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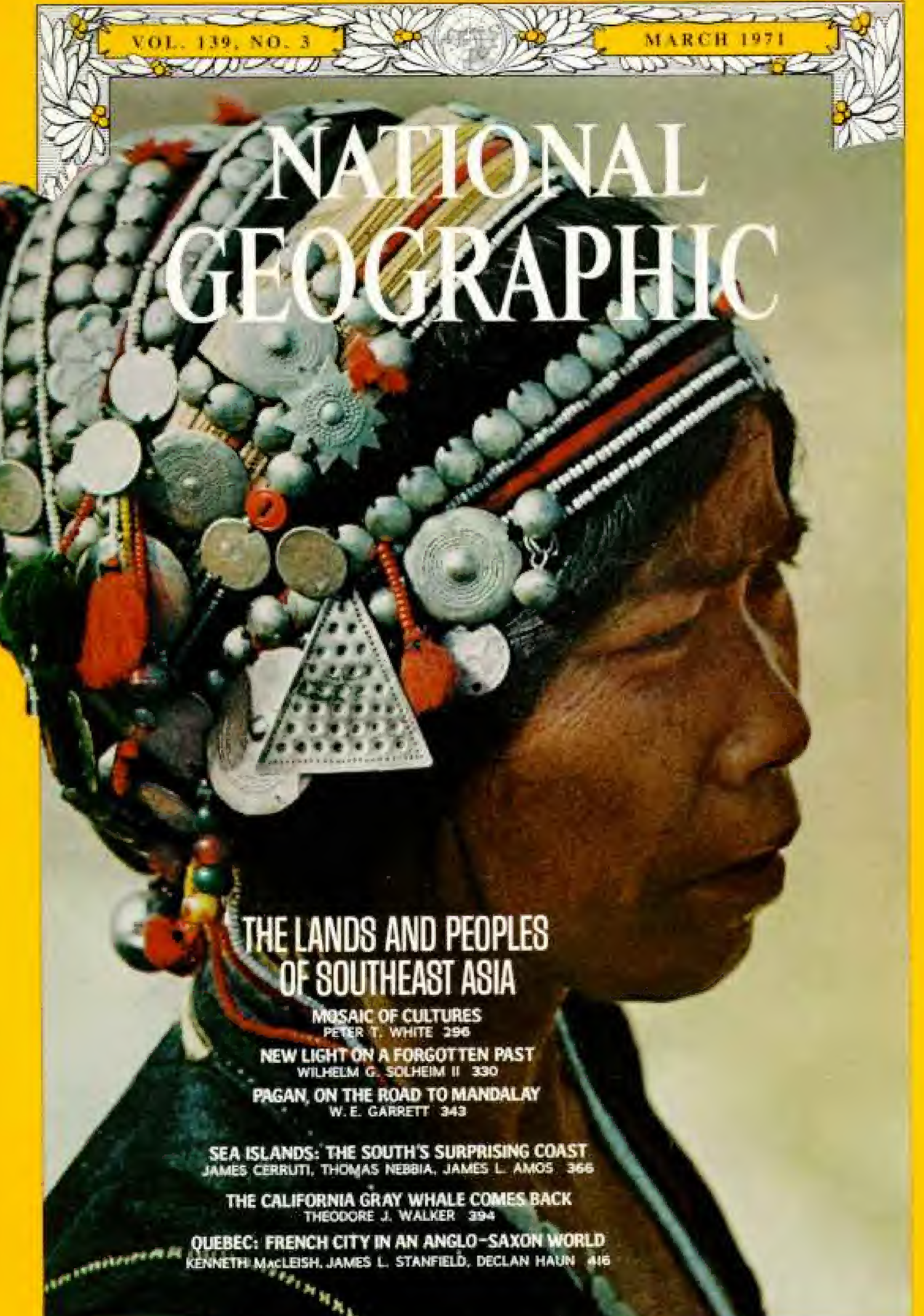

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Geographic staff man discovers a new orchid

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SCIENTISTS WORKING with National Geographic Society support have added scores of new species to earth's rosters of animals and plants—most recently fishes from Easter Island waters and birds from New Guinea, including a previously overlooked bird of paradise.

Last year Luis Marden (above, center), Chief of NATIONAL GEOGRAPHIC's Foreign Editorial Staff, joined the ranks of the discoverers while exploring the Brazilian hinterland for an article on orchids, which will appear next month. Traveling with naturalist Dr. Augusto Ruschi, left, he came across this unrecorded beauty. Dr. Ruschi named it for its finder—*Epistephium mardeni*.

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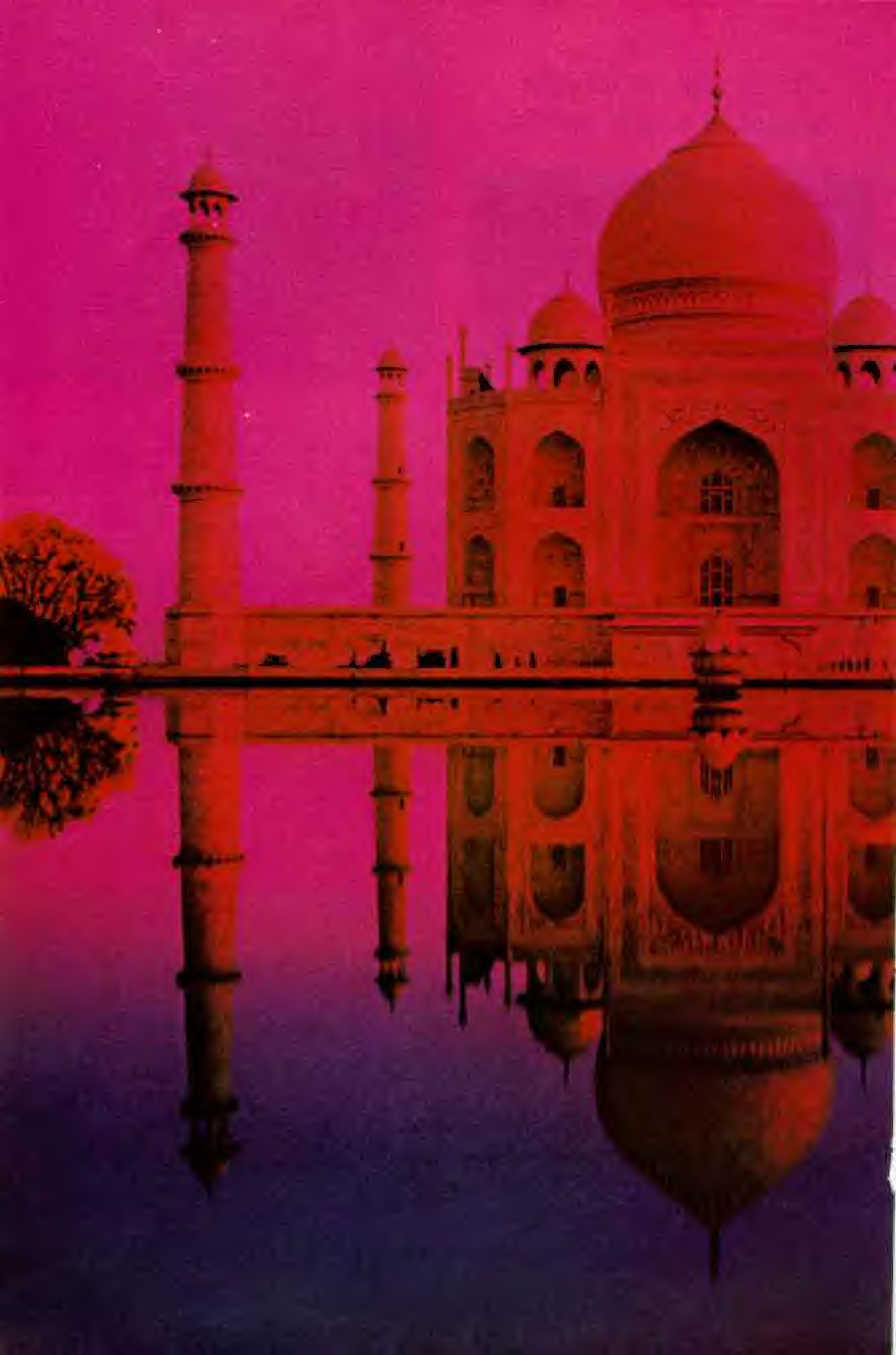

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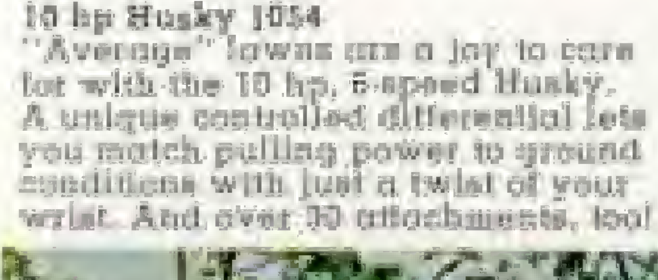

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1971

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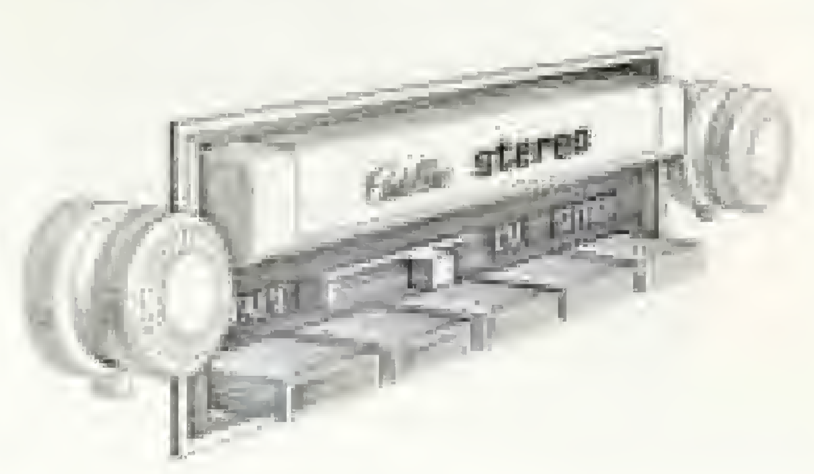

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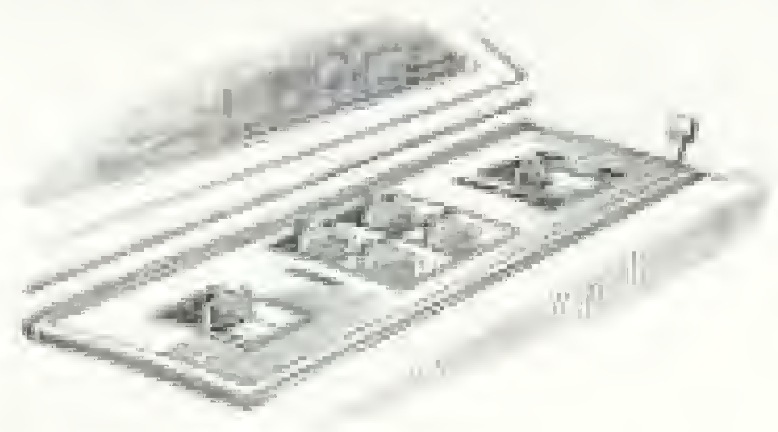

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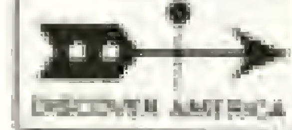

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The search for and production of oil by

will we leave them?

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Standard Oil Company (New Jersey)

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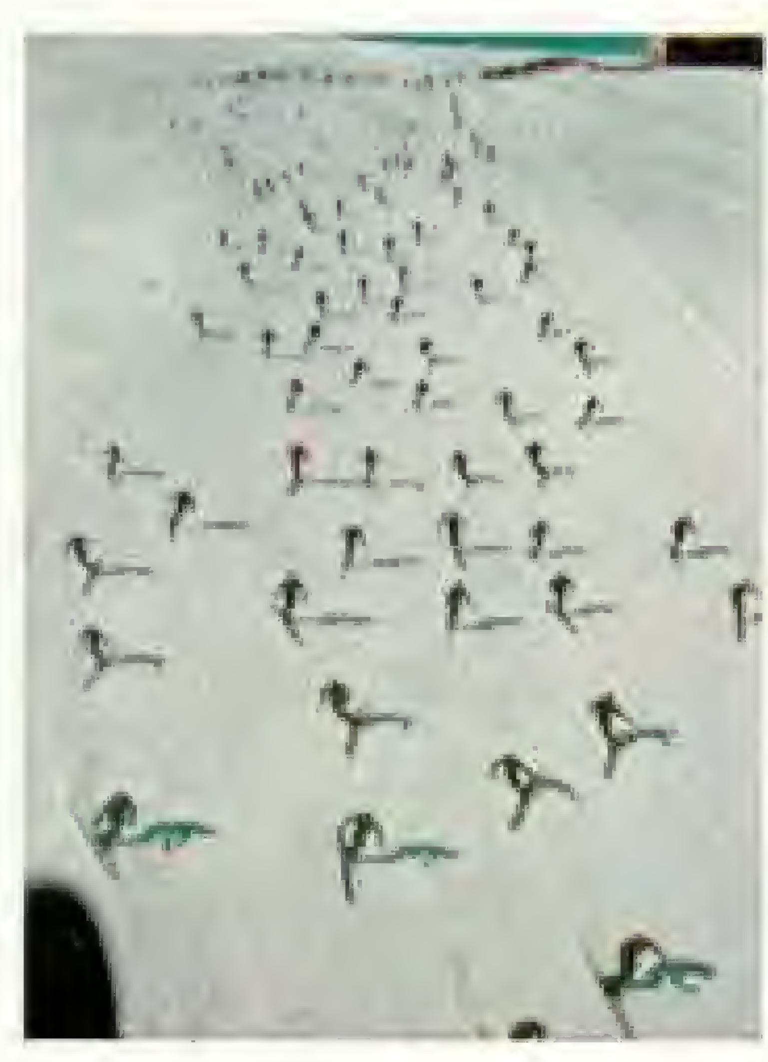

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It could also be a picture of the beginning of their fulfillment.

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We sell life insurance.
But our business is life.

GM

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The 1971 Olds Ninety-Eight is more comfortable than ever. Every significant interior dimension has been generously increased. The seats are uncommonly comfortable. Ninety-Eight's new front-seat design is simple and sag-proof: full foam, molded to the precise shapes and depths desired. The comfort easily rivals that of your own favorite armchair. In sedan models, the front seat also includes a center armrest.

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This year, when you head for the open road, take the comforts of home with you—in a spacious, luxurious Oldsmobile Ninety-Eight.

NATIONAL GEOGRAPHIC

March 1971

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A graphic look at the lands and peoples of Southeast Asia

MAINLAND Southeast Asia is about as distant from the United States as anywhere on earth. Yet we place such importance on the future of five of its nations and their 91,000,000 people that we have sacrificed thousands of American lives and spent billions of American dollars trying to protect them.

Yet our effort may ultimately fall short of success. Why?

For one thing, we have neglected our homework: *We do not really know these myriad people.* We do not know whence they came; we are baffled by their thought processes; we find their customs difficult to understand; we are frustrated by their behavior.

Once I asked a U. S. sergeant about the tribesmen who dwell in Viet Nam's central highlands. Answering, he spoke, I think, for many of us: "You talking about gooks? There's two kinds. The Charlies shoot at us. The Friendlies shoot with us—but what help is a guy who can't even talk English?"

Clearly, we are confronted here with a void in human geography.

The NATIONAL GEOGRAPHIC staff, with its many specialized skills, has dedicated itself to filling this void. Staff men W. E. Garrett and Peter T. White—who have been writing about and photographing Southeast Asia for the past decade—led the task force.

Bill Garrett conceived and directed the production of the unique ethnic map included in this issue. After consulting scores of scholars throughout the world, our cartographic division carefully blended a physical map with a wealth of notes outlining cultures, religion, history, economy, and politics.

For the lead article, Peter White crisscrossed mainland Southeast Asia. To his own wide experience he added that of hundreds of others—scientists, statesmen, writers, soldiers, villagers.

The second article offers a hypothesis that could upset our present beliefs as to the beginnings of civilization. On the strength of carbon-dated archeological finds, Dr. Wilhelm G. Solheim II theorizes that the peoples of mainland Southeast Asia were cultivating plants, making pottery, and casting bronze at least as early as those of the Near East. Whether or not his theory is eventually accepted, Dr. Solheim immeasurably adds to our knowledge of these peoples.

Third, Bill Garrett takes us to Burma's Pagan, capital of one of the most advanced cultures in Asia seven centuries ago. With excellent photographs and a fascinating story, Pagan's glorious past comes to life.

Here, then, is a sympathetic view of foreign peoples, designed to help National Geographic Society members gain a deeper understanding of this critical sector of our changing world.

—THE EDITOR

WITH THIS ISSUE: A SPECIAL TWO-SIDE SUPPLEMENT MAP OF ASIA AND THE PEOPLES OF MAINLAND SOUTHEAST ASIA

SOUTHEAST ASIA 1

Mosaic of Cultures

KODACHROME BY PETER BINSTADTER © N.G.S.

Graceful as a waterfall, the moss-clad hand of a giant Buddha reflects the serenity of mainland Southeast Asia's dominant faith. Pilgrims to a shrine at Sukhothai, Thailand, applied the bits of gold leaf that glove the image's five-foot-long fingers. Taking different forms in different lands, Buddhism permeates the kaleidoscope of cultures that make up Thailand, Burma, Laos, Viet Nam, and Cambodia.

TRAFFIC SWIRLS about me where the six lanes of Ploenchit Road cross the eight lanes of Rajdamri, in Thailand's capital of Bangkok. Colorful signs proclaim British Overseas Airways and Caesar Key Club. Here too stands a shrine to a Hindu deity, the four-faced Brahma, creator of the world.

Dusk falls, the signs light up, the crowd thickens around the shrine. I detect the odor of incense and jasmine, mixing with the exhaust fumes in the humid air.

People come to the shrine to ask favors: a young lady in slacks, hoping to dream of a good lottery number tonight, an engineering student anxious to do well on his exam tomorrow.

People come to give thanks for favors granted: a housewife for the birth of a son; a builder for a fat plumbing contract.

The shrine rises on the grounds of a modern hotel, which isn't surprising. Just about every building in Bangkok, business or residential, has a shrine to honor the spirit that inhabits the ground on which the building stands. But nine out of ten people in Thailand are Buddhists, so what's a gilded image of a Hindu god doing here?

"When our hotel was under construction, there were unhappy incidents," the manager tells me. "The ship bringing marble from Italy sank. The contractor ran out of money. A

By PETER T. WHITE
FOREIGN EDITORIAL STAFF

PHOTOGRAPHS BY
W. E. GARRETT
ASSISTANT EDITOR

medium was consulted, and the message was that we erect an image of Brahma, since Brahma is a patron of building contractors. After all, he built the world."

The spirit has turned out to be powerful and good, the manager adds, and naturally it likes elephants, because the hotel is named Erawan, for the three-headed elephant ridden by another Hindu god. People who have been helped therefore bring wood carvings of elephants as presents, and eventually these are auctioned, at high prices, having belonged to the spirit and thus become powerful too. The proceeds go to a Buddhist monastery.

To me, this nightly scene at the Erawan corner epitomizes the manifold influences that have mingled in mainland Southeast Asia for thousands of years.

Those shiny cars, for example, symbols of technology in the service of mass consumption, represent a brand-new influence—an American influence—at work in Thailand, Burma, Cambodia, Laos, and Viet Nam. Most of the cars happen to be made in Japan and Germany, but the idea of mass-producing automobiles, and selling them on credit, stems from Detroit.

The outpouring of feeling at the shrine, on the other hand, manifests an influence rooted in prehistoric times and still affecting the behavior of nearly everyone in each of these countries. That is awe of the spirits, meaning the spirits of places and things; of beings animal and quasi-divine; and the spirits of the dead.

Everywhere, mixed into everyday life, one encounters influences Indian and Chinese. It was these cultural currents, as much as the lay of the land, that led people to call this part of the world Indochina.

I WENT TO SOUTHEAST ASIA first in 1961, to write an article about the war in Laos and another about South Viet Nam. As I traveled, I had an uneasy feeling that I was in a place so far away, so different from my own background that it would take time to comprehend who the people were, how they thought, how they felt about even ordinary things.

I have been back five times. I have, in addition, read much about the people who live there, their art and literature, their religious beliefs, their wars, their conquests and defeats. I have talked to scholars, and to friends I have made in the villages and cities. In short, I have tried to gain an appreciation of their civilization, whose roots may be the oldest in the world.

To do this in Southeast Asia, which means

Symbols of vanished glory and of hope for tomorrow. Crumbling spires of old Ayutthaya loom at dusk behind a girl of modern Thailand (following pages). Founded as a Siamese capital in 1350, Ayutthaya fell three times to Burmese invaders—a history of strife characteristic of the region.

EKTACHROME BY W. E. GARRETT © N.G.S.

BURMA

GOVERNMENT: SOCIALIST STATE. **AREA:** 261,789 SQ. MI. **POPULATION:** 28,000,000; MOSTLY BURMAN; ALSO SHAN, KAREN, CHIN, KACHIN, AND KAYAH. **MAJOR RELIGION:** BUDDHISM

LAOS

GOVERNMENT: CONSTITUTIONAL MONARCHY. **AREA:** 91,429 SQ. MI. **POPULATION:** 3,000,000; MOSTLY LAO, WITH NUMEROUS HILL TRIBES. **MAJOR RELIGION:** BUDDHISM

NORTH VIET NAM

GOVERNMENT: COMMUNIST STATE. **AREA:** 61,293 SQ. MI. **POPULATION:** 21,000,000; MOSTLY VIETNAMESE, A NUMBER OF HILL TRIBES, AND CHINESE. **RELIGION:** BUDDHISM, ALSO CATHOLICISM, TAOISM, AND CONFUCIANISM

Hanoi

Luang Prabang

Vientiane

Rangoon

Irrawaddy

Mekong

SOUTH VIET NAM

GOVERNMENT: REPUBLIC. **AREA:** 67,108 SQ. MILES. **POPULATION:** 18,000,000; MOSTLY VIETNAMESE, NUMEROUS MOUNTAIN TRIBES, CHINESE, AND CAMBODIANS. **RELIGION:** BUDDHISM, ALSO CATHOLICISM, CONFUCIANISM, TAOISM, AND CAO DAISM

Bangkok

Phnom Penh

Saigon

THAILAND

GOVERNMENT: CONSTITUTIONAL MONARCHY. **AREA:** 198,456 SQ. MI. **POPULATION:** 35,000,000, MOSTLY THAI; ALSO CHINESE, MALAY, VIETNAMESE, AND KHMER. **MAJOR RELIGION:** BUDDHISM

CAMBODIA

GOVERNMENT: PROVISIONAL REPUBLIC. **AREA:** 69,898 SQ. MI. **POPULATION:** 7,000,000; MOSTLY CAMBODIANS (KHMER), ALSO CHINESE, VIETNAMESE, AND SEVERAL HILL TRIBES. **MAJOR RELIGION:** BUDDHISM

Standing at varying stages of attention, girls of Phnom Penh undergo brief basic training. The young recruits, who call themselves commandos, will bolster a militia force that guards schools, offices, and factories of the Cambodian capital. They volunteered last year after the ouster of Prince Norodom Sihanouk and invasion by North Vietnamese troops, when Cambodia found itself reluctantly swept into the war in Southeast Asia.

MAP BY GEOGRAPHIC ART DIVISION; EKTACHROME BY PETER T. WHITE © N.G.S.

trying to bring simplicity to diversity, one must sort out and separate things originally theirs from things they have accepted (always, however, with their own alterations) from their neighbors.

What, for instance, came from China?

Except for the language, Viet Nam adopted virtually all of China's culture—so much so that in Hue, in central Viet Nam, I often felt that I might well be in China. And while it's true that the spoken Vietnamese language cannot be understood by a speaker of any version of Chinese, a Vietnamese and a Chinese might write notes to each other; some Vietnamese can read Chinese characters.

China contributed less to Thailand, Cambodia, Laos, and Burma (where the massive influence has been Indian). Chinese influences showed in down-to-earth things, mostly. The weights and measures of the marketplace. Traditional medicine. Kite flying.

And what came from India?

The stuff of much literature and art—notably the tales of the *Ramayana*, whose kings and gods and demons animate the dazzling classical dance and ornament the gaudy covers of notebooks children take to school. Above all, the teachings of that supreme Indian sage born 2,500 years ago, the Buddha.

I have been to housewarming ceremonies in Bangkok where the host invited Buddhist monks to chant a blessing. After they left, a practitioner of Hindu ritual—a Brahman—did the same in his fashion. Then the host brought candles and fruit to the pretty little spirit house in the garden (page 305).

The fact is that diverse beliefs coexist not merely side by side but right in people's heads. I used to wonder, what does he really believe? He may very well believe it all. Here a man can be a 100-percent Buddhist, a 100-percent follower of Hindu ritual, and a 100-percent animist, or believer in spirits—and feel completely sincere and comfortable about it. If you point out that such a mixture would add up to 300 percent, which is impossible, he might not understand what you are talking about, or advise you not to worry so much about arithmetic.

THE MIXTURES OF PEOPLES—that is, the assortments of ancestry and languages—are as intriguing as those of cultures. That's why an ordinary political map may mislead as much as it informs.

Take Burma. Out of 28 million inhabitants, some 18 million are Burmans. Almost 5 million

Funan: a flowering of art and trade

WHILE DISTANT ROME was expanding in the first century A.D., India was establishing trading posts among tribespeople living beside the Gulf of Thailand. These people fused sophisticated Indian culture with their own and created a dynamic kingdom.

The energetic Funanese traded widely, became skilled goldsmiths and jewelers, and planned a masterful irrigation system, still impressive today. Floods drove them inland. Ultimately Funan yielded to Chenla, which absorbed its culture and blended it with that of the Khmers, who created fabled Angkor (pages 308-309).

In a striking composite (**following pages**), to which the sketch above is keyed, GEOGRAPHIC staff artist Ned Seidler portrays some of the kingdom's ancient treasures, most of them discovered at the Funanese city of Oc-eo: 1) life-size statue combining features of the Hindu gods Vishnu and Shiva; 2) ornate stone from above a doorway; 3-4) rings of gold and sapphire; 5) engraved cameo; 6) gold ornament—perhaps a dagger pommel; 7) crystal ear pendant and beads; 8) Roman gold medal dated A.D. 152, portraying the Emperor Antoninus Pius, indicating a link with Rome, possibly through Indian traders; 9) seal ring and impression written in Sanskrit; 10) the two sides of a silver Funanese coin beside a smaller one, both from A.D. 300 to 400; 11) gold buckle; 12) decorative gold pin; 13) bronze animal bell, actual size, with 14) ornamental gold bell; 15) gold and glass-bead necklaces; 16) gem-studded gold buckle, viewed from front, back, and side (with clasp open).

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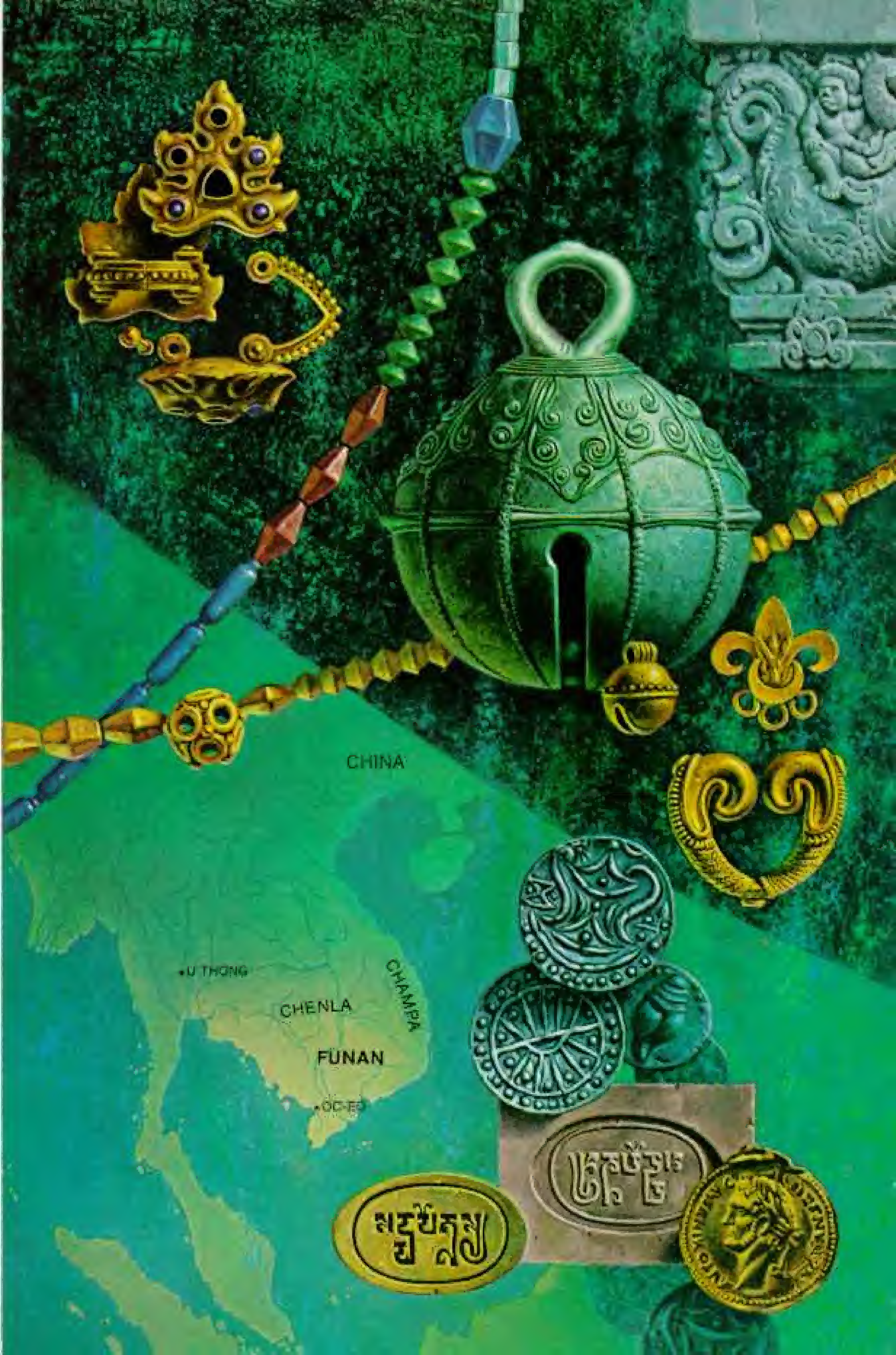
CHINA
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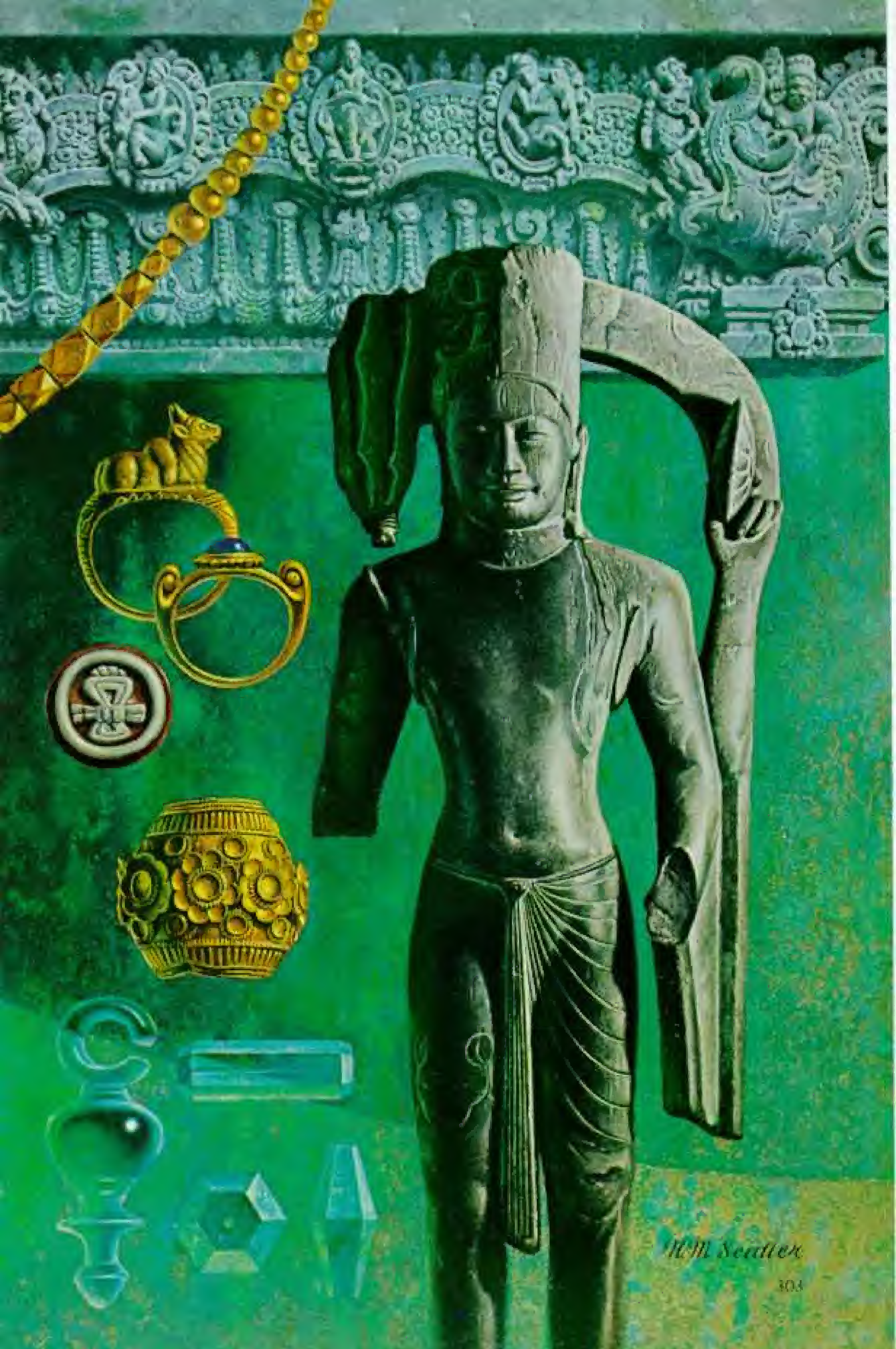


more belong to smaller groups—among them the Karens, Kachins, Chins, and Shans. True, each of these four ethnic minorities has a state within the Union of Burma, but each overspills its boundaries. For example, the Karens' state has only three-quarters of a million inhabitants, but there are more than 2 million Karens in Burma.

And where on the political map of Burma are the other five million who belong to even smaller minorities, such as the Naga and Lahu and Lisu, the Palaung, and Wa? You need the map, **The Peoples of Mainland Southeast Asia**, a supplement to this issue, to tell who's where.*

The Thai of Thailand have, in addition, a different kind of ethnic mix-up.

Immigration from China has led to a good deal of intermarriage, especially in Bangkok, where an enterprising Chinese has always been considered a good husband. The king appointed Chinese to high rank; their daughters entered the palace. All the kings of Thailand's present dynasty have had Chinese blood. Until the recent influx of people from the countryside, Bangkok's population was, by descent, at least half Chinese.

Even now the Chinese element makes up a third of Bangkok's people. At least three-fourths of the city's shops, factories, and banks are owned and operated by Chinese. But what does one mean by Chinese?

Many people of Bangkok are Chinese by ancestry, but in speech and thought they are completely Thai. I know of one prominent family that brings up some of its sons to read, speak, and think entirely in Chinese, while the others read, speak, and think only in Thai. (Different mothers, of course.)

And what about appearance? Some Chinese look Thai; some Thai look Chinese. Southeast Asians often cannot tell each other apart by their faces. When Prince Norodom Sihanouk, former ruler of Cambodia, visited a Buddhist convocation in Rangoon, he was taken for a Burmese by a Burmese sitting next to him. Burmese say that Prime Minister Pham Van Dong of North Viet Nam looks like a Burmese too.

The explanation is that virtually all mainland Southeast Asians belong to the worldwide family of Mongoloids, whose various members look a lot less distinctive than often is assumed. In Bangkok's atmosphere of intermarriage and assimilation, a man usually is accepted as he wishes to identify himself.

REDISCOVERING THEIR PAST has become a deep concern among mainland Southeast Asians.

This is a manifestation of healthy nationalism based on a desire to prove their own cultural identity after a century of European domination, during which Burma was ruled by Great Britain; Viet Nam, Cambodia, and Laos were subjugated by France; and Thailand, while remaining independent, felt the squeeze from both Britain and France.

It also is a response to exciting discoveries, now coming thick and fast, which put the past, so to speak, into flux as never before.

"Everything from India! Everything from China! We're getting rid of that stuff in our history books," Dr. Nyi Nyi, Deputy Minister of Education in Burma, told me.

He wears the Burmese national costume, a wrap-around skirt called a *longyi*, derived from India, and a short formal jacket with three pockets and cloth buttons, derived from China. He doesn't deny the importance of influences from India and China, but the notion that everything of importance, every truly creative impulse, came from one or the other—as propounded until recently by distinguished Englishmen and Frenchmen—strikes him as patronizing and erroneous.

Foreign scholars today tend to agree with Dr. Nyi Nyi. For example, Professor Jean Filliozat, Director of l'École Française d'Extrême-Orient, a group of French scholars with many decades of experience in Southeast Asia, said to me with great emphasis: "What these countries borrowed from India and China was completely changed by their own artistic genius, so that their masterpieces were something entirely new. Angkor has no parallel in India."

*Additional copies of this supplement may be purchased rolled, suitable for framing, for $2.00 on heavy chart paper or $3.00 on plastic, plus 35 cents postage and handling. Order from the National Geographic Society, Washington, D. C. 20036.

East meets West on a Bangkok street. Ornate spirit houses attest to the animist beliefs that pervade Thailand and the rest of Southeast Asia. At the little shrines homeowners propitiate spirits believed to inhabit every plot of land. Western influence announces itself with signs advertising Fiat automobiles and the Hollywood Theater showing of Walt Disney's *Charlie the Lonesome Cougar.*

KODACHROME BY W. E. GARRETT © N.G.S.

FIAT
HOLLYWOOD

The most startling ideas come from Americans. For instance, anthropologist Dr. Paul K. Benedict has traced the origins of numerous words previously thought to have been borrowed by Southeast Asians from the Chinese. He believes that, instead, it was the other way around, that those words went from Southeast Asian languages *into* Chinese. These are basic words denoting the advance of civilization: plow and seed, kiln and pottery, ax and boat, iron and gold. . . .

Dr. Benedict theorizes that there were many other cultural exchanges between the Chinese and the early inhabitants of Southeast Asia, "with the Chinese as the recipients rather than the donors." Dr. Wilhelm G. Solheim II, of the University of Hawaii, develops a similar thesis from archeological evidence. (See "New Light on a Forgotten Past," beginning on page 330.)

WHO WERE THESE aborigines? And how did their civilizations grow in Southeast Asia?

Prehistoric skulls, many of them dug up in North Viet Nam during the early 1960's, have led Dr. Nguyen Duy, of the Academy of Sciences in Hanoi, and Professor P. I. Boriskovsky, of the Institute of Archeology in Leningrad, to suggest this genesis:

First came a mixture of peoples known to anthropologists as Australo-Negroids, presumably from the south, from what is now Indonesia. Then came Mongoloids, from the Asian north.

The two peoples mingled, producing a population of southern Mongoloids who created Southeast Asia's most distinctive early civilization. This is the fourth-century B.C. bronze culture of Dongson (pages 336-7), named for the place in North Viet Nam where its artifacts were first excavated.

Later, and farther south, rose an impressive state now known only by the name that Chinese records give to it: the Kingdom of Funan. It appeared in the seventh century of the Buddhist era (roughly contemporary with the first century A.D., the zenith of the Roman Empire). Such was its splendor a century later that Chinese ambassadors, who as a rule were unimpressed by anything not Chinese, took note of Funan's treasures of precious metals and gems (pages 301-303).

Indian merchants who exchanged the gold of Rome for the spices of China found Funan a convenient stopover on the trade route. They settled and brought Hindu and

India and China cast long shadows

EVER DIVIDED, the rich peninsula of Southeast Asia has long attracted the attention of its giant neighbors. Indians, bringing their Hindu and Buddhist faiths, arrived as traders. Chinese came as merchants and colonizers.

Seventh-century tribute bearers carry gifts to China's ruler in the scroll above. Coming from Borneo and the Kingdom of Champa in present-day Viet Nam, they bring elephant tusks, petrified wood, peacock fans, two goats, and a caged parrot.

Reflecting Indian influence, a Brahman (right) who serves as teacher to the Thai king discusses astrology in a Hindu temple. A member of the highest Hindu caste, he advises the Buddhist king on all court rituals.

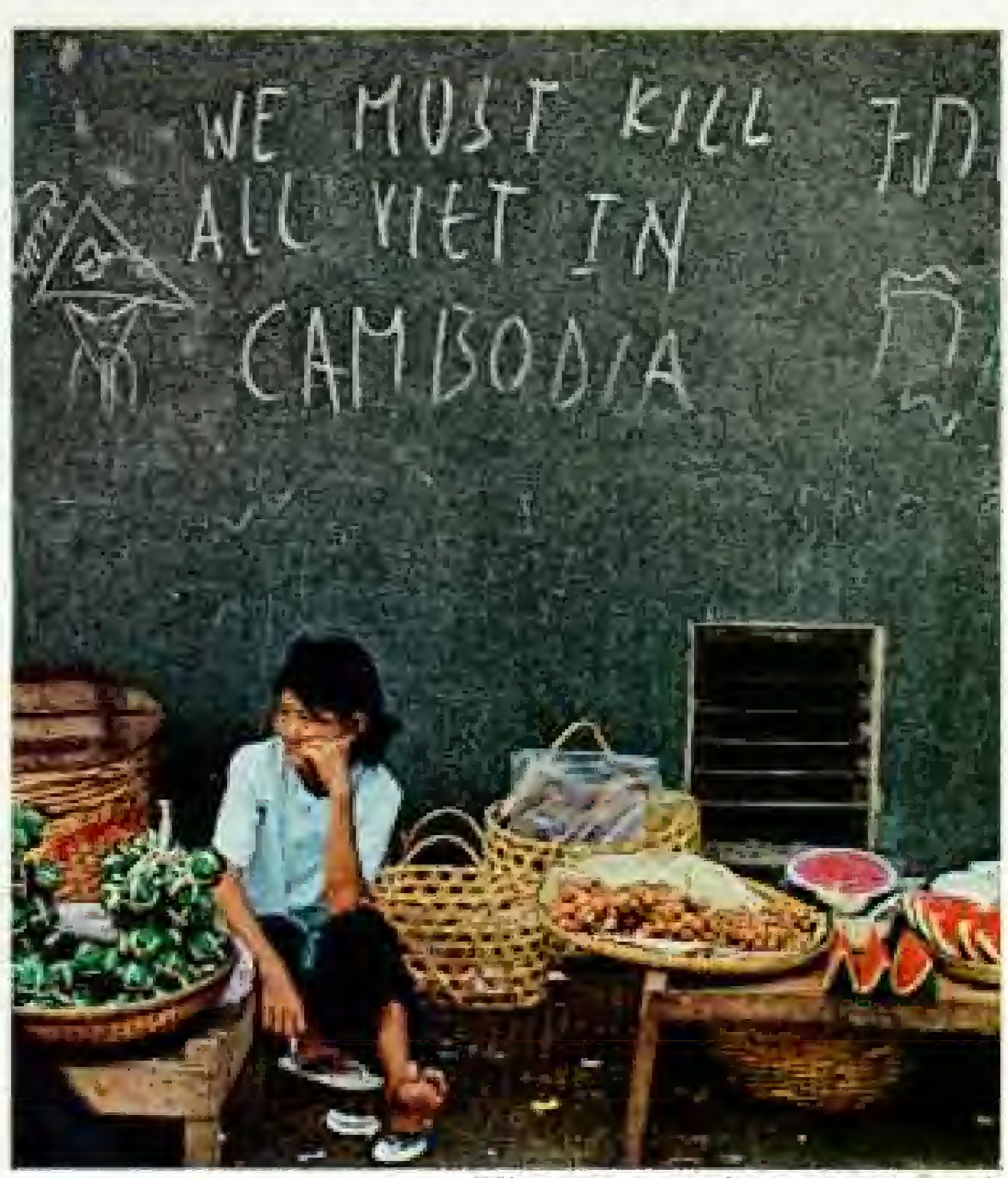
EKTACHROME (ABOVE) BY DEAN CONGER © N.G.S.; PAINTING FROM THE COLLECTION OF THE NATIONAL PALACE MUSEUM, TAIPEI, TAIWAN

Caught in the forest's stranglehold, buildings crumble at Angkor, the great stone city of the ancient Khmers. The Khmer Kingdom of Kambuja, which gave its name to Cambodia, flourished for six centuries until the capital fell to the Thais in 1431. For four

centuries afterward the city lay prey to the jungle, virtually unknown to the Western World. Today Communists occupy the area of the ruins—including the enormous *wat*, or temple—shutting off the flow of tourists who once flocked to this wonder of Southeast Asia.

European unexpectedly shows up on an 18th-century Siamese lacquer panel. As the grotesque horde of Mara, Lord of Evil, futilely assails the unseen Buddha, a mounted Dutchman in its midst draws a bead on the Blessed One. The Westerner's presence among the sage's attackers reflects a Siamese attitude lumping early European traders with the other evil forces with which Buddha must contend.

Smoldering hatred finds voice in Phnom Penh. Warred upon in earlier times by their neighbors, Cambodians live uneasily beside the aggressive Vietnamese, some 500,000 of whom dwell within their borders. Last spring, with the movement of North Vietnamese armies into Cambodia, the old violence flared anew; Cambodians massacred hundreds of Vietnamese civilians and sent their bodies floating down the Mekong River. This sign, chalked above a vendor's stand, appeared in Cambodian, French, and English—the last two presumably for the eyes of the foreign press corps.



EKTACHROMES BY TERENCE KHOO, BLACK STAR © N.G.S.

Buddhist teachings, and Indian forms of government, literature, and art.

Until recently the only excavated Funanese archeological site was in South Viet Nam: the ancient Oc-eo, in the Mekong Delta area. Here many of the kingdom's treasures had been discovered. In 1964, however, something new was added to the past. At U Thong, 60 miles northwest of Bangkok, Professor Jean Boisselier of the Sorbonne found more objects of the Funan period.

The conclusions? That the influence and culture of Funan extended at least as far west as the present-day town of U Thong in Thailand; other researches indicate that the empire may have reached far down the Malay Peninsula.

WHAT OF LATER AGES? Inscriptions, chronicles, and the magnificent ruins of cities tell of kingdoms come to grandeur and disaster.

The Khmer, as the Cambodians still call

DETAIL FROM THE LACQUER PAVILION AT SUAN PAKKAD PALACE, BANGKOK; COURTESY PRINCESS CHUMBHOT OF NAGARA SVARGA

themselves, inherited Funan around A.D. 600, and by 1200 ruled much of mainland Southeast Asia. Their capital of Angkor—which I visited shortly before the war in Cambodia put a halt to sightseeing there—remains one of the wonders of the world (pages 308-309). But its glory was snuffed out by the Thai in 1431.

A Lao kingdom called Lan Xang emerged from Khmer control in the 14th century, and extended as far east as the Annam Cordillera, west and south into present Thailand and Cambodia—and then fell vassal to the Burmese, the Vietnamese, and the Thai.

The Thai, or Siamese, rose to rule from northern Thailand south into the Malay Peninsula, until in 1767 their capital, glittering Ayutthaya, was destroyed by the Burmese.

Its walls, six miles long, were overshadowed by gilded palace towers, and I was told many a tale of gory happenings beneath them. On the sites of these towers and of the city gates, pregnant women, caught at random by order of the king, had been crushed—so that

they might turn into fierce spirits, warding off attack. According to a contemporary Burmese account, the city's most powerful spirit resided in a great cannon. But in a crucial battle against the Burmese, after the gun had been carefully loaded, it failed to go off. The dispirited Siamese gave up the fight.

TRIBUTE TO THE EMPEROR of China was paid by the Burmese, the Lao, and the Siamese most of the time, but just what that means depends on whose histories you read.

In the Chinese view, these people—who did not possess Chinese culture and therefore were barbarians—considered it an honor to acknowledge the sovereignty of China, and so they gladly brought precious gifts at regular intervals (pages 306-307).

The Siamese chroniclers put forth another view, which Laurence G. Pickering, a counselor of the U. S. Embassy in Bangkok, summed up for me thus:

"To be allowed to carry on commerce with China, one had to give presents to its emperor; and so the Siamese did it, because it was good for trade and kept the Chinese happy. Besides, the Chinese sent valuable gifts in return. In any case, to the Siamese there was nobody higher than the King of Siam."

The Vietnamese faced far more pressing China problems. For a thousand years their land had been under Chinese rule, often in revolt but never free for long, until in A.D. 939 they threw the Chinese out. The victorious Vietnamese dispatched envoys to China with tribute and apologies. This was in keeping with the precepts of Confucius, the Chinese sage born in the sixth century B.C.; his teachings have profoundly influenced Chinese and Vietnamese life.

Student volunteers whisk pans of gravel to the construction of a huge concrete reclining Buddha at Chaukhtatgyi Pagoda in Rangoon, Burma. Each toe is as long as a man (below); the completed colossus will stretch 216 feet—one of the world's largest Buddhas.

The young people's zeal, which earns them merit, reflects the vitality of Buddhist doctrine in Southeast Asia. Buddha images, reminders of the sage's teachings, sometimes portray him in a reclining posture to signify his entry into nirvana—a state of nonexistence to which Buddhists ultimately aspire.

EKTACHROME (ABOVE) AND KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

Confucianism is essentially a code of behavior, stressing order and decorum and based on a sincere wish for social harmony. At its core is filial piety and the well-ordered family; its ideal is a well-ordered state and a well-ordered world. Thus Viet Nam, after defeating China, sent apologies; it was the Confucianist way, preserving harmony, saving China from embarrassment. The Chinese appreciated that; the Vietnamese, after all, *did* have Chinese culture.

In 1288 the Mongols of Kublai Khan—who then ruled China—invaded Viet Nam, and the Vietnamese general Tran Hung Dao trounced them on land and on the South China Sea. Again, the Vietnamese, in their Confucianist way, sent emissaries to sue for peace and to apologize for the "irresponsible behavior" of their guerrillas who had killed Mongol generals in ambush. The same happened after another great victory over the Chinese, in 1427. Between battles, Viet Nam and China kept sparring with the weapons of poetry and wit. For the ambassadors, like the generals and all high functionaries, as a rule owed their appointments to their high scholarship in the Confucian classics.

A Vietnamese diplomat of our day—Tran Van Dinh, formerly chargé d'affaires in Washington—gave me this example: "Sometimes when Chinese sages saw signs in the stars of Viet Nam waxing especially great in intellectual power, Chinese strategists would wish to confirm this before deciding whether it might be wise to invade Viet Nam once more. The Vietnamese rulers, getting wind of this, would disguise their cleverest scholars as boatmen, peasants, and beggars, and have them engage the Chinese emissaries in literary jousts. The Chinese would return with reports of depressingly vigorous culture in the land of the south."

Rococo splendor shelters a fledgling faith as Cao Daist priests and nuns mark the Day of the Founder in their holy city of Tay Ninh, South Viet Nam. Counting two million adherents, the half-century-old religion exalts brotherhood in a blend of

Buddhism, Confucianism, Taoism, Christianity, and animism. The faithful receive messages not only from Cao Dai, the Supreme Being symbolized by the eye above the altar, but from such compassionate figures as Moses and French author Victor Hugo

EMERGING FROM THE CONTROL of China in the tenth century, the Vietnamese looked beyond their homeland—a small area around the Red River Delta—and started their march southward, between the coast and the Annam Cordillera. It lasted 800 years. First they chewed up the Kingdom of Champa (pages 324-5).

The Vietnamese varied their tactics. Sometimes they tried peaceful expansion, marrying their daughters to the Cham aristocracy. A Vietnamese saying goes, "When you have good relations with a country, it's a good time to get ready for war."

Then would come violent action. Shock troops of orphans raised by the state would conquer another piece of Champa; then they would settle down to farm, taking Cham wives. Even today the words describing their field pack, *ba bi sau quai* (three bags six straps), connote fierceness; Vietnamese parents frighten their children with stories of Ong Ba Bi, Mr. Three Bags.

In the 17th century the Vietnamese continued southward into the Mekong Delta, which was held by the Khmers, and overwhelmed them.

When the Khmer people were docile, the Vietnamese would withdraw all but a token force. When the Khmers rebelled, the Vietnamese would move ruthlessly. A scholar in Saigon gave me an illustration: "Our Vietnamese phrase 'to topple the tea kettle' means to punish severely, to terrorize, from what was done to Khmer prisoners. They were forced to kneel in groups of three, each group holding up a large stove atop which stood a kettle of boiling water. As soon as one man weakened and fell, the kettle toppled, scalding him. Then he was beheaded." To this day Khmer hate Vietnamese (page 310).

CHINA WAS ENFEEBLED by internal problems and unable to oppose the technologically superior Europeans who, by the mid-19th century, stood ready to carve up Southeast Asia.

Siam was to escape, thanks to its King Mongkut—the ruler portrayed in *Anna and the King of Siam* and *The King and I*. He fostered reforms, pushed modernization with help from Europeans and Americans, and wrote cordial letters to Queen Victoria.

While the strong and modern-minded monarchs, Mongkut and King Mindon of Burma, sought compromise with the aggressive Europeans, the weaker ones, Mindon's son Thibaw and the Emperor Tu Duc in Viet Nam, stayed old-fashioned, tried to resist, and were crushed.

The French controlled all Vietnamese territories by 1893, and Laos as well—basing their claim there on the claims of the Vietnamese emperor, who was now in their power. On top of that, they pressured Siam to cede two provinces to Laos and three to Cambodia; by then Cambodia had been tucked away into French Indochina. Mongkut's son Chulalongkorn gave in to these French demands. He also granted teak concessions and extraterritorial courts to the British. Siam survived, shorn but unoccupied.

But then, in 1905, the Japanese crippled the Russian fleet in the Far East, and Asians learned that Europeans were not invincible. The lesson was dramatically re-emphasized in 1942. Japan swept the Europeans in Southeast Asia into the sea or into prison camps. Before long, Vietnamese and Burmese who had sought help from Japan turned on the Japanese as their new oppressors.

The Japanese were gone by 1946 and the Europeans were back, wanting to be masters again. But times had changed. The British left Burma quietly in 1948.

By 1954, after a guerrilla war that culminated in the battle of Dien Bien Phu and an international conference in Geneva, the French began to pull out too. Laos and Cambodia emerged independent and undivided. And Viet Nam? The Geneva conference drew a provisional "military demarcation line" at the 17th parallel, directing guerrilla forces to withdraw to the north of it, French-led forces to the south. This line, the conference declared, should not be considered a political or territorial boundary.

Nevertheless, the result was North Viet Nam and South Viet Nam. The agonizing events that have happened there since—the new struggle, the growth of American involvement—are all too familiar from the press and from television.*

*Other articles on Southeast Asia include "The Mekong, River of Terror and Hope," December 1968; "Behind the Headlines in Viet Nam," February 1967; "Saigon: Eye of the Storm," June 1965; "South Viet Nam Fights the Red Tide," October 1961, "Report on Laos," August 1961—all by Peter T. White. Also "Air Rescue Behind Enemy Lines," September 1968; "American Special Forces in Action in Viet Nam," January 1965; "Slow Train Through Viet Nam's War," September 1964—all by Howard Sochurek; "Water War in Viet Nam," February 1966, and "Helicopter War in South Viet Nam," November 1962—both by Dickey Chapelle.

SOMETHING IMPORTANT to know about mainland Southeast Asia today is that eight out of ten of the people are villagers. They share many attitudes—enough so that in a sense they share a common culture.

In the village, one doesn't say thank you. I help you harvest your rice today, you help me next week. That people help each other, and share what they have, is taken for granted. It does not call for thanks. If someone important comes from the city, a *puyai*, a big person, a governor or someone from Bangkok, or a foreigner, and brings something or makes promises, the villager thinks, well, that's the function of big persons, it's natural for them, they are rich.

In the traditional village a man can be reasonably well off without any cash income at all. He may have three buffaloes instead of one, or a little more and better land than his neighbor, but no matter how well off he is, he will not flaunt his prosperity.

Like everyone else, he lives in a bamboo house; he exerts himself during the rice-planting and harvesting seasons, and works hard around the house and relaxes in the time of the festivals. If the government has not provided a teacher, his children will be taught like everyone else's—the boys by the village monks, the girls by their mother. And if he falls ill, he'll call the spirit doctor; being ill means that one has offended some spirit, and the spirit doctor prescribes appropriate medicines and sacrifices.

The city Thai is sometimes annoyed at not being thanked. But if he knows both worlds, he realizes that even the gesture of greeting—raising hands pressed together and saying *Sawatdee* (meaning "hello," or literally, "good fortune") which so charms foreigners—is a city thing too. Citified villagers are learning it now, but in the houses a little way off the paved road you won't find it.

The villagers' traditional greeting to the outsider is, "Where do you come from? Where are you going? Have you eaten?" He is given food, a mat, and the best place to sleep in the house. Or better still, in the monastery, where it's cool. Nobody will expect him to say thanks.

If the villagers find the stranger sympathetic, they will meet him with real affection, even if he is a foreigner, and especially if he likes their food and tobacco, and if he really likes *them*. They can always tell.

Incidentally, chopped and fried rat can be delicious. When I had my first taste in a

KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

Ravaged by drugs, a Chinese opium dealer prepares the narcotic in northern Laos. Heating it over an alcohol lamp, he will place it in the bowl of a long-stemmed pipe and draw air through it into his lungs.

Despite government disapproval, cultivation of the opium poppy thrives among hill tribes of eastern Burma, Laos, and Thailand, and to a lesser degree in adjacent parts of China. Networks of middlemen dispatch the harvest toward southern ports by pony caravans, often guarded against hijackers by onetime Chinese Nationalist soldiers. Each year the region smuggles out some 500 tons of opium and its derivatives, morphine and heroin.

Devotion embellishes Burma's golden glory

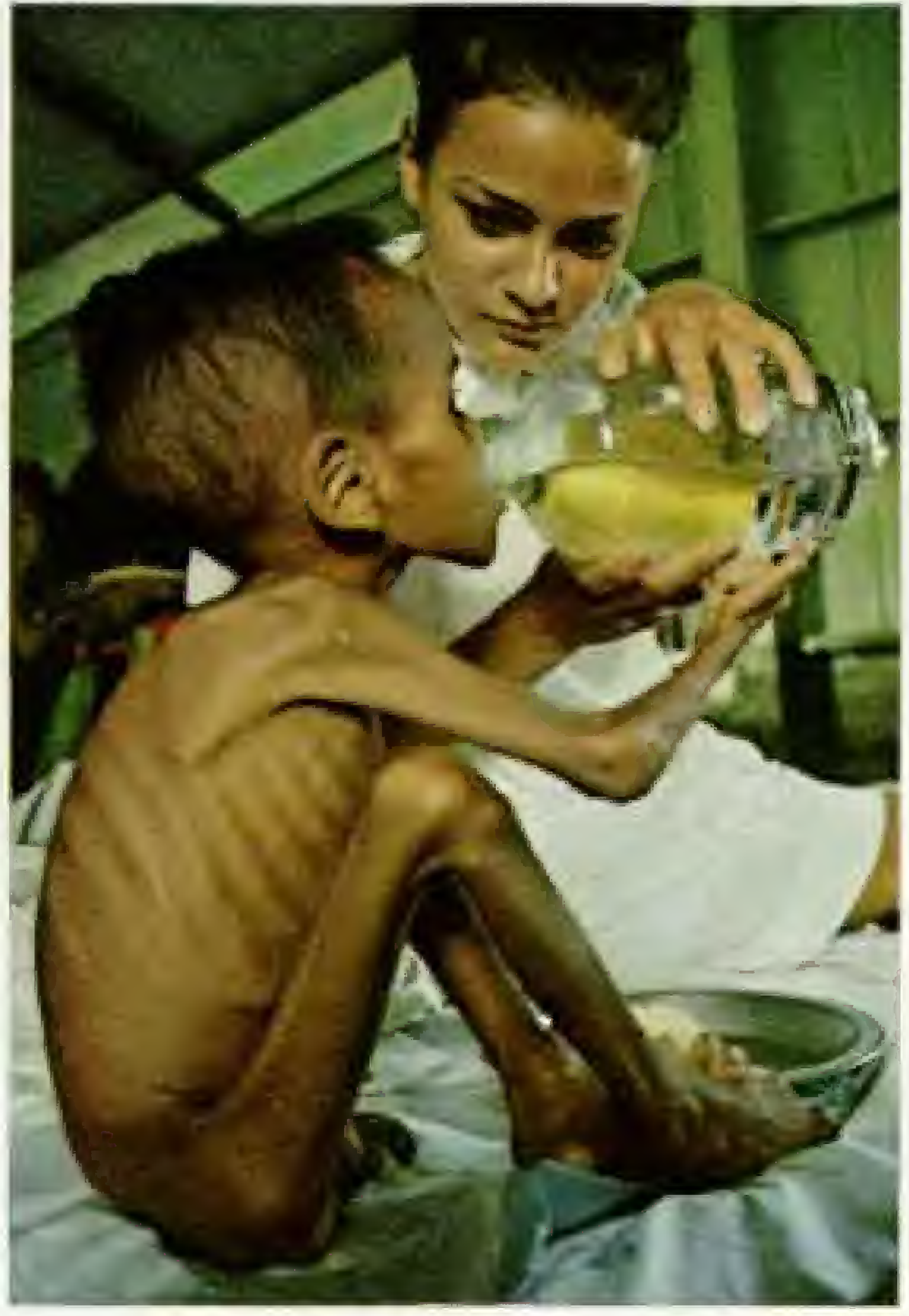
Majestic Shwe Dagon thrusts its gilded spire 326 feet above a cluster of smaller shrines. Tiny human figures at far right show the scale of Rangoon's mammoth pagoda.

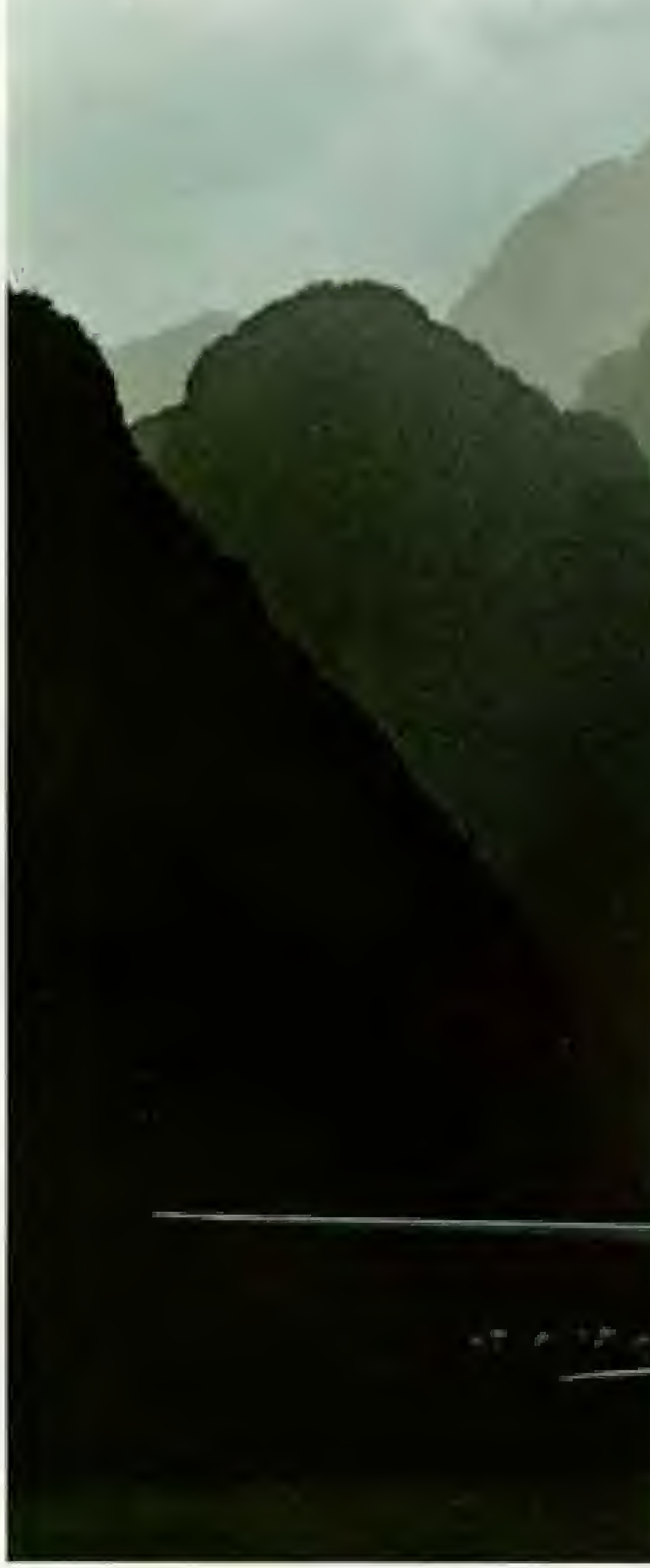
Reputedly begun during Buddha's lifetime 2,500 years ago to enshrine eight hairs of his head, Shwe Dagon grew with the efforts of successive Burmese monarchs. In 1900 a campaign began to sheathe it with solid gold. As pilgrims bring offerings, Shwe Dagon smiths form them into foot-square 1/16-inch-thick plates; already the armor envelops the 33-foot section patterned after a lotus flower (right).

Gaining merit, a girl washes one of Shwe Dagon's many Buddhas with water purchased for the ritual.

Rescued from the tides of war, a four-year-old boy sips water at a United States-built hospital in Laos. His parents, driven from their cropland, starved. They had left the child, an eight-pound bundle of skin and bones, at the hospital. Here he has already gained four pounds.

An Air America C-46, waiting for cargo at Vang Vieng, flies food and war supplies to Laotian ground forces. Such cargo planes also help the United States feed the needy among the country's 250,000 refugees.





village near Sakon Nakhon in Thailand, I didn't know what I was tasting but said how good it was. My hosts beamed, saying their rats had to taste good: "After all, they eat our good rice."

This brings us to the smile.

Even if one villager is mad at another, he won't show it, or how could he ask him to come help harvest the rice or build a house? Social harmony must be preserved; it is necessary for the good of all. That doesn't mean that one doesn't feel anger, but it wouldn't be good form to show it, and one way not to show it is to smile.

The smile reflects the Buddha's teaching—to take the middle path, to avoid anger and hatred if possible, to avoid showing any strong emotions as much as one can. Strong emotions mean craving, which is the root of all suffering in the world. The Buddhist way to remove the suffering is to remove the craving. The principal injunction in terms of one's own life is to avoid emotional extremes and social disharmony.

The Thai have words to go with this. Someone who readily shows emotion has a hot heart. And that is not a virtue.

A cool heart, that's good. Not in the sense of being coldhearted, but in the sense of keeping one's cool.

The cool way to show disapproval of one's fellow man is to do it by indirection.

An American social scientist, William Klausner, reports from a village he knows

well in the northeastern part of Thailand: "A woman was kicking a dog and scolding it, but her words were really meant for another woman who was slapping her own children and scolding them with the same words.

"I suppose that the only ones who didn't know what was going on were the dog, the children, and myself. I hadn't yet caught on to this game of what I have come to call 'projected vilification.'"

An oppressive government official will be criticized only in private, by members of a family to one another or to their close friends. Outwardly the villagers remain respectful. But he must redeem himself in their eyes before they will respect him in fact. And if he doesn't? Officials, too, are subject to the law of karma—that sooner or later every action brings its retribution, in this existence or in one to come.

These patterns of village behavior, drawn from what I have experienced in Thailand, apply not only there—and in Burma, Cambodia, and Laos—but also in Viet Nam, where Buddhist influence is almost inseparably intertwined with the teachings of Confucius. The Vietnamese also believe in the law of karma; many think that the misfortune Viet Nam suffers now is retribution for what their ancestors did to Champa.

Quite a few Vietnamese are Roman Catholics—roughly one in every 20 in the north, one in every ten in the south—but they too tend to think in Confucianist ways. The late

KODACHROMES BY W. E. GARRETT © NATIONAL GEOGRAPHIC SOCIETY

Village vogues offer contrasts among tribeswomen of a remote hamlet in northern Laos. Typical Akha headdress jangles with silver trinkets; another girl wears Western curlers.

The Akha live amid a patchwork of hill tribes scattered through northern Laos and Thailand, eastern Burma, and southern China—legendary homeland of the region's peoples. Most of them cling to the animism and subsistence farming of their ancestors.

President of South Viet Nam, Ngo Dinh Diem, was a noted Catholic layman and the very model of the Vietnamese mandarin, Confucianist to the core.

HIGH IN THE MOUNTAINS, deep in the hinterlands, live assorted ethnic minorities—relatively small groups and subgroups with names like Meo and Yao. Population statistics about them can be misleading.

Officials don't care to visit their remote villages often, and when they do, the figures they will be given are likely to be low. Why pay more taxes than you have to? Or send more sons into the militia? Besides, to the government these hinterlanders are a headache, a problem one would rather minimize.

South Viet Nam reports a total of 650,000 people in these ethnic minorities. American ethnologists speak of close to a million. A rough estimate for all of mainland Southeast Asia would be five million, or approximately a twentieth of the population. But they are a lot more important than this would indicate. They occupy, however sparsely, nearly half of the territory.*

These minorities often do not like what other people call them. When the South Vietnamese want to be polite, they lump them together as Montagnards, French for "mountain men," but more often they call them *moi*, Vietnamese for "savage." Their own name for themselves may be People of the Forest or simply the Men, or the People.

A tiny proportion are nomads, but most of them by far live in villages and have distinct geographic preferences. The French ethnologist Georges Condominas points to the layer cake of cultures in Laos: "The majority, the Lao, live in the river valleys. Along some rivers and in the lower parts of the mountain slopes you have the Khmu. Behind them, higher up, live the Man, or Yao. And on top of the mountain you have the Meo, or Miao."

Scientists classify these minorities by language families as Sino-Tibetan, Thai, Austroasiatic, and Malayo-Polynesian; some may be remnants of populations pushed into the remoter hills by later arrivals who commandeered the more fertile lowlands. Like the majorities, they are virtually all Mongoloids, and often hard to tell apart except by their distinctive tribal costumes and jewelry. Some tribes, in fact, have been named for their colorful clothes. There are, for instance, White Meo, Red Meo, Black Meo, and Flowered Meo.

Most tribespeople practice swidden, or slash-and-burn, agriculture—cutting down vegetation, burning it, and utilizing the ashes for fertilizer. When the fields are burning in Laos, I have seen the haze over the mountains dimming the sun into a dull reddish gold at midday.

A field will be used until the weeds take over or the land is exhausted—normally within a few years. The plot then lies fallow for ten years or so, and adjacent fields are cleared. It's a system of rotation, and this, believes the American ethnologist Gerald C. Hickey, may have hatched the myth that all these backcountry people are nomadic.

"But nomads wouldn't plant fruit trees or build with hardwood logs," he told me. "These people abandon a village only for very compelling reasons."

Until about a century ago the tribesmen were left pretty much to themselves. Then European colonizers came, and, of late, some governments have pressured them to adopt the ways of the majority. Tribal elders tend to frown on this. But the wars have left them little choice. Many tribes now see their culture being destroyed. The Black Thai of Muong Moui provide a vivid illustration.

"Our village was in northern Laos," the eldest son of the headman said to me. "We had 200 houses and 1,000 people. We had rice, pigs, chickens, goats; we were very happy. Then the Vietnamese Communists came in 1952. The government made us move to a place near Hanoi. We had nothing to do; we were not happy.

"We were sent to the Xieng Khouang region, back in Laos, in 1954. We had little plantings in the forests, very little ones. We were not happy and asked the Lao government to let us move to the Vientiane plain, to grow rice. Twenty-seven miles north of Vientiane we had little fields and some pigs and chickens, we were happy a little.

"The Lao Communists came in 1960. We had to move again, and so we came here." To the outskirts of Vientiane, capital of Laos.

Are they happy now?

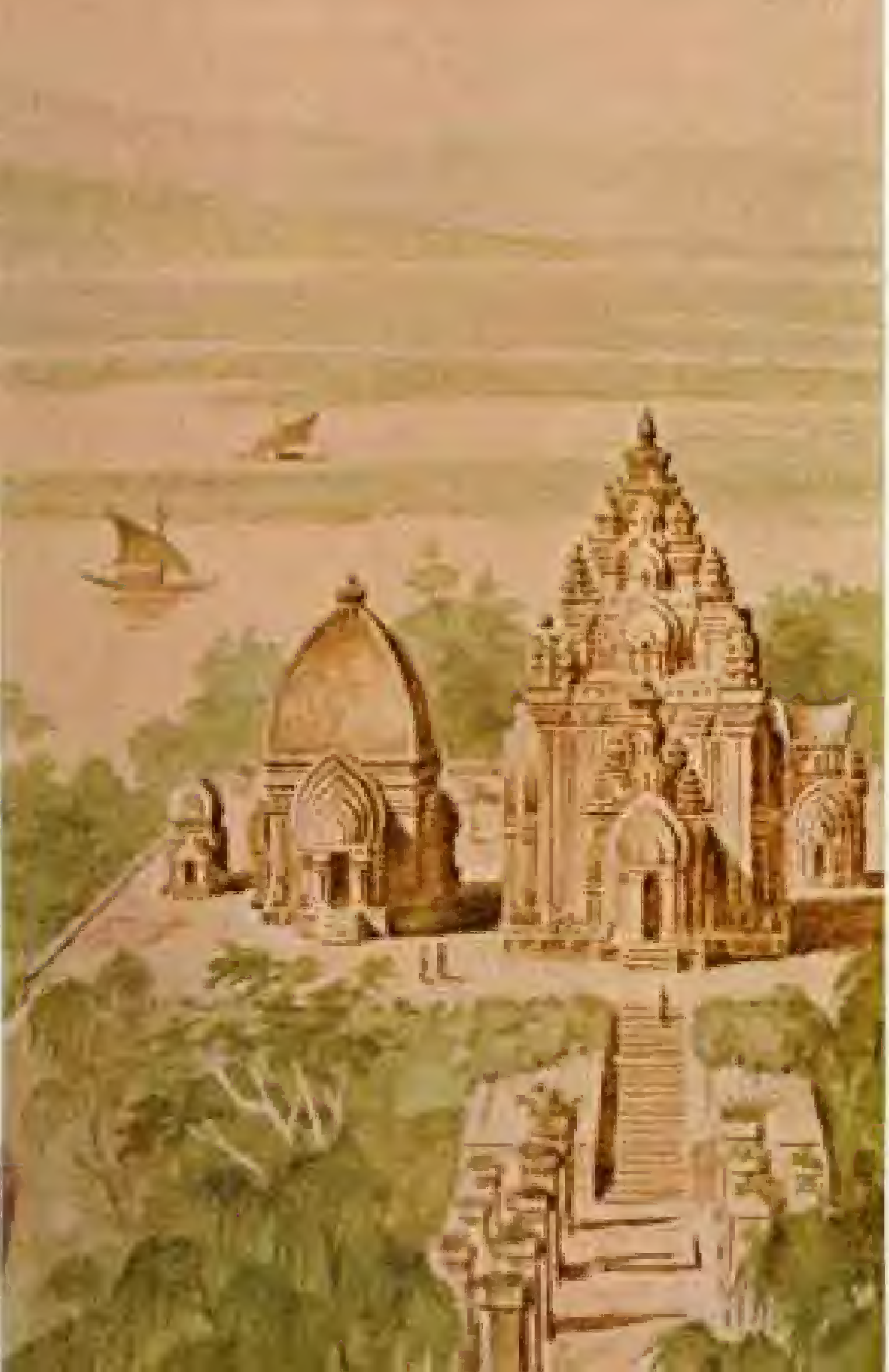
"Well, we can find work, in the military, in the civil service, in the police, but these jobs aren't regular, they are day by day. Only a few of us get a salary. . . ."

*Howard Sochurek wrote of Viet Nam's Mnong and Jeh tribes in the April 1968 NATIONAL GEOGRAPHIC, and Peter Kunstadter told of life among Thailand's Lua in the July 1966 issue.

MYSTERY-VEILED MEMENTOS *survive the Kingdom of Champa, which arose at the end of the second century. Ardent musicians and mariners, the Chams succumbed to invading Vietnamese in the 15th century.*

Lavish thousand-year-old gold ornaments from My Son, now in a Hanoi museum, were used in the Chams' Hindu-flavored rituals. They probably decorated a half life-size statue similar to the artist's re-creation shown at left. Cham kings built the hilltop temples of Po Nagar, near Nha Trang, background.

PAINTING BY [illegible] © N.G.S.



If peace and quiet come again, would they want to go back to Muong Moui?

The older ones, the ones who remember well what it was like, yes. Even some of the young ones think about it. One of the headman's younger sons tells me: "I would like to know those things I have heard about, the cool climate, the nice water. But I like what we have here. We have bicycles and motorcycles; maybe we'll get cars. In the old country there is so much space, to get to another village means a day of walking, or a long ride on a horse. . . ."

His father is still the headman here, in charge of 130 houses and 1,000 Black Thai. He is tall and proud. He says nothing.

A million people have been uprooted by war in Laos since 1953, mostly tribesmen, out of a total population of 3,000,000. Keo Viphakone, the Secretary of State for Social Welfare, informed me that during eight months of last year it happened to 200,000.

"The Communists make soldiers of the young men, and force old men and girls to carry supplies," he says. "And the war makes life hellish for everybody. People dig holes, and because of the fighting and the bombs and the rockets they work their rice fields at night. By day they sleep in their holes, they become modern cave dwellers. . . ."

HOW ARE THE CITIES FARING in mainland Southeast Asia under the impact of war and modernization?

Vientiane has grown from 100,000 to 160,000 since 1965. Commerce is brisk, and the number of Japanese-made taxis keeps rising. One of the melodies most often heard on the radio is the "Lament of the Black Thai."

We cry
We think of the ancient time
Of everything which is lost.

In Cambodia, where the war began in earnest in the spring of 1970, some 700,000 people fled from the countryside to the capital almost overnight, so that Phnom Penh now holds 1,500,000. For the first few months at least, the city faced the change cheerfully, with students and office girls calling themselves commandos, buying uniforms, and learning to shoot and to march in their spare time (page 300).

Austerity has descended on Rangoon, where Burmese Socialism, entrenched since 1962, established strict priorities. Cars are

scarce. To get cloth for a new longyi is a problem. But the university admits 500 medical students a year, more than ever before; also more prospective engineers.

Young doctors marry doctors, engineers marry engineers. Young people who cannot afford or find servants, and don't have a relative to cook for them, try something different: contracting with a restaurant to send in food twice a day, in the traditional *jike*, the four-layered food carrier, with rice in the bottom compartment. The conventional mother-in-law shudders.

Though insurrection plagues the provinces, there has been no rush to Rangoon (population about 2,000,000). Daily I read in the newspapers of clashes with assorted insurgents—dissident minorities, Communists of different colorations.

But the biggest excitement I witnessed in Rangoon during the last rainy season came when earthquakes caused precious ornaments to fall from the 326-foot-high Shwe Dagon Pagoda (pages 318-19).

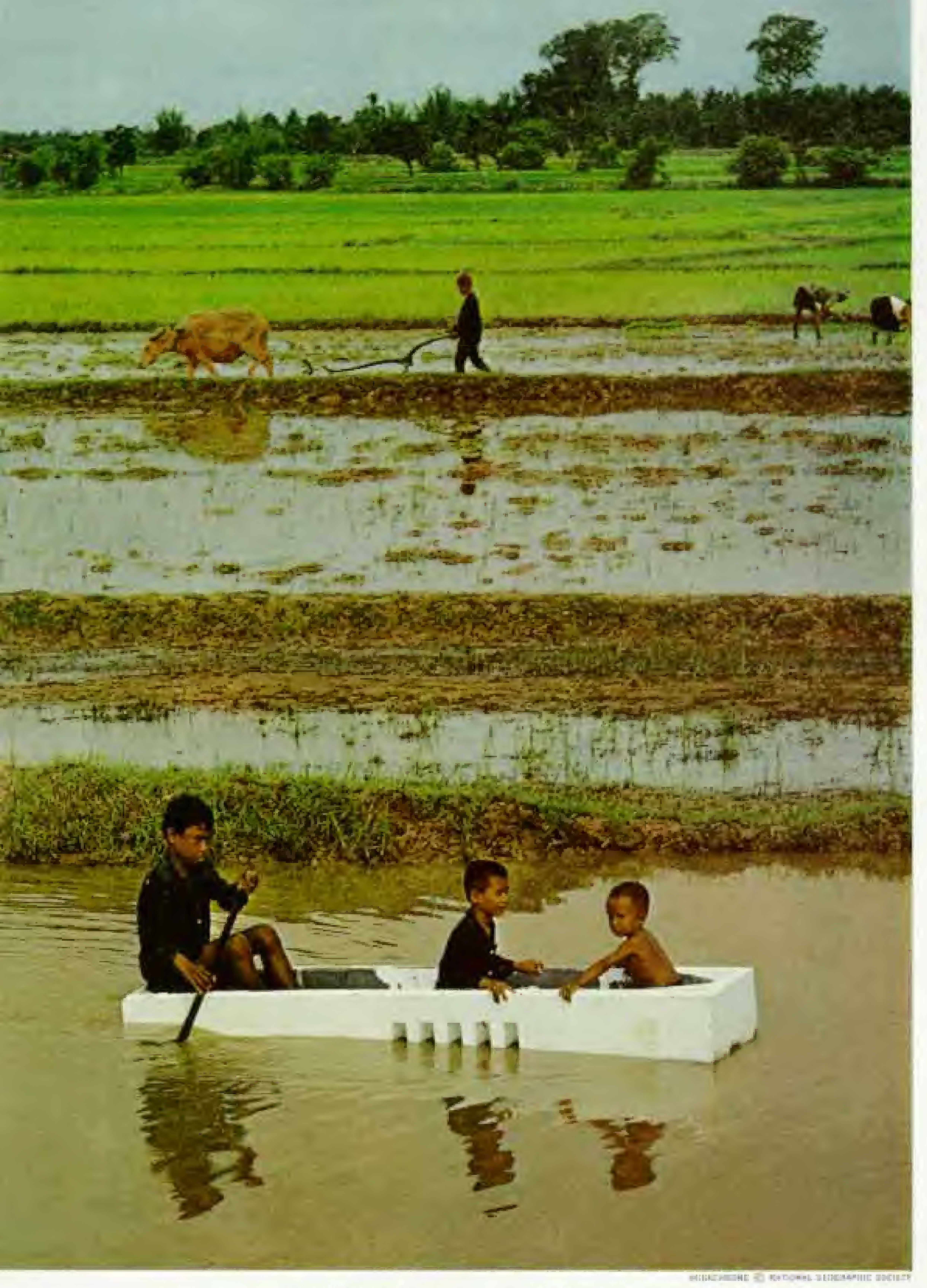
THAILAND FACES INSURGENCY in the provinces, in the north, the northeast, and the south, but booming Bangkok is a monument to rapid and thorough modernization—to what's good about it and what isn't. A five-story garage! Another 500-room hotel! A six-story garage! Bangkok, with 2,800,000 people in its sprawling urban area, and with all those cars, looked to me like the smoggiest city in Southeast Asia.

A Thai friend, who has become addicted to golf lately, tells me how the consumer psychosis takes hold, pressures mount, more wives go to work. "How else can a family keep buying all the new gadgets? There's

Straight as a bamboo pole, a canal cleaves the Mekong Delta beneath monsoon clouds. Some 3,000 miles of waterways lace this region of South Viet Nam, draining and irrigating it as well as carrying the commerce of the nearly roadless delta.

Under fire and frightened, a young South Vietnamese Marine radios for helicopter support in the delta, once a Viet Cong stronghold. Today the burden of war falls more and more heavily on the South Vietnamese as the United States attempts to disengage itself.

KODACHROME (LEFT) AND EKTACHROME BY W. E. GARRETT © NATIONAL GEOGRAPHIC SOCIETY



KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

Plastic foam that once cradled a bomb becomes a plaything a few miles from Thailand's giant Udorn Air Base, where U. S. Air Force fighter-bombers roar aloft. Rice farmers plow and plant along this canal as life goes on in the shadow of war.

something newer and better to be bought every few months. The children, of course, must go to college, preferably abroad."

The big question is how long the boom can last. Tourists keep pouring in, but the number of U. S. soldiers stationed in Thailand is dropping. The economy still expands but not quite as rapidly as before. Will the new Indra Hotel be the last of the glossy giants?

Meanwhile there are plenty of distractions, with a world of movies to choose from: Hollywood fare (page 305), Indian movies full of sentiment, Thai movies full of ghosts and spirits, Chinese films from Hong Kong with Robin Hood-like heroes brandishing swords.

There are few foreign movies in Hanoi, I am told. Films come from the North Vietnamese State Agency for Film Production, and most of them deal with modern war. Most traffic moves sedately, on bicycles, many of them made in China.

In Hanoi the war has produced an intensified sense of solidarity, as if some huge village had been superimposed on the city. The bombing did it, starting in 1965, creeping closer to the city, producing fear, an emotional huddling together.

AND WHAT OF SAIGON, burgeoning capital of South Viet Nam and nerve center of the war in Southeast Asia?

Many of its leading citizens came from central Viet Nam or from the north. The population has swollen to three and a half million, but many newcomers are mentally still in their little villages in the north, the center, and the south.

Off the clogged main thoroughfares, much of the city is in effect a juxtaposition of small villages, with houses of brick instead of bamboo, but with lanes barely wide enough to let a car pass. The ex-villager doesn't yet feel at ease in a street wider than would be needed to let two or three people pass, or at most an oxcart.

Saigon takes terrorism—assassinations or the bombing of buildings—in stride, much as traffic accidents, but the fighting in the city during the Tet offensive, in 1968, and a few subsequent rocket attacks produced widespread fear. People couldn't dig shelters under their houses; such digging is forbidden, lest insurgents use the tunnels as hideouts. And so for a while the things my friends in town wanted most of all were sandbags.

The future casts a shadow over the city. Somehow, sooner or later, the war will end, but what will those newcomers do, that first generation of rapid urbanization?

Many won't be able to go back to the rice fields, even if they want to, even if the countryside should become safe. For if a boy left the farm at the age of 8 and is now 15, he has missed a crucial part of his education for the farming life—working with buffalo, threshing rice. He has lost the confidence that he can be a successful farmer. I have seen children like that by the score.

Right now they are still shining shoes, opening restaurant doors, or making money in whatever ways an enterprising boy can find in a war-fevered city. Their mothers wash clothes for foreigners, or work as waitresses. Their fathers and older brothers are in the army. What will happen when all that ends?

Already people in Saigon sense a lessening of their chances for earning a living. Orders are fewer for souvenirs going to the post exchanges of the foreign soldiers. Construction laborers are losing jobs. Their women support them by selling soup, but when men don't have jobs, they don't go out in the evening for a bowl of soup with their friends. A downward spiral has begun.

And while pay isn't going up much, prices are. In one week when I was there last October, the price of eggs rose 30 percent, vegetables 70 percent. In a government office a secretary told me that in 16 years her salary had increased by 75 percent, but in that time rice went up 1,000 percent.

Saigonese lucky enough to own television sets can turn off their worries and tune in on "Bonanza" or "Gunsmoke." Most popular, though, are the weekly shows mixing songs with dialogue in the style of Chinese opera. They abound in virtuous but wronged heroines and repentant villains.

Thus a recent production presented a beautiful blind girl, raised by a devoted foster father whose enemy, the wicked district chief, wants to kill her. She flees, and meets a teacher of swordsmanship who trains her to defend herself. She is wounded by the district chief, but rescued by her teacher—who, it turns out, is the district chief's long-lost son; she marries the son, and the district chief promises to mend his wicked ways.

Not all endings are as blazingly happy as that. Sometimes the heroine simply retires to a life of religious contemplation. In any case, justice is always done harmoniously, in a Confucianist way. □

New Light on a Forgotten Past

By WILHELM G. SOLHEIM II, Ph.D.

PROFESSOR OF ANTHROPOLOGY, UNIVERSITY OF HAWAII

THE WORLD has turned its attention to Southeast Asia during the past decade, but the cause of the interest has been war. The overwhelming nature of military events has obscured some astonishing discoveries about the ancient history and prehistory of the people who live there. Yet in the long run these discoveries, primarily archeological, will affect—perhaps more than the war or its outcome—the way we think about the area and its people, and the way they think about themselves.

Even the position of Western man and his place in the evolution of world culture may be drastically affected. For clear and powerful indications are emerging that some of the earliest steps toward civilization may have been taken in Southeast Asia.

Where Did Man First Grow Plants and Cast Bronze?

European and American historians generally have theorized that what we call civilization first took root in the Fertile Crescent of the Near East, or on its hilly flanks. There, we have long believed, primitive man developed agriculture and learned to make pottery and bronze. Archeology supported this belief, partly because it was in the region of that Fertile Crescent that archeologists did their most extensive digging.

Now, however, discoveries in Southeast Asia are forcing us to re-examine these traditions. Material excavated and analyzed during the past five years suggests that men were cultivating plants there, making pottery, and casting bronze implements as early as anywhere on earth.

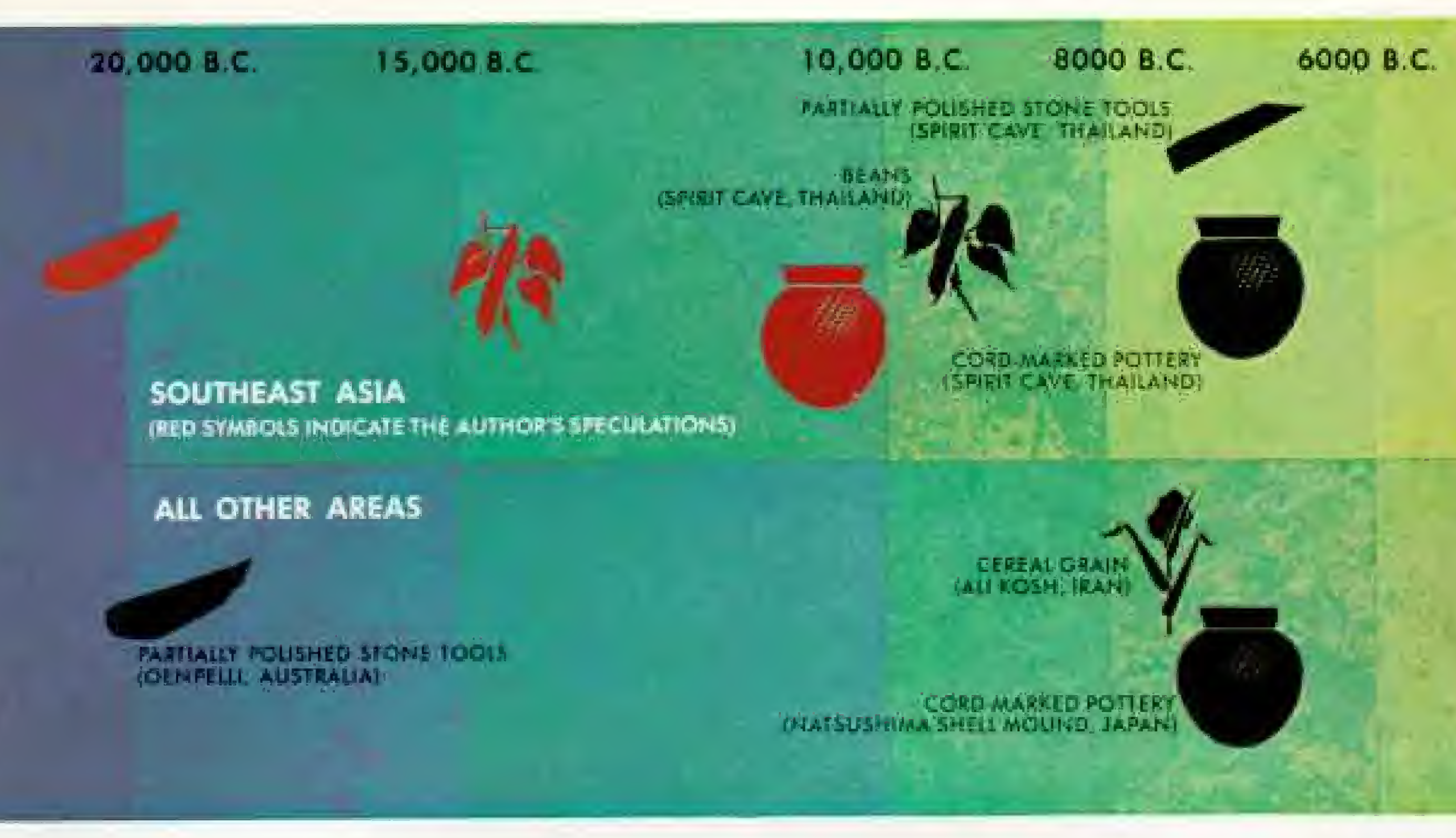
The evidence comes from archeological sites in northeastern and northwestern Thailand, with support from excavations in Taiwan, North and South Viet Nam, other areas in Thailand, Malaysia, the Philippines, and even from northern Australia.

Materials uncovered and dated by carbon 14* are the cultural remains of people whose ancestors may have been growing plants

*See "How Old Is It?" by Lyman J. Briggs and Kenneth F. Weaver, August 1958.

KODACHROME BY W. E. GARRETT, NATIONAL GEOGRAPHIC STAFF © N.G.S.

Prehistoric whodunit brings together clues like this 5,000-year-old clay jar from Non Nok Tha in northeastern Thailand and archeological sleuths seeking to answer the question, "Where did civilization begin?" The author (above), acclaimed as "Mr. Southeast Asia" by fellow prehistorians, puts forth in these pages his revolutionary theory that Southeast Asians may have been the first to make pottery, grind and polish stone tools, plant rice, and cast bronze.



and making polished stone tools and pottery thousands of years earlier than were the peoples of the Near East, India, or China.

At one site in northern Thailand, bronze was being cast in double molds well before 2300 B.C.—perhaps earlier than 3000 B.C. (page 334). This is substantially earlier than such work in India or China, and possibly earlier than the first bronze cast in the Near East, where, until now, most experts have thought that bronze metalworking began.

One may reasonably ask: If it is so important, why has Southeast Asia's role in prehistory remained unknown until now?

There are several explanations, but the main reason is simply that very little archeological research had been done in the area before 1950. Even now the work has barely begun. Colonial officials did not place a high priority on studies of prehistory, and few of the men who did investigate it had professional training. Not one complete site report acceptable under present standards was published before the 1950's.

Secondly, what they did uncover was interpreted on the assumption that the flow of culture was eastward and southward. Civilization, they theorized, having begun in the Near East, flowered in Mesopotamia and Egypt, and later in Greece and Rome. It also moved east to India and China. Southeast Asia, being so far from the point of origin, got it thereafter.

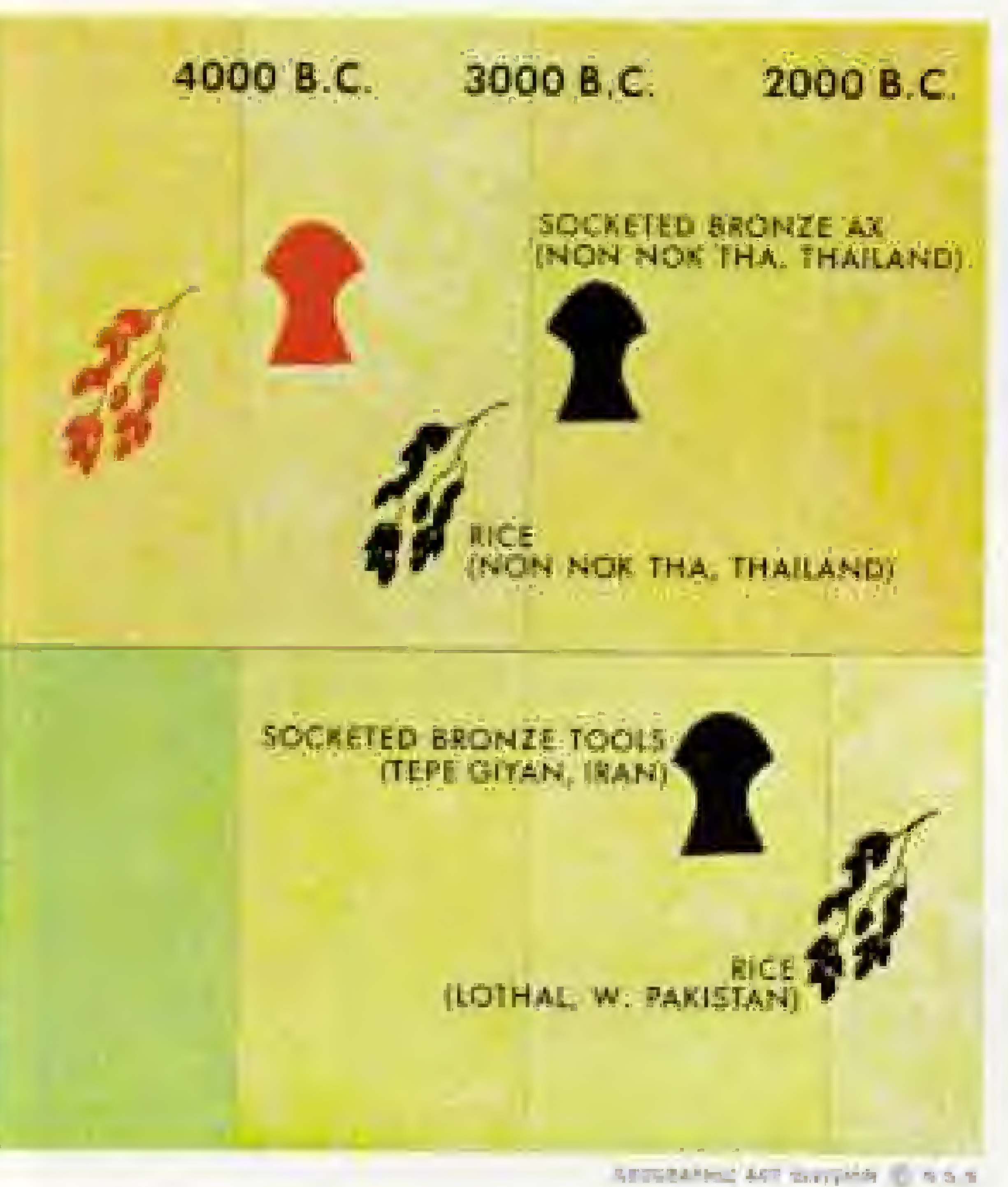
Europeans found advanced cultures in India and China. When they saw similarities in the architecture and aristocratic life-styles of those countries and Southeast Asia, they assumed Indian and Chinese influence. Even the name they gave the area—Indochina—reflected this attitude.

Migrating Peoples and "Waves of Culture"

For purposes of prehistory, what we usually think of as Southeast Asia must be expanded somewhat to include related cultures. Prehistoric Southeast Asia, as I use the term, consists of two parts. The first is "Mainland Southeast Asia," which extends from the Ch'in Ling Mountains, north of the Yangtze River in China, to Singapore, and from the South China Sea westward through Burma into Assam. The other I call "Island Southeast Asia," an arc from the Andaman Islands, south of Burma, around to Taiwan, including Indonesia and the Philippines. (See the double supplement, **Asia** and **Peoples of Mainland Southeast Asia**, distributed with this issue.)

Robert Heine-Geldern, an Austrian anthropologist, published in 1932 the traditional outline of Southeast Asian prehistory. He suggested a series of "waves of culture"—that is, human migrations—which brought to Southeast Asia the major peoples who are found there today.

His most important wave—people who made a rectangular stone tool called an adz—



GEOGRAPHIC ART DIVISION © N.G.S.

Time scale of human development in Southeast Asia has been pushed back by startling finds of tools, pottery, and plants.

Black symbols show specific discoveries and their ages from carbon-14 dating of the sites. Matching red symbols are the author's conjectures as to even earlier origins for these key building blocks of civilization.

Cord-marked pottery and stone tools unearthed in Spirit Cave, Thailand, date from about 7000 B.C. The sophistication of the pottery leads Dr. Solheim to speculate that more rudimentary pottery must have developed at least 3,000 years earlier. Likewise, the discovery in Australia of similar stone tools some 12,000 years older than Spirit Cave's leads him to guess that both stem from a common cultural source somewhere in Southeast Asia. Migrating peoples could have carried the techniques across narrow straits or land connections that once existed between the mainland, Indonesia, and Australia.

came from northern China into Southeast Asia, he said, and spread from there through the Malay Peninsula into Sumatra and Java, and then to Borneo, the Philippines, Taiwan, and Japan.

Later, Heine-Geldern dealt with the coming of bronze to Southeast Asia. He theorized that the original source of the Southeast Asian Bronze Age was a migration from eastern Europe about 1000 B.C. The people in this migration, he believed, moved east and south, entering China during the Western Chou Dynasty (1122-771 B.C.). They carried with them not only a knowledge of bronze working but also a new art form. That is, they decorated their bronze with geometric patterns, spirals, triangles, and rectangles, as well as with scenes or pictures of people and animals.

As applied to Southeast Asia, both Heine-Geldern and Bernhard Karlgren, a Swedish scholar, called this culture Dongson, after Dong Son, a site in North Viet Nam south of Hanoi, where large bronze drums and other artifacts had been unearthed (painting, pages 336-7). Both men felt that the Dongson people brought bronze and the geometric art style into Southeast Asia.

Prehistorians, for the most part, have followed this traditional reconstruction, but there were some facts that did not quite jibe. A few botanists who studied the origins of domesticated plants, for example, suggested that Southeast Asia had been a center of very early plant domestication.

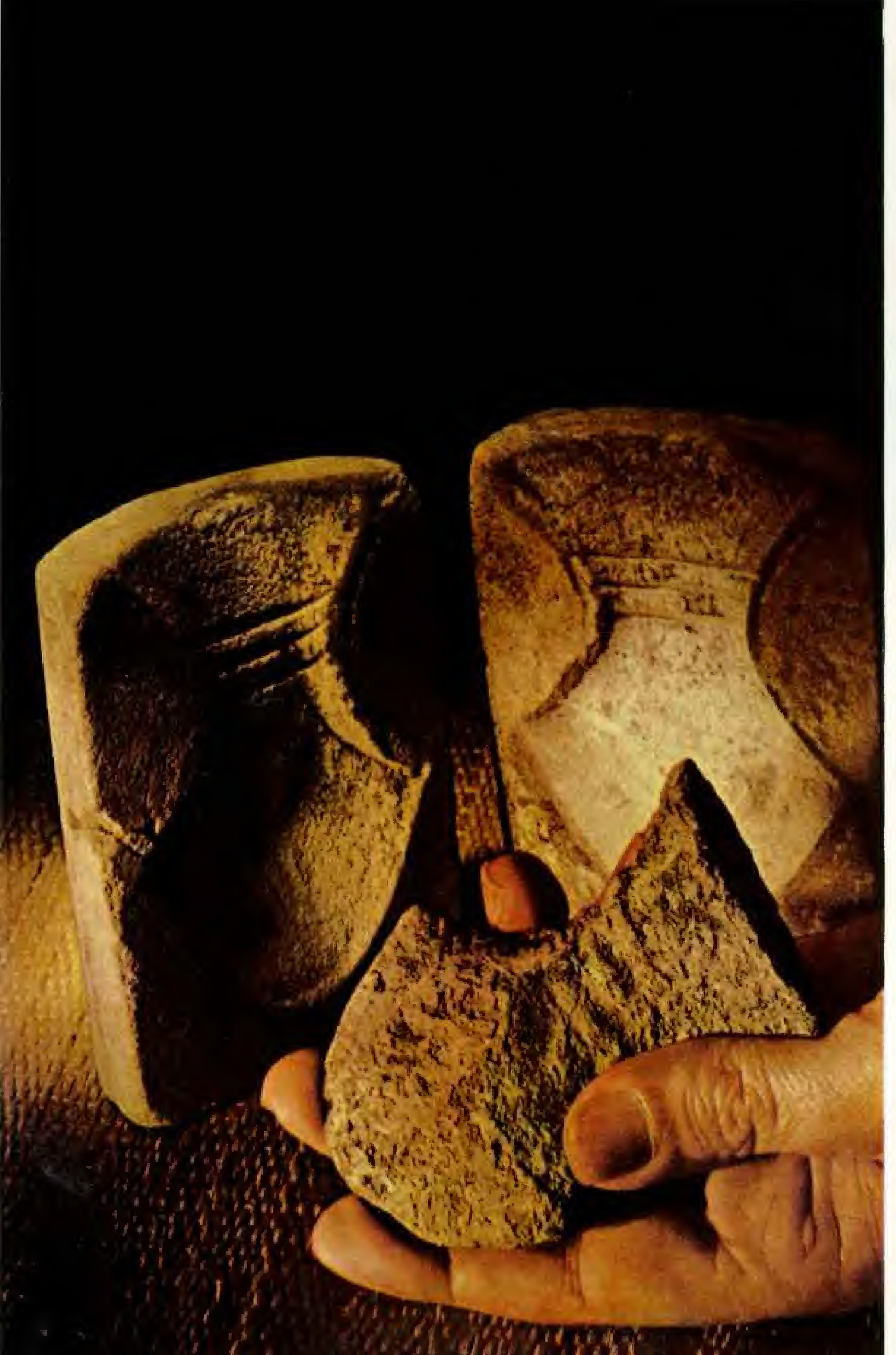
In 1952 Carl Sauer, a U.S. geographer, went a step further. He hypothesized that the first plant domestication in the world took place in Southeast Asia. He speculated that it was brought about by people much earlier than the Dongson period, people whose primitive culture was known as Hoabinhian. Archeologists did not immediately take up Sauer's theory.

Dams Add an Element of Urgency

The existence of a Hoabinhian culture had first been proposed in the 1920's by Madeleine Colani, a French botanist turned paleontologist and then archeologist. She based the idea on excavations of several cave and rock-shelter sites in North Viet Nam, the first of which was found near the village of Hoa Binh.

Typical artifacts in these sites included oval, circular, or roughly triangular stone tools flaked on only one side, leaving the original surface of the rock on the other. Neat grinding stones were found in most sites, and many stone flakes. Upper levels usually held pottery and a few somewhat different stone tools, with the working end ground to a sharp edge. Animal bones and large quantities of shell were usually present.

Archeologists felt that the pottery was associated accidentally with the Hoabinhian tools and had been made by more advanced



Tool challenges the theory that the Chinese introduced the grinding and polishing of stone implements to their "backward" neighbors of Southeast Asia about 3000 B.C. Dr. Chester Gorman (below), a close associate of the author, studies with a magnifier the partially polished surface of a stone adz he unearthed at Spirit Cave in northwestern Thailand. Discovered in a layer dating from about 7000 B.C., it predates by several millenniums any such advanced neolithic implements yet found in North China. Could it be, ask the author and his colleagues, that the Chinese learned from the Southeast Asians, rather than the other way around?

Long-vanished bronzesmiths of Non Nok Tha cast ax heads by pouring molten metal into two-piece molds like the one at left. Dating from 2500 to 3000 B.C., the artifacts demonstrate an already well-advanced technology, possibly older than that of the Near East. Non Nok Tha also yielded an edged copper tool (below) dating from about 3500 B.C.—the oldest known metal tool from eastern Asia, and the oldest socketed one yet found anywhere.

people living nearby, possibly farmers who had migrated from the north. They also felt that the edge grinding of the stone tools had been learned from these outsiders. But no sites of the northern farmers have ever been found.

In 1963 I organized a joint expedition of the Fine Arts Department of Thailand and the University of Hawaii to do archeological salvage work in areas that would be flooded by new dams on the Mekong River and its tributaries.* We were to start work in northern Thailand, where the first dams were being built.

No systematic research had ever been done on the region's prehistory. I felt that it was urgent to begin a series of excavations before much of this area went under water.

Surprises From an Unimpressive Mound

During the first field season we located more than twenty sites; during the second we excavated some of these and tested others; and in 1965-66 we made a major excavation at Non Nok Tha. While the carbon-14 dates from this site have presented some problems, they strongly suggest a sequence of human habitation (with some interruptions) going back to well before 3500 B.C.

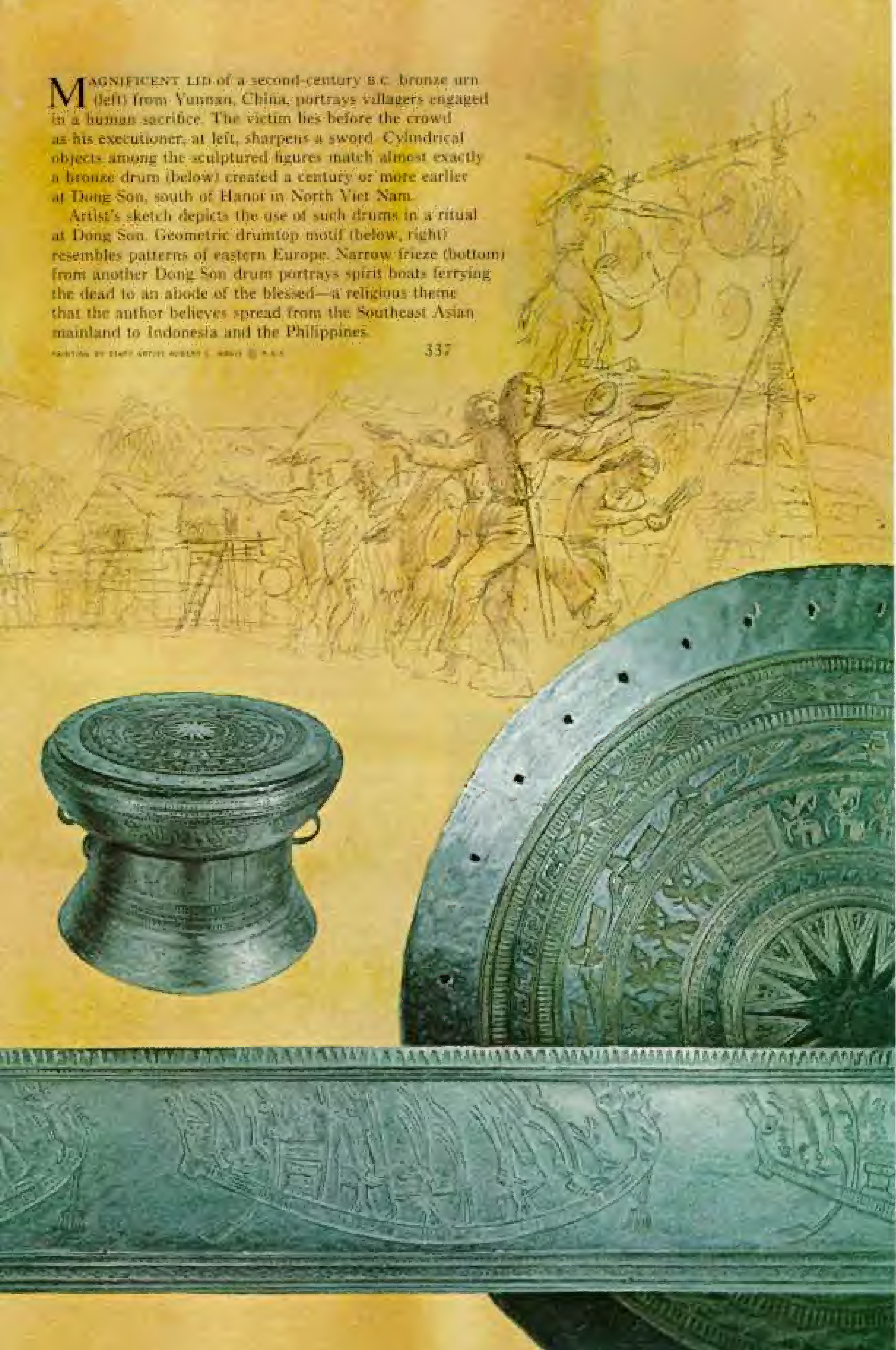
Non Nok Tha is a mound of about six acres that rises less than six feet above the surrounding rice fields. While working there, we lived in the small Thai-Lao village of Ban Na Di, a couple of hundred yards from the mound.

We spent about four months at our first excavation. Hamilton Parker, of the University of Otago in New Zealand, was in charge the first year. Donn Bayard, a student of mine working for his Ph.D., returned to Non Nok Tha in 1968 to make a second excavation for his doctor's thesis. Since then Otago and the University of Hawaii have continued to support our work in Thailand as a joint program with the Thai Fine Arts Department.

The results of those excavations, now in their seventh year, have been astonishing, but have only unfolded slowly as the analysis of our finds proceeds in our laboratory in Honolulu. As we started to receive our carbon-14 dates, we began to realize what a truly revolutionary site this was.

In a scrap of broken pottery little more than an inch square, we found an imprint of the husk of a grain of rice, *Oryza sativa*. From the carbon-dating of a burial in a level above this potsherd, we know that it—and the rice—date at the latest from 3500 B.C. This is as much as a thousand years earlier than rice has been dated for either India or China—where, some archeologists have claimed, rice was first domesticated.

*See "The Mekong, River of Terror and Hope," by Peter T. White, NATIONAL GEOGRAPHIC, December 1968.



MAGNIFICENT LID of a second-century B.C. bronze urn (left) from Yunnan, China, portrays villagers engaged in a human sacrifice. The victim lies before the crowd as his executioner, at left, sharpens a sword. Cylindrical objects among the sculptured figures match almost exactly a bronze drum (below) created a century or more earlier at Dong Son, south of Hanoi in North Viet Nam.

Artist's sketch depicts the use of such drums in a ritual at Dong Son. Geometric drumtop motif (below, right) resembles patterns of eastern Europe. Narrow frieze (bottom) from another Dong Son drum portrays spirit boats ferrying the dead to an abode of the blessed—a religious theme that the author believes spread from the Southeast Asian mainland to Indonesia and the Philippines.

PAINTING BY STAFF ARTIST ROBERT C. MAGIS © N.G.S.

Heirlooms from a slowly emerging past help fill gaps in the story of man. A Thai farmer dug up the painted pot (above); similar pottery from a site near Udon Thani in northeastern Thailand dates from about 4700 B.C. Corroded bronze bracelets from Non Nok Tha still ring a human forearm; other bodies were buried with little or no jewelry, hinting at well-defined social strata in the second millennium B.C.

KODACHROME BY J. BORNHIESER (TOP), EKTACHROME BY W. E. GARRETT © N.G.S.

From carbon-dating of associated charcoal, we know that bronze axes, cast in double molds of sandstone, were being made at Non Nok Tha substantially earlier than 2300 B.C.—probably before 3000 B.C. This is more than 500 years earlier than the first known bronze casting in India, and 1,000 years before any known in China. It may also prove older than sites in the Near East, which is where bronze manufacture was long assumed to have begun.

The rectangular molds we found at Non Nok Tha all came in pairs (page 334), indicating that they had been placed together where we found them, rather than having been lost or discarded. Considering the whole and broken crucibles that turned up, and the many small nodules of bronze scattered about, we have no doubt that we have unearthed a bronze-casting area—in effect, an ancient ax factory.

Portions of cattle were interred with some of the early burials at Non Nok Tha. These have been tentatively identified as domesticated animals very similar to the zebu (*Bos indicus*). This would be the earliest dated find of domesticated cattle in eastern Asia.

Chester Gorman, a student of mine at the University of Hawaii, was the one who located Non Nok Tha by finding potsherds eroding from the mound. In 1965 he returned to Thailand for his Ph.D. work. He wanted to test the suggestion by Carl Sauer and others of possible plant domestication by Hoabinhian people. In far northern Thailand, close to the Burmese border, he found Spirit Cave—and what he was looking for.

Cave of Death Yields Startling Dates

Spirit Cave stands high on the side of a limestone outcrop, overlooking a stream which ultimately drains into the Salween River in Burma (see supplement map). The cave was apparently once used as a mausoleum—hence the name.

Excavating its floor, Gorman found carbonized plant remains, including two probable beans, a possible pea, a Chinese water chestnut, a pepper, and bits of bottle gourd and cucumber, all in association with typical Hoabinhian stone tools (page 335).

The remains of animal bones, chopped into small pieces but usually not burned, suggest that the meat cooked here was not roasted in or on the fire but stewed, probably in a container of green bamboo—as is still done in Southeast Asia today.

A series of carbon-14 dates for this site range from 6000 B.C. back to 9700 B.C., and there is still older material, in deeper layers, yet to be dated. At about 6600 B.C., new elements entered the site. These include well-developed pottery, burnished, incised, and marked by the woven cords used in its manufacture; rectangular, partially polished stone tools; and small slate knives. Hoabinhian tools and plant remains continue to be found with this more recent material.

We may regard the finds at Spirit Cave as at least preliminary corroboration of Carl Sauer's hypothesis, and other expeditions are adding evidence of a complex and widespread Hoabinhian culture. U Aung Thaw,

Director of the Archeological Survey of Burma, excavated in 1969 a remarkable Hoabinhian site at the Padah-lin caves in eastern Burma. It contained, among other things, many cave paintings. This is the farthest west that a Hoabinhian site has been reported.

Excavations in Taiwan by a joint expedition of the National Taiwan University and Yale University, led by Professor Kwang-chih Chang of Yale, have shown that a culture with cord-marked and incised pottery, polished stone tools, and polished slate points had a long existence prior to 2500 B.C.

Puzzle Begins to Fit Together

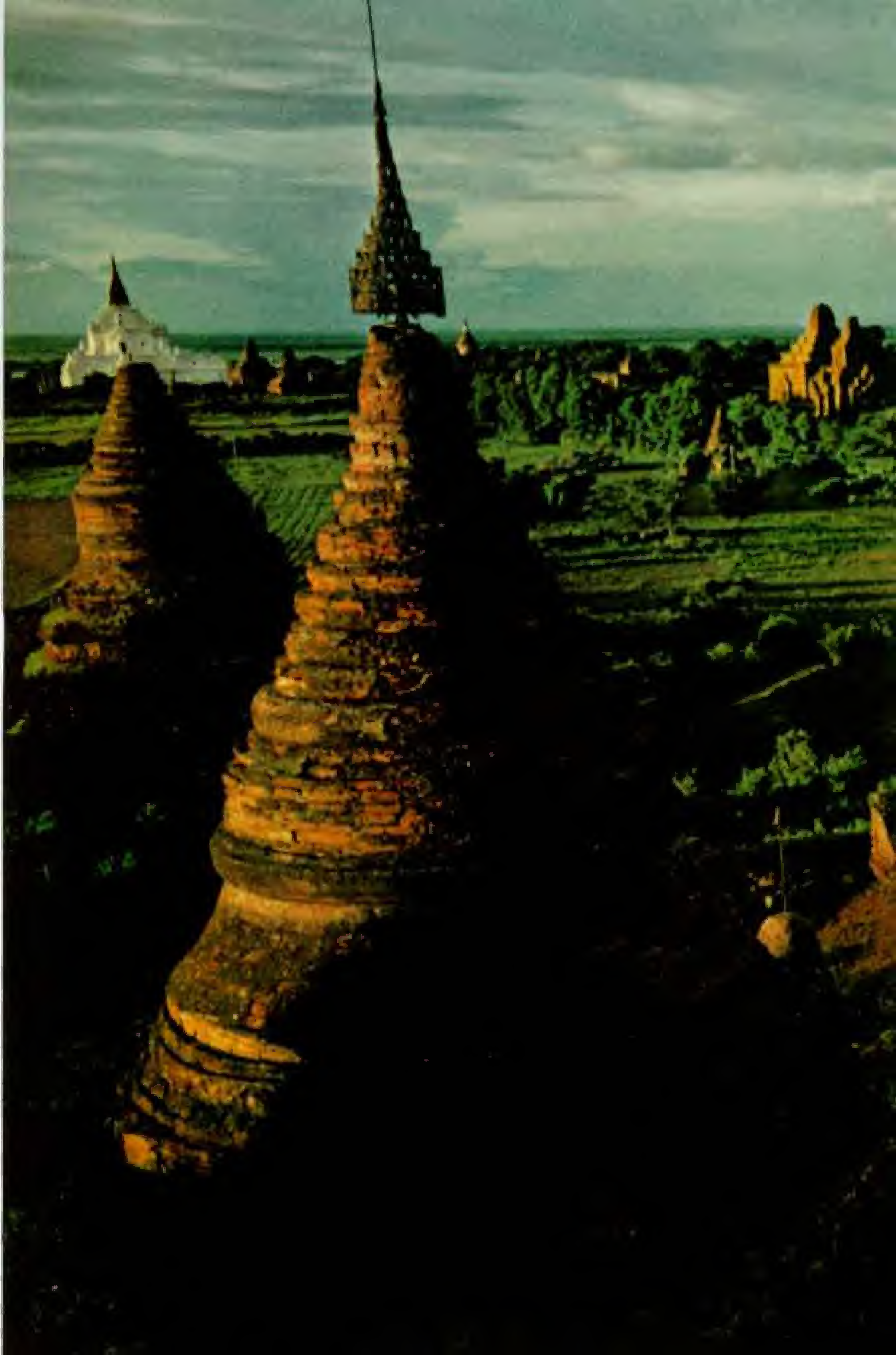
In view of the new excavations and dates I have summarized here, and others, perhaps equally important, that I have not, it is interesting to speculate on how the prehistory of Southeast Asia may someday be reconstructed. In a number of published papers I have made a start on this. Most of the ideas I have proposed must be labeled as hypothesis or conjecture. They need a great deal more research to bear them out—or refute them. Among them are these:

- I agree with Sauer that the first domestication of plants in the world was done by people of the Hoabinhian culture, somewhere in Southeast Asia. It would not surprise me if this had begun as early as 15,000 B.C.
- I suggest that the earliest dated edge-ground stone tools, found in northern Australia and dated by carbon 14 at about 20,000 B.C., are of Hoabinhian origin.
- While the earliest dates for pottery now known are from Japan at about 10,000 B.C., I expect that when more of the Hoabinhian sites with cord-marked pottery are dated, we will find that pottery was being made by these people well before 10,000 B.C., and was possibly invented by them.
- The traditional reconstruction of Southeast Asian prehistory has had migrations from the north bringing important developments in technology to Southeast Asia. I suggest instead that the first neolithic (that is, late Stone Age) culture of North China, known as the Yangshao, developed out of a Hoabinhian subculture that moved north from northern Southeast Asia about the sixth or seventh millennium B.C.
- I suggest that the later so-called Lungshan culture, which supposedly grew from the Yangshao in North China and then exploded to the east and southeast, instead developed in South China and moved northward. Both of these cultures developed out of a Hoabinhian base.
- Dugout canoes had probably been used on the rivers of Southeast Asia long before the fifth millennium B.C. Probably not long before 4000 B.C. the outrigger was invented in Southeast Asia, adding the stability needed to move by sea. I believe that movement out of the area by boat, beginning about 4000 B.C., led to accidental voyages from Southeast Asia to Taiwan and Japan, bringing to Japan taro cultivation and perhaps other crops.
- Sometime during the third millennium B.C. the now-expert boat-using peoples of Southeast Asia were entering the islands of Indonesia and the Philippines. They brought with them a geometric art style—spirals and triangles and rectangles in band patterns—that was used in pottery, wood carvings, tattoos, bark cloth, and later woven textiles. These are the same geometric art motifs that were found on Dongson bronzes and hypothesized to have come from eastern Europe.
- The Southeast Asians also moved west, reaching Madagascar probably around 2,000 years ago. It would appear that they contributed a number of important domesticated plants to the economy of eastern Africa.
- At about the same time, contact began between Viet Nam and the Mediterranean, probably by sea as a result of developing trade. Several unusual bronzes, strongly suggesting eastern Mediterranean origins, have been found at the Dong Son site.

Past May Help to Light Up the Present

The new reconstruction of Southeast Asian prehistory I have presented here is based on data from only a very few sites and a reinterpretation of old data. Other interpretations are possible. Many more well-excavated, well-dated sites are needed just to see if this general framework is any closer to what happened than is Heine-Geldern's reconstruction. Burma and Assam are virtually unknown prehistorically, and I suspect that they are of great importance in Southeast Asian prehistory.

Most needed are many more details about small, definable areas. By intensive investigation in a small area, it will be possible to work out the local cultural development and ecological adaptation to see how living people fit in with the framework of prehistory. After all, it is people we want to understand, and this information may give us some insight into their interaction with each other and with their changing world in Southeast Asia. □



SOUTHEAST ASIA 3

Pagan, on the Road to Mandalay

MANDALAY
BURMA
Irrawaddy
RANGOON

ARTICLE AND PHOTOGRAPHS BY

W. E. GARRETT
ASSISTANT EDITOR

MARCO POLO REPORTED that Kublai Khan sent only court jugglers and clowns to conquer Burma's powerful Pagan dynasty in 1283. Burma's chroniclers admit their side lost but insist the Mongols attacked with six million men on horse and twenty million on foot.

Both stories are absurd, but they point up how little we know about the first Burmese capital, whose ruins stand as one of the unique religious and architectural monuments of the world. Now that Cambodia's famed Angkor has been occupied by Communist guerrillas, Pagan may become the most visited of Southeast Asia's ancient cities.

You've never heard of Pagan? Blame Kublai Khan. When his Tartar archers made pincushions of Pagan's vaunted war elephants in the battle of Vochan, 350 miles north of the capital, he destroyed more than a Burmese army. He shattered the elephant cavalry's myth of invincibility and triggered warfare that led to the empire's fall and seemingly cursed even its name into oblivion. (Pagan rhymes

Virtually unknown to the outside world, a forest of Buddhist shrines unsurpassed in history nestles within an eight-mile curve of the Irrawaddy River in Burma. This site of the royal capital of the first Burmese Empire once held 5,000 pagodas, built by rulers and subjects alike to gain merit in future lives. The high tide of construction began in the 11th century, then ebbed within 250 years as Mongol invasion and internal conflict ended Burma's golden age. More than 2,000 pagodas survive.

THIS PAGE FOLDS OUT

Train of oxcarts, laden with baskets of palm sugar, rumbles toward a landing on the Irrawaddy River, Rudyard Kipling's road to Mandalay. The cart returning at left carries rice, a staple not grown in the arid Pagan region. A convoy like this once bore a richer cargo; a stone tablet dedicating

KODACHROME BY W. E. GARRETT © NATIONAL GEOGRAPHIC SOCIETY

an 11th-century Pagan temple tells of a king who paid six oxcarts of silver to artisans erecting a pagoda in his name. Little of the empire's former grandeur remains along this dusty, sun-streaked road in Nyaungu, one of five villages that now occupy the site of the onetime metropolis.

with "anon"—and has nothing to do with our "pagan," as in pagan worship.)

Marco Polo reported on the city's splendors, though only on hearsay. Along Rudyard Kipling's road to Mandalay, the Irrawaddy River flotilla, with "paddles chunkin' from Rangoon to Mandalay," passed Pagan on every trip, but the ruins didn't get a mention.

Even the ubiquitous modern tourist has failed to discover Pagan. Until recently, Burma's government granted only 24-hour visas, so there was no time to reach the remote ruins. Now, however, seven-day visas are obtainable, and Pagan is about to emerge from undeserved obscurity. I was fortunate to be one of the first journalists to enter Burma under the new policy, and I found Pagan well worth the special trip.

IN TWO AND A HALF CENTURIES of sustained and fervent piety, from 1044 to about 1300, kings and commoners together spent their wealth honoring Buddha. They built more than 5,000 elegant pagodas, averaging almost two a month.

The earliest pagodas relied heavily on Indian design and engineering, but later ones utilized every form of the arch with unmatched skill. One king reportedly threatened to execute the bricklayer responsible if a needle would slide between any two unmortared bricks in his pagoda. No expense was spared, for Burma had grown rich and powerful on agriculture and trade with India, Ceylon, Malaya, and China. And taste went along with treasure; Pagan developed one of the most advanced cultures in the East. (See the double-supplement, **Asia** and **Peoples of Mainland Southeast Asia**, distributed with this issue.)

Like toy castles strewn on a pool table, more than 2,000 pagodas still stand, many in excellent condition, along an eight-mile crook of the Irrawaddy River, a hundred miles down from Mandalay (foldout, pages 340-42). Climbing high up the sloping side of one of the taller ones, I scanned the bizarre landscape, an appropriately austere setting for shrines to a man who rejected sensuous pleasure. Here were no rolling meadows, forested hills, or towering peaks—only a parched plain in the heart of Burma's dry zone, now greened briefly

EKTACHROME © N.G.S.

Droplets form a crystal arch over the Irrawaddy as a stevedore washes his *longyi*—a skirtlike garment worn by men. Rising in Burma's rippling highlands, the river serves as a broad highway through the central plains. In the middle of the ninth century it attracted drifting Burman tribes from Tibet, who built Pagan on its banks. Two hundred years later, King Anawrahta led them against the Mon Kingdom to the south and surrounding principalities, carving out an empire nearly the size of modern Burma. Captured Mon artisans helped make Pagan, in the words of Marco Polo, "a very great and noble city."

by monsoon rains (pages 352-3). The scant annual rainfall supports a wild growth of cactus and scrub thorn popular only with goats. In contrast to the way the consuming tropical jungle has clawed at Angkor's temples (pages 308-309), this dryness has protected Pagan's ruins.*

Ornate pagodas by the hundreds, all different in size and detail, yet all much alike in form, dominated the harsh land and my senses. No familiar sound or sight reached me to betray the century I had come upon. Though the bright heat of day lighted the eerie quiet, I had an uneasy feeling of being surrounded by huge mausoleums and their caretaker spirits. But my imagination had no need to wander. There was already too much of the unfamiliar to absorb.

The present "ruler" of this ancient city joined me for a tour of the ruins. Unlike its fierce kings of old, he is a mild and modest man named U Bokay—the "U" is a title of respect stronger than our "Mr." As conservator under Burma's Department of Archeology, U Bokay supervises the protection, preservation, reconstruction, and study of Pagan's monuments (page 359).

He probably knows more about Pagan than did any court gossip in the days of empire, for his work includes translating stone inscriptions and palm-leaf manuscripts from Mon, Pyu, Sanskrit, and Pali into Burmese and English. A member of a celibate Buddhist lay order, U Bokay is married only to Pagan—past, present, and future. He touches old frescoes and the subject of Pagan's history with the same tenderness, but he is no romantic.

"Were there once 4,486,733 pagodas, as legends say?" I asked him while we looked out at the 2,000 survivors.

"Nonsense!" U Bokay shot back. "Never more than 5,000!"

"Then the story I read of the king who tore down 14,000 pagodas to build defenses against Kublai Khan couldn't be true?"

"Unthinkable. No Buddhist would destroy a pagoda. He would have been sure to lose the war."

"Did Kublai Khan sack Pagan?"

"Just as unthinkable. He too was a Buddhist. The king of Pagan fled, and so no battle was fought here. Even so, Kublai Khan ordered his troops to respect the temples. And Pagan didn't end with his victory. Some pagodas were built later. Pagan's enemies were time, negligence, and ignorance."

U Bokay permitted me to enter temples that are locked to protect their murals from vandals and wandering goats and cows. While I photographed a section of a mural depicting the birth of Buddha (page 354), the caretaker's wife brought us a snack of delicacies enjoyed in ancient Pagan and still popular—pickled tea leaves, fried garlic, toasted sesame seeds, fried beans, and palm candy.

Late in the day with my friend U San Win, a Burmese writer and editor who had come with me to Pagan, I climbed another high pagoda to watch evening overtake the ruins. A guide and his driver accompanied us.

THE TINKLE of wind chimes wafts faintly from a nearby spire, mellowing the silence. A plow drawn by oxen in a distant field slowly ripples the soil around and around a small obstructing pagoda, until it seems that shock waves emanate from it, leaving it isolated in space as well as in time.

Two slim-hipped girls, posture-perfect, with baskets balanced firmly on their heads, glide timelessly and sensuously along the dusty road that brought us here. Barefoot, yet sure-footed, they flow with a harmony never seen in the mincing, high-heeled gait of modern ladies. They disappear and reappear as the road passes amid the huge temples. Finally they are lost under the green canopy of acacias where the present-day village of Pagan huddles at the edge of the ruins.

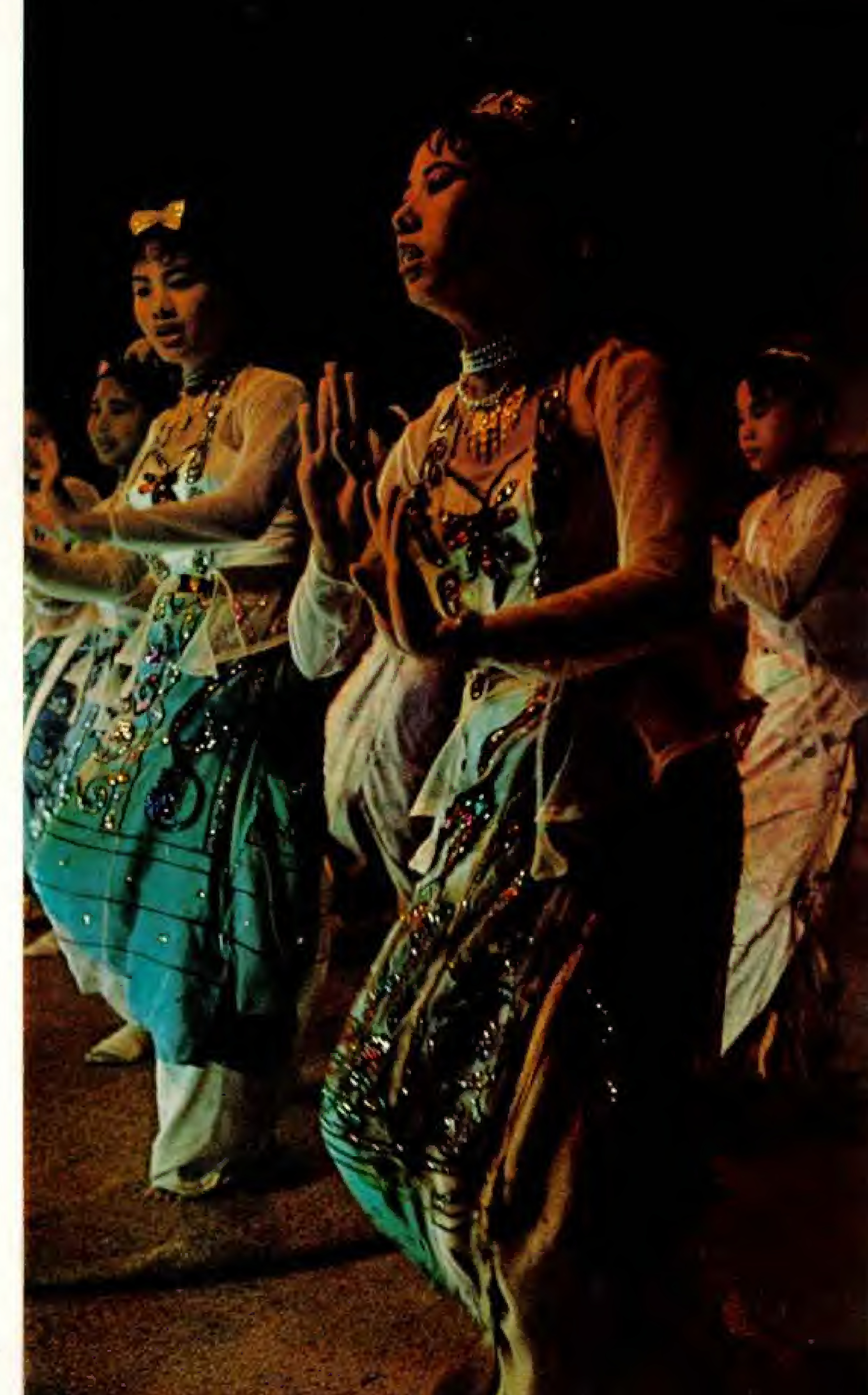
As the day cools into evening, other villagers appear along the road, some riding in high-wheeled pony carts. A truck and an aged bus pass, going toward Burma's major oil field, 20 miles to the south.

Behind us wallows the brown mass of the Irrawaddy River, flushing mountain snows and monsoon rains down past Rangoon to the Indian Ocean. With only an eighth of the drainage area of the Mississippi and 80 percent of its volume, the Irrawaddy erodes its banks eight times as fast.

U San Win points out the mounds that mark the south wall of the ancient city. A third of old walled Pagan and about thirty of its pagodas have already gone with the river. He tells me of a strange local practice that resulted.

"The entire west wall is gone, but for funerals the townspeople pretend it's still there. It was traditional to carry the deceased out through the west gate, then to turn south

*W. Robert Moore described "Angkor, Jewel of the Jungle," in the April 1960 NATIONAL GEOGRAPHIC.



to the cemetery. Now at high water they transfer the bodies to small boats for the short trip to the burial ground south of town. A road leads there from the south gate, but it's never used for funerals."

The setting sun finds a last gap under a bank of monsoon clouds. Like thousands of golden spotlights, horizontal rays pick out every pagoda, isolating the structures from the fields and paths, which grow dark in contrast, masking what little sense of reality exists.

Flashes of heat lightning play across the eastern sky, silhouetting the extinct volcanic cone of Mount Popa. As Mount Olympus was home to Greek gods, Mount Popa, towering awesomely, became the dwelling place of Burma's *nats*, or spirits.

Buddhism allows for no spirit or god worship, but the people cling to the animism that predated the arrival of Buddha's teachings. One Burmese tried to explain it to me: "Buddhism is concerned with the hereafter; we placate and propitiate the nats in this world."

The nats, it seems, are everywhere, infinite in number and mood, some good, some very bad. After almost 11 centuries of coexistence, Burma's classical Theravada Buddhism still tolerates nat worship and, perhaps as important, the nats still tolerate Buddhism.

Our guide and driver chatter nervously in the growing darkness. None of us worry about ghosts, I'm sure, but I guess it doesn't hurt to assure any wandering nats that we are human and harmless—and leaving.

IN TINY PRESENT-DAY PAGAN (population 3,252) no hotels mar the village charm—yet. So we checked in at royal quarters, an eight-room government guesthouse built under British rule in 1921 to accommodate the visiting Prince of Wales, now the Duke of Windsor.

Large ceiling fans stirred the hot air, and mosquito nets suspended over springless plank beds provided us some protection from insects at night. Twenty-four hours a day insect-eating lizards called geckos darted across the walls and ceilings—four-footed, nontoxic bug bombs. Yet each time I cocked my arm to swat a fly, a Buddhist appeared to shoo it out of harm's way—to protect me, no doubt, not the insect, for Buddhists believe that one who takes life loses merit.

Pagan's fame within Burma rests not only on the past. Its villagers, perpetuating old Pagan's legacy of artistic excellence, produce

"Let music be performed!" commanded King Anawrahta, who on his travels reportedly left behind musical instruments and dancers for the amusement of the people. Burmese still obey, as seen by their enthusiasm for the *pwe*, a marathon of drama, singing, dancing, and joke telling. Seated before outdoor stages on mats, audiences supplied with flasks of tea and fat cigars watch throughout the night.

Here at Nyaungu, pwe dancers from Mandalay begin a performance by adding song to sinuous movement (opposite); an orchestra of gongs, drums, and an oboelike *hne* provides accompaniment.

First light of dawn in the nearby village of Pagan (right) finds a pwe still under way before a dwindling audience that includes children and dogs.

DRAWING BY SIR HENRY YULE IN "A MISSION TO THE COURT OF AVA IN 1855"

"Make a pleasing lovely room," reads a Pagan temple inscription, "a fragrant chamber for the mighty Seer." Such is the interior of Ananda, where 31-foot gilded figures of Buddha (right) stand on four sides of a central column (above). Light streaming through lofty windows enhances the splendor of the images, whose hands signify teaching. Built about 1105 by King Kyanzittha, famed for having strengthened his empire through diplomacy rather than strife, the temple has remained a seat of worship for more than 800 years.

Citadels of devotion, Ananda, left, and 210-foot Thatbyinnyu, highest of the pagodas, rise against a backdrop of the Tangyi hills. Ananda's ornate profile and cavelike interior reflect the style of Mon architects. With towering Thatbyinnyu, built about 1150, the Burmese developed a distinctive architecture, with interiors that utilize more open space. Both structures feature pyramidal terraces and soaring, flamelike pinnacles to convey the idea of virtuous aspiration.

EKTACHROME (OPPOSITE) AND KODACHROME BY W. E. GARRETT © N.G.S.

"Like an epic stage that has lost its cast," the author says of the ruin-filled plain of Pagan. Kings' palaces and sermon halls of ornately carved wood have long since vanished, as have hordes of courtiers, artisans, scholars, merchants, and laborers.

Thirteenth-century Gawdawpalin, a massive example of the Burmese style, looms at left. A member of a diplomatic mission to Burma in the 1850's, British engineer

some of Burma's finest lacquer work. Nine out of ten households take part in the community industry.

Good lacquer requires a mood of timelessness that even the visitor senses. Workers' time clocks, if such existed, would be marked in months, not hours. Between layers of lacquer a good piece must sleep well in a damp cellar for several weeks. From the weaving of the bamboo-and-horsehair skeleton to the final polish, a fine bowl may take a year (pages 356-7). The villagers also rush out items for tourists in three months now, but no one is proud of them.

Fortunately, though unintentionally, I went with U San Win to shop for lacquer at the home of U Ba Kyi just at mealtime—10 a.m. Burmese eat twice a day, in midmorning and midafternoon. I was politely refusing U Ba Kyi's invitation to join the family, which I assumed to be just a courteous gesture, when U San Win took charge and accepted for us.

Old chronicles quote one king of Pagan as bragging that he never sat down to fewer than 300 curries a day. As the table filled, I began to doubt that the old chronicles exaggerated. From a tiny kitchen near the main house, dish after dish appeared; one even arrived by messenger.

U San Win explained: "A sister nearby is famous for her rice. U Ba Kyi borrowed a bowlful so his visitor from the United States would have the best."

The rice was good, but I also remember the

KODACHROME © NATIONAL GEOGRAPHIC SOCIETY

Sir Henry Yule wrote of the temple, "We had seen it from far down the Irawadi rising like a dim vision of Milan Cathedral." Thatbyinnyu and Ananda, center, and Shwesandaw, far right, stand amid fields of millet, melons, sesame, and peanuts greened by autumn's brief rains. The broad river has carried away a third of the old walled city, upper left, including an estimated thirty pagodas.

wife's cucumber salad garnished with a faintly sweet dressing containing sesame seeds, river fish poached in brown bean sauce, fried fingerlings served with fresh limes, and crisp breaded gourd. Pomegranates, bananas, and guavas appeared for dessert. From then on, I never thought of turning down a Burmese invitation to come to the table. And I left Burma weighing more than when I arrived—but it was worth it.

AS WE WALKED BACK from U Ba Kyi's home, U San Win told me: "Since we were there at mealtime, it would have been insulting to refuse his hospitality. If I arrived at an old friend's home after a 30-year absence, he would welcome me, even if his wife had to go out the back door and sell her jewelry to buy food."

That started us talking about other ways in which Burmese conventions might surprise a Westerner.

"We have no good morning or good night in our language," U San Win said. "To a Burmese a smile is more eloquent than words. Sometimes foreigners misunderstand. During World War II a handbook printed for your GI's warned them not to read too much into a Burmese girl's smile; she might just be saying hello—or goodbye!"

She might also be married, and to misunderstand that would be deplorable. "The only way to tell if a Burmese woman is married is by her behavior," U San Win said. "She wears

no ring, and she keeps her own name and property. By law and custom Burmese women are equal. We couldn't have one law for women and another for men, could we?"

THE SAME DAY, however, Ko Than Shwe, a young man of Pagan, told me: "The female is unpredictable. How or whether she works depends on how much you beat her. If properly beaten, she'll outproduce a male. Some temperamental types like to be beaten very hard."

His wife Ma Aye Myint stood beside him—agreeing.

"You can overbeat them," he added. "No two of them are alike, so you have to learn by experience."

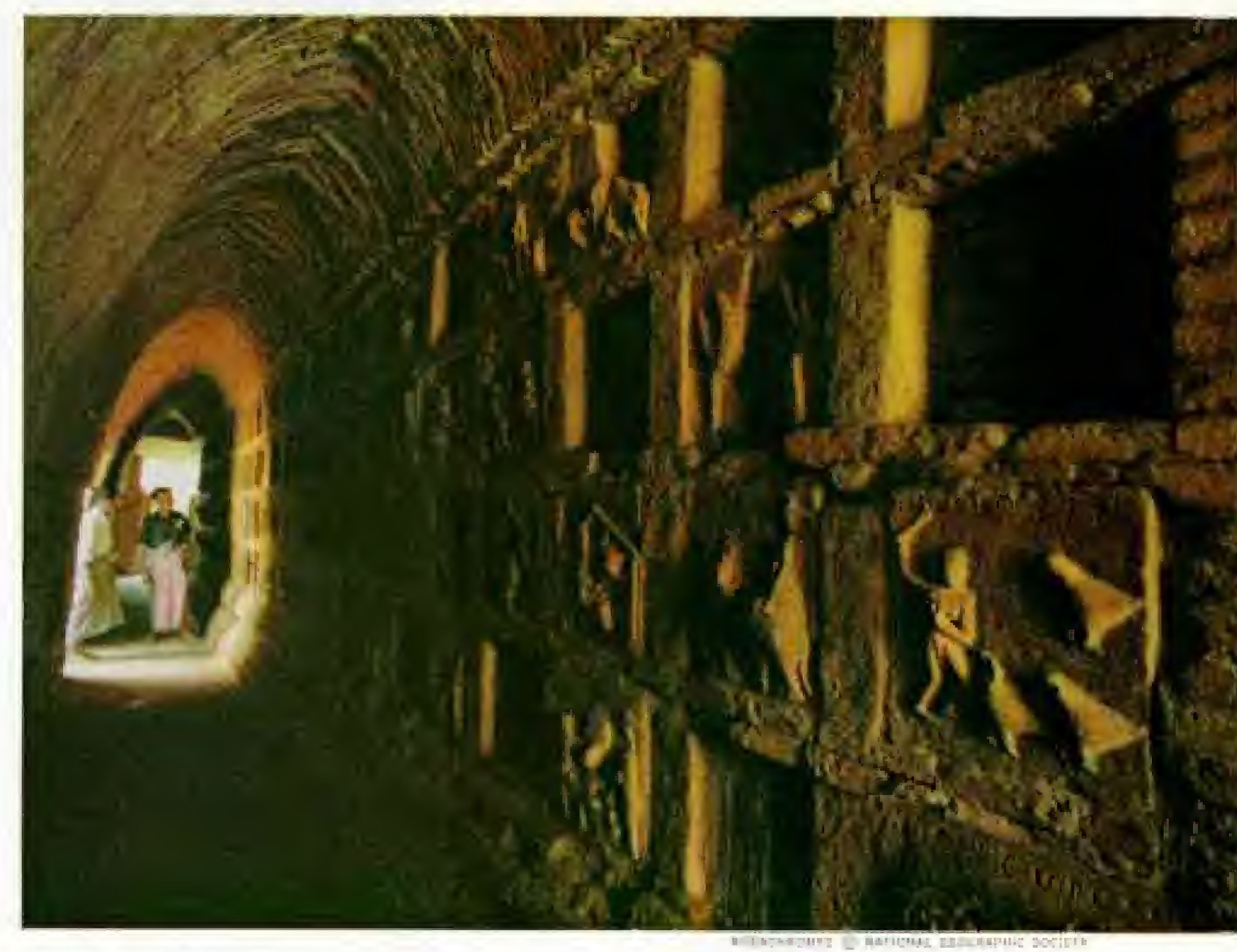
Ma Aye Myint went into the house. She returned with a special brass hammer used by her husband to beat not her, but his female palm-sugar trees.

The juice of the toddy palm, like the sap of maple trees, cooks down to a delicious candy-like sugar called jaggery. Ko Than Shwe, like many men around Pagan, is a toddy tapper. He climbs the tall palms seven days a week to collect the juice (page 360).

The globular fruits of the female tree grow along a stalk. It is this stalk that tappers soften by beating to speed the flow of juice to a cut at the end. The harvest of the male tree is accomplished by slightly crushing the long, fingerlike fruits, then cutting off their tips. Earthenware cups tied below the cuts catch the dripping juice. A properly beaten tree will yield 120 pounds of sap a year.

Not all toddy juice becomes sugar. You can

(Continued on page 358)


KODACHROMES © NATIONAL GEOGRAPHIC SOCIETY

Birth of Buddha in southern Nepal's Lumbini Grove adorns a wall of Nandamannya temple (opposite). This 700-year-old tempera painting shows the child on the left hip of Queen Maya, left, who leans upon her sister. Below them kneel a row of worshipers, paying homage to the child Buddha.

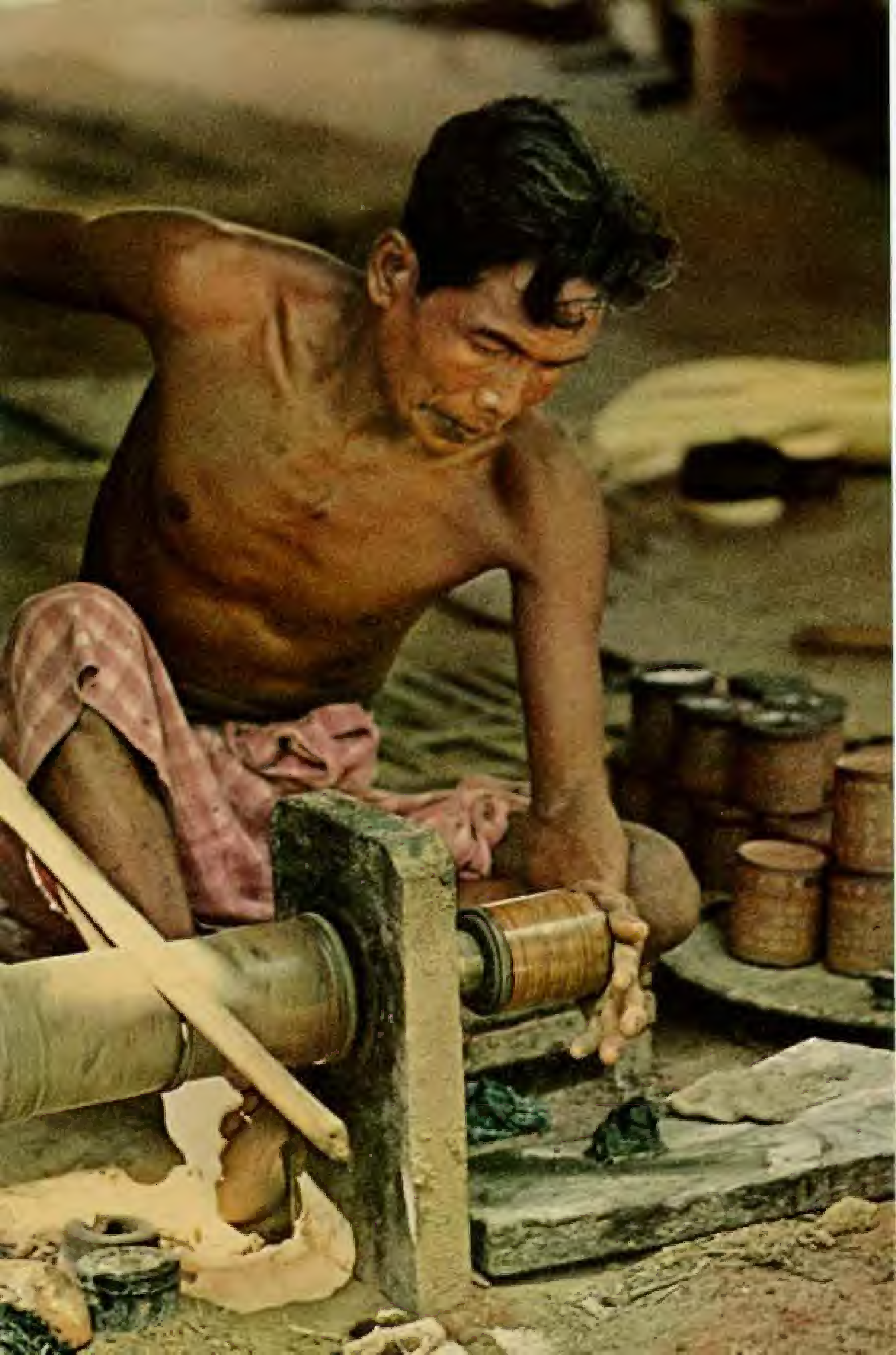
Scriptural gallery stands pillaged by vandals; rows of terra-cotta plaques in East Petleik pagoda illustrate the many lives of Buddha. Robbers eviscerated images of the sage and tunneled into stupas to remove valuables often secreted within—jewels, precious metals, and sacred relics.

Masterpieces of lacquer ware have been the pride of Pagan since the days of empire. The craft may have originated in China and spread across Southeast Asia to the Mons, who brought the technique to the capital.

Leading products of the area today, lacquer vessels range from small finger bowls to bucket-size betel-nut canisters (above). An artisan first weaves a cylindrical frame of bamboo and horsehair, over which successive coats of sap from the *thitsi* tree are applied. After each layer has dried, a worker puts the cylinder on a lathe for polishing (right). Using the stick in his right hand to spin the lathe, he smoothes the surface with pumice.

An artist then creates a pattern by scratching a design and covering the container with pigmented lacquer. Another polishing removes all the color except that caught in the depressions. These steps are repeated for successive colors until a multihued design is complete. Some tell a love story; others include figures from astrology, such as the mythical bird Hintha (actual size, below).

EKTACHROME (RIGHT) BY W. E. GARRETT
AND KODACHROMES BY KENNETH GARRETT © N.G.S.



drink it fresh. When yeast is added, the sweet liquid changes personality in a hurry. Juice collected at 8 a.m. ferments to toddy wine by 5 that evening. By midnight it has soured.

For my own good, I'm sure, U San Win tried to discourage me from visiting a toddy bar. The one I visited outside Pagan was a bamboo hut with a small window through which the bartender passed coconut halves filled with the white liquid.

Toddy wine, I found, is an acquired taste. Lukewarm and still full of working yeast, it has the look, smell, and flavor that I imagine fermented milk of magnesia might have. It is cheap enough—seven cents a bottle—but, if, as they say, it takes two bottles to get a person intoxicated, I was safe.

TO SEE MORE of Pagan's 16 square miles of pagodas, we needed an automobile, a rare commodity in the region. Luck led us to hire guide U Win Thein and his World War II jeep. The antique vehicle commanded a higher fee than its owner—but not out of sentiment. Burma's Socialist government, following a policy of neutrality, has accepted little foreign aid for fear of political entanglements. A crippling shortage of foreign exchange inflates to black-market levels the cost of the few available imported items. Our jeep sold as surplus for $200 a quarter century ago. Now, patched and battered, it would bring $3,000—in a country where teachers earn $250 a year.

Unlike the war-swollen economies of its Southeast Asian neighbors, the economy of Burma is stagnant. But the situation is not as critical as I first thought.

"To keep body and soul together is easy in Burma," said U San Win. "We need no mink or ermine. We have been called the butterfly race—gaudy, always happy, living for today."

As always, no one starves in Burma, where there is always a rice surplus. And the nation has been spared the horrors of the current war in Southeast Asia. Because most Burmese subsist happily without imported luxuries, an economy that seems hopeless by Western standards works!

More surprising, the jeep worked. For nine days it performed faultlessly, bouncing us from before dawn until late at night along cart paths and across dry creek beds to scores of temples.

Burma's Buddhism dictates that socks as well as shoes must be removed on pagoda property. Since thorns will get you if you step off the blazing walks, I found it best to avoid temple visits in the heat of day.

We encountered huge solid stupas, reminiscent of Mexico's Maya pyramids, even to the steps that led up one face. The temples were not solid, and their interiors afforded us a welcome coolness. Originally they were plastered inside and out, and many interiors were decorated with intricate frescoes. Interiors of early temples often resemble caves pierced by dark passages, which provide havens for bats. Like the swish of velvet gloves, the flutter of their wings fanned the still coolness when our flashlights disturbed them. They're harmless, but, even so, I preferred the shrines of a later period, which enclose light, airy—and batless—vaulted interiors (page 355).

Some temples allegedly contained relics of Buddha; others housed images of Buddha. Of the millions of statues originally dedicated, most have long ago been looted. Those too big to steal have been beheaded and eviscerated by vandals looking for valuables secreted inside.

Unlike religious architecture in the West, which primarily protects congregations from the elements, Pagan's served only to honor and revere. Disciples met in wooden sermon halls interspersed among the temples, but no trace of these survives.

Dr. Gordon H. Luce, an English scholar who studied Pagan for half a century, writes: "There was once a wealth of wood palaces, schools, colleges, and monasteries; perhaps the major glory of Pagan . . . they must have lightened and set off to great advantage the brick masses in between."

In a misguided effort to beautify, Luce continues, "man has been more cruel to the monuments than time. Many of these lovely details are now lost beneath lime whitewash, which villagers, even temple-trustees, delight to spill all down the outside of pagodas, daub over stone inscriptions, and splash across the old paintings of the interiors."

AS FASCINATING in their way as Pagan's architectural relics are records of the ancient realm, called *The Glass Palace Chronicle of the Kings of Burma,* collected and authorized by King Bagyidaw in 1829. Before allowing me to become confused by their quasi-historical wonders, U San Win set the scene from his study of more reliable sources:

"Before your Crusades began in Europe, our King Anawrahta launched a crusade to

purify Pagan's Buddhism. He requested holy relics and accurate scriptures from his Mon neighbors to the south. When their King Makuta refused, Anawrahta in 1057 prepared to attack."

The Glass Palace Chronicle records that Anawrahta massed a force of 800,000 boats, 800,000 elephants, 8,000,000 horses, and 98,000,000 fighting men. When the vanguard reached Thaton, 300 miles away, the rear guard had not left Pagan.

Naturally, Thaton fell!

Anawrahta, apparently a forgiving conqueror, brought the captured king and his family to Pagan and treated them as royal guests. He conveyed the coveted scriptures and relics to his capital in jeweled caskets, on the backs of 32 white elephants.

Also, as important to Pagan's eventual splendor, he brought from the Mon capital "such men as were skilled in carving, turning, and painting; masons, moulders of plaster and flower-patterns; blacksmiths, silversmiths, braziers, founders of gongs and cymbals, filagree flower-workers; doctors and trainers of elephants and horses; makers of shields, round and embossed... of cannon, muskets, and bows; men skilled in frying, parching, baking, and frizzling ... hairdressers, and men cunning in perfumes, odours, flowers and the juices of flowers."

THE VIOLENCE that launched Pagan's classic period, spiced with intrigue, fratricide, patricide, and plain homicide, accompanied almost every change on the throne—if we can believe the genealogy. One king was killed after a dispute over the price of war elephants. Another died when his elephant fell on him. Alaungsithu was smothered at the age of 101 by a son impatient for the throne.

In 1290 a Shan worshiping and raiding party from what is now Thailand paid their respects to the pagodas—then took away 500 families of artisans, much as Anawrahta had done to Thaton 233 years earlier.

General Ne Win, present military dictator of Burma, came to Pagan in 1962 to rest and think. Apparently he found inspiration, for a few days later he executed his successful coup.

Despite Pagan's history of violence, I saw only one truly villainous type during my visit, and he was easy to spot. The village men wear the traditional skirtlike *longyi*. This character wore blue jeans and a black leather jacket. He flashed money around immodestly. U San Win told me he was a smuggler. I knew he

KODACHROME © N.G.S.

Legends about the universe, inscribed on palm leaves, absorb U Bokay, conservator at Pagan for Burma's Department of Archeology. A monk found the 400-year-old manuscript behind an image of Buddha in a ruined temple. A 15th-century inscription speaks of a governor giving almost 300 such books to a Pagan monastery.

Scribes cut the characters and drawings in the outer faces of the leaves, then darkened the cuts with turmeric and crude oil. Lacquered wooden covers protected the pages, which sometimes, as here, were hinged with cord and folded in accordion pleats.

Sweet harvest sends Ko Than Shwe up a palmyra, or toddy, palm to retrieve sugary sap; the empty pot hanging from his waist will be left to catch more dripping juice for collection in the morning.

In a process similar to that used in making maple sugar, villagers have milked such stately trees for centuries to produce sugar for Burmese households. Ko Than Shwe taps 16 trees each day; his wife Ma Aye Myint (below) boils the sap until it thickens and crystallizes, then shapes it into golf-ball-size lumps.

EKTACHROME (ABOVE) AND KODACHROME BY W. E. GARRETT © N.G.S.

Working seven days a week for nine months of every year, the couple extract an average of 120 pounds of sap from each tree, earning about 7½ *kyats* ($1.56) a day. When yeast is added, the juice ferments within a few hours into an inexpensive wine popular with village men.

To make the palm juice flow, tappers lacerate and bruise the fruit and stalks, then catch the dripping sap. Burmese men note wryly that female trees must be beaten with just the right touch before they produce properly.

would come to a bad end, because he was the villain in a *pwe*—the traditional theater of Burma.*

Since few villages have movie houses, the traveling pwe groups, known as jungle companies, must offer many things. Singers, clowns, dancers, ogres, nats, heroes, and villains, supported by an enthusiastic orchestra featuring drums and gongs, present a nonstop blend of slapstick, ribald burlesque, dancing, morality play, and melodrama. A pwe performance serves the community as a combination television-type soap opera and drive-in movie.

In a typical drama a nat boy and a nat princess fall in love. The princess's father, the nat king, approves of the boy but has already promised his daughter to another. He decides the boy may have his daughter—but only for seven days. Then the lover must surrender her to her betrothed. The boy-girl parting takes an hour or so, but there's never any hurry, since pwes last all night (pages 348-9).

BURMESE WIVES particularly enjoy the all-night escapism. They equip the family "box," a mat spread in front of the outdoor stage, with blankets, tea, and snacks. The men may watch, sleep, or gossip at the tea stands that appear at every pwe. Teen-agers, like American youngsters at a drive-in, tend to find flirtation in the shadows more interesting than the action on the stage.

The government has requested that pwes stop at midnight for the health of the people, but at 1:30 a.m. the arrogant smuggler stood surrounded by beautiful girls in front of a painted backdrop of a big city. From the excited hoots and cheers of the crowd of several hundred, it seemed things were going well. The city slicker's inevitable retribution might still be hours away.

For my own health I decided to sleep for a while. When I rejoined the pwe at 5:30 a.m., the villain was gone, as was most of the audience. A few women, children, and village dogs stayed until 6 a.m., when the curtain finally closed.

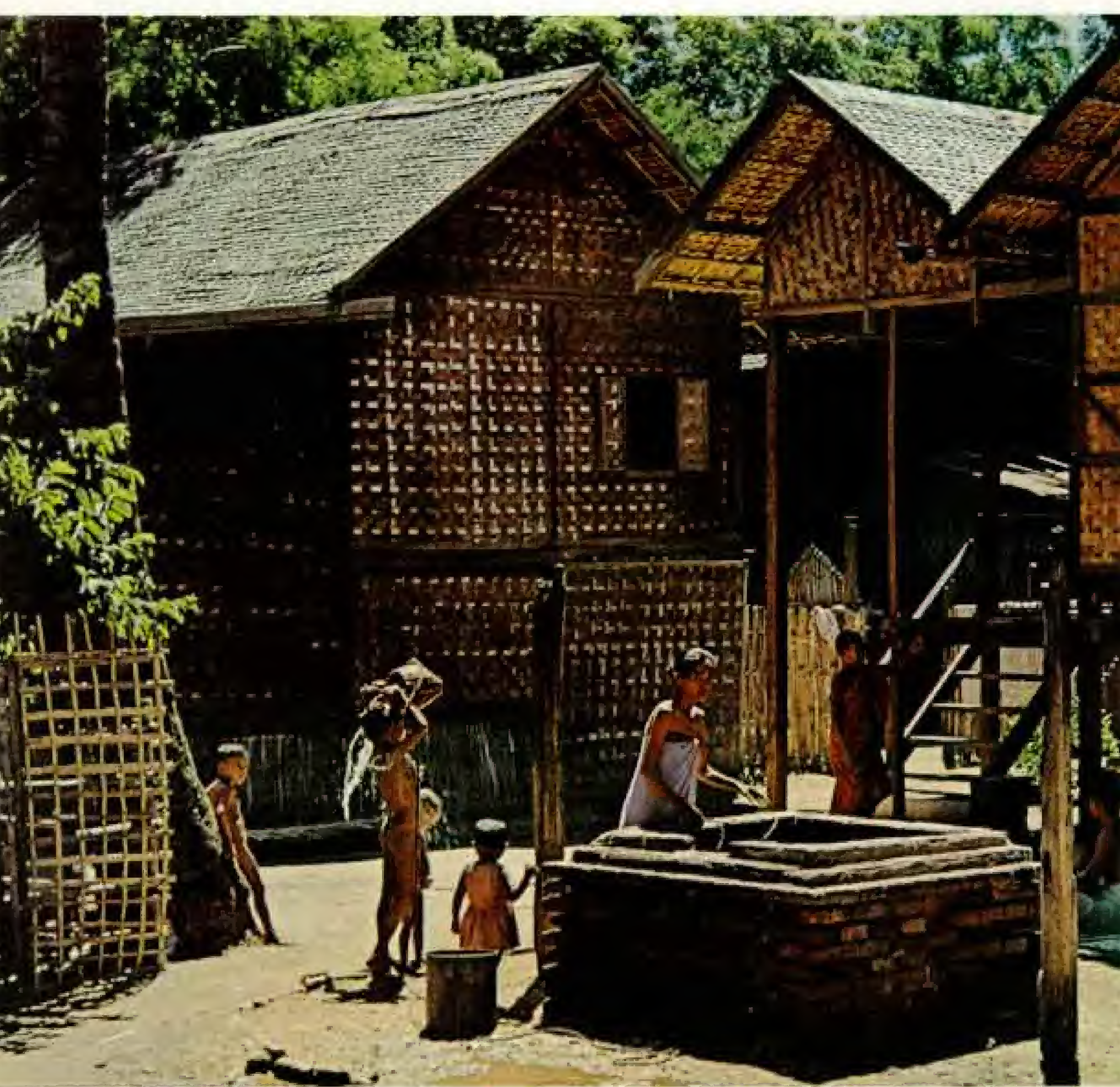
The pwe director told me his company, one of 50 operating out of the government drama school in Mandalay, could go on for a week without repeating a performance. I wondered how long the audience could last.

The pwe had been a special evening treat

*See "Burma, Gentle Neighbor of India and Red China," by W. Robert Moore, NATIONAL GEOGRAPHIC, February 1963.

"**An' I seed her first a-smokin'** of a whackin' white cheroot," wrote Kipling in "Mandalay." Owner of a sesame-oil factory, Pagan grandmother Daw Sint puffs on a cigar of tobacco leaves, stems, and roots rolled in corn husks and tied with red silk thread—a surprisingly mild combination.

Throughout Burmese history women have enjoyed a rare equality with men. Pagan temple inscriptions refer to female chiefs, writers, scholars, and—unusual in the East—musicians. There has been no battle of the sexes in Burma, says writer Daw Mi Mi Khaing. "In the all-important matters of . . . inheritance, of freedom of movement . . . women admit no inferiority," she observes.



EKTACHROMES (ABOVE) AND KODACHROMES © N.G.S.

At greeting or parting, a smile often serves the Burmese in place of the spoken word. When the little girl marries, she will retain her name and property rights, and will wear no wedding ring. Either mate may initiate a divorce action.

For a tropic land, houses of woven bamboo keep occupants cool. In the village of Myinkaba, near the edge of the old capital of Pagan, a woman draws drinking water and children take bucket baths at a public well. Early inhabitants of Pagan donated money to build pagodas; similarly, a modern Burmese donated this well to the village to gain merit.

Buddhism still orders village life. Every devout family budgets for charity, including food for monks, who accept offerings to benefit the giver.

for U San Win and me. Usually we ended the day with a visit to a sidewalk tea shop beside the unpaved main intersection of Nyaungu, a five-minute ride from the village of Pagan. Out of sight of the pagodas, we relaxed to the unhurried beat of small-town Burma.

We watched as a crew of laborers, shovelful by shovelful, inched a trench past the shop, gaining a few feet each day. It would eventually carry pipes for the community's first water system.

Two-wheeled, one-pony carts—the local taxis—waited across the road for fares. One displayed a chrome-plated automobile grille mounted ahead of the driver. The Chinese shopowner told us most carts ran on automobile tires until a few years ago. Because of the economic squeeze there is a tire shortage, and all but one have reverted to the old high wooden wheels, which gives them the look of long-legged ostriches. As they clattered briskly past our table, they lent an unfair note of antiquity to the scene. Truckers from Mandalay and Rangoon occasionally stopped to transfer supplies to pony- and oxcarts for local distribution. Caravans of carts rumbled by with local jaggery and sesame-seed oil, carrying them to the river landing a few blocks away (pages 344-5). Across the road carpenters, working with native teak, were building a tea shop. And the Union of Burma Airways' new Japanese-made bus passed on its way to meet one of the twice-daily flights.

I HAD TALKED with the airline's young and optimistic general manager, Capt. Khin Maung Latt, in Rangoon. He looks forward to a welcome flood of foreign exchange now that Angkor is unavailable to tourists and Burma is encouraging them. "We're training multilingual guides and will offer various package tours. We expect 55,000 visitors in 1971."

I couldn't picture thousands of tourists, no matter how dedicated, being accommodated in Pagan's eight-room guesthouse.

"We are renovating and air-conditioning two old Irrawaddy passenger steamers," the captain explained. "They'll tie up permanently at Pagan until we can build a hotel."

So at least this much of Kipling's "old flotilla" will at last stop at Pagan. Tourists won't "'ear their paddles chunkin'," but if the dawn continues to be the only thing that "comes up like thunder outer China 'crost the Bay," Pagan will become the busiest port on the road to Mandalay. □

"**You can hardly take a step** in Pagan without treading on bits of centuries-old building bricks or roofing tiles," says the author. Here archeological field workers carry away topsoil, baring remnants of a shrine. Pagan's restoration began in 1899, after hundreds of years of neglect.

Mortarless mountain, Somingyi stupa lifts its brooding bell-shaped dome above the plain. It owes its survival to careful workmanship and the dry climate.

Burma's long-time policy of issuing only 24-hour visas has limited travel to Pagan. Today, granting seven-day permits, the nation looks to increased revenues from visitors. Barred from war-torn Cambodia's Angkor, many tourists are turning to the glories of shrine-studded Pagan.

The sun rises and the surf flames as riders greet the dawn

By JAMES CERRUTI

ASSISTANT EDITOR

PHOTOGRAPHS BY

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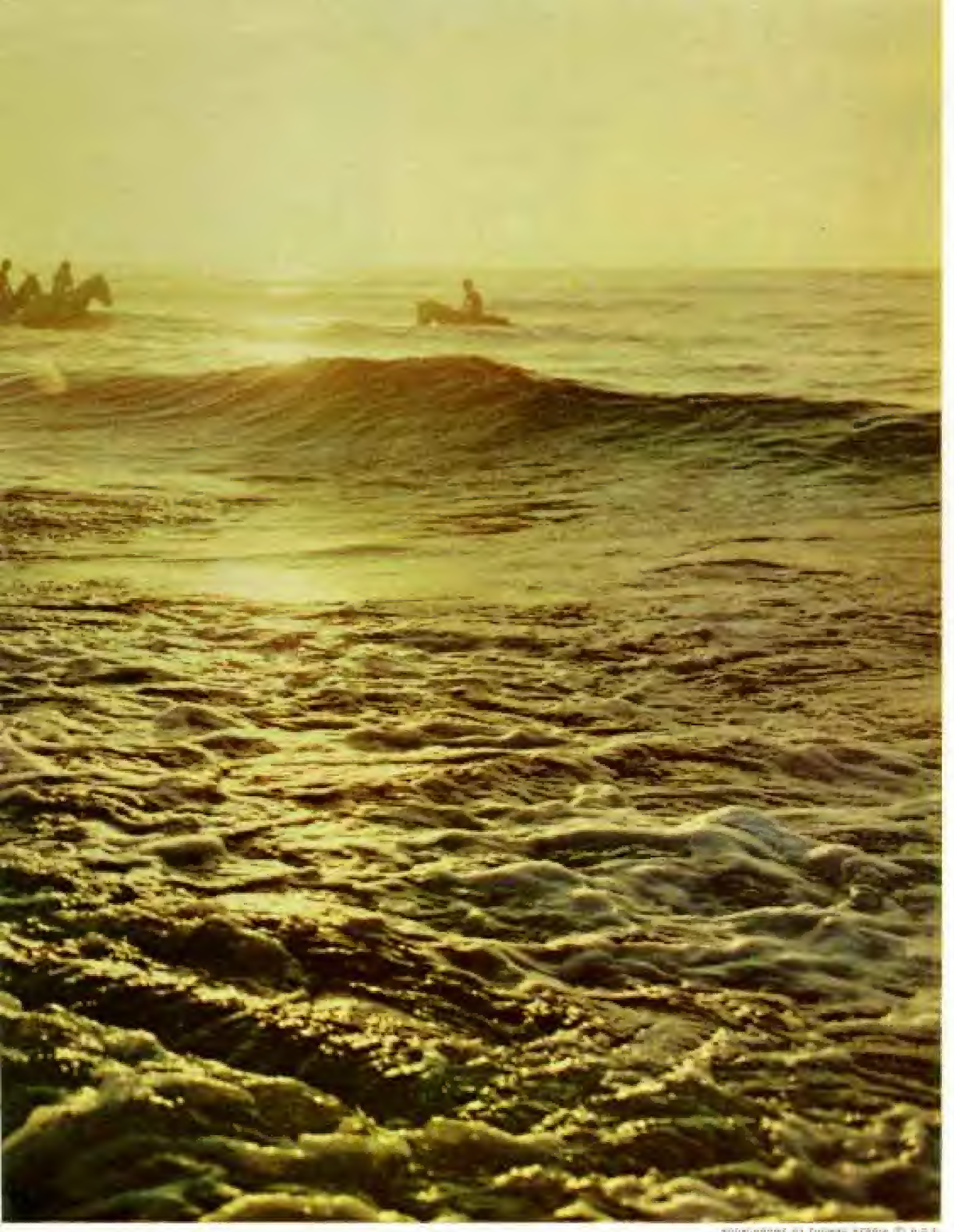
and JAMES L. AMOS

NATIONAL GEOGRAPHIC PHOTOGRAPHERS

SEA



PHOTOGRAPHS BY THOMAS NEBBIA © N.G.S.

on Sea Island, Georgia, one of the Atlantic Coast's famed "Golden Isles."

ISLANDS

ADVENTURING ALONG THE SOUTH'S SURPRISING COAST

Sea Islands: the South's surprising coast

"WHAT WAS IT LIKE?" they asked when I got back. The question was merely polite. I had not gone to Africa, Antarctica, or even Acapulco—just to some islands off our own southeastern shore. What *could* it be like that any well-traveled Easterner didn't already know?

"Like nothing I've ever seen," I answered. "Diamondback rattlesnakes seven feet long, big around as my leg. Live oaks centuries old. Wild turkeys. Razorback boars. Pools so full of gators you can stand with a lantern in the dark of the moon and in ten minutes count 42 pairs of ember-hot eyes.

"You know, of course, how we gauge a gator down there. You don't? Well, we reckon the distance from the knob on the snout to the ridge above the eyes. The distance in inches is the gator's length in feet."

Must a Sea Island Touch the Sea?

My deliberately lurid (though absolutely factual) account got through. My friends' questions were no longer polite. "Didn't you say you were going to Sea Island? Golf, tennis, riding, a posh retreat for millionaires?"

I explained I had said Sea *Islands*—and therein lies the difference.

Not that Sea Island, that opulent Georgia Eden, did not delight. The luxurious hotel named the Cloister, the stately vacation villas (average price, $150,000) formed a flattering backdrop to my early-springtime plashing in warm Atlantic waters. But elegant Sea Island is not typical.

Then just what are these sea islands that lace the Georgia and South Carolina coasts? If every one of an acre or larger could be tallied, they would number in the thousands (depending on the tide), ranging from 23-mile-long Cumberland to specks like Little Egg, Rockdedundy, Shutes Folly, and Wahoo (map, page 375). Breathes there the man with soul so dead he would not burn to see such picturesquely named places?

Well, perhaps the geologist friend who told me, "Most of those now aren't sea islands at all. By strict geologic a sea island should face the sea, should be an outer, or 'barrier,' island. All the rest are 'inner' islands."

This distinction has not penetrated to the natives or historians. They persist in calling big inner isles like Port Royal and St. Helena sea islands, and so shall I.

Essentially, the Sea Islands of glorious tradition comprise eight or so off Georgia and half a dozen off South Carolina. Their names, to choose a few, reflect the cosmopolitan forces that bore upon them: Sapelo, Ossabaw, Wassaw, Edisto—Indian. St. Simons, St. Catherines, St. Helena—Spanish. Port Royal—French. Cumberland, Jekyll, Johns—English.

Ossabaw's Luxury by Invitation Only

Of the score or more islands I set foot on, Ossabaw seemed the happiest blend of unspoiled nature and human enterprise. A privately owned, bridgeless barrier isle, it lies 20 miles by boat south of Savannah. From St. Simons, where I was staying with my family, it was 44 miles north. I arranged to go by small chartered aircraft, landing on the beach at low tide with great bravado.

My teen-age son Jimmy came along, and we arrived just in time for breakfast with our hosts, Mr. and Mrs. Clifford West, and half a dozen other guests. We ate in splendor in the manorial tiled dining room of the Main House, built by Mrs. West's parents, who bought the island in 1924.

In 1961 the Wests created the Ossabaw Island Project Foundation, opening the island to "men and women of creative thought and purpose in the arts, the sciences, industry, education, and religion." For a nominal fee or none at all, these happy few have the run of Ossabaw's 43 square miles, with room and board (a most inadequate description of Main House facilities) for up to two months.

The thick bacon served with our eggs had an intriguing, gamy smack. Mr. West said it came from Ossabaw's wild razorback boars. The Wests and the people who work for them know how to live off the land. They shoot the boar, the wild turkey, and the deer.

"**Beautiful glooms,** soft dusks in the noon-day fire—Wildwood privacies, closets of lone desire," wrote Georgia poet Sidney Lanier. Here, curtains of Spanish moss cloak live oaks on St. Helena Island, South Carolina. In these forested settings, Indians once stalked game, English settlers outwitted Spanish soldiers, southern planters grew rich on the labor of African slaves, and brother fought brother in the Civil War.

Exclusive haunts: As northern factories boomed after the Civil War, wealthy Yankees purchased entire islands for hunting preserves and winter resorts. In 1886 tycoons bought Jekyll Island to create a club for 100 members reputedly so rich they controlled a fifth of the world's wealth.

Migrating south by yacht and private rail car, Rockefellers, Vanderbilts, and Morgans relaxed at carpeted lawn parties. The one above was given at the turn of the century by Pittsburgh locomotive manufacturer Henry Porter.

Rustic simplicity was the vogue. A neighbor termed pretentious the 26-room villa (opposite) of Richard Crane; the plumbing magnate fitted it out with 16 bathrooms.

In 1942, with German U-boats offshore and a blackout imposed along the coast, the club disbanded. "The end of a way of life," mourned a member. Georgia bought the island in 1947 and today runs it as a state park.

New era, new goal: Mrs. Clifford West opens her family's island, Ossabaw, to invited intellectuals in the arts, sciences, industry, education, and religion. In her living room she holds one of her pet piglets from the island's herd of wild razorbacks.

Ghostly relics of the Old South, chimneys of slave quarters still rise on Cumberland Island's Stafford Plantation. In the 18th and early 19th centuries, battalions of slaves supervised by a handful of whites cleared the major islands and planted indigo and long-staple cotton. During the Civil War many islanders moved away, and the forest

pick oysters, net shrimp, and raise and slaughter their own cattle. Sicilian donkeys, Appaloosa horses, and wild big-horned goats are ornamental rather than nutritional.

As we toured the island by jeep, hordes of these animals passed before our bedazzled eyes, causing Jimmy to remark to the Wests' young son Justin, "Say, you live just like the Swiss Family Robinson."

The exhilaration of being so close to nature seized our group, and we plagued Dr. Eugene P. Odum, a distinguished Ossabaw Project member accompanying us, for nature lore. Director of the Institute of Ecology of the University of Georgia, Dr. Odum studies the interrelationships of organisms, including man, and their environments. This means he must know just about everything—and does.

We were jouncing under moss-hung live oaks, and Jimmy wondered, "Does all that guck kill the trees?"

"That's a common myth," Dr. Odum said. "Actually, Spanish moss is beneficial—and not only as mattress stuffing. It holds the nutrients that come down in the rain and lets them drip slowly to the trees' roots. The

KODACHROME BY THOMAS NEBBIA © N.G.S.

reclaimed its own. To safeguard Cumberland for eventual preservation as a national seashore, a private foundation last October paid $5,000,000 for 8,300 of the island's 24,000 acres.

moss isn't a parasite; it uses the trees only for support and takes its nourishment from the air. When you find young oaks dead, it's not moss that killed them—more likely the sea seeping in and poisoning their roots."

By the time Dr. Odum had demonstrated how to tell the age of a young pine by counting the branchings off the trunk, shown us one of the Indian shell mounds that dot the islands (some with human bones 4,000 years old), and tested a rusty, scummy-looking seepage spring for sweet water (by fearlessly tasting a handful), our hats were off to ecology.

We came next on the remnants of the Morel mansion and piled out for a look. The family, lords of Ossabaw for more than a century, built their manor house around 1770. The first Morel on Ossabaw, John, planted indigo for dye, the earliest big sea-island crop. After the Revolution the Morels, like other Sea Islanders, supplanted indigo with the famous long-staple sea-island cotton. Planters who had fled the South during the war found the variety (originally from Anguilla) in the Bahamas and sent it home. Because its long fibers could be generously overlapped, it made the strongest thread. Bringing twice the price of ordinary cotton, it formed the warp and woof of the Sea Islands' great era of prosperity before the Civil War.

Island Grab by an Indian "Princess"

"The War" or "the War Between the States," as it is called in the South, all but destroyed the island plantations and the cotton economy on which they depended. Aside from fragments of the Morel mansion, the chief survivors of Ossabaw's great days are three slave dwellings, now occupied by the Wests' employees.

Mrs. West introduced me to white-haired Cyrus Martin, called Jimbo, who has lived on the island more than fifty years. Jimbo looks after the Wests' Appaloosas and other animals. As we talked, a little razorback pig came racing toward us. It did not trot but loped, and it jumped all over Mrs. West like a puppy, joyously wagging its tail. Mrs. West cried, "Maria Bosomworth!" and cuddled it in her arms (page 370).

Jimbo chuckled and said, "Hem t'ink hem dog. Hem sleep here in the house with the dog, and hem learn to do what the dog do."

My hostess told me the tale of Maria's strange name. Three months earlier she had found the abandoned piglet and had taken it home. Her dog, William Rodgers, adopted it. Finding the waif highly intelligent, Mrs. West declared it a reincarnation of Ossabaw's onetime owner, Mary Bosomworth.

Mrs. West's intuition seemed apt, for the human Mary Bosomworth was not only smart but piggishly greedy. Half Indian, she had served Gen. James Oglethorpe, the founder of Georgia, as interpreter to the Creeks and had taken his chaplain, the Reverend Thomas Bosomworth, as her third husband. In 1747 the Bosomworths promoted a deal that netted them not only Ossabaw but also Sapelo and St. Catherines, all islands the

British Crown had given the Creeks as hunting grounds.

Though one account says Mary was simply "the daughter of an Indian woman of no note," she and her crafty cleric persuaded the Creeks that she was their princess in the maternal line. ("That's why I changed the name to Maria—much more suitable than Mary for a princess," Mrs. West explained.) The Creeks accepted Mary as their own, and, at her royal request, were honored to hand over the three islands.

The British tried to abrogate the land grab, but Mary marched her armed tribe into Savannah and, breathing fire and firewater, threatened a massacre. In the end the government backed down, and the Bosomworths kept St. Catherines and received handsome cash settlements for Ossabaw and Sapelo. But lo, the poor Indians, since they had given away their former hunting grounds to Mary, received not one red cent for them.

Marshes More Fertile Than Fields of Corn

We remounted our jeep and jounced along to a beach picnic where I discovered that gourmet's delight, the wild-turkey sandwich. In fact, after munching the gamy *café-au-lait* white meat and the rich *espresso* dark, I discovered two more of them.

Back at the Main House, I talked with Dr. Odum about the uncertain future facing the big privately owned Sea Islands like Ossabaw. Resort developers, phosphate strip miners, industrialists, state and federal governments all covet them.

"These islands are a unique treasure," Dr. Odum said, "the last sizable relatively untouched stretch of the East Coast. But their ecology is delicately balanced, and we had better be careful how we tamper with it. Most people just don't understand the value of the sea-island marshes. Dredge them, fill them, use them for waste disposal, they say.

"Do that and you get some unpleasant surprises. More than half our shellfish and ocean fish spawn, hatch, and feed in the estuaries. The salt-marsh grass is vital to them. Four times more productive than the most intensively cultivated corn, it grows ten tons to the acre, and as it dies and decays it pours its nutrients into the estuarine nursery. This natural feeding process in a quarter of a century produces 200 million dollars' worth

Labyrinth of land and water: Thousands of islands, each as distinctive as a human face, crowd the mid-Atlantic coast, their profiles changing with tide, wind, rain, and river silt. From 146 miles aloft, Apollo 9 records the Georgia shore (left) from Cumberland in the south to Ossabaw. Beaches fronting the ocean sparkle white in this infrared photograph, which turns the green of forest and grass to shades of red. Between islands and mainland a band of salt marsh provides a nursery for sea life. The islands, extending into Florida waters, include many that remain uninhabited or in private hands (map, right).

"Day of the big gun-shoot"

THUS SLAVES SPOKE of the November 7, 1861, battle off Hilton Head (top left) that ended the Confederacy's hold on the Sea Islands and established the North's naval superiority in the Civil War.

As Federal transports, foreground, wait to move into Port Royal Sound, the Union's steam-powered warships circle, simultaneously bombarding Confederate Forts Beauregard, right, and Walker, left. They maneuver "with the accuracy of well-trained battalions," meeting little resistance from the South's ragtag fleet of four boats lying in the distance.

After the third circuit, the rebel forts fell and the Federals landed, setting up a depot for their blockade of the South.

At Cassina Point Plantation on Edisto (left), New Hampshire men penciled names that may still be seen on the home's plaster walls. After the war, the owners returned. Granddaughters Adelaide, left, and Ella Seabrook live in the house of their birth, renting the land to a farmer.

of shrimp and oysters alone. Losing that would be just one of the costs of tinkering with the ecology.*

"You can very easily ruin your beaches, too. Say you fill the marshes for real estate development—all the mud they've been filtering out of the rivers gets dumped right on your nice white sand. That is, if there's any sand left. The marshes act like a sponge, absorbing the force of the exceptionally high tides and the storms we have here. Without the marshes the beaches would rapidly erode away."

Islands Not Merely a Local Asset

Like Dr. Odum, Clifford West, as chairman of the Georgia Marshlands and Islands Association, feels strongly about planning the Sea Islands' future. "It must be planning for all time. Of course, we must have places for people as well as for birds and animals, but it's imperative to work out a balance. And remember, the Sea Islands are not just a southern thing—they are a national asset, as great, beautiful, and primeval as the Grand Canyon. The whole Nation should be interested in what is done to them."

The whole Nation might also well remember how often the Sea Islands played a key role in molding the national destiny. The Spaniards discovered them in 1521, and in 1526 established the first European settlement in what is now the United States, near North Island, South Carolina. The colony predated St. Augustine, Florida, by 39 years.† Among the 500 settlers were the first Negro slaves on present U. S. soil; after they staged the first slave revolt—and Indians, disease, and starvation struck—the colony collapsed.

In 1562 the French challenged Spanish dominance in the region when Jean Ribaut deposited 28 to 30 Huguenots on South Carolina's Parris Island—the same one that the U. S. Marine Corps now holds against all comers. Ribaut sailed home for reinforcements, and the settlers soon quit, hewed out a small sailing vessel, and made it back to France alive only by killing and eating one of their number. Ribaut tried again in Florida, but Pedro Menéndez de Avilés, the Spanish commander who founded St. Augustine, destroyed him and his force in 1565.

The Spaniards had things pretty much their way till 1663, when the English launched their own sea-island adventure. Capt. William Hilton, exploring out of Barbados, sailed by the bold cape now called Hilton Head, on South Carolina's island of the same name. Colonists followed in 1670, settling in the Charleston area. In 1733 another group founded Savannah under the leadership of General Oglethorpe.

In 1742 the Spaniards, bent on wiping out every British colonist in *their* Georgia and Carolina, sent some 50 ships and 3,000 troops out of Cuba and St.

*See "Our Ecological Crisis," a three-part survey with map-and-painting supplement, NATIONAL GEOGRAPHIC, December 1970.

†See "St. Augustine, Nation's Oldest City, Turns 400," by Robert L. Conly, GEOGRAPHIC, February 1966.

Gnarled patriarch, hoary with Spanish moss, Angel Oak survives the centuries on Johns Island; its longest limb spans 76 feet. Countless live oaks fell to 18th- and

KODACHROME BY THOMAS NEBBIA © N.G.S.

19th-century builders seeking the iron-strong, worm-resistant wood for ships. Timbers of "Old Ironsides"—the frigate *Constitution*—were shaped from sea-island oak.

Augustine. Their first assignment: to take Oglethorpe's chief stronghold, Fort Frederica on St. Simons, now a national monument. With only 900 defenders Oglethorpe routed the Spanish forces; indeed, scarcely 50 of his "Voluntiers" struck the crucial blow.

On a St. Simons savannah at the edge of a quiet oak wood, a stone marker commemorates this little-known turning point of American history—the Battle of Bloody Marsh. Had the Spaniards won, they might well have taken the whole southern coast. The vast area that was to be the American South was preserved for the future United States that day when the 50 citizen-soldiers ambushed 300 Spanish troops marching on Frederica and left scarcely a hundred alive. With the Latin dedication to gastronomy, the Spaniards had not seen why warfare should interfere with the bill of fare. They had stacked arms, begun to prepare a meal—and then. . . !

Spaniards Panicked by a Ruse

Aghast at the carnage, the Spanish general, Don Manuel de Montiano, concluded Oglethorpe's forces must vastly outnumber his—an impression Oglethorpe wished to enhance. Unfortunately, the Spaniards had a spy among the Voluntiers, a Frenchman who ran to tell Montiano how few the defenders were.

Oglethorpe countered the spy's betrayal with a ruse worthy of wily Odysseus: "The next day I prevailed with a Prisoner and gave him a Sum of Money to carry a Letter privately . . . to that French Man. . . . This letter was wrote in French as if from a Freind of his telling him he had received the Money that he sho[d] strive to make the Spaniards believe the English were weak. That he should undertake to Pilot up their Boats . . . under the Woods where he knew the hidden Batterys were. . . ."

Oglethorpe calculated that the letter would fall into Montiano's hands. He calculated rightly. Smelling a trap, the Spaniards panicked: "A Council of War . . . deemed the French Man to be a double Spy . . . they imbarqued all their Troops . . . with such Precipitation that they left behind them Cannon &c. . . ." And so, duped by a master psychologist, the Spaniards sailed for home, never to return.

From historic St. Simons I jumped one island northward to scientific Sapelo, home of the Marine Institute of the University of Georgia (pages 382-3). There I met scientists working on problems ranging from the age of the barrier isles (from 3,000 to 40,000 years) to the long-range effects of man-made changes on the estuarine nursery (pretty bad).

Dr. Vernon "Jim" Henry, the director, showed me round the laboratory, housed in a huge barn of Sapelo's late owner, Richard J. Reynolds, Jr., who endowed the institute.

We paused beside an array of jars and tubes, and Jim said, "This bubbly brown 'beer' is waste we're concentrating out of the marsh waters. It's from a nearby mainland paper mill, and we're studying what various amounts of it do to our local oysters."

Georgia once had a large and prosperous oyster industry, but overpicking and pollution have brought it close to collapse.

In headlong flight, a white-tailed deer bounds down a woodland road on sparsely

Now the laboratory on Sapelo looks for ways to restore the oysters and protect them from natural predators and man's carelessness.

As unusual as its science center is Sapelo's island-born black population, largest in the Sea Islands. Its 40 families trace directly back to the hundreds of slaves of Thomas Spalding, "Laird of Sapelo" in the first half of the 19th century. Perhaps the warmth and gentleness of the 300 people on Sapelo today reflect Spalding's benign treatment of their ancestors. Not only did he establish a six-hour workday and allow his slaves to own livestock, but also, in the War of 1812, he armed them with muskets to defend their island.

Whatever the cause, the angry winds sweeping black-white relations elsewhere have hardly touched Sapelo. Allen Green, a deacon of the First African Baptist Church, asked me, "What Jesus t'ink if I hate my neighbuh—black or white? If I love Jesus, who I never see, how kin I hate my neighbuh who I see ev'y day?"

Along with such old-time religious values, the people of Sapelo have preserved much of the old-time talk. The lilt and pungency of it intrigued me: "I keep agrumblin'." "I trow 'em shru de vinda." "A bahd sickness, dat minny-Jesus" (meningitis).

From this manner of speaking, some might call my Sapelo friends Geechee, but they would not like that. The term (first used for blacks living in the Ogeechee River region, then for their lingo) now connotes backwardness and smacks of condescension. Gullah (probably from Gola, a Liberian tribe) has the same overtones for the Georgians' cousins in South Carolina.

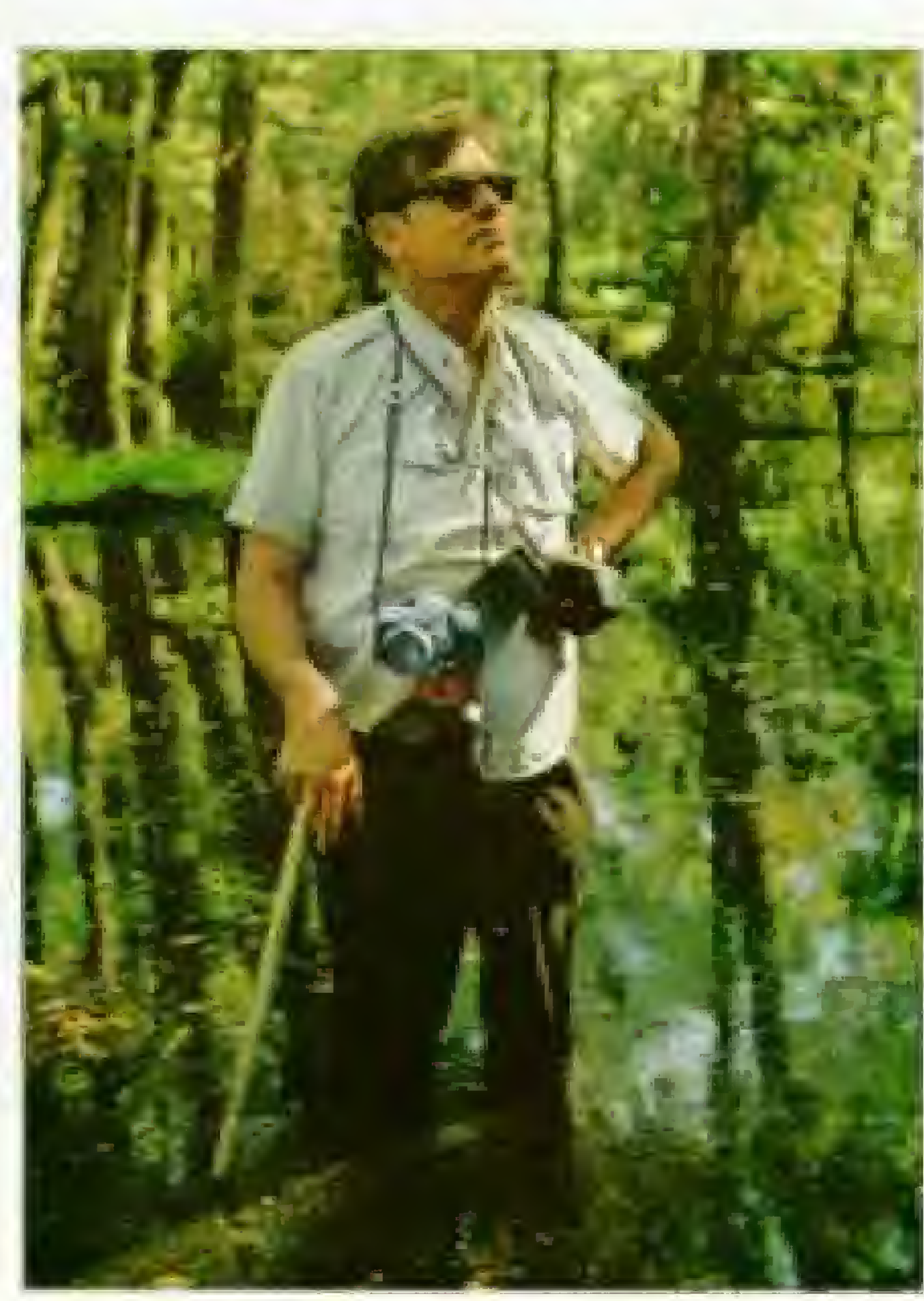
KODACHROME BY THOMAS NEBBIA © N.G.S.

inhabited Ossabaw. Deer increase so rapidly on the Blackbeard Island Refuge, a former pirate lair to the south, that hunters are permitted to kill them—but only with bow and arrow.

Where nature reigns

FED BY THE SEA and nourishing it in turn, salt marshes form the lifeblood of sea-island ecology. Cord grass (right) captures river silt behind the islands, slowing erosion. The matted growth absorbs inrushing tides as high as nine feet, protecting the mainland. As grasses die, their nutrients feed plankton, oysters, shrimp, clams, crabs, and small fish. These in turn support larger fish and birds, such as this great blue heron and the common egret that stands beyond it (right).

KODACHROMES BY THOMAS NEBBIA (ABOVE AND UPPER) AND JAMES L. AMOS © N.G.S.



At the top of the salt-marsh food chain, the alligator (above) preys on both birds and fish.

Since much about the marshes remains a mystery, the University of Georgia's Marine Institute makes the entire island of Sapelo its laboratory. Visiting professor Dr. Paul L. Wolf (top left) and colleagues found here this violet goby, a fish previously known only in Central American rivers.

"We've lost half the marshes on the East Coast to pollution—sewage, draining, filling, industrial effluent," says Orion Hack, a Hilton Head resort developer and conservationist (left). "That must not happen here." He has helped lead the fight against increasing industrialization in the area (page 386).

Nevertheless the Geechee and Gullah dialects, which blend archaic English and various African tongues, survive on the Sea Islands. When islander was talking to islander, their words were often incomprehensible to me. Spoken at lightning speed, as Gullah is, something like, "Ain me bin on de whaf an shum?" does not sound much like English. Of course, it means, "Haven't I been on the wharf and seen him?"

A black woman in her 70's declared, "We gotta know two lang'age. Dat why we speak Eng'ish so bahd." Only a person that old would make the admission. On Sapelo the leaders of Hog Hammock, the black community, feel that to cherish the dialect would be to look back. Cap'n Ben Johnson, boatman for the institute and owner of Sapelo's only general store, told me, "We want to look ahead. We don't want to remember Geechee or slavery or Africa. We just want to be American citizens like everyone else. And all we need is enough work so we can stay right here on our island."

But Georgia has recently bought Sapelo from Reynolds's widow for a million dollars and is making it a wildlife preserve to provide game for the state's public hunting areas. What will become of Hog Hammock? Will the state also provide work for its people? Will they be dispossessed from their land? All is unsettled. Ben is sure of only one thing: "Slave days are over. We've got to tell 'em why we ain't gonna go!"

Cruise Through an Untouched Domain

From Sapelo my family and I cruised northward on the Intracoastal Waterway in the institute's yacht *Pegasus,* captained by Bill Schmidt. For two days we twisted through marshes so vast, so solitary, so much the untrammeled domain of blue heron, teal, loon, egret, and osprey that we almost believed ourselves the first human intruders.

Going ashore at St. Catherines, we met the total population of its wooded 23 square miles in the person of caretaker John T. Woods, Jr., who maintains the island for a foundation established by the late owner, Life Saver and chewing-gum tycoon Edward John Noble. Mr. Woods led us to the reputed burial place of that reputed Indian princess, Mary Bosomworth—an unmarked mound in a pine-studded field where cattle grazed. Mr. Woods's father, while bulldozing around the mound, discovered three skeletons. It seems likely they were those of Mary, the Reverend Bosomworth, and his second wife, all of whom died on St. Catherines.

In 1765, after Mary's death, Bosomworth sold the island to Button Gwinnett, later a signer of the Declaration of Independence. When Gwinnett died after a duel in 1777, he left his estate so heavily in debt that the Reverend Bosomworth regained ownership of the island.

Ironically, if Gwinnett had been able to sell for today's prices the signatures he scribbled on his notes of indebtedness, he would have died rich. A letter bearing his autograph, among the rarest of those of the Declaration's signers, is now worth about $25,000.

"All Just as God Made It"

Next day we reached Wassaw, most primitive of the Sea Islands, never farmed, and most of it in virgin forest (page 393). *Pegasus* eased in close, and my daughter Diana and I swam ashore. Custodian Alex Barbee met us in his jeep and gave us a roller-coaster ride over ancient dunes covered with oak, sweet bay, cassina holly, magnolia, and 100-year-old slash pine with trunks 15 feet around—"All," Mr. Barbee said, "just as God made it."

To ensure that Wassaw stays that way, the descendants of George Parsons, the New England cotton merchant who bought it in 1866 for $2,500, sold most of it to the Nature Conservancy in 1969 for a million dollars, on the condition that no bridges be built to connect the island to the mainland. The Conservancy then deeded Wassaw to the Federal Government for use as a wildlife refuge.

With Easter vacation over, my family went home, and I boated across to Sapelo's small neighbor island named for the pirate Blackbeard, terror of the southeast coast in the early 1700's. Property of the United States since 1800, the island served for many years as a hellhole quarantine station, where yellow-fever suspects on incoming ships, who usually did not have the disease, were promptly

Twilight bronzes the marshes as islanders gig for flounder in the clear waters off Hilton Head. The technique remains unchanged from Indian days. Sea-island marshes annually yield ten tons of organic material per acre, rich fodder for young fish.

inoculated with it by the local mosquitoes. Blackbeard became a national wildlife refuge in 1924, and today the 5,600-acre sanctuary is, like Wassaw, almost untouched. A thousand alligators choke its ponds. Loggerhead turtles come ashore to lay their eggs—and hundreds of raccoons eat the eggs. Birds fill the air and blanket the waters—198 species in all have been counted—and 60,000 waterfowl crowd in at peak season.

In a virgin forest, Pres Lane, who manages the Savannah area's national wildlife refuges, pulled our jeep up before an ancient bay tree. An iron spike pierced its trunk.

"That points to Blackbeard's lost buried

Controversy embroils an island Eden

With songs and slogans, Jeaneane Briles joins a Hilton Head protest last March against a German firm's plans to build a 200-million-dollar dye and plastics plant that would dump 2.5 million gallons of treated wastes a day into Port Royal Sound, South Carolina. The demonstrators meet on the wharf of the fishermen's cooperative, which harvests the area's rich shrimp beds. Leaders of the rally include owners of such showplace resorts as Sea Pines Plantation, with its championship golf course (right).

When the U. S. Government intervened, the German company temporarily canceled plans. But because many state officials and job seekers want industry for the taxes and employment it brings, the issue still smolders.

treasure," Pres said. "I'm not kiddin' you—I'm just plain tellin' you a lie. Anyhow, it's an old shipbuilding spike, and maybe Blackbeard really did put it in. Only the Devil himself knows."

Satan Fell Heir to Blackbeard's Loot

Pirate Edward Teach, who was called Blackbeard, claimed to be the Devil's brother and dressed the part. He plaited his bounteous whiskers into pigtails tied with red ribbons, tucked smoking hemp matches under his hat, and loaded his chest with pistols and knives. To anyone rashly inquiring about his buried treasure, he replied that only he and the Devil knew where it was, and the one who lived longer would have it. Since Blackbeard died in 1718 (of five pistol balls and 20 other wounds), the Devil no doubt got it, but treasure hunters claim it is still on the island.

From unpopulated Blackbeard I turned south to populous Jekyll, a state park. Linked to the mainland by a bridge and well supplied with motels, Jekyll Island now opens nine and a half miles of fine beach to all. By contrast, in its gilded age (1888-1941) when it was the Jekyll Island Club, only a very few of the very rich made it ashore. Membership was limited to just 100. Here Rockefellers, Astors, Vanderbilts, and Morgans entertained

EKTACHROME (ABOVE) AND EKTACHROME BY NATIONAL GEOGRAPHIC PHOTOGRAPHER JAMES L. AMOS © N.G.S.

Life passes at oxcart pace on Daufuskie, where population has dwindled to 150 residents. A generation ago, the Union Baptist Church resounded with spirituals; on weekdays, its congregation gathered oysters, raised vegetables, and ferried both to Savannah and island markets. Then pollution ruined oystering.

KODACHROME BY THOMAS NEBBIA © N.G.S.

Most young adults left for better jobs elsewhere, some entrusting their children to retired grandparents. The island school ends with the eighth grade, so these boys face a hard choice: moving to the unfamiliar mainland to compete for an education and a job, or staying on their beloved island with no future in prospect.

their peers: President William McKinley, Republican Party boss Mark Hanna, steel baron Andrew Carnegie. A guess at the time reckoned that clubmen controlled one-fifth of the world's wealth.

Some members built their own "cottages" (pages 370-71), but most stayed at the Club House, now a 125-room period-piece hotel. It was there, on January 25, 1915, that Theodore N. Vail, president of American Telephone and Telegraph, participated in the first transcontinental phone call, by virtue of a thousand miles of cable specially run from New York. A four-way hookup brought him the voices of Dr. Alexander Graham Bell, inventor of the telephone, speaking from New York; President Woodrow Wilson, from Washington; and Thomas A. Watson, Bell's assistant, from San Francisco.

The next island down, Georgia's southernmost and longest, is also associated with legendary wealth, for Andrew Carnegie's brother Thomas bought most of it in the 1880's. His descendants still live on secluded Cumberland, reachable only by boat or plane. But last fall the privately supported National Park Foundation bought about a third of the island—8,500 acres—looking toward establishment of a national seashore.

I stayed at Greyfield, an old Carnegie family home now run as an inn (guests by referral only) by Carnegie descendant Rick Ferguson. From there I visited the ruins of the island's most famous Carnegie mansion, Dungeness, destroyed by fire in 1956. Built in the late '80's, it had 59 rooms and an illuminated enclosed swimming pool for night bathing.

The Carnegie wonder stood on the site of an earlier Dungeness, called "the most elegant residence on the coast" when it went up about 1796. Among its famous guests was "Light-Horse Harry" Lee, the comrade-in-arms who framed the immortal tribute to George Washington: "First in war, first in

KODACHROMES BY NATIONAL GEOGRAPHIC PHOTOGRAPHER JAMES L. STANFIELD © N.G.S.

"She worked for the slavery," says 87-year-old Katie Underwood of her mother, who with hundreds of others served planter Thomas Spalding on Sapelo. Of her own youth, Mrs. Underwood recalls, "We had to work hard in the fields—hoe potatoes, hoe corn, peas, rice."

Toil has been the constant fate of sea-island blacks. But in their isolation, those who remain preserve a soul-lifting culture: storytelling through gesture and animal characters, a call-and-answer song style, a dialect mixing European and West African elements, and an attachment to cooperative societies.

"Look upward; do something better." With such words Esau Jenkins (right) fights apathy among Johns Islanders. He worked his way from farm laborer to trucker to political organizer, meanwhile attending night school. Injustice motivated him. "We had one man shot dead by a white man over a dog. The case just seemed to get lost."

In 1948 he organized the Progressive Club to encourage neighbors to pool their money and votes to better their lives. The results: adult-education courses, a high school with bus service, a cooperative store, and a credit union.

peace, and first in the hearts of his countrymen." He died at Dungeness in 1818, and I saw his gravestone in the little cemetery nearby. But his remains are not there; they were moved in 1913 to Lexington, Virginia, to lie beside those of his son, Robert E. Lee.

Driver, Postmistress—and Snake Slayer

From Georgia's southernmost island I leapfrogged, via Hilton Head, to the southernmost island of South Carolina (map, page 375). An hour's boat ride from any neighbor, Daufuskie is another rare wilderness isle.

Daufuskie's magistrate, Lance Burn, showed me around. He and his wife Billie comprise one-fifth of the island's white population and hold most of the island's jobs. The petite Billie is school-bus driver, postmistress, and champion rattlesnake killer. ("You just hit them right with a stick, break their backs, and beat their heads," she said, showing me a skin seven feet long.)

Since Daufuskie provides near-zero employment, the island's 140 blacks—mostly children, women, and old folk—live chiefly on retirement and Social Security checks.

Lance, a burly, grizzled, humorous man, told me, "People got along just fine here when the oystering was big. But about ten years ago pollution from the Savannah River killed off the oysters. By golly, this pollution is killing everything. When those planes spray for fire ants, shrimp and crab come up dead by the thousands. I'd rather have the ants."

The unemployment problems that beset Daufuskie have been roundly licked on neighboring Hilton Head. There three energetic resort developers, Fred and Orion Hack and Charles Fraser, have created jobs aplenty. Luxurious inns and tasteful vacation villas nestle in woods along the shore. Eighty thousand visitors a year come to swim from April to November, play over eight golf courses and dine in sophisticated restaurants.

EKTACHROME BY THOMAS NEBBIA © N.G.S.

At first conservationists bemoaned the "pollution" of the landscape by gas stations and shopping centers, but now they and the developers have joined forces against the threat of a more basic pollution. A German chemical firm has bought 1,800 acres on the mainland three miles from Hilton Head and hopes to build a plant there that will create 600 jobs. Opponents contend that because of disastrous effects on the estuarine ecology and the resort atmosphere three jobs will be lost for every new one gained (page 386).

South Bottled Up by Hilton Head Battle

This is not the first time that the conflicting currents of an age have boiled around the island. At the very cape where William Hilton spearheaded the English settlement of South Carolina and Georgia, the Union inflicted on the Confederacy its first great and perhaps most fateful defeat. In November 1861, 52 Union vessels and 12,000 troops staged a massive assault against the forts guarding Port Royal Sound (pages 376-7). The Confederate forces, with only 3,000 men and four gunboats, stood no chance. This crucial invasion established the key supply base for the North's blockade of the South.

The slaves who believed that "the day of the big gun-shoot" meant "Yankee come to gib you Freedom" found freedom elusive. Their descendants are still pursuing it, though some of the older people have wearied of the struggle. An old Hilton Head oysterman said with a wry grin, "When God made de colored man and de white man, He put two package on two stump. De colored man rush 'n grab de big package. He get de pick and de shovel. De white man, he pick up de li'l package. He get de pad and de pencil. An' I tell yuh, it be dat way evuh sence!"

Farther north, however, round Charleston, it no longer be dat way. There the blacks have discovered progressive clubs, protest marches, and strikes. On Johns Island I spoke with Esau Jenkins, who 20 years ago began a one-man civil-rights movement (page 391).

Now in his 60's, the mild-mannered, round-faced Mr. Jenkins told me that his key to "standing for the right" has always been education—for himself, for his children (he has sent seven to college), and for his people. Though he left school after fourth grade to help his father in the cotton fields, young Esau went doggedly to night classes.

When a white man on Johns shot a black man dead for running over his dog and the case got sidetracked in court, Mr. Jenkins began thinking of education for others. The blacks, he reasoned, could not get fair magistrates if they could not vote, and they could not vote unless they were registered. That meant passing the literacy test—reading or writing a passage from the state constitution.

In those days Mr. Jenkins was driving a bus to carry blacks from Johns to jobs in Charleston, and he realized that he had a captive class. He taught his riders the meaning of the test passage, and soon their neighbors came to ask for night classes. To meet the demand, Mr. Jenkins organized the Progressive Club on Johns in 1948, and it has turned out multitudes of what he calls "registered citizens." As a result, several local offices have gone to blacks for the first time.

Golden Isles Face an Uncertain Tomorrow

With all this familiar ferment around me, I felt I had reached the end of the Sea Islands. According to tradition, I had. Though barrier islands continue northward, the golden Sea Islands, with their aura of another age, end at Charleston.

For some of them, like Jekyll and Sea Island, the future has been settled, but what of those isles of lonely loveliness that stand on the brink of perilous change? Must they "develop" and lose what is now uniquely beautiful? And if they stay the same, must they stay poor?

On Daufuskie Lance Burn spoke to the heart of the matter. As we watched the westering sun glinting through the woods, he remarked: "Every day, when I come to the end, I say, 'Thank you, Lord, for letting me have one more day here'—because it can't last like this. Sure enough, this whole island, like all the rest, is gonna be just one big collision!"

I hope—but I don't trust—that Lance Burn is wrong. □

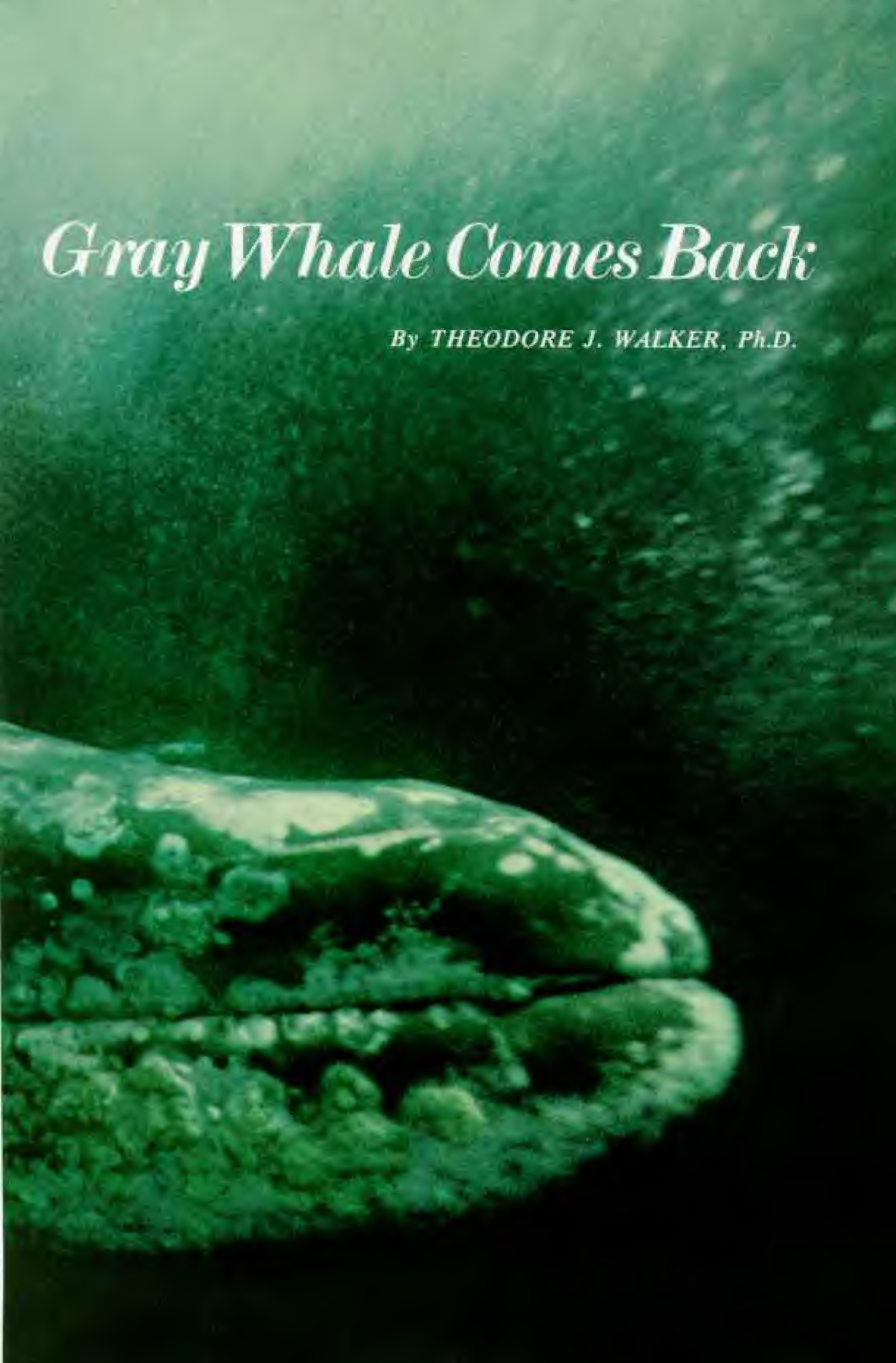
"The wild savage loneliness" of the coastline appealed to Fanny Kemble, a 19th-century English actress and ardent abolitionist, who married a Georgia planter. These canoeists, drifting through seagirt palmettos of lonely Wassaw, still find the same untamed splendor on the Georgia and South Carolina coast.

KODACHROME BY JAMES L. AMOS © N.G.S.

The California

LEVIATHAN IN LABOR, *a migrating gray whale thrashes upside down in the Pacific Ocean as she nears her calving grounds in Baja California's lagoons. A sudden storm prevented photographer Cousteau and the author from witnessing the moment of birth. Once hunted to near extinction, the gray whale now numbers many thousands under international protection.*

 PHILIPPE COUSTEAU © N.G.S.


Gray Whale Comes Back
By THEODORE J. WALKER, Ph.D.

The California gray whale comes back

WE ARE IN a small outboard motorboat in Scammon Lagoon, on the barren, dune-rippled coast of Mexico's Baja California. Suddenly, less than 100 feet away, an awesome creature the size of a Greyhound bus rises vertically from the slate-colored water.

Its gaping mouth reveals the baleen, a comblike mass of horny plates hanging from the upper jaw. Through the baleen stream gallons of muddy water. Long ribbons of eelgrass dangle from the mouth. The spectacle is reminiscent of a prehistoric monster as portrayed by an imaginative artist.

And that, in a way, is what we are seeing: a California gray whale (*Eschrichtius glaucus*), once perilously near extinction but now protected by international agreements and staging an impressive comeback.

In the few seconds before our whale slides from view, we get a good look at the long tapered head with eyes set far back near the corners of the mouth. Colonies of barnacles and lice pock the front third of its 50-foot-long cigar-shaped body (page 411). These, combined with the mottled and scarred skin, create a grayish appearance, hence the animal's name.

Sometimes it is called the desert whale because its winter mating and calving grounds lie along a desolate stretch of Mexico's Pacific shore, some 400 miles south of the United States border. Each year it makes a round trip of at least 8,000 miles between chill Arctic and warmer Pacific waters.

Cruising mostly along the coast, the gray reveals itself to thousands of people, permitting

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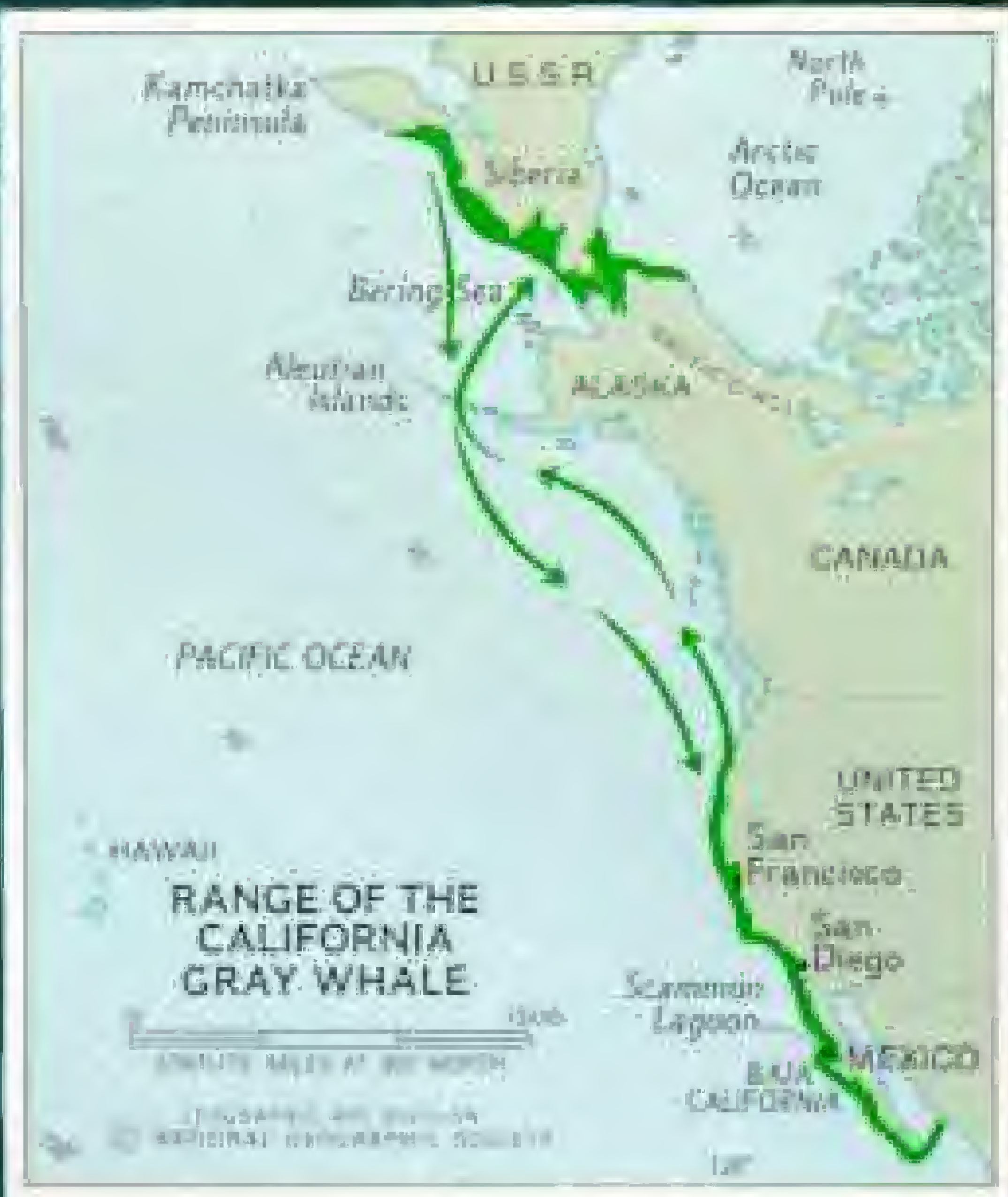
The Author: A Montanan educated as a biologist in Wisconsin, Dr. Theodore J. Walker did not see salt water until World War II, when he served aboard a U. S. Navy destroyer in the Pacific. Later, as an associate research oceanographer at the Scripps Institution of Oceanography at La Jolla, California, he took up the study of gray whales. Twenty-three years of firsthand observation have led him to many new and sometimes controversial conclusions about the behavior of these wondrous marine mammals. He now makes documentary films on natural history for television.



Like submarines on patrol (left), gray whales cruise past San Diego, California. Each autumn they head south from the Bering Sea and Arctic Ocean to breeding grounds in warm lagoons scalloping Baja California. In spring they return north, a round trip of at least 8,000 miles.

closer study in its habitat than any other whale. Yet much of its behavior remains a mystery.

The ancestors of whales were terrestrial animals, lumbering on four legs through primordial grasslands. At some point in prehistory the seas began washing over their habitats, and the creatures began adapting to an aquatic environment. Forelegs evolved into streamlined flippers that project as much as 14 feet from each side of the body.

Using these limbs like a submarine's diving planes, the gray whale wheels and dives and climbs through its dim, salty domain. Hind legs have disappeared, though vestigial bones remain inside the body.

Breaching Whales Can Reach 30 Knots

Up-and-down strokes of the great tail, measuring ten feet across the trailing edges of the fan-shaped flukes, drive the 35-ton cetacean through the water. Grays cruise at about four knots, but can maintain a ten-knot speed for an hour or so. To shoot out of the water in the breaching maneuver, they can accelerate briefly to 30 knots (page 401).

Like some other whales in an order that numbers about a hundred species, the California gray developed the baleen filter that enables it to feed on small marine organisms. And like all whales, it has lungs and must surface to breathe. The gray does this every four to 15 minutes through twin blowholes, or nostrils, atop its head.

From our boat we watch the climax of the feeding process. Having bulldozed huge furrows across the lagoon floor, the whale has engulfed power-shovel helpings of crabs, shrimps, clams, and whatever else lay in its path, including a lot of debris (pages 408-409). Its mouth full, it rears to an upright stance, sculling with its powerful tail or perhaps resting its flukes on the bottom (page 410).

Then, as we look on, the whale pushes water and sediment through the baleen with pistonlike thrusts of a tongue that weighs as much as 3,000 pounds. In the vertical posture the law of gravity takes over, conveying food from the whale's mouth to a capacious four-chambered stomach. Although a gray whale can swallow when horizontal, the vertical position allows it to clean entangled debris

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from the filter and to wash food down to the throat for quick ingestion.

After a long day of whale-watching we start up the outboard motor and head back to our little expedition's mother ship, a chartered 40-foot fishing vessel that brought us south from San Diego. En route we see dozens of other whales—feeding, surfacing, diving with a flourish of flukes, spouting, carrying out the ritual of courtship, or sleeping partly awash in the fading sunlight.

After dinner, with whales still whooshing and splashing all about in the twilight, I swap notes with NATIONAL GEOGRAPHIC's Bates Littlehales, who has been out with his cameras in another boat. He tells of an encounter with local fishermen—wiry, mahogany-hued men who harvest anchovies, sardines, and the green turtles that graze and sleep in the lagoon's eelgrass pastures.

"The men were *muy infelices*, very unhappy," Bates reports. "They said the whales were gobbling up too many of their fish."

Although I sympathize with the fishermen, the report supports a conclusion of mine in which I am in disagreement with other cetologists, who say that gray whales do not feed in the lagoons. They refer to the whale's brief vertical posture as "spy-hopping." In this maneuver, they say, the whale looks around, spying out possible dangers such as ships, or even spotting shore landmarks as aids to navigation.

In reply, I cite my own observations of whales feeding, the facts that in the "spy-hopping" position their range of vision is limited and that they navigate mostly by echolocation, and now the Mexican fishermen's complaint.

Whales Enveloped in a "Sea of Total Sound"

Later in the evening, after my shipmates have turned in, I lower a hydrophone, an underwater microphone, over the side and connect it to a headset and a tape recorder. Then I climb to the flying bridge for an hour or two of eavesdropping on whale "conversation."

Whales have no vocal cords, but they produce a variety of sounds that carry through the water for astonishing distances. The importance of sound to all whales was described most eloquently by marine biologist Dr. Victor B. Scheffer in his fascinating book, *The Year of the Whale* (Charles Scribner's Sons, New York, 1969).

"Every whale everywhere moves in a sea of total sound," writes Dr. Scheffer. "From the moment of its birth until its

Sea-hunters' bonanza: Century-old lithograph records the slaughter of grays amid the mangrove islets of a Baja California lagoon. After harpooners kill the whales, crews tow the carcasses to ships for cutting up and rendering into oil. Flag atop the whale in foreground identifies the vessel that killed it.

Charles Melville Scammon, a 19th-century whaling captain, used this dramatic scene as the frontispiece for his 1874 book, *The Marine Mammals of the North-western Coast of North America.*

Sandy shoals veined with tidal channels, 250-square-mile Scammon Lagoon provides a protected mating and calving ground for the grays. "It's almost unbelievable how well they know the geography of this watery maze," says the author. "Despite 2½-knot currents and tides ranging up to eight feet, the whales seldom become stranded in its shallow passages."

Bursting from the sea, an adult gray rolls over in midair so her back will absorb the impact of the crash landing. Males breach more often than females, Dr. Walker observes. The catapulting action, he believes, enables the animals to scan the waters around them and make course corrections when interfering noises prevent them from navigating by echo-location.

KODACHROMES BY THEODORE J. WALKER (ABOVE) AND NATIONAL GEOGRAPHIC PHOTOGRAPHER BATES LITTLEHALES © N.G.S.

final hour, day and night, it hears the endless orchestra of life around its massive frame. ... The snapping and crackling of tiny shrimps and crablike organisms, the grunting and grating, puffing and booming, of a hundred fishes, the eerie whining and squealing of dolphins, the sad voices of sea birds overhead, the chatter of its own companions, the undertone of moving water and the drone of wind, all these notes and many more come flooding through its senses. ... It *feels* the music, too, for water presses firmly on its frame—a smooth continuous sounding board."

The "song" of the nearly extinct humpback whale *(Megaptera novaeangliae)*, recorded in Bermuda waters by Dr. Roger S. Payne, reminds listeners of oboe, muted cornet, and bagpipes. Entirely different, but equally impressive, is the clacking sound of the mighty sperm whale *(Physeter catodon)*, the species that included the famous Moby Dick.

The sperm attains lengths up to 60 feet. With physical powers to match, it sends out a signal roughly equal in decibels to the noise heard by a man standing 20 feet directly behind a jet engine at wide-open throttle!

Monotonous Clicks Help Grays Navigate

Nobody knows exactly how whales create sounds. Humpbacks may produce their signals by the passage of air from lungs through larynx, a theory that could apply to the California grays as well.

After hours of listening to gray-whale sounds, I must report that the gray lacks the musical talent of the humpback and the great

volume of the sperm whale. The gray emits a monotonous series of high-frequency clicks.

The signals undoubtedly help the gray zero in on schools of fish and find its way by echolocation. As the whale swims, the clicks bounce back from moving masses of food or from obstacles such as shoals, seamounts, and submarine canyon walls, thus enabling the animal to compute distance and direction and hold to a safe course.

Scientists suspect that whales, like porpoises, also use varying sounds to communicate with one another. For years the subject has been under intensive investigation.*

I have studied gray whales mainly in Baja California waters, but such are the creatures' habits that I can watch them at home, too. From my garden on the heights of La Jolla, I can look out over the Pacific toward San Clemente Island, bulking blue-gray in the hazy distance. Around Christmastime I see the frequent rise and fall of wispy white jets, like a procession of old-fashioned steam locomotives. Under each plume of vapor—caused by condensation of expelled warm air—swims a gray whale headed south.

All summer the whales had fed close to the shores of Siberia, fattening on an abundance of plankton and bottom-dwelling crustaceans. In early fall, with the onset of freezing weather, the animals felt the ancient urge to migrate and to mate. Leaving the Arctic seas behind, they found their way through the Aleutian

*Sound-sensing abilities of the smaller cetaceans were described in "Porpoises: Our Friends in the Sea," by Robert Leslie Conly, GEOGRAPHIC, September 1966.

EKTACHROME (BELOW) BY THEODORE J. WALKER; KODACHROME BY NATIONAL GEOGRAPHIC PHOTOGRAPHER BATES LITTLEHALES © N.G.S.

Eternal triangle of the animal world

A BANE OF THE HUMAN RACE proves a boon to the gray whale. Two courting males pursue a cow (left) in Scammon Lagoon. One male overtakes her (above) and forces her down into the water. During the mating period, which may take several minutes (right), the second male helps stabilize the pair, Dr. Walker believes. A year later, after another journey to the far north and back, the cow will give birth.

Islands and entered the open Pacific. After heading toward British Columbia, they made landfall near the Columbia River mouth. From there they took a southerly course, keeping close to the beaches and headlands of Oregon and California. By journey's end the whales will have covered at least 4,000 miles (map, page 397).

Some scientists believe the grays do not feed while migrating but rely on reserves of fat they have built up during the summer. I disagree. Even granting the tremendous power of these animals, it seems obvious to me that they require nourishment to sustain them on a majestic passage of at least three and a half months. While grays are essentially bottom feeders, I believe they take food where they find it—and on migration they find plenty of squid, crabs, and fish.

The spectacle of their passage arouses in me a sense of awe combined with gratitude. Here are creatures that have survived over millions of years, only to be brought to the brink of extinction by a few decades of relentless

PHOTOGRAPHS BY THEODORE J. WALKER (RIGHT) AND RON CHURCH © N.G.S.

Half-ton baby lolls on its 35-ton mother's back (right). Riding a rubber boat onto the sleeping whale, the author shared the hazardous perch with the four-hour-old calf to make this amazing photograph. The youngster's blowholes show clearly. For most of its first year, the calf hugs its mother's side (above), learning to dive and breach. During early weeks it gulps huge quantities of milk squirted into its mouth by muscles around the female's mammary glands.

slaughter by men who hunted them, first in sailing vessels and later in highly mechanized factory ships, seeking profit from a yield of oil, meat, and bone.

But since 1937, through an international conservation program, the gray whale has recouped its numbers in gratifying fashion. The 15-nation International Whaling Commission last year recommended that the total prohibition on commercial hunting of gray whales remain in effect indefinitely. And last December, the United States placed eight whale species—including the gray—on the endangered-species list and banned the import of most whale products.

Only a handful of men have ever seen live whales underwater. Among the lucky ones are several divers on the exploration team of Capt. Jacques-Yves Cousteau, well known to National Geographic Society members. Cousteau's divers not only photographed whales at close range (pages 394-5 and following page) but they also hitched rides by hanging onto tail flukes. Sometimes they leaped

Playing follow-the-leader with a gray, members of a Jacques-Yves Cousteau expedition to Baja California attempt to attach a tracking buoy, but the whale dives before they can throw their harpoon.

Success—and then disaster! Cousteau's crewmen secured a marker to this gray and tracked its movements for 24 hours. The migration continues southward even at night, they discovered. After the first buoy fell off, the divers attached a second, but the giant turned and charged marker and boat. Breaching, the whale landed on the fragile vessel. Happily, all hands escaped without serious injury.

from swift rubber motorboats to photograph the giants as they went by. One of them miscalculated and found himself sharing a speeding mother whale's back with her newborn calf, which was held in position near the cow's tail by the pressing flow of water.

For most observers the only signs of the giants are spouts and partial glimpses of the whales themselves. Even so, the procession of migrants, in twos and threes and sometimes by the dozen, ranks as one of the greatest free shows on the West Coast. Around San Diego thousands of people gather annually to watch the southward movement (pages 414-15). In the spring the performance takes place on a less dramatic scale: heading back to Arctic waters, many whales follow routes farther offshore (map, page 397).

One migration season I was on a boat near La Jolla and fell in astern of a fine big whale. My companions and I watched at unusually close range as it repeatedly surfaced, spouted, and returned to the depths with a parting flirt of its tail.

Gradually we realized that the whale was on a collision course with a long pier. At the last moment the whale burst from the sea at a 45-degree angle. Then it breached again and again, each time falling back on its side and heading a few more degrees toward the open sea. By the time the whale had made ten lunges out of the sea, it was clear of the obstacle and back on course.

I have observed similar performances elsewhere. And I believe that breaching enables whales to make emergency course corrections.

Whale-Watching Has Its Dangers

By some miracle, few whale-watchers have come to grief as they have cruised amid spouting and breaching whales. But in 1956 a tragedy nearly befell a small-boat crew on a scientific mission in Scammon Lagoon. As part of Dr. Paul Dudley White's effort to record a gray whale's heartbeat, the crew was close behind a cow and calf, trying to implant an electrocardiograph lead in the mother.

Suddenly the big whale turned and charged, shearing off the rudder, bending the propeller, and leaving the boat with a gaping hole in its bottom. Frantic bailing and hasty patching kept it afloat until help came.*

*See "Hunting the Heartbeat of a Whale," by Paul Dudley White, M.D., with Samuel W. Matthews, NATIONAL GEOGRAPHIC, July 1956.

Another encounter almost cost the life of my friend Rick Grigg, then a graduate student at Scripps Institution of Oceanography. While scuba diving one day, Rick emerged from under a ledge and found himself close enough to a gray whale to touch it. Rick did just that. He felt a quiver of flesh, like the muscular twitching of a horse. There was a flurry of movement, and then the whole undersea world seemed to explode.

The next thing Rick knew, he was being helped into a boat by his diving companion. On his forehead he still wears a scar, undoubtedly the result of a blow from the whale's huge, barnacle-encrusted tail.

Most species of whales have mighty teeth for attack or defense; the gray's only weapon is its tail. But a formidable weapon it is! Whenever I see uplifted flukes at close range, I recall the words of Captain Ahab's chief mate Starbuck in *Moby Dick*: "I will have no man in my boat who is not afraid of a whale."

Slaughter Prompted by Demand for Oil

Today's tight curbs on whaling stand in sharp contrast to the uncontrolled slaughter Herman Melville so vividly recorded. Even so, many of us feel that whalers of some countries still kill excessively and that the International Whaling Commission, or a similar body, should be given strong police powers.

Some historians believe that the first whalers were Basques, hunting in the Bay of Biscay as early as the 10th century and in Newfoundland waters by the 16th. The English, soon followed by the Dutch, began large-scale whaling operations at Spitsbergen in 1610.

In North America, whaling from shore stations had become an established industry on Long Island by the middle of the 17th century. Later, the centers shifted to Boston, Cape Cod, and Connecticut. With the growing demand for whale oil and the advent of ships capable of three- to four-year voyages to southern seas, Nantucket and then New Bedford became the major whaling ports.

Massachusetts whalers dominated the industry until its decline in the late 19th century, when petroleum began supplanting whale oil for lamps and candles. For a while longer there was a lively market for whalebone, actually the tough, springy, hornlike baleen. In those days our forebears wore corsets with whalebone stays, carried umbrellas with whalebone ribs, and brandished

Challenging a long-held theory that gray whales fast while wintering in Baja California, the author maintains that they do indeed feed. "In the photograph at left," he says, "three animals scoop up mouthfuls of shrimp and buried clams and worms, along with eelgrass, from the floor of Scammon Lagoon." One leaves a murky trail on the bottom; others whiten the surface as they prepare to dive.

EKTACHROME BY FLIP SCHULKE, BLACK STAR © N.G.S.

How the gray whale feeds

Lower jaw serves as a monstrous scoop when a whale plows the bottom. Filter plates in the mouth (page 411) strain the prodigious food intake, allowing water and silt to escape.

GEOGRAPHIC ART DIVISION © N.G.S.

Rolling on its side—usually to the right—in a 90-degree turn, the animal twists its head from the bottom. Then, with a swish of its tail, it rights itself to surface (next page).

whalebone whips when out for a buggy ride.

The West Coast also had its whaling industry, and a leading center was San Francisco. Gray whales were the chief quarry; although smaller than sperm and right whales, they yielded profitable amounts of oil.

Among the best-known of the West Coast whalers was the remarkable Capt. Charles Melville Scammon, who left his native Pittston, Maine, to seek his fortune in San Francisco. He accepted command of the brig *Mary Helen* in 1852, and set out to hunt whales and elephant seals.

For nine years Scammon and his harpooners slew hundreds of whales, and thousands of barrels of oil were delivered to the shipowners. His favorite whale-hunting grounds lay off the Baja California coast and in the shallow bays and lagoons where grays came in winter to mate (pages 398-9).

He reaped particularly rich harvests in Laguna Ojo de Liebre—Eye of the Hare Lagoon. Most English-language maps and charts today show the 250-square-mile body of water as Scammon Lagoon, though Baja Californians still use the Spanish name.

Scammon differed from other whalers in that he combined his hunting expertise with a keen interest in zoology and considerable writing skill. His great contribution was a book, *The Marine Mammals of the Northwestern Coast of North America.* Some of its zoological content has lost validity in the century since it was written, but scientists still accord Scammon the highest respect.

His observations on gray-whale behavior were limited, but he did note correctly that from November to May "the cows enter the lagoons on the lower coast to bring forth their young. . . The time of gestation is about one year."

Scammon also noted that the cows, as the time for parturition arrived, retired to the most remote extremities of the lagoons, which reach as far as 30 miles into the desert. My own observations, made during five winter seasons in the lagoons, reveal that some cows do indeed seek out the loneliest reaches,

Food-straining system, the baleen consists of some 150 filter plates on each side of the animal's mouth (above). Through this curtain of hornlike plates hanging from the upper jaw, the whale's enormous tongue pushes out water and silt, retaining the food.

Shaking down her dinner, a female gray stands on her tail in 20 feet of water. The tidal current braces her as she lets a mouthful of shellfish—probably clams—gravitate to the first of four chambers in her stomach. The whale can hold this vertical position for as long as a minute. When she has finished standing, the barnacle-encrusted giant will topple onto her back and then right herself. The author distinguishes male grays from females by their narrower heads.

Woes of a whale: Cog-shaped barnacles become embedded in the hide of a gray. Crablike whale lice dig deeply into sores and cuts. Often the animals scrape against the bottom in an effort to dislodge the pests.

FAIRCHROME (LEFT) BY FLIP SCHULKE, BLACK STAR; KODACHROME (UPPER) AND EKTACHROME BY THEODORE J. WALKER © N.G.S.

Journey's end

IN THE MARSHES of Scammon Lagoon, gulls feed on a calf that has made its last landfall. The body drifted into the shallows with tides and wind. Within two months only a sun-bleached skeleton will remain (below).

"Grays exceeding 45 feet in length are a rarity today," says the author. "The majority of the present herd are less than 35 years old. They were the then-youthful survivors of the last mass slaughter in the 1930's." If international protection continues, Dr. Walker foresees an increasing number living well beyond the half-century mark and reaching lengths of 50 to 55 feet.

KODACHROMES BY ROB CHURCH © NATIONAL GEOGRAPHIC SOCIETY

where high salinity gives babies added buoyancy and abundant food enables mothers to make milk to suckle their young. Most cows, however, prefer the lagoon entrances, and some calve at sea.

Scammon did not comment specifically on the mating habits of gray whales. But again, from personal observation, I believe that three whales—a cow and two bulls—are involved. The function of the second bull has never been fully explained; presumably he helps stabilize the cow as she rolls on her side and presents herself to the male for the act of mating (pages 402-403).

Nobody has witnessed the birth of a gray whale, but there is a possibility that photographer Bates Littlehales came closest to the experience. Before we left La Jolla on our Baja California expedition, Bates set out one afternoon to make aerial photographs along the migration route. After he had received his color transparencies from the processors, he telephoned me from his hotel.

"I think I've got a picture of a whale giving birth," he said. "Come over and look at it."

The picture had been made from low altitude near the Coronados, the island group off Tijuana, and showed a cow floundering on her back. I believe she was in labor, with what seemed to be about half of a baby protruding tail-first from her abdomen. Unfortunately, the thrashing of the whale roiled the water and obscured the details.

We who follow the gray whale take such frustrations in stride. We take comfort in the knowledge that the animals in ever-increasing numbers again roam the Pacific, free of the harpooner's threat. When Scammon and others of many nations hunted them, perhaps 25,000 existed. By the 1930's the species had been all but wiped out, and little hope was held for its recovery.

Now, thanks to international protection, estimates of the total population range as high as 18,000. My own guess would be about 6,000, based on the frequency of sightings and the relative abundance of whales in the lagoons during my seasons of study there.

And the studies go on, so that each year we know more about these gray leviathans. But despite the efforts of scientists, whales are likely to remain—in part, at least—what Herman Melville called them: "portentous and mysterious." □

"Moby Dick Parade," residents of southern California call the procession of grays that moves southward along their shores each winter. Telephoto lens captures the dive of this migrant, about a quarter of a mile offshore from San Diego. An average of 40 to 50 whales, sometimes as many as 75, file by in a day. On the trip northward, the herd usually swims farther offshore.

KODACHROMES BY NATIONAL GEOGRAPHIC PHOTOGRAPHER BATES LITTLEHALES © N.G.S.

QUEBEC: French City in

By KENNETH MacLEISH
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PHOTOGRAPHS BY
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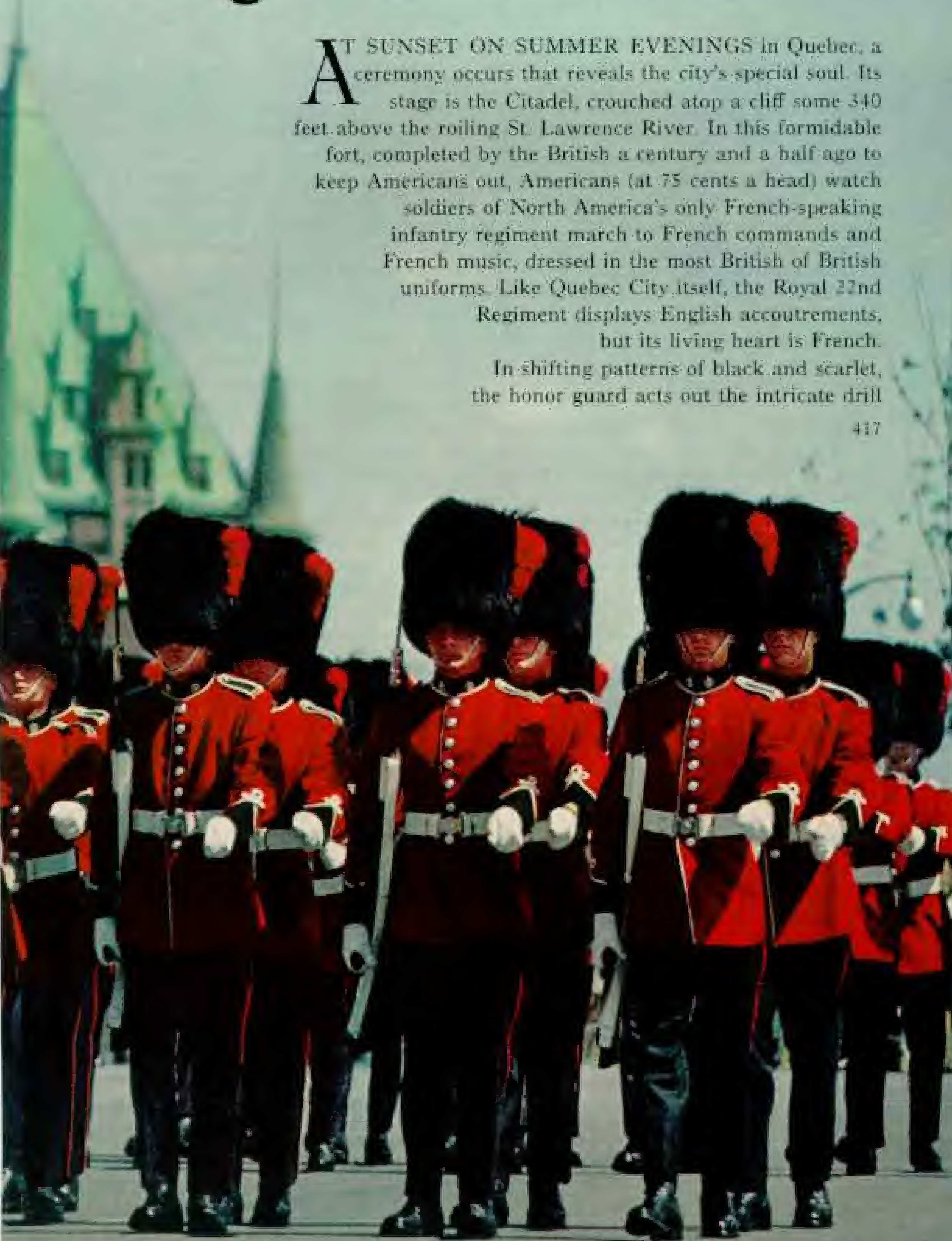
and DECLAN HAUN
BLACK STAR

TRIM AS TOY SOLDIERS: *French Canadians of the Royal 22nd Regiment, in British busbies and scarlet coats, parade in Quebec. The Château Frontenac's copper roof dominates the skyline of this capital of Quebec Province and stronghold of French-speaking Canada.* JAMES L. STANFIELD © N.G.S.

an Anglo-Saxon World

AT SUNSET ON SUMMER EVENINGS in Quebec, a ceremony occurs that reveals the city's special soul. Its stage is the Citadel, crouched atop a cliff some 340 feet above the roiling St. Lawrence River. In this formidable fort, completed by the British a century and a half ago to keep Americans out, Americans (at 75 cents a head) watch soldiers of North America's only French-speaking infantry regiment march to French commands and French music, dressed in the most British of British uniforms. Like Quebec City itself, the Royal 22nd Regiment displays English accoutrements, but its living heart is French.

In shifting patterns of black and scarlet, the honor guard acts out the intricate drill



of the retreat. Drumbeats fade with the sun as the detail marches away. And the visitor withdraws from the Citadel beneath an arch that proclaims the regimental motto: *Je me souviens*—"I remember."

Here, where so much history began, there is much to remember. And to the French Canadians, conquered by the British 212 years ago and dominated by their English-speaking compatriots ever since, the remembering brings more than misty-eyed nostalgia: It feeds a new philosophy in the French community which could conceivably change North America's map and makeup.

Stray civilians may not linger alone in the Citadel when the public spectacle is over. I left with the rest of the visitors and made my way to a nearby lookout station on the river cliffs. From there the bold geography that has shaped Quebec's fate and fortune lies plainly revealed.

QUEBEC IS A CITY placed on a pedestal. It tops a cliff-flanked promontory of twisted stone set between the St. Lawrence on the south and the St. Charles River on the north. The rivers meet at the promontory's eastern end, terminating the passage which gave the place its name, *kebec*, meaning "narrows" in one of the Algonquian languages. From its perfect vantage point the city looks downstream, waiting for whatever the distant sea may bring.

The first European it brought (apart from a possible unrecorded Viking or two) was Jacques Cartier, who explored the St. Lawrence in 1535 and wintered at the mouth of the St. Charles. He had been looking for Asia, and hoped the St. Lawrence might lead to it. Cartier came here three times, built a few forts in the region, and then went home.

Next came Samuel de Champlain. In 1608 he set up a fortified wooden *habitation* beneath the promontory's cliffs. Champlain was looking for Asia too, but he was an ardent colonizer. He dreamt of a community of farmers and fur traders, and that dream materialized, if the route to Asia did not.

An old gentleman, stooped, slow-footed, joined me at the lookout station's rail.

"*Bonsoir*," he said. "You have found our grandest view. From here one sees so well the curious coming and going of the St. Lawrence. Oh yes," he caught my look of surprise, "our great stream is not like most. It rises and falls. Here, 400 miles inland, we feel the pulse of the sea." He nodded, pleased with his river's performance.*

"The St. Lawrence made us, and betrayed us," he went on. "It led our French ancestors to this spot. Then it brought the English."

Actually, the British took Quebec twice. The first time was in 1629, when it was no more than an oversize trading post. They returned it to France three years later. Clergymen and nuns came in numbers to create churches and schools and hospitals. Bishop François de Laval de Montmorency made Quebec the spiritual capital of all New France; his diocese extended to the Great Lakes and the Gulf of Mexico.

As the trading post became a town, Louis XIV sent governors to rule it. Walls were built across the promontory to give protection on the west. These, plus the fortifications around the cliff edge, made Quebec one of the first walled cities in North America (map, page 423). Less than a decade after its defenses were built, in 1750, it was to find itself in need of them. The British returned in 1759, this time to end French rule in Canada.

The spot where the beginning of the end came for New France is today a peaceful place by the Citadel called the Plains of Abraham. I would visit it under tomorrow's sun. Now, mesmerized by the river, I walked downstream toward my lodgings in the Château Frontenac (pages 434-5).

ONE OF THE LOVELIEST WALKS in the world lies between the lookout near the Citadel and the Château. A quarter-mile-long wood-floored terrace here clings to the cliff edge, forming a perfect promenade. In summer Québecois and tourists alike gather upon it at dusk to watch the spectacle of each day's departure.

Night had fallen when I took up this elegant trail. I was glad, for night eases the transition of thought from present to past. The dissonant details of modernity are erased by darkness. Even the town-topping Château seemed part of an essentially antique picture. Floodlit, its copper roof glowing green, this turn-of-the-century creation of a New York architect, built by the Canadian Pacific Railway, has

*See, in NATIONAL GEOGRAPHIC: "North Through History Aboard *White Mist*," by Melville Bell Grosvenor, July 1970, and "The St. Lawrence, River Key to Canada," by Howard La Fay, May 1967.

EKTACHROME BY DECLAN HAUN, BLACK STAR © N.G.S.

With Gallic good humor, Québecois Lucien Durand hawks French-language newspapers. The economic dominance of English-speaking Canadians in most of Quebec's cities—particularly in Montreal—has swelled a tide of secessionist sentiment among French Canadians. In Quebec City, however, where 97 percent claim French as their mother tongue, good jobs do not require a knowledge of English, and the bitterness erupting elsewhere finds little nourishment.

Cradle of New France, Quebec sprawls atop Cape Diamond, discovered in 1535 by Jacques Cartier. Upper Town preserves stately buildings of old Quebec Seminary and Laval University, left. Overlooking

KODACHROME BY NATIONAL GEOGRAPHIC PHOTOGRAPHER JAMES L. STANFIELD © N.G.S.

the St. Lawrence River, beyond turreted Château Frontenac, hulks the Citadel, erected between 1820 and 1832 to guard this strategic gateway into British North America against United States invasion.

EKTACHROMES BY OSCAR UHON, BLACK STAR © N.G.S.

Venerable city's youthful mayor, Gilles Lamontagne (above) reflects the calm that prevailed in Quebec City even when the events of October 1970 brought armed French-speaking soldiers to guard government buildings (below). The federal government deployed troops after terrorists in Montreal kidnaped a British diplomat and a provincial official. The extremists murdered the Canadian; the diplomat was later released.

more the air of a fairy-tale castle than do most genuine chateaus.

Other strollers appeared as I walked north. Two matrons trudged past, evidently walking off a memorable meal. They were fifteen hundred feet out from the start of the boardwalk and still reliving the main course: "I tell you, Muriel, that orange sauce. . . ."

Younger promenaders were more interested in each other. One of them, a pretty young Québecoise, led me to the single direct linguistic face-off I witnessed during two visits to Quebec.

The girl was bouncing along the boards when she caromed off a little knot of young Canadian tourists. One lad called a joking reproach to her, in English. She turned, feet apart, hands on hips, and threw back a good-natured retort in French.

"Say that in English," shouted the boy.

"And what does it make if I do say something in English?" she asked, pertly if ungrammatically. Like most of the Québecois, she spoke barely enough to get by.

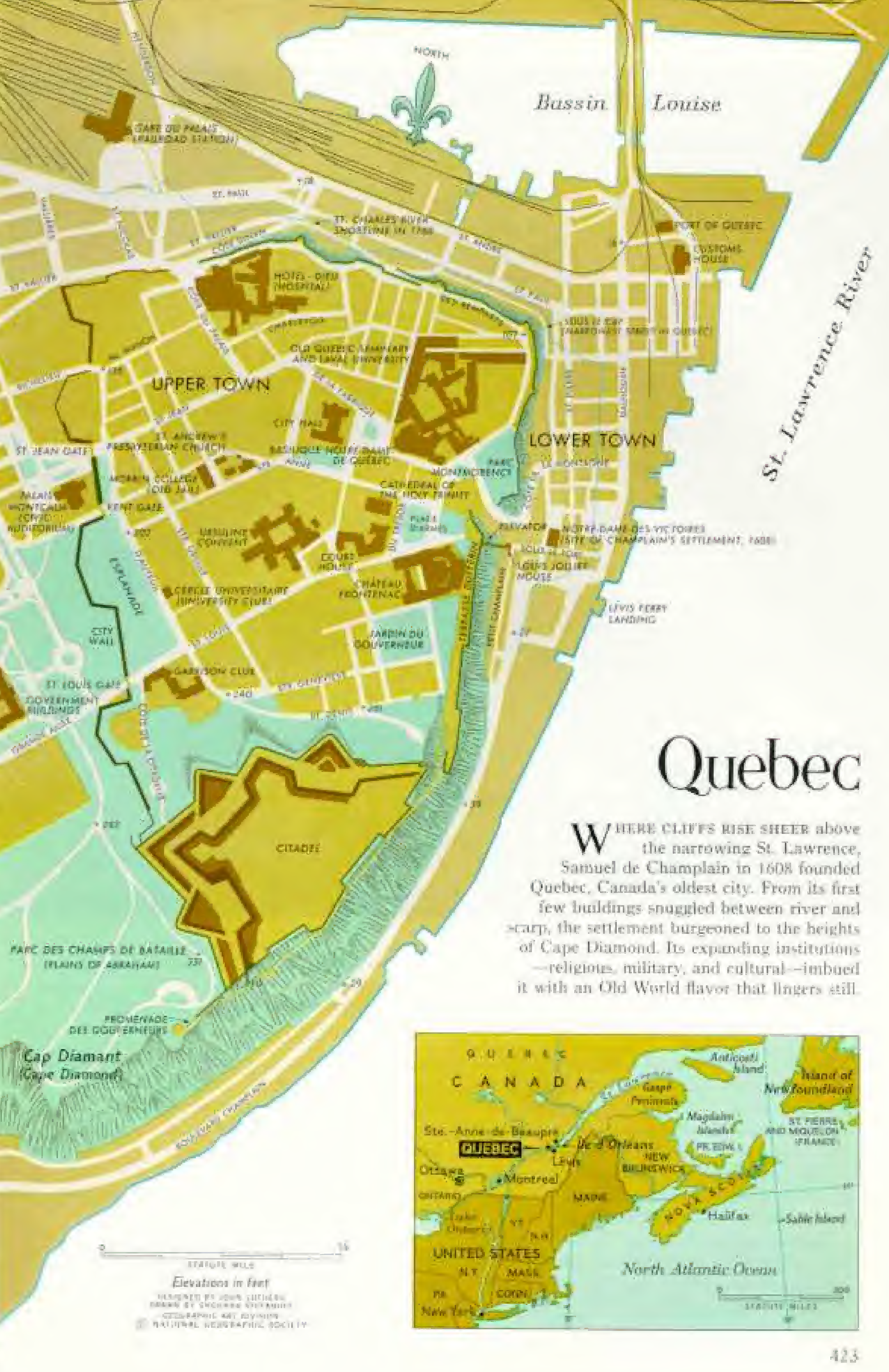
"Well, nothing, I guess," the boy said. Then, to his friends, "You know, I wish I *could* speak French to her. I mean, it *is* the language here, isn't it."

FRENCH is indeed the language here, as much as it is in Paris itself. Ninety-seven percent of Quebec City's citizens are Francophones—a much-used term denoting the linguistically French—and most of the other three percent, who are Anglophones, are bilingual. Descendants of the invading British, long since Gallicized, have left the town a legacy of Irish and Scottish family names such as MacDonald (Jean Claude), O'Neill (Yves), and Corrigan (Marcel), many of whose owners have lost the language of their forebears.

I met one such in the Château's elevator. He was running it at the time, letting tourists off at floors whose numbers they called out in English. I called mine in French. He turned, without a word, and shook my hand.

Quebec's Frenchness has not always been so solidly established. Soon after the conquest of 1759, British merchants entered Canadian commerce. Before long they controlled it. The Québecois did not oppose the takeover, and could not; their society consisted of the lordly and the lowly. There was no effective middle class to compete with the busy British in the marts of trade.

Since then, Quebec City has developed an



Quebec

WHERE CLIFFS RISE SHEER above the narrowing St. Lawrence, Samuel de Champlain in 1608 founded Quebec, Canada's oldest city. From its first few buildings snuggled between river and scarp, the settlement burgeoned to the heights of Cape Diamond. Its expanding institutions—religious, military, and cultural—imbued it with an Old World flavor that lingers still.

Spangling the evening with song, visiting choristers from Montpellier University in southern France perform at one of Quebec's free summer concerts on Dufferin Terrace, overlooking the St. Lawrence. Music and other arts flourished in the city from its earliest days, encouraged by religious leaders

educated and competent middle class, thus filling its entire social spectrum with Francophones. Most Anglophone families have moved away. There is nothing of the melting pot here; and if the town lacks some of the fertile ferment born of the mixing of peoples, it is also nearly free of the eruptions that can be caused by incompatible elements.

Quebec knows and trusts itself. Therefore it is serene even when political strife disturbs the rest of French Canada. Visitors sense this at once. Here, they feel, is a city in which they can relax. And so they give themselves over wholeheartedly to the satisfaction of their individual appetites—for splendid food, for present beauty, or for past history. For these are the city's prime attractions.

My own guide to Quebec's history was George Marier, a tall, crew-cut, bespectacled law student.

"Salut!" he said, as I climbed into his car. "We're off to the Plains of Abraham. *On parle français?* Or English, *cela m'est égal.* I don't care. I'm not called George without

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

and aristocrats seeking to re-create in a wilderness settlement some of the cultural amenities they had enjoyed in their sophisticated homeland.

Velvety glow of candles marks a procession leaving flood-lit Sainte-Anne-de-Beaupré. Within the shrine, 21 miles from Quebec, stacks of crutches attest to the miraculous cures claimed by many who have made pilgrimages there.

an 's' for nothing. My mother is Scotch-Irish. But at heart I am French-Canadian."

"We'll speak French," I said, "for the good of my vocabulary and your French-Canadian heart."

WE DROVE SLOWLY along the edge of the 220-acre Parc des Champs de Bataille, known as the Plains of Abraham because one Abraham Martin once grazed his cattle there. Today the Plains are an immense lawn (following pages), rolling and sweeping to the cliffs and tumbled slopes that drop to the river. It is a lawn for walking on, for picnicking upon, for the racing games of children. No signs warn or forbid. Yet there is no torn turf, no scattering of soiled paper.

"It is really quite lovely, all this," George conceded. "We do well to keep it so. The battle it commemorates is important to us: It signaled the end of New France. Still, it was a very little battle. Consider:

"It is September of 1759. General Wolfe has been shelling the town for two months.

The place is in ruins. Now Wolfe has learned of a way up the slope from the river at a place where there are few guards.

"His men climb the slope before daybreak. They form two lines, here on the Plains, outside the city walls. General Montcalm's troops approach. The two little armies—perhaps 5,000 on a side—face each other, the British with orders not to fire until the French have come within 40 yards. The French shoot raggedly; the British fire volleys. The French fall back.

"The Battle of the Plains is over. It lasted only a few minutes. Both generals died. As I said, it was not a great battle."

Not great, perhaps, but it had the setting and terrible simplicity of a duel: the early hour; the quiet place; the confrontation at close range; the sudden deadly fire. Regimes have fallen less dramatically than that.

Although the brief, bloody encounter on the land I now traversed has more symbolic meaning to Quebec than any other in its history, it did not mark the end of war for that much sought-after and fought-over city.

The next invaders came from the south. The Continental Congress had dispatched troops to take Quebec by force and George Washington had urged the French Canadians to turn against the British. His appeal received little popular support. The unsuccessful assault, led by Richard Montgomery and Benedict Arnold in December 1775, cost the invaders 500 soldiers. General Montgomery, who had sworn to eat his Christmas dinner in Quebec or hell, lost his first choice. He was found dead in a snowbank.

MONTGOMERY'S CANNON were the last the city was to hear—or so I was telling myself when a loud report jolted me into the present. That, I knew, was the Citadel's noon gun, which performs an admirable service in this city of capricious clocks (assuming, of course, that it is fired on time). Quebec's battles would thenceforth be fought with words, and always with the same objective: to preserve her identity as an island of French culture in an Anglo-Saxon sea. That objective still stands; for every French Canadian is in some sense a nationalist.

The Citadel's monosyllabic announcement of noon reminded me to hurry along to a rendezvous with a gentleman who could speak with authority on the present state of French Canada's problem.

Only the clip-clop of a passing calèche stirs the cemetery silence of the Plains of Abraham, where British guns in 1759 thundered an end to New France. British forces under sickly, 32-year-old Gen. James Wolfe mounted nearby cliffs under cover of darkness. On these rolling, wind-swept heights outside the walls of Quebec, they met and defeated French, Indian, and Canadian defenders commanded by veteran Gen. Louis-Joseph de Montcalm. The brief skirmish left both leaders mortally wounded. Ironically, on the way to battle, Wolfe reportedly quoted to his troops from Gray's "Elegy": "The paths of glory lead but to the grave."

Jean-Charles Bonenfant, Professor of Law at Quebec's Laval University, is a scholar with a gift for separating facts from feelings.

"The Francophone-Anglophone conflict is milder here than in that bustling manufacturing center, Montreal," he told me, "mainly because there are not many English Canadians left. No one here needs to know English to get a decent job.

"In Montreal that isn't true. The city is largely French, but there the English Canadians and your countrymen control the economy. The language of business is English. The French make up the lower classes and must stay in them unless they become bilingual. It's 'Speak English or be a laborer.'

"There is still real bitterness between the linguistic groups in the industrial areas along the river," said Monsieur Bonenfant, "and traces of it even here in our own provincial capital. Much as this conservative, middle-class city differs from the manufacturing towns and farming villages that surround it, and from the lumbering and mining centers to the north, it shares with them a common French culture. In a way, it epitomizes it.

"That culture unites the French-speaking 80 percent of Quebec Province and gives the region its special character. Honest efforts are being made among both French and English Canadians to take this fact into consideration and to fit our province more comfortably into the Confederation.* Most agree that changes must be made. If we remain simply one of ten provinces, of which all the others are English Canadian, then we may suffer when the government responds to the Anglophone majority.

"So two ideas present themselves: first, a special status for our province within the Confederation, to safeguard the guarantees given us after the conquest. Second: separation.

"Most of us would rather remain part of Canada, and not just because our standard of living would drop if we separated (which it would). We care about Canada as a country. But the idea of separation has its fascination —the idea of forming a new nation of our own in which no foreign languages or ways could be imposed upon us. That is a dream, but a dream that could be realized—if the rest of Canada consented to its realization. But should it be? Need it be?"

*See "Canada, My Country," by Alan Phillips, in the December 1961 NATIONAL GEOGRAPHIC.

Old stones still throb with life

GRAYED BY THE BRUSH OF TIME, Quebec lures thousands each year with her exceptional cuisine, culture, and conviviality in a historic setting.

Fragrant pastries in a window on Rue de la Fabrique (above) in Upper Town tantalize a visitor from the United States.

In Lower Town, on the Rue Petit Champlain, the mansard-roofed building at left marks the approximate site of the city's first chapel, erected in 1615. Across the narrow street, opposite the pedestrian, stands the three-story house built for explorer Louis Jolliet in 1683-84.

Sidewalk critics (upper right) on historic Rue du Trésor brave summer rains for a glimpse of paintings by local artists.

The cavernous Brasserie Jean Talon (lower right) attracts the younger set to a supper club named for Jean Talon, an administrator of New France; he established Canada's first brewery in 1668 with the hope of reducing public drunkenness by making beer drinkers out of brandy lovers.

In the muffled serenity of the Hôtel-Dieu's choir, Augustinian nuns of the 332-year-old hospital find moments of quiet for reading and prayer. The Roman Catholic Church, though less influential in Canada today than during the country's early years, still wields a potent voice and claims the allegiance of more than 90 percent of all Québecois.

A growing minority of Québecois think so. A young professional, cultured, soft-spoken, had told me: "We have only two choices: assimilation or separation. Assimilation hasn't begun yet, but only because we prostitute ourselves—at least in the commercial centers—to be English at work and French only at home; to be second-class citizens in our own country.

"But we can't go on like this. We must get out regardless of the cost."

TWO OR THREE YEARS AGO my unhappy young friend was one of perhaps five percent of the city's residents who believed deeply in independence. By 1970 that percentage had risen sharply: A quarter of the provincial population voted for the thoroughly legitimate *indépendantiste* Parti Québecois. And there had developed an extremist group called the FLQ—Front de Libération du Québec. Its few hundred active members—hard-core Maoists for the most part—won a small measure of admiration from some emotional indépendantistes by calling for separation in louder voices than anyone else and punctuating their rhetoric with acts of violence.

Then, in early October, the FLQ kidnaped Quebec's Provincial Minister of Labor and Manpower, Pierre Laporte, and British Trade Commissioner James Cross. In true terrorist fashion they demanded $500,000 in gold and the release of 23 of their jailed associates, several convicted of major crimes, as ransom for their hostages. The federal government not only refused, but invoked the War Measures Act, which suspended civil rights and gave the police and military almost limitless powers.

These powers were used sparingly, and almost entirely within the Province of Quebec. Manhunts were launched. Several hundred people—most of them said to be FLQ members and sympathizers—were arrested. On the night of October 17 Pierre Laporte was strangled and left dead in the trunk of a car near Montreal's airport. The killers sent word of their action to the press, and vanished.*

Next morning, as the news flooded through Quebec City (and the world), I walked the chill sunlit streets to see how the provincial capital was reacting to brutal political murder. To the eye, Quebec was a picture of perfect calm. A few soldiers, mostly French Canadians, mostly embarrassed-looking, stood outside government buildings (page 422). Curious citizens glanced at them in passing. A few girls flirted with them. People walked to church in their Sunday best. In the Lower Town children played stickball in the streets.

*On December 3, the kidnapers released Cross in exchange for sanctuary in Cuba.

KODACHROME BY JAMES L. STANFIELD © NATIONAL GEOGRAPHIC SOCIETY

No crowds formed, no voices were raised. Only the flags, flying at half-staff everywhere from the city's government buildings to the ferryboats on the river, proclaimed the horror and sadness that touched the hearts of Quebec's people that day.

But if the searching eye found little to note, the listening ear found much. Feelings were running deep if not high. I set out to sample them. Beyond a unanimous and heartfelt condemnation of the killing, I collected a varied set of reactions.

Bracketing the saner statements were: "The FLQ leaders should be lined up and shot," and "The murder is the fault of the intransigent federal government." Otherwise:

- A university professor: "The independence movement has disavowed the terrorists. No one should ever confuse indépendantistes with terrorists. But the move toward independence is irreversible."
- A restaurateur: "This violence has given the independence movement a setback. People can see where that philosophy can lead."
- A young blue-collar worker: "The federal government speaks of insurrection and invokes wartime laws. What insurrection? Are the few dozen FLQ people still at large

really a threat to the Canadian nation?

- A city official: "Perhaps now the federal government will listen to us. The FLQ has shown itself contemptible, but it wouldn't exist at all if Ottawa had ever really dealt fairly with Quebec."
- A priest: "It will be months before anyone knows where we go from here, or how."

That last is perhaps the only unquestionable conclusion I heard expressed in that troubled time.

EVEN IN TIMES OF STRIFE, Quebec is a comforting place to look at. The bronze sunshine and wedgwood sky of Quebec evenings offer a fine light by which to see houses. I went off to look at some.

Had General Wolfe's bombardment in 1759 been less thorough, more of the Lower Town might stand as it was in the 17th century. The thick-walled, mostly one-story, steep-gabled houses of those years were built to last. The oldest ones were wonderfully quaint, but they were small and dark. The winters were too severe to encourage the construction of large, well-lit rooms.

The 18th century brought multiple fireplaces and consequently larger houses. The 19th ushered in many three-story mansions. Since the more recent buildings are the more common, Quebec is architecturally a post-conquest city, more British than French in appearance. But in the placement of its buildings upon its bold terrain, Quebec remains what it has always been: a split-level city. Cliffs still separate the Upper from the Lower Town, and give the whole a magnificence not shared by its parts (pages 420-21).

The area between the foot of the cliffs and the river is where Quebec began (pages 428-9). Crooked alleys and cockeyed houses pleasantly proclaim their age. The 20th-century intrusions can almost be overlooked. I cut through an eight-foot-wide street, one of the narrowest in North America, where small children played diligently with sticks and cans, taking no notice of the passing stranger.

In the next block, two pigtailed ten-year-olds carried on a long-distance conversation using parking meters for phones. Eyebrows raised and noses upturned, these moppets conversed in the dulcet tones they believed to be those of the upper-class ladies who lived in the pretty houses on top of the rock. They vied with each other in length of word and elegance of enunciation until, fractured by their own comedy, they laughed themselves breathless and skipped away hand in hand.

If house-watching outclasses dining as a popular pastime in Quebec, it is only because people are physically unable to spend as much time eating things as looking at them. For a city of 194,000, Quebec is richly endowed with restaurants. Though their cookery is French, not all of its practitioners are. One of the best eating places, the Continental, toward which I now turned, is run by Italians. Host Angelo Sgobba led me to a table.

Monsieur Sgobba, his brother, and two friends, all of whom came from the same village in Italy, founded the Continental 14 years ago after a long and cosmopolitan apprenticeship abroad.

"This is a town that likes to eat," said M. Sgobba. "We set out to earn a place in it."

I asked him about his specialties.

"First, beef in many forms. And of course, we offer the wonderful smoked salmon of the Gaspé."

He ordered for me, and excused himself. The dishes of his choice arrived in sequence—a chilled soup, a pink-fleshed brook trout, a flaming fillet that barely resisted the blade, a salad so crisp it crunched, and an aromatic confection of strawberries.

Thus ballasted, I set off to wander the walled town. Near at hand lay the Rue du Trésor, a narrow two-block-long street bright with floodlights and the works of the young artists who use its walls as an outdoor gallery. Since it sloped downhill (as any street must, if it is to lure a freshly fed client of the Continental), I allowed the force of gravity to lead me.

Along the sidewalks young French-speaking portraitists, cartoonists, and specialists in sketches of the-Château-Frontenac-as-seen-from-below-at-night displayed their creations. Middle-aged English-speaking visitors walked up and down the middle of the pavement looking for masterpieces at $3.50 each.

At the foot of the Rue du Trésor stands the

Intent as a Davis Cup contender, a tennis-playing sister at the Ursuline Convent, Canada's oldest school for girls, prepares to deliver a blurring overhead smash. The convent, established in 1639, occupies a seven-acre tract in Upper Town. The province's unusual educational system, serving a Roman Catholic majority and a Protestant minority, struggles to satisfy both by maintaining separate French- and English-speaking schools.

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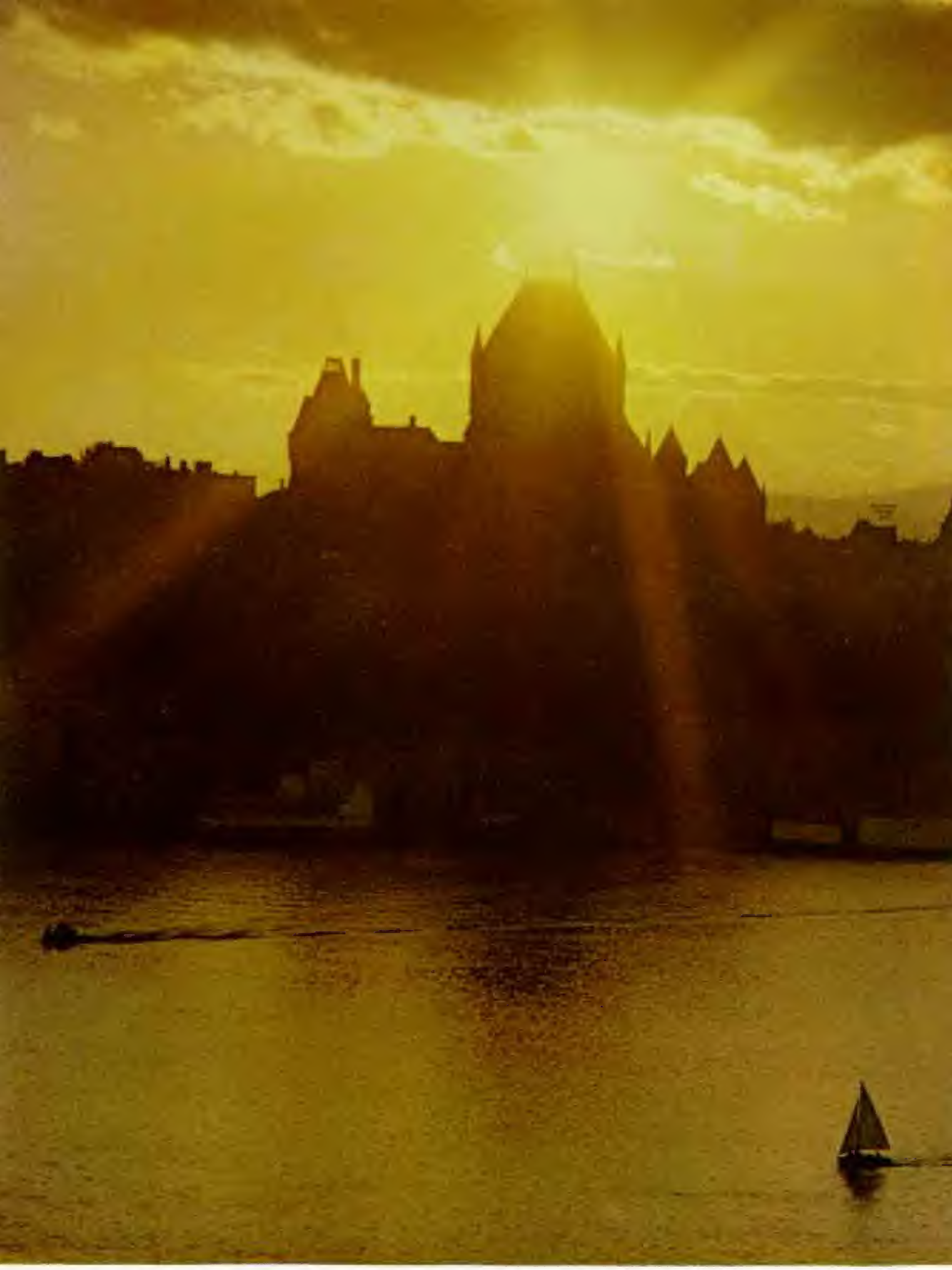

Golden burst of sunlight splashing off Château Frontenac's brooding tower recalls Thoreau's words in 1850: "I associate the beauty of Quebec with the steel-like and flashing air. . . ." Silhouetted on the tide-tugged St. Lawrence—a watery key to the heart

KODACHROME BY NATIONAL GEOGRAPHIC PHOTOGRAPHER JAMES L. STANFIELD © N.G.S.

of a continent—a ferryboat makes its familiar way to the cross-river landing at Lévis, while a sailboat courses upstream. Quebec's year-round port exports grain from the prairies, ore concentrates from the north, and locally produced pulp and newsprint

Peace symbols and relics of war—all have a place along Dufferin Terrace, where these Québecois students gather. The city's youth tend to be more vehement and vocal than their elders in supporting the independence movement for Quebec Province. The 1,500-foot-long, 60-foot-wide terrace clings to the edge of the escarpment separating Upper and Lower Town. Visitors to Lower Town often find 68-year-old Gerard Caron (below) treating feathered friends to corn from hands and hat.

Roman Catholic Basilica of Notre-Dame de Québec. Beside it, on a protective wall, perched half a hundred youngsters obediently conforming to the dictates of nonconformity from their unshorn heads to their booted feet. From the darkness above, the arched windows of the basilica looked down in mildest reproof. I recalled the comment of a middle-aged friend, himself the father of four.

"Most of our long-haired youngsters are not really hippies," he had told me. "They only dress the part. We are a bit too bourgeois to be a really swinging town. And we are still rather religious."

Quebec has always been religious. Until recently the church dominated Québecois life, and it remains strong today. In 1639 the Augustinian nursing order founded its Hôtel-Dieu, now one of the city's finest hospitals (pages 430-31), with funds from the Duchess of Aiguillon, a niece of Cardinal Richelieu. The Ursuline nuns, a teaching order, established their convent in the same year.

These zealous ladies looked after the health and education of the townspeople. Bishop François de Laval, in turn, looked after them and the spiritual welfare of everyone else in New France. A nobleman who gave up his patrimony to come to Quebec in 1659, Bishop de Laval possessed both humility and strong-mindedness in staggering quantities. He slept on the meanest of mattresses, yet demanded

the richest of ornaments for his church. He allowed no one to serve him, yet he caused the removal of a governor who displeased him. He died of gangrene at 85 after he had suffered frostbite as he prayed before dawn in a freezing cathedral.

Like the good sisters of his time, Bishop de Laval established institutions for the betterment of his flock. He created the Quebec Seminary, which later founded Laval University. They still serve the community, as do the hospitals and schools of the early nuns.

I presented myself one afternoon at the Ursuline Convent, where Boston-born Sister St. Croix explained to me the workings of her order's school.

"Our girls aren't taught to be nuns," Sister St. Croix said. "Oh my land, no! Hardly any take the vows, these days. We teach girls from six to eighteen years old. They go from here to college. And, nowadays, we ourselves attend university classes! I still marvel at that, when I remember how it was when we were cloistered. Why, I was here thirteen years without ever stepping outside."

I asked her about the school curriculum. She smiled. "You're wondering if it's up to date. We think so. The girls do just about everything that's suitable, and we do almost everything with them.

"But we love the memory of our early days, too. And our old buildings, and all the lovely

old things we've kept. Come see our museum."

Antiques shone in the old rooms. Glass cases glittered with fine crystal and silver from France. One glass case contained a skull. "It is General Montcalm's," Sister St. Croix said. "His body has rested in our crypt since the Battle of the Plains."

I went next to the Hôtel-Dieu, a towering structure whose upper floors are as modern as the medicine practiced in them and whose lowest levels contain the vaulted halls of the early nursing sisters. The successors to these 17th-century ladies still own this hospital and share in managing and staffing it. But in the interest of efficient practice, professional administrators, specialists, and lay nurses carry on the Hôtel-Dieu's work, now supported by government funds.

Dr. André Jacques showed me the surgery floor, immaculate and beautifully equipped, then comfortable patients' quarters. Never, in any country, had I seen a less depressing hospital. I said as much to Dr. Jacques.

"Perhaps that is because we treat our patients as human beings. We call all patients by name from the moment they arrive—not just 'Madame' or 'Monsieur.' Thus the patient thinks, 'Aha! They remember who I

Barely touched by the winds of change, Île d'Orléans in the St. Lawrence (right) perpetuates a three-century heritage of pastoral simplicity. Jacques Cartier originally named the island Bacchus—after the Greek god of wine—for its profusion of vines; later he renamed it in honor of the Duke of Orléans.

Farms handed down from generation to generation stretch inland in narrow strips, giving each family a segment of precious river frontage. Farmers often take their maple syrup, apples, strawberries, and cheese to Quebec's open-air St.-Roch Market. Mrs. Roméo Vézina (above), from mainland Loretteville, sells pumpkins there.

am; perhaps they remember what's wrong with me, too.'"

Quebec's largest legacy from the 17th-century religious community is a complex of schools originated by Bishop de Laval. Until recently a great compound in the middle of town contained them all: the original seminary, secondary school, and university. (The university and seminary moved to the suburb of Ste.-Foy in the 1950's.)

But there are also touching relics of another day and another faith, precious to the city's English-speaking minority. One of these is St. Andrew's Presbyterian Church, whose rector, the Reverend Edward Bragg, is a sympathetic friend of the Protestant community. I found him out back of the manse, watering flowers. "I'm just hosing around," he called. "Be right with you."

In a moment he was, wiping his hands and smiling, a ruddy, kind-faced man. He ushered me into his study.

I asked him how his flock was faring.

"It's shrinking," he said. "Our young people don't go to Laval but to McGill University in Montreal, or elsewhere. They don't come back. It's terrible, in a way. English-speaking people have contributed a lot to

AUX ANCIENS

Quebec, including some of its most beautiful buildings. Like this one, and the kirk. Let me show them to you."

Mr. Bragg took me through the warm, welcoming rooms of the old manse. Then we crossed a green carpet of lawn to the kirk, built in 1810 and one of the most charming structures in this building-proud city. It is a church-in-the-round, with the pulpit set in the middle of a long wall. In the loft, a pretty red-haired girl played a Scottish hymn on the pipe organ. I was touched, and said so.

"Aye." Mr. Bragg cleared his throat. "Well. We can't fill it, you know. Not with 250 members. And to think that in 1850 there was a plan to build a new church that would have seated 1,500! But we're still very much alive; our people are loyal. Would you come to the service next Sunday?"

I did. Mr. Bragg spoke about the need for better communications between people. He was speaking generally, not of the Quebec situation. But suddenly he transfixed me with a painfully apposite phrase, gently spoken: "Loneliness is all we need to know of hell."

ONE ENGLISH CANADIAN who feels neither lonely nor disenfranchised in French Quebec is a vital young lawyer named Anthony Price. Grandson of one of the two Price brothers who made fortunes in the pulp industry, Tony is the only one of their 45 descendants who still lives in Quebec.

I met Tony at his office one evening and drove with him to his summer place on the Île d'Orléans. Despite the occasional splash of third-rate modernity, the island remains as pretty and pastoral as one could reasonably expect, and the St. Lawrence embraces it fondly. Long, fine fields slope down to the water, and the houses rest comfortably upon their land (pages 438-9).

As if to prove that mutual respect can count for more than common ancestry, Tony and his Ontario-born wife Martha had

Preserving their legacy, owners of old buildings on Rue St. Louis—such as this 1675 house—have voluntarily restored their properties in recent years. Under a new 20-year government program, many more structures will be renovated—at a cost of $100,000,000—in the city that prompted Charles Dickens to write: "It is a place not to be forgotten or mixed up in the mind with other places. . . ."

KODACHROME BY [illegible], BLACK STAR © N.G.S.

invited their closest friends, René and Monique Amyot, to dinner. There followed an evening of good food and good conversation, in the course of which everyone involved switched from English to French as the spirit and the subject matter moved him. Among these convivial Canadians "we" and "they" no longer referred to linguistic communities, but to communities of interest.

Such bicultural company is scarce, of course. But it is not limited entirely to the Prices and the Amyots. It can be found in a venerable but evolving institution called the Garrison Club. I had the honor of lunching there one day with M. Jean Fournier, head of the Provincial Civil Service Commission.

The Garrison Club was English-founded, English-built and, for many years, English-Canadian in membership. Today, most of its members are French-Canadian. Yet the new majority, far from converting the club and ousting its remaining Anglophone members, enjoys their presence and traditions.

"You must realize," said M. Fournier, "that despite all the political difficulties between French and English Canada, the middle and upper classes here are likely to speak English on occasion. That may be, of course, because we don't *have* to speak it.

"You've heard of our *Révolution tranquille* —our Quiet Revolution. It seems less quiet now, but it will be again. It refers simply to the determination of Québecois to have an adequate voice in the handling of their own affairs. But the 'révolution' is in Montreal; the 'tranquille' is in Quebec City."

HELPING to maintain that "tranquille" is a sister institution to the Garrison Club—the Cercle Universitaire. Once *the* French club of Quebec, it now has almost as many bilingual members as its ex-British equivalent. Like the Garrison Club, it is private. But a kind acquaintance, M. Paul Bousquet, Manager of the Port of Quebec, had promised to take me there.

I met M. Bousquet in his high-ceiled office, full of old oak and leather. From its windows the port looked curiously quiet.

"There is not much general cargo to be picked up here," he explained. "Our main exports are grain, ore concentrates, newsprint, and pulp. Nevertheless, our cargo volume is increasing. We have two new terminals for containerized cargo. And we are open in winter. Our 15-foot tides break up the ice.

"But Quebec is not yet a port city; it is a city with a port. Though we are growing, at the moment we don't have enough manufacturing and commerce to attract much foreign trade. In any case, our institutions are just as important as our factories. Allow me to introduce you to one of them."

The port-authority car took us to a fine old building in the Upper Town.

"Welcome," said M. Bousquet, "to the Cercle Universitaire. And observe what we have here in our front hall: on one side, a portrait of Wolfe; on the other, one of Montcalm. Our members may be mostly Francophones, but this does not make them a bigot brigade. Many professional people and high officials belong. Look, there is Gilles Lamontagne, just leaving. Our mayor, you know."

WHEN NEXT I SAW M. Lamontagne, it was in his office. A young, vigorous man, elected on a civic-progress platform, he is determined to guide and goad his city into realizing its potential (page 422).

"Quebec is a North American treasure. It should be treated as such. In the old part of the city, we have launched a vast program of restoration and preservation on which we plan to spend $100,000,000 over 20 years.

"We need industry. We have almost none, but with the expansion of the port facilities and the annexation of several suburbs we now have plenty of land and services for industrial development. We are evolving, and faster than ever before."

I left the mayor and walked for a while in the tree-shaded streets, where bronze plaques and silent statues spoke of old days and old doings. In this evocative atmosphere it struck me that "evolution" was indeed the word for what is happening in Quebec. Social evolution has created a new educated middle class, capable of and insistent upon determining its own future. Religious evolution has brought new liberalism to the church. Economic evolution has at last begun.

Happily, the evolution of Quebec differs in no notable sense from evolution in nature: It embraces the present without abandoning the past. The Québecois possesses to an uncommon degree the peculiarly human capacity to look ahead with longing while looking back with love. "Je me souviens," says Quebec. "I remember." □

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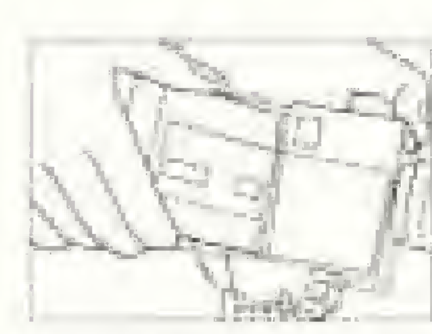

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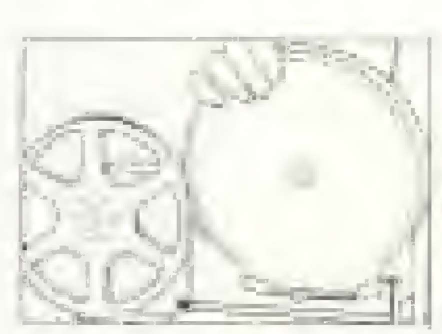

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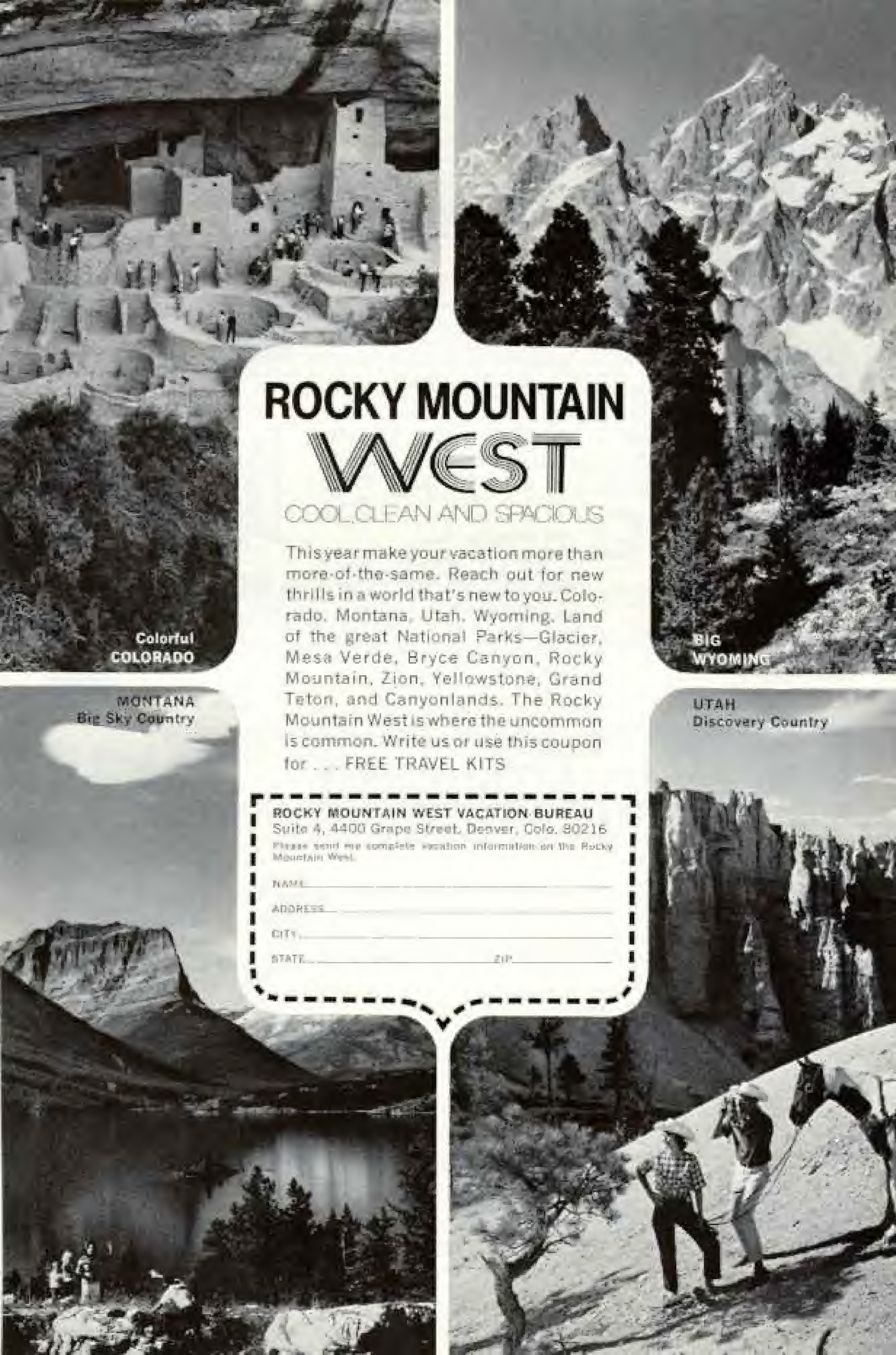

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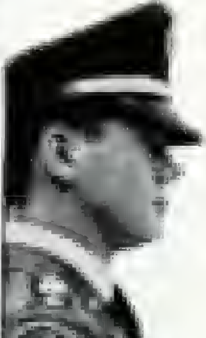

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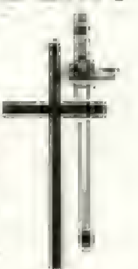
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