GRAND CANYON RIVER GUIDES

The News

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✷ Protecting the Grand Canyon ✷
✷ Setting the highest standards for the river profession ✷
✷ Providing the best possible river experience ✷

Grand Canyon Protection Act Passes!

Late the night of October 30, 1992 President George Bush brought to a close the 3 year effort to pass the Grand Canyon Protection Act (GCPA). Waiting until the last minute the President signed into law the Water Bill, a package of 30-odd measures for the western U.S. Had one more day passed, the bill would have been the victim of a pocket veto, dying from lack of presidential signature. And in the end, it wasn't debate over the Protection Act itself that pushed Bush to the brink of veto, but the fact that it was tied to controversial reclamation reform in the Central Valley of California, a measure to allow federal water to shift from agricultural to urban use.

With its signing the GCPA becomes law of the land, and helps guide our efforts to adjust operations of Glen Canyon Dam to protect the resources of Grand Canyon. As Arizona Senator John McCain said in Flagstaff a short time before the signing, a lot of the credit goes to the guides who realized that things were not right and kept the issue alive. And to the thousands of people who cared enough about the Canyon to take the time to write or call their Congressman. We want to thank Senator John McCain, Senator Bill Bradley, and Congressman George Miller for their fierce support in Congress. And our hats are off as well to Ed Norton of the Grand Canyon Trust for his untiring efforts in Washington. A very special thanks go out to all of you who made all those calls and wrote all those letters. We at GCRG are happy and relieved; we feel we can now spend more

time focused on the local issues. We all deserve a great big "atta boy/girl".

What exactly does passage of the GCPA mean to those who care about the river? It states once and for all that Glen Canyon Dam shall be operated in such a manner as to protect, mitigate, and enhance the resources of Grand Canyon National Park and Glen Canyon National Recreation Area. As Ed Norton said, "It puts a stake through the heart of the principle that power has primacy" in operations at the dam. The Act also guarantees that interim flows remain in effect until the Environmental Impact Study is completed. Lastly it mandates that a long-term monitoring program be initiated, with annual reports to Congress, to ensure that the Canyon and River remain protected. On the minus side is an amendment that transfers funding for the ongoing studies and the cost of replacement power from the power users to the general public.

The question before now us is "What next?" Will passage of the Grand Canyon Protection Act guarantee that the Canyon is protected? The answer is no. While the GCPA will set the basis for operations at the dam, that decision will be made by the Secretary of the Interior upon completion of the EIS. The management process and monitoring program that emerges from the EIS will shape the future of the Canyon. It is important that we continue to be active participants in the process. Although the Grand Canyon Protection Act is a pillar on which we can lean, it is not yet time to sit down.

Tom Workman

The rumors of Tom's departure from Lees Ferry to Saipan, north of Guam, are still flying, but neither Tom nor anyone else seems to know if he'll be going. We know this much: although Tom hasn't gone to Saipan, three typhoons have. Maybe it's a sign.

Tom has been a good friend to the Canyon, the River and the river community during his many years at Lees Ferry. We all express our heartfelt thanks for his efforts. While we realize the Park has not asked him to leave, and that it *is* Tom's decision, we have encouraged Superintendent Chandler to do whatever is in his power to keep Tom.

Or think of it from Saipan's point of view: Three typhoons are enough! In Saipan's interest *and our own*, we urge the Superintendent *not* to allow Tom to leave.

Insurance and Retirement

In GCRG's ongoing search for affordable insurance and retirement plans, we stumbled across Buster Quist, an independent insurance and securities agent. He spoke for a bit at the Kanab GCRG/Outfitter meeting and at the Fall GCRG meeting. So far he has come up with the most affordable plans we have found. He is working with two types of plans which, together, make a lot of affordable sense:

Payroll Deduction Systems

"Section 125" is a plan for health insurance and other health related expenses.

"401k" is a plan for retirement, utilizing various investment options.

Both of these are systems set up through your employer, whereby your health and/or retirement expenses are deducted from your payroll *before taxes*. This means two things:

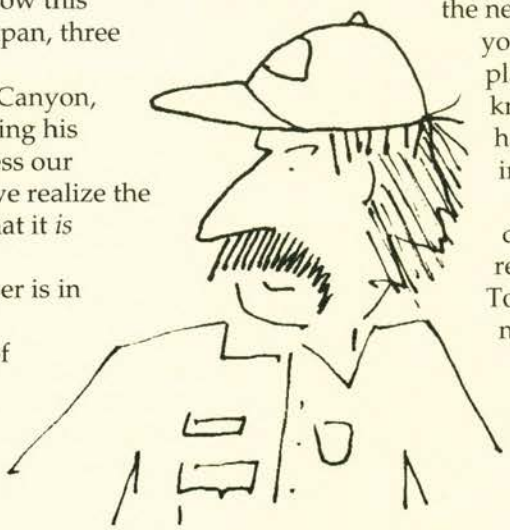
You don't pay taxes on that money, and your *employer* doesn't pay payroll overhead on that money. Furthermore, the employer may be willing to contribute some of the saved funds into the boatman's account, making things even *more* desirable.

Affordable Plans

Buster has come up with several low priced health insurance and retirement plans that can be customized to each person's needs. When these are combined with payroll deduction plans, we begin to see some truly attractive savings.

We boaters get older and our mortality becomes ever more apparent; at the same time health care costs continue to skyrocket and the federal pension plan, Social Security, appears ever more tenuous.

It is up to each one of us to look out for our own futures. It is up to our outfitters to be responsive to the needs we present to them. If you want payroll deduction plans, be sure your outfitter knows it. A few outfitters have already begun to implement them.



If you want health or dental insurance, or a retirement fund, deal with it. Today. Not next week. Not next year.

Buster Quist can be reached at (800) 554-9367.

Git Along, Little Doggies, Git Along

One of the most fundamental ideals GCRG continues to stress is cooperation; getting along with each other. All in the same boat and all that. We do better than most groups. We have to.

But we must remain vigilant; we must keep after it. Our community is too tight, our boat is too small. Just as it's necessary to wash your hands a lot on a river trip lest something unhealthy start to grow, we've got to constantly wash our hands of the excess baggage of animosity before it does lasting damage.

I said we do better than most, but some friction points continue to flare up.

Oars vs. Motors - you thought we'd dealt with this in the '70's? So did I. Yet there is a resurgence of some oar groups' boatier-than-thou attitudes towards motors, a rudeness toward motor trips, a shunning of motor boatmen. It's unprofessional, it's counterproductive, and it's inexcusable.

Commercial vs. Private- Even this year there are reports of commercial boatmen pulling fast ones on privates, taking all the good spots and to hell with them. At the same time we hear of private trips with a blatant anti-commercial agenda, going out of their way to interpret us as evil. Who gains by this?

Guides vs. Park- This is almost a tradition, with the sides viewing each other as hooligans vs. gestapo. Some folks on each side dug in pretty deep. Very productive, eh?

Okay, sure, everybody can think of a few stories to back up any attitude they may have. Face it: some of the motor guys are jerks. Some of the oar guys are jerks. Some of the NPS guys are jerks. Some of the privates are jerks. Sometimes I'm a jerk. So are you. So what? Welcome to the planet.

Then there's reputations - every entity, every company, every constituency eventually gets a reputation, good, bad or ugly. But times, personnel and attitudes change; whereas reputations linger, get outdated and fester. And we all know it's a hundred times easier to make a good reputation go bad than vice versa.

We're all in the same boat and we've all got to paddle. If I get mad at someone else, does it help me to hit him with my paddle? Or paddle backwards? Or call him unspeakable things? Or just give up? No. We'll *all* miss the run and *still* all have to get back in the same boat again tomorrow. Better to paddle a little harder in a positive direction.

If someone or some group is consistantly out of line, address it. Confront it. Don't mutter and grumble. Self righteousness is utterly useless.

If you've lost all your friends down there, wake up. Pay attention. When you find yourself in a hole, stop digging.

Consistantly, repeatedly wipe the slate clean. Carrying a chip on your shoulder makes you walk funny.

The fact is there's folks in every category that shine like pearls. The fact is we're all damned lucky to work here and play here. We all need to search ourselves now and then. Forget the arrogance. Dump the animosity. Take a few aspirin; it thins the blood and reduces swelling. It's antiinflamatory.

Git along.

Brad Dimock

GCRG / Outfitters Meeting

Back in September, in Kanab, GCRG got together with the outfitters to talk. The meeting produced some frank and lively discussion on a range of issues all needing our collective attention.

Fred Burke (ARR retired) was invited to attend and lend some historical perspective and personal insight on outfitting. No stranger to controversy, he encouraged the outfitters to stand together, to lead and not to follow, and to give more consideration to the boatmen (health plans, retirement). "It's a profession now, not a hit or miss summer job," he said. To the boatmen he said, "Stand with your outfitter and present a united front. It's good to see GCRG speak for the boatmen and fight for the things they should have". To the NPS: " The emphasis on law enforcement over resource management is off track. "Who gives a damn if someone shoots off a rocket on the Fourth of July! That's not the point. Be more resource oriented. Don't lose the personal contact with the boatmen."

There was genuine desire to address issues and entertain fresh ideas which might improve our continuing role as custodians of the Canyon, the visitor experience, and the resource. The river community can take a lead role in addressing these issues and, given the current enviro/political climate, the GCRG/outfitter forum is a downright positive approach.

GCRG would like to thank the both NPS for presenting their concerns to us so we could discuss them before they became crises; and all the outfitters for attending the meetings and contributing their energy and input toward a common cause.

Where do we go from here?

There is a river that slips quietly through the corner of Canada's Yukon Territory, a piece of British Columbia, and into southeast Alaska. It traverses the highest coastal range in the world and until the mid 1970's was the exclusive domain of wolves, bears, moose and the occasional trapper. At that time a small group of river runners from the arid southwest began taking folks there to experience the wildness. I was lucky to be one of that group. But a big part of that wildness came from it's lack of human presence and I found it quite a shock when we finally ran into the first "other trip". It occurred to me then that I was in many ways responsible for taking some of that wildness away.

Our world often contains the keen blade of the double edged sword. Our very act of visiting the wilderness takes something from it's wildness. But intimate knowledge can also provide the basis for good stewardship. Today a large open pit copper mine threatens the Tatshenshini River drainage and the voices raised in protest come largely from those who have known and experienced that wilderness. I feel better knowing that my impact on the Tatshenshini is now working to protect that river from a larger threat.

Our situation in Grand Canyon is much the same. For all its visitation the Canyon is still a wild place. There are canyons without name, grottos without sound, and labyrinths that still afford the opportunity to lose oneself. For all the superlatives that have been used to describe its parts, it is more than simply the sum of its parts. It is a synergy. And what strikes the river visitor most is the sum; the feeling, the experience. We as boatmen work hard not to quantify that experience, to feel it rather than describe it. The names of the formations are not as important as the part they play in the Canyon as a whole. But in the early 80's we realized the need to quantify the effects of Glen Canyon Dam on the river below if we were to correct them. We turned to science. It became necessary to break that miraculously complex system into its many component parts and look at each separately. Since 1983 science has been a constant part of the river experience in Grand Canyon. That presence peaked last year at more than 18,000 user days with an intense gathering of data for the Glen Canyon EIS. This year research trips have used less than 40% of that total.

This research represents our double edged sword. Its presence has impacted the visitor experience; the knowledge gained has sometimes led us to focus on one constituent part and lose sight of the whole. Yet we owe a great debt to Dave Wegner and the many researchers for their time, their commitment, and their untiring efforts to understand this creature in an effort to return balance lost to the system with the closing of Glen Canyon Dam. These understandings have made two things very clear, 1) the system is indeed amazingly complex, and 2) there is not a single, simple solution that will bring the system back to balance. As long as the dam's presence prohibits the river's natural system from regulating itself, a long-term management system must be set in place that can adapt to changes over the decades to come. With the passage of the Grand Canyon Protection Act and the conclusion of the EIS at hand, our task is to define this system of adaptive management.

Micro vs Macro Management

This is perhaps our greatest challenge. Now we have looked at the components one by one, trying to make sense of the whole. Do we now manage each component or do we reassemble them and manage the whole? This can be called the choice of micro-management and macro-management. The river was once a self regulating system of macro-management. Each component's importance came from its contribution to the whole. It is critical that we do not attempt to manage each component independently but instead restore the river's own processes whenever possible. To macro-manage. It is less important that any one beach be restored than that the Colorado's process of erosion and deposition be restored, that the chub's habitat and life cycles be preserved, that the river's natural processes be returned.

The river carried out it's management elegantly, subtly, almost invisibly. We can do the same.

An invisible hand

We have a responsibility to keep the manager's hand as unobtrusive as possible. For all of its majesty the Canyon is an intimate place as well. One of quiet and solitude. The river carried out it's management elegantly, subtly, almost invisibly. We can do the same. Our long-term monitoring program, an absolute necessity, should be as elegant as

the river's own. The need for understanding and the time restraints over the past 10 years have often forced us to explore the bowels of our patient. Now we must develop the means to take the patient's pulse, regularly and accurately; adjust her medication from time to time. Hopefully by doing so we will rarely if ever have to go into her bowels again.

That is the challenge we place on science. Restore the balance, repair the whole. The components of the Colorado River in Grand Canyon are the cloth of a synergistic robe. A sum which far exceeds the parts. Find a way to monitor the pulse without removing the patient's robe. For that robe is important to our human ability to experience the Canyon. Give us elegant methods, worthy of a place like Grand Canyon. It can be done, and the men and women who have brought our understanding this far are the ones to do it.

Tom Moody

GCRG Fall Meeting

Ahh, the Fall meeting. Those of you not attending really missed it. Or maybe you were there... incognito. A preliminary survey of the site and the weather report dictated that we abort putting up our megatent and move into the horse barn. Things got rolling Friday night with a call from Washington announcing the signing of the Grand Canyon Protection Act. What a way to start! We partied hard with Hopefully-Not-Leaving- But-Maybe-Hard-To-Say-Workman and turned the music up way too loud. We were well on our way, (well fed, well fortified, well well), when the rains came. Not the greatest camping weather but we all prevailed and resurfaced the next morning for some discussions about a variety of topics including updates about 1st aid, the new Navajo Bridge, the Michael Jacobs Award, Bat Towers, over-regulation, science, the future the Glen Canyon Environmental Studies and so on. Roger Clark and Jim Ruch of the Grand Canyon Trust stopped by and spoke about air traffic: where it's going, what to do, who to write and such.

Karen and Lanie from NAU Special Collections set up another Kolb photo identification session as we broke for lunch. Big fun.

After sandwiches, Buster Quist provided a lively and insightful talk about health insurance, personal finance and the inevitability of utter financial disaster in these United States. A good reality check.

Then on to the shitty situation for '93. Some war stories from those who have already experimented under the new fecal guidelines, hands on with two of the new potties. With the crap finally behind us, we (washed our hands and) prepared for dinner and Halloween dementia.

Bill Gloekler and his git down band fired up, with guest performances by several of the boatfolk, and the strange costumed creatures began to crawl from the woodwork: calculators, monsters, m&m's and a giant green chili; a chain sawed logger, a ski-skewered ski repairman, and innumerable masked marauders; a six or seven person Lava Falls, complete with Vulcans Anvil, the bubble line, the ledge hole, the v-wave, the black rock, (with wrecked dory), and the tail waves. And then there was Lady Godiva... somewhere along the way, Godiva must have gotten into the steroid bottle, because when (s)he did that wild strip tease there was an uncanny resemblance to Bob Gruse's evil twin sister.

Sunday morning brought frozen solid water buckets, a lot of coffee and aspirin, and a slow up-picking of detritus, including many pieces of the exploded v-wave, scattered about by those wreaking revenge for past wrongdoings.

Thanks to all who attended, the ground troops who made it work, and especially to the Schniewind clan for having us all. See you in the spring!

By The Light Of The Silvery Moon

Heard a story at the Post Office yesterday. Woman from Newark, New Jersey - we'll call her Edith Warton, dragged downstream by her adventurous younger sister (Hazel, of 68 years) - appeared down at the boats an hour or so after dinner. The sun had set and a big beautiful full moon was rising high above the Canyon leaving the camp whitewashed in gorgeous, thick, reflected light.

Well, Edith was miffed, nay, peeved nigh to pissed. She and Hazel had decided after a lengthy discussion to skip the tent and sleep out under the naked starlight. Hazel had planned to search out Cassiopeia. But the moon was putting out more light than the Vegas strip- so much light that not only were the stars wiped from view, Edith could not keep her eyes closed. They kept opening of their own accord, apparently under the mistaken impression that it was already morning.

"Boys!!! Booooooheeeeeeys! Are you still awake out there?"

Of course they were. Knocking back the Old Weller's and telling tall tales from their arsenal of boatboy stories. The buzz bruthuz, hard at play after earning an honest day's pay and basking in the momentary relief from "the peeps" remained silent. But she could see them, sitting there, bathed in the glorious moonlight, which was closer to a bath than one or two had been since Nanko... stanko.

"Hellooooooo out there…"

"Ya'll got a problem, ma'am?"

"Weee can't sleeeep!"

"I'll deal with it," Toad volunteered. He knew it could score a point for hanging in the harbor at Havasu. He rose like a tortoise and picked his way over legs and rubber to shore and the wailing woman. "It's that moon, son. That moon is far too bright."

"That's a full moon for you, Edith. Big, and bold and far too bright... Wonderful... you lucked out... not every trip gets a full moon..."

"Well we don't like it. Hazel can't find her constellations and I can't keep my eyes closed."

"What would you like me to do about it, ma'am... UUUUghhggghchgg ?" Toad belched.

Edith waved her hand to clear the air in front of her face and answered "Well put it out of course. Get rid of the light... something... We need our sleep."

A soft wind blew through the kitchen and carried a thought into the dulled but brilliant mind of the boatman. Toad looked about for an appropriate tool and found the perfect specimen waiting on the ledge not two feet from his cracking toes. He picked up the small chunk of Muav and offered it to Edith as a token of his esteemed affection.

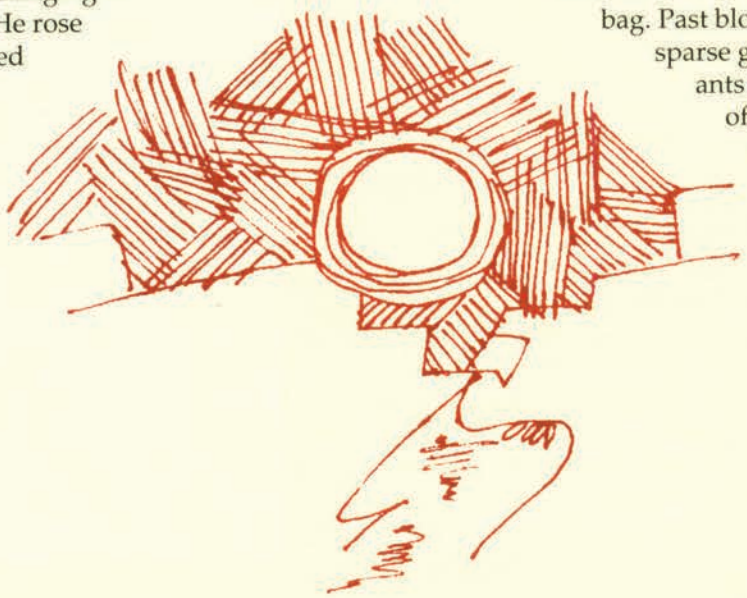
"Here, honey. Go ahead. You do the honors. Wind 'er up and put 'im out of our misery. Poor 'ole Mr. Moon, put him in his place. But before you do, I must say, ma'am, with all due respect, you look absolutely radiant tonight... standing there in the moonlight... with your hair all mussed up like it is, absolutely radiant... Dudn't she boys?"

Edith giggled. "Radiant?" she asked. She put one hand over her mouth and giggled again. Toad reached out, carefully took her other hand and placed the weapon of destruction in her palm as though it were a daisy. Edith's fingers closed over the rough edges. She winked at the boatman; came close to kissing him on the cheek but he belched again in the nick of time. Edith laughed out loud.

"Good night, Toad" she whispered.

"Sweet dreams, ma'am."

Edith wiggled a handful of fingers in Toad's direction and set out to find her sleeping bag. Past blooming prickly pears, sparse grasses, sleeping red ants she carried her trophy of Muav and sang a little tune, barely distinguishable from her breathing. When she found her sister, Hazel was already sound asleep, by the light of the silvery moon.



Nancy Coker Helin
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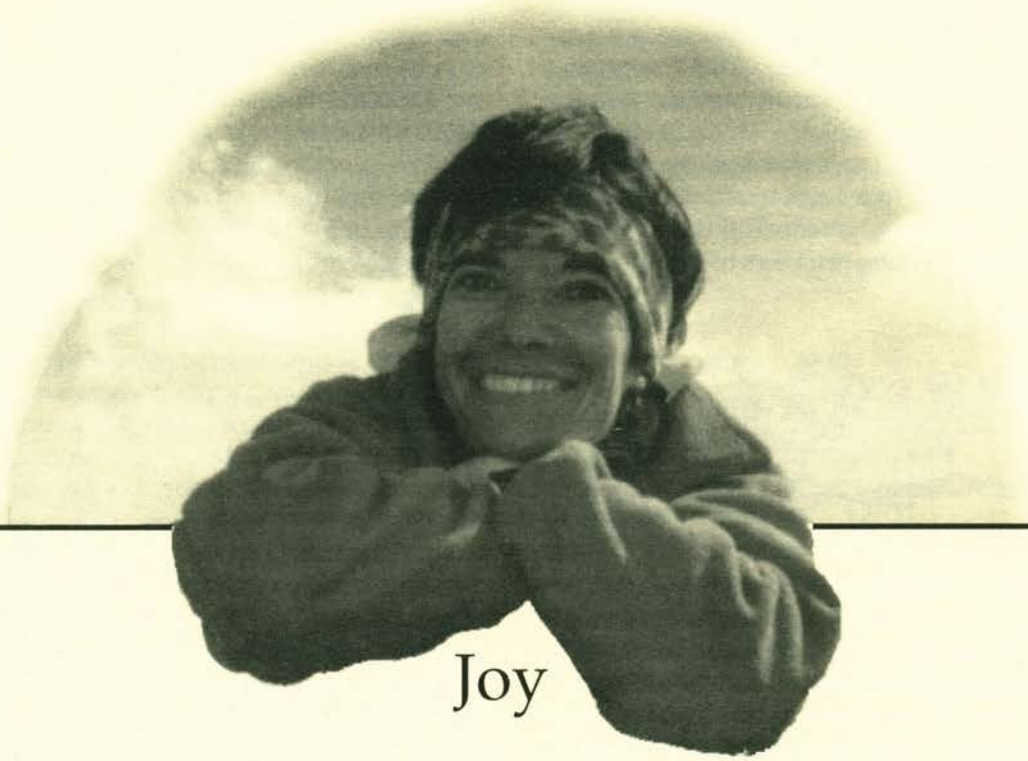


Joy

Joy Ungricht Carber died in her home at Arnold, California, on September 29, 1992, after a courageous battle with cancer. She died held in the embrace of the wide circle of family and friends who loved and honored her.

She was born March 10, 1952 in Salt Lake City. For most of the seventies, Joy was a resident of Horsethief Ranch and Moab, where she took up outdooring, dancing and laughing in the canyons of the Colorado Plateau. "Peepers" was into everything, and was a preeminent female in the evolution of guiding and adventure travel worldwide. She was the first female river guide on the Bio Bio in Chile, Turkey's Çoruh, the Watut River in Papua New Guinea, and the Tatshenshini and Copper Rivers of Alaska. Joy was a member of the first exploratory expeditions on the Zambezi River in Africa, the Indus River in Pakistan, and organized and led the first descent of the Luangua River in Zambia, an all women's expedition. She married boatman Butch Carber in 1989 on the summit of Mount Kilimanjaro in East Africa.

She was a boatwoman and guide of mythic proportions, a caring friend and playmate, a scrappy opponent who could challenge the toughest. Let's all not forget the impact on our own lives of Joy's courage, spunkiness and enthusiasm for life. She reminded us to go a little further, point our toes a little more. In the wisdom of American Indians, wholeness is not seen as the duration one has lived but rather the fullness with which one enters each moment. We'll miss our friend Peepers, but there is a greater tragedy than death, and that is having a life not lived. This is why most of us admired and loved Joy: she consciously and intentionally sought the fullness of her life.

Donations may be made in Joy's honor to the Joy Ungricht Carber Scholarship Fund, c/o Canyonlands Field Institute. PO Box 68, Moab, Utah 84532. The "JOY" scholarship will pay for female guides to participate in CFI's River Rescue program, a program Joy taught for many years.

Triple Your Pleasure, Triple Your Fun

A classic boat no longer seen in Grand Canyon is the " Triple Rig". Georgie had the mondo rendition of this class of boat. Take three inflatable boats, roughly the same size, hitch them together side by side and, by gosh, you've got a triple rig. In the early seventies, Grand Canyon Youth Expeditions ran triple rigs consisting of three Green River rafts roped and carabinered together. An outfitter's dream is to run three boats with just two boatmen. This was accomplished by rowing with two oars something that should have been rowed with six. The full load compliment was twelve passengers, all the camping stuff you needed for a two week tour and, of course, two spare oars. Boatmen actually did this for the same reason that a bumblebee takes to the air.

The two-oar set up on a triple rig had basically the same function as a rudder or sweep at each side of the boat. The rig could be rowed but you were essentially aiming it downstream with one oar upriver and the other one downriver. The pilot was in the downstream or lead boat and the poor sucker in the back boat was along for the ride to provide terror stricken muscle power. With any other boat in big water, you would try and go into the waves and holes lengthwise. In a triple it was preferred to go through diagonally. The diagonal method allowed the rig to snake through whitewater in a somewhat slovenly, graceful manner and lessened whiplash and pile-up of the back boat. When a cut maneuver was necessary, say a right run in Crystal, it was best to cheat or hedge the back boat closer to the right shore. The front boat was easier to maneuver because there was no mass of the rig in front to pull around. The cheating of the back boat would keep it from swinging down and overtaking the lead boat. All of this was theory of course. A good triple rig team had to believe this nonsense to fight off the reality of not having one bit of control once you entered a rapid.

The idea of running a boat as a team was fairly unique to triple rigs. It was a love-hate relationship. If the other boatman was asleep at the wheel you could angle the rig just so that he was in the eddy and had to work his ass off, while all you had to do was play with your oar in the current and torture him. It was a bad move to get a triple into an unwanted eddy; they just loved to stay in them. After running a trip or two with the same boatman, a silent communication would form. Complete jokes and in-depth ideas were exchanged with just an expression, without the spoken word. Because both of you were in the same boat, literally, the good runs were shared. The bad runs could be a different story. One boat could get through fine and the other boat could get trashed. This was where the boatmen realized that they may be joined by the hip but the river was going to smite whom she wished.

Don Neff broke me into the ways of triple rigging . Eventually triple rigging broke us. On my second trip of running back boat with Don, we had ten eighth and ninth graders and two chaperone adults. McCallum, GCYE's owner, worked for the Flagstaff school district at the time and billed these kids as the cream of the crop. Don and I came to bill them as the perfect cast for "Lord of the Flies." The two chaperones were nurses. This came in handy when one of the little rascals broke his arm in some harmless game on the beach. Don and I were having good runs with the triple and the gang of thugs was no longer impressed with the ferocity of the white water. I am sure that the river felt this, so it made Bedrock into that oh-so-awkward stage. Don and I went smashing straight into the damn thing. The word accordion came to mind. I was shot from the back boat into Don's bilge. We had ropes running underneath the length of the rig as well as diagonally. This prudent step in rigging allowed the rig to spring back instead of remaining like a stack of drying boats at Diamond creek. We careened down the left; the sweet children of Flagstaff were crying loudly.

Mike Yard started going along with us as a trainee. Don had many friends on the river and he would occasionally hop on their boat and leave the triple in our hands. Oh boy! I got to play engineer and drive the train! Once, after pulling out of Matkat, Don was thirsty and got aboard a motor boat. Mike and I pulled in above Upset to get Don and take a look. Don told us that we should run it and that he would be waiting down below on the motor rig. This engineer drove that boat right into the middle of that hole. It was ugly. We lost people, gear, and skin. Don helped pluck some floaters out of the river and looked down at us from the motor

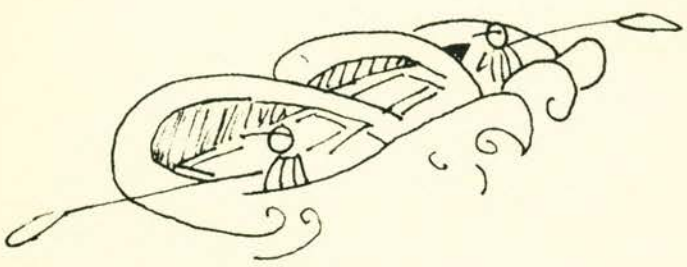
rig. His bemused grin told me that he either liked the show or that he liked to see the young bucks bleed. He later told me that what intrigued him was to see what an ungodly beating a triple rig could take.

I had done my time and taken my beatings. On my first trip as the lead boatman I was told that my partner would be a guy that hadn't rowed a triple before but who had considerable motorboat experience. When I first met Tom Moody I had my doubts that someone who appeared to have more hair than muscle would be able to pull that back boat around. We had a good run in House Rock that first day and I was impressed to see how well that skinny guy could pull an oar. A bit further downstream Brian had pulled the galley snout into camp above Boulder Narrows. Tom and I pulled in too high on the eddy. We went back out into the stream but then failed to make the pull in at the bottom of the eddy. Brian was a bit perturbed as he was already unloading his boat. Tom and I looked at each other and shrugged our shoulders as we floated downstream looking back at Brian standing on the beach in a bad temper. I knew then that Tom was a pro.

Mike Yard and I had a tough run to make at the old Crystal. Everything was going fine on the entry except that Mike's boat started to swing downstream. I was intent on the hole and pretended not to notice his calamity. My boat skated by the hole but I felt the triple shudder as the hole remodeled the boat that had just dropped in for a visit. I yelled enthusiastically for Yard to get pulling to avoid the island. Then I looked back. No Yard. No other people in the boat, for that matter. An oar blade was flopping around where Mike should have been. Oh well, *I* had a good run.

The triple had done its duty. It hadtaught us how to run the river without endangering the passengers too much. McCallum decided to forego the triple and give us some sports cars to row. Snout rigs. It was kind of lonely at first but the independence was intoxicating. We didn't miss the bailing and the snouts were great to sleep on. At first we thought Mac made the change to make life easier on us, but later realized that instead of rowing just twelve passengers with two boatmen, he could now send sixteen.

Dan Dierker



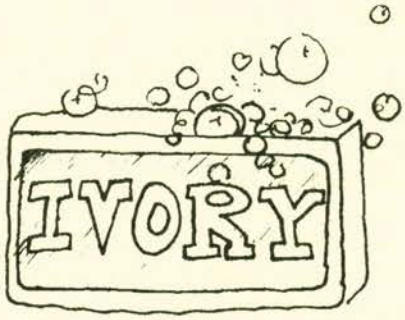
Action, Reaction

7/10/92

to: River Unit
re: Hand soap at Lees Ferry
from: Larry Hopkins, commercial guide

I find it really ironic that on the river we stress hand wash with soap before all meals and after using the bathroom, but at Lees Ferry where most boatmen use the toilet the morning we start a trip and all of our guests use the bathroom after their bus ride to the Ferry- there is no soap available. Why? Somebody, sometime is going to get sick from this situation. Is it possible to remedy this A.S.A.P.?

thanks
Larry Hopkins



Aug 13 1992

Larry Hopkins, Commercial Guide

Dear Mr. Hopkins:

Thank you for your letter concerning the need for soap in our restroom facilities. Presently we do not provide hand soap at any of our public ramp facilities within Glen Canyon National Recreation Area. There are a number of reasons why we do not, which includes improved personal sanitation, the maintenance of soap dispensers, added cost of soaps, liability of soap products, vandalism to dispensers, theft of bar soap, etc.

Generally it is the accepted practice that campers and boaters provide their own hand soap.

Thank you for your suggestion and interest in operations at Glen Canyon National Recreation Area.

Sincerely,

John O. Lancaster
Superintendent

Sky Wars

When the National Parks Overflights Act was passed in 1987, many thought the last great battle over Grand Canyon air traffic lay behind. Since that time, however, the number of overflights has nearly doubled and Grand Canyon Airport now boasts handling up to 1000 flights daily. As the airspace nears its saturation point the FAA has been forced to break its own rules to reduce the risk of collisions. It comes as no surprise that, with profits topping $100 million a year, the air tour industry is pressuring the FAA to grant new routes. Recent acquiescence by the FAA in favor of the air tour industry has again brought the issue into hot debate.

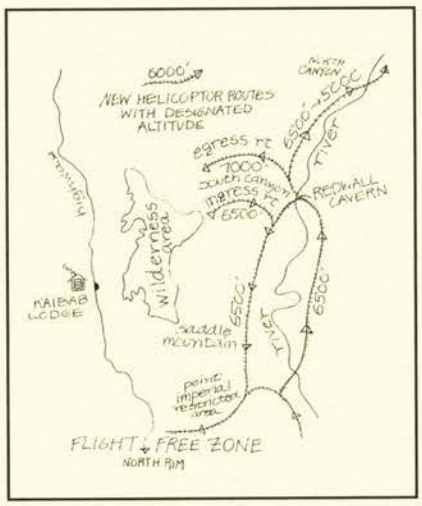
One practice which has come under fire is that Grand Canyon tower operators sometimes direct pilots to enter "flight-free" zones. When the traffic pattern becomes too congested, arriving aircraft are instructed to circle in designated locations outside the Airport Traffic Area. When those locations fill up, the traffic pattern is extended into the Bright Angel "flight-free" zone in order to accommodate more airplanes, in direct violation of FAA's own rule prohibiting such entry. In a letter to Grand Canyon Trust, Park Superintendent Bob Chandler stated, "These incursions happen almost daily, with aircraft flying over Grand Canyon Village, sometimes as far as the Canyon rim, before being turned back toward the airport."

FAA officials insist that they try to limit such intrusions, but that at times it becomes necessary in order to safely separate traffic. Jim Dagle, Principal Operations Inspector with the FAA in Las Vegas stated, "We are very accountable. If somebody is given permission to fly through [the flight-free zones], they have a darn good reason." We would not argue that tranquility should take precedence over safety, but if that choice must be made on a regular basis there are too many aircraft in the system.

Although the FAA has considered limiting the number of flights, they show much more interest in other alternatives such as addition of a runway and installation of radar services. According to FAA officials, these improvements would solve many of the problems. However, the proposed projects are not listed in the 5-year plan of the Arizona Department of Transportation, the agency in charge of such matters. Also, these projects would effectively allow further unbridled expansion of the air tour industry, a decidedly unpleasant proposition for the Grand Canyon environment.

These traffic patterns are purely a fixed wing problem, as helicopter operators are quick to point out. However, they have created quite a furor of their own lately by convincing the FAA to grant them additional routes.

When the original aircraft routes were designed by the FAA in cooperation with the NPS, they allowed only fixed wing aircraft in Marble Canyon. However, without consulting the NPS, the FAA has recently granted a Marble Canyon route to Papillon, a helicopter tour operator.



According to Jerry Gavette, an FAA Principal Operations Inspector, Papillon used to run an extensive tour to Havasu Canyon which he described as "the best helicopter tour you could get." It was also rather pricey. "Papillon and the Indians got into a row," he said, which was financially motivated. Papillon pulled out and began looking for a comparable tour to replace it, and set their sights on Marble Canyon and the remote North Rim.

They requested, and were granted by the FAA, a route parallel to the existing fixed wing route, but as much as 2,500 feet lower. Gavette calls it the "longest, most interesting tour...in the form of a triple figure 8." It heads up the east side of the river, crosses it at South Canyon, and continues on to North Canyon, dropping to within 2000 feet of the tree frogs' tiny little heads. Helicopters will cross the river yet again and continue north. Rick Carrick, chief pilot for Papillon, claims that the North Canyon route won't be used. "It's not our idea to disturb the solace", he said, "I'm an environmentalist."

For boatmen, perhaps the most disquieting aspect of the new route is that Marble Canyon has been relatively isolated from the heavy air traffic we had grown accustomed to in other areas. In addition, the Marble Canyon helicopter routes are as much as 2500 feet closer to the river. On a recent river trip, a series of helicopters flying 3000 feet above Redwall and Vasey's left us feeling violated.

Perhaps it's partly the fact that they're HELICOPTERS that offends us. Boatmen tend to associate the noise of rotary aircraft with negative events, such as evacuations and death notices. The mere sound sets us on edge, especially if it's lower and louder than we are accustomed to.

After the helicopters cross the river at South Canyon, there are ingress and egress routes to the west. This has opened the opportunity for Papillon to run a North Rim commuter service, another strong point of contention. Papillon announced winter helicopter rides to the Kaibab Lodge which would let tourists "experience the quiet and secluded winter beauty of the North Rim."

Much of the controversy has focused on the route, which some claim would pass 500 feet above the Saddle Mountain Wilderness Area. Such flights would violate FAA regulations against flights lower than 2000 feet over a wilderness area. However, Jerry Gavette insisted that helicopters would have to "climb like a fool" to accomplish that altitude, and that the route actually lies north of the protected area. Rick Carrick of Papillon stated that if they were unable to maintain 2000 feet above the wilderness area, they would go around it. "I terminate immediately any pilot I find deviating from those routes", he said. The confusion about just where the routes ARE isn't helped by the fact that current federal air charts still depict NO helicopter traffic northeast of Nankoweap.

In his letter to Grand Canyon Trust, Bob Chandler expressed concern that the presence of a commuter service would detract from the solitude of the North Rim. "We believe that rim-to-rim flights are contrary to the philosophy that the North Rim provide a more pristine experience to the visitor than the South Rim." He continued that "The North Rim may be more difficult to get to (especially in winter months), but that is part of the reason the public visits that location. Providing easy access would defeat this philosophy."

Part of the trouble is that, although Congress recognized in 1987 that "natural quiet" is one of Grand Canyon's most valuable resources, FAA officials seem yet to be convinced that heavy air traffic creates significant impact. Jim Dagle stated that "with aircraft the only impact is noise; how much impact is that causing? There's no impact on the ground."

Robert Trout, FAA's Geographic Unit Supervisor in Las Vegas went further in a recent statement to the Southwest Sage, an independent newspaper. "There are one million people who want to fly over the Canyon, while the couple who go out there and actively hike these flight-free zone areas are a drop in the bucket."

A genuine antagonism has developed between FAA officials and those who would like to see overflights limited. Jerry Gavette makes no effort to hide his disdain for the boating industry, towards whom he vented his wrath at length for what he saw as their "chicken-@*#!" adversarial attitude against the air tour industry. "I've been in this war since '75...", he said, "...when Tri-State Air Taxi Association came out in support of motors [on the river]." His perception is that the boating industry has "turned on them", although he admitted that Tri-State's principal reason for speaking out then was the accurate assumption that their industry would be next to be questioned.

Certainly boatmen are in no position to point fingers from our motor rigs at an airplane thousands of feet overhead. During any discussion with the FAA or the air tour industry, fingers are inevitably pointed right back at motor rigs, multiple trails, mules, Phantom Ranch and hiker's fecal deposits. Certainly their point is valid; every form of visitation produces an impact. But the simple fact is that every other form of visitation is strictly limited in numbers as well as area of access. Although air space has become much more restrictive, the number of flights increases without restraint. We are not asking for an outright ban on air tours, rather that there be reasonable use limits.

We would also hope that the air industry begin to shift their usage to the quietest aircraft available. Some operators have made efforts to reduce the noise they generate. The boating industry would do well to set the example by striving to reduce their own noise impact. All tourism industries must be acutely aware of public perceptions that they are profiting at the expense of the resource.

Jeri Ledbetter

WHOM TO WRITE

Secretary of Transportation
US Department of Transportation
400 7th St. SW, Washington DC 20590

Senator John McCain
111 SROB, Constitution & Delaware Ave. NE
Washington DC 20510

Bob Chandler, Superintendent
Grand Canyon National Park, Box 129
Grand Canyon, AZ 86023

Jack Washington, FAA
6020 S. Spencer St. Suite A-7
Las Vegas, Nevada 89119

The Michael Jacobs Award

In 1990 GCRG was planning to initiate a "service to Grand Canyon" award. At the fall meeting, shortly after Michael's tragic death, it was decided to name the award in his honor and award it annually "for outstanding contributions to river running in Grand Canyon."

A difference of opinion soon emerged however, some people feeling that the award should stand for the above qualities, and others, Michael's friends and family among them, felt it should be more in keeping with the way Michael was and honor the "boatman's boatman", the unsung hero, the professional guide quietly doing a damned fine job.

We presented this quandary with the 1992 ballot, hoping the vote would give us a mandate one way or the other. Instead we got a tie, with one award going toward each ideal.

Since then the board, in close communication with Michael's friends and family, came up with the following redefinition, which was adopted at the Fall Meeting:

- that we would like to retain an award in Michael's honor
- that it should represent the ideals defined by those who knew Michael best:
  - that it go to a working boatman who:
    - is doing a damned fine job
    - may have done something particularly heroic
    - may be consistently going beyond the call of duty
    - may be stricken by some calamity
  - that it will not necessarily be awarded annually, thereby becoming a popularity contest. It will be awarded occasionally by the board of directors in response to input from the river community.

So. Keep your eyes, ears and hearts open and let us know when someone may be shining particularly brightly, whatever the reason.

Map explanation

The geologic map on the following pages is detatchable to carry in your ammo can. What you actually see as you float through the Upper Granite Gorge is represented by the half inch or so above the "river level" line. The rest of the diagram represents structural forms inferred by what is found up the side canyons and by the angles and structures that the metamorphics exhibit where we *do* see them. It gives you the BIG picture. Enjoy.

Metaglossary

Karl Karlstrom and Brads Ilg and Dimock have conspired to bring you this interpretation of the wild geology of the Granite Gorges. Below is a glossary of the geo-terms used on the next four pages. A verbal presentation of this material will be presented at the spring GTS.

Amygdules	A gas filled cavity in an igneous rock
Antiform	A concave downward fold in which the original "up" is unknown
Crust	The outer layer of the earth (around 30 km thick on the Colorado Plateau)
Felsic	Rocks with abundant light colored minerals
Fold hinge	The steepest part of a fold
Foliation	The planar arrangement of textural or structural features in a rock. (think of pages in a book)
Gradded bedding	Bedding which displays a gradual change in grain size from top to bottom
Lithosphere	The outer 100 km of the earth, including the crust and upper mantle. Overlies the plastic asthenosphere
Mafic	Rocks with abundant dark colored minerals
Metalithic arenite	A metamorphosed "dirty" sandstone. Baked Tapeats, for instance
Metamorphism	Mineral (biotite becomes garnet), chemical(water driven out), and/or structural(alignment of platy minerals), changes a rock undergoes under high temperature and pressure
Metasedimentary rocks	Metamorphosed sedimentary rocks
Metavolcanic rocks	Metamorphosed volcanic rocks
Orogeny	The process by which folds and faults form in areas being squeezed
Paleozoic	From 570 to 225 million years ago
Pelitic Schist	Schists formed from silty ingredients
Pillow Lavas	Long tubes of basalt
Porphyroblasts	Large crystals developed during metamorphism, such as garnets
Proterozoic	From 2500 to 570 million years ago
Protocontinent	The early core of a continent to which younger crust was added
Shear Zone	Planar or curved zones of high deformation surrounded by less deformed rocks
Subduction Zone	A long belt where one plate is sliding under another
Suture	A shear zone between two crustal blocks with different histories
Synform	A concave upward fold in which the original "up" is unknown

METAMORPHICS FOR THE GEOLOGICALLY IMPAIRED -- GRANITE GORGE SCHISTS, GRANITES, AND TIME

Geology by Brad Ilg and Karl Karlstrom

Two billion years ago, the part of the North American continent that we call the Southwest did not exist--the area was oceanic and the nearest coast was in present day southern Wyoming. The Granite Gorges of the Grand Canyon provide a record of the addition of an immense area of new crust to the North American continent.

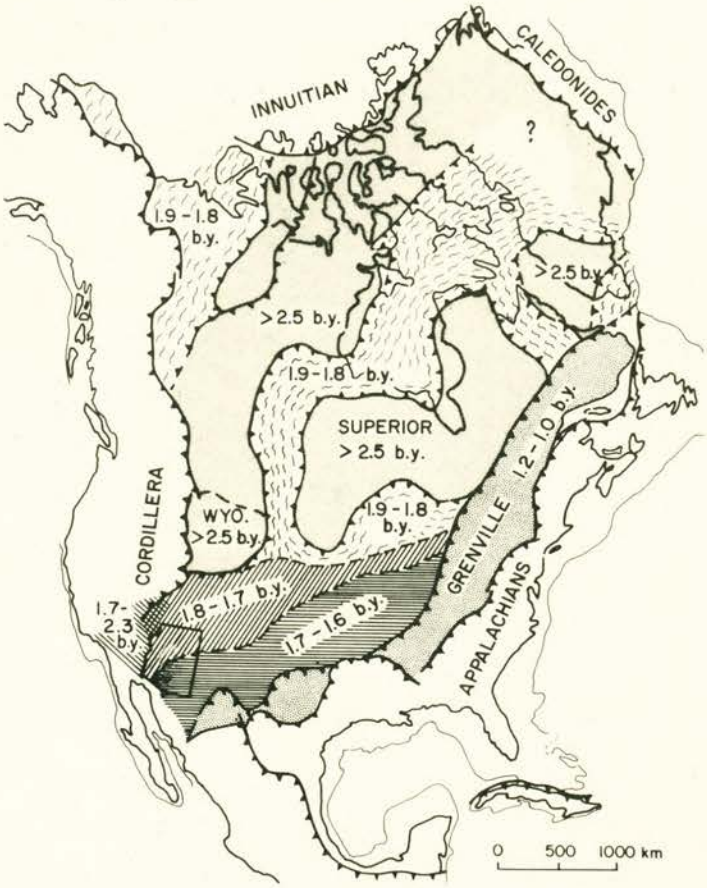


Figure 1 - Precambrian age provinces of North America. The wide belt of Proterozoic crust extending N-S from Wyoming to Sonora, Mexico and SW-NE from California to Labrador was added to North America from 1.8-1.6 b.y. ago.

Beginning about 1.74 billion years ago (b.y.), a series of small lithospheric plates of ocean floor and island arc volcanoes were waiting to collide with the North American protocontinent, just as the area from the present day Indonesian islands to the Philippines is beginning to collide with the northward traveling Australian continent. The remains of the ancient oceanic islands and ocean floor volcanics are preserved in the Canyon as metamorphosed volcanics of the Brahma Schist (we have revived the terminology of Maxon). The volcanics were covered by submarine sediments that came from eroding oceanic islands-- these became the Vishnu Schist after intense metamorphosis. Sharp eyes can see primary structures such as graded bedding within the dark and light bands (coarse grains on the bottom, fine grains on the top) in Vishnu, Boucher, Hakatai, Walthenberg, and a few other canyons.

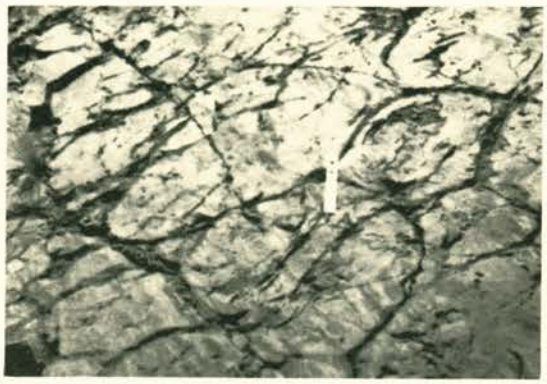


Figure 2 - Photo of relict pillow lavas. Pillows are cross-sections of lava tubes which form under water. You can see pumpkin-sized blobs called "pillow structures" in metamorphosed volcanics, just below Horn Creek rapid, way up Shinimu Creek and in the canyon on the right below Travertine Canyon in the Lower Gorge. These blobs are cross sectional views of chilled rinds of 1.74 b.y. old submarine lava tubes similar to those forming off of Hawaii today. (Photo: Peter Noebels).

The collision of the small plates with the Wyoming Province added real estate to North America as each plate rode up on or dove beneath the one ahead of it. (Think of a line of rafts and kayaks successively colliding and becoming welded to the upstream side of the rock in Bedrock.) Collisions went on from 1.74 to 1.67 b.y.; that's 70 million years, about the amount of time since the dinosaurs went extinct and around 70 times as long as humans have been around.

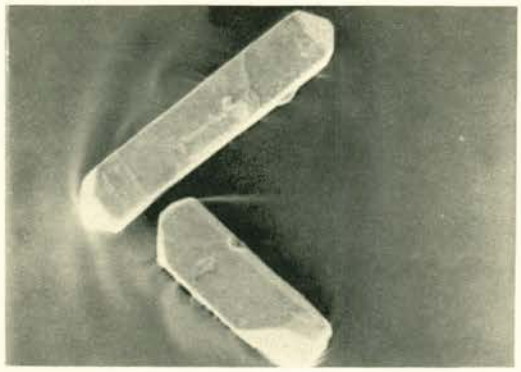
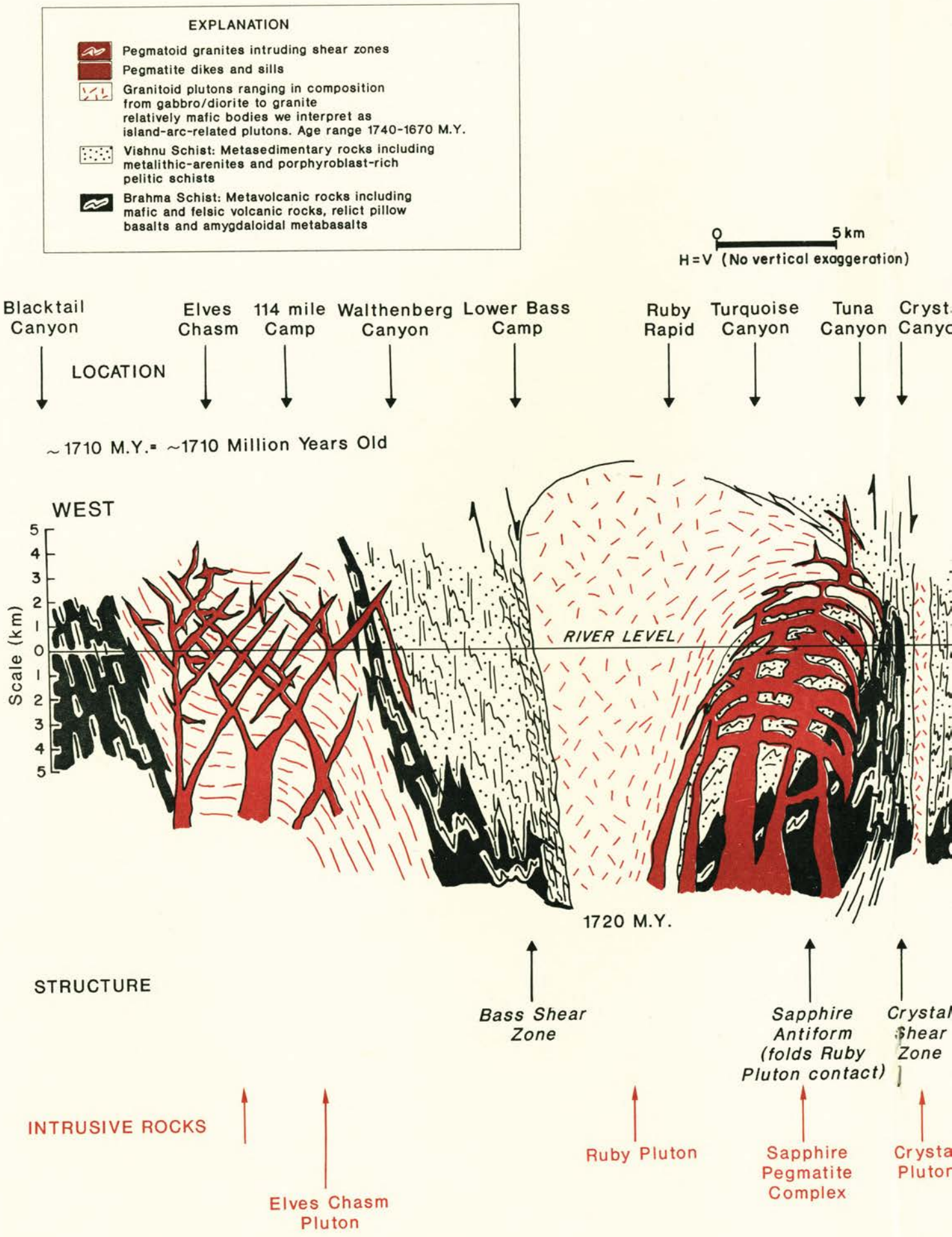


Figure 3 - How do we date rocks anyway? Photomicrograph of zircon crystals (individual crystals are about 1/10 mm). When zircons crystallize in magmas uranium goes into the lattice but lead does not. Over time the uranium in the lattice decays to lead and by measuring this ratio at some later time it is possible to estimate the crystallization age of the zircon in the magma, this is the age of the pluton.

As subducted slabs reach depths of 100-150 km, they begin to melt. Molten blobs have a tendency to rise like air bubbles in honey and when they freeze into place at depths of 20-25 km, they form large plutons like the 1.72 b.y. Ruby pluton, the 1.73 b.y. Diamond Creek pluton, the Trinity pluton (formerly the Trinity Gneiss), and the Elves Canyon pluton (formerly the Elves Chasm Gneiss) that formed the cores of ocean island arcs. These are the oldest plutons yet known in the Canyon.

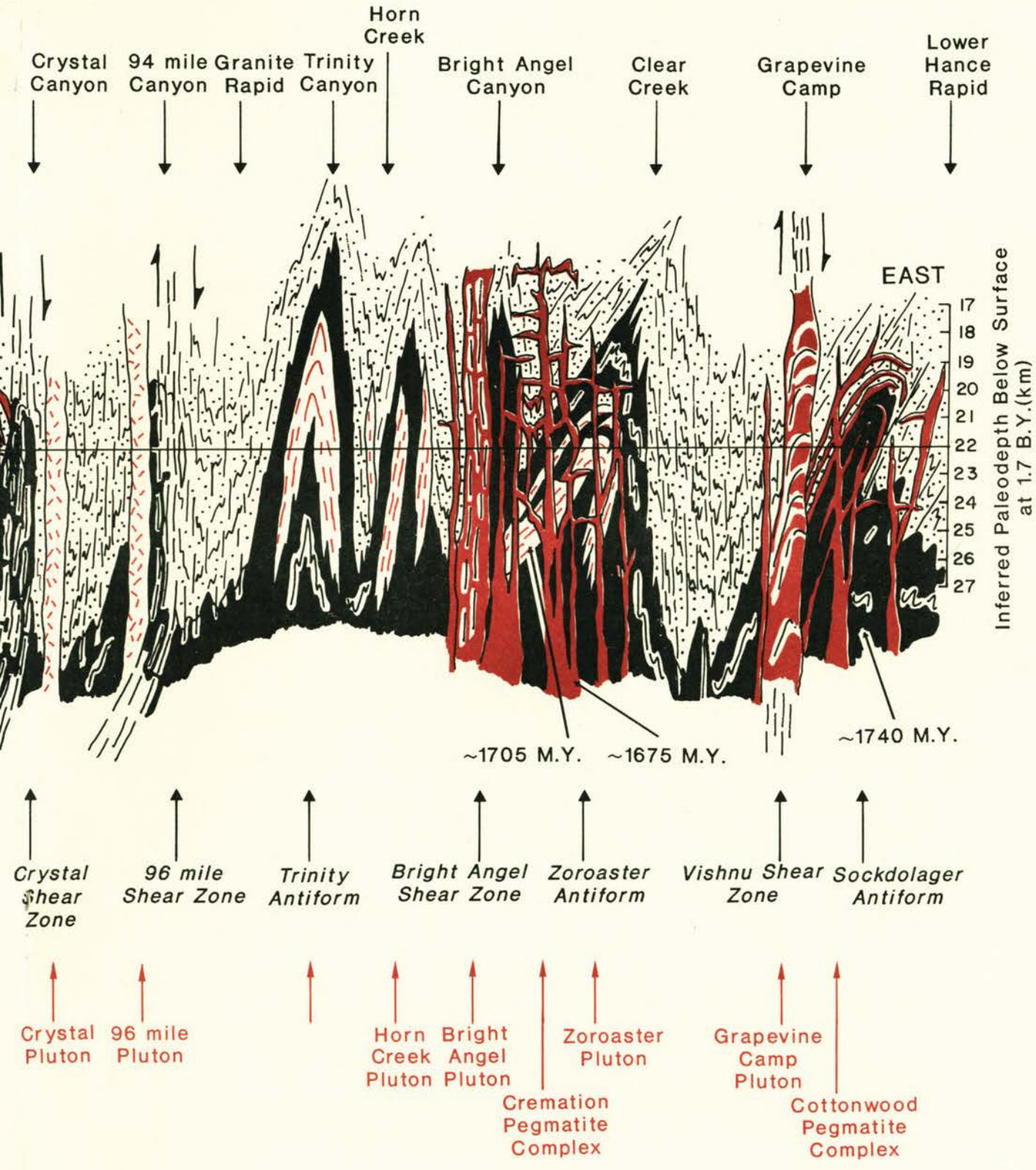

EXPLANATION
Pegmatoid granites intruding shear zones
Pegmatite dikes and sills
Granitoid plutons ranging in composition from gabbro/diorite to granite relatively mafic bodies we interpret as island-arc-related plutons. Age range 1740-1670 M.Y.
Vishnu Schist: Metasedimentary rocks including metalithic-arenites and porphyroblast-rich pelitic schists
Brahma Schist: Metavolcanic rocks including mafic and felsic volcanic rocks, relict pillow basalts and amygdaloidal metabasalts
0 5 km
H=V (No vertical exaggeration)
Blacktail Canyon
Elves Chasm
114 mile Camp
Walthenberg Canyon
Lower Bass Camp
Ruby Rapid
Turquoise Canyon
Tuna Canyon
LOCATION
~1710 M.Y.= ~1710 Million Years Old
WEST
Scale (km)
RIVER LEVEL
1720 M.Y.
STRUCTURE
Bass Shear Zone
Sapphire Antiform (folds Ruby Pluton contact)
INTRUSIVE ROCKS
Elves Chasm Pluton
Ruby Pluton
Sapphire Pegmatite Complex

Geologic Cross Section of Upper Granite Gorge

Along the Colorado River (heavy line = river level)

by
Brad Ilg
and
Karl E. Karlstrom

1992



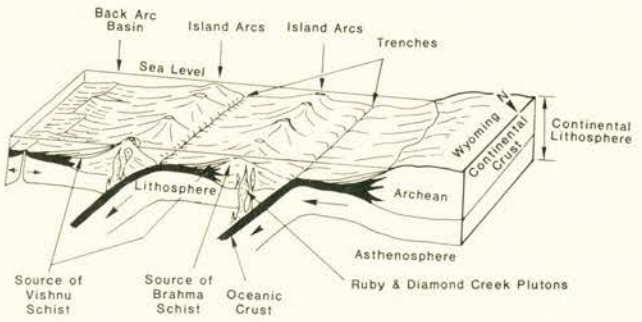


Figure 4 - Hypothetical geometry of island arcs south of the edge of North America at about 1.74 b.y. As Wyoming continues to move toward the island arcs, the thin oceanic crust attached to the Archean continental crust is consumed at trench B. When Wyoming "crashes" into the northern island arc complex, neither the island arc nor crust of the Wyoming province will subduct. Further subduction will continue at trench A until the growing continental crust nears the subduction zone. The southern arc will then be assembled to the growing continental mass during compressional (fold and shear zone forming) deformation. A new subduction zone may then develop with opposite polarity (north dipping) in the back arc basin region.

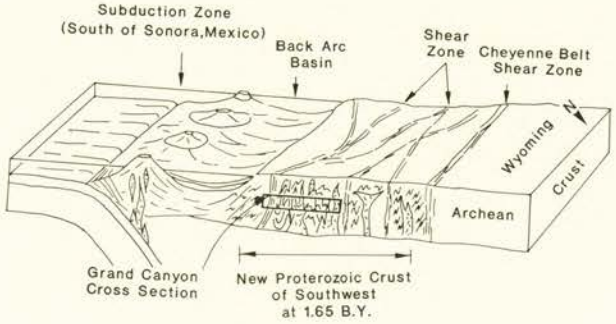


Figure 5 - Hypothetical geometry of the Southwest at 1.65 b.y. Volcanic arcs had assembled and deformation had ceased in the crust of northern Arizona. Subduction and deformation continued in southern Arizona.

Figure 6 - Photo of staurolite crystals and garnet crystals which grew during peak metamorphism. Different assemblages of metamorphic minerals can be used to estimate pressures and temperatures of mineral formation. Mike Williams at the University of Massachusetts. has estimated that Canyon rocks record depths up to 22 km and temperatures up to 650°C. (Photo: Gary Gray).

As plates collided, the sediments and volcanics became welded to their colliding counterparts. As the collision process went on, the welded mass got thicker and rocks originally at the surface were buried to depths where they were heated, squeezed, and permanently altered or metamorphosed-- rock nirvana. Horizontal squeezing due to collisions created an endless multitude of small scale folds (hike up Clear Creek, Monument, or Walthenburg Canyons to see folded and refolded schists), as well as giant folds called antiforms (∩) and synforms (∪). The hinge of the Sockdologer antiform can be seen below Sock. The Zoroaster antiform forms the corridor below Zoroaster. The folding rotated all early bedding planes into near parallelism with the regional vertical foliation that characterizes the entire gorge. In general, during collision, western plates were thrust over eastern plates and major shear zones at Grapevine camp, Bright Angel Creek, 96 mile, Crystal and Bass all show this west-side-up sense of shearing. One or more of these zones may be sutures--the site of collision of two major plates. However, the last squeezing was so intense that we can't tell the really important ones, where whole oceans disappeared before the volcanic arcs jammed against each other, from lesser shear zones with only perhaps kilometers of slip. We're still working on this.

During and especially towards the end of this process, as the new section of continent began to thicken and stabilize, molten pink granites rose opportunistically along cracks, shear zones, fold hinge zones, foliation planes, and any weakness they could find. Some of these melts collected into plutons in the antiforms, like the 1.7 billion year old Zoroaster granite and Pipe Creek granite, others were caught (frozen) while rising and remain as the zillion pink dikes and sills we see. Many of these dikes were filled with the last liquids of the crystallizing magmas and formed a rock called pegmatite. These have ages of about 1.68-1.67 b.y. You float through great criss-crossing clusters of these dikes, called pegmatite swarms, near Cottonwood Canyon, Phantom, through the Jewels, and between 114 mile camp and Elves Chasm.

The heat from the molten rock, combined with the fact that its hot anyway at depth, caused chemical reactions during which new minerals grew in the schists during metamorphism. Garnets can be found throughout the gorge, staurolite crystals can be seen near the mouth of Clear Creek and in 94 mile creek, and large gray knots that once were andalusite (now replaced by sillimanite) are present up Hermit. The chemistry of these minerals tells us that temperatures ranged from 650°C (near Sock) to 500°C (in Vishnu)-- temperatures that you only think you are experiencing as you hunt for shade in July.

The deformation, metamorphism, and magmatism that took place between 1.74 and 1.67 b.y. ago is called an orogeny. Contrary to some ideas, we don't think the orogeny created high mountains like the Himalayas or the Alps; these form when continents collide with other continents. Instead, the collisions caused thickening of thin oceanic plates and the result was like the Indonesian region: tectonically active but not too much above sea level on average. By 1.60 b.y. the continent had grown south to about the Mexico border, and collisions had ended, or at least were no longer creating new rock fabrics in the canyon. We have no record of the next 300 million years, but the region was uplifted (perhaps gradually) and, as is happening in central Canada, a tremendous body of ancient deep rock was exposed at the surface. The 22 km of crust that once overlay the rocks of the Granite Gorges was eroded, reduced to particles, and transported elsewhere-- we don't know where. By about 1.3 b.y. a broad plain of deep metamorphic rocks had been exposed and was ready to receive the Grand Canyon Supergroup-- about 14,000 feet of new sediment-- three times the thickness of the Paleozoic sediments (Tapeats through Kaibab). But that's a different story and a different cross section.

We hope this helps; the schists and granites tell an incredible story about the birth of continents and about the processes that operated deep in the earth during plate collisions. These rocks certainly seem friendlier once you get to know them better.

A Report on Recent Developments at Pearce Ferry, AZ

It is Pearce Ferry Saturday Morning and you, Mr. Boatman, have a problem. You need to be at Lees Ferry by midnight with your motors, which are, at present, in need of a few major repairs. In a huge rush you de-rig the boats and load the trucks, jump in, and roar off into 200 miles of scorching high-noon desert heat, not even stopping for pizza. Surviving that, you arrive in the cool Flagstaff pines many long hours later. Next: you must rebuild your two outboard gearhousings, right down to the shims. This greasy fiasco leads obliquely to heliocoil work of preposterous dimensions. Soon you are cursing loud. You would rather go sit in the truck, to *try* to sleep your way to Lees Ferry. Don't worry. You will. Soon.

But, before all of this, it was Pearce Ferry Friday Night. You were one-half day ahead of schedule. The Plan: return early to Flagstaff and sleep in a bed, between sheets, with your girlfriend whom you have not seen for three weeks. On the morrow you will linger with her still. There will be fresh ground coffee and fine, crisp-baked lemon scones. Yes...

The deluxe tour bus with your 20 passengers has long since departed. The 37' inflated inrigger assembly has been got into the long trailer backed deep into Lake Mead. Now it is being pulled from the lake. Suddenly the truck lurches. And again. Soon it is stuck. You off-load the boat, which does not help. The truck is still stuck. "More weight!", somebody yells in the gathering dusk. The boat goes on again. Nothing. The boat comes back off. By now it is dark, pitch black. And, by now, you are stuck good.

So far there have been only a dozen hurried conferences. Now, thanks to a deliberate huddle, a single vision arises: jack-up the trailer and get rocks under its wheels! Into the pitch black Pearce Ferry Friday Night you stagger, in a vain search for any stone comprising more hard surface area than a solitary pebble. You may wish to try this same exercise yourself sometime. There are no rocks. There is dust and driftwood and a boisterous population of Mojave rattlesnakes and nothing else. After seeming endless hours of wandering empty-handed through the desert darkness you and your comrades settle on a dynamic alternative. The driftwood! There's loads of it, huge chunks everywhere!! Massive faggots of this snake-infested material are gathered, pushed, pulled and shoved downslope to the lake where they....float away(?). Later, much later, after beer and stale pretzels and more, if that even seems possible, even more lousy rasta music, this which bubbles up from inside the truck cab where you sit partially submerged, morning comes. It is raining. To Hell with The Plan.

Three boats are coming off-river; you are, luckily, the first. Two more trucks and trailers will soon arrive. The second truck is on time. The second and third boats motor into the landing, through a maze of driftwood, to disgorge their grizzled horde of 7-Day passengers. Soon Number Two Truck is stuck. Things take a decided turn for the worse. There is no phone for 10 miles; passing messages to Flagstaff concerning events at Pearce Ferry becomes a fine art unto itself. Number Three Truck is late but, finally.....wait....what is this?! There is genius at work: with a makeshift (we are talking nickels and dimes here, folks) block and tackle and Number Three Truck never closer to Lake Mead than Redlands, California, Number Two Truck comes free, and, shortly thereafter, Number One. After that, by the grace of the Almighty, you are, two hours later, on the road. Yeah!

OOOPPS!! The truck has lost its brakes—the brake drums are filled with water. The driver gambles, he keeps going. There is nothing else to do! There is a schedule to meet. As an aside to it all you offer wagers on the amount of lubricant remaining in the truck's differential, and are surprised to find takers.

Now, about the trailer. When it slumped, trying to emerge from the lake many light-years ago, its rear axle got bent. This translates into three flat tires before you arrive in Flagstaff, the shop, at 6PM, a few hours behind schedule, just in time to rebuild your two outboard engines while headed for Lees.

Shane Murphy

Sacred Datura

Poison Lily, Thornapple, Moon Flower, Devilweed, Belladonna, Jimson Weed, (Datura stramonium)

...is a nightshade, like a pepper or a tomato, but different. Datura is from the potato family, SOLANACEAE. We see them all over the river corridor, along roadsides, and in dry washes, corollas shrivelling in the sun. These long, lustrously white, trumpet-like flowers burst out from thick, viney stems and are garnished with large rubbery leaves. Datura likes to live in dry, disturbed areas. The fruit, known as thornapples, are full of seeds that break apart by late July or early August. These seeds, as well as every other part of the datura, are quite toxic.

Shakespeare alluded to datura, so did Homer. Some say these seeds originally came from the Middle East and were cultured in English greenhouses during the sixteenth century. Datura was brought to North America for medicinal use by colonists who settled in Jamestown. In 1676, these colonists used the weed to poison British soldiers during Bacon's rebellion. Hence the name, Jamestown weed, or jimson weed.

Actually, datura is an indigenous plant and has been in this area for hundreds of years. During the Winona Village excavation project in 1940, McGregor, the chief archaeologist, found a "datura seed pod" (thornapple) ceramic bowl in a trash midden. This midden dates to A.D.1075-1120.

The datura is a nocturnal plant and is tended by several different types of insects: beetles, bees and moths. Beetles are attracted to the white fluorescence of the flowers as well as the large landing pads they offer. Larry Stevens says he has witnessed solitary bees crawl into a datura corolla in early morning and get held inside when it closed from the sun. The Lined Sphinx moth (Hyles liniata) packs a very long proboscis and has been seen appreciating datura nectar as well. However, their snouts are so well adapted to long corollas, they may miss the anthers altogether and never collect any pollen at all. On the east coast of North America and throughout Central America, where datura is more like a tree and grows to be 5-9 feet tall, it is pollinated by bats. On these trees the trumpet-like flowers hang down making nectar drinking easier for bats. The height of the plant is important; bats need to be able to drop into flight and can only land on high roosts.

The Indians know the dangers of datura. Some say it is not to be touched because it is one of the first plants made by the Gods. Some use its hallucinogenic properties as a 'right of passage' for their young men. The Seri call it, "he he camostim" - 'Plant that causes grimacing' and "he he carocot" - 'Plant that makes one crazy.' The Pimas used datura as a poultice over boils and hemorrhoids (please don't try this at home). It was rumored to be used by witches, along with henbane and mandrake. They would "...make a salve, apply it to the upper thighs and genitals to induce the sensation of rising into the air or flying on a broom." Ah, Hahahahaha.

Along the Mediterranean resides a relative of the datura. This herb has reddish-purply flowers and slimy black fruit. Italian women would use it as a cosmetic to redden their lips and cheeks, and even rub an extract of it into their eyes to dilate their pupils. Hence, the name 'belladonna' or 'beautiful woman' in Italian (datura is often referred to by this name as well). During the nineteenth century, datura was marketed as "Spanish Herbal Cigarettes." Many cultures have taken advantage of datura's antihistamine and bronchio-dilating properties; used as a smoke, it can relieve the symptoms of asthma, but it can kill you too.

Datura is highly unpredictable. It contains dangerous alkaloids in every part of the plant. Younger plants contain mostly SCOPOLAMINE, as do deadly nightshade and black henbane. The older plants contain HYOSCYAMINE. This alkaloid, a nerve toxin, is guaranteed to make anyone who ingests it feel miserable. .. even the name is painful to pronounce. Hyoscyamine makes up almost 60% of the flowers, the fruit, the seeds, the nectar and smaller percentages in the shoots, the roots and the leaves. Don't even touch this plant. Depending on what is touched and whether you rub your eye or not afterward, you could affect your vision for 24 to 48 hours. This state of temporary blindness and pupil dilation is called MYDRIASIS. An extract of this same alkaloid in belladonna is what ophthalmologists used to call 'The Drop' and put in your eyes during examinations... not any more.

So, WHAT ARE THE SYMPTOMS?

In Medicalese, datura ingestion is called, ANTICHOLINERGIC TOXICITY:

- Dry mucus membranes - nose and mouth

- Thirst
- Difficulty swallowing and speaking
- Dry, hot flushed skin
- Mydriasis and Photophobia - difficulty with light
- Hypertension - elevation of blood pressure
- Constipation
- Hyperpyrexia - increased body heat
- Scarlatiniform rash
- Tachycardia, taphyphea - excessively rapid heartbeat
- Urinary retention
- Decreased muscle coordination
- Mental status changes, such as agitation, confusion and hallucination
- Respiratory depression, paralysis and death

An easy mnemonic is, "hot as a hare, blind as a bat, dry as a bone, red as a beet, and mad as a hatter," originally used to describe ATROPINE poisoning (another alkaloid and close relative hyoscyamine), from ALICE IN WONDERLAND.

WHAT IS THE TREATMENT?

For us, while on the river, there is not a whole lot we can do. Prepare to evacuate.

- Get the plants out of their system. Syrup of Ipecac, 30mL for adults, 15mL for children under twelve is suggested, (only if ingested within the last several hours). Don't attempt it if they're already hallucinating.
- Keep patient safe in non-threatening, nonstimulating environment
- Keep lights down; make it as dark as possible
- Physical restraints may be required
- Don't give sedatives; they will exacerbate the problem
- Get them to a medical facility quickly

According to the American Family Physician, (Vol. 46, #2) which has given us all this up-to-date medical information;

"Patients usually recover from the effects of jimson weed toxicity within 48 hours (if properly treated), with few side effects. Fatalities are rare. Amnesia for most events after ingestion of jimson weed are common. Long term sequelae are rare."

Cynta de Narvaez,

with special thanks to
Dr. Michael Collier

This poet's father was born and raised a boatman on the San Juan River and Glen Canyon. He grew older, Glen Canyon was dammed, and he moved on to teaching, then bartending. Some years after this poem was written, he returned to boating.

This man is too old to be tending bar.
If romance ever flowed between damp walls,
it was where the canyon pressed narrow,
rough and green,
and not in smoke-dank cellars,
crowds of hands lapping at cracked formica,
washing up bills and coins
and trash where driftwood might be
littering cut shelves of sandbars.

Beer bottlecaps
should be rusted, politics simple:
curse the infidels who would dam a river
that once carved boatmen's backs like red sandstone.

With an oar-creased hand
the man sweeps pink plastic swords and glittering
bottlecaps into a sack he will tote to an alley bin.
He is no longer sure it is best
to "pack out what you pack in." Flash floods
will bring it all down
to that dam
in the end.

The loud and lonely flood and ebb,
high heel and hairdo monotony,
dull whiskey tragedies and punch lines
are brittle,
are frayed like sagebrush.

There still could be the lizard and heron leanness
on the bottoms, and cheap bread,
and cheap beer, and patched boats,
and the lonesome of fossil shale and slickrock.

The bartender gives the busboy small change
and a one-sided smile.
Tequila tonight is as pale as a campfire, and gin
smells of juniper. There is a little time before the
river is a sea again.

Laurie Ross

On Drinking Too Much... Water: Dehydration, Water Toxicity and Hyponatremia

Probably the most common medical problem encountered by boatmen during the hot summer months is dehydration. Many of us experience some level of dehydration ourselves, but more often than not it's our non-acclimatized passengers that suffer from it in varying degres. Especially susceptible are those passengers hiking out of or into river trips at Phantom. An experience I had last summer with a passenger hiking in encouraged me to share this with as many people as possible. Changeovers are a reality for everyone these days and assessing and dealing with arriving hikers might become a crucial decision for a trip leader. What might appear to be basic symptoms of dehydration might also be signs of hyponatremia, since these conditions exhibit similarities. Herein lies the Catch-22.

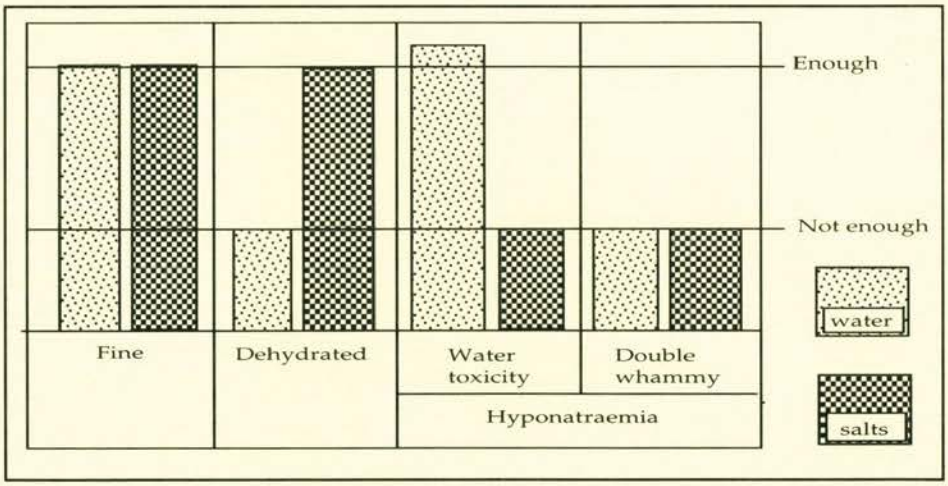
"Hyponatremia is a medical condition characterized by decreased concentration of sodium in the blood, which may occur in participants in endurance and ultra-endurance athletic events. Slower competitors and non-acclimatized individuals appear to be at greater risk of becoming hyponatremic, especially if they experience salt depletion as a result of sweating or water intoxication. Clinical signs and symptoms of hyponatremia, which can range from muscle cramps and mental confusion to convulsions and coma, may not manifest themselves until well after the end of the event. Death may occur if hyponatremia is not properly diagnosed and treated. Medical personnel treating this condition should be cautious not to confuse water intoxication with dehydration, which produce similar symptoms."[1]

The long story short: Remember those electrolytes!

Sounds frightening, doesn't it? It is. What's water intoxication? How do we know someone's not hyponatremic, just dehydrated? Where does this leave us at the bottom of the ditch, in terms of assessments and decisions? Good questions. Great questions.

To begin with, water intoxication is a condition achieved by drinking too much water and not having enough salts in your system. Non-acclimatized individuals, (read: out of shape), may experience large sodium chloride losses through sweating as the body doesn't know how to regulate salt losses. (Conversely, sodium losses in heat-acclimatized individuals is minor. The body "knows" how to sweat.) Other unknowns may further complicate matters. People with high blood pressure are often on medications, many of which are diuretics. Add to that a low sodium diet and you've got a real double-whammy.

Back to the Catch-22: People exhibiting classic signs of dehydration may be well beyond that condition and into the realm of depleted sodium levels in their blood, i.e. hyponatremia. Again, this condition is achieved through prolonged exercise, water intoxication, or both. Treating someone for dehydration with straight water might exacerbate their depleted sodium levels. The kicker is that the only way to diagnose a hyponatremic situation is to take a blood test. Even the paramedics on the helicopter don't do that. That leaves you in the ditch with this bottom line: if treating for dehydration, be mindful that water intoxication may be a potential complication. *Any fluids administered to a stricken hiker should have some electrolytes (sodium and potassium salts).* Many boatmen encourage nauseated hikers to sip water if Gatorade or ERG is unpalatable. This may make things worse. They need those salts! Dissolved salts (such as ERG) are far easier on the system than salt tabs. (Our passenger was flown directly to Flagstaff and, after a blood chemistry test, placed on an



incremental 3-day sodium I.V. due to her massively depleted levels. She remained on I.V.s for 7 days before being released.)

I truly hope none of you out there have to deal with a situation that severe, but be aware that the potential is always there. Prevention of this whole scenario goes back to acclimatization, conditioning. But we don't know of many places that simulate the conditions of the Inner Gorge in July. That wild-card hiker might be on your next trip.

Dirk Pratley

[1]*The Incidence of Hyponatremia in Prolonged Exercise Activity* Brian Toy, Journal of Athletic Training, vol. 27 #2, 1992 (For a copy of this article, write or stop by the office. Thanks to Sue Cherry for sending me this informative piece).

Havaspew II, the sequel

"The reports of my death are greatly exag-s gerated," says Havasu to those who go for a hike there these days.

Yes, another major flood raged through in July, wedging logs into the harbor narrows and rearranging much of the stream bed. And yes, Havaspew III followed soon after, smaller in volume but carrying in enough gravel to pave Iowa. And yes, a vast majority of the pools between Beaver Falls and the river, including most of the harbor, were filled to the brim with said gravel.

The Park expressed a concern that Havasu's desirability might be so diminished that impact might increase in nearby canyons such as Matkat, Kanab and National. We would hope any such rescheduling of trips would soon be spread throughout the entire trip rather than just the immediate vicinity.

But the truth is, Havasu, different, dynamic and changeable as it is, is still a spectacular side canyon. Check it out with an open mind. Don't expect the Havasus of yore. Let your passengers be the judge.

Precycling...A Step Beyond

For many of us, our recycling programs have been really successful; your energy, enthusiasm, and dedication should be commended! Hopefully we can continue to develop new programs as well as add to those already existing.

Thank you's are also in order for R & W Recycling (AKA New World Recycling). They have helped the process along for many of us in Flagstaff by making sure our collected items make it to the remanufacturing market. They are even finding markets for difficult items like glass, cardboard and plastic. Hopefully the recycling market will continue to grow, with things like minimum recycled content legislation, and the development of closer remanufacturing facilities.

In the meantime, another way to facilitate recycling is to PRECYCLE. To precycle is to make purchasing choices that support responsible products and packaging, make recycling easier; and to reduce the amount of garbage you throw away. One way to precycle is to **buy products made from recycled materials**, such as paper office supplies, toilet paper, and many packaging materials. Here are some other ways to make responsible purchasing decisions:

Avoid Throwaway Products. When possible, avoid buying products manufactured purposely for automatic disposal such as plastic razors, paper plates, styrofoam cups, plastic utensils, and non-rechargeable batteries.

Select Products Carefully. Consider the environmental impact of each purchase you make. Is it safe for the environment? Can it be reused or recycled? Is there a better alternative product or packaging of it? Do you really need it?

Overcome Overpackaging. If the packaging isn't necessary to protect the product, buy the less packaged product. Buy in bulk.

Reuse Things. Donate unused trip food to the Mission. Reuse plastic containers.

Express Yourself. Patronize businesses that offer recyclable products, less packaging, and the choice to buy in bulk. Your purchases are like votes - they send messages to manufacturers that encourage environmentally sound products.

Kris Campitelli

In Memoriam, Polyethylene

In respect to river running now a days, we as a collective group cumulatively finish the season with a pocketful of memories, tips, experence and tons of human feces. It isn't anything new. Humans and their predecessors have been defecating and excreting since time immemorial, whence they swam up and onto boats from the primordial soup of life. Sometimes I find it very perplexing, wondering just how much do we annually generate and transport out along the river. Admittedly, many factors come into play which influence an accurate estimation of fecal weight. These factors are anywhere from substantial will power to pride, constipation to propulsive acts, steak dinners to mex-out, anorexia to sport eating gluttony. In the process of pounding on this keyboard, I have selected arbitrarily an average of 1/2 lb. as a weight per golden nugget. The 1991 calendar year had 213,000 total user days. And as an estimate of weight it comes out to total of 53 tons per annum. Now that's some crap.

The disposal process has been memorable, if not priceless, the telling of stories, countless stories, from dead-dog holes, sewage lagoons, to the Ponce de Leon search for the most God-inspiring landfill. And there have been those other sites. Ones which have consisted of the most deplorable conditions imaginable. It makes you really wonder what is the true definition of sanitation (mentality of out-of-sight out-of-mind). We are now at a juncture in time, where we must actively respond to a new method, becoming acquainted first hand with unknown fecal disposal problems. Oh boy, more stories! As a historical perspective I thought I might reacquaint those of us either whose memories have intentionally failed, or for some, for what ever reasons, have been deprived of our scatological heritage. Fecal disposal as we know it today consists of a wealth of stories and myths which would furnish countless volumes and, unfortunately, is beyond the intent of this story. Therefore, for space, I will only summarize.

First generation, or Archaic period, utilized an approach that is best characterized by the motto "like a bear in the woods." Even today, for what ever reasons, this mode appears to be preferred by some individuals; often to our own dismay upon discovery. Though a fairly universal technique, on the Colorado River numerous problems became apparent. There were two factors responsible for this; 1) the annual sanitation cycle had been disrupted with the presence of Glen Canyon Dam (1963), removing the annual cleansing effect of torrential floods; and 2) the exponential increase in use by river-runners. It didn't take a rocket scientist too long to figure this one out. Mind you this is a generalized portrayal of disposal events, therefore, don't take offense if through omission certain progressive individuals or companies are not given credit for initiating alternative approaches.

By the early '70s, with the encroachment of regulations we entered into a new era. Heavily used beaches became engulfed with the cleansing fires containing toilet paper and fecal desiccant, welcoming in the "modern" approach. This time period, though short-lived, was referred to as liquid goo (i.e. "Jensen blue" named by trademark and not persona). The system was simple to use, though the method of disposal became increasingly difficult with time. The practice was to pour effluent into an excavated hole of some depth in porous sand and above the high water line. The problems encountered were many from rocks, mass wasting, splashes and mouthwashes, to baptisms. Substantial footing was required. The effects were quite noticeable and of some permanence. It was a job for youth, and quick of foot (holes functioned similar to an ant-lion's crater). Available sites were quickly lost either to beach erosion or prior occupation. Multiple site locations were common and the tell-tale signs were ever apparent with the tinge of blue sand. The Grand Canyon was a huge kitty litter box, bulging from use and neglect. Sometimes human kind just needs to wallow around ankle deep before it resolves the proper course of action.

Since the late seventies, effluent has been transported out of the canyon by way of plastic bag, the greatest invention since sliced bread. During its infancy we learned a lot about chemical reactions, some of which rivaled military arms development. Incredible concoctions were formulated by combining formalin with either chlorine or semi-warm charcoal. These were literally breathtaking. Engineering achievements were numerous from testing expansive qualities of methane production to the development of liquid propulsives that created a barrage of lethal slurry. Others have been, in part, due to cavalier mishaps. The broadcasting of liquified dung onto and within the personal effects and boat interstices. Ah, olfaction extraordinaire. Leaky bags, undesirable proportions of urine, and lime burn treatments represent a few of our innumerable accomplishments along the learning curve. Over time with subtle refinements this method has

been test proven and developed into a workable and efficient system.

And here we stand today with great hesitancy, with change imminent upon us. A new era of fecal disposal, one which I consider fourth generation, is upon us. To date, there are numerous unsung heroes, charting these new waters and quickly sharing their experience with this new method (watch out for the tapered bung). However, this new system is almost a step back into the past. Are we reinventing the wheel, replacing it with a less desirable method? It is too reminiscent of the second generation, blue goo. We should have suspected the good-times wouldn't last. And maybe it is just as well.

Presently, the focus is directed specifically at the use of plastic bags. However, if the problem is really plastic, are we not approaching this from a back-assward direction? Logic would appear to suggest that this is the case. Should we attempt to curtail use patterns? Then again, what would America do without its packaging effect? Are feces really the problem? No!!! It is the floating fecal-bergs in an undegradable form that impedes the processing for an archaic system in its sanitary disposal of human waste. We are a disposable society with a concept of indispensable resources at hand. This unfortunately prevents the development of recyclable attitudes. The disposal of energy confined in the form of inorganic (glass, aluminum) and organic material is an incredible waste. Also, the loss of organics rich in nutrients which are often substituted by other less desirable synthetically derived compounds (artificial fertilizer) further compound the problem. No wonder it is referred to as waste disposal. In addition, we are influenced by a cultural stigma associated with feces. Word association quickly brings to mind paranoid thoughts of hepatitis, nematodes, tapeworms and a slow, agonizing death. Fortunately, these fears and loathing are unfounded.

In this world we (boatman) like to think of ourselves as well informed within an ecological context; however, by our example we are far from that point with our use of plastics, glues, synthetic rubber, epoxy, paint, et cetera. It becomes ever more critical that we think and develop better disposal and recycling practices. At present, from a sanitation point of view, we have both the knowledge and technology to disrupt the life cycles of all these pathogens. And yet, we continue to separate out human waste, not for use, but from other waste material that has equal if not potentially greater toxicity. Let alone the negative effects from the over use of chlorination processes. These landfills are creating both air and water quality problems on both a regional and national level.

So, it is inevitable that a new toilet method is sure to replace this transitional mode of today. In this interim period, I hope we are all encouraged to find other viable alternatives, whether in the form of dehydrators, cloth diapers, biodegradable bags, floating commodes, imported dung-rolling scarab beetles, or scatophagovores. And let us hope that in what ever form it arrives, it is something more ecologically efficient. Otherwise once again, euphemistically, we will be left holding the bag; all because of human waste.

Mike Yard

Books Present & Future

Dick Westwood, whose fascinating book *"Riverman"* (about his uncle Elwyn Blake's USGS river trips on the San Juan, Green and Colorado) is new on the bookstands, showed up at our fall meeting. He's now writing a book about Georgie and, if you have any stories, journals, movies or remembrances of her, he wants to talk to you now. Get in touch with Dick at: 5302 N. 79th Pl.
Scottsdale, AZ 85250
(602) 994-8244

Christa Sadler is putting together a book of boatman's tales, as told by the boatmen. Have you written any? Would you like to? They should not overly toot your own horn, have minimal jargon, be clear, well written and entertaining (which doesn't necessarily mean funny). Deadline is February 1. Contact her after Dec. 30th at: P. O. Box 22130
Flagstaff, AZ 86002
(602) 774-8436

Nancy & Terry Brian wanted to announce, a) the birth of their son Hayden, and b) Nancy's new book *"Rim to River"*, which gives the story behind vast numbers of Grand Canyon place names. Ever wonder who Stephan Aisle was named after? She invites any additional name origin data for the second edition. Write (or buy a book - $14.95 & $1.50 postage): P.O. Box 1391
Flagstaff, AZ 86002

*Ivo*king the Canyon Spirit

Noted Canyon geologist Ivo Lucchitta ponders a question many of us have a difficult time pinpointing: why do we keep coming back to Grand Canyon? We give you an excerpt from a letter he recently sent...

"...wherein lies the secret?

Many evenings have been spent around Grand Canyon campfires debating this question, yet no satisfactory answer has been reached. We all agree that the ponderous majesty of the great rock layers, heavy with ancient secrets and contrasting with the sparkling female quickness of river and stream water, is part of the magic, as is the way of life along the river's shores and in the recesses of the canyon. Beyond that we agree little, because response to the Canyon is so individual and varied.

For me, the answer lies in detail that encompasses the whole, the poet's way of dealing with the world... for me the Canyon is...

The fragrance of verbena on sandy evenings

The cascade of the canyon wren's liquid song

The unexpected shady and green silence of side canyons, and the sudden intrusion of the river's sound at the mouth

The smell and ever-present sound of the great river, whether the thundering roar of a rapid or the lapping tinkle of the quiet stretches

The purple explosion of redbud trees in the spring

Orion and the Pleiades in the slit of the sky, and the new panoply of stars when awakening at night

The companionship and friendship of boatmen, cooks and other river people, a great privilege and honor

The Harvest moon rising in the slit of Comanche Point, while on the beach below an impromptu rip-roaring rendezvous of river people is in full swing, the river people gathered on that particular beach by the attraction of some unexplained pheromone

The cool and perfumed first light, when the features of the Canyon slowly emerge from the shadows of the night and birds issue the first tentative morning song.

But it is the words of Kazantzakis that perhaps best trigger the complex of feelings that cumulatively represent the Grand Canyon for me. These are his exact words:

"The returning swallows, like shuttles of a loom, wove spring into the air"

Here lies the clue to the matter. One's feelings about the Grand Canyon are precisely that - feelings, matters of the heart and spirit, not the intellect..."

Matkatamiba

Someone's playing a fiddle up Matkat.
And I dance on my own on a plaza of stone
As I cling to the hand of a partner unknown,
Spinning and reeling, free but alone,
Up on Matkat.

Someone plays a guitar up at Matkat,
And I'm touched to the bone by the beautiful tone
Of the lyrics that burst from my throat to the stone,
Thinning the feeling of being alone
Up on Matkat.

I find myself saying some words to a Lord
Whom I sense by my side in that place.
And He plucks me and tunes me, and plays me the chord
Whose arpeggio resounds through the whole Human Race!

I want to go back up to Matkat,
And dance there, and sing to the vibrating ring
Of whatever the instruments are that they bring,
Beginning the healing. You can't be alone
Up on Matkat.

John Kron © *91*

Wuddyathink?

Last issue we asked what y'all thought about the Bat Towers down around mile 265: if the ones on the Park side should be preserved and kept up as historical monuments, or removed before they become "historically significant," i.e. are they monuments or trash?

The topic was discussed at the Fall Meeting and the general consensus was:

since the main and most majestic towers are on the Hualapai side and will remain regardless of what the Park does and:

since funding is always scarce and there are many other pressing needs within the Park, (the historic boat collection, for instance):

that posterity could afford to forego the Bat paraphanelia on the right bank.

In a dissenting opinion historian Roy Webb writes:

"Of course they are historical and should be kept intact, as much as anything left by Bass or Hance or John D.Lee. Just because someone can remember them doesn't mean they aren't history. Think what a loss it was when the NPS tore down all the buildings at Lees Farry and up in Dinosaur. I actually think the bat towers are a fascinating bit of history and stand as a monument to that same spirit (greed?) that drove Hance and Bass into the Canyon."

For next issue we'd like 25 word opinions on:

Air traffic: inalienable rights
or indefensable wrongs?

Send your opinion to GCRG today.

Seeking Hyde

When Emery Kolb found Glen and Bessie Hyde's sweep scow in the lower Granite Gorge, Bessie's camera was aboard. The film therein was developed and became part of the Kolb collection.

What was the last picture taken before the Hyde's mysterious disappearance? Might it give us a clue to what became of the Hydes? By trying to decipher Kolb's cryptic numbering system on the back of the photos, it seems that

the lower picture should be the last one. Dock Marston, however, insisted for reasons we'll never know, that the upper picture was Bessie's last shot.

The answer is up to you: figure out where one or both of these is, and send us a matching photo. When we get both, we'll print them in a future issue. Happy hunting.

GTS '93

By popular demand we're putting up the Big Top at Marble Canyon again for a long week-end of lectures and tall tales around April 2-5.

By more popular demand we're bringing back the River GTS, an 8 (more or less) day river trip launching around April 6. Here, ever so roughly, is the schedule.... Crayon it in on your calendar.

*March 26-30	First Aid, Flagstaff (GCRG)
*April 2	Highway clean-up & GCRG meeting/party, Marble Can.
*April 3-5	GTS, Marble Canyon
*April 6-14	GTS River trip

First Aid

The great quandary of future first aid requirements appears to be resolved. A new American Red Cross course called *EMERGENCY RESPONSE* is due to be on line next spring. (The course name's unfortunate resemblance to ARC's *Responding to Emergencies* and NASAR's *First Responder* will likely confuse us for years to come; it is most important to be very accurate when speaking about these different courses.) This will be the new minimum requirement for a guide license. *Wilderness First Responder*, a more comprehensive course, will also be acceptable.

Emergency Response will be a 43-hour course, including CPR, roughly equivalent to the old Advanced First Aid, and will be offered on an affordable, nationally available basis. Those needing to update will NOT be able to recertify with a refresher course- you'll have to take the whole new course. *Emergency Response* will be valid for 3 years, at which time a refresher course should become available.

IF *Emergency Response* is not available in time for the spring classes, Mark Law said the *Responding to Emergencies* course that was offered last year can be offered again with the proviso that it will expire in 2 years.

Tentative Spring First Aid Schedule

Time	*Location*	*Course*	*Contact*
Mid March	Salt Lake	E.R. (or W.F.R.)	Dave Mackay
Late March	Flagstaff	E.R. (or R.t.E)	GCRG
March or April	South Rim?	W.F.R.	Gnd. Cyn. N. Pk.
Late April	Hatchland	E.R. (or R.t.E.)	Patty Elwanger
Early May	Green River	E.R. (or W.F.R.)	Dave Mackay

These *are* all tentative, so it might be best to wait a month or two before tormenting the folks listed above for details.

Nuts and Bolts: How we're doing

The Office

The physical headquarters of GCRG currently reside in a room of Brad Dimock's house in Flagstaff. The phone, the fax, the computers, the files and other accumulated debris are all to be found here.

Orders, membership and communications

The office is in operation whenever someone is in town to operate it. This means that your calls, letters and orders may be answered right away or may have to wait a month or more. Be patient and understanding- we are all volunteers and we're doing the best we can. It's a tremendous amount of work and we are always looking for good help.

Meetings

Board meetings are held here on the first and third Tuesdays of the month at 6:30 PM, and all interested parties are encouraged to attend. (Give us a call first to make sure that particular meeting has not been rescheduled.)

The News

The sophistication and quality of our quarterly newsletter continues to rise, due to three things: 1) High level Macintosh publishing technology (Thank you, Tides Foundation!) and a good print shop; 2) a hell of a lot of work; and most importantly, 3) Excellent submissions from you all. Please keep sending things and let us know when you can help.

Submissions

Don't be discouraged or offended if everything you send doesn't get printed. That's the way publishing is. Keep sending stories, poems, ANYTHING! We're especially looking for line drawings and other artwork.

For those of you who do computers, it helps us tremendously if you can send us your submission on a disk. We can transfer IBM *or* Mac disks (5 1/4" or 3 1/2") directly to our publishing program.

Preferred programs to submit in:

IBM:	Word (easiest)
	Word Perfect(easy)
	ASCII (will work)
Mac:	Word 5 (excellent)
	Pagemaker 4.2 (excellent)
	Macwrite

We can translate many other programs too, but if yours is obscure, send along a copy of the program. One more thing: don't justify the text columns; it confuses the translator.

GCRG Board and Officers

President	Brad Dimock
Vice president	Teresa Yates
Secretary/Treasurer	Jeri Ledbetter
Board of Directors	Dave Edwards
	Fritz
	Shane Murphy
	Dirk Pratley
	John Toner
	Tim Whitney

The News by: Brad, Jeri, Fritz, Shane, Dirk, Dan, Moody, Whitney and more...

Our Foster Child

Have you heard? GCRG now owns a piece of Highway 89. Or at least we've agreed to take care of it. We've officially adopted the road from Marble Canyon to Vermillion Cliffs. Signs stating the fact are now up for all to see. Our end of the deal is to clean it up two or three times a year and now is your opportunity to get involved. We're having a road party on Sunday, December 6, 10 am to noon. We'll provide the garbage bags. Come on up for some big fun. Call Tom Moody, (774-1178) if you need a ride from Flag.

Contributors

All contributions to Grand Canyon River Guides, large or small, are greatly appreciated. With nearly 800 members, it would be impossible to list every donation, but the GCRG Board of Directors would like to express our special appreciation to the following, (sincere apologies if we missed you. A * indicates a guide member; all others are general members.):

Donations of $1000 or more

Margaret Endres, a Tour West passenger during the summer of 1991, who joked about spending her children's inheritance with the donation. "So I'll allow them to inherit it via the efforts of your dedicated Guides to defend the integrity of the Colorado River and preserve the Grand Canyon and its indescribable environs, for their future enjoyment and hopefully that of their children."

The Tides Foundation, Grand Canyon Fund for River Conservation

Donations of $500 or more

Geoff Phillips of Tic-La-Dex Inc., California, an OARS passenger

In Memory of Michael Jacobs

Donations of $100 or more

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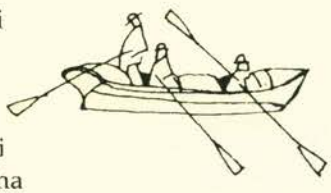

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THE GRAND CANYON

I speak now of that Grand Canyon
Which lies within each of us.
There are pre-Cambrian rocks at the center, the core,
And from yesterday's fall;
Marble and granite grown hard from the pressure
and heat
Of heartbreak and passion;
Crumbling sandstone, layer and layer of sediment.
Sentiment piled on over a lifetime's experience.

The sun bursts on us each morning
Then dies and we are in darkness,
But moon shadows tease our walls.
We listen to the pulsating rhythm of time's river
Lapping at our shores.
The sandy places slide, diffuse, move closer to the sea.

A billion years of erosion is magnified,
demagnified
Into sixty or seventy years as we count time.
Perhaps in a million years your shinbone
Will be a fossil in another Grand Canyon
Cold in a bed of rock next to mine.

Amil Quayle

dedicated to the memory of Georgie,
as we knew her way back when

Georgie Pictures

We'd like to tell you a little bit about that captivating color picture of Georgie we were lucky enough to be able to send to you all in our last issue. Georgie's friend and boatman Teresa Yates took it at Poncho's Kitchen on the back of the Big Boat. It was taken at 1/30 second, hand held.

The photo won first prize at Jane Foster's photo contest at Marble Canyon last spring. Teresa was generous enough to let us print and distribute it in honor of Georgie.

keeping her eye on all of us

It was printed at Northland Printing, where Lulu Santamaria donated the color separations and a box of extra prints. The project was coordinated by Greg Wallace of Aspen Avenue Printing, and Brad Dimock. Thanks go to all the above, to Georgie, and to the butterfly.

Copies are available from GCRG for $2 each, or 3 for $5, postpaid. Also available are additional copies of thisissue's Geology Map, at the same price.

GRAND CANYON RIVER GUIDES

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