

LAKE POWELL:

Waterway to Desert Wonders

Article and photographs by WALTER MEAYERS EDWARDS

National Geographic Staff

LIKE A SHINING MIRAGE beheld by some lost prospector in the desert, a vast new lake grows in the West behind Glen Canyon Dam on the Colorado.

Early in 1963, huge steel gates dropped across the tunnels that for four years had diverted the Colorado around the growing concrete plug, and the river began to rise. The resulting lake will back up 186 miles.

Glen Canyon Dam, flooding one of the Colorado's least-known and most placid stretches, lies 75 miles upstream from Grand Canyon, which beauty-loving Americans agree must never be despoiled by a dam. The Glen Canyon project is part of the Colorado River development program that began with the great Hoover Dam, completed in 1935.

New Lake Draws Hundreds of Thousands

To an astronaut, the nine-trillion-gallon reservoir of Lake Powell rising behind Glen Canyon Dam would resemble a gigantic bolt of forked lightning spread across the Arizona-Utah desert (map, pages 54-5). To some people, it represents irrigation, flood control, electric power, recreation, and beauty—a man-made miracle. To others it demonstrates the ways in which the splendor of nature, revealed through eons of geological change, can be drowned by the works of man in an instant of cosmic time—a tragic error.

But good or bad, it has been done, and even a tamed river may offer more gifts than its conqueror is capable of comprehending.

Before the dam was built, each year's visitors to Glen Canyon could be counted in the hundreds. Though the area is remote from large population centers and still relatively little known, nearly 360,000 people swarmed

there last year. At the height of the season 1,200 boats were launched weekly, with more than 700 cruising there on Memorial Day weekend alone. Visitors are drawn not merely by the crystal water and the abundant sunshine, but also by the multicolored, cliff-adorned, canyon-carved setting, unrivaled by any other large lake in the world.

Name Honors Explorer of a Century Ago

I first encountered this desert land in 1962, before the Colorado started to fill the sheer-walled canyon that twists away to the northeast from the damsite, 120 miles north of the nearest city of Flagstaff, Arizona. At that time, floating downstream on a raft, I saw it much as it must have appeared a century before to the man for whom the lake is named—Maj. John Wesley Powell, dauntless explorer of the Colorado and a founder of the National Geographic Society:

"Past these towering monuments, past these mounded billows of orange sandstone, past these oak-set glens, past these fern-decked alcoves, past these mural curves, we glide hour after hour, stopping now and then, as our attention is arrested by some new wonder. . . ."

Drifting along, I could imagine Powell—in his thirties, a bewhiskered veteran of the Civil War that had cost him an arm—standing in his boat, leading his expedition down the Colorado in 1869.

For two months and 550 river miles, they battled rapids. Then, from the junction of the Colorado and the Dirty Devil Rivers to the meeting of the Paria, the going became smoother. Powell named this idyllic stretch Glen Canyon. His choice was apt.

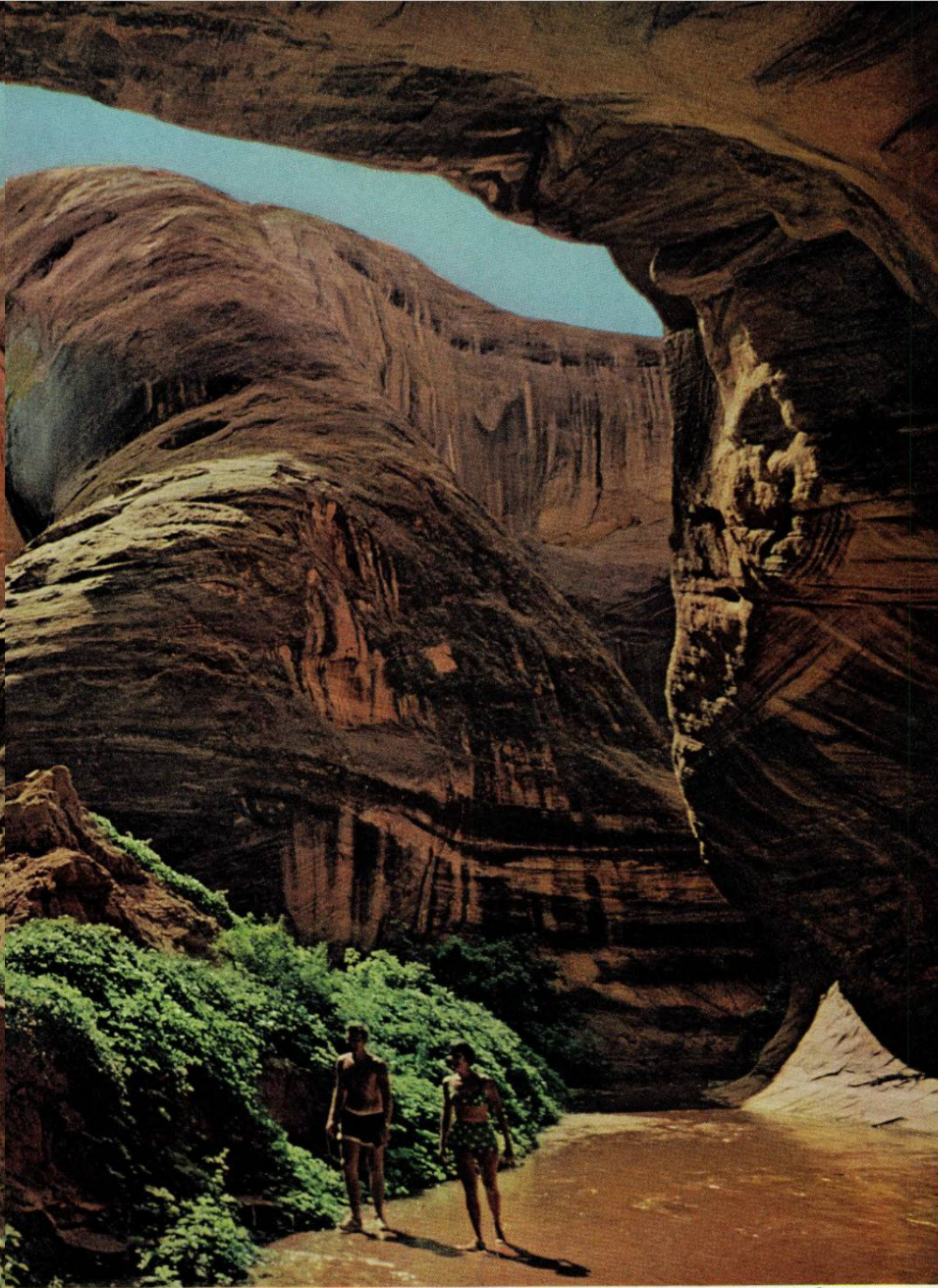
(Continued on page 49)

Desert varnish, created by iron and manganese seepage, streaks a sandstone wall in Forbidding Canyon, one of the myriad arms of new Lake Powell in southern Utah. Plastic raft sails rising waters backed up by Glen Canyon Dam. When filled to capacity, the reservoir will drown this hanging tapestry, but others equally spectacular survive in once-remote canyons.



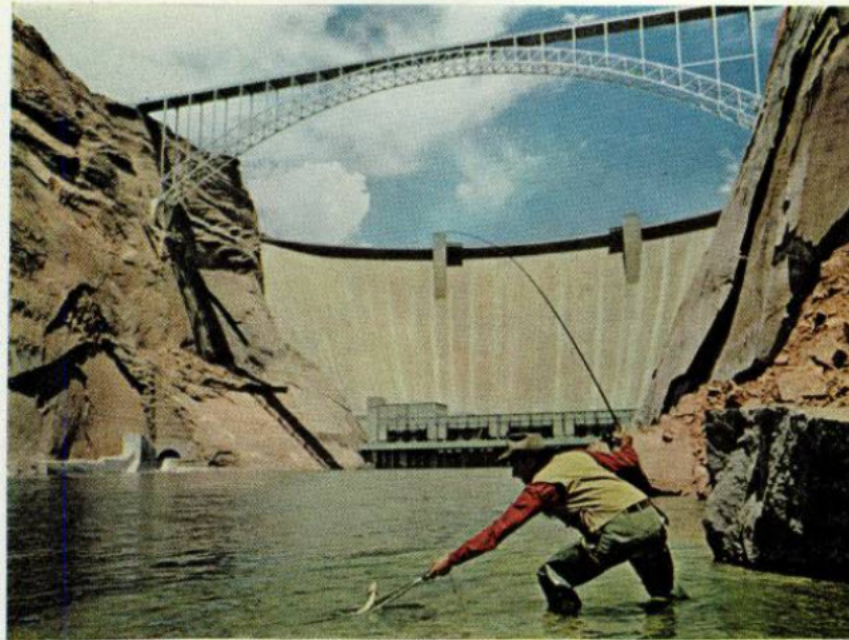


Oasis amid parched red cliffs, Davis Gulch tempts sun-soaked hikers to linger in its shadows. Thin, clear stream takes a tortuous course toward the Escalante River, thence into the Colorado. Distant La Gorce Arch at left center honors Dr. John Oliver La Gorce (1879-1959), who served



the National Geographic Society for 54 years, including three years as President and Editor. Ultimately Lake Powell will cover the silt bar and the rocky eaves in the foreground, but spare the arch. Such beauty epitomizes wonders hidden deep in scores of Glen Canyon's tributaries.

Casting into the Colorado from a ledge below Glen Canyon Dam, a fly-fisherman nets a 12-inch rainbow trout. Fishing is good, the author reports, both below and above the 710-foot-high concrete plug and its neighboring span, the world's highest steel-arch bridge. Lake waters abound in trout, largemouth bass, sunfish, and catfish. Air drops periodically restock the lake (pages 68-9).



Here the river's narrow tributary canyons tempt the explorer into fascinating glens—secret fairylands where walls, tapestry-streaked with desert varnish by iron and manganese seepage (page 45), tower up to thin cerulean crescents far overhead, and titanic chambers glow delicately pink or orange.

When I first drifted through Glen Canyon, many such Edens beckoned. Other wonders, difficult if not impossible to reach, remained unexplored. Four years later, with the lake flooding deep into their twisting passages, they became accessible by boat, and I recruited a party for an exploratory cruise.

To navigate the new lake, we obtained two Buehler Jet boats. Developed by New Zea-

lander William Hamilton to travel his homeland's shallow mountain torrents, they drew less than 6 inches of water at their 28-mile-an-hour cruising speed, and could turn in their own length. Using a water-jet system instead of propellers, they were sisters of the boats that in 1960 climbed the Colorado's formidable rapids in Grand Canyon.* We named them *Green Lady* and *Blue Lady*.

To help man them on our month-long cruise up Lake Powell, I enlisted 22-year-old William (Buzz) Belknap III of Boulder City, Nevada, who at 16 had piloted one of the jet craft in the Grand Canyon adventure. He

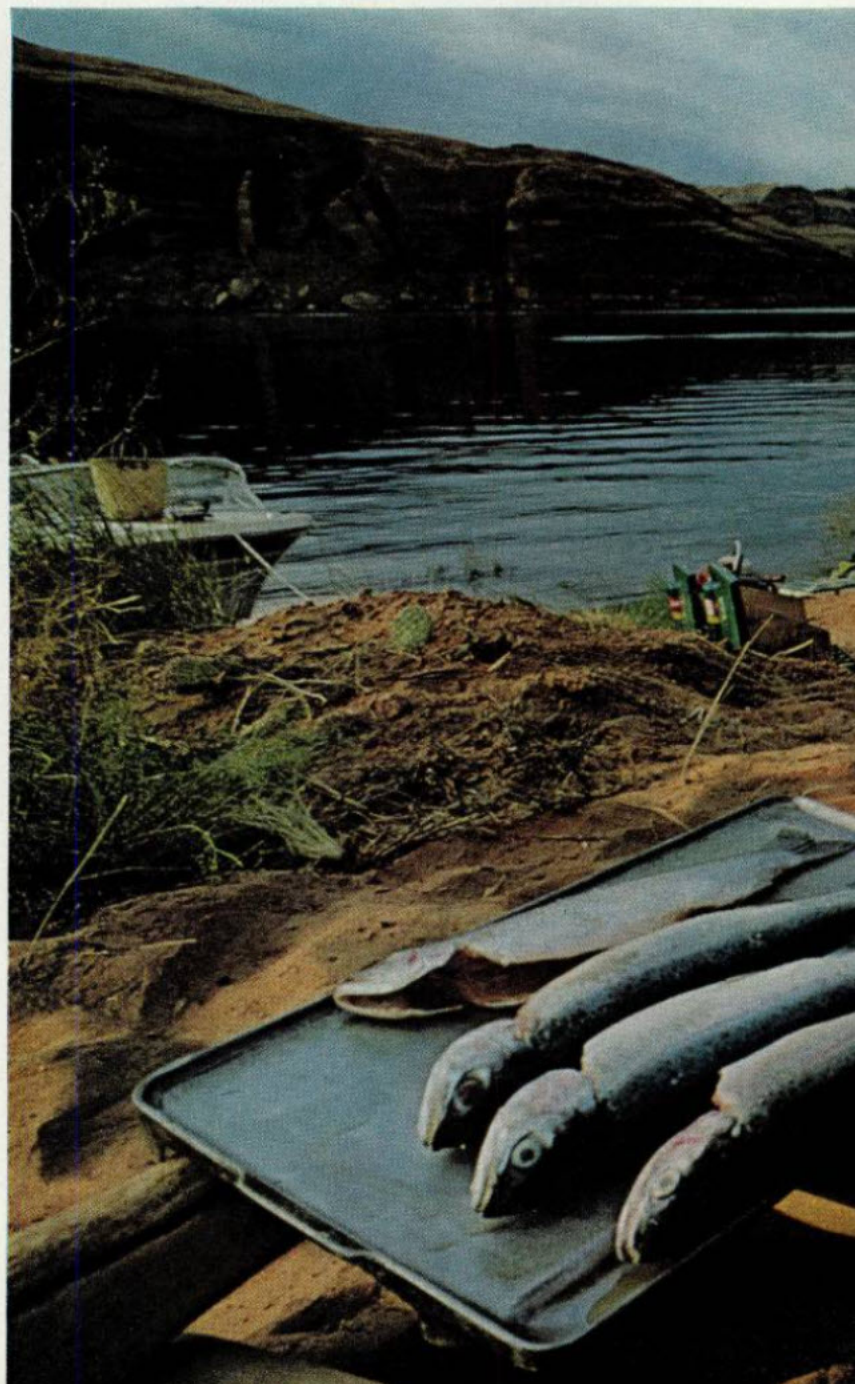
*See "Shooting Rapids in Reverse!" by William Belknap, Jr., NATIONAL GEOGRAPHIC, April, 1962.



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

Brazen nibbler, a green sunfish too small for the hook bites at the toes of a wader.

Dawn. Driftwood crackles and fresh trout, dusted with cornmeal, await the frying pan. The aroma proves almost more than hungry campers can bear. The previous night they spread sleeping bags on this wedge of sand beside the lake near Hole in the Rock (page 66). They awakened to a golden glow that routed the last of the stars, and breakfasted as the summer sun climbed above the jagged horizon and enveloped the cove.



was joined by his sister Loie and his mother Frances. His father, photographer William Belknap, Jr., a frequent contributor to the *GEOGRAPHIC*, joined us whenever he could. John Evans, a graduate student at the University of Minnesota in Minneapolis, and Jerry Garrett, undergraduate at the University of Missouri at Kansas City, completed our team. In addition, Dr. J. Parker Van Zandt, of Washington, D. C., a spry septuagenarian, aviation pioneer, and former contributor to the magazine,* accompanied us for part of our journey.

On a scorching June afternoon we started from Wahweap, about five miles behind the 710-foot-high dam and its spectacular bridge, world's highest steel-arch span (page 48). Until work began on the dam in 1956, 45 miles of jeep trails separated the site from paved highway.

After the barrier was finished, the National Park Service, which administers the new Glen Canyon National Recreation Area, built paved roads beside the bay at the mouth of Wahweap Creek, the lake's largest boat-launching area. Now, with a motel, trailer park, and marina, Wahweap bustles with activity.† Lake traffic has grown so fast that a Coast Guard station has been established to assist with an aggressive water-safety program.

"Like Cruising in a Washing Machine"

Between Wahweap and Padre Bay, 25 miles uplake, the river had not yet climbed out of its canyon. In the narrow channel, the wakes of our boats and others bounced back and forth between the cliffs, churning a chaotic storm of crisscrossing echo waves. As Jerry put it, "It's like cruising in a washing machine."

Padre Bay was worth the pounding we took to get there (pages 58-9). The lake's largest expanse of open water, it introduced us to the massive red sandstone cliffs and monuments that would be our companions during most of the trip. Gunsight Butte loomed like a giant saddle to our left. On our right, Dominguez Rock lifted its red monolith from the lake, and many unnamed buttes stood around us like dignified sentinels.

One of the best-known landmarks lies beneath Padre Bay. Here in 1776 two Franciscans, Fathers Dominguez and Escalante, forded the Colorado on their return to New Mexico, after a futile attempt to open a direct route to their order's California missions. The spot came to be known as the Crossing of the Fathers. As Lake Powell formed, the crossing vanished under Padre Bay.

We beached our boats on a strip of golden sand at Padre Point, where the Navajos plan to build a marina, and plunged into the water, clothes and all. The intense dry heat had dehydrated us, and we soon learned that the only way to remain comfortable was to drink gallons of water and wet ourselves down at every opportunity.

Following lunch Buzz and Loie demonstrated their

*Then in the U. S. Army Air Service, Lieutenant Van Zandt wrote "Looking Down on Europe" for the March, 1925, *GEOGRAPHIC* and "On the Trail of the Air Mail" in January, 1926. "Looking Down on Europe Again" appeared in the June, 1939, issue.

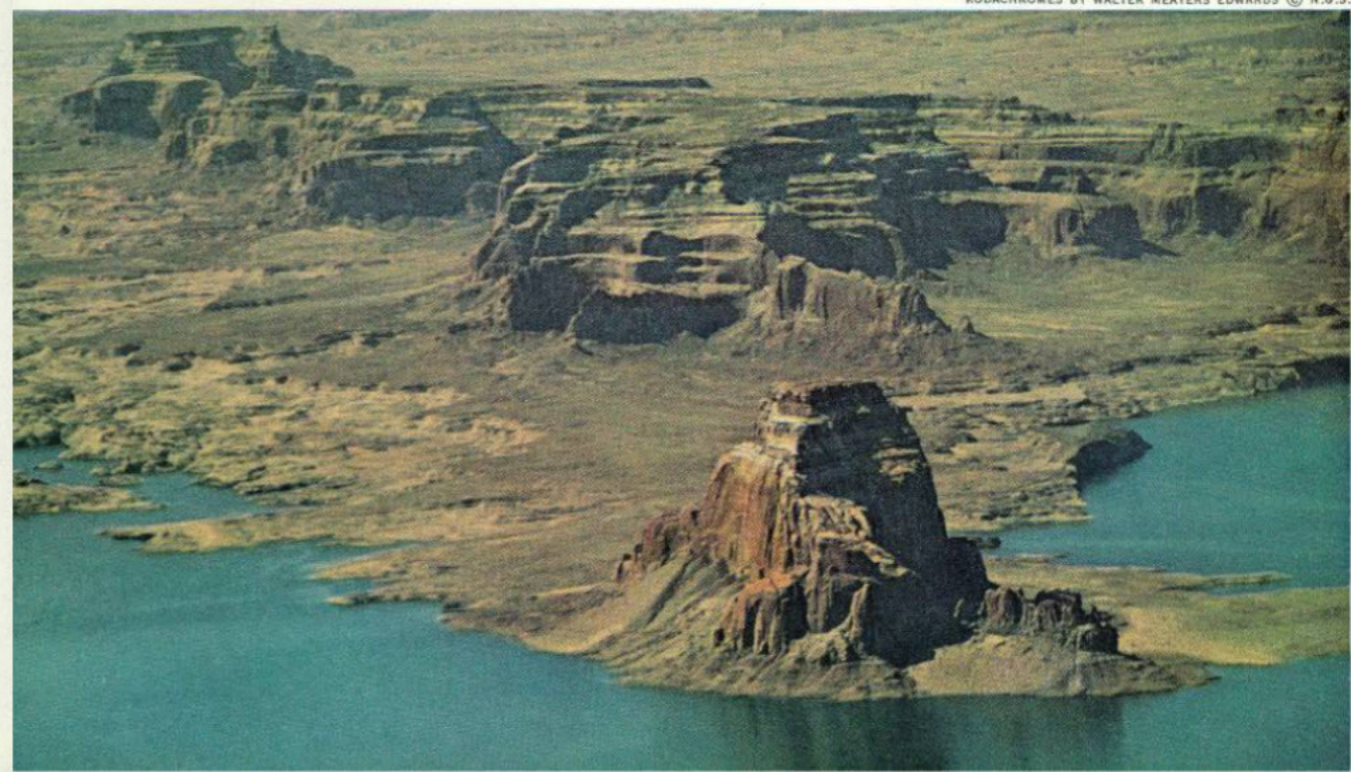
†Ralph Gray reported on the area's recreational facilities in "From Sun-clad Sea to Shining Mountains," *GEOGRAPHIC*, April, 1964.



Drama of change wrought by Lake Powell unfolds in photographs of Gregory Butte made four years apart.

When author Edwards, flying in a companion Cessna, snapped the picture above, in June, 1962, the Colorado snaked between steep-walled banks. Nine months later, the gates of Glen Canyon Dam closed, and the waters began encroaching on the land.

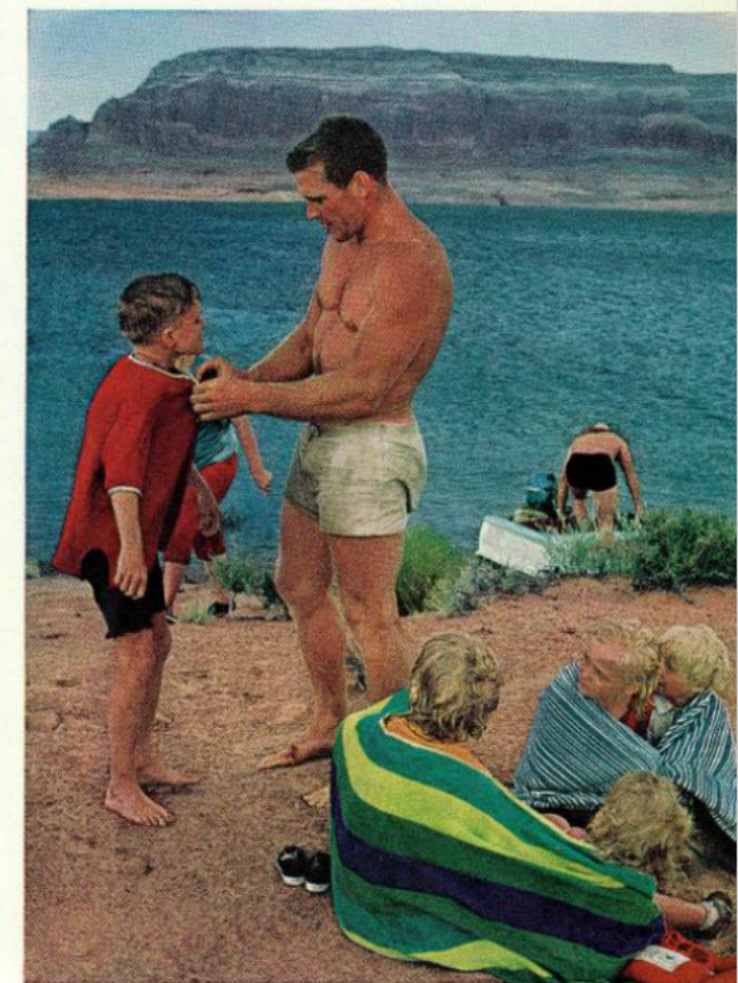
By June of 1966 the lake almost rings Gregory Butte. At capacity, Powell will cover the peninsula behind the butte and turn the stone tower into an island.



KODACHROMES BY WALTER MEYERS EDWARDS © N.G.S.



Blankets and bonfire warm boaters drenched by a squall that almost capsized them on Last Chance Bay. John Evans, here helping remove a wet shirt, later joined the climbing team that scaled Antarctica's highest peaks (GEOGRAPHIC, June, 1967).



water-skiing expertise. When Britain's Princess Margaret and her husband Lord Snowdon visited the lake the year before, he had indulged his fondness for the sport. The November weather was cool, and he had worn a wet suit, but we needed no such insulation. In midsummer the surface water was 72° F., and the sun blazed relentlessly.

Storm-tossed Family Calls for Help

Heading uplake the next afternoon, we rounded a long S-curve leading into Last Chance Bay, a broad, straight arm that stretched northward, paralleling the multi-colored layer cake of the Kaiparowits Plateau for more than ten miles. Suddenly we were caught in one of Lake Powell's many moods—the dangerous one. The weather in the canyon is capricious. Storms can be wild and squally, and boating requires seaworthy craft and competent crewing.

At the mouth of the bay we overtook a family in distress. The wind, whipping white streamers from heavy swells, was toying

with a tiny boat and its occupants, a couple and their five youngsters. The drenched little ones were crying.

"Can you take my children?" shouted the desperate father. The waves seemed about to swamp his homemade plywood craft.

"Too dangerous!" shouted John. "Head for shore! Over there!"

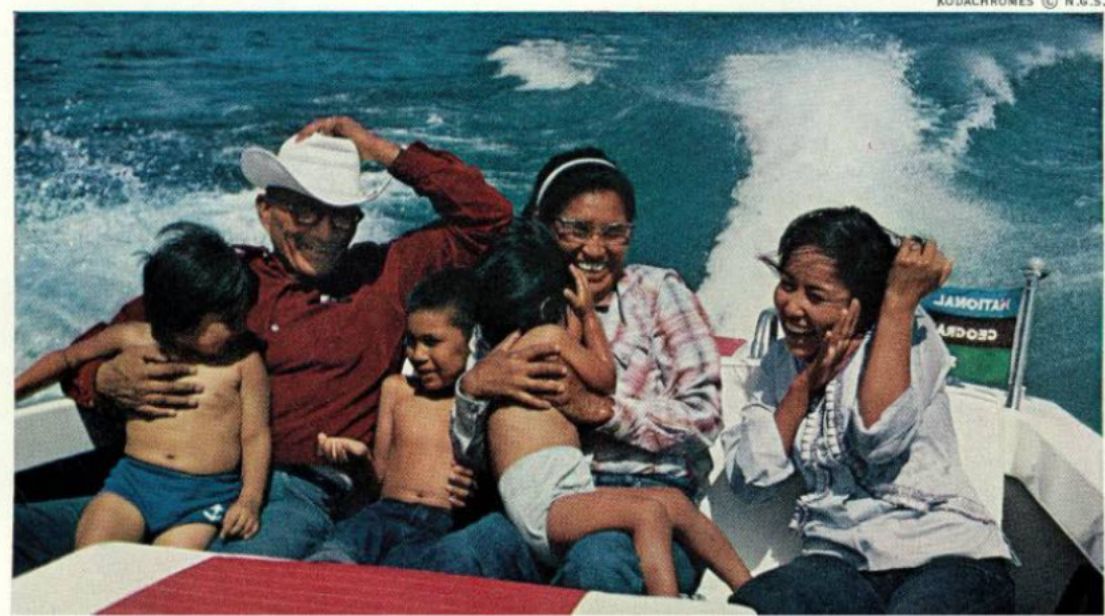
We escorted the little boat to a sheltered beach, and soon the family was drying around a fire, wearing assorted spare clothing from our duffel bags (opposite, upper).

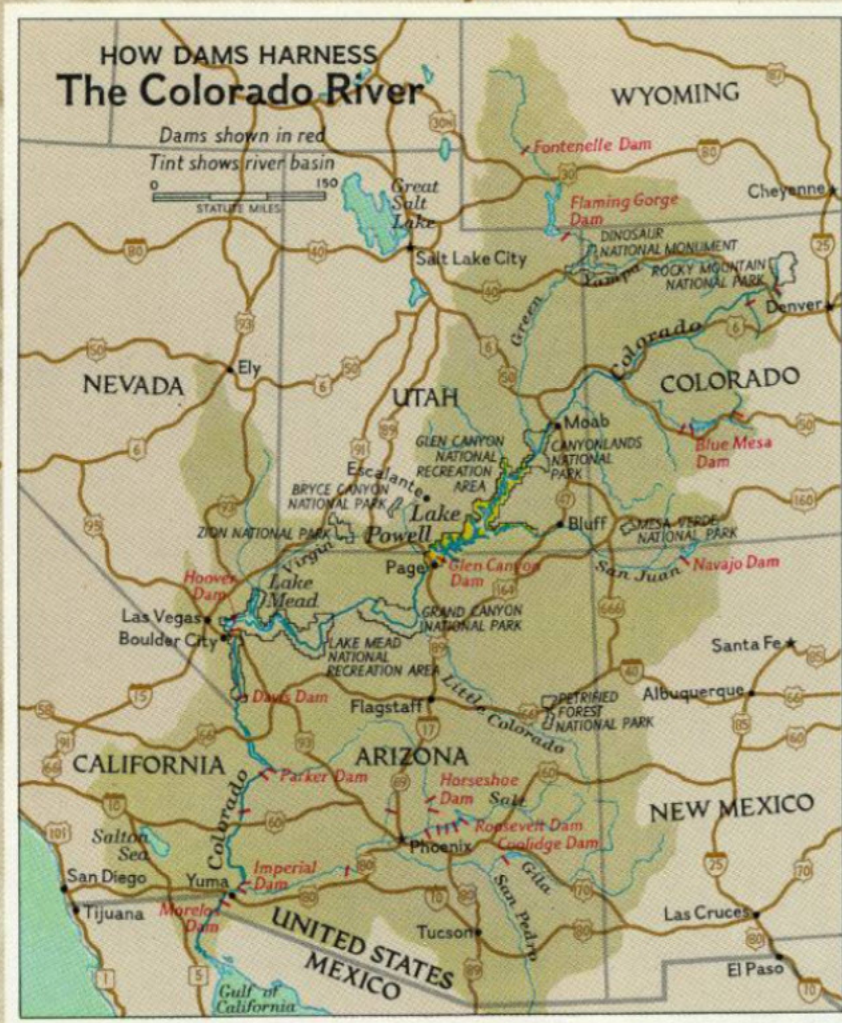
After the storm, we breezed out of Last Chance Bay and headed uplake once more. Between Dungeon Canyon, now lying beneath 250 feet of water, and the mouth of the San Juan River, 22 miles farther up the lake, about twenty tributary canyons drain Kaiparowits Plateau to the north and Cummings Mesa and Navajo Mountain to the south. We had explored many of these on our raft trip four years before, hiking deep into such evocatively named canyons as Dangling Rope, Cascade, Twilight, Little Arch, Mystery,

Southwestern sun copperplates buttes above Padre Bay, where jet boats cut creamy wakes. All but the tip of Padre Point lies within the vast Navajo reservation that borders Lake Powell's eastern shore south of the San Juan River (map, next page). The tribe plans a marina and airstrip here.

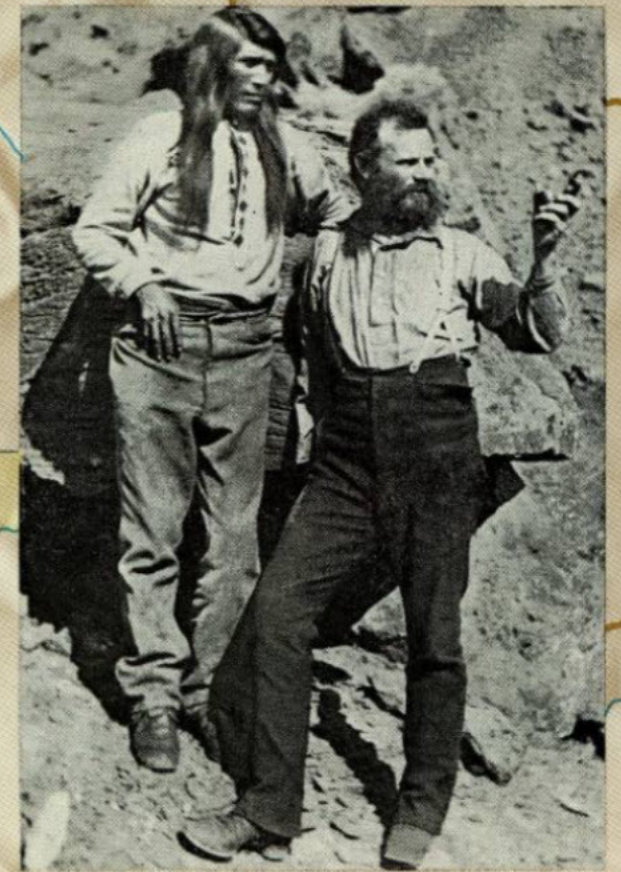
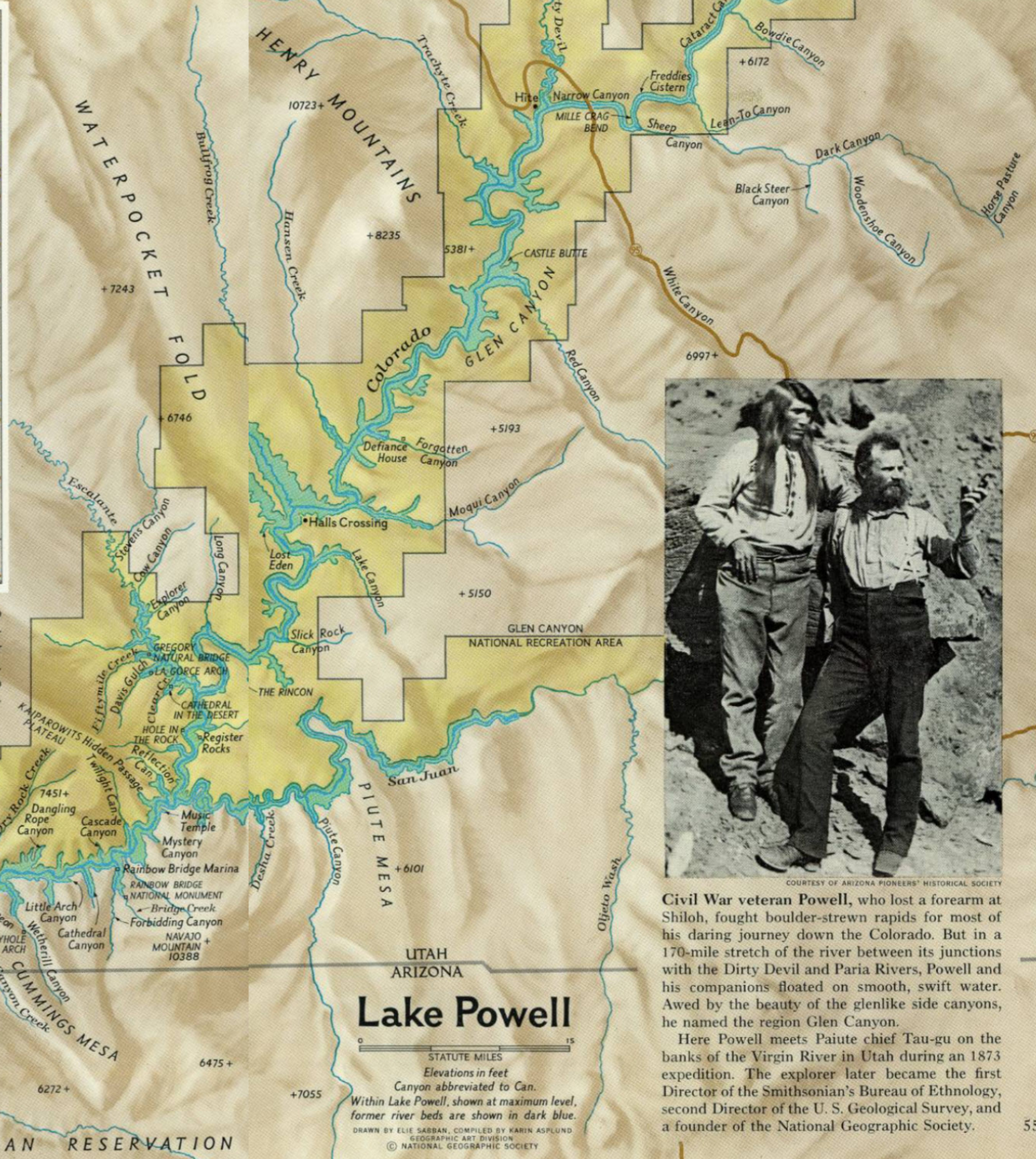
Thrilling to their first boat ride, a Navajo family skims the lake. A sheepman like many of his fellow Indians, Harold Drake farmed a small island near the mouth of Piute Canyon before the rising lake waters engulfed it. Active in tribal affairs, he serves as a member of the Navajo Council and for a time was Chairman of the council's policy-making Advisory Committee.

KODACHROMES © N.G.S.





Rising in the snow-crested peaks of its namesake state, the Colorado zigzags southwestward for 1,450 miles to reach Mexico's Gulf of California. Hernando de Alarcón discovered the mighty stream in 1540, yet for more than three centuries it remained a river of mystery. In 1869, Maj. John Wesley Powell (opposite) led a party down the uncharted Colorado in wooden boats. Today more than 40 dams tame the river and its tributaries; map shows 27 major installations.



COURTESY OF ARIZONA PIONEERS' HISTORICAL SOCIETY

Civil War veteran Powell, who lost a forearm at Shiloh, fought boulder-strewn rapids for most of his daring journey down the Colorado. But in a 170-mile stretch of the river between its junctions with the Dirty Devil and Paria Rivers, Powell and his companions floated on smooth, swift water. Awed by the beauty of the glenlike side canyons, he named the region Glen Canyon.

Here Powell meets Paiute chief Tau-gu on the banks of the Virgin River in Utah during an 1873 expedition. The explorer later became the first Director of the Smithsonian's Bureau of Ethnology, second Director of the U. S. Geological Survey, and a founder of the National Geographic Society.



Green lawns of Page and blue depths of Powell patch the desert's tawny mantle. Aerial view surveys the lake's southern end on the Arizona-Utah border. A prominent landmark, Lone Rock, looms like a fortress at upper left and appears even more formidable at water level (below).

Page, the town a dam built, sprang out of scrub and sandstone atop Arizona's Manson Mesa, where Navajos grazed their sheep only a dozen years ago. From the outset a planned community, built and administered by the Federal Government, Page swelled to almost 7,000 residents during construction of the dam.

Today the town counts about 1,200 but contemplates a prosperous future as a recreation and retirement center. Homes, schools, office buildings, supermarkets, motels, and a dozen churches line broad paved streets. The name honors the late John C. Page, Commissioner of the Bureau of Reclamation from 1937 to 1943 and a pioneer in development of the Colorado River's resources.

U. S. 89, looping across the new bridge, links Page with Kanab, Utah, to the west and with Flagstaff, Arizona, 134 road miles to the south. Summer temperatures soar by day, but the 4,300-foot elevation and low humidity assure cool nights.

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KODACHROMES BY WALTER MEYERS EDWARDS © N.G.S.

Hidden Passage, Cathedral, Music Temple.

A few, like Music Temple, a vast, fern-fringed chamber that Powell had found "filled with sweet sounds," now lay more than 100 feet beneath our hulls, but others, like Cathedral and Forbidding Canyons, had surrendered only their outer defenses.

Raft Carries Party up Narrowest Channels

The lake had opened many remote beauties to the eyes of the voyager. Cathedral had been one of my favorites. In 1962 we had penetrated only three of its reputed 30 "rooms"—cavernous bulges sculptured out of the sandstone gorges by millenniums of water-borne sand and gravel. The lake had risen more than 300 feet since then, and this time we cruised for almost two miles in a channel that

contracted and expanded as it twisted, until finally it became too narrow for our jet boats.

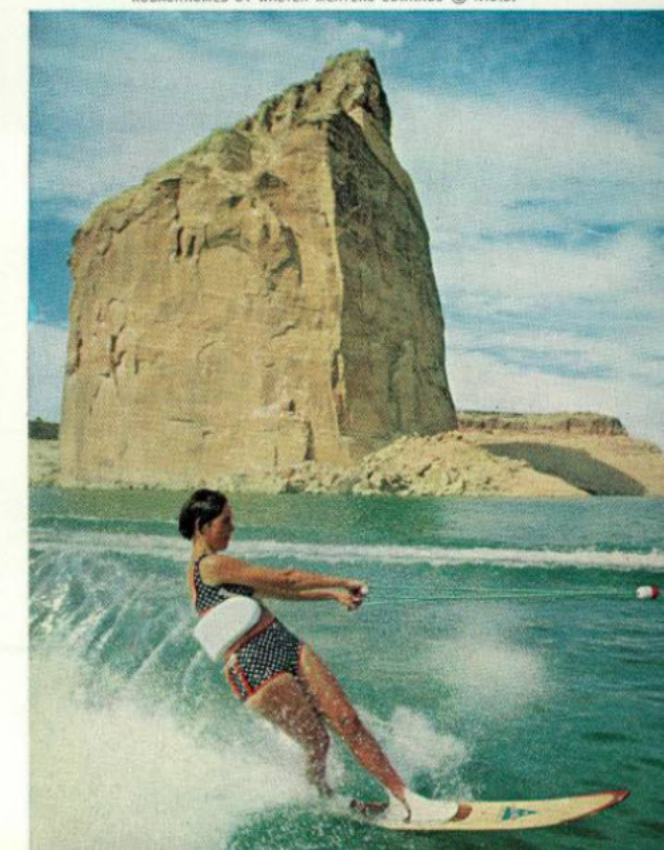
Here we unshipped our Sport Yak, a hard plastic boat shaped like a life raft, not much larger than a bathtub, unsinkable, and apparently indestructible (page 45). At various times we had paddled it, rowed it, sailed it, or dragged it along the ground loaded with duffel. Inverted, it served Buzz as a bed.

In this tiny craft Buzz ferried us still farther up Cathedral Canyon until the passage became too tight for even its 42-inch beam. From that point, balancing on driftwood logs, or straddling the space between high curving walls, we made our way to higher ground and picked a route over smooth boulders until a high overhang, the lip of a dry waterfall, frustrated further exploration.

Just six miles from Cathedral Canyon and about 50 miles from Wahweap is one of the area's most famous sights—Rainbow Bridge (pages 64-5). Spanning Bridge Creek, its spectacular rock arch rises 309 feet above the stream's bed, striking testimony to the relentless power of the elements.*

Four years earlier we had hiked for five miles from the river to reach Rainbow Bridge, threading our way up Forbidding Canyon, over flower-decked dunes, through glistening Bridge Creek, past great rocks and occasional low waterfalls. We had stopped often to linger in the cool pools along the canyon floor. It was a tough hike, and broiling hot. I recall one of our party gasping as he flopped below the arch, "I'm all here, but there's nobody inside pushing."

*Ralph Gray wrote of "Three Roads to Rainbow" in the April, 1957, NATIONAL GEOGRAPHIC.

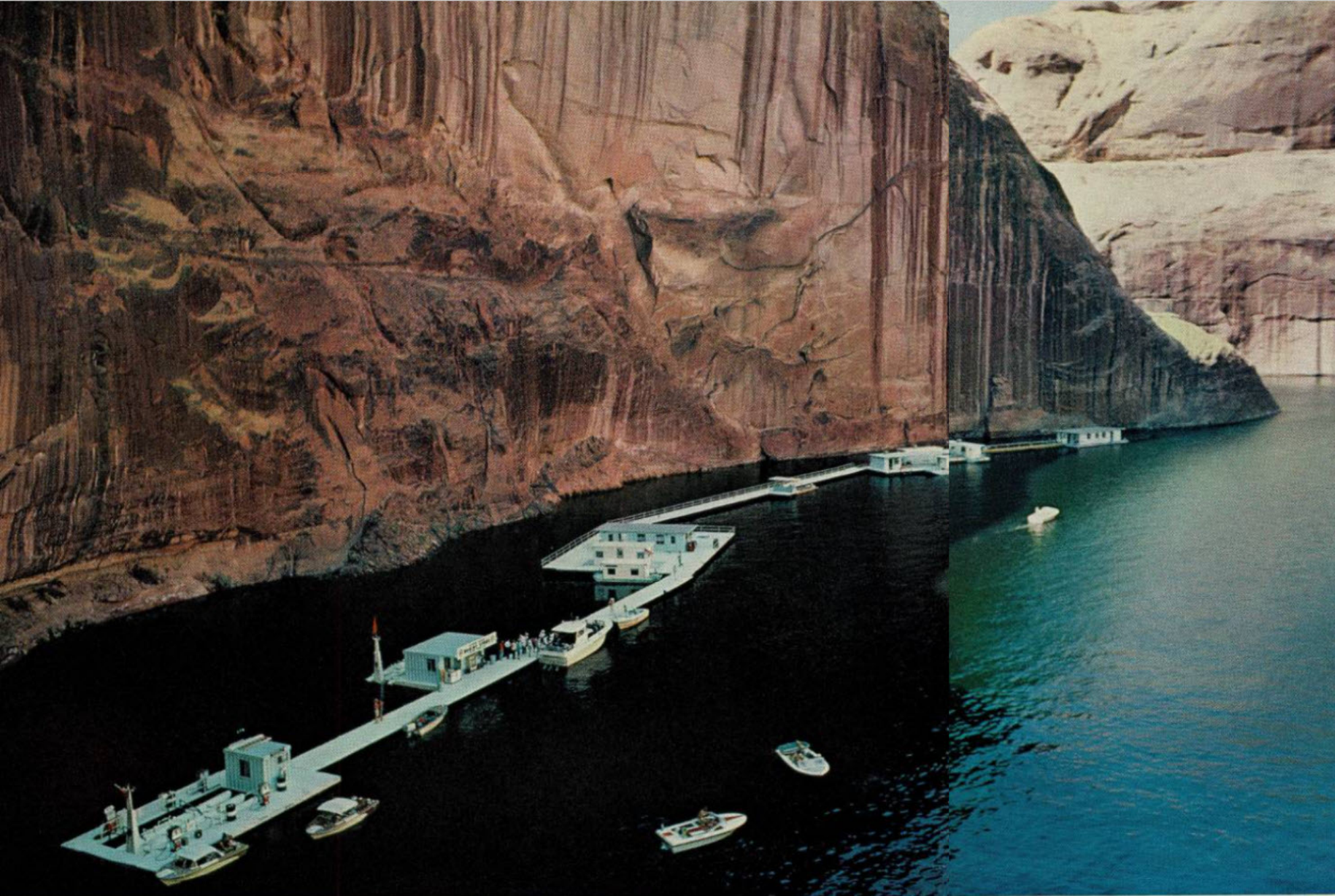




KODACHROME BY WALTER MEAYERS EDWARDS © N.G.S.

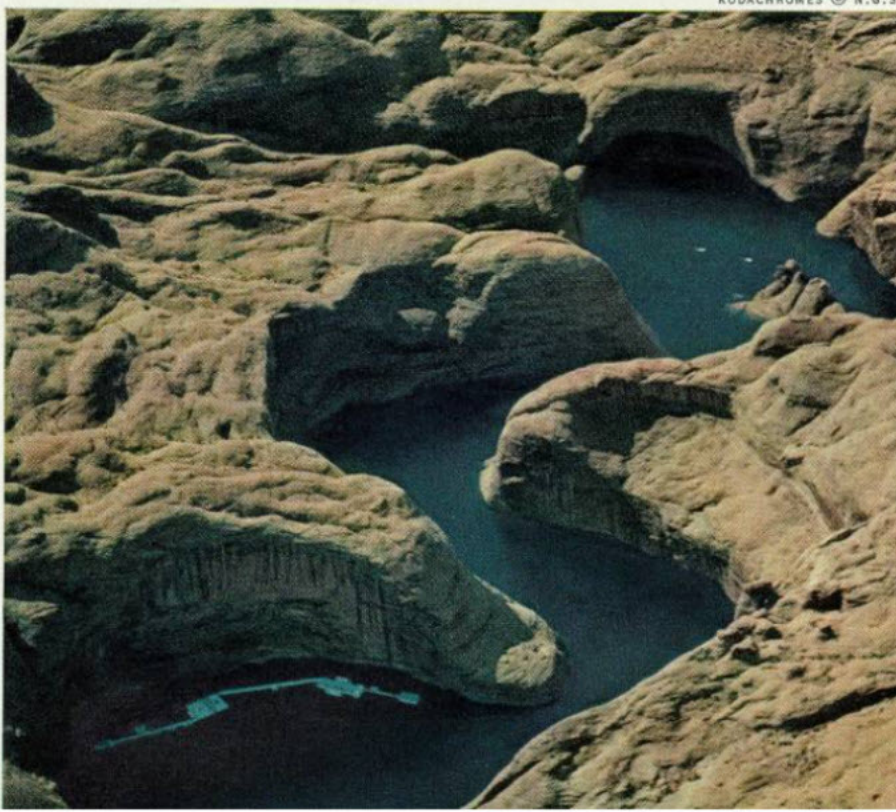
Powell's largest expanse of water, Padre Bay laps at Gunsight Butte, left foreground. Already the lake converts many promontories into islands; a rise of 165 feet more to maximum level will widen the bay to six miles, swallowing the jutting finger of Padre Point at right center, except for Dominguez Rock near

its tip. Waters lick ever higher on Gregory Butte (page 51) near the mouth of fiordlike Last Chance Bay, just beyond Padre. Other landmarks: the tableland of Cummings Mesa, upper right; the 10,388-foot whaleback of Navajo Mountain, beyond; and the sheer ramparts of Kaiparowits Plateau, upper left.



Floating filling station near the mouth of Forbidding Canyon lies anchored in 200 feet of water; sheer canyon walls necessitate the unconventional dock. Here at Rainbow Bridge marina, boaters can buy gasoline barged from Wahweap or shop for camping and fishing supplies. Maintenance personnel and a park ranger live in houses built on the platform.

Through Forbidding Canyon's rock-ribbed maze (right), waterborne visitors will cruise to the boundary of Rainbow Bridge National Monument, within a short walk of the arch (pages 64-5), when the lake has attained capacity. In pre-lake days, hikers had to tramp five miles up the canyon to reach the landmark.



his first plane trip. He wouldn't believe how small Rainbow looked—like half a thin doughnut. Now I'm having a hard time believing it's so big!"

For my part, the sight of a marina floating near the entrance to Forbidding Canyon had been hard to believe. Its white structures nestled incongruously against the brooding cliffs in 200 feet of water (left).

There was something else new, too, and it saddened us. When the lake level is down, retreating water leaves a white "bathtub ring" on the walls of the great gorge. The fact that Lake Powell presents its best face only when rising or remaining constant continues as one argument against such dams as Glen Canyon.

Near Reflection Canyon one morning, Buzz and I met Guy Chambers, a schoolteacher from Tucson, Arizona, and his wife Betty, a nurse, putt-putting along in a ten-man life raft powered by a tiny outboard motor.

"We've known this canyon for years," said Mr. Chambers. "We still love it, though we liked it better the way it used to be."

Later we encountered Don Teetor, a retired industrialist, in his 60-foot houseboat *Connie*. With air conditioning, two-way radiotelephone, and a speedboat as tender, he and his guests were "roughing it" in style.

"This lake's the greatest thing that ever happened!" he exclaimed.

With 1,800 miles of shoreline, Lake Powell never seems crowded. Seldom did we see more than three boats at a time above Wahweap.

Fire Still Warm—But No Navajos

The 25,000-square-mile Navajo Indian Reservation borders nearly a third of the eastern shore of the lake. One afternoon, in the hope of finding Navajos, we cruised for 22 miles up the San Juan and pulled into Piute Canyon, one of several large gorges that drain the north side of Navajo Mountain. We left our boats and hiked up the creek. Bill Belknap forged ahead with a two-way radio.

He called back shortly that he had found a Navajo camp near a spring and a rock corral in a grove of cottonwoods, but no Navajos.

"Looks as if they've been here recently," he said. "Suggest you walk up the wash."

Half an hour later, a tiny white terrier overtook us, gave a few staccato barks, and disappeared ahead. Following a hand-dug irrigation ditch, we came finally to a spring and a rock shelter with a fireplace.

"The coals are warm," announced John. "Whoever was here hasn't been gone long." The terrier reappeared, sniffing and howling.

*See "Beyond the Clay Hills," March, 1924.

Water backing up in Bridge Creek was now only a mile from Rainbow Bridge, and the lake ultimately will form a reflecting pool 46 feet deep beneath the arch. Some geologists believe the water eventually will topple the spectacular formation. Others disagree. But more visitors have seen Rainbow Bridge in the past two years than in all the previous years since its discovery in 1909.

In that year John Wetherill rode a horse beneath Rainbow Bridge, the first white man known to have done so. Neil M. Judd, who directed Society-sponsored archeological studies of Southwestern Indian ruins four decades ago, was with the party that discovered the bridge and wrote in the *GEOGRAPHIC* of his awe upon first beholding "this sublime creation of the Master Builder."*

Our old-timer, Parker Van Zandt, had known Wetherill. "In 1927," he told us, "I flew Wetherill around Navajo Mountain on

Off to the east, the sides of Piute Mesa, now glowing red in the setting sun, warned us to retreat. We had gone only a short way when a sturdy, broad-faced man in red shirt and blue jeans hailed from high up on a rise: "Have you seen a little white dog?"

John ran to meet him and returned to report. "He's a Navajo, all right—name's Harold Drake. He was sure pleased to find his little pooch. He and his family camped here last

night. His sheep were down at the lake." John turned to me and added: "When I told him you were from the GEOGRAPHIC, he wanted to know how he could get the magazine. I told him if he'd meet us tomorrow at the mouth of Piute, you'd arrange it for him."

Next day, Harold Drake, his wife Stella, and four of his five children enjoyed their first boat ride in *Blue Lady* (page 53).

The following afternoon found us at a historic spot. Loie, John, Jerry, and I perched precariously on a cliff about five miles uplake from the mouth of the San Juan. Our feet rested on a narrow ledge 800 feet above the water. Directly below us, *Blue Lady* floated at the apex of a pointed inlet. From there a steep trail led almost straight up a cleft in the canyon wall to a narrow notch at the top, 200 yards to our right, known as Hole in the Rock (map, page 54).

Here in the winter of 1879-80, a band of Mormon pioneers—some 250 men, women, and children, with some 80 wagons, horses, and more than 1,000 head of cattle—halted on their way from Escalante, Utah, to settle on the San Juan. Misled by over-optimism and hazy geography, they found themselves committed to trekking across almost impassable desert, crossing the Colorado, and building a 200-mile road through some of the roughest country in the West. This break in the Glen Canyon wall was the only way to cross the river without a long detour.

In six weeks of superhuman toil they opened a route through the "Hole" with blasting powder, built a wagon road three-quarters of a mile down to the water's edge, assembled a raft, and on the opposite shore hewed a road up the face of a 250-foot cliff.

The first third of the way down was a 45-degree grade over rock that became slicker and more treacherous with the passage of

every wagon. Incredibly, they *drove* the wagons down! Each wagon's brakes were locked, and its rear wheels wrapped with chains. A dozen men and boys hung on behind to keep it from careening into the rocks below.

Joseph Stanford Smith and his wife found

themselves stranded at the top. A grandson, Raymond Smith Jones, retold the story a few years ago:

"If we only had a few men to hold the wagon back," Joseph angrily exclaimed to his wife Arabella.

"I'll do the holding back," said Belle, "on old Nig's lines. Isn't that what he's tied back there for?"

Stanford braced his legs against the dashboard and they started down. Old Nig was thrown to his haunches, rolled to his side, and gave a shrill neigh of terror.

"His dead weight will be as good as a live one," thought Belle.

Just then her foot caught between two rocks. She kicked it free but lost her balance and went sprawling after old Nig. She was blinded by the sand. She gritted her teeth and hung on to the lines. A jagged rock tore her flesh and hot pain ran up her leg from heel to hip. The wagon struck a huge boulder. The impact jerked her to her feet and flung her against the side of the cliff.

"All the Help a Fellow Needs"

The wagon stopped with the team wedged under the tongue, and Stanford leaped to the ground and turned to Arabella.

In a shaky voice he asked his wife, "How did you make it, Belle? Belle, you're hurt! Is your leg broken?"

Kicking his shin with fury, she fairly screamed, "Does that feel like it's broken?"

Later, Stanford met five men coming up to give him a hand with chains and ropes.

"We came back to help you," one of them began, but Stanford cut him short. "How's the ferry, boys? Any of it left for us?"

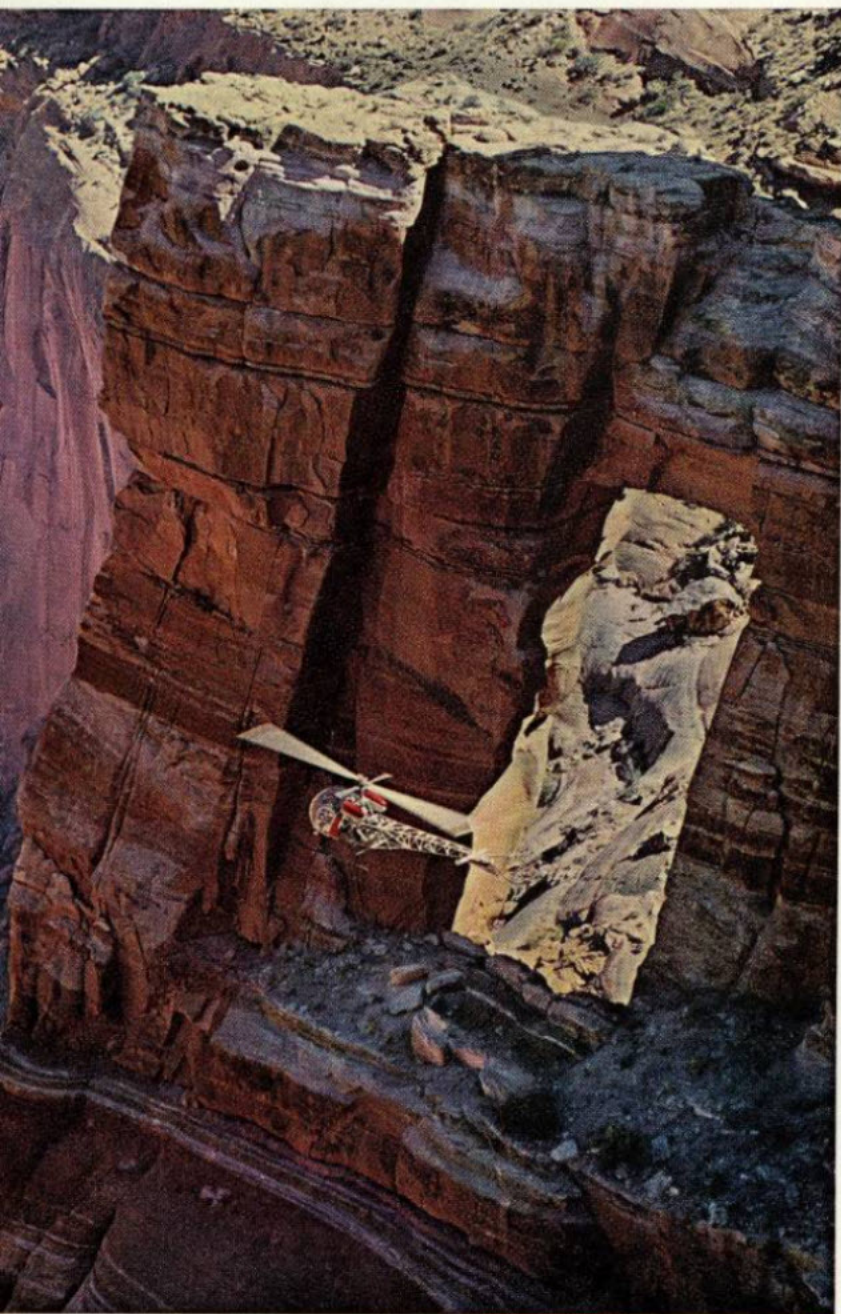
Stanford hadn't gotten over the bitterness he felt when his family and wagon were left stranded above the Hole in the Rock. He glanced at Arabella. She was pale. He remembered her gallant conduct, and was ashamed of his own ill temper.

"Forget it fellows. We managed fine. My wife here is all the help a fellow needs." *

*Adapted from *Desert Magazine*, June, 1954.

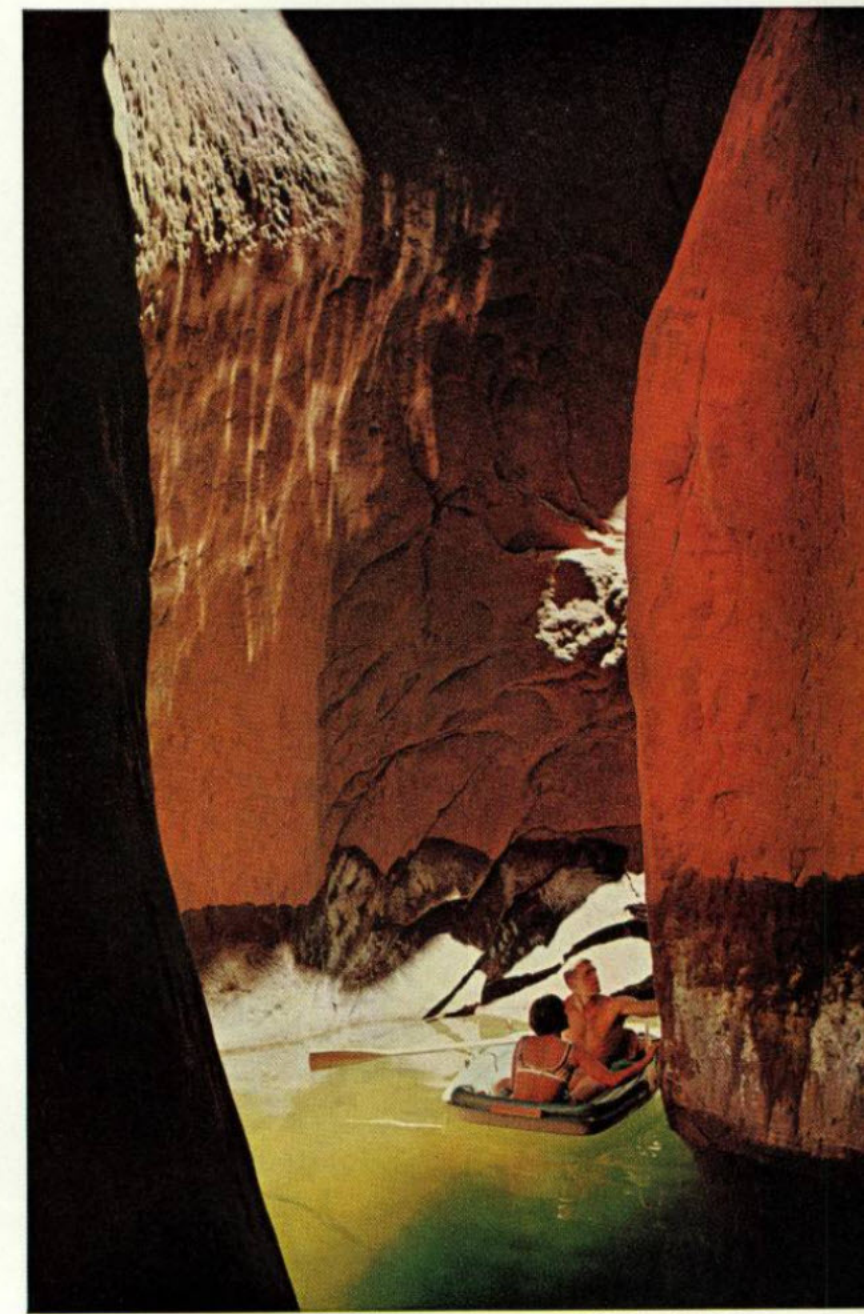
Somehow, every wagon made the perilous descent safely (page 66).

Once across, the pioneer band faced further laborious road building through mile after mile of tilted, twisted, and eroded rock. After ten weeks of travel, they halted and founded the settlement of Bluff, Utah. There had been no casualties, and three babies were born en route, but the trek, originally estimated at six weeks, had taken them almost six months.



KODACHROME © N.G.S.

Six-story building would fit into the keyhole arch overlooking Wetherill Canyon. With its altimeter, the helicopter measures the vertical opening as about 70 feet high. The rock window—work of rain, wind, and frost—stands safely above Lake Powell.



KODACHROME © N.G.S.

Tracery of reflections from a limpid pool dances on a rust-red wall in Cathedral Canyon. Loie Belknap and John Evans weave the Sport Yak around corkscrew bends between cliffs that rise hundreds of feet, but stand less than ten feet apart on the canyon floor.



EKTACHROME (LEFT) BY JERRY GARRETT; KODACHROME BY WALTER MEYERS EDWARDS © N.G.S.

Like a giant's boomerang lodged in the land, Rainbow Bridge sheds none of its splendor in forsaking its solitude; the lake now reaches to within a mile of the awesome landmark. Powell's waters have brought more visitors to this isolated national monument in the past two years than in all the previous years since its discovery in 1909. At full height, the lake will lie 46 feet deep in the arroyo below the 309-foot-high arch.

Dwarfed to antlike proportions by the immensity of the stone crescent, two climbers wave from the top to a companion below. The ascent demands a hard, half-hour climb.

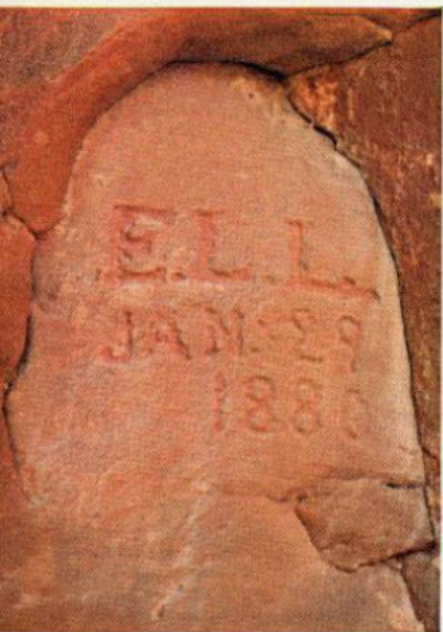
Aerial photograph made last year (left) traces the dry bed of Bridge Creek, architect of the span. Down this meandering course gushed silt-laden torrents that gnawed through a sandstone buttress and, during the ages, shaped it into nature's largest arch. Centuries of wind polished the masterpiece.

Perilous defile, Hole in the Rock witnessed heroic deeds in the winter of 1879-80.

To this place came a band of Mormon pioneers—about 250 men, women, and children in 80 covered wagons—on a journey from Escalante, Utah, to the San Juan River, where they hoped to plant a colony.

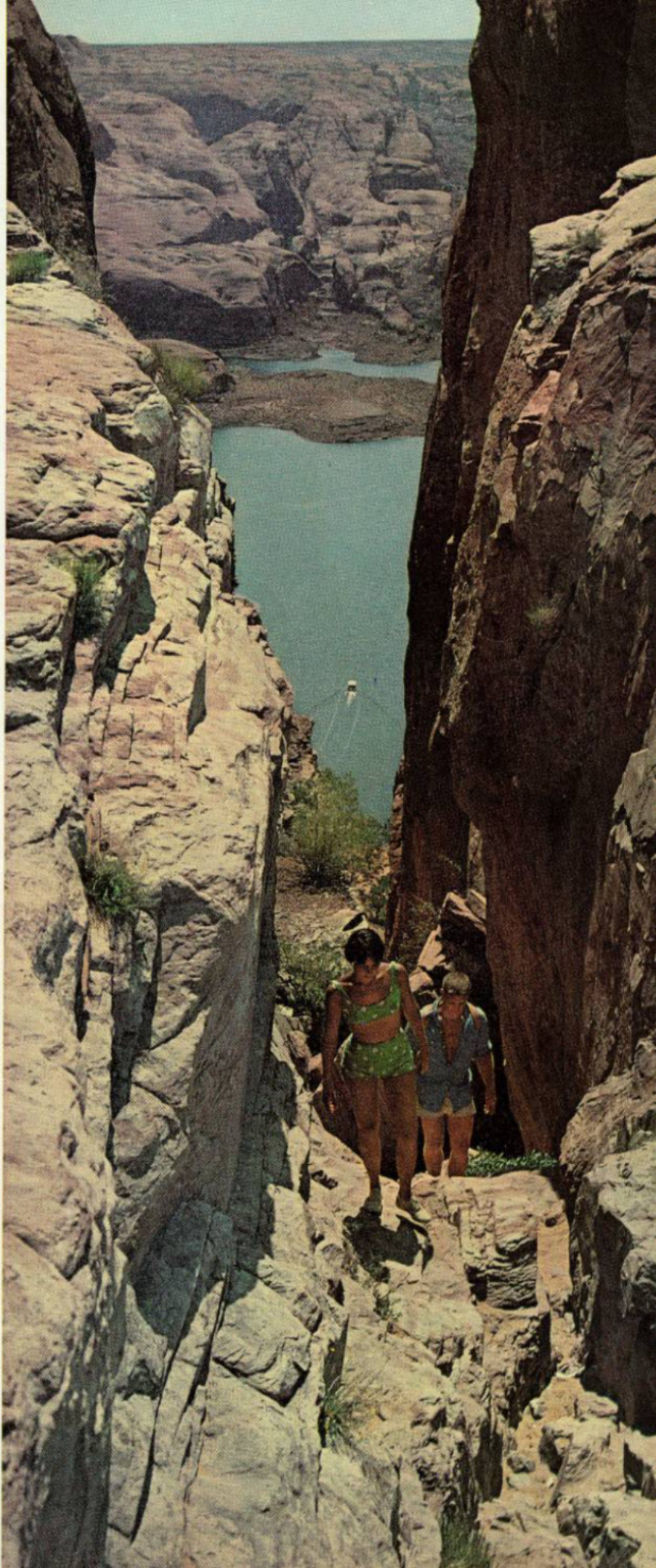
Here they faced a terrible obstacle—the deep, swift Colorado River in its seemingly impassable gorge. But they found one cleft that offered hope of reaching the river. Blasting an opening through the “Hole,” they carved a road down the 45-degree slope. At the river they built a raft, and on the opposite side hacked another road up the face of the 250-foot cliffs. Then they actually drove the wagons down the precipitous rock chute seen at right, from which erosion has long since swept away most of the road’s surface. Teams of oxen, horses, or mules helped slow the wagons, and men and boys hung on as human brakes. Incredibly, the Mormons lost not a wagon.

Across the Colorado the trail led between huge flat-sided boulders on which the



pioneers scratched their initials and names. Their autographs survive on Register Rocks (above), a reminder to Powell visitors today of the indomitable frontier spirit.

KODACHROMES © N.G.S.



Weathering had obscured much of the evidence of the heroic passage. In one stretch, to traverse a 50-foot cliff, the Mormons attached a road to the sheer rock wall. We saw grooves they had cut to hold the inside wagon wheels, and holes they had drilled for poles to support a roadway for the outside wheels.

Waters Almost Swallow Huge Arch

Just north of Hole in the Rock, the lake is fed by the muddy Escalante River. Before Lake Powell provided easy access over the quicksand at its mouth, few but plateau-roaming cattlemen knew the upper reaches of the Escalante. From the air, I had been intrigued by its deep tributaries: Fiftymile Creek, Davis Gulch, and Clear Creek on the west, and Stevens, Cow, and Explorer Canyons draining the Waterpocket Fold on the east.*

Now, boating up Fiftymile Creek, we just squeezed under Gregory Natural Bridge, which once soared 180 feet. In Davis Gulch, however, the triangular window of La Gorce Arch (page 46), named for the late John Oliver La Gorce, President and Editor of the National Geographic Society from 1954 to 1957, seemed high enough to survive. So did a 100-foot panel of Indian pictographs, believed to be a thousand years old.

In Clear Creek the lake lay eight feet deep

in the Cathedral in the Desert, a glen that closely resembled Music Temple. I had hiked in to see it the previous year in all its tapestried, vaulted glory. This time we entered in the boats. Though it was still magnificent, I missed the green pool, the tiny crystal stream, and the delicate moss and maidenhair fern on the red sand floor. Its years, too, are numbered by the rising waters.

Explorer Canyon’s scenery confirmed the impression I had gained from the air. We hiked to the far end, splashing through crystal pools, pausing to examine some aquatic creature or drink from a cool, sweet spring. Here 500-foot-high walls merged in a gigantic alcove. Water trickled down into an inviting pool. Vines entwined a chaos of rocks under the overhang. The great alcove acted like an orchestra shell, reflecting the chirps of swooping violet-green swallows and the sweet descending notes of canyon wrens. We left the miniature Shangri-La reluctantly.

There is much to be learned of man’s prehistoric past in these canyonlands. Archeologists from the University of Utah and the Museum of Northern Arizona, under contract with the Park Service, in 1957 began an urgent survey of the lake-bed area to discover

*See “Escalante: Utah’s River of Arches,” by W. Robert Moore, NATIONAL GEOGRAPHIC, September, 1955.



KODACHROME BY WALTER MEYERS EDWARDS © N.G.S.

Dinosaur junction: Frozen in stone, tracks discovered by the author’s party in Explorer Canyon trace the crisscrossing paths of reptiles living 170 million years ago. Prints more than a foot wide leading across the rock were made by a carnosaur, or flesh-eating dinosaur, striding on hind feet. Paleontologists suspect it may have been the big Kayenta dinosaur, *Megalosaurus wetherilli*, skeletal remains of which have been uncovered on the Navajo reservation. A smaller dinosaur left the seven-inch tracks going up the slab.

all they could before it was submerged.

Five years later my wife and I had watched a University of Utah field party excavate a cliff dwelling in a high alcove in Slick Rock Canyon—about 16 miles upriver from the mouth of the Escalante—measuring and mapping, picking and brushing in storage cists, ceremonial kivas, and living rooms, and dropping their finds into numbered bags.

“The Indians who lived here about A.D. 1250 are called the Anasazi—Navajo for the ‘Ancient Ones,’” said Floyd Sharrock, the field director. “Remnants of alluvial terraces show that the stream level was higher at that time, and the valley was probably covered with fields of corn, beans, and squash.”

We passed the evening in a tent with bronzed young archeologists, singing and swapping yarns, while Floyd sorted the day’s discoveries.

Among them were arrowheads, a chalcedony drill attached to a reed shaft, a piece of soft cotton cloth, string made of human hair and yucca fiber, tiny corn-cobs, part of a turkey-feather garment, and a size-13 sandal that made me wonder if the huge hands and feet I had seen in petroglyphs on a canyon wall were really exaggerations after all.

Boat Docks at Once-lofty Retreat

Farther upriver, Lake, Moqui, and Forgotten Canyons were especially rich in prehistoric dwellings. In the first five miles of Lake Canyon, there are more than three dozen. The March, 1924, NATIONAL GEOGRAPHIC contained a picture of an Anasazi site 200 feet above the stream in Moqui Canyon. We stepped right onto the same spot, from the deck of *Blue Lady*.

Dr. Jesse Jennings of the University of Utah, the project director, had told me about the exciting discovery of a 20-room Anasazi pueblo in a Forgotten Canyon alcove (pages 72-3).

“Impassable falls above and below had sealed it off,” he said. “We chanced on an ancient hand-and-toe trail pecked into the rock, bypassing the lower falls.

“Most of the roofs were still in place, and we found whole pottery vessels. Two perfect red bowls still had scraps of food in them. We named the place Defiance House, because on the cliffs above there are pictographs of three men brandishing weapons and shields. This place had

SKYDIVING FISH, a quarter of a million rainbow trout cascade from a C-46 and free-fall toward Powell, 300 feet below. Camera mounted on the belly of the plane and facing the tail snapped this picture. All but a handful of the fingerlings survived the drop. Last year, Intermountain Aviation, Inc., under contract with the U. S. Bureau of Sport Fisheries and Wildlife, scattered 2½ million trout into the lake.

EKTACHROME BY WALTER MEYERS EDWARDS © N.G.S.



not been disturbed for some seven centuries.”

As our jet boats cruised along a mile below Halls Crossing, about 95 miles from Wahweap near the mouth of a short side canyon called Lost Eden, I found that water had covered a rookery where I had once seen scores of great blue herons. Now, a lone bird took off, its huge wings beating in dignified retreat.

Just as the herons of Halls Crossing are gone, so are the largest of the rapids in Glen Canyon. A placid lakescape appeared where I had watched kayakers ride white water near Bullfrog Creek.

Another landmark I missed was what was

left of Robert B. Stanton's giant dredge, abandoned in midstream after the failure of the engineer's gold mining scheme in 1901. Several hundred prospectors had once worked in Glen Canyon. The gold, however, proved too difficult to obtain, and the men drifted away.

Millions of Fish Planted by Airdrop

The big attraction these days is fishing. Frank Wright, who has a marina and ferry at Halls Crossing (map, page 55), told me that 80 percent of those who launch their boats between there and Hite, 45 miles upstream, come mainly to wet a line.

The roads are much too rough for casual sightseers, but the angling is excellent. In fact, the States of Utah and Arizona consider Lake Powell a major fishery and maintain a biological station at Page to manage it.

Every spring since the dam closed, the lake has been stocked with trout and largemouth bass. Because of the distance from hatcheries and the great length of the lake, they are dropped from an airplane fitted with four 500-gallon tanks. I saw several such operations.

Each time, the low-flying C-46 made a wide circle and released its load through a chute in the aircraft's belly. In 18 seconds

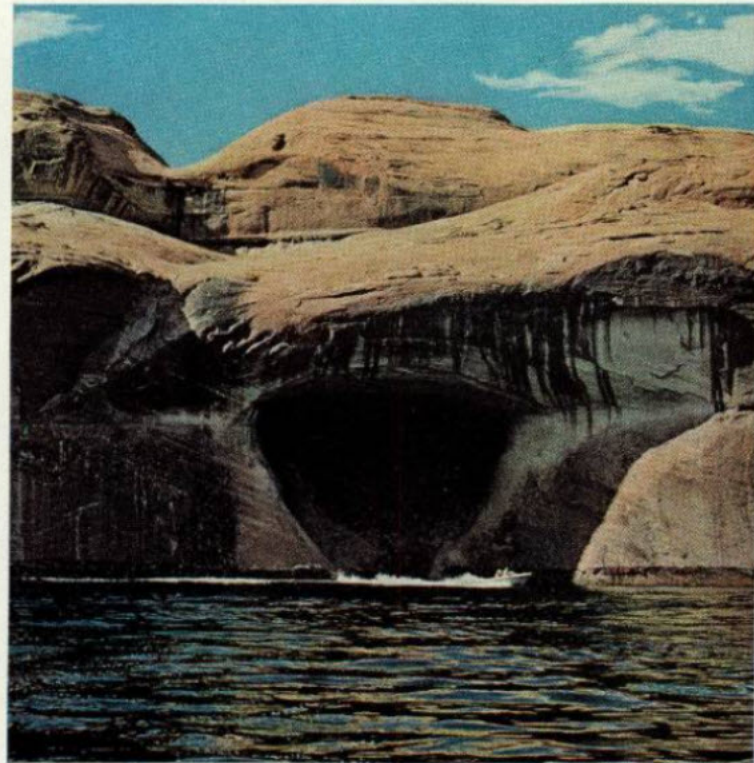
250,000 fingerling rainbow trout streamed 300 feet down into the lake (pages 68-9). In four days 2½ million trout were released. To my astonishment, few died.

Roderick Stone of the Utah Department of Fish and Game told me later: “We scouted the drop areas to pick up the dead ones, but we got only a quart bottleful altogether.”

“How fast do they grow?” I asked.

“That depends on many things—available food, competition from other species, water temperature. At this age of the lake, we are uncertain. Probably about eight inches a year.”

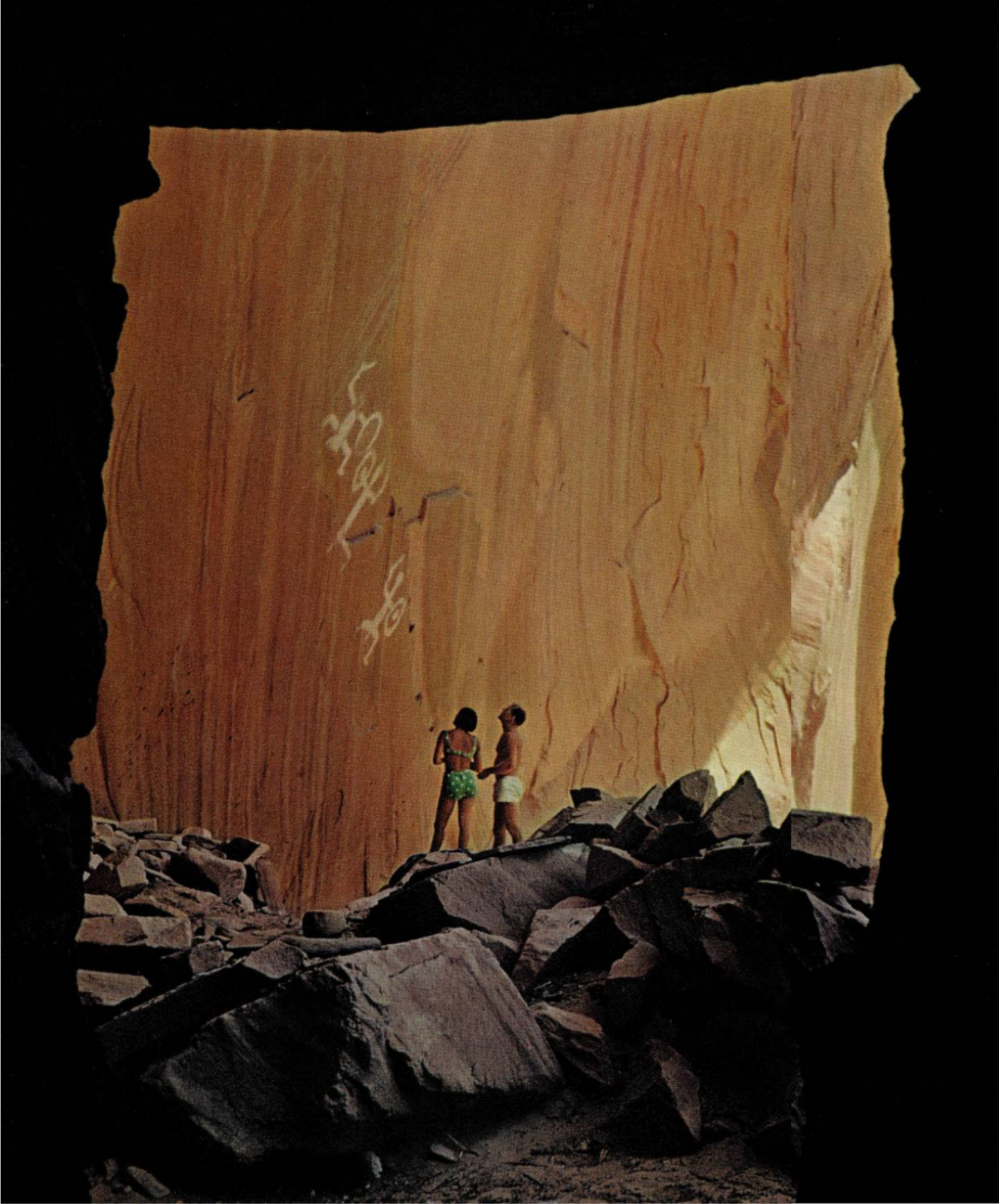
We did some fish research ourselves. Jerry



KODACHROMES © N.G.S.

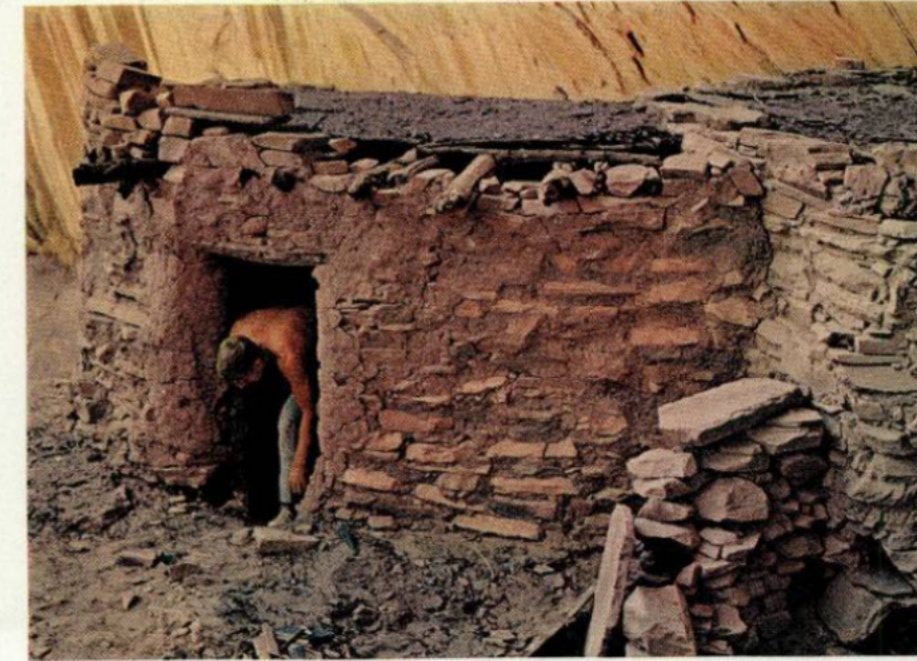
Age-old adversaries, land and water, wage a mute but mammoth battle in Glen Canyon. Assisted by man, the liquid realm triumphs. Four years ago kayaks slipped past sandy shores fretted with tamarisk (right). High above the river-runners loomed a huge triangular cave, upstream from Hidden Passage and Music Temple. Today Powell blots out the verdant bars and the winding river, and ripples to the very lip of the once lofty cave (above). When the lake rises another 75 feet, the cavern too will vanish.



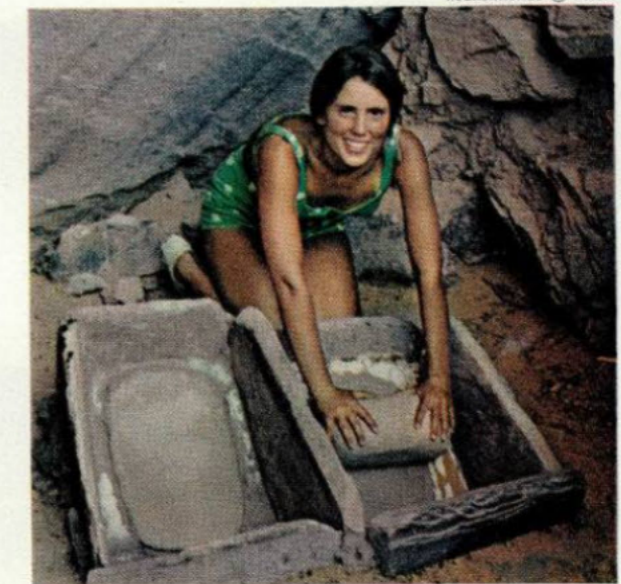


Pre-Columbian pictographs of three men with weapons and shields inspired the name of Defiance House, a 20-room Anasazi village in Forgotten Canyon. Abandoned for 700 years, the cliffside dwellings lay undisturbed until University of Utah archeologists discovered them eight years ago. Most roofs remained intact; pottery vessels still held food. Scientists speculate that severe drought in the late 13th century forced the Anasazi—Navajo for the “Ancient Ones”—to flee southward.

Waters of Lake Powell, rising into Forgotten Canyon, will not flood Defiance House, but will bring boaters within easy walking distance. Low and narrow doorways that require stooping (below) may have been a device used by the Pueblo people to discourage invaders.



KODACHROMES © N.G.S.



Rubbing dry corn between handstone and slanted slab, or metate, Loie Belknap demonstrates how Defiance House women made meal.

can state, for instance, that green sunfish eat shaving cream. They also find people tempting. As I washed in the shallows each morning, they nibbled at my toes (page 48).

From Halls Crossing upstream to Hite, named after Cass Hite, the prospector who started a Glen Canyon gold rush in 1883, the gorge walls are lower and less spectacular, although some side canyon scenery is superb.

Hite wasn't where I had last seen it. Not only had it sought higher ground, but it had moved seven miles upstream. This wasn't difficult, since it consisted of only a few shacks and a river-gauging station. Even its new location near the mouth of the Dirty Devil River (named by the Powell expedition for its high silt content) is temporary. When silt fills the area, Hite will move again, becoming a full-fledged marina miles downstream.

Hungry Cook Seeks Pie in the Sky

We gassed the boats at Hite and soon roared under the new bridge, just above the Dirty Devil (map, page 55). It is the only highway span across the Colorado between Moab, Utah, and the dam, 155 air miles apart.

Here the gorge changes its name from Glen Canyon to Narrow Canyon, and seven miles farther up, to Cataract Canyon. Powell negotiated this turbulent 40-mile stretch with difficulty. Even before entering Cataract Canyon, he ran short of food. One day he found Billy Hawkins, the cook, pretending to use a sextant. Billy said he wanted to find the latitude and longitude of the nearest pie.

The water by now was turbid. We would soon reach the end of the lake and meet rapids ourselves, and I wondered how far we could get up Cataract. Between high rugged cliffs, millions of years older than those of Glen, we rounded Mille Crag Bend, named by Powell for its "vast numbers of crags, and pinnacles, and tower-shaped rocks. . . ." Then we passed Sheep Canyon and Freddies Cistern, and nosed into the mouth of Dark Canyon.

The sedimentary rock that made up its tremendous walls varied from slate blue to pink (opposite). With its clean stream and potable water, its inviting "bathtubs" and waterfalls, it came as a delightful surprise.

Our map showed Dark Canyon zigzagging 30-odd miles eastward into uranium and vanadium country. Branching from it were side

canyons by the dozen: Lean-To, Black Steer, Horse Pasture, Woodenshoe. We could have spent a month exploring them.

Back on Lake Powell, not far beyond Dark Canyon, little whirlpools betrayed the presence of submerged rocks. The water was flowing. The lake had met the river.

Buzz, with an assurance born of experience in reading the river, wove an exhilarating, almost rhythmic course between shores gay with tamarisk and willow and sparkling white beaches. Then around a bend, opposite Bowditch Canyon, we saw rapids. A broad sand bar squeezed the leaping, boiling river against the mighty west wall.

After making camp, we donned life jackets and devoted our full attention to the joy of running the rapids in the Sport Yak. Portaging upstream, we abandoned ourselves to the downstream torrent as we battled to hold a safe course between lurking rocks. When the river won and overturned us, we reveled in the struggle to keep our heads above water.

Finally, after several hours, we flopped exhausted on the beach. The surging power of the river and the majesty of the cliffs above us suggested our insignificance, but filled us with the satisfaction that springs from such intimacy with the beauty of nature.

Young Eyes See New Riches for Old

Silt must inevitably fill Lake Powell, though not in our time. The glens Powell knew are already gone. But thousands of square miles of desert wonderland, hitherto accessible to only a few, have suddenly become available to all.

I have talked to men who knew the river before the dam was built, men who made their living by guiding visitors on boat trips through Glen Canyon. One, who fought the dam, had changed his mind and spoke enthusiastically about Lake Powell. Another, his fortune invested in a new marina, readily admitted, "I'd willingly lose it all if Glen Canyon could be put back the way it was."

But my young companions, who had never seen Glen Canyon before, viewed it through the fresh, enthusiastic eyes of youth.

"Maybe the dam shouldn't have been built," remarked Buzz Belknap, "but it's mighty hard to mourn Glen Canyon now that I've seen Lake Powell." THE END

Enticing walkers to explore yet another bend, a shallow stream twists past ancient sedimentary rocks in Dark Canyon. The gorge penetrates unspoiled country; using Lake Powell's upper reaches as access, more and more visitors will discover its haunting beauty.