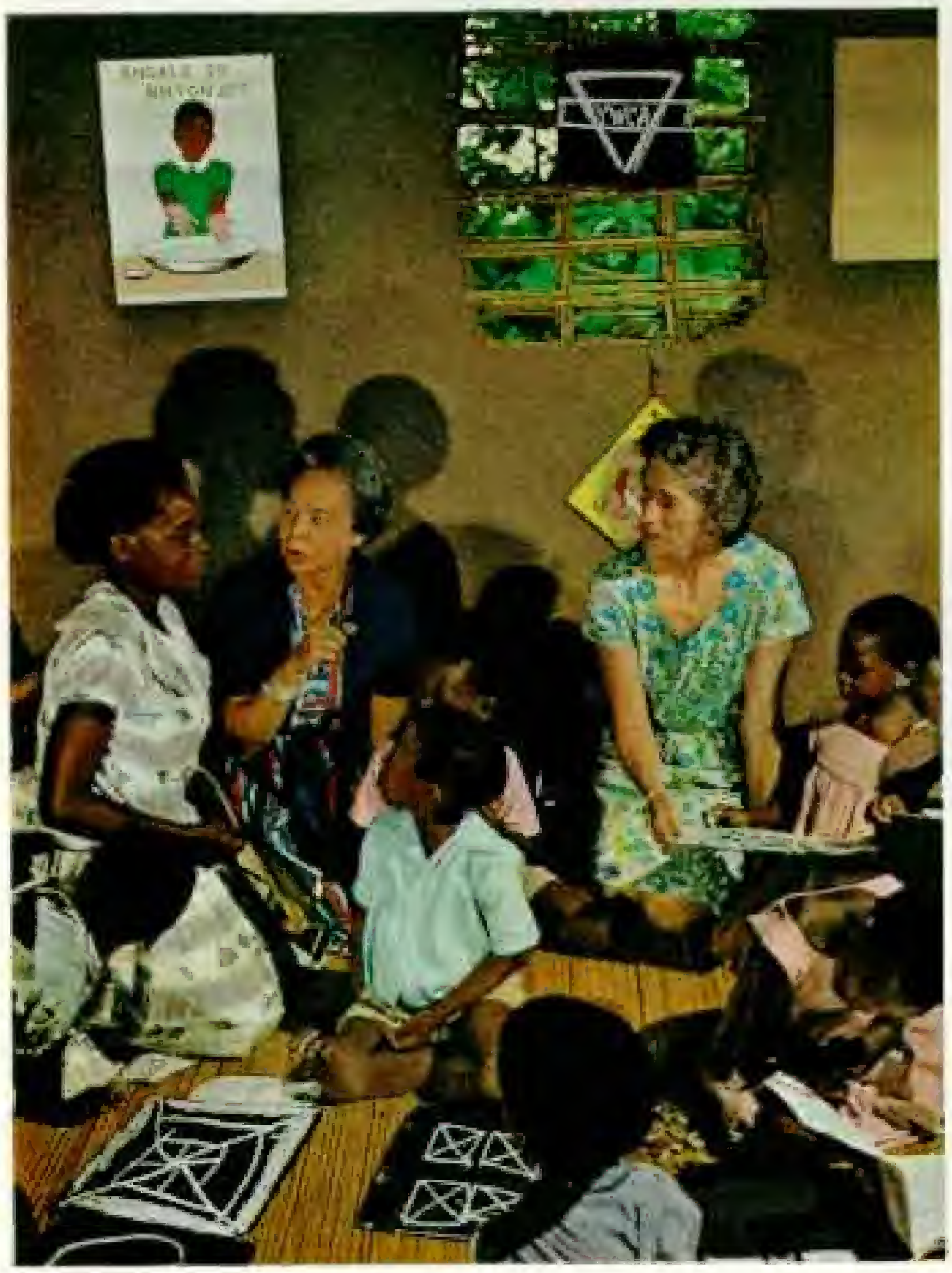
The center is, most importantly, a chance for student social workers from the YWCA School of Social Work to get field experience. We visited the school in Athens the next morning. Student social workers from 17 to 19 were attending classes in child care and hygiene and listening to lectures on basic psychology.

"We have 45 girls now," the school's director told us. "Greece is doing all it can to get teachers and social workers who can carry

Investment in children: a YWCA nursery school (right) in rural Kanyanya district. Mrs. Victoria Kibuka (below, left) and her husband, with 10 children of their own, built the mud-walled, tin-roofed school and opened it to neighboring youngsters. Mothers come to hear talks on nutrition. Here the author claps her hands in appreciation of a song of welcome.

UGANDA

Class listens to Mrs. Fannie Byrd (center), the YWCA adviser to Uganda from the United States. Mrs. Rockefeller (right) watched children draw on slates and count with bottle caps.



their education and skills into the country's villages and farm areas."

Once in the field, the girls combine teaching and welfare work in somewhat the same way our Peace Corps does. They may find themselves helping to collect goats and sheep for landslide victims, as well as teaching the Greek alphabet. In the main YWCA center in Athens, we saw the first—and still the only—school for librarians in Greece, established by the YW only last year.

Then we were introduced to a group of girls who were going to Australia as domestic servants—part of a program of planned emigration. Twelve hundred girls have been going to Australia from Greece each year, and the YW has been helping to prepare them. They have jobs and family sponsors waiting for them there.

"It's a frightening plunge for them," said Maria Tsakonakou, YW staff member in charge of the group, "but we are trying to ease the shock by teaching them what to expect when they reach their new homes."

One of the instruction sessions, we learned, included a trip to the Acropolis (page 916).

"Besides teaching them about Australia, we teach them also about their own country and its history," said Maria. "It's part of what we call *philotimo*—perhaps you translate it 'self-pride.' The girls want to be good representatives of their homeland."

Lebanon: Learning to Type in Arabic

Beirut is a city of international character: East-West, Christian-Arab, French colonial and modern influences all twined together like a ball of string. Arabs in kaffiyehs and flowing robes strode out of hotels and climbed into tiny Volkswagens. Square-bearded patriarchs of the Orthodox Church swung aboard rumbling, two-in-tandem streetcars.

Our hostess was Doris Boss, advisory secretary of the YWCA, who has served more than 22 years in Lebanon. She took us to visit the YW vocational school.

I was fascinated by the Arabic typewriters in one classroom. Typing is taught in English,

French, and Arabic. It had never occurred to me that those intriguing squiggles, dots, and hyphens of Arabic could be put together on a typewriter. But even more startling is the idea of having to type on both Roman- and Arabic-alphabet machines to be a good Lebanese secretary.

Prayers From Both Sides of the Street

At the downtown YWCA girls' hostel, one of the residents pointed out a mosque just across the narrow street.

"I won't say that this is a strange place for a YWCA," she said with a smile, "but every Sunday when we're saying our prayers, we seem to coincide with one of the hours of prayer for the Moslems. Just as we're singing our hymns, a muezzin on the tower outside our window begins to chant the praises of Allah. It's what you could call a genuinely inter-faith prayer service."

Our next stop was Jordan. Ironically, here in the Holy Land the YWCA faces some of its knottiest problems. Jordan's long quarrel with Israel and the partitioning of the city of Jerusalem have left scars. Thousands of Arab families, about 650,000 people, still live in Jordan under the care of the United Nations Relief and Works Agency.

We visited a large camp at Aqabat Jaber on the arid plain between Jericho and the Dead Sea, where about 40,000 refugee families live (page 920). Many of these families once owned land in the areas now incorporated into Israel. They still hope fiercely that their lands will be returned. Many resist all attempts to resettle them. By working with the young people, the YW tries to give the new generation some hope of building a life outside the refugee compounds.

In the YW center at the camp we visited a classroom-kitchen. This is part of the home

INDIA

Making flowers for fun, a Bombay teen-ager looks forward to the time when she can sell her work. Meeting the needs of a nation emerging into the industrial age, the YWCA repeats its early history, when the influx of young women into cities spurred the association to provide clean, inexpensive homes-away-from-home for them.

"India's YWCA hostels are crowded, and there is a crying need for new ones," the author reports. Last year the YW added its bit to India's defense against China. Girls went without tea and spent hours making bandages. Their leaders set up troop canteens.

Sheep and camels mark nomads' dusty trek from Agra toward Jaipur.

economics course for refugee girls, which also includes lessons in child care and first aid.

In another part of the camp we found a YW instructor surrounded by nursery school youngsters excitedly playing the world-wide game of blindman's buff.

"Please forgive them—they are so noisy," apologized their dark-eyed young teacher, "but it is good to hear them laugh—the camp is not always a happy place."

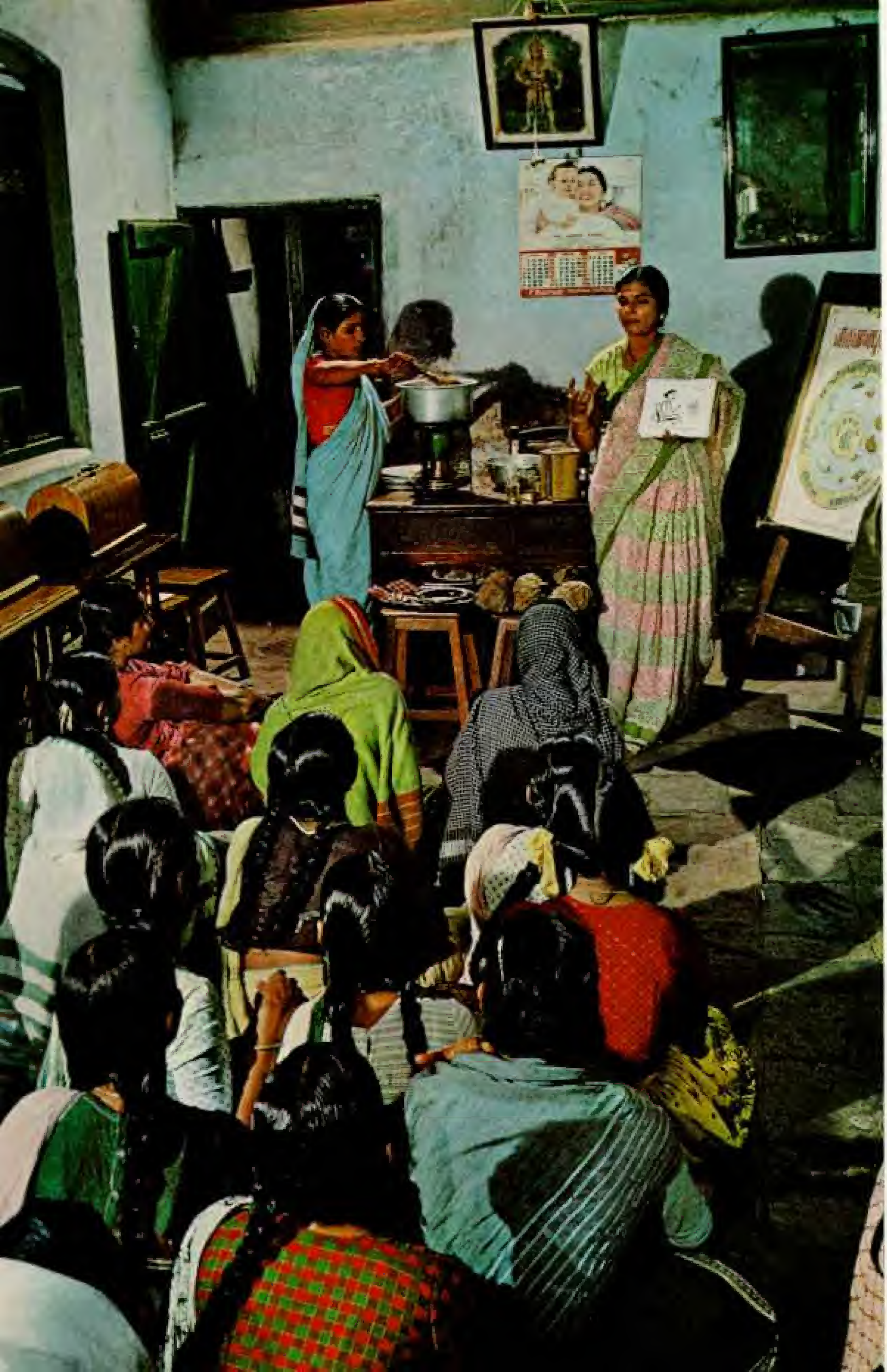
Before leaving Jerusalem, we climbed the Mount of Olives and looked across the divided city to Israel (see the accompanying Atlas Map, **Holy Land Today**). YWCA's are active in Haifa and Nazareth, but they—like YW's in so many other lands—would have to await another trip. To go on to Egypt as planned, we had to fly directly from Jordan.

YW Teaches at the Desert's Edge

Our Jordanian airliner took a long swing east of Israeli territory, and we cruised the length of the Dead Sea. Turning toward Cairo, we saw the Suez Canal—a blue band across a buff-colored desert.

Cairo gave us an opportunity to combine sightseeing with business. Happily, the YW recreation camp we visited at the edge of the desert lies at the foot of the Pyramids (pages 904-5). Run for women who are taking vocational training at the Cairo center, the camp can accommodate 40 to 60 people a day. It has facilities for overnight stays for 14, and some families avail themselves of these.

"We bring the whole family out whenever we have a free weekend," explained one of



the mothers as she untangled her three youngsters from a melee of dozens of others. "The air is fresh here. We love to come out just to watch the sunset."

By dawn next morning we were flying south across the Sahara. Only the Nile, winding in vast loops, interrupts the stark desert and reminds one that here human life has struggled and survived for thousands of years.

Baganda Wives Learn to Grow New Crops

Uganda's Entebbe airfield was our port of entry for an eight-day tour through East Africa. After the parched landscapes of Jordan and Egypt, Uganda's green vegetation was balm to the eyes.

We were met by Mrs. Fannie Byrd, the YW advisory secretary (page 922). She took us to a garden plot where an Indian woman in a blue cotton sari was teaching Baganda wives how to raise beans and cassava. This was Mrs. E. Oomen, YW president.

Proper nutrition as well as improvement of agriculture is involved in these lessons. The YW is teaching the women to grow and use high-protein foods, such as nuts, peas, and beans, to supplement the standard starchy diet of *matoke* (plantain). Close to half of the babies of Uganda who perish before the age of five die of malnutrition.

Later we saw teen-age girls sitting at attention while a YW volunteer helped one of the class demonstrate the bathing and diapering of a baby. I was surprised that the baby suffered through all the make-believe mothering without a whimper, until I saw that it was a life-size doll.

We flew next to Uganda's Queen Elizabeth National Park, where we stayed in thatch-roofed bungalows at Mweya Safari Lodge. On a lane nearby, one of the world's most unusual traffic signs proclaims: "Elephants Have Right of Way."

For a close-up of the animals we rode a

Scattered flower petals and a painted lotus blossom welcome the author as she visits a class for young Bengali dancers in New Delhi, India.

Attentive Indian mothers, eager to improve the health of their families, watch a YWCA demonstrator cook wheat pudding; a lecturer explains its nutritional value. This room in a Bombay tenement area also serves as a YWCA sewing center.

small sightseeing boat along the channel between Lakes George and Edward. To my horror, our helmsman steered us directly into herds of hippos. The boat lurched as the massive animals bumped our keel, churning the water around us.

"They usually seem so placid," said Senior Park Warden Frank Poppleton, "it's hard to believe that hippos kill more people in Uganda than any other wild animal. They have a nasty trick of overturning canoes."

I didn't find it hard to believe at all. But the helmsman assured me our boat was large enough to be safe.

Later we spent nine jolting hours in Land-Rovers crossing the grasslands of the vast Serengeti Plain in Tanganyika. My husband and his associates, James Hyde and Carl Gustafson, who had joined us in Entebbe, were studying the problems of big-game management and wildlife preservation in these great African animal parks.

Once we came within 15 feet of a pride of 10 lions, sunning themselves on a rise. Their ears began to twitch nervously.

"You mustn't try to get out of the car!" warned our driver. At the moment, I assured him, that was the furthest thing from my mind.

The following day we flew to the capital of Tanganyika—Dar es Salaam, "Haven of Peace." There we called on President Julius Nyerere, who has been head of state since Tanganyika became a republic in 1962.

Mango Tree Shades Sewing Class

The Tanganyika YW is a young association, founded only in 1960, and owns no headquarters building, but the work has already spread to five towns. One women's group we visited near Dar es Salaam was meeting in the shade of a broad mango tree. Women bring their children and are led by

Leading the way, YWCA volunteers show the gestures that accompany a song at a once-a-week school in Chawdwingon, near Rangoon. "This is a depressed area," Mrs. Rockefeller recalls, "where men earn only 50 cents a day." YWCA members teach mothers how to feed their families better by varying starchy diets with nuts, eggs, greens, and fruits.

BURMA

a YW instructor in discussions of cooking and child care as they sew brilliant-hued cotton goods into blouses and wide skirts.

Next day in Nairobi, a beautifully modern city and East Africa's largest, we met the wife of the mayor, Mrs. Hannah Rubia. She addressed the Kenya Women's Seminar held at the Nairobi YWCA. This annual meeting brings together representatives of civic organizations and women's groups from every part of Kenya. One of its major organizers is Margaret Kenyatta, daughter of Prime Minister Jomo Kenyatta. The seminar discusses ways the women of Kenya can improve the health of their families and get better education and work.

"We have to make so much progress in so little time," said Mrs. Rubia. "That's why the women of Africa are anxious to get on with the job."

The YWCA in Kenya is half a century old, with branches in many rural areas. Its membership of more than a thousand includes women of various racial and religious groups.

Our final night in Africa, the full moon rose from behind Mount Kenya in a memorable

THAILAND

Washing a food bowl, a Buddhist monk eyes Mr. and Mrs. Laurance Rockefeller on their tour of Bangkok's *khlongs* (canals). His laden boat attests the generosity of the Thai people, whom the author found to be gay and friendly.

"It is interesting to see," the author observes, "how well Buddhist and Christian work together here in community service."

The Thai Government's Social Welfare Department invited the YWCA to conduct cooking classes for low-income mothers, staff a nursery school, and teach a vocation to delinquents (left).

Rolling up hair, a girl in the Juvenile Court center at Pak Klong Talat learns "to pass the time good," as she told the author. Instructor stands at center. Some 60 girls between 8 and 18 years take YWCA classes in English, home economics, and hairdressing.

"Many will be able to earn a living from the skills they learn here," says Mrs. Rockefeller.

display. We watched it from the famous Treetops Hotel near Nyeri. With 20 other guests we gazed down in silence as elephants, buffaloes, and rhinos came to the water hole just below our balcony.

Three nights later Laurance and I watched the moon rise again—this time to cast halos around the unforgettable minarets of the Taj Mahal at Agra, India.

India: *Chawls*, Children, and Dancers

Our first stop in India was Bombay, a city bursting with activity, from its towering sweep of bay-front apartments to its cluttered backstreet tenements, or *chawls*.

"The first YW in all the Orient was founded in Bombay in 1875," Miss Sarah Paul, association president, told us.

Miss Paul drove with us to a government housing development in the village of Sewri, where the YWCA is helping to feed the children of the very needy, in connection with a study being made by Bombay's Haffkine Institute (page 925).

One aim is to show the mothers the importance of a balanced diet—the virtues of unpolished wheat, the role of vitamin B in preventing beriberi, the value of protein foods.

We watched as young three-, four-, and five-year-olds received their daily lunch at the YW kitchen. *Chapatti* (unleavened bread), lentils, nuts, curds, potatoes, powdered milk, American wheat are a few of the foods the YW distributes. Physical exams and daily records provide data on each child's progress.

In both Bombay and New Delhi, YWCA's are actively engaged in vocational training. They give courses in bookkeeping, commercial correspondence, and office routine to prepare girls for business careers. But the cultural side is not neglected.

At the Bombay center we watched a class in classical Indian dance. Since Bombay is the Hollywood of India's film industry, several of the YWCA-trained girls have worked as dancers in musical film productions. This, I'm sure, is the world's only YWCA offering training to prospective movie stars!

From Agra, site of the Taj Mahal, we drove to Jaipur, seeing a part of India almost untouched by the modern world. Oxcarts, camels, and flocks of sheep shared our dusty road. The way passes among parched fields where oxen draw water from irrigation wells in great leather bags.

Many villages in India still have no electricity, piped water, or sanitary facilities. At community wells the women fill shining brass water jars, returning home with the containers balanced on their heads.

The women of the New Delhi YWCA showed me how their association is working to fight illiteracy in such regions.

"India is a country of democratic ideals," said Ivy Khan, YWCA national general secretary, "but people must be able to vote intelligently. All hope for social reform has to begin with better education for the 80 percent of our people who live in villages."

At Paprawat village near New Delhi we saw YW instructors working with a community group. Mothers were sewing articles for a cooperative sale while their children chanted through their Hindi ABC's.

At the other end of the educational scale we found the YW at work, too. We visited the University of Delhi to see the Delhi School of Social Work, which has 80 students from 14 Indian states and 10 countries.

Founded by the YWCA in 1946, the school has now become a postgraduate institution of the university, and its graduates are serving with social agencies in all parts of India. Their work ranges from counseling parents of juvenile delinquents to training group workers for community centers.

"We even have five students from the United States," said the school's principal, Dr. M. S. Gore. "They do field work here as part of their study for postgraduate degrees at home. Several plan to remain and seek careers in social service in India."

Burma: Folk Songs and Duck Eggs

In Burma we visited Shwe Dagon Pagoda, largest in the world, towering 326 feet. The spire's golden brilliance is continually renewed by faithful Buddhists who buy offerings of gold leaf and add their mites for the glory of the temple.

Mrs. Ba Maung Chain, a World YWCA vice president, told us how the association works without ostentation in this predominantly Buddhist country. She arranged for us to see it in action at the Chawdwingon section on the outskirts of Rangoon.

There we watched YWCA volunteers teaching folk songs and games to the neighborhood children (page 928), while their mothers listened to a talk on the need to balance starchy family diets with nuts, duck eggs, vegetables, and fruits. After the question-and-

discussion period, the mothers, many of them with babies on their hips, received powdered malted milk and yeast tablets.

Princess Prem of Thailand's royal family is an active supporter of the YW's efforts to help girls in her colorful, progressive land.

"The government has come to us for help, too," said Mrs. Boonchuan Hongskrai, YWCA executive director. In a Juvenile Court home for delinquent girls in Bangkok, we saw YW instructors giving English lessons and teaching trades ranging from making artificial-flower arrangements for sale at the bazaar to professional hairdressing (page 930).

"Time passes fast when we learn something," said one of the girls, smiling.

"More important," said Mrs. Hongskrai, "is the hope that they can get jobs when they are released. We try to make them all feel that someone is interested in them."

Korea was the finale to our tour. We came with concern about the problems of the YW in this country split by war and civil unrest. But all our misgivings faded away.

Esther Park, advisory secretary, showed us one of the most active associations in all the Orient. It serves 20,000 participants in 9 different centers, 116 high-school Y-Teen clubs, and 21 college student groups. Clubs, craft classes, and discussion groups filled the large YWCA building in Seoul. And, amid all these activities, the YW also rents its auditorium for weddings—proving that the YWCA, which helps girls who have left home, can also help put them back in the home.

Scarves Swirl in YW Farewell

For our Korean farewell dozens of YWCA members escorted us to the airport. They waved goodbye, whirling their scarves in a circle—the symbolic gesture of YWCA united around the world.

We flew home via Tokyo. We left there at 9:30 p.m. on Friday, and crossing the Date Line, arrived in New York at 11:00 p.m.—the same Friday. This paradox of rapid travel made me realize how closely we are all interrelated, and how important are the mutual understanding and the friendship which the YWCA promotes between peoples of different nationalities and backgrounds.

THE END

Plucking 12 strings of zitherlike *kayageum*, musicians at the Seoul YWCA keep alive a traditional form of Korean music. They themselves wrote the score for the instruments.

KOREA

Whirling their scarves to symbolize the YWCA around the world, members at Seoul bid farewell to the author and Mrs. John McTernan of the United States national staff at the last stop on their global inspection tour.

"Korea is full of contradictions," Mrs. Rockefeller discovered. "Young people are independent, yet some marriages are arranged. There is TV, but women still cook on charcoal stoves. The YWCA's finest work, here and elsewhere, is the help it offers young people in finding their place in the world."

ERNATIONAL AIRPORT

Freeing Flamingos From Anklets of

By JOHN G. WILLIAMS

Photographs by ALAN ROOT

Death

Shackles of dried soda disable a baby flamingo at Lake Magadi, Kenya. Parents inadvertently hatched their young in a death trap; the fetters built up as the birds waded in alkali-laden shallows.

Fledglings and a few adults drink at springs in brackish Magadi. When chicks reached about six weeks of age, 400,000 of them hiked across five miles of soda flats to reach this fresher water.

I WAS FINISHING BREAKFAST when photographer Alan Root strode into my house with a dead flamingo chick in his hands. The bird's grayish down was matted with alkali; crystals of the stuff clung in huge shackling anklets around its spindly legs.

Quickly Alan told me what had happened. Flamingo young, I knew, cannot fly until nearly grown. This one had waded in and out of shallow water in the lake that was the flamingo colony's new breeding ground. The water contained a high concentration of sodium salts; evaporation under the hot African sun gradually built up the encumbering deposits. Finally, no longer able to move, the fledgling had died of starvation or exhaustion.

"John," Alan said, "the same thing is happening to tens of thousands of flamingo chicks in that lake. We've got to do something to save them."

Before dawn that day—September 17, 1962—Alan had risen to drive the 70 miles from

Black-pinioned wings bite the air as lesser flamingos race across gray soda flats and vault

CHAIN OF LAKES in East Africa shelters the lesser flamingo, *Phoeniconaias minor*, and his larger cousin, *Phoenicopterus ruber roseus*. Floods at Lake Natron in 1962 drove two million birds to nest at Lake Magadi.

into flight. Hidden phalanxes, massed in the thousands, await their turn to get a runway.

Lake Magadi in southern Kenya to my home in Nairobi. He came to me because, as Curator of the Department of Ornithology at the Coryndon Museum, I had been responsible for the fact that Alan was camping out at Magadi to guard these shy flamingos.

Magadi lies in one of the lowest spots of the Great Rift Valley, the giant earth fault that cuts through eastern Africa (opposite). The finger-shaped lake has no outlet, and forms an evaporating pan two miles wide and 18 miles long, where saline, alkaline waters feeding it from subterranean springs are concentrated into a stronger and stronger solution.

Crusts form on the surface, in some places 10 to 12 feet thick. The Magadi Soda Company, Ltd., dredges up this crust, called trona, and turns it into soda ash (sodium carbonate), a valuable industrial chemical used in making glass, soap, paper, and other products.

Nesting birds carpet flats near the Magadi Soda Company, Ltd. Employees of the plant helped

At night, volcanic fires from far-off Ol Doinyo Lengai—the "Mountain of God"—sometimes reflect on overhanging clouds and can be seen from the lake. Heat from the same underground sources warms the springs that bubble into Lake Magadi, some at temperatures near boiling.

Shy Flamingos Favor Lonely Lakes

Similar brackish lakes spot the Great Rift Valley. They form a habitat favored by flamingos—desolate, hot, shunned by most other creatures, and with alkaline mud flats where algae and other small organisms provide food for the birds.

Flamingos flock here in incredible numbers. Some authorities estimate that 90 percent of Africa's lesser flamingos live in the region. They sometimes mass in belts so thick that individual birds cannot fly; those on the edge of the flock must take off first, while the inner ranks await their turn (preceding pages).

For years a colony of perhaps a million pairs has bred at Lake Natron, not far from Magadi across the border in Tanganyika. These are mainly lesser flamingos (*Phoeniconaias minor*), showy pink birds with crimson-blotched wings, black-tipped red beaks, and red feet, but shorter-necked and shorter-legged than the greater flamingo (*Phoenicopterus ruber roseus*), of which a few thousand pairs also breed on Lake Natron. The nesting grounds are soda flats, far from shore and almost inaccessible to human observers.

Then, for reasons unknown to us at the time, there came a massive migration of flamingos from Lake Natron to Magadi. This happened in July, two months before Alan brought the dead chick to my breakfast table.

I had first learned about the migration when I returned from safari on July 17. A telephoned message was waiting for me from a friend at the Magadi Soda Company.

"John, come quickly," it read. "Magadi has

REDISCOVERED BY ALAN RIGHT © N.G.S.

free alkali-burdened chicks.

Cradled in eggshell, a nestling lifts its wobbly head. Button-eyed lesser flamingo supplies semidigested pink soup for its chick's first meals. To get food, wading adults scythe bitter water and muck with strainer-equipped beaks held upside down. Their diet: algae and other minute organisms.

Wings outspread in alarm, a greater flamingo surrenders its egg to an Egyptian vulture. Dark-billed lesser birds, half the size of their timid cousin, puff out their back feathers and defy the predator. To spill the red yolk, the vulture will seize the egg in its bill and drop it on the crusted soda.

High-stepping Kikuyu, enduring temperatures that rose to 120° F., herds flightless five-week-olds to a trapping pen (out of picture at left). Protective boots may fail to save him from painful soda-crystal

Hobbled chick struggles from shallows, its body flecked with soda. Moments later this lucky two-week-old was rescued and its crippling bonds were broken. In weeks to come its beak will hook downward and its legs lengthen into wading stilts. Birds sprout feathers when a month old and fly at about three months.

a greater influx of flamingos than ever seen before. It's possible they are about to breed."

Next morning, with two visiting United States friends, bird artist Arthur Singer and New York surgeon Robert C. Ashley, I had gone to Magadi.

Exodus Caused by Floods

An awe-inspiring sight greeted us—a congregation, a massing, an overabundance of flamingos that baffles description. All were in perfection of pink breeding plumage, their color accentuated against the white crust, the bright deep blue of the open water, and the primeval black of the mud. They were parading in the curious communal display that precedes mating.

There could be no doubt that, for the first time on record, colonies of lesser flamingos were about to nest at Lake Magadi.

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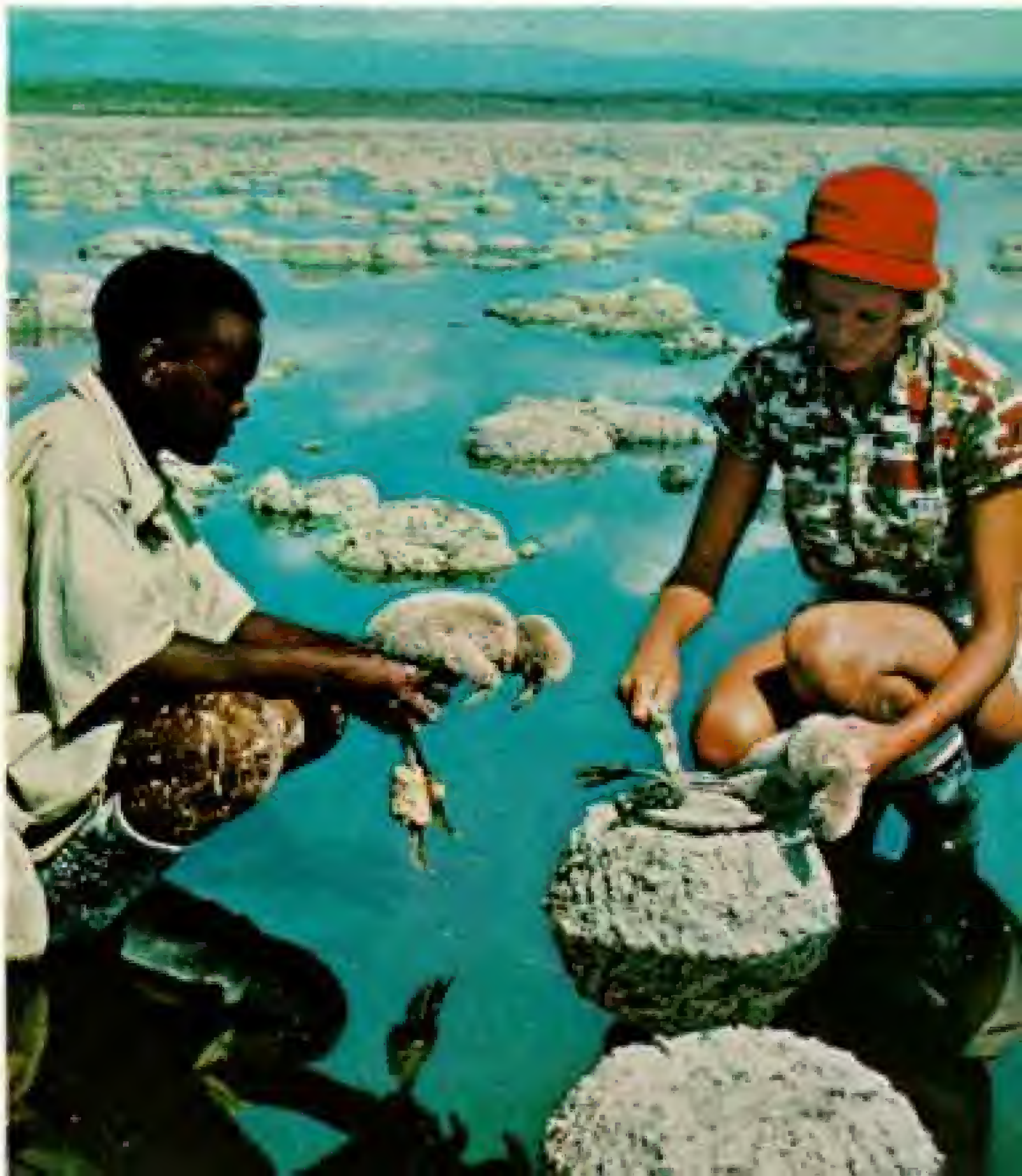
burns. Fledglings thrive in heat that would kill most other young birds.

The question of why the birds had forsaken their ancestral breeding area was answered next day. Dennis Zaphiro, Game Warden of Kenya's Southern Province, reported after an aerial survey that heavy rains had flooded the nesting grounds at neighboring Lake Natron.

Immediately the need arose to protect the colony from careless intruders during the critical nesting period. That was how Alan Root and his pretty wife Joan came into the picture. Both are ardent conservationists and field naturalists, as well as photographers; they let me talk them into camping near the broiling soda flats and serving as unpaid game wardens.

The Roots set up a tent on a lava outcrop across the lake from the soda works and overlooking the main concentration of birds. Two much smaller

Striking off a fledgling's shackles, naturalist Joan Root uses an improvised anvil: an old stove lid atop a flamingo's mud nest. Her Kikuyu helper, Gichoi, holds the next patient.



Kenya schoolboys, freed by a teachers' strike, hold birds for banding following the flamingo roundup. Cpl. Derek Wally, one of many British soldiers who worked to save the chicks, clamps on an identifying leg ring. Banding will help ornithologists trace the migrations of the Magadi flamingos and, eventually, to learn how long they live.

African game scouts and Europeans work together to build a trapping pen.

Chick and Shell Convince a Skeptic that Flamingos Really Hatch From Eggs

African flamingos build nests on alkaline lakes, far from the eyes of man. Under these conditions, Masai tribesmen saw the chicks only after the flocks had trekked to lakeshore springs to drink. Failure to sight nesting birds gave them the notion that the parents bore living young. This bended Masai, who clutches spear and throwing sticks, listens as Joan Root explains the facts of flamingo life.

colonies were strung out farther south, protected by areas of mud and water.

Before the last week of August the mating pairs had built their nests of scooped-up soda mud and laid their eggs in the hollowed crowns of the sun-hardened mounds. Then the chicks began to hatch.

By early September most nests in the main colony contained downies, grayish white with almost translucent red bills and legs (page 939). As they grew, bills and legs changed to the blackish gray of the juvenile state (left).

An estimated 800,000 birds hatched and, when 10 to 12 days old, left the nests. While adult birds made their daily forays for food, the chicks trooped together in the middle of the nesting grounds.

Late-laying pairs on the perimeter of the colony, finding their near neighbors gone, deserted eggs that were on the verge of hatching—and many of them did hatch in the heat of the sun. One of the most harrowing experiences I have known in my lifetime as an ornithologist was to walk through this belt of deserted nests and hear the piteous piping of several thousand chicks calling for parents who would never return. Vultures by day and hyenas by night became angels of mercy to end their sufferings.

Shackles Form on Birds' Legs

Then came September 16. After a look through his binoculars that day, Alan turned to his wife. "Something's wrong with those chicks over in the northeast part of the flock. They don't look very active. I'm going over to see what the trouble is."

What he found appalled him. Dead and dying fledglings were everywhere, thousands of them in and around the shallow lagoons of hot saturated liquid, their legs fettered in heavy shackles of crystallized soda. Obviously the chemical concentration here was greater than in Lake Natron, or even in other sec-

tions of Magadi. The adult birds, unable to sense this, had hatched their young in the midst of a deadly trap.

Working until it was too dark to see, Alan freed perhaps a hundred by using his sheath knife to break the crystallized anklets. But it was a slow process. Obviously, help was needed if the chicks were to be saved. The mature flamingos, able to fly to Lake Natron and Magadi's fresher bays to wade and feed, developed no encrustations.

Next morning found Alan in my home in Nairobi. Minutes later I was telephoning Tony Irwin, editor of the wildlife magazine *Africana* and a live wire of Kenya's press corps.

"We need help," I said.

"You'll get it," he answered when he had heard the story.

Press Spreads Word of Birds' Plight

Tony was true to his word. News of the flamingos' plight was spread by newspaper, radio, and television. Appeals for funds brought in $3,500 almost overnight—so much that further donations were turned down, and we had enough left after our rescue operations to give more than $1,000 to the East African Wild Life Society.

Calls for rescue-team members brought scores of answers—young people willing to brave the hundred-degree heat, the nauseating stench of dead birds, the blinding glare of the soda crust, and the risk that thin spots might give way beneath their feet and plunge them into the hot liquor below.

Walking across the crust was unnerving. It undulated slightly with every step, raising thoughts of a most unpleasant death if one went through.

Forty-eight hours after the *Africana* Flamingo Rescue Fund was launched, Alan was back at Lake Magadi. With him were lengths of plastic hose, a number of collapsible baths in which to wash chicks, and our first two helpers—youths holidaying in Kenya. One was Douglas Wise, a veterinary student from Cambridge, the other Christopher Callow, a medical student from Edinburgh. With fresh water and generous assistance supplied by the Magadi Soda Company, the team began soaking alkali from encrusted chicks.

Two hundred were cleaned up by evening. Five hundred went through the baths the next day. But the task seemed hopeless. It took too long—five minutes—to soak the anklets off each chick, in addition to the time consumed in carrying chicks to the washing station and returning them to the flock. A more efficient way had to be found.

In camp that night everyone experimented with removing encrustations from dead flamingos. It was Chris Callow who came up with the answer. He discovered that if the anklet was held against a hard surface, then tapped sharply with a light hammer, it broke in two without injury to the fledgling's leg. The sun-baked mound of a flamingo nest, we found, was just the right hard surface.

Tried next day, the "C.C. method," as we called it, proved an immediate success. More than a thousand young were relieved of their deadly impediments.

Now, however, the removal of anklets was faster than the collecting. We needed more bird catchers. A strike of Kenya school teachers, of all things, provided a source—idled schoolboys willing to help round up the birds in trapping pens (page 942). Also pitching in were volunteers from Army and Royal Air Force units, and others eager to help.

By the second week of October, the rescue crisis passed. Seasonal rains came to dilute the soda-saturated lagoons. And the young flamingos reached the migratory age of six weeks at which they began to trek in loose formations across the burning soda wastes to bays of open and comparatively fresh water near the southern end of the lake.

227,000 Flamingos Saved From Death

We stopped to assess our efforts. More than 27,000 young flamingos had been manually freed from their soda fetters. But more important, at least 200,000 other juvenile birds had been prevented by the presence of the rescue teams from entering the shallows where the soda was most concentrated. Counting young birds from other areas of the lake, close to 400,000 fledglings—half the season's hatch—safely made the five-mile migration across the dangerous flats.

Not only was the operation the biggest and most successful African bird rescue in history, but it was also probably the world's cheapest. Thanks to the volunteers, every dollar used by the rescue fund saved 92 flamingos from death.

Now another year has gone by. Happily, however, there has been no sign of flamingos nesting on Lake Magadi in 1963; the Masai report large flocks on Lake Natron instead. Another great bird rescue has not been needed.

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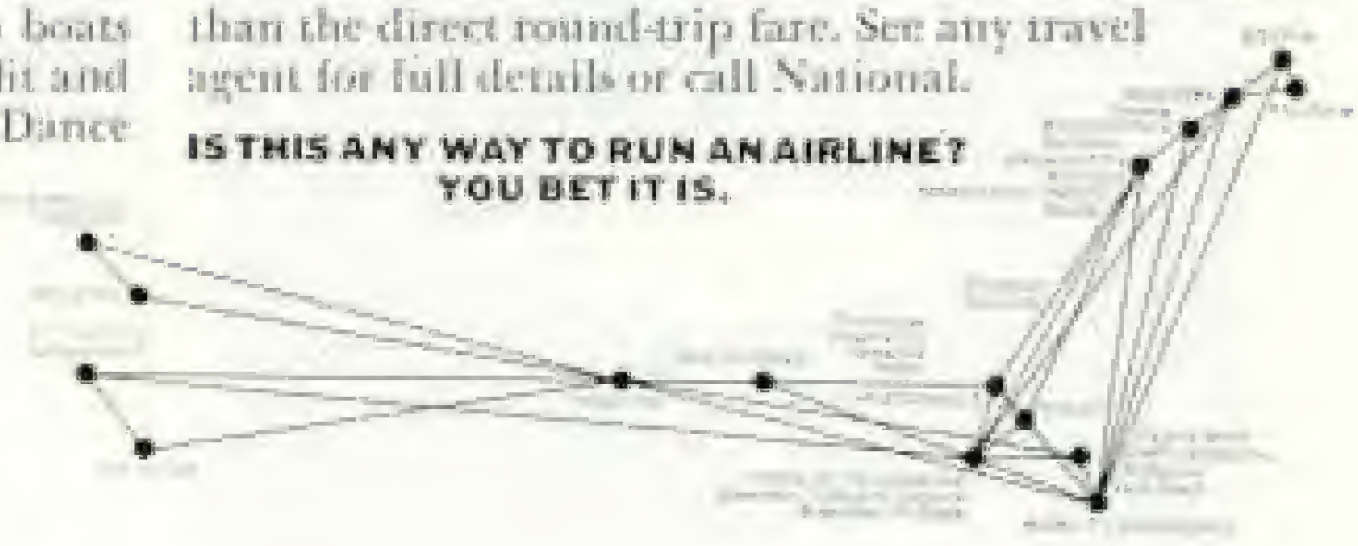

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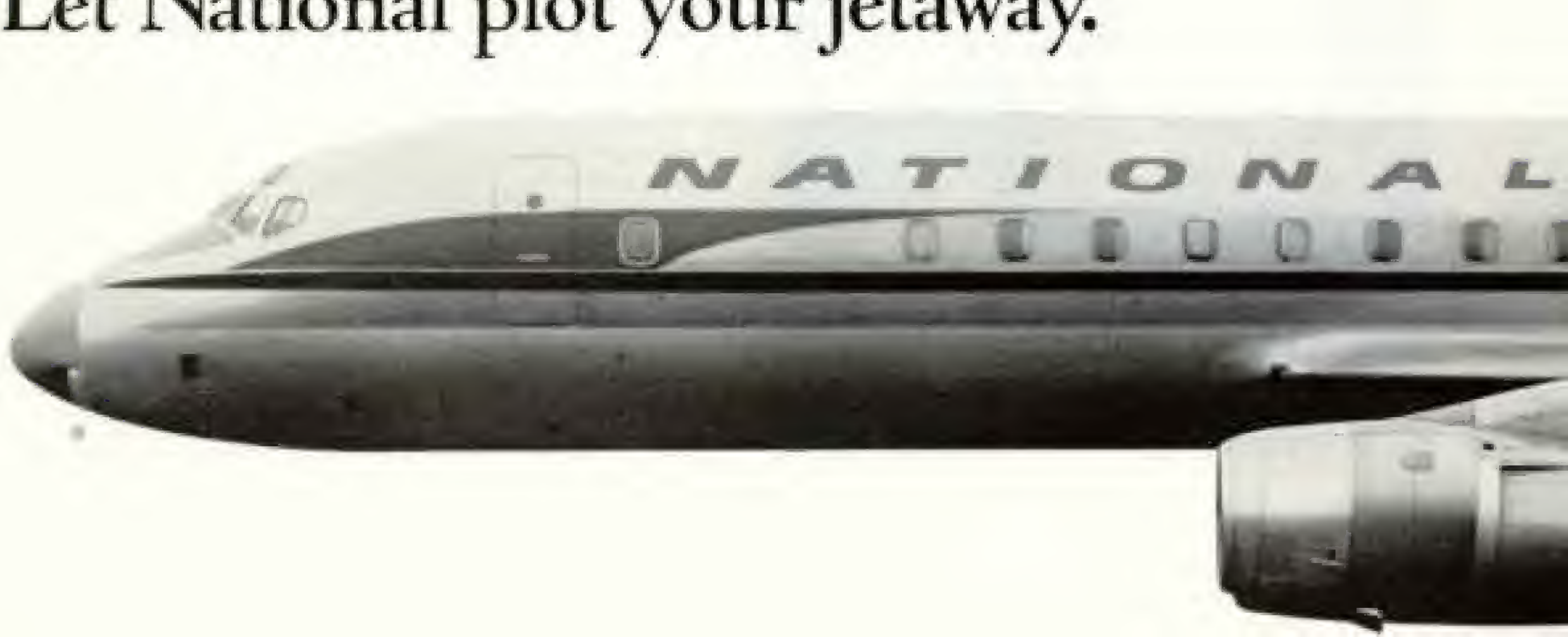

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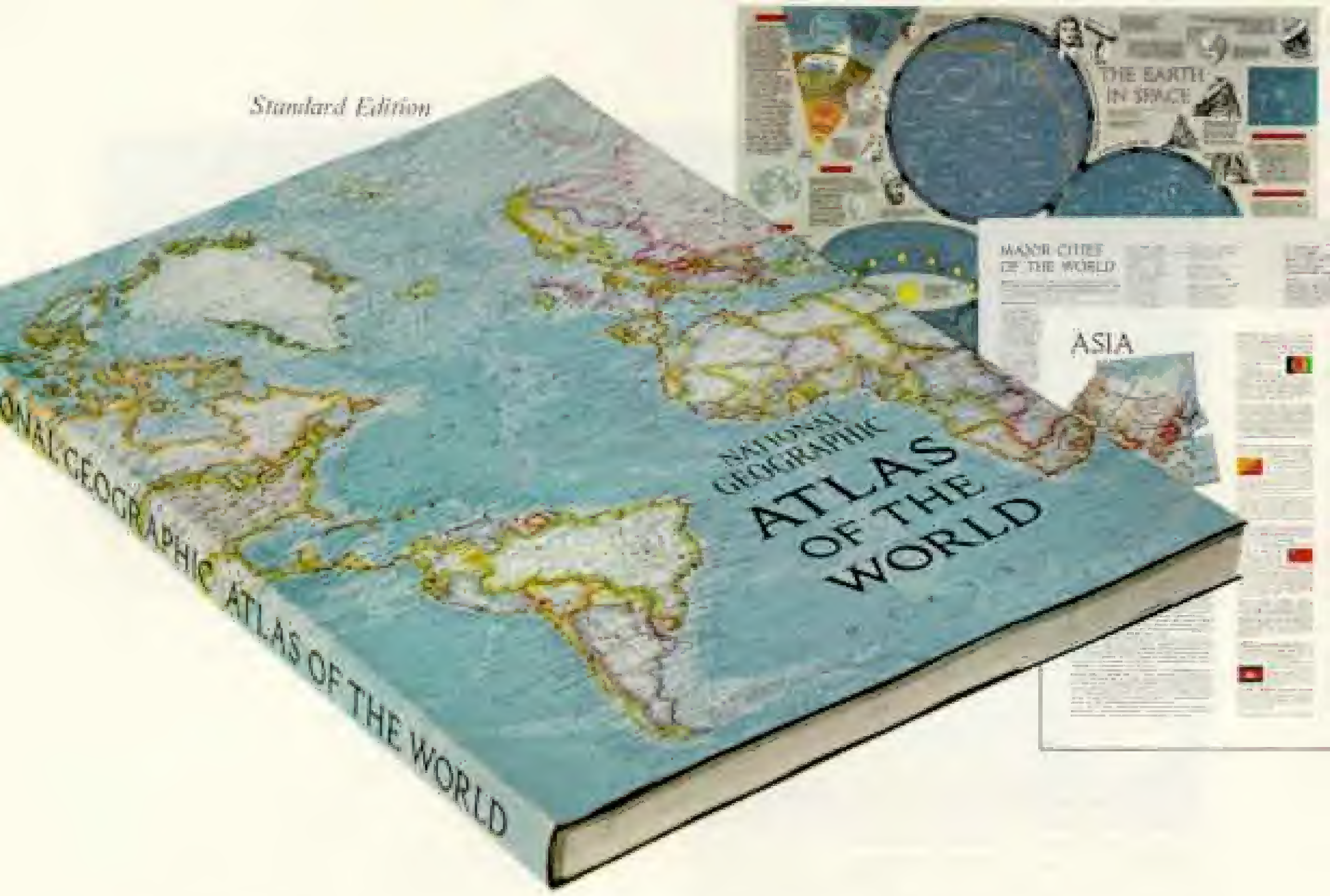

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