

*Guess
I thought you
might like
to see the
turtle piece
on page 4. I'm
still looking
for a good
Hawaiian
story mark*

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Carrying a heavy load, researcher Kim Clifton returns a tagged East Pacific green turtle to sea off the coast of Mexico. While studying the animals at their last major breeding site in the Northern Hemisphere, the American has had a number of dangerous confrontations with poachers.

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"Yankee don't go home" say the Mexican villagers of Maruata, where this rugged American is battling against staggering odds to save an endangered sea turtle

BY MARK WEXLER

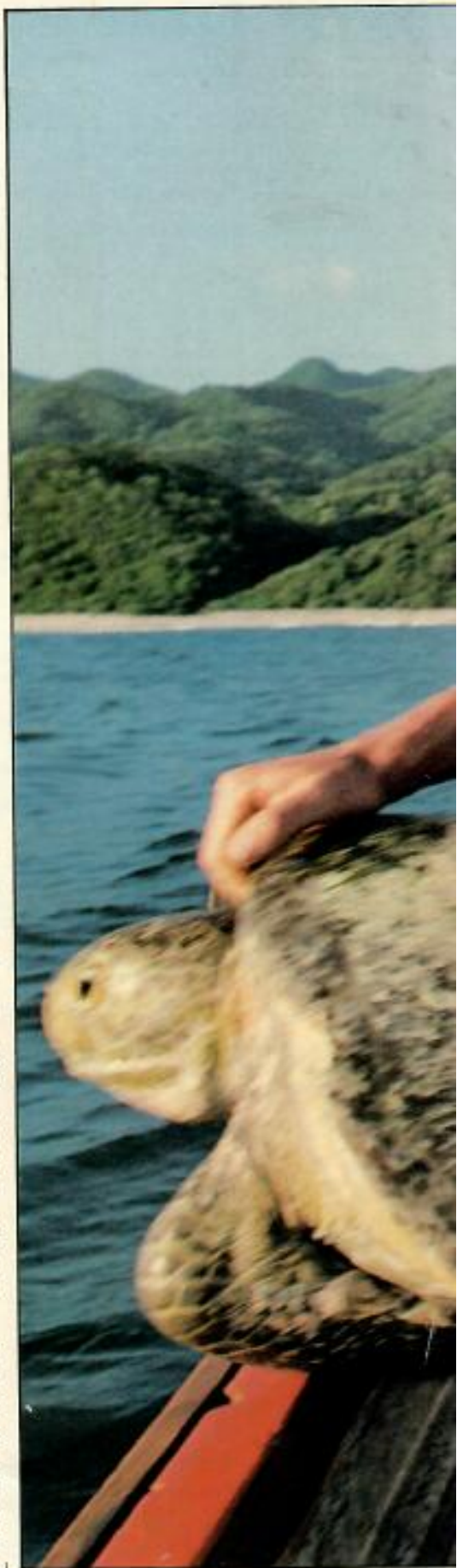
PEOPLE often picture paradise as a warm white beach, trimmed in a sparkling sunset and surrounded by swaying palm trees, lush green forests and vivid tropical bouquets. Kim Clifton found precisely that kind of setting the first time he entered Maruata Bay. The year was 1976 and the brawny American scientist had hiked some 35 miles to reach the remote Nahuatl Indian village, located halfway down the west coast of Mexico. At that time, the Pan American Highway had not yet been carved through the region, and few gringos had ever visited Maruata.

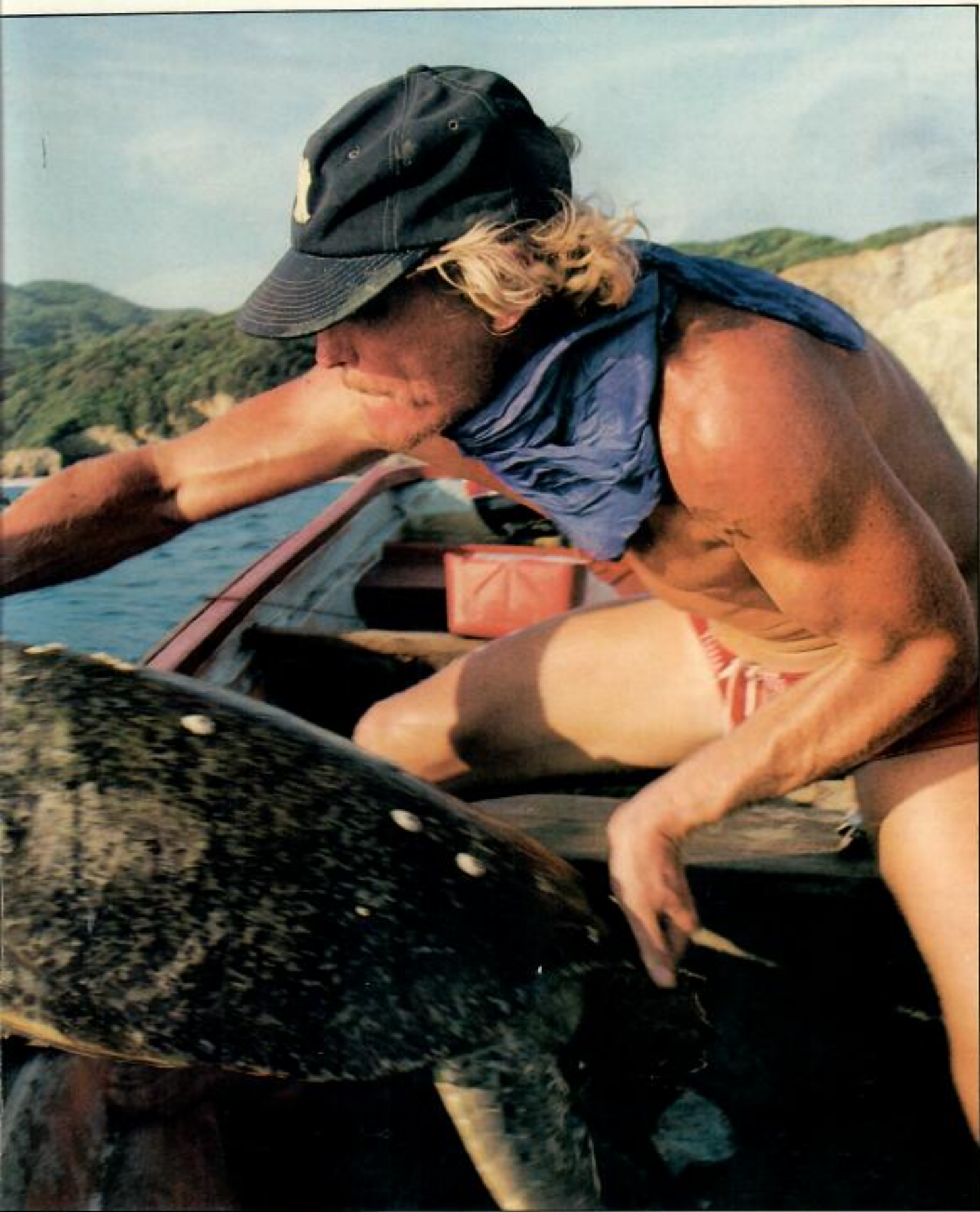
Strutting past primitive palm-frond houses with his long, curly hair blowing in the breeze and his muscles bulging under the weight of a heavy backpack, the blond six-footer must have cut an imposing figure to the isolated Indians. "The people were very poor but the place seemed to have a tranquil, alluring quality about it," he remembers. Clifton had ventured to Maruata in search of the elusive East Pacific green sea turtle, and he soon found more than he bargained for.

As he approached the beachfront, the

weary American came upon an incredible scene: the village fishermen had captured dozens of the turtles and were slaughtering them onshore. While some of the men dragged the bulky creatures from boats, others slashed them open with long knives, cutting away the shells and hides and throwing the remains into the water. "The sea was filled with the stench of turtles," says Clifton. "A long chapter of the earth's history was being erased in the blink of an eye." The researcher pulled out his equipment and began measuring some of the turtles. The Indians looked on apprehensively. The next day, one of them accused the American of being a government agent and threatened to kill him. Reluctantly, Clifton left the village but knew he must return. Paradise, he discovered, had a terrible flaw.

Kim Clifton did go back to Maruata, and he eventually gained the trust of the village's 100 inhabitants. That area, he learned, is site of the turtle's last major nesting grounds in the Northern Hemisphere. The East Pacific subspecies is the smallest and most critically endangered of the world's three major types of green turtles, and it is the only one found off the west coast of the



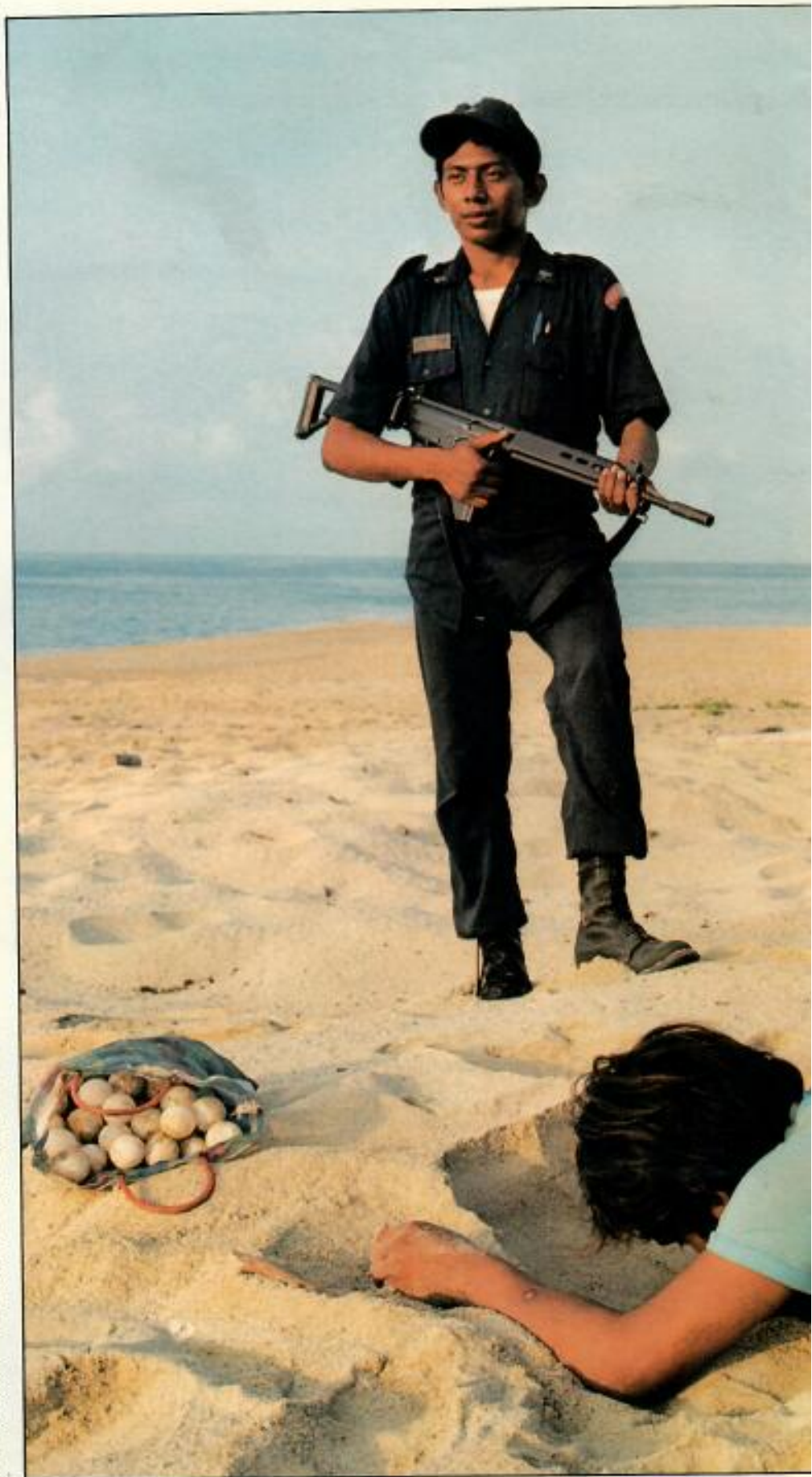


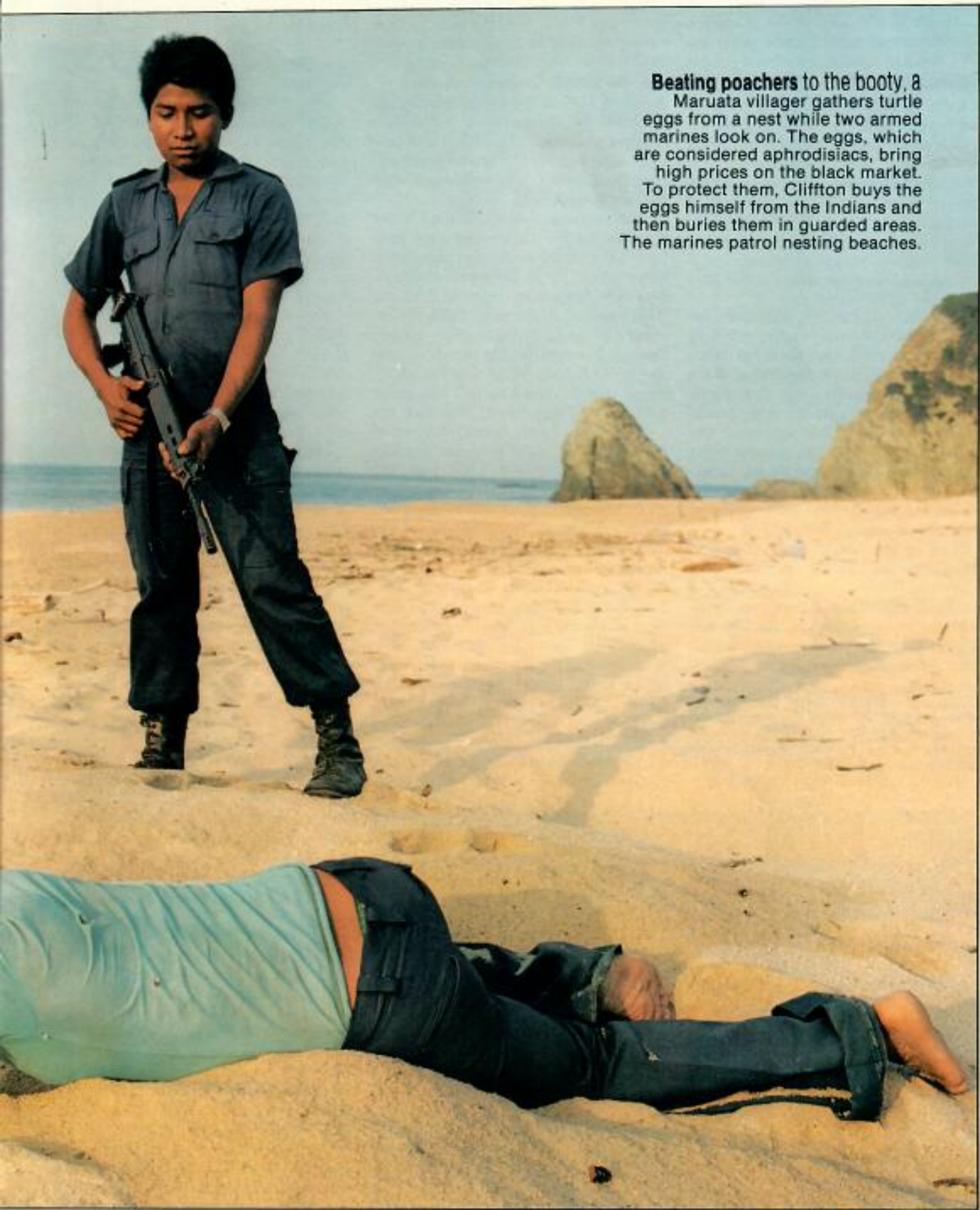
Americas. It also breeds in small numbers in the Galapagos Islands.

Partly because of Clifton's efforts, there is now an official government moratorium on the harvesting of green turtles along the Pacific coast of Mexico. In the past three years, the researcher and volunteers from Maruata have released nearly a half-million turtle hatchlings into the ocean. Operating under a permit from the Mexican government, the 33-year-old Clifton has worked with local authorities to protect most of the nesting female turtles there. In doing so, he has put his life on the line a number of times. "It's a dangerous game of bluff and courage that can only go on for so long," says Peter Pritchard, a Florida Audubon Society biologist who oversees the project. One question remains: can the problems at Maruata be controlled fast enough to save the animals? "Right now," notes Clifton, "we're stalling for time — time for turtle numbers to increase, and time for the Mexicans to take full control of the project."

In many respects, Mexico has long adopted an enlightened sea turtle conservation program. "Officials there recognized the critical status of another turtle, Kemp's ridley, long before we Americans did," says Pritchard. "They were using marines to patrol the ridley's nesting beaches on the Gulf seven or eight years before the United States even included the animal on its Endangered Species List." Nevertheless, Mexico is one of several nations that has not signed the Convention on International Trade in Endangered Species (CITES), which prohibits the exportation of products made from such creatures. One reason: sea turtles and some other endangered animals are still commercially valuable. In Mexico, turtle meat is prized as a delicacy. The shells are turned into expensive jewelry, while the hides are tanned and used for boots and bags. Turtle oil is a treasured cosmetic item. What's more, many men believe that turtle eggs are an aphrodisiac; in Mexico City, one egg may sell for a half-dollar or more.

While Mexican authorities are well aware of the problems at Maruata, they do not have the resources or the manpower to fully protect and study the turtles there. "Without the assistance of Clifton and the United States, we would not be able to release so many hatchlings every year," observes René





Beating poachers to the booty, a
Maruata villager gathers turtle
eggs from a nest while two armed
marines look on. The eggs, which
are considered aphrodisiacs, bring
high prices on the black market.
To protect them, Clifton buys the
eggs himself from the Indians and
then buries them in guarded areas.
The marines patrol nesting beaches.

Marquez M., the hard-working head of Mexico's understaffed turtle program. "We hope to send more of our people there soon."

Until then, is it the responsibility of the United States to assist another nation with its animal resources? "Without question," says Jack Woody, a U.S. Fish and Wildlife Service official whose agency sponsors Clifton's project in conjunction with a World Wildlife Fund-U.S. grant. "These creatures are under the jurisdiction of Mexico but if we can help them survive, it is our duty to do so," adds Woody.

Long before the first dinosaurs appeared, millions of turtles already roamed the earth. Scientists speculate that they may have developed from marsh lizards that hunched their shoulders forward to protect their heads. About 100 million years ago, some turtles returned to the sea. At one time, possibly hundreds of species of sea turtles existed; today, there are only seven. All but one of them are considered either threatened or endangered.

Prior to the 1500s, there was little human predation on the creatures in the Americas. Because most sea turtles can live for a month out of the water, however, they were prized by the first European explorers in the New World. What made the turtles so easy for sail-

These seven female turtles were taken by poachers last fall, while the animals were ashore nesting. With the aid of Mexican marines, Clifton (shown below) set up a roadblock to catch the offenders. All but one of the turtles survived the trauma.

ors to catch was the one flaw in their evolution: their need to return to land to lay their eggs. During nesting season, the female greens often show up *en masse* at their rookeries, which may be 1,000 miles from their turtle-grass feeding grounds. The 100-pound animals mate just beyond the breakers and then the females come ashore at night to deposit their eggs.

Until recently, little was known about the East Pacific turtle's migration habits. The creature is distinguished from other greens by its dark pigmentation. Scientists frequently refer to it as the "black turtle." In the early 1950s, a University of Texas research party passed through Maruata Bay in search of new species of lizards. What they found, instead, was the black turtle's last major northern nesting area. At that time, the animals were being heavily harvested by Indians at their summer feeding grounds in the Gulf of California. But few of them were taken by the villagers of Maruata until the late 1960s, when black marketeers from Mazatlan and other cities began offering high prices for the turtles and their eggs.

With an adult turtle worth anywhere from \$30 to \$300, poaching became rampant at Maruata. As many as 20,000 of the animals were taken annually on the beaches there. "Those people were taking every single egg that was laid, without exception," says Archie Carr, a University of Florida turtle expert. As a result, today, fewer than 15,000 adult female black turtles survive. "Clifton's project may be the only thing that's

saved them," adds the Florida biologist. "We could right a lot of wrongs in the sea turtle world if we had more people like him."

Kim Clifton is a quiet man with simple tastes, a rugged individual who can adapt to the most humble surroundings. He is the quintessential American adventurer — fearless, handsome, robust, carefree and clever. He leads the kind of exciting, unpredictable, dangerous life that most other people only dream about. "I decided a long time ago that I didn't want to go through life just as a tourist," he says.

Born in New Haven, Connecticut, in 1948, Clifton grew up on the outskirts of New York City. When he was 17, he enrolled at the University of Miami, but dropped out after one semester and joined the U.S. Army. While stationed at Ft. Bragg in North Carolina, Clifton volunteered for a camp boxing tournament. A few months later, he became heavyweight champion of the 82nd Airborne Division. He finished out his military career as a member of the national Army boxing team.

After his discharge, Clifton bought a single-engine airplane and embarked on one of many unusual adventures in his life: a 100-hour solo flight from Arizona to Ecuador. Unfortunately, that trip came to an abrupt end high in the Andes, when he crashed while attempting to maneuver through a dangerous pass. He was found wandering about in a state of shock by local Indians, who took him to safety.

Clifton began studying biology in the early 1970s at Prescott College in Arizona. In 1975, he was hired by Richard Felger, a researcher at the Arizona Sonora Desert Museum in Tucson, to tag green turtles in the Gulf of California. "The Indians there assumed that because the ocean is so big, it would never run out of turtles," says Clifton. "They refused to believe that the animals' numbers were declining."

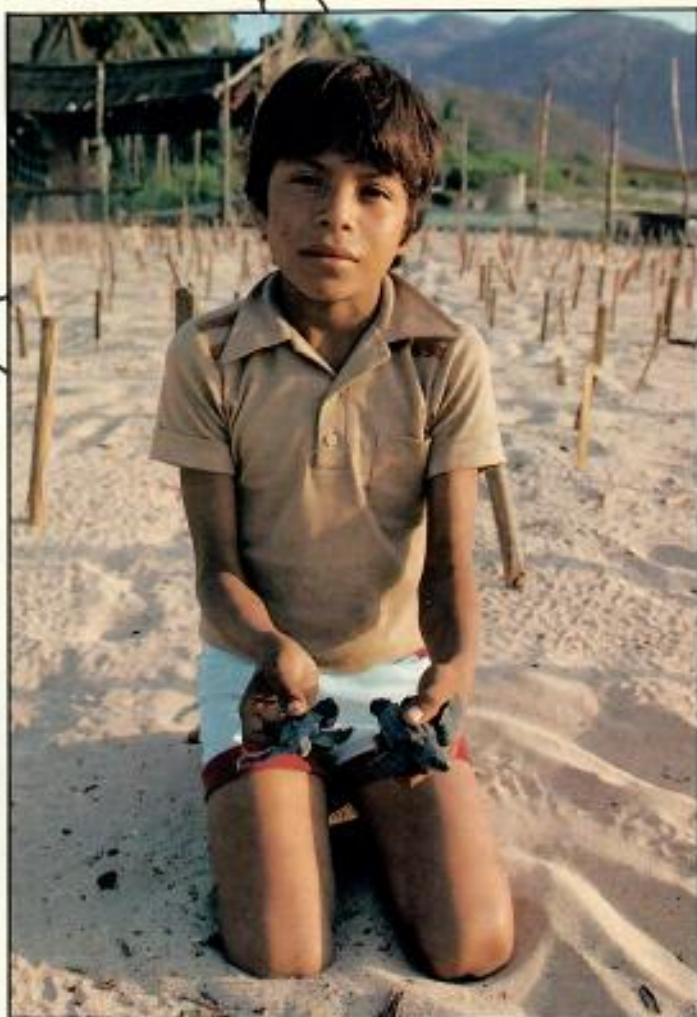
Clifton read the University of Texas report on Maruata and resolved to visit the area. A year later, he arrived there, just in time to witness the killing of turtles by local villagers. "Those people were taking about 80 adult turtles a day during the peak nesting season in the fall," recalls the American.

With the aid of Felger, Clifton secured a World Wildlife Fund grant and returned to Maruata in 1978. He set up a program based on a capitalist system:





A troubled paradise, Maruata Bay attracts hundreds of breeding sea turtles every year. Until recently, almost all of the creatures' eggs were taken illegally by local Indians. Since 1978, however, Clifton and his young helpers have incubated about a half-million eggs in corrals like the one shown here (right). As soon as the hatchlings emerge, they are put to sea.



he offered to buy the turtle eggs from the villagers. He also set up corrals at the two major nesting beaches with the aid of Mexican authorities, in order to protect the eggs during their two-month incubation period. In the wild, a turtle will lay anywhere from 60 to 100 eggs at a time on the beach.

When the young hatch, they immediately scurry toward the water. No one knows what guides the hatchlings, but one thing is clear: those few minutes on the sand are often the most dangerous time in a young turtle's life. Under the moonlight, crabs, wild dogs and other predators are often lying in wait. Prior to 1978, however, few hatchlings ever ran this dangerous gauntlet at Maruata because few eggs ever hatched. "Some men will break open a dozen of them at a time into a glass, add some chili and drink the raw concoction down in one gulp," says Clifton.

That first year, the researcher safeguarded nearly 100,000 eggs. Seventy percent of them hatched and the young were returned to sea. "We have no idea

how many of them may survive, but at least they have a fighting chance," notes Clifton. The same year, a bulldozer arrived in Maruata, marking an end to the village's ageless isolation. The Pan American Highway was about to pass through.

During peak nesting periods, Clifton often worked round the clock, collecting eggs, releasing hatchlings and tagging adults. "I was pretty naive back then," he admits. "I'd let a villager take me to one beach to tag nesting females while his companions were at another beach poaching turtles."

The following year was a nightmare for Clifton and George Huey, a slender, soft-spoken photographer from Arizona who joined the Maruata project. The Mexican government had imposed a ban on the killing of all green turtles, and a small company of marines was sent to the area to enforce the law. Unfortunately, the ban had little effect; poaching was worse than ever in 1979. "Our egg program continued to work," remarks Clifton, "but we had little time

for research. We were too busy protecting the turtles — and ourselves."

One afternoon, Clifton and Huey ventured out in a boat to tag breeding pairs. Mating turtles often copulate for hours at a time — a fact that has linked the animals with aphrodisiacs — and they are easily captured during that time. As it happened, the two Americans were not the only people in the water that day. Huey spotted another boat manned by poachers from a nearby village. He and Clifton went after them. Minutes later, the Americans found themselves trapped between two boats of armed poachers. "They chased us all the way back to Maruata," recalls Huey. A few days later, an unidentified man fired several rounds of ammunition at Clifton's house from a nearby arroyo. "Someone was trying to tell us something," muses the researcher.

That Christmas, Clifton was walking toward Maruata's *embarcadero* when a neighbor approached. "I wouldn't go down there tonight," the Indian told him. "See those lights? They're loading

turtles into a truck." Clifton went after the marines, who were camped on another beach, and they set up a roadblock just outside the village. Then, they waited. "We eventually realized that the Indians weren't going to drive out as long as Huey and I were away from our house," he says. "They didn't figure on the marines being nearby." The two Americans left the soldiers and returned home. Almost immediately, the truck pulled out of the village. Moments later, it was in the hands of the marines. In the back of the vehicle, the villagers had stashed 140 live turtles. The truck was confiscated, the turtles were released and the drivers were turned over to local authorities. Mexican law states that wildlife poachers can be sentenced for up to two years, though rarely are offenders jailed. "Some of the villagers didn't talk to us for a long time after that night," remembers Clifton. In spite of that successful roadblock, some 2,000 female turtles were lost to poachers in Maruata in 1979 — more than a tenth of the surviving population.

Clifton's relations with the villagers improved dramatically during the 1980 nesting season, after Mexican officials gave the Indians a small subsistence quota. Last fall, they were allowed to harvest 250 male turtles a month from September to December. "If you give these people a small quota, just enough to get by on, they'll work with you — not against you," notes Clifton. He convinced the villagers that the turtles are a valuable, renewable resource that they can tap for many years to come if they allow the animals to repopulate. The Maruata Indians are now important allies in patrolling against poachers from other villages. As a result, few turtles were taken illegally in 1980.

"Kim is one of us," says Amador Chavez, a 33-year-old Indian who manages one of the egg corrals. "He speaks to us like a Nahuatl Indian, not a gringo. The people of our village trust him — he's one man who can't be bribed." Curiously, it was Chavez who threatened Clifton's life the first time the American visited Maruata in 1976.

Last year, Clifton purchased another 225,000 eggs from the villagers and released about 150,000 young turtles into the sea. Meanwhile, his Mexican helpers succeeded in protecting a small section of beach where several hundred natural nests produced young. "Some

Safe at last, a female green turtle enters the surf at sunrise after completing her nesting ordeal on the beach. Scientists do not know how a turtle finds its way across hundreds of miles of ocean to lay eggs at the same place it was born.

people say that these green turtles are headed for extinction no matter what we do," observes Clifton. "I don't buy that. Any time you throw a few hundred thousand hatchlings into the ocean, you're doing something."

Now that the highway passes through Maruata, the American fears that tourism may spread into the area. Mexican officials hope to avoid that problem by safeguarding some turtle nesting beaches at Maruata and elsewhere in the country, too. "We must set aside some critical habitat zones," says René Marquez.

On a warm, clear tropical night last December, a timid female turtle lumbered onto the beach at Maruata Bay. Behind her, massive breakers crashed and foamed in the moonlight. At the edge of the tide, the turtle paused and nuzzled her head into the sand. Was she determining if she had landed at the proper place? Scientists do not know how a turtle finds its way across hundreds of miles of ocean to nest on the same beach where it was born.

Her mind made up, the animal lurched forward, swinging her foreflippers in a circular fashion and dragging her 100-pound hulk up the sand. With each motion, she gasped and wheezed. Slowly, ever so slowly, she moved farther away from the water. After nearly a half-hour, she stopped high on the beach and began excavating a pit. Gyrating from side to side, the powerful creature heaved huge quantities of sand into the air. Then, using only her rear flippers, she dug a smaller hole for the nest. She paused, breathing heavily, while her muscles began to contract. She laid almost 100 eggs, three or four at a time, then climbed out of the pit.

In the next few moments, the animal packed down the sand to bury and disguise her cache. Finally, three hours after first venturing on land, the turtle struggled back to the water and disappeared into the moonlit sea. For that animal on that night, there had been no trouble in paradise. ■

Senior Editor Mark Wexler visited with Kim Clifton at Maruata Bay last December.





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CONTENTS

JUNE-JULY 1981

• "Yankee Don't Go Home" by Mark Wexler <i>At a remote Mexican village, a rugged American researcher is battling against staggering odds to save an endangered sea turtle</i>	4
• There's No Safe Time for the Snowshoe by Catherine Cremer <i>A hare's life is rough in winter, but summer is no picnic either</i>	12
• When Animals Work For Man by Paul Weingarten <i>Even if the results are good, some humans still complain</i>	14
• A Study in Contrasts by Jerry Lyons <i>Here's an easy way to create some stunning images of nature</i>	18
• Journey Through the House of the Sun by Richard W. Brown <i>On the island of Maui, a seasoned nature photographer captures the many moods of a legendary volcano</i>	20
• Wildlife Digest <i>Summary of late-breaking news, views and issues</i>	24A
• The Incredible, Edible Crayfish by George S. Fichter <i>This freshwater crustacean may look fierce, but it's just a softy at heart</i>	28
• National Wildlife Federation Shop	33
• He Brings New Life to Dying Forests <i>An unusual tree-planting program has taken firm root in the smog-riddled mountains of Southern California</i>	35
• King of the Heap by Frank L. Jackson <i>To Navy personnel on Adak Island the local dump is an eyesore, but to the resident bald eagles it is a favorite feasting site</i>	36
• Charging Through the Seasons by Renira Pachuta <i>When it comes to year-round survival, moose aren't as clumsy as they look</i>	40

ABOUT OUR COVERS:

Front: Taking a firm stand, a male Canada goose issues a strong warning to intruders to stay out of his territory. Nearby, the bird's mate is perched on a nest. David C. Fritts photographed the aggressive gander during late spring in a Colorado marsh. He used a Canon A-1 camera, a 400mm lens and Kodachrome 64 film.

Back: At the Bowdoin National Wildlife Refuge in Montana, a young white pelican feeds from its parent's gullet. Only by violent shaking can the adult dislodge the voracious chick. Lynn M. Stone photographed the birds with a Minox camera, a 400mm lens and Kodachrome 25 film.

Staff members of the Milwaukee Public Museum have reviewed portions of the textual and photographic content of this issue of National Wildlife for accuracy.



George H. H. Hux, Mark Wexler

Cliffton bringing up a turtle to tag; Lipkis sitting amid his seedlings.

Two who did try

Earlier this year, I pointed out that you — the individual — can make a difference in this world if you really try. This issue of NATIONAL WILDLIFE includes articles about two bold Americans who have tried — and who are now making a discernible impact on the world around them.

Beginning on the next page, Senior Editor Mark Wexler recounts the saga of Kim Clifton, a tough, 33-year-old researcher who has frequently put his life on the line to help protect critically endangered green sea turtles along the west coast of Mexico. Though Clifton ventured to the turtles' last major northern nesting area only to study the animals, he has spent much of the past three years driving off armed poachers there. "He's one of the few hopes those particular green turtles have for surviving," observes Archie Carr, the renowned University of Florida turtle scientist.

Andy Lipkis is another determined American who has refused to ignore a problem. Eleven years ago, when he learned that air pollution was killing many trees in Southern California, he resolved to do something. Since then, he has mobilized hundreds of volunteers and planted thousands of "smog-resistant" trees. (See page 35.)

John Strohm
EDITOR

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