

INTROO

A man in a red tank top and black shorts is running on a rocky trail. He is wearing a backpack and a watch. The background shows a deep canyon with red rock walls and a valley floor. The sun is shining, creating long shadows on the ground.

By Adam Buckley Cohen
Photographs By Alex Tehrani

DEEP



**Running
the 42-mile
Rim-to-Rim-
to-Rim trail
into and out
of the Grand
Canyon was a
bad idea.
Trying it a
second time
was just
insane**

LAST LEG

Heading back down
from the North Rim.



I could feel the sun baking me.

Its furnace breath cooked the air that threatened to suffocate me. Already the temperature was nearly 100 degrees, and it was only 11 a.m. ■ “Harlow,” I coughed to my friend, “I’m going to be sick.” I pushed myself up from the bench I was lying on beneath a cottonwood tree. ■ I retched. Retched again. I looked at Harlow as I braced for a third round of full-body convulsions. “I need an IV,” I mumbled. But even in my addled state, I knew there would be no intravenous fluids. No trained medical professionals. Just my exhausted pal, a couple of grazing mules, and a few scruffy hikers who, like us, had sought respite from the relentless heat at Phantom Ranch, the rustic outpost on the floor of the Grand Canyon.

A strapping hiker with short-cropped gray hair and a baseball hat sat me up and hoisted my right arm over his shoulder. He beckoned to a shorter, younger guy who grabbed my left arm. “We need to get you to the river,” said Mr. Ballcap.

My guardian angels carried me toward Bright Angel Creek. That morning, Harlow and I had run and hiked 35 miles in a quest to make it from one rim of the Grand Canyon to the other and back—in 12 hours. We’d climbed more than a vertical mile and descended nearly twice that much. But the violent reaction inside my body signaled the onset of exertional heatstroke and its potential for organ damage, even death. I didn’t have the

strength to walk 100 yards—how could I climb seven miles out of the canyon? This wasn’t supposed to happen. Not this time.

THE RIM-TO-RIM-TO-RIM IS NOT A RACE ACROSS the Grand Canyon but a run. There are no numbers, timing chips, aid stations, or finish times, and you can try it whenever you want. On most weekends in the spring and fall, when temperatures are cool enough to blunt the risk of heatstroke and dehydration but not so frigid as to invite hypothermia, you’ll find a handful of intrepid runners attempting

to add the r2r2r to their bucket lists. The route begins at the South Rim and snakes down to the Colorado River, which lies almost a vertical mile below. From there, the route travels across the canyon floor and climbs to the North Rim. That's the rim-to-rim. To add the final -to-rim, you retrace your steps. In all, the journey covers approximately 42 miles, with more than 10,000 vertical feet of descents and a corresponding 10,000-plus feet of climbing. Temperatures typically rise 40 to 50 degrees between the rim in the early a.m. to the canyon floor at midday, and the rocky, switchbacking trails reach grades in excess of 20 degrees.

The run draws people precisely because it's so difficult. "The distance, the vertical gain and loss over very technical terrain, the weather—it's probably as hard as running two and a half or three marathons," says ultrarunner Dave Mackey, who in 2007 established the fastest known time of six hours 59 minutes and 57 seconds for the r2r2r. "If you tell runners—especially ultrarunners—that you ran 42 miles, it may not really mean that much. But if you say, 'I ran from one rim to the other of the Grand Canyon and back,' they'll get it instantly."

The National Park Service, which operates Grand Canyon National Park, recognizes that such an endeavor may be possible—for "extremely fit, highly trained individuals." But according to Marc Yeston, the park's deputy chief ranger, "the vast majority of the 5 million people who visit the park each year are not prepared for challenges of this magnitude." In 2010, park personnel performed 286 search-and-rescue operations. Yeston estimates that 60 to 80 of those involved runners attempting the rim-to-rim or its big brother, the r2r2r.

Indeed, two years earlier, I nearly found my way into the statistics. With Harlow and another friend, Ben, I'd attempted the r2r2r, hoping to break 12 hours for the journey. Facing rising temps, I'd grown so worried about dehydration and heatstroke that I downed more than 400 ounces of water over the course of the morning and afternoon. When I started to feel nauseated, dizzy, and disoriented, I chugged more water. It was only after I'd stopped moving and proceeded to pee seven times in an hour that I realized dehydrated people *don't* pee. I'd consumed too *much* water, not too little. I had hyponatremia, a condition in which excessive water consumption causes blood sodium levels to plummet to dangerously low levels (see page 86). It took another hour to rid my body of the excess fluid, load up on the electrolytes that had been flushed out of my system, and convince my friends that I was fit to ascend to the south rim as nightfall approached. We shuffled out of the canyon under the

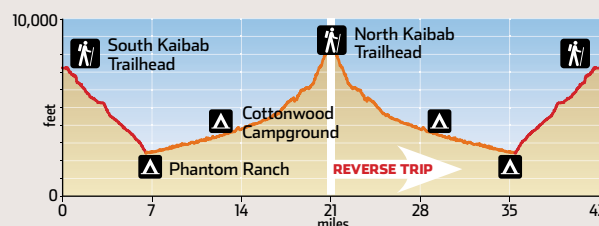
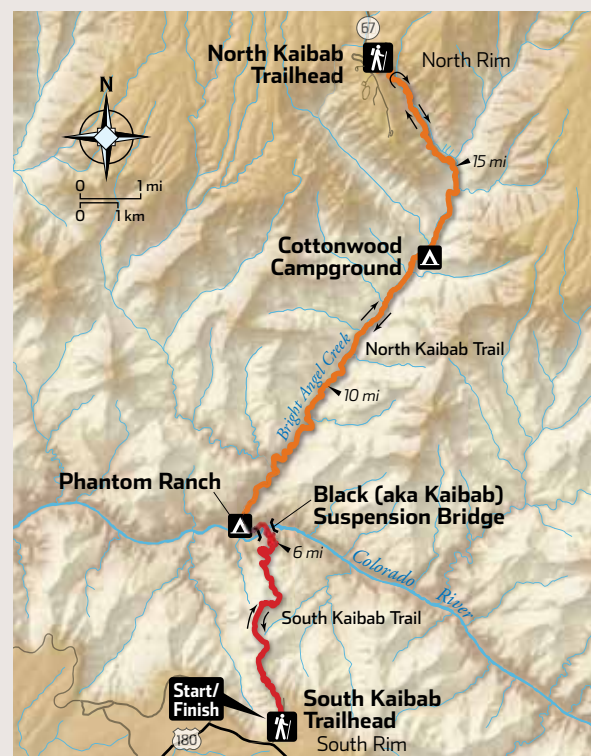
light of the moon, nearly 15 hours after setting out. And that's how the tale should have ended. Canyon has its way with Adam. Adam learns his lesson. Adam takes his ball and goes home.

But in the two years that followed, I rounded myself into the best shape of my middle age. I finished a marathon in two hours and 38 minutes and notched my fastest 10-K in six years. Through it all, my canyon failure had gnawed at me. I'm a typical type-A, results-driven runner—when I tell myself I'm going to run ten 800-meter intervals, I run ten 800-meter intervals. So when I tell myself I'm going to get from one end of the Grand Canyon to the other and back in a half-day, that's what I intend

Rim-to-Rim-to-Rim

The Grand Canyon run is no walk in the park

THE ROUTE BEGINS—and ends—at the South Kaibab trailhead on the South Rim at an elevation of 7,260 feet. It descends to 2,560 feet at Phantom Ranch, and rises to 8,255 feet at the North Kaibab trailhead. Total distance is 42 miles.



The trail traced the limestone cliffs—first redwall, then powdery white Muav. Here was the earth, peeled away, layer by layer.



GRAND STRATEGY

Electrolytes in drink powder, gels, and blocks would help maintain sodium levels (above). Leaving early made for a cooler descent along the South Kaibab trail (right).



to do. I'd covered the route at the laughable pace of less than three miles per hour. Surely, that wasn't the best I had to offer.

So when Harlow called and asked if I was game to give the r2r2r another shot, I didn't think twice. This time, I knew what I was getting into. Twelve hours could still be mine.

Snow and freezing weather forced us to settle on the first Saturday in June, a date later than we would've preferred. When we arrived that Friday afternoon, the desert air greeted us like a blast furnace. Temperatures for the next day were predicted to hit triple digits on the canyon floor.

As we sat down to dinner in a nearby lodge in Grand Canyon village, a placard featuring a 20-something model/hiker who looked like Superman's first cousin greeted us. "Over 250 people are rescued from the depths of Grand Canyon each year," warned the sign. "Most of them look like him."

"Well," I said, "I guess we've got nothing to worry about." No six-pack abs here. Hell, no four-packs. Plenty of gray hair and male-pattern baldness, though. If an Adonis-like physique was all that prophesied a medevac removal, we'd be fine.

But the sign wasn't finished. "A surprising majority of victims are young, healthy males between the ages of 18 and 40 attempting to hike to the river and back in one day," it read. "No matter what your age or health status . . . DO NOT attempt to hike down to the river and back in one day—plus another 28 miles. But we weren't worried. We were healthy, young(ish), in excellent shape, and, most importantly, we'd done this before.

A T 1:45 A.M., THE GRAND CANYON IS INVISIBLE. Cloaked in blackness. We were about to step blindly into a yawning void on a steep, snaking trail the width of a welcome mat.

Using my headlamp, I checked my pack one last time: water, electrolyte drink powder, electrolyte jellybeans—no way my sodium levels were tanking this time—energy bars, energy gels, SHOT Bloks, fruit, sandwich,

pretzels, sunglasses, sunscreen, Body Glide, extra socks, cap, and cell phone (no bars). I strapped it on. It was time to go. But first, we switched off our lamps and absorbed the moment.

The stars stretched to the horizon in every direction, white pinpricks gently tearing the fabric of the night. Not a single earthbound light broke the tableau. The wind rustled some scrub pines in the darkness. The temperature hovered in the 50s. Harlow and I bumped fists. "Let's do this thing," he said.

Harlow broke into a jog, and I tucked in behind him. His every footfall kicked up puffs of dust that floated in the white glow of my headlamp like undersized mushroom clouds. I tiptoed down the snaking path, hugging the canyon's limestone walls.

The South Kaibab—Paiute for "mountain lying down"—trail represents the shortest path to the canyon floor, dropping nearly 4,800 feet in about seven miles, making it the steepest way down. Loose stones pocked the trail, and our steps sent them streaming into the dark mouth of sky that began where the ribbon of trail left off. We could hear them skitter, seemingly forever, down the canyon's steep walls. The drop was sheer.

I ran with baby steps, my upper body rocked back and arms held high for balance—and to catch myself if I stumbled. I braked on each step to maintain control on the serpentine trail. My quads grew seared from the effort of holding my body in check against gravity. The heel of my shoes ate into my Achilles each time my feet met the trail, and my toes slammed against the front of my shoes with each step. I could feel blood blisters forming beneath my toenails.

Logs and broad stones lying across the path every eight feet or so to prevent erosion posed a challenge. A pattern emerged: Two long strides. One short. Hop over log. Chop landing to avoid loose rock and plummeting into abyss. Wash, rinse, repeat.

Just as my quads were about to surrender, the Kaibab Suspension Bridge spanning the Colorado River emerged out of the darkness. We'd hit bottom. A few minutes later, we arrived at Phantom Ranch and filled our CamelBaks from its pump. I checked my watch—3:30 in the morning.

"You're going rim to rim? And then back?" the hiker asked. I nodded. "On a day like this?" I nodded again. "You guys are crazy."

Wait a second. *It took us an hour and 45 minutes to run seven miles?* My chest tightened with panic. No way was I missing my goal again. "Harlow, we need to *go!*"

He was digging for something in his pack. "Relax. We're okay." But even in the dim light of a single bulb outside the ranch's canteen, he could see I wasn't chilling out. "Fine," he said. "Let's go." I was running before he finished the sentence.

We spent the next hour and a half traveling across the canyon floor, tracing the path of a creek that would bring us to the foot of the north wall. The trail was relatively flat—ascending "only" 1,000 feet over six miles—and provided a welcome respite for my quads and toes. We kept the same pace we'd run coming down into the canyon, but with the floor's gradual rise, the effort was harder. Perspiration dribbled down my cheeks and into my mouth. I could feel it pickling my lips.

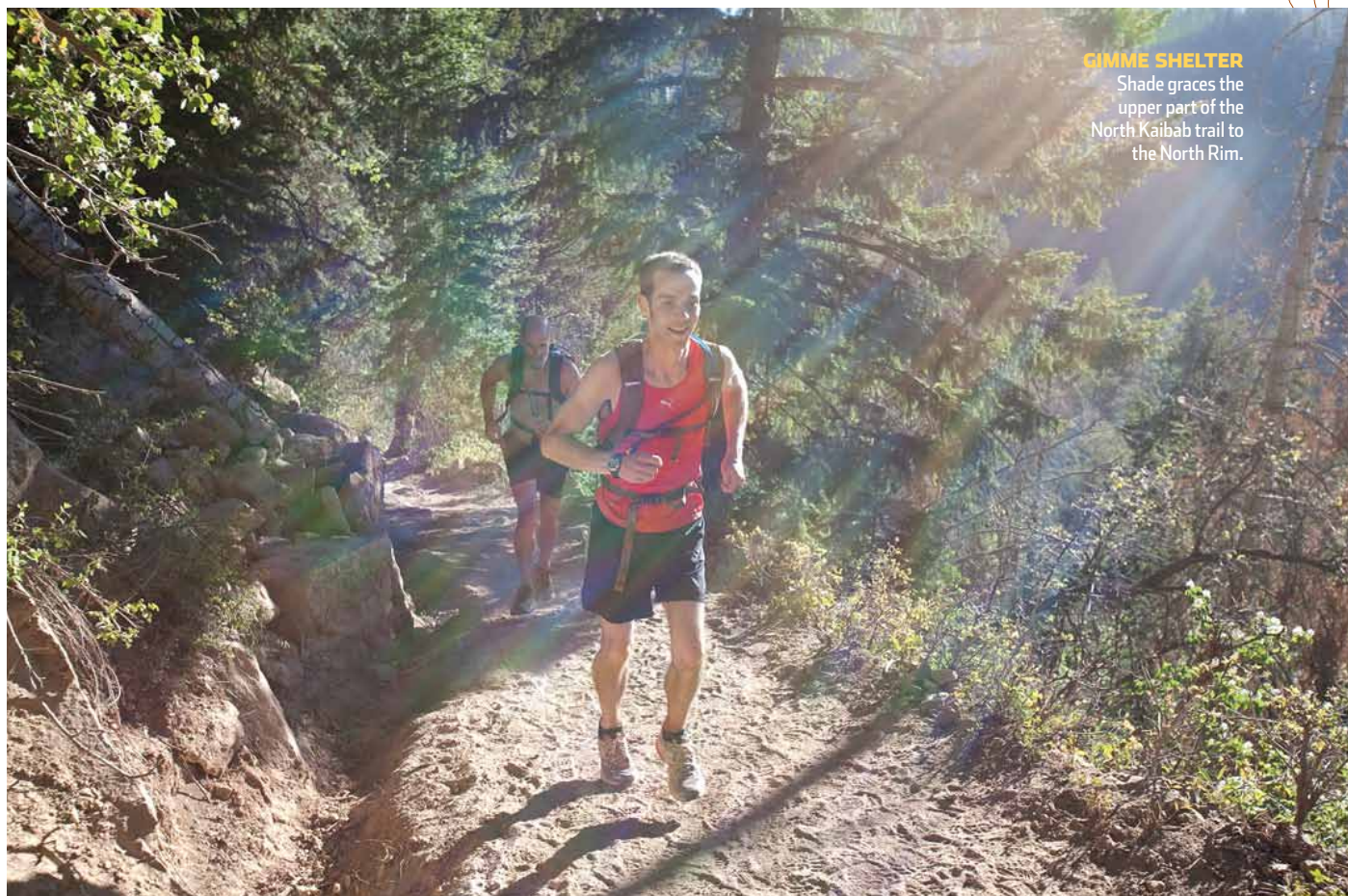
Just before 5 a.m., the sky turned the color of watermelon flesh, and we switched off our headlamps. The temperature had

nosed into the 70s. I looked down—my tank top was striped with dried salt. *That's not good.* Heavy perspiration laden with sodium meant I wasn't handling the heat well. But all I could do was chug more electrolyte drink and push on.

We hit Cottonwood Campground for a final water break, then started up the North Kaibab Trail toward the North Rim. At first we ran, but as the trail pitched upward, we began alternating between running the flatter stretches and power-hiking the steepers. I asked Harlow, a seasoned mountain runner, to let me lead so he didn't grind me down. But as soon as I got in front, I began pushing harder. It wasn't intentional; it was instinctual. The canyon had thrown up a challenge—I had to meet it.

My breathing grew labored. My calves groaned as I leaned forward into the trail. The pitch was steeper than anything I'd trained on, as challenging as any mountain race I'd run. The sun rose in the sky, erasing the shadows and licking at our heels. As we climbed, pines replaced cactuses, and the cool air felt like an open refrigerator on a summer day. We plowed ahead, somehow climbing at the same pace we'd maintained on the canyon floor. *Maybe, just maybe, we can beat this heat,* I thought.

We emerged at a picnic area on the North Rim a little before 7:15. The sun shone brightly amid the evergreens and tendrils of snow that still remained. We sat in the shade, slaking our thirst and eating sandwiches and fruit, kneading our pummeled quads and pulverized feet. I wobbled like a knock-kneed colt when I finally stood up. We'd covered 21 horizontal miles and climbed one vertical mile in just under five and a half hours, running the lion's share of the time. Already a good day's work.



GIMME SHELTER

Shade graces the upper part of the North Kaibab trail to the North Rim.

At that point, we could have taken a shuttle that would carry us the 210 miles around the perimeter of the canyon back to the South Rim. Or we could have booked a room, enjoyed a relaxing day and a good night's sleep, then reversed course the next morning. If I had any premonition of what was coming, I would've gone with either option. But I was rested, well fed, hydrated—and had a monkey to shake off my back. Within a few minutes, Harlow and I were charging down the North Kaibab trail, running back into the maw of sand and rock.

BUTTERY MORNING LIGHT STREAMED down the canyon, washing over its toothy spires and muscled buttes. With gravity once again on our side, we jumped down switchback after switchback, making our way back in geologic time with each step. The Kaibab formation, a thick vein of snowy rock that forms the crust of the canyon, soon gave way to yellow Cococino sandstone and rust-hued shale. We ran along a thin rope of trail that traced the faces of limestone cliffs—first redwall, then powdery white Muav. Here was the earth, peeled away, layer by layer. By the time we reached Roaring Springs, a snowmelt waterfall that fed the Colorado River below, we'd reversed course roughly 500 million years.

The first hint of trouble came when I caught my toe on a rock and nearly went down. The unrelenting downhill had shortened my stride to Lilliputian proportions, and my feet skimmed the ground. Harlow had pulled away from me. It was only 8:30 a.m., but with the climbing sun and lower elevation, the mercury was already at 80. The soft pink hues of early morning were replaced by a harsh whiteness that covered me like a blanket. I tried to take deep breaths and relax, but the thick, still air made me feel like I was breathing through a rag. Like I was choking. I came around a corner to find Harlow crouched in the shadow of a boulder, looking rattled. "I'm out of water," he said. I handed him my CamelBak, and he took a long pull. "We should only be a mile or two from water at the next rest hut," he said. "I'm going to run ahead. The longer we stay out here, the faster I'll dehydrate." Then he was off.

I struggled to stay with him, but I was slowing with every step. Even at a glacial 15-minute-per-mile pace, I felt like I was running through molten lava, each footfall requiring a near Herculean effort. Sweat dripped off me like rain. My stomach gurgled with a half-dozen liters of warm fluid—chiefly water spiked with electrolyte crystals. The thought of another gulp of the salty soup made me gag.

When I arrived at the campground, Harlow was sitting in the shade of a cottonwood tree, next to a water pump, drinking and talking to a group of hikers so well equipped they might have trekked off the pages of a Patagonia catalog. I collapsed in the dust next to him. "You're going rim to rim? And then back?" one of the hikers asked. I nodded. "On a day like this?" I nodded again. "You guys are crazy." I thought about arguing with him. Then I thought about how I looked—drenched in sweat, covered in salt, sunken eyes, hollowed-out cheeks. With more than a half-marathon to run in scalding temperatures. I nodded at the guy, who was messing with a pair of walking poles I would have killed for. "Yeah, you're probably right."

I took off my shoes, and from them poured streams of fine, red sand. My toes throbbed. I pushed my finger against the top of each one to check for incipient blood blisters, and counted three soon-to-be lost toenails. I drank as much as I could from the pump, refilled my CamelBak, and choked down a few pretzels and SHOT Bloks. The über-hikers gave me some electrolyte

Get It Straight

Knowing the difference between heatstroke and overhydration is a lifesaver

BY DEFINITION, exertional heatstroke and hyponatremia are distinct—the former indicates a core body temperature of 104°F to 105°F or higher, while the latter indicates low blood-sodium levels caused by drinking too much. But symptoms of both conditions overlap considerably. Victims may experience confusion, irrational behavior, nausea, vomiting, headache, and lethargy, says Douglas Casa, Ph.D., A.T.C., COO of the University of Connecticut's Korey Stringer Institute. Here's a look at the difference.



Hyponatremia	Heatstroke
RISK FACTORS	
Exercising moderately for three or more hours (may or may not be in hot weather); overconsumption of fluids.	Strenuous exercise in hot, humid environments lasting 30 to 90 minutes; poor fitness; dehydration; lack of heat acclimatization.
DIFFERENTIATING SYMPTOMS	
<ul style="list-style-type: none"> ■ May have swelling in hands, wrists, and feet ■ Not peeing during exercise even though drinking copiously ■ Red, sweaty complexion 	<ul style="list-style-type: none"> ■ Loss of balance/muscle function ■ Inability to walk ■ Hyperventilation ■ Seizures ■ Ashen, pale complexion
TREATMENT AND PREVENTION	
Treatment Stop exercising, stop drinking. Prevention Supplement sports drinks with salt, electrolyte tablets, or powder. Carry salty snacks like pretzels.	Treatment Immersion in cold water until temp drops to 101 to 102°F. Transport to medical facility. Prevention Acclimatize to heat over 10- to 14-day period.

BROKEN DOWN

On the return route, the author (in red) was struck down by heat illness.



pills, and I dropped them into my water along with another—*blech*—packet of crystals. I thought about putting on fresh socks, but the effort of digging them out was more than I could muster. I hoisted my pack onto my shoulder and cringed as it reunited with my lower back, a stinging reminder of the campaign of exfoliation that was about to continue.

If I could stay in front of Harlow, I could control our speed. If I could keep a lid on the pace, perhaps I could ration my energy, quell my rising nausea, and hold it together long enough to reach Phantom Ranch. When I tried to explain all of this to Harlow, I think it came out as, “Please, let me lead.” Then I began shuffling across the canyon floor.

ON PAPER, THE SIX-PLUS MILES THAT MAKE UP THE path from Cottonwood Campground to Phantom Ranch should have been a walk in the (national) park. Dotted with cactus flowers—golden plumes sprouting from agaves, the electric pink blooms of prickly pears, carpets of deep red Indian paintbrush—the idyllic path meandered gently along Cottonwood Creek, losing about 1,500 feet in elevation. In reality, it was more like a death march.

White sun saturated every inch of the canyon floor, making me feel like an ant caught beneath nature’s cruel magnifying glass. I willed myself to keep running, to keep putting one foot in front of the other. I knew if I stopped, I would not start again.

I was haunted by visions from my last attempt, of walking the entire six-mile stretch, frying with every step.

My mind went blank, caught up only with survival. Zombie-like, I shuffled forward, my stiff body wrenching with each step, my unfocused eyes gazing into the distance. With each turn, I expected to see the low-slung, green-roofed cabins and oasis of cottonwood trees that was Phantom Ranch. And with each turn, I was disappointed. Heat pulsed in waves from the canyon walls. I grew dizzy. My breathing became shallow. My stomach churned. The palms of my hands felt chalky, even dry. I ran a thumb across my jawline and saw salt crystals flake off. It took a minute to register—I wasn’t sweating anymore.

I took a few pulls of electrolyte drink. It tasted acidic and was the temperature of a steaming cup of coffee. A squirt of digestive juice shot up the back of my throat. My stomach seized. *Must. Not. Puke. Must. Keep. Going.*

Damn it. I’d been so careful—taking electrolytes religiously and monitoring my drinking. *It couldn’t be hyponatremia—could it?* My head and belly were swimming, just like last time.

A raven the size of small plane took wing when I rounded a corner. He had, I noticed, been perched on a garbage can. In my muddled brain, the revelation played out like this: Trash can. Blackbird. Cue lilting Beatles’ melody—“Blackbird singing in the dead of night.” *Wait, why would there be a trash can here?*

Through the cobwebs, I realized we had finally arrived at Phantom Ranch. I dropped my pack and stumbled into the



BITTERSWEET FEAT

After 14 hours, the pair regained the South Rim (left). The author missed his goal of 12 hours for the second time and amassed a row of raw, blistered toes.

canteen, a one-room dining hall built from round river rocks. I grabbed a Styrofoam cup and tried to fill it with ice from the dispenser. The gears rumbled, but nothing fell into my cup. In desperation, I reached into the trough below and scooped up a few melting cubes. I added tea, paid, and gulped it down. Or maybe I gulped it down and paid.

Either way, it did not stay down for long.

THE SILVER-HAIRED ANGEL WHO HELPED SPIRIT me to the river was an avid trail runner named Dave. He said he routinely paced runners through ultramarathons like Leadville and Bighorn. Which, lucky for me, had honed his ability to identify and treat heat illness. While many symptoms of exertional heatstroke and hyponatremia are similar—confusion, irrational behavior, nausea, vomiting—Dave took one look at my ghostly pallor and correctly assumed my body had begun cooking from the inside out. (Although without a rectal thermometer reading, we wouldn't know if was from heatstroke, a condition where core body temp reaches 104°F to 105°F, or heat exhaustion, where an overwhelmed cardiovascular system makes it impossible to continue exercise.)

When we reached Bright Angel Creek, Dave and his companion lowered me onto a rock at the water's edge, and removed my shoes and socks. "We need to get your core temperature down," Dave said. "But don't get in too quickly—we don't want you to go into shock." I shuddered as the cold water washed over my feet. Dave daubed water onto my head and neck as I gradually submerged my calves, thighs, and trunk. His wife brought me an ice-cold lemonade. Dave dropped an electrolyte pill into a bottle of water and had me drink that, too.

For nearly a half-hour, I sat in the icy mountain stream, drinking steadily. As the fog in my head began to lift, I noticed Harlow sitting quietly on the riverbank, looking defeated. I suddenly remembered why we were there. I looked at my watch—11:35. Using the warped logic of a recently fried brain, I figured if we left then and climbed the remaining seven miles in just over two hours, we could still make our 12-hour goal.

Harlow—only slightly less fried—was all for leaving at once. And with taking the steep, waterless South Kaibab Trail. "It's the shortest way out," he said.

I'd dragged Harlow down once before. Now was the chance to set things right. I turned to Dave. "What do you think?"

He pushed his hat back on his head and rubbed his palm on his forehead. "I've seen a lot of guys who looked like you come back from the dead and finish ultras." He crinkled his eyes, as if picturing those moments of resurrection. "I think you can, too."

We had the blessing of our guardian angel—what more did we need? We filled our CamelBaks and headed out.

Almost immediately, our folly was apparent. It can take up to two days to recover from heat exhaustion, and a week—even months—to recover from heatstroke. I'd been somewhere on the spectrum between the two, and in my depleted state I could manage only a brisk walk over the flat mile that led to the suspension bridge over the Colorado River. Once the trail turned vertical, I discovered that my calves and quads, the engines I needed to propel me up the equivalent of four Empire State Buildings, were gassed. Each step felt like I was pushing a boulder up an endless hill. Only I was the boulder.

Over the next four hours, temperatures reached 108 degrees in the shade. And on the South Kaibab Trail, there is very, very little shade. The small patches to be had are like sprinklers you encounter on a hot run; they only cool you so much, and you can't get home if you stand in the sprinkler all day.

We hiked in silence, Harlow patiently shadowing my ever-shrinking strides. My thirst began to wane. I knew that wasn't good, but I'd passed the point of caring. I took to curling up in the red dirt whenever a boulder offered even a hint of shadow. Each time, Harlow waited a decent interval then gently urged me to my feet. After three hours, he relieved me of my pack. I drank warm water and dreamed it was a frosty Diet Coke. But mostly, I dreamed about seeing the people I love.

I imagined dying and appearing to my young sons, Will and Theo, as a repentant ghost. *Um, I'm sorry I'll miss pretty much your entire lives because I wanted to break 12 hours in the r2r2r.* This had been a dumb thing to attempt once, but twice? Unforgivable. I had blatantly ignored the lessons the canyon had tried to teach me the first time. That surviving to fight another day doesn't mean you *should* fight another day. That some challenges are best left unmet. And that sometimes, you win simply by recognizing your own limitations.

Fourteen hours after we'd begun, Harlow and I spotted the sign that marked the trailhead and made a stiff-legged sprint to the lip of the South Rim. I texted a "celebratory" photo to my boys, accompanied by just two words.

"Never. Again." 🙏