Dispatches
from the
Arid Regions

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A Good Paiute Woman

It's the tail end of winter in the mountains. I'm staying in a friend's cabin at the extreme northwest corner of the outskirts of Bishop. Past here it's all sagebrush. The cabin itself used to be part of a concentration camp for Japanese-Americans, at Manzanar in the southern part of Owens Valley. It was moved here after World War II. A little stream runs through the yard just outside, under a grove of locust trees. There are floor-to-ceiling windows in the west, from which I have an unobstructed view of the rugged 6,000 foot wall of the Eastern Sierras, rising from a leathery tan into blue-black and snow white.

Outside in the green grass of the locust grove, I'm usually surrounded by mallard ducks. The little stream runs into a pond, and the ducks march through the yard, up and down the stream, all day, sometimes falling asleep under the locust trees a couple yards from my door. There's a beautiful red horse next door, and a pig and a goat on the other side of the pond. About 3 dozen quail surrounded my car when I was ready to leave.

At the White Mountains Research Station, I met Laura, who works for the Bishop Paiute Tribe. Laura was from Wyoming, a country girl, shy, seemingly reticent. She briefly reviewed the cultural preservation projects she was facilitating for the Tribe, using grant funding: proj-

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ects in education and documentation. They were holding classes in the Paiute language, of which there were only 9 native speakers left locally, and videotaping traditional skills. She had only been here 4 years, but the Paiutes were beginning to accept her. She's the only white person working for them, in their facilities, which take up a large semi-rural area of Bishop proper.

Laura had no idea why I was interested in any of this, so I tried to outline my own story. I had been introduced to her in the context of institutional science, and I felt awkward and pretentious trying to put my own story into abstract, theoretical language. In short order, I was getting excited and gesticulating, and I thought my enthusiasm was a little daunting to Laura.

But suddenly she burst out with a joke, and was totally transformed. She began to open up, and mentioned Coyote Camp, an event the Paiutes had organized long ago, which they still spoke about, where they took the young people up in the mountains and had the elders teach them the old ways. She said her boss, the director of the Vocational Center, wanted to revive Coyote Camp. Would I like to collaborate on a grant proposal?

I was mystified that they would need a grant. Why couldn't they just pile everybody in cars or buses and haul them up the mountain? But it became clear that things weren't done that way anymore. You had to do research, write a plan, set up the infrastructure, and all that took money. Foundation money.

So we exchanged contact info. Then she said, "Hey, why don't you come to our language class tonight? The instructor has another engagement, and without him there's nothing to do. You could come and ask them about your ideas."

I almost drove off the road on the way back to town, craning my neck around at a charcoal shroud of rain dragging across the north end of the valley, and fresh snow powdering the vast dark mountain flanks which had been revealed between spreading, billowing, multi-toned clouds.

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The Paiute language class quickly filled up. When I first got there it was just our "hosts", the couple in their 30's who provided most of the moral support for the class. The rest of the class came in together, two very old women, a couple of longhaired guys, some young and middle-aged women and a kid about 20. Altogether there were 13 of us. They all had notebooks and looked like they wondered who the hell I was.

Laura immediately said I was going to ask questions about their stories and songs. Exactly the kind of introduction I didn't need. I turned completely red and tried to give them a brief summary of what I was thinking, and said I just wanted some feedback. Did they think I was onto something or not?

Oh, boy. Blank faces all around. Who is this retarded white kid? I had been told one of the longhair guys was a singer, so I had looked at him. He said he needed to ask his elder for permission to speak about their songs. She took off her glasses and rubbed her eyes. She looked down her nose at me. "You can find everything you need at the library in Independence", she said in a neutral tone. "We don't have any songs. That's all in the past, anyway. You want to know about our past, go to the library. Why do you want to know about us? Why are you here?"

It was great. She was asking me the questions. I was red-faced and sweating. There followed a long discussion. A couple people remained quiet, but most of them wanted to know what the hell I wanted from them. I talked way too much and too fast, trying to explain that I didn't want to know about them. I wanted to get in touch with my own lost culture, and to find out how to get my people more connected to the land. I didn't have any plan, I wasn't doing research, I was just visiting their class. But they were smarter than that.

One of the young women gave me a friendly smile. "Our culture wasn't lost," she said. "It was taken away from us."

The elder lady laughed. "What you need is a good Paiute woman," she said, looking straight at me. They all broke up laughing.

Another older lady had just arrived. She asked, "I hear you talking

about telling stories. What kind of stories are you talking about? Old stories? Stories about the past? We're not interested in that."

"No, no, I'm interested in the present, in the future. And I don't care what kind of story it is."

"My papaw told ghost stories. He grew up in an area of deep, dark, valleys, where ghosts were everywhere. When he told those stories, us kids would listen. We would get scared."

"But me, I don't care about what type of story it is. Any story is fine. Anything that happens to you can be a story. But the places are important to me, because that way the stories connect me to the land."

I began giving them an abbreviated version of the story of Carson and me, almost dying of thirst in the desert. It inadvertently delivered the lesson that what could kill you could also save you. They had all immediately become good listeners, and the friendly host, Chub, got us all laughing as he paraphrased the story's message. The gray-haired singer caught my eye and nodded, smiling.

"Tell us another," asked the new woman in the group. So I told the story of how I'd first discovered the desert, led blindly through deep fog by Mark Norris to the cave in the Granite Mountains, marking arrows in the sand so we could find our way back. They seemed to enjoy this one, too, but it also seemed to spook them, and they began changing the subject. They started in on some language work, and Laura asked me if I'd like to go visit Mark, the guy who was making their native skills videos, in his studio nearby. As I got up to leave, most of them smiled at me, and a few turned to shake my hand and ask me to come back. I wondered what they would say about me after I left.

I had a great time hanging out in a loft above a karate studio run by a young Paiute entrepreneur, watching videos about face paint and cordage-making, and talking to Laura and Mark, whose main gig is extreme sports videos. The skills videos were very nice, beautifully shot, with local people and homespun but economical dialog. Under the bright sun of midday, men walked into a hollow in the Coso

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Range, the mountains of fire. The ground was some sort of volcanic clay, blindingly white. Colorful mud bubbled in little depressions. A man dipped his fingers and applied the pigment to his face.

Laura hung out in the studio for a while, letting the Paiutes run their class. It was getting late. Laura had to run to the class and retrieve something. When she returned she was all excited.

"They loved you!" she said. "They were asking when you could come back and tell some more stories!"

Skull Posts and the Plastic Head

Late fall in the Southwest. The drive from Las Vegas to Prescott took much longer than I'd expected. It was dark by the time I pulled into the parking lot of Yavapai Community College, where Cody has an adjunct teaching position. I got out of the truck dressed in jeans and wearing my fleece jacket, and was shocked by the cold. It was just a little above freezing. I found Cody's little office, and there he was, barefoot, just as I'd seen him in the cover photo from Backpacker Magazine. We hadn't seen each other in eleven years.

He warmly welcomed me and quickly finished his work on the computer, then we went outside. Cody was dressed in a t-shirt and shorts, and barefoot. In freezing weather. I don't think he owns warm clothing. It's part of his persona. He can survive anywhere with nothing. He's not tall, but he's massive, like a superhero, and with his Swedish features and long blond hair, he evokes our image of the Viking.

He took me out for dinner, as a point of pride, because most of his adult life he's been poor, seeking something other than wealth. We ate at the Prescott Brewery, "Arizona's Most Awarded Brewery", on the historic courthouse square. At the curb, Cody pulled a pair of flip-flops from under the seat of his old truck. "It's just for courtesy," he explained. "I won't put them on unless they ask me". They didn't; I suspected they knew him and tolerated his "eccentricity". But he seemed awkward in the restaurant, as if eating anywhere but in the wilderness was unusual.

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I ordered; Cody declined, opening a can of tuna he'd brought. I began to tell him about my quest. Midway through he muttered "You've got a lot on your mind". He doesn't waste words. Then after I finished he said "That IS serious. Why are you telling ME this?"

I explained how much I respect what he's doing: teaching people to survive using primitive skills, harvesting natural resources sustainably. I told him I remembered that when we were together on the survival course in Utah, he seemed to be on a spiritual path. I wondered if he had teachers; if he knew of anyone who could enlighten me on my own path.

A door seemed to slide down behind his eyes. He said he doesn't use the word "spiritual", because it's been cheapened by the new-age people. He said spirituality doesn't enter his teaching, and his beliefs are personal and he keeps them to himself.

He said the world has changed since the old days, when a person had teachers to lead him on a spiritual path. He said he believes that life gives us our lessons now: that our teachers appear when we need them, in the form of difficulties we have to face. He said that gratitude is the main lesson he's learned, because he could have ended up in prison, or dead, and now he has his own land and his own business.

Then he softened a bit. He said "Come and spend a night with me at my house, then spend another night there alone. The silence will be good for you." His house, which he's still working on and hasn't moved into yet, is a passive-solar structure on a remote piece of land subdivided from an old ranch, northwest of Prescott.

I asked him more about his work. The Aboriginal Living Skills School is basically just him and whoever he can get to help. He plans a few courses a year, but most of his classes are custom-designed on request for specific clients, who come from all over the country in response to the Backpacker Magazine story, and to his web site. He has an unusual permit from the state to hunt or trap any kind of animal with primitive technology, which allows him to teach his students far more than the other, larger survival schools.

He also teaches a 30-day field course for Prescott College, as well as

the primitive skills part of their student orientation, and he teaches students of the Ecosa Institute how to build primitive structures. And he's starting a non-profit foundation, Arizona Center for Environmental Sustainability, to explore and promote passive solar construction, organic farming, composting, etc.

I asked Cody for references to other Prescott locals who might be able to help me in my quest. He gave me some names of friends, warning me that there are many at Prescott College who wouldn't respond well to the name Cody.

"I have to do things my way," said Cody. "I don't apologize about being an aggressive male."

He drew me a map to his place, illustrated with pictograms. I was to turn right at the sign of the cow, before the heart sign on the left. Cody's road was marked by a "Keep Out" sign, and I would come to a gate signified by skull posts and the plastic head of a woman. Valhalla was shown as a winged cross.

Tearing Off Their Beards

The drive south from Prescott first takes you east across the high juniper plateau, then south on a spur that narrows until finally the road plunges down toward the Phoenix basin, thousands of feet lower in elevation. Saguaro begin to appear, along with my old friends from the Mojave: creosote bush, palo verde, catclaw acacia, ocotillo, and mesquite. This is the Sonora Desert proper.

Now that I was back in the desert, I remembered part of a Simpsons episode I'd seen in my motel room the first night in Prescott. It had been so close to home, I'd promptly forgotten it. Homer gets a blow to the head and experiences a vision. A desert tortoise leads him across the desert to a place where a giant coyote materializes in the sky, claiming to be his spirit guide, commanding him to find his soul mate. Then he awoke in despair. How do you find your soul mate?

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I drove into downtown Tucson, which was dark and dead. Although

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there were highrise buildings, like in Oakland they butted up against abandoned industrial space and dark residential blocks. I found the block with the Congress Hotel and drove around looking for parking. Even at this late hour, young people in funky clothes were streaming into the area from all directions. There was a storefront with kids overflowing into the street. The Congress looked fabulous from the outside, with a sidewalk seating area in back, lots of people inside, but no tacky modern signage or tourist-oriented commercialism anywhere.

I parked, and as I walked I noticed cool-looking art all around me, on doors and sides of old buildings. I worked my way through the storefront overflow crowd, and saw some kids inside a small space tuning guitars. I went in the Congress and discovered that the lobby, crowded at 10:30 PM, was a bar, with sofas and lounge chairs full of people. The club with the bands was immediately to the right, and the cafe was to the left.

I got a burger and an unfamiliar beer, both delicious, and did some people-watching from my table. I liked the decor, arty but not clicheed, with a sense of the desert but not via obvious symbols. In the small cafe, there was a big black rasta guy with his white date, groups of single college kids, middle-aged gays, a lone yuppie guy, and a table with couples my age, all of them dressed casually. This was apparently the hippest night spot in town, but I didn't see a single pretentious-looking poser, except maybe the miniskirted young waitress.

Then I worked my way through the crowd into the small, packed club, and into a position where I could see the band, which was doing a full-on, killer ZZ Top parody complete with fake beards, cowboy hats, synchronized moves, and exaggerated guitar leads. But not in an ironic, sarcastic manner; they had artistry, spirit and humor.

Around me, the crowd was all ages and races, friendly and polite, people dancing where there was room. The band rocked bitchin' hard through five songs while I was there, tearing off their beards and tossing them into the crowd on the last tune, then they had to leave the stage for the last act in this benefit for the local domestic violence center. I was howling with pleasure.

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I decided to leave while I was ahead. Across the street and around the corner, passing the store front I'd passed earlier, one of the kids outside asked me how I was doing. I said Cool and he said Glad to hear it. Curious, I stopped and peered inside. Then I noticed the handwriting on the window: it was some sort of alternative Christian youth hangout. I remembered how ever since I'd entered Arizona, there'd been tons of Christian stations on the radio.

Then I looked up at the sky, and at that moment a bright falling star fell right out of a cloud and exploded into crackling fragments. I was briefly stunned, then I realized that I was downtown in a city, and I could see the sky clearly, there was no light pollution, and it was a desert sky with desert clouds. And I thought, I love this place!

Lives Have Been Sacrificed

Another day I headed out to the Arizona-Sonora Desert Museum. It's on the other side of the Tucson Mountains, on an upper slope of bajada at the edge of Saguaro National Monument, facing downhill into a huge basin with Mexico in the distance. The approach is very impressive, and even on a Thursday afternoon the big parking lots were almost full.

I was starving, and as soon as I paid my fee, I began following signs to the restaurant, which was well inside the "museum". The "museum", in fact, turned out to be almost entirely outdoors, a combination botanical garden and zoo. The areas I passed were so intriguing I almost forget my hunger.

Paths meander over the gentle slope between native plantings which seem natural, but which have been lovingly crafted to epitomize microenvironments. Birds, insects, and rodents are everywhere, but concentrations of them can be observed (and photographed) up close in walk-through enclosures. Hawks are released periodically outside, to swoop from giant saguaro. The full variety of desert cats, canines, and javalinas each have their own groovy places, fenced or sunken below the ground, and I was told they are all captive-bred rather than captured in the wild. As soon as it dawned on me that this was a zoo, I remembered that ancient civilizations had kept captive wild animals in their temples, and I began to feel that these animals were serving

a ritual purpose here. Everybody I saw seemed excited and in awe.

In fact, shortly after I started walking through the park, at the outdoor, living "exhibit" on pollinators, where in one area butterflies flew around me doing their thing with their flowers, and in the next area bees flew around me likewise doing their thing, I was overcome with emotion. My heart filled up. To me, this really was a temple to the desert. Reading the simple, unobtrusive signposts, I learned for the first time that Encelia, which covers the bajadas in the western Old Womans, produces a superior glue and a medicinal tea. I discovered a carnivorous fungus that chokes nematodes to death in the soil. I found out there are Cichlids, a tropical fish genus I knew only from Africa, in Sinaloa. The Phainopepla, a familiar bird from the Mojave, spreads the parasitic mistletoe to mesquite and catclaw by shitting the seeds on the bark of the trees.

A few hours later, exhausted by feelings, I did have a couple of problems. They had a wee corner dedicated to the unique vegetation of the Mojave, but they described my desert in terms of what it lacks (zillions of species of cactus) rather than what it has, and it sounded like a put-down: Sonoran chauvinism. And in the walk-through aviary, which was teeming with dozens of kinds of well-fed birds, I watched two birds of the same species, one inside the enclosure and one out, fly back and forth on opposite sides of the screen, trying in vain to find a way to meet. Lives have been sacrificed here, as in those ancient temples.

Church of Obsolete Technology

SiteSantaFe was a one-story, tall-ceilinged, squarish building from the outside. The entrance was a horizontal wooden ramp with borders made of seductively colored blue and yellow silk flowers, and the entire facade was covered with a sort of abstracted cross pattern made of three-dimensional formed sheet aluminum components that evoked nothing so much as an African civic structure from the 70's. The facade turned out to have been designed by Jim Isermann, a guy I used to know at CalArts, who specializes in using synthetic and industrial materials in his art.

Just inside the door was a hypnotic computer-generated abstract

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digital animation by Jennifer Steinkampf, with an electronic soundtrack, projected on a hemicylindrical surface below the ceiling. Jennifer's work has been praised by my friend Peter Lunenfeld; I liked it and moved on in. I turned out to be the only visitor.

Most of the rest of the work, some by famous artists and others by unknowns, left me cold. I found some paintings in a little side room which were parodies of Flemish country art, with pigs in a basket, little birds and mice in awkward poses, a guy carrying a huge fish on his back; those were okay. The work was all pretty but lacked substance. They had a series of films showing on a loop in a large screening room at the back. Alone, I sank into the overstuffed sofa in the middle of the room. I stayed for three films and left as the fourth, by a Los Angeles conceptualist who had been my look-alike at CalArts, became unbearable. The first one I saw, by two Wilson sisters, was amazing.

It was an antisymmetrical split-screen documentary of a Russian space launch, with sound but without narration. The launch had taken place in a sort of blue pre-dawn fog. The rocket they use, which I was later told has been in continuous use since the 50's, is so different from ours. The way it was filmed, beginning with closeups of the engines in their supine position within the floodlit missile shed, and proceeding through the majestic conveyance of the missile to the launch pad outside in the blue fog, its monumental erection from horizontal to vertical, with the black claws of scaffolding closing upon it like giant pincers, and the procession of the ageless yet boyishly grinning astronauts through a crowd of proud, ceremonially uniformed men, it was like a high ritual of some church of obsolete technology. As the engines fired and it slowly rose, it was simply absorbed into the fog, and there was nothing left but blue.

The show as a whole left me sad. Dave Hickey, the curator, has catholic tastes and loves pop culture as well as high art. But it seems to me that high art has even less relevance now than it did back when the pop artists were trying to turn the art world on its head. It's come full circle and it's eating its tail.

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Expensive Tea

I drove northeast up a long, snow-dusted ridge toward the Santa Fe Institute, which is a low-roofed, sprawling complex disguised amid the pinyon and juniper on top of a hill overlooking Santa Fe and all of north-central New Mexico. All the public information about the institute is very mysterious and pretentious: they're an elite community of scientists from all disciplines and all parts of the world; members are accepted by invitation only; nothing they do is practical, straightforward, conventional, or easy to understand. I had taken it as a challenge to recast my own work into their terms.

The stern receptionist wouldn't let me talk to anybody else in person, but she gave me an information packet, and from the outside I made a cell phone call to the Vice President's assistant, who said she would try to set up a tour for me in the next couple of days.

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The day of the tour, I slept in, got up and made myself a nice breakfast, and started researching their website to find projects and people I might be interested in. I was all the way to the last page I thought I should check, having written down ten names, just scanning a few more, when I stopped on Cormac McCarthy. I looked at it a while and decided it sort of made sense. He lives down the road in El Paso, he's an award-winning writer. He's their Artist in Residence.

This was the last straw. My number one hero of writing was here in town, and I was scheduled to go hang out with him in a couple of hours.

I had one good shirt with me, but it was all wrinkled, and I discovered one of the buttons was about to fall off. Found everything I needed, fixed and ironed the shirt, and drove out there looking good, thinking about what I was going to say, wanting to just look and listen, but also, I had a question: I've always wanted to know how much camping he has done in the desert, since he writes about it so well.

On the drive up the ridge, I suddenly realized why this landscape bothered me. I was intimately familiar with junipers, but these juni-

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pers were of the Utah, not the California kind: conical rather than wind-sculpted. And the pinyon-juniper community occurred here thousands of feet higher than in the Mojave.

Caroline, my tour guide, met me in the small lobby. She was a large, young, blonde public relations person. The first thing she pointed out was that the main building we were in used to be the house of a rich man who used to be in the military. It was a strange building, with odd proportions and fixtures that were a mildly disturbing blend of military and modernist. Immediately behind the reception desk the red tile floor had been ripped open and you could see three narrow pipes passing underneath, like veins in a wound. It was a steam-heating system that frequently leaked and had to be repaired

There was a dark, cramped library in the proportions of a cube, with tight metal shelves. She stroked the edge of a shelf where books recently requested were displayed. She said it showed what all the researchers were interested in right now, and I was welcome to check it out after the tour.

Then, walking through a large, tall, austere, unornamented grand ballroom set up as a conference chamber, she flung open double doors and there was the veranda, where you could stand and talk and watch the sun rise and set over the plains and mountains of northern New Mexico.

Now we walked seamlessly from the former house into the additions which had been made by the institute. She led me down into the pods, which cascade level by level down a slope, with a broad open passageway of stairs going from level to level.

She said, “We maintain the ‘cave and commons’ plan here. The caves are arranged around a commons where everyone interacts. The commons have whiteboards and windows to write on, and comfortable easy chairs. The offices are all shared; nobody gets a private office, because we want to maximize interaction.”

I told her I had noticed that they had an artist in residence program. She smiled proudly. “Ah, yes. We have Cormac McCarthy here. We like having artists around, it helps us break out of the box.”

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"He's one of my heroes," I added. She said, "I saw him at lunch today. You'll probably see him at Tea. It's basically tea and crumpets, English style. It's very expensive for us to do these teas, but we find it's well worth it as a way of bringing people together."

She walked me back to the lobby. She said Tea would be announced over the phones in 5 minutes or so. She pointed out that I would need to stand next to somebody's phone to hear the Announcement. I asked her where the Tea would be, and she realized she hadn't shown me the kitchen. She pointed down the hall. I thanked her, and waited for the Announcement.

It voiced itself as predicted, softly and clearly, and people began emerging from caves and entering the small door of the kitchen.

Entering myself, I blinked my eyes. It was a lab kitchen just like the one at White Mountains, but quite a bit smaller, not really equipped for group cooking. And on the table were two plastic pitchers with herbal teas, and a plastic plate with mini-carrots. The most expensive Tea I've ever seen!

I got a glassful of green tea and starting pounding it, and a young kid standing next to me asked me where I was from. He turned out to be a grad student, friendly, and interested in my visit. I outlined my story and asked if he could identify the people around the room for me, and what they were up to. He agreed, and pointed out the Vice President, who I knew would have an overview of research. Cleverly, Caroline and the others had shielded him from me so far. Just as I saw him and we locked eyes, an older woman grabbed him and asked him to come talk to her.

I quickly intercepted them as they started to hurry off. As I responded to his curt questions, the woman inspected me with friendly interest, her head shaking a little from some nervous disorder. Then he became friendly, as if what I had said made sense, directing me outside and into another building to see Erica.

Erica was an Asian woman about my age who seemed really smart and carefully analyzed what I was saying. She was interested, and asked me to send her an outline of what I had in mind, and we

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exchanged cards.

I returned to the kitchen, checking my list of names. I walked up to another young guy and asked about Jeffrey Brantingham, who supposedly studies ancient hunter-gatherers. He didn't recognize the name, but another guy did, and took me two pods down and into an empty office. Jeffrey was out, so we stood outside his office in the commons and talked. I led this kid into mentioning Cormac, and said he was my hero, and he smiled, "Yeah, it's cool having him around. I saw him at lunch today. His office is right over here," he walked straight across from where we were standing, "come on, we'll see if he's in."

With a feeling of awesome destiny, I crossed the commons as he leaned into McCarthy's office. "No, looks like he's gone for the day." McCarthy is notoriously reclusive and doesn't talk to anybody about himself or his work, so I just casually glanced into his space, trying to respect his privacy. I saw a black cloth cover over something which seemed to be a small typewriter, and that was it. It was like peeking into a forbidden shrine, except that he must have been here because he wanted people around, so he has to expect that strangers will interrupt him from time to time.

My friendly guide had a brainstorm that he should take me to his professor, Jim Crutchfield, a physicist who's interested in media. Jim turned out to be right next door to Erica. Jim asked me to sit down and we had a nice chat. He hangs out with artists a lot, and has founded something called the Art and Science Lab, devoted to the historical context of technology-based art, which collects and maintains an archive of art and music incorporating technology. He was also really interested in my background and encouraged me to send him more information by email.

While we were talking, the grad student busted in again to tell me he had thought of someone else who would be good for me to talk to. But that person's office was likewise vacant. I was a nervous wreck at this point from all the caffeine in the tea, and I didn't think it was appropriate for me to wander around bugging people any more, so I left the institute.

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Gyms of Valhalla

Here I am in Winslow, Arizona, on Friday evening, in a Motel 6, after driving like a truck driver across western New Mexico and eastern Arizona, past the rusty red rimrock, snow-capped Mount Taylor, bone-pale Navajo sandstone's vaulted arches, and finally an encircling treeless plateau that eventually dropped off into an endless blood-red basin with blue mesas in the far haze. Like a landscape film unrolling outside your window.

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West of Winslow, I picked up a radio station playing African music, and discovered KUYI, a new Hopi station only a year old, broadcasting from Hopi Mesa. Later they played a duet between Ralph Stanley and his son, a song I hadn't heard called "Pretty Girls, City Lights". The Hopis like Ralph too!

From Flagstaff, up and down out of the forested mountains to the west, reaching the rolling, grassy plateau where I turned off to reach Cody's place. Down a well-graded dirt and gravel road, through old ranches that are being subdivided into 40-acre retirement plots. Dotted with pinyon and juniper on the slopes, red-banded prominences and shallow tan bluffs scattered around to punctuate the skyline, and a falling away into lower valleys to the south.

As predicted, when I turned off onto Cody's two-track lane, two posts hung with animal skulls and topped with a plastic lady's head framed the entry. Winding onto the property, I saw parallel marks in the dirt beside the road that looked like it had been disked, learning later from Cody that this a permaculture technique that reduces erosion, traps moisture in the soil, and encourages root growth.

The first I saw of Cody, he was shoveling dirt out of a small enclosure with low walls. He explained this was to be his gym. He had bought a storage shed which would sit on these walls, the floor would be lined with flagstones, and there would be a wood stove in the corner. He'd have room for a squat rack, a pulldown machine, a couple of benches, and his free weight set.

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I helped him shovel for an hour or so as I filled him in on my journey. We got to talking about meeting girls, and I told him another friend's story (move to the middle of nowhere, become a hermit, a group of hikers comes through and you meet your partner). I recalled the cool people I'd run into over the years in the Old Womans and the Granite Mountains. He said, "There you go. You don't need to look for them - they'll find you!" Then the shoveling was done, with Cody thanking me profusely. He walked me over to see his house.

The first thing I saw was a low hill with some strange protruberances and an arched earthtoned doorway extending out of the hill to the east, with elk antlers mounted in the arch and a winged Maltese cross above the antlers, lettered with the name "Valhalla". I realized that the hill was his home! Then we rounded the corner of the hill to the south side and the southern facade appeared. I gasped. The southern face of his house was a parabolic arch above a wall of glass framed in cedar, and the upper rim of the arch was decorated with an array of symbols from all the major religions of the world.

He quickly took me inside as I was stammering "I can't believe this! It's amazing! It's the most beautiful house I've ever seen!" Inside, the sun was heating a mosaic of flagstones on the floor, arranged in star patterns with precious minerals in between the sandstone. There was a large semicircular main room, and three rounded cave rooms elevated 18 inches above the entry floor, around the rear of the house. The entire shell of the house was sprayed concrete, rough-textured, with the domed ceilings and walls painted metallic gold, the lower walls a rust-red, with decorative borders inset with patterns of crystals and rare minerals, and large crystals set into the walls at intervals. The place was fully plumbed and wired for both AC and DC. Cody's bedroom was large, circular, and had a large skylight painted with a lotus pattern and topped with a mosaic of tiny mirrors that reflected light downward from the 90-degree "ship's smokestack" opening. My jaw was still hanging, to Cody's great amusement.

Best of all, whereas it was cold outside, inside it was warm, with no source of heat other than the sun. This "passive solar" design was based on principles discovered by insects and borrowed by native people all over the world for thousands of years, but ignored by the vast majority of "advanced" European-derived cultures. Cody said his goal was a house that he would have to work on as little as possible.

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The shell had been overbuilt to carry its insulating load of earth and rock, with a dense skeleton of rebar and an average of six inches of gunnite. There were shrubs growing all over the roof to prevent erosion. His view was a meadow dotted with juniper, sloping up to a low ridge on state property, behind which the land sloped away to big ranches.

He took me on a perimeter walk. He viewed a truck with suspicion as it drove across his closest neighbor's property and stopped briefly in front of the neighbor's small prefab shack before departing the way it had come. He made a point of staring at the truck in plain view to let them know he'd seen them. He was concerned about the neighbors. He thought one old fellow might be dead in his cabin, because there were feral dogs barking all around it. He said those wild dogs could go after a person, and he'd hate to be taken down by domestic dogs.

Cody, of course, didn't look like the kind of person who would be afraid of dogs, with his Viking build. As we reached the northern property line and turned west, he pointed out the overgrazed condition of his grassland and reminded me that by western law, he was responsible for fencing his neighbors' cattle out, and until he could afford to do that, they were free to trample his land.

I asked him about antelope and he said pronghorn regularly visited his land. He said he'd grown up in Wyoming where pronghorn were everywhere, but the biggest pronghorn buck ever taken was from the Prescott area, about 60 miles south of him.

My Flagstaff brunch had upset my stomach and I wasn't hungry that evening, so Cody warmed some grub on an outdoor propane stove and we talked inside, by the light of two candles, as it got dark and cold outside. He kept checking an inside thermometer every hour or so until we went to bed, explaining that this winter was his first real test of the effectiveness of the passive solar design. He knew why it worked but couldn't suppress his childlike delight at the effortlessness of it. When we got up the next morning after dawn, it had dropped only eight degrees, from 73 to 65, inside. Outside it was 24.

He described the remaining details of the house. Solar power, for his laptop. A wireless modem or cell-phone connection for the internet. A

propane refrigerator if his “cooling tubes” set in the wall didn’t suffice. A small wood stove to make up for the lack of solar heating after a few days of cloudy skies. He had paid for everything so far in cash, and he emphasized that one of his main goals in life was to live as cheaply and simply as possible and avoid debt. He said he had lived on $2,500 a year in the past, and was making twice that much now just from his work with Prescott College.

He showed me the large-format book of plans, photos, and artist’s renditions just completed by Ecosa Institute students for his “Valhalla Institute”. He would use this to help raise funding for his non-profit center for sustainable living. If he raised enough money he would build the low-profile structure for research and teaching, but in any event, he was committed to start gathering information and holding workshops on the property.

We went to bed not long after it became completely dark, and slept well until dawn. We talked briefly in the morning and I gave him my copy of “Cultures of Habitat”, then we hugged and parted. I felt so much better, leaving, than I had felt in days. Here was somebody who was realizing his dream. He’d had a lot of volunteer help, but it was a deeply personal vision, combining art, science, and a commitment to subsistence living, that had really made it come together. That inspired me like nothing else I’d seen yet on my journey.

Microsatellites of the Potala

I found John in his lab at the White Mountains Station, just as he was getting started with his bighorn genotype analyses for the day. He wanted me to see the process up close. After spending decades in the field, he’s like a kid with a new toy now, tinkering with the complicated technology and its attendant, highly error-prone lab techniques.

During the years I’ve known and worked with my biologist friends, their herculean (and sometimes Sisyphean) field work has gradually given way to lab work, accompanied by the rise of the interdisciplinary field of biogeography. DNA analysis allows them to trace animal populations backward in time as well as in space, yielding results which can be correlated with climate and geology with sometimes

surprising implications. A young grad student advised by John has been hiding at springs in the mountains of the Mojave for several years now, collecting scat he can identify with individual sheep, building a more and more complete record of haplotypes (mitochondrial DNA transmitted by females) to form the basis for a reconstruction of the colonization history of sheep in the Mojave. John and his partner Rob are doing the same for sheep in the Eastern Sierra and Inyos, and eventually they hope to fill in the blanks for all the populations from north to south.

Haplotype analysis so far has shown that there is almost no shared genetics between mountain ranges in the Mojave, indicating long isolation.

In John's study area in the eastern Sierra, laboratory work has enabled much more precise tracking of individual sheep in different populations. Since the sheep leave a trail of scat wherever they go, the scat is much easier to find than they are. You can find, and study, sheep that you wouldn't necessarily see. And that's allowing John to learn much more about where they go, what they need, and how to help these animals that have been relentlessly eliminated from the mountains of the west by the long arm of civilization.

John keeps mitochondrial DNA samples from the sheep scat he and others have collected over the years, each sample representing an individual wild sheep in a specific location. The sheep DNA is chemically separated from other waste products in the scat, and then using the PCR (polymerase chain reaction) process, each molecule is replicated into a long chain so there will be sufficient material to study. Heat is then used to split the chains in half, and they are dehydrated and stored for analysis in the tiny wells of little plastic "muffin tins". All this is done by John in his little lab shed at the foot of the towering, snow-covered White Mountains, while outside, brutally cold winds whip the station.

When I entered the process, John was using metered pipettes to laboriously mix a small number of dyes and chemical agents in dozens of tiny "muffin tin" receptacles, to which he would subsequently add the DNA samples. Then he selected a 12-channel pipette metered from one to ten microliters (pretty damn small), to transfer the sample DNA into the target tray for mixing with the dyes and chemical agents. The

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additives would assure that the genetic markers of interest to John would show up in the sequencing machine, which was the destination of all these samples. This process of transfering and mixing samples took about an hour and a half of fanatically meticulous work by John, while I just stood around watching and waiting. Then he fired up the DNA sequencer (discount price $25,000). It took about a half hour of fiddling with software, coolants, buffers, and whatnot to get it ready. Then another fifteen minutes of John laboriously and meticulously transferring the contents of each tiny receptacle, via another metered pipette, to 48 microscopic wells in the upper edge of a two-micron thick gel medium held between perfectly planar glass sheets, clamped vertically against a ceramic cooling panel in the sequencer. Each of the hundreds of manual pipette transfers required a different disposable plastic pipette tip, and after making each tiny transfer, John would punch the pipette button to eject the used tip before adding another one.

Finally he started the sequencing process by clicking a software button on the antiquated Mac next to the sequencer. Then he started over again, preparing another set of samples. We waited together for results to appear on the Mac screen. The sequencer applies a current vertically through the sheet of gel medium, and the current physically draws the DNA molecules downward through the medium, with genetic markers arriving at the bottom in a particular order ("sequence"), to be picked up by a laser scanning the lower edge of the gel. The software displays these markers visually as "microsatellites" in roughly parallel "lanes", each lane representing a DNA sample.

After an additional hour of waiting, we discovered the first run was a failure, for no apparent reason. So John finished his next sample set, loaded it laboriously, and started the machine again.

Finally, after about five hours of this, we began to see good results from the second sample set. First to appear were the all-important "size standards", which would allow him to identify individual genetic markers. The initial display, which he called "garbage", slowly rained the colors of the spectrum down the black computer screen, tracing an architectural form evocative of the facade of the Potala, the Tibetan palace where the Dalai Lama used to live. John mentioned Galen Rowell's amazing photo of the Potala, and said he was planning

to hitch a ride with the Rowells in their plane later in the week, to attend a big party they were having at their Bay Area gallery.

Then the real microsatellites began to appear onscreen, and John kept exclaiming "That's beautiful data! That's just beautiful!" I was dead on my feet at this point and just wanted to go home and collapse in front of the wood stove.

We did go home, but John brought the sequencer output on his laptop, to finish processing the files at home. We ate dinner while he was trying to get the software to "auto-track" the lanes of genetic markers. It kept crashing, and he's new to the Macintosh system and couldn't figure it out. I urged him out of the way, and within a few minutes had the problem solved, and he continued with his analysis into the wee hours of the night.

Playing With Skulls

A comfortably hot spring afternoon on the generic UNLV campus in Las Vegas. I'm sitting in on the undergraduate honors biology class Jef is teaching, in a high-ceilinged concrete-block lab room under a distracting array of festively-colored, suspended ventilation ducts, piping and sprinklers, fluorescent light fixtures and wiring. I'm awkwardly trying to maintain visual contact with the rest of the class in spite of all the equipment between us on the lab counters, while mulling over my pre-class conversation with the other TA, a grad student in water resource management who recently discovered that the city's public drinking water from Lake Mead is filled with perchlorates from rocket fuel, which have entered the environment downstream from the Nevada missile test site. The health effects are not yet known....

Jef has passed out the class notes, a seven-page synopsis of human evolution, and we are taking turns reading out loud. Scientific understanding of human evolution is in the midst of a big leap forward, seething with controversy. Everyone seems to agree that there were a bunch of unexpected branches in our family tree, during the time in which the making and using of tools is believed to have been increasing in importance. These students, all non-biology majors, show no signs of interest in anything except maintaining their grade point averages. At least reading out loud helps keep their attention.

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"You may have noticed that the counter behind me is covered with skulls. These are not Halloween skulls, these are very expensive reproductions made directly from the original skulls and fossils. We've provided labels but the skulls themselves are just sitting there, so when you pick them up, be sure you return them to where you found them."

"As we've just heard in the readings, the great apes are most closely related to us among living primates. We have orangutan, gorilla, and chimpanzee, our closest living relative. Look at how big this male gorilla skull is! Here's the female. Note the sharp ridge or crest on the top of his head. That's called the sagittal crest. It forms an attachment for the jaw muscles. You can see this guy spent a lot of time chewing tough leaves."

"We have a particularly good specimen of homo erectus, which is considered to be our direct ancestor. See this Neanderthal skull? Here's the modern human - Look at the difference. The Neanderthal brain was actually larger, with a different shape. But the amazing thing is that these hominids were almost certainly living on the planet at the same time as our ancestors, and possibly interbreeding, but as a species they did not survive."

"You can use these calipers" (holding oversize plastic calipers over his head like a pinching bug) "to take measurements. I don't care what you measure. Just make comparisons among the skulls. Notice the jaw, the dentition, the cranium, the sagittal crest."

"Don't get hung up on the measurements. This is all about process, not results. I just want you to have the experience of playing with the skulls."

The honors students are mystified. One by one, they approach Jef, asking what exactly they are supposed to measure, and Jef repeats his invitation to experiment. They seem unable to do anything without detailed, explicit instructions, repeated several times, as if they were deeply distrustful and excessively concerned with quantitative performance. Later, Jef says he notices a huge difference between this and the previous generation of students: severely limited attention, profound distrust, uniform apathy. "When are they going to get

another chance to play with the skulls of their ancestors and relatives?"

I have no such hesitations. The skulls are solid and heavy and have a glossy surface, with the fossil replicas pigmented in dark earth tones to match the originals. The teeth are in place and the jaws are wired loosely in place, so they can be flexed.

I start out looking at the overall three-dimensional relationships between volumes and forms, including orientations and angles, for insights into function, as if it were a mystery to be solved. Eyeballing or using the calipers, I measure the relative volumes of cranium and jaw, and the apparent angle of attachment of the spine. The chimpanzee skull is much smaller, but the comparable size of orangutan and human skulls emphasize the extreme difference in shape and proportion, and the shift from walking on all fours (60 degree angle) to walking upright (90 degree angle). In the great apes, the jaw is the dominant structure of the skull, whereas in modern humans, it's just an accessory for the brain case.

Suddenly I realize that the skull, my own skull, is just a container for my brain with a chewing tool attached to it. Everything else is minor. And I'm easily convinced that without tools to cut up and grind my food, not to mention fire to further tenderize it, my diet would be severely limited. This little exercise has thrown the evolution of culture into high relief.

The Fool and His Ox-Team

Two hours of driving up and over the high basins and low passes of the East Mojave, into the heart of the National Preserve, under the already high sun of mid-morning....arriving at Carl and Adrienne's low-slung, desert-colored compound dispersed and mostly hidden among the dark junipers and fleshtoned granite boulders at the foot of multicolored Pinto Mountain. Here, it's pleasantly temperate and a strong west wind has come up. Carl is working at a bench outside his studio when I pull up, and Adrienne runs out of the house to welcome me.

Energized by my arrival and my description of what I'm trying to do,

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Carl offers a tarot reading that evening. He points out that when he was living in Hollywood in the sixties, all the professional readers came to him for their readings. The deck he produces has definitely seen some use....Tarot is not one of my interests, but I'm always inspired by the revelation of Carl's eclectic talents and wisdom.

To tie directly into my symbolic studies, he begins by mentioning what he considers the deepest, most mysterious and powerful symbol of tarot, which sounds to me like "ox-team", an arrangement of disks otherwise known as the master glyph of the Cabala, which is so pregnant with meaning that I'm not even going to attempt to describe it. As he lays out the cards and elaborates their symbolism, he gets more and more animated, because they do seem to relate to my search and to provide some good omens. Directly above my present station in life, a card shows a path leading between twin towers, off into the mountains, with a dog on one side representing the domestic, and a wolf on the other side representing the wild. And most propitious: directly in front of me, there's a card showing the "ox-team" with a sumptuous estate in the background, and in front of that, and above me, is the Fool, representing the pinnacle of freedom and creative potential. So we're both pretty happy with the outcome.

After dinner, as the night darkens and the wind continues to whip the trees outside, we tell each other the seminal dreams of our lives. My dream, the powerful, allegorical dream I had in adolescence, remains a secret to almost everyone I know, partly because until recently I had been half-afraid of it and unready to attempt an understanding of it in the context of my later life experience. Carl has never shrunken from an understanding of his dreams and visions, and the dream he had at the end of his career in Hollywood was instrumental in his move to the desert. Adrienne goes to bed with the setting of the sun, and Carl and I slowly vanish from each others' sight in the enfolding darkness, at opposite sides of the small living room, as we ponder the gripping symbolic messages and images we've been given, not just once, but frequently throughout life.

The Urge and Posture of Plants

The moon is new, the night is cold, and I sleep fitfully, rising late. Carl and Adrienne prefer to spend most of their day outdoors, Adrienne

tending her garden and tramping around the desert in search of invasive plants to pull up, and Carl returning to various far-flung plein aire painting locations, his canvas slung from a shoulder strap. But today the wind blows strong across the high valley of small trees and boulders and keeps us indoors.

Throughout the day, Carl brings me books which he thinks may help with my search. He always does this, and I seldom fail to leave with one of his books. The library is spread throughout all the buildings of their compound. We all do quite a bit of reading, watching the birds, rabbits, and ground squirrels in their comings and goings outside the big window, where water and seeds are kept in abundance.

In a quiet moment of reading, we suddenly hear loud squawking and turn to see one pinyon jay standing on top of the prone body of another, pinning it to the ground and trying to spear it with a long, sharp beak. Another jay arrives to join in. I've seen birds briefly grappling in midair, but this is the first time I've seen them wrestling on the ground. The newcomer creates enough of a distraction for the victim to get loose and fly away, with its attackers in immediate pursuit.

Another time, as I'm heading for the outhouse, a brilliant flash of color passes me, and I turn to see a Western Tanager checking me out from its perch in a juniper, a rare and incongruous tropical vision of lemon yellow, fiery peach, and black in high contrast.

Late in the afternoon I feel relaxed enough to demonstrate my cosmological work to Carl, expecting some good feedback. Each time I do it, it gets clearer, simpler, yet richer with connections and meanings. Carl's excitement builds, until he has to borrow the pen and a sheet of paper to illustrate other symbolic structures from his own research: the natural patterns present in neural networks and molecular structure.

As I finish the sequential drawings and begin circling back, using the later diagrams to reinterpret the earlier, Carl is beside himself. He tries to describe the Buddhist notion of a "dharma duel", when two masters meet and demonstrate their mastery in (presumably friendly) competition. "You and I are so in tune, Max! When I'm by myself, I'll

get into it with someone, maybe a scientist, trying to describe an idea, for example that rocks are alive, and it's so easy for them to fall back on their expert posture. But if you and I were working together, we could get to a point where you could feel the air "humming": "BZZZZZZ", like the way music can connect people on one groove."

Before sundown, the wind dies away, and I go for a hike with Adrienne up to "the white", a layer of volcanic tuff on the lower slopes of Pinto Mountain. Along the way, we observe the stress of drought on various plants. This is considered the worst drought in over 100 years in the desert. Yucca are dying and falling over. We pick up trash, plastic bags, cans, and boxes, that have blown over from Bud's place, the trashy neighbor to the west. Luckily they are buffered by an intervening property which has just been bought by scientist friends. Bud's favorite hobby seems to be taking a bulldozer to the remaining patches of natural habitat on his own land.

Carl speaks of the "urge" and "posture" of plants, but he's not talking about naive anthropomorphism. As we speak, we're in the midst of a community of plants which are communicating with each other via light and chemistry, negotiating a shared "plant" space which is shaped and constituted differently, almost impossibly disjunct from the space we can visualize. Carl follows his eye for patterns, collecting rocks with human faces, not to trivialize nature but to keep his pattern-recognition skills sharp. I mention Goethe's notions of science, which I only know of second-hand; Goethe is only one of many touchstones in Carl's lifelong researches, but I think Goethe would approve of Carl's devotion to direct personal observation.

That night, after Adrienne retires, Carl and I again take up opposite sides of the living room and gradually disappear into pitch darkness, talking. This time, our disembodied voices ramble on mostly about art. It's a wonderful image to recall, the evocation of spirits alone in some empty corner of the cosmos, discoursing on things both material and immaterial.

Dharma Triangle

With the wind gone, Carl and I decide to pay a visit to his friend David, the Steward at the Granite Mountains. So I find myself return-

ing to this dramatic land of white granite monoliths, which is where I first discovered and lived on the desert, riding with David as he goes to the other side of the mountains to fill his water tank at the only spring that's still flowing in this drought. We're talking about new species being discovered and how little is known about every aspect of our world, like the effects of the perchlorate the defense industry put in our water years ago, in the ongoing pursuit of space flight.

"When I was a kid in school," says David, "I was taught that there were no more frontiers on earth, everything had been discovered. We were pointed to space, the great dream of outer space. And it's still the same, yearning for adventure and discovery, always looking up, while the vast majority of life on earth remains unknown and is being destroyed under our feet." It was like another little light turning on in my head: it's true, it's a subtle point of focus in our historical narratives and institutional programs. Even when we introduce kids to nature study, we tend to paint nature as the familiar and science as the ultimate authority, and our system of parks and preserves, under human management, promotes the notion that everything has been discovered and is contained. People need the unknown, the frontier, room to explore and discover, especially children, and we point their attention to space, while suffocating them within the concrete structures and decorative plantings that have replaced the natural habitats which represented the only real frontier they'll ever have. And of the parts of the civilized habitat we want to protect them from, we say "It's a jungle out there!" implying that real jungles, the wilderness, are dangerous and to be avoided.

David and his partner Charlotte are, like Katie and I used to be, rock art nuts. Except that David has pursued and finally achieved academic acceptance, to the extent that there can ever be academic acceptance in a field that is itself accepted by few academics. The study of native rock art has always been full of crackpots. I was interested in David's take on some of the latest theories, since he knows virtually all the players in the field.

David repeatedly asserted that rock art is being steadily destroyed, via real estate development and vandalism, and within twenty years all the sites we know and treasure will be gone, and the only hope is to scientifically record as much of it as possible before it's lost. He's just been awarded a significant grant to record petroglyphs in the

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Pahranagat Valley of eastern Nevada, an incredibly beautiful and exotic landscape with a big natural lake and wetlands habitat. I had asked him about Whitley's dogmatic pronouncements on the shamanic nature of all rock art, and Carl started in on what was apparently an old argument between them about interpretation of symbols, with David trying to keep his cool, warning Carl against subjective readings of artifacts from a radically different culture.

I had my own comments, but Carl was getting worked up, and I wanted to wait until he'd had his chance before I busted in. The three of us were sitting in a triangle in David's upstairs office at the head of the Cove, looking out over some of the most beautiful, sun-drenched, verdant high desert, surrounded by white granite cliffs.

Bighorn are one of the two most prominent images in the rock art of the Coso Range, which is the largest rock art site in the world. Whitley asserts that the bighorn sheep symbolize rainmaking. This assertion is supposedly based on Whitley's readings of ethnographic notes from the turn of the century, which are stashed away in various protected archives, difficult of access. Carl maintained that a picture of a bighorn sheep represents a bighorn sheep. David responded that everybody agrees that rock art is shamanic. Carl responded, jumping out of his chair and waving his arms, that he understands the shamanic worldview as well as anyone, and shifted attention to what he calls the "universal sun sign" and the universal sign for the four directions or seasons, the equal-arm cross, referring to examples near his home.

Somewhere around this time I busted in, completing the triangle. I didn't want to mess with Carl, I wanted to mess with the accepted paradigm. "I have a hard time with the term shamanism and shamanic functions, frankly. I think it's totally misleading to define a tribal culture as representing an '-ism', because '-isms' are the product of detachment and abstraction and reflect a shift of attention from the particular to the generic. And the term 'shaman', even to scientists, means a crazy healer with supernatural powers, and I believe that the supernatural only has meaning to us, who are mostly cut off from nature and have a fear of the unknown. To people living in nature, there's only the natural."

"No, no, shamanism is defined as a belief system in which natural

phenomena are determined by unseen forces, and certain individuals known as shamans are the interpreters and intermediaries between the people and those forces. And all the ethnographic evidence shows that the desert people who made this rock art had a shamanistic belief system."

"Okay, but WE also believe natural phenomena are determined by unseen forces! Look at gravity! And look at the example of Celtic society. There's the concept of the Druids, as misunderstood a term as shamanism: it was simply the notion of the learned, the cultural leaders of the tribe, encompassing doctors, philosophers, judges, teachers, artists, bards and historians, and so forth, as well as those who led ceremonies and would be considered spiritual leaders. Now look at symbols in that light. We think of the shaman as one who worked in secret and mystery, one who received visions in a bolt of lightning and healed people with mumbo-jumbo, and Whitley perpetuates that by tying shamanism to the reduced importance of men in a gathering ecology, when they desperately tried to hold on to "supernatural" power since women had become the providers."

"I think symbols in rock art had a very practical role in communicating, teaching, and reinforcing knowledge about the natural, not supernatural, world, which for tribal people included social values, political conditions, and ethics. Not just 'shamanism'."

David considered this, allowing Carl to jump back in with his "the picture means the thing pictured" theory. "These people out here were very primitive; they didn't need to come up with complicated meanings for symbols. They were eating roots out of the ground, for christ's sake!"

Oh, boy! This sent David and I straight up the wall. As we attempted to get rid of the term "primitive", Carl thundered ahead, traveling across the border into Mexico, maintaining that the sun sign and other alleged celestial images probably came from the advanced cultures of Mesoamerica, where they built great observatories and had an advanced understanding of astronomy.

"But why would people who had lived successfully hunting and gathering in this environment, with an intimate knowledge of everything

in it sufficient for their needs, need advanced astronomical knowledge from a completely different, agricultural society, from a distant environment? What use would they have for it?"

"Because it's advanced, it's beyond their knowledge! People always latch onto new and exotic ideas!"

"But these people were separated by dozens of other cultures and habitats, from the civilizations in Mexico. How could advanced ideas with no practical application travel across all those boundaries?"

Carl grinned devilishly again. "Because the elites of each society are the ones who are in touch at the boundaries! The priests, the shamans, the intelligentsia, whatever you want to call them, they were aware of what was going on. While others were trading beads, they were trading knowledge."

The sun was about to fall behind the high ridge of the Cove, and I needed to take Carl home and set out on the next phase of my tour. Our engagement had been heated but in the end, fun, a classic confrontation of eccentric scholars, old desert rats with similar passions, children of the sixties. Carl was thoroughly worked up, and on the long drive back to Pinto Mountain, he gave me more of his wildlife observations.

From Geronimo to the Quakers

An international conference on environmental conflict resolution was being held by the Udall Center for Policy Studies at the University of Arizona in Tucson. Believe it or not, there's an entire profession of environmental conflict resolution, with thousands of practitioners worldwide, and about five hundred of them were in attendance, from Chile and Thailand as well as all over the U.S.

Early Wednesday morning I drove up a gradual slope towards the mountains, through the sprawl of Tucson, leaving the dusty decaying parts and entering the scenic zone of the affluent, with its upscale malls and Santa Fe-style residences. I had expected the resort to be secluded and idyllic, and it was, on a high bench above the Tucson valley, fronted by golf courses and tennis courts with a view of the

whole landscape to the south, backed by a steep canyon with a waterfall creating a stream that ran under the hotel into a koi pond at the head of the golf course.

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Lunchtime arrived, and I hadn't made friends yet, sufficient to join anyone at their table, so I took my box lunch and walked up to the waterfall behind the resort. They had taken an intimate riparian corridor and sanitized it for low maintenance, cleverly channelizing the little stream between natural-looking rocks, with signs identifying the vegetation arching over the paved path. There were birds and lizards, and later they had to remove a rattlesnake from the reception area, so I guess the habitat hadn't been completely bastardized....

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For the evening reception, the conference organizer had recruited Bill McDonald, from the Malpai Borderlands Group. He was introduced as a sixth-generation rancher. Tall and straight-backed in his sixties, articulate, with the gentle drawl of a rural southwesterner and the blunt, honest delivery of someone who has had to go out looking for calves in the middle of the night all his life, he was the first person I've ever seen who fully bridged the gap between old school and new school.

What they're calling the Malpai Borderlands is country I passed last winter on my first southwest road trip. It's a triangle straddling the Arizona, New Mexico, and Mexican border country, encompassing about a million acres, with dozens of family ranches and a bit of national forest and state land. It includes the beautiful mountains where Geronimo hid out and the place where he finally gave himself up. When I first laid eyes on it from the highway, I knew it was magical and I wanted to go there.

Maybe what made the Group possible is the remoteness of the land, which gave them longer to adjust to new conditions, and allowed them more solidarity than usual. A couple decades ago the ranchers began talking about the threat of subdivision as ranching became economically more difficult and people came under outside pressure

to sell. They agreed it would hurt them all to have the open space grazing cut up. There were some fires, which they believed had benefited the grasslands in the past, and the Forest Service came in and put them out against the wishes of the ranchers. So they decided to organize, and try to find a way to protect their economic basis and their way of life. One of them was a Quaker, and he helped define the basic principles of protecting and nurturing the land, which would enable them all to stay on and prosper.

They put these principles into a mission statement, which placed the health of the land at the foundation of their survival. They worked hard to learn about the legal systems and agency regulations they would have to deal with. They raised money and created mechanisms to acquire conservation easements and trade these for forage when members of the group were suffering from drought or other circumstances, so they could help each other out in times of need. They got to the point where they could hire their own scientists and lawyers, and through that they found ways to protect endangered species while increasing the profitability of cattle ranching. They learned how to work with purist organizations like the Nature Conservancy, in spite of their disagreements on principles. Today, they're recognized nationwide as a premier example of habitat stewardship through a traditional American way of life.

And, whereas many of us have left our birthplaces and lost our ancestral sense of community, they've stayed and made their community stronger and their habitat healthier.

Fields of Fire, Spheres of Light

While outdoors in Tucson, my eyes kept returning to the Santa Catalina Mountains north of the city. I figured that if ever I had to live here, they would be my escape. After recovering from the conference, which had taken place in their foothills, I was anxious to revert from motel life to camping. I had already spent more on rooms and restaurants than I had planned, or could justify spending from my dwindling savings. And after the heat and dust of Tucson, I imagined cooler, cleaner air, and shady canyons with running streams, in these mountains which were tall enough to have a ski area in winter.

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The road climbed first through classic Sonoran desert vegetation on beautiful stratified rock, then higher up through juniper and manzanita among clusters of granite pinnacles. Every vista featured the sprawl of Tucson, and I began to realize that these mountains have exactly the same relationship to the city that the San Gabriels have to Los Angeles. That should have been my first clue.

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The Santa Catalinas are called a “sky island” because, like other ranges in the “Basin and Range” province, including the Old Womans, they’re isolated in the midst of arid basins. I found them very beautiful, but was surprised to hear there was no water. There seemed to be plenty of granite to hold it, and even the much lower ranges of the much drier Mojave have a few perennial springs in the worst drought.

Entering the forested zone, I drove to the turnoff for Mount Bigelow, which seemed to be the only campground located at a higher elevation than the road, with a possiblity of a view out of the forest. I followed a bumpier and bumpier dirt road up and around the peak, finally entering a clearing where a bunch of vehicles were already parked. I pulled over and got out, and a bunch of teenagers emerged to look at me from behind a pickup with a stereo blaring.

On the other side of the road from them was an open woods leading a short distance to the end of a ridge. I walked over there, passing a nice new cowboy hat that had been left on the ground next to a soft-drink bottle. This was not an auspicious place to camp. I got back in the rental car and kept driving up the road, another half-mile or so. Suddenly the top of Mt. Bigelow appeared, a forest of massive, brightly-colored communications towers and fire lookouts. Just below the top, at 9,000 feet, were a couple of camping pullouts in the forest, one of them already occupied by an old RV. I pulled into the other and began scouting for a place to camp. The entire hillside was littered with toilet paper.

But on the other side of the road, toward Tucson, was a low ridge. I climbed over it and immediately saw that there would be many poten-

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tial campsites within a short walk. So I grabbed everything and started walking. About a half-mile down the slope, I came upon a massive granite outcrop.

I dropped everything and scrambled out onto the rock. It was about a hundred feet long, gently sloping downward to the southwest, with a sheer drop of about two hundred feet to the forest below on the southeast. At the very end, facing Tucson, it formed a lookout over the entire Tucson valley. And sheltered behind the outcrop, in a little grove of pines, was my perfect campsite, complete with a builtup stone fire circle (which I had no intention of using in this extreme drought) and some cut logs and trash left by previous campers.

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It was around 6 PM, and the sun had another hour to set behind the western ridge. I read for as long as I could, in an alcove of the rock. I did some bouldering on a vertical granite face with small cracks and minor irregularities. The whole time I was there, the kids across the slope, behind the forest, on the other side of the ridge, kept up a regular rhythm of roaring, as if they were playing a game. A large group of them would roar. Then a group of girls would scream. This went on until it became a familiar part of my environment.

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After dark, in the moonlight, I walked out onto the rock. Flickering Tucson filled the plain six thousand feet below me, essentially the same sight I'd seen thirty years before, when in college I used to ride the elevator to the top of the John Hancock building in Chicago and sit for hours at night on the observation deck, looking for meaning in the seething grid.

Now I knew what it meant. The city is a beautiful, seductive field of fire, burning away the fruit of the land and leaving a burden of poison. Cities concentrate the wealth of nature, burning through it at a feverish pace, making larger and larger areas unfit for abundant, healthy life. It's like trying to live inside a continually-expanding tomb whose interior is artificially animated with a disorienting virtual-reality simulation....

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I looked up at the moon. “No lights but thine, oh lord, no lights but thine,” I said. I was returning to my campsite, when I glanced sideways at the rock, and saw a tiny point of light coming from the rock itself, stronger than the illumination of the moon.

Carefully, I approached this new development. I found it was coming from a horizontal crack that traversed a 45 degree stone face which was currently facing the moon. The light itself was a cool green. I lay down against the rock and brought my face toward the light.

As my eyes adjusted to the darkness of the crack, whose opening was no more than a half-inch high, I saw by the light itself that it was a sphere, the size of a shotgun pellet, suspended just inside the crack, surrounded by a collar of lichen. It was incredibly bright for its size. It could be seen shining from a white rock face fully lit by the moon, from dozens of yards away. I was reminded of the unexplained light Michael and I had seen in Scanlon Gulch years ago.

The light of the sphere remained absolutely steady. After a while, I fanned it gently with my hand, which had no effect. I blew on it from a couple inches away, likewise with no response. I lay there quietly with a profound sense of gratitude, gazing upon the steady green light of the tiny sphere, and memories came to me of all the wonders I had been allowed to witness in this life. And of those who say there are no frontiers.

The Other Guy’s Plate

I entered the San Pedro River valley, which led to the Gila River Valley. Surrounded by low desert, there were irrigated farms and ranches in the narrow valleys, but no water flowing in the dry riverbeds. The country was reddish and greenish. Mountains appeared regularly which were not natural: the waste heaps of huge open-pit copper mines, five hundred to a thousand feet tall. The evil-looking smokestacks of the Hayden smelter towered at the entrance to the Gila River gorge. I entered the gorge, and suddenly on my right, between groves of cottonwood, I saw a small river flowing past rocky bluffs. It was hot, I was sticky, and my primal bathing urge took over. I hungered to bathe in the healing waters of the desert.

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The highway was contained between tight guardrails, winding tantalizingly alongside the ribbon of water. No place to turn off, and huge late-model pickup trucks tailgating me the whole way. Suddenly a turnout appeared, and I skidded off into it. It was an ugly place, hot as hell, bulldozed, with nary a path down the steep rubble bank to the saltcedars that obscured the river. But I packed some fresh clothes and a towel and headed up the bank looking for a way down.

When I finally scrambled and crawled through mesquite and tamarisk to a precarious perch by the stream, I found it clear but stagnant, the surface littered with plant debris. There were big turtles surfacing, and bigger fish, probably some kind of sucker, nosing around in the muddy bottom. This was not a good place to bathe.

I tried a couple more turnouts, but there were starved-looking cattle foraging the floodplain, and I finally gave up. I was famished, and I stopped in the frontier mining town of Globe for an early dinner at a Mexican restaurant in the old downtown. They were involved in a big effort of swabbing the windows and mopping the floors, despite having a number of customers. A girl at the cash register finally pointed me out to an older waitress, who gave a melodramatic look of surprise, and shortly came over with menu.

I found they were serving New Mexico-style Mexican food, and I ordered chile verde. Within minutes the waitress dropped a burrito smothered with red sauce on my table and ran off. I'm going, Hmmm, maybe they do things different here. I cut into it, tasted it, it was okay, and being famished, I started working on it seriously. Then the young floor-mopper appeared pushing an industrial cart loaded with exactly one bowl of chile verde. He looked at my plate, double-checked the order in his hands. "This is supposed to be yours," he said uncertainly.

"Is that the chile verde," I said innocently.

"Yeah. You must have that other guy's plate," he said, motioning to an Apache gentleman across the room.

"Well, I was starved, and I'm eating it now," I said. So I got both plates, and the Apache guy had to wait a few minutes longer. And by

the time I was finished with my duties, I was so bloated there was no way I could go any farther, so I had to spend the night in Globe, in yet another over-priced cheap motel.

Sacred Waters, Closed for the Day

Coming into Globe from the south, I had been prepared by the two or three big open pit mines I had seen already. I knew this was a mining district. I wasn't surprised that there were many vacant buildings along the highway and in the old downtown. Downtown, there was a 19th-century building with big dusty windows through which I could see shiny brewing tanks, and could just barely read the name of the microbrewery which, it appeared, must have opened in the 90's and closed a year or so ago.

The next day, hoping to make coffee in my room, I got up and discovered that my new backpacking stove did not work. It seemed that the point on the gas valve was not long enough to engage the female gas canister. It was like a sexual dysfunction. I took the valve completely apart and found it had been fabricated wrong. I was pissed off in Globe, which did not seem to have a store for these kinds of things, on a Sunday, when even if there were it wouldn't be open.

Now I was both hungry and pissed. I scanned the yellow pages for restaurants, and they all seemed to be strung out along an arcing highway connecting four towns in a row. It seemed strange, why would they have separate towns so close together?

I drove up a gentle hill toward a saddle, on a highway lined with gas stations and auto shops, and suddenly reached the top, where a wondrous vista was presented to me. Almost the whole of the earth ahead was burdoned by artificial mountains: bright, crudely geometric, of intensely multicolored rock and clay that had been laid down and carved with broad strokes by unimagineable forces. Stratified, like the sedimentary mountains that they were, in layers of blood-red, pink, yellow, grey, black, salmon, and white. And at my very feet, directly below the hill I had just surmounted, was a poorly watered golf course, forming a sort of sunken garden for the primitive gods who had built the mountains.

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Naturally I slowed down, trying to keep my eyes on the road and mostly failing. At the bottom of the hill, dwarfed by the mine, the town became Miami. Here everything seemed to be dead. On the right, rising hundreds of feet into the sky, was the steep mountain of waste from the mine, which had provided a miserable, degraded livelihood for the vanished people, and which had physically dominated every minute of their lives. Here and there iron towers could be seen away back from the top, and smokestacks.

On the lower slopes of this mountain of waste, the ruins of tiny windowless wooden shacks, blackened with dryrot and soot, hung by their roots. And in the floor of a narrow, winding valley, along the streets of the town, dusty buildings crudely designed and built stood mostly empty, windows thick with dust.

There were vehicles passing regularly through these towns on the highway. I occasionally saw someone picking through the ruins on the mountainside, and a few people passed between buildings and vehicles in the side streets, as I drove all the way through, coming into a new world defined by a new mountain of waste, with a large, imposing building directly in front of me that seemed to divert the road around it in a long curve. There was an Arizona trooper parked in the curve. They are very serious about stopping speeders in Arizona, but nobody seems to care, they just drive like hell everywhere, and get busted. Or maybe it's the Californians who are getting busted....

I drove responsibly past, found a legal turnaround, and returned to Miami, this time leaving the highway to investigate the "old downtown antiques district". There were, in fact, two antique stores, one of which claimed to be open. I drove up the street a few blocks, finding one other occupied storefront and a scattering of public buildings, none of which were open. Everything else was vacant.

I came to a Mexican restaurant I recognized from the yellow pages, saw an open sign in the dark window, and pulled over to the opposite curb. As I got out of the car I saw I had parked next to a swimming pool, a big one, sparkling clear, the surface calm, reflecting the blue sky and its soft clouds. I had found the sacred waters, but they were closed for the day.

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It's Not a Squiggle

After a good lunch, I took a walk, looking for weirdness. This seemed to be one of the weirdest places I'd ever been to. I wanted to just leave, but I thought I might discover something by lingering, and I needed help digesting my meal.

The lower slopes of the waste mountain were closer now, and I could see that some of the shacks scattered on the steep slope were occupied, though not much maintained. Some of the side streets curved back and up into artificial canyons, with views of more towers and machinery in the upper distance. Now and then a big late-model pickup truck would slowly enter or leave one of these side streets, its windows tinted almost completely opaque.

The first thing I saw on the street was a little town park with three rocks from the mine, arranged in a manner recalling the decayed stoneworks of Paleolithic people in the British Isles. Two tall rocks faced forward, bearing a pattern of deep, dark shot-holes in a grid formation, and had clearly been used for a competition of hard-rock men. The park itself had a sign dedicating it to the mines and miners. It listed four mining operations in the valley, talking about all the great environmental things they were doing and how profitable they had been. It was like being in Hell, with a sign claiming it to be Paradise. Probably the most extreme form of wishful thinking I'd ever seen.

I walked farther up the street, passing an open door, a roomful of junk, with the sound of an R&B band rehearsing somewhere far in the back.

Parked at the end of the next block was a Kaiser-Fraser (I know because the license plate holder said so). A classy but heavy and bulgy-looking antique car, in good shape but not in mint condition. I walked around the block and was going back in parallel along a lesser street, at the very foot of the hillside. There was a large rambling building climbing upward, with several levels and wings, painted bright turquoise, with all the windows broken out. Now I could see even weirder ruins, a honeycomb of abandoned and decayed foundations embedded in the steep slope, blackened by leaching minerals.

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Halfway up, an old guy was slowly scaling these gaping foundations, and picking at junk. I got distracted watching him, and suddenly I was approaching another side street and there was a good-looking couple sitting on a bench facing me, amusement on their faces.

"Looking for property?" said the man. They looked to be in their early sixties, in good shape and health. I walked over and we fell into a long conversation.

They live in Mesa, a big satellite city just east of Phoenix. They come up to Miami whenever they can on the weekend, just to kind of soak it up. It's not for everyone, they admit, but it amazes them how much history there is. They had just returned from a walk up the hill behind us, where they had met the old guy I'd seen picking through the ruins. He'd told them that the miners lived in ten by twelve shacks.

But then the building they were sitting in front of, which was a bed and breakfast they sometimes stayed in for $50 a night, had been home for all the Finnish miners, as the vacant building diagonally across from it had been home for the Italians, and the one behind that for the Yugoslavs. They said there had been eight different ethnic groups represented.

The other place they stayed in was up the hill a bit and had a terrace where they could look down over the town. They pointed out several buildings that artists had bought and were planning to restore. It was like they were looking at a different place, a place I couldn't see.

Wil Morrison (a fellow Scot) had been an industrial engineer and now worked for Dale Carnegie. Pat was a businesswoman but I didn't find out what kind. Wil was a talkative sort, and my initial urge was to get going, but I gradually warmed to both of them, although I wished Pat had talked more. She seemed smart but shy in an attractive kind of way.

We started talking about life in the city, and the cost of living. Their daughter was an executive in New York and had bought a tiny studio apartment for $250,000 which was now worth almost a million. But she couldn't sell it because that wouldn't be enough for her to get a

better place in the city. Duh!

Finally I had to get going. I told Wil I was going toward Flagstaff and planned to take the highway through Payson. He said that might not be a good idea and immediately took off for his van to get a map. It turned out to be an old map, probably from the sixties or seventies, showing that a long stretch of the road I had planned to take was not paved. He said if I went the other way, farther east through Show Low, it would actually be quite a bit faster, and very scenic.

He made me take his map, saying it would force him to get a new one. Finally, he pointed out the Salt River Canyon, which showed up on the map as a squiggle. "It's not a squiggle," he said. "It's...." and he made a series of spirals with his arm.

After I left, I began to suspect that they were probably hoping to move to Miami in a few years, when they both retired. They were just starting to insinuate themselves little by little, at a very leisurely pace.

High Summer

High summer on the Mojave. I wake up at first light, before dawn, morning breezes rustling the leaves. I've been sleeping away from the house, on a bed of pine needles, in a sheltered little clearing under two old pinyon trees on the bank of a little arroyo, on a gentle slope at the base of granite cliffs that rise hundreds of feet like some kind of Flintstones fortress.

Sometimes I hear coyotes singing as I wake up. In the drought, there are fewer insects and birds about, and mornings are quiet. I walk to the bunkhouse and enter the kitchen to start coffee on the propane camp stove. Depending on the day, I might go for a run, or a hike, or work out in the bunkhouse for an hour or so before breakfast.

In the city, my pockets would contain my wallet, keys, and change. Here, my pockets contain nothing but a cigarette lighter and a swiss army knife, tools I use frequently throughout the day.

I have breakfast outside at the picnic table, facing the northeast, across gently rolling desert scrub punctuated by tall yucca and lumi-

nous buckhorn cholla, to where the sun will rise from behind the pinnacles of Granite Pass, which tower like mute idols. I watch the sky slowly brighten from a pale steel blue-grey, to an explosion of brilliant gold.

I wander around outside among the drought-shriveled dormant forms of bushes as tall as me, surveying the parched bajada. The ground is crawling with black ants. I have to pay close attention to the ground to avoid walking on cryptobiotic soil. Cryptobiotic is the first stage in the formation of living soil, an industry of fungi in partnership with bacteria, related to the lichens that form on rocks. The partnership was forged in the early days of life on this planet, for the purpose of binding dust, sand, and gravel together, liberating their minerals, and producing nutrients from which other organisms, particularly plants, can benefit. Depending on who you listen to, this proto-soil takes from one hundred to one thousand years to form, and if trampled or disturbed, life in that place is set back correspondingly. None of the native animals has a large enough footprint to do significant damage, but we and particularly our livestock have retarded or eliminated the potential for life all over the arid west.

The air feels thin and dry, and as the sun rises, so does the heat. Now and then, I hear a very faint roaring sound far away, as a car crosses the valley on the Kelbaker Road. I retreat into the shade of the house to see what sort of work I can do there.

I might start with laundry. One by one I wash and rinse my clothes by hand in a dishpan, wring them out and hang them up to dry. If I have five days worth, it takes between 15 and 20 gallons of water, in comparison to my daily 2 or 3 gallons for drinking, cooking, and bathing combined.

Two or three times a week I'll drive the seven miles to the Cove to check my email, borrow scientific papers and texts from the library, and visit with Jim, Jason, Mo, or Dave. I'll pack a lunch for these trips, returning in late afternoon.

With the sun high in the sky and no strong winds blowing, the blue of the heavens is inexpressibly clear and limitless. Wispy or banked clouds appear, hang briefly, and disappear when you turn your back.

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On the northeast and northwest of the house, the arms of the bajada slope gently up to mountain ridges in a complex series of undulating folds of dusky, glowing land, peppered with dark green juniper, the upper slopes of fractured granite continuing the intricate pattern.

To the north, the road converges into the brush and the bajada disappears downward into the trough of the big basin, behind which, twenty miles away, the massive humpback of the Cima Dome rises like the back of a huge whale from the trough of a wave. In the far distance, peeking from behind the Dome, a few, scattered, indistinct, jagged grey peaks faint in shades of grey: Clark Mountain and other ranges.

Breezes will come up suddenly, and I need them to keep the place cool, so the windows with screens are kept open, but all papers that I'm working on have to be held down with weights at all times.

The bunkhouse is a low-slung, tastefully unobtrusive, desert-colored ranch house. Inside it's very simple and utilitarian, drywalled with linoleum floors, except for the dining room, which has a nice flagstone floor and one knotty-pine wall. The east-facing windows of the dining room cleverly swing upwards to hooks in the ceiling.

I do my indoor work in the dining room, which is furnished with an impractically massive and rustic picnic table and a stack of cheap utility chairs. The furnishings of the entire bunkhouse consist of almost nothing else besides bunks. The walls of the dining room are almost completely covered by a hundred handmade signs commemorating the classes that have stayed here over the last fifteen years. They're mostly scrawled or carved on scraps of old board, some of them crude and simple, and some carefully, precisely, or creatively crafted. Classes have come from all over California and the West, ranging from high school natural history, to college- and graduate-level ecology, herpetology, bryology, art, petrology, photography, landscape architecture, and so forth. Many of them have fairly good renderings of local species and landforms. Some of the inscriptions exemplify the legendary wit of biologists: "Herps good, herpes bad", "Death to the lepus in my headlights". And mystical responses to the beauty and power of the place: "Humbled in sweet surrender", "Spirit won't you take us to the Granite Mountains, to the long hot days of spinning the wheel". I feel like I'm surrounded by post-adolescent

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ghosts in here.

By an hour before noon I'm hungry, and I throw together some leftovers and raw vegetables. After another hour or two of work, I'm ready for my siesta.

The sun is running down toward the northwest ridge when I wake again. Breezes come up suddenly and rustle the doors and papers tacked to the walls.

I'm in shade soon, as the sun falls behind the steep ridgeline, long before true sunset. Now I can think about showering, and starting dinner.

With sunset begins a great pageant of color, as shadows reach toward the eastern hills, which rise up in high contrast, ripening to the heart colors of cactus fruit, against a sky of flourescent delicacy.

I have dinner as the sun sets and the sky fades to a pale lavendar up the long basin to the north. Strong breezes race past, whipping the trees around the house. I see the lights of Kelso twinkling like a broken bracelet down in the bottom of the basin. I watch a point of light crossing the opposite slope of the alluvial fan, a car bound for Twentynine Palms. From now on, there will occasionally be a point of light coming or going, some headed to Las Vegas, in the opposite direction.

One night, I hear a great horned owl calling from the cliffs. Another night, I see a kit fox trotting past the door of the bunkhouse.

As the final afterglow of sunset fades, I notice a faint brightness over the cliffs in the east. Slowly the moon appears out from behind the rocks. A new sort of light flows out over the land, dead neutral light, and I see the buckhorn cholla glowing with ghostly haloes. I often go for night hikes in this exotic moonlit landscape, and it sometimes seems like being inside an infrared photo. But even with no moon, if the sky is clear, starlight provides plenty of light for night hiking, because there's no canopy of trees to shadow the ground, and shrubs are widely spaced on the bajada.

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Mesquite Hummocks & Koala Bears

My position here is challenging but “full of potential”. The story of my life! I have easy access to a large mountain range with diverse topography and unusually diverse wildlife. The wider world of the East Mojave spreads out around me for hundreds of miles, with prominent mountain peaks, walls, and ridgelines, spectacular hidden canyons, vast fields of volcanic cones and craters surrounded by massive lava flows, broad shallow basins sloping to flat white dry lakes. Hidden and hard to find, at the end of abandoned 4wd roads or daylong hikes, are thousands of isolated springs, seeps, tinajas, streams, and pools, some with thick stands of coyote willow, mesquite, or invasive, destructive tamarisk. Even the most barren volcanic rock has been colonized by communities of lichens, heat-resistant plants, insects, reptiles, birds, and rodents.

For people, the major indigenous food resources tend to be concentrated locally, sometimes in landscapes that are intimidating for us non-natives. Mesquite, which produces protein-and-energy-rich beans, grows in thickets along major sandy washes in the bottoms of remote, otherwise barren and exposed basins. Or it forms hummocks of sand around the margins of sterile dry lakes. Ricegrass, another major native crop, covers the base of alluvial fans in sandy soil in or near barren dunes. Pinyon pine, source of delicious pine nuts, generally only grows on steep upper slopes, and agave, whose rich, starchy heart must be cut out and baked for days, dots high, rocky ridgelines.

On a tip from my friend Adrienne, I drove ninety miles to the northwest to the Cronese Dry Lakes looking for mesquite pods. It’s late in the season, but other friends had just discovered the mesquite in the Granites to be completely stripped by feral burros, and I didn’t have anything better to do.

There’s a freeway exit, dead-ending on the north side in a track trending through deep, fine, white sand, harsh black mountains dominating the distance on each hand. The gently rolling white sand extends toward the nearest lakebed, punctuated by widely spaced mesquite hummocks. I locked my hubs and shifted into 4wd low gear. The sand was so soft, it was like piloting a boat. I felt like a heavier vehicle would have immediately bogged down, but the little Tracker plowed

ahead like a tugboat.

I dutifully stopped at each mesquite hummock, but there was no evidence that they had even flowered this year, let alone set seed. I approached the crossing of a powerline, and there was a small sign describing the basin as a major archaeological site dating to the ancient (and some simply prehistoric) pluvial periods when the lakes held water. I looked around trying to imagine active camps of Indians harvesting mesquite pods, ricegrass, waterfowl and eggs, perhaps even fish. Like most dry lake margins, the landscape looked devastated, as if in the aftermath of a nuclear explosion. I saw a flash of color alongside the road and stopped to examine a spectacular folk-art painting on a splintered panel of plywood, lying on a hummock beneath a bush. It was split into two "frames", the left one showing koala bears in a tree, another showing a computer displaying gibberish, surrounded by rats, inside a laboratory or office. In the past, I would've taken it, but on this expedition I recognized it as a precious component of the archaeological record for future generations to enjoy in context.

After a few very slow miles, I came to the proximate margin of the lakebed itself, where the ground was a hard dirty-white crust, and a broad swath of blackened shrubs lay uprooted and flattened to the ground, again as if in the aftermath of a violent explosion. My search for food had failed, but I had seen much. Unfortunately, on the way home in the night, I yanked the food chain in a disturbingly common rural fashion, by hitting and breaking the back of a beautiful little nighthawk that was feeding on a lizard in the road. It simply couldn't rise fast enough to miss my windshield. I had to turn around and go back to finish it off with a blow to the head, sad but hopeful that a coyote or scavenger bird would find it quickly.

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Ephemeral greens, fruits, and vegetables appear after winter or summer rains in dependable locations only known to old desert rats or Indians. Many of them are both exotic and delicious: the lotus-like flower buds of the beavertail cactus, and the white stupa of the parasitic broomrape.

Hunting is allowed everywhere except in my immediate surroundings. You run into individual cottontail rabbits and large coveys of quail all the time on the upper bajada. The large chuckwalla lizard is supposed to be a delicacy and a good source of protein, but hard to catch as it wedges itself deep in cracks of the rock, and I haven't seen any yet this year. Introduced whitetail deer are coming in to water in some areas. The widespread and destructive feral cattle and burros would be a great source of meat if they weren't protected by law.

And then there's the River (the Colorado), which would be an excellent, though far away, source of fish and waterfowl, except that its native habitat has been almost completely destroyed by dams and even its most remote and scenic stretches are filled with thundering powerboats pulling families of wake-boarders, and drunken spring-break students on jet skis.

Study the Past

Along the highways, roads, and railroads of the open desert, there are tentative collections of European-American dwellings. Because railroads and highways take the path of least resistance, most of these settlements are out in lowlands of the open basins, exposed to the full force of sun and wind. For water, wells have to be drilled to a depth of a thousand feet or more. Scattered trees were planted generations ago, mostly imported trees that are showing their age and struggling for survival. The pattern of these "permanent" settlements is so different from the migratory camps of the Indians, which were always located near concentrations of natural resources.

Some settlements have a post office, fewer have a one-room school, even fewer have a tiny store or gas station. In recent years the country stores and gas stations have almost all been replaced by service centers at wide intervals on the interstates, and many local post offices have closed during the two decades I've been visiting the desert. The modern facilities are always made on a generic plan and can't stand up to desert conditions, deteriorating rapidly.

In every outpost of humanity, many or most of the buildings have been abandoned or otherwise stand vacant, surrounded by junk. There will always be an open, unregulated dump which is often bigger

than the occupied area, spreading sparsely across the surface of the bajada out of sight of the main road, consisting of vehicles, appliances, furniture, windblown paper and rags, abandoned construction materials and toxic waste, and huge middens of rusty cans, broken glass, and plastic containers.

The railroads represent the most active component of resident humanity out here. Former watering stops from the days of steam trains are spaced at close intervals along the tracks. They're far more numerous than the occupied settlements, and each one is the remnant of a settlement previously supported by the railroad, the remains of which have been salvaged and carried away over the years by desert rats and ridge runners. Now they're access points for track maintenance. You always see the broad white trucks of the track crews coming and going from these outposts and passing on the highways, and in the hottest parts of the days the track crews spend hours sitting in their trucks in the shade of an old abandoned tree at an empty railroad outpost, far off the highway.

Where's everybody else? Widely scattered and mostly doing their own thing, piecing together unconventional livelihoods. A very few still ranch. There are pockets of active mining which appear in clots of trailers far from permanent settlements, temporary extractive communities which bloom for short periods, to be abandoned and padlocked for decades until the next mineral boom.

The old homesteader center of Goffs retains the memory of, and longing for, a social life for the surrounding rural population. Its most prominent occupant is Dennis Casebier, an ex-Marine professional historian who publishes a series of books on the area and recruits dozens of volunteers to record oral history. Casebier maintains a museum and library in his sprawling compound, with a huge, intimidating locked gate surmounted by large capital letters commanding passersby to "STUDY THE PAST", by appointment only.

Walking Away from Power

I returned from a Bay Area trip to find a storm front looming over the Providence Mountains to the northeast. As I sat at the picnic table eating dinner that night after sundown, the storm moved westward

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over Kelso, completely obscuring the basin and the Cima Dome behind it. I danced a little rain dance, calling to the clouds.

Incandescent, iridescent explosions went off regularly behind the eastern hills. Jagged lines of lightning suddenly joined the bodies of clouds which hung low and heavy like a massive roof, tinting them a miraculously pale lavendar or magenta. From far, far away, finally the thunder came rolling.

I called again to the clouds, sharply. I heard a strange echo and experimented with it. This place has the ultimate echo! It actually repeats four times in a row, distinctly, from a series of four ridges at farther distances toward the Pass. Never have I heard anything like it.

My ears rang with the sound of crickets, more than I'd heard previously. Throngs of them had started singing all across the bajada, singing to each other and to the storm. We waited all night, and the next morning, as the storm moved around us to the north and south, but no rain came to the Granite Mountains.

Small things surprise me from time to time. Dragonflies appear rarely. A walking stick prowls one side of the bunkhouse, a praying mantis the other. One evening I find the mantis at the top of a tall mojave yucca above the picnic table, perched on the tip of a yucca blade, outlined against the blue-grey sky, waiting for its prey. Cleaning junk out of a cabin, we unveil a tiny black night lizard. Dave carefully catches it and moves it 50 yards away to cover, but a week later when we finish the cleanup, the tiny lizard is back in the cabin. Closing the bunkhouse door another evening, I see what looks like a juvenile tick on the doorstep, and bend down for a closer look. Its teardrop-shaped body is about the size of the head of a pin, but it has tiny, almost microscopic pincers on long arms so thin they might be hairs. I mention it to Jason later and he says "Oh, yeah, those...."

So what is my project? It started out as my attempt to make sense of my own life and work, symbolically and in pictures. Later, it started looking like something that might be useful to other people with similar needs. Even later, it started looking like something that could be of fundamental value to anyone, anywhere.

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Sometimes I think of it in terms of what it does: provides a cognitive framework for the world around us, redirects attention from the distractions of media to the underlying reality of our sensory environment, allows us to study interactions and interdependencies between things that aren't already well-integrated in our lives. Other times I think of it in terms of the questions or goals that people might have, that would make my work useful to them.

I'm working on drawings which apply the insights of ecology, evolutionary biology, and social anthropology to dynamic social and cultural systems in a natural context. But instead of taking the scientific approach, I'm pursuing it as an art project, looking for and actively developing integrative results and methods intuitively through visual art, experimenting with symbols and symbolic pictograms and symbolic compositions that will hopefully evolve toward a toolkit, a set of templates, that anyone could use to investigate: What condition am I in? My family? My community? My society? My environment? What about my belief system? My value system? My culture? Are they helping us?

Best of all, the pictures could allow family members, and community members, to work on these questions together. And the models could be used to expose children to the questions, methods of inquiry, values, and beliefs.

I walk out onto the bajada, away from the bunkhouse. As I move into a new perspective, the large full moon suddenly appears, golden, in the blue gap between the granite towers. I'm in a small clearing between massive buckhorn chollas. Whereas most shrubs have lost their leaves in the drought, the cholla still seem powerful. I think about those who seek power, whether political, or financial, or spiritual. I, on the other hand, walk away from power, casting myself on the mercy of struggling people and faceless institutions, exposing myself to the hazards of the raw elements. I wonder why I continually make myself powerless, in search of...what?

Shy Bob

It was mid-morning, and I was driving down the sandy, bumpy lane from the Cove toward the Kelbaker Road, on my return home to

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Norris Camp. After turning a few corners, I could see off the edge of the plateau to the southeast, over the blessedly hidden Interstate, through the gap between the Marble Mountains and the Clippers, past the old 66 and the Santa Fe right-of-way, to where towering plumes of white dust rose thousands of feet into the air over Cadiz Dry Lake, forty miles away, stirred up by the winds that had been rapidly cooling off this desert and clearing the air most everywhere else.

A few miles later, heading north, I crested the rise near the Pass, slowing and rattling the cattle guard, and saw a man walking away from me down the road I was turning into. He stepped off to one side, a new pair of jumper cables hung over his shoulder, and asked politely for a boost, and I invited him to jump in.

He was medium-sized, lean, and burnt a dark red, dressed in reasonably neat jeans and t-shirt, and as he got into the seat beside me I noticed he was wearing about a week's stubble and was sweating a load of alcohol out of his pores. He could've been anywhere between 45 and 60.

As I drove up and around the rough, eroded bajada along the edge of the granite pinnacles of the Pass, he told me his battery was new and had a seven-year warranty but there might be a short somewhere. It'd gone dead yesterday afternoon, but he'd waited until this morning to go for help. He'd walked over to the Norris Camp gate first but had been dissuaded by the No Trespassing signs and not being able to see anyone there, then he'd walked to the road. But nobody ever stops for you on the Kelbaker, except the rare ranger, so he'd given up and was heading back to his car when I showed up.

He said he ranged all over the desert, but he rarely ventured over here. I asked him where he was based out of, and he repeated, "Like I said, I range all over the desert." He didn't have a home.

As we came over the rise into Snake Spring basin, with the cliffs ahead and the pinnacles on our right, he motioned to me to take the second turnoff. There's a handful of long-established unmarked campsites scattered among the boulders and juniper at the base of the pinnacles; the Park Service people call them "our campsites", but

before that they were just where generations of people had made fire rings, many of them quail or rabbit hunters.

We pulled up to where his car was parked, the hood tucked under a juniper at the base of a boulder, a tiny tent alongside it. The car was a ten-year-old, rundown American sedan with blankets propped inside the windows, and when he opened the door I could see stacks of books and boxes inside. He was living out of his car, moving from campsite to campsite.

He was clearly embarrased to be needing help but grateful to have it; he kept elaborating on the possible causes of his battery failure and the mistakes he might've made to cause it, but he obviously didn't want to share any other personal information. We connected the cables and his car quickly started up, and as I closed my hood he pulled out his wallet and offered me a twenty, which I vehemently refused, so he rummaged through the back seat and found a couple bottles of Gatorade to give me in gratitude. I offered my hand and told him my name, and with reluctance he said his name was Bob. I wished him happy trails and headed for home.

Extreme Weekending

It was just eight in the morning on Sunday, and I had been rushing to make my date with Jason and Mo. As I approached the last turn before the gate to the Cove, I saw a guy stand up in the bend of the road, and I slowed down to avoid him. He looked young and was stuffing a knit cap on his head, scowling and looking away from my car. At his feet was a sleeping bag spread out in the middle of the fenceline road.

In the background I could see White Fang looming against the upper cliffs. White Fang is a pinnacle that used to be very popular with climbers. When the University took over the land, they naturally fenced it off, because it's also favorite nesting habitat for golden eagles, and over the years many Reserve staff, including me, had conscientiously patrolled the perimeter and busted would-be climbers or warned them away. Just a couple days before, Dave had busted a kid from Arizona, returning from a Yosemite climb, who had parked his luxury SUV by the fence and was scouting an approach to

the Fang.

I was in a hurry and figured we'd deal with this guy on the way out, but I thought it was curious that he'd camped in the middle of a road. A few minutes later, on the way out, we pulled up to the corner in J and Mo's car. A second kid had appeared, and J slowed to greet them and ask them what was up.

They both looked like typical, scruffy college students. They said they had arrived late last night, parking near the Kelbaker and walking in to the fence, a distance of between 2 and 3 miles. "How late?" said J. "Oh, about four AM," said the kid with the long beard. "We didn't get out of LA until one AM."

J offered to give them a ride back to their car, and they hurriedly packed and piled into our small vehicle. "You guys left LA at one AM to go camping in the desert?" said J.

"Yeah, I have a flight back east at noon today, and we just wanted to camp out for a night," said the bearded kid.

We all had a good laugh. Then we dropped them off at their car, a brand-new Volvo sport convertible, and we had another good laugh. "Sweet," said J. After partying late on Saturday night, they had driven their parents' car 200 miles out into the desert. From the road, in the dark, they'd glimpsed the pale cliffs in the distance, hiking over two miles in deep sand in the hopes of camping there. When they reached the fence and found their way blocked, they'd collapsed, getting about 3 hours of sleep before hiking back out and driving the 200 miles back to catch a plane.

Bird Points & Aztec Swords

Joshua Tree Village, in spite of its name, doesn't consist primarily of a cluster of humanity. With the exception of a tiny barrio and a couple of dilapidated strip malls, the homes and businesses are widely separated and largely hidden from sight among the Joshua Trees on the gentle slope up toward the hills of the Park.

The main intersection on the highway is the road to the park. The

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Saloon and Ethan's store sit on this intersection. The road snakes uphill to the south through a shallow, winding, canyon which gradually gets narrower. Houses perch at wide intervals up the slopes among the time-varnished granite boulders. We turn off and climb a short driveway between partially-hidden, whitewashed pueblo-style buildings.

I'm asked to visualize the abandoned shack that Jason and Tony used to throw rocks at as kids. But instead I see a series of white stucco walls and roofs and patios following the hillside above and below us, accompanied by considerable clutter. Tony has been working on this place for ten years, adding rooms, filling in and taking out walls and ceilings, adding an upper story and various outbuildings. The interior walls are textured and painted pueblo-style, with a modest amount of artifacts and southwestern crafts on display, and comfortable furnishings.

On his brochure, Tony has thick black hair down to his waist, but now his hair is cut short and stands straight up like a brush. His grandmother taught him to make pots and gave him an interest in indigenous crafts. Throughout childhood, tramping around the wild desert, he found pots representing every style going back to the paleolithic, along with stone tools and implements and arrow shafts and atlatl parts, and he was driven to learn how to make them, and he did. He gathered his own clays from the dry lake beds and the Colorado River, and learned how to grind them and mix them to the right consistency, how to build pots using forms like the old Indians, how to mix his own pigments, and how to build and use handmade kilns. He made exact, functional replicas of the ollas that people used for thousands of years to store food and water, in all sizes, and people started buying them, and he was asked to teach children from the Cahuilla and other tribes, because the Indians themselves had completely lost the art of native pottery.

The decorative motifs he used were taken directly from the ancient pots he had found himself in the desert, and at one point his studio was surrounded by National Park Rangers and his work was threatened with confiscation, because they believed it had been looted from archaeological sites.

He also learned all of the basic aboriginal skills, from flintknapping

to firemaking to the crafting of weapons. As we stood in his back patio surrounded by huge ollas, his primitive kiln, a kiva, and various exercise machines, he climbed up a narrow stairway to a faux adobe shed, pulled out the pieces of an atlatl, fitted the six-foot shaft, and fired it in an amazingly true trajectory up the hill, out of sight. Then he took us into a back room and showed us a replica of an Aztec sword that he had recently finished. “Nobody else has figured out how to do this,” he said modestly. “Don’t touch the edges,” he warned, handing me the sword by its handle. The black wooden handle was an extension of the wooden shaft, which was engraved with simple Aztec motifs. On either side of the shaft were hafted rows of razor thin, translucent obsidian blades, each one uniformly rectangular and about four inches long. I touch an edge, and am reminded of how many times I’ve heard that obsidian is used in eye surgery because it can take a thinner cutting edge than steel.

The whole sword, excluding the handle, is about two feet long. He shows me the core he flakes the blades from, a roughly cylindrical rod of clean black obsidian. From my own limited experience working stone, I’m totally mystified that anyone can do this. Tony enters another small room, reaches up to the top of a cabinet, and hands down an unfinished sinew-backed bow he’s been working on. He mentions a few of the arrow and spear point styles named by archaeologists, and points out that what the archaeologists call “bird points” were actually used on long arrows and atlatl shafts to take down big game. “The weight of the hardwood foreshaft forces the point through,” he says. “A larger point would get hung up and wouldn’t do as much damage. And after working to make a fine point, you’d never want to waste it on small game. You’d use a net or a throwing stick, implements specially designed for small game.”

He walks us back out through the front door and down to a lower-level terrace where his raw clays from various remote parts of the desert are stored in faux-adobe bins, around a central area where he grinds the clays on stone metates and mixes them with water in shallow troughs. J and Mo need several wedding gifts, and Tony digs a series of different-sized pots out of their protective blankets in a big box. The patterns are all different and the finishes are uneven, and they are so simple yet so beautiful, partly because they belong to this desert, they are the inevitable intersection of the geology of this place and the universal needs of humans which did not change over the

thousands of years during which they've been made. Later, Jason points out that although archaeologists bemoan the loss of indigenous cultures, Tony has resurrected this lost art simply by single-mindedly studying and duplicating it, and now the Indians are learning it back from him. I'm reminded of my friend Cody in Arizona, a gringo of Scandinavian ancestry who teaches the descendants of hunter-gatherers how to live off the land.

Tony's pots sell for hundreds of dollars. Many are sold through Ethan's store, but Tony regularly gets large commissions from the tribes, who buy them in quantity to give as gifts. He mentions a few celebrities and politicians who, he's been told, own his work, but in his uncertainty it's obvious that this doesn't particularly matter to him.

Fresh Nopales

To finish off my Joshua Tree experience, as we head back toward 29 Palms, Jason drives us up into a little "artist's colony" beyond the main spread of homes and businesses. Off to the right, midway up the slope toward the hills, stands the recently-completed hay-bale home of new-music composer Lou Harrison, which was featured in a color spread in the SF Chronicle sunday supplement a few months ago. It looks more like an inflatable Sonoran chapel than a home or studio, and we agree we wouldn't want to live there. Then the road takes us past some more arty compounds, near the rugged cliffs, where a small torch-cut steel sign proclaims "Alarms and Cameras", and suddenly a gap in the boulders appears, spanned by the scariest-looking fence I've ever seen.

Tons of steel have been cut into skeletal spines arcing outward in defensive points, like a dinosaur's backbone. Behind it, a paved drive disappears upward behind the boulders, and the ramparts of a futuristic fortress can be seen looming atop the cliff. Like the fence, the projecting roofline of the "house" seems defensive, broken into sharp, projecting edges, with narrow gaps between the segments like arrow slots. You can't tell how big it is or what the plan might be, all you can see is a forbidding, skeletal, defensive sculptural articulation. This is the home and studio of artist Bev Doolittle, a successful painter of illusionist landscapes in which Native American figures are

disguised among natural features like rocks and trees. I wonder what she's afraid of, how an artist could ever afford this much sculptural steel and over-the-top architecture, and whether the house gives her the security she seems to need. It's straight out of Star Wars.

Next we follow the highway through the solid, tacky strip malls of 29 Palms, turning to the southeast and into the compound of the 29 Palms Inn. The Inn is a historic, modestly upscale retreat on the site of the ancient 29 Palms oasis, in old times the main Indian village site for this entire area. J and Mo spent their last anniversary here, and I stayed here with my friend Leslie on the night of the lunar eclipse in the mid-90's. The rooms are small, minimal bungalows in a southwestern style, and the restaurant facing the pool serves healthy gourmet food made from raw ingrediants, many of them grown in the Inn's garden. We had come here to visit the garden, which I hadn't seen before.

J parked in the center of the compound and we walked through a gate, under a living grape arbor, into the garden. The arbor formed the near boundary of the garden and provided shade for workbenches and sinks and toolbins. From the gate, segments of neatly-laid-out rows fanned out radially to the back fence, where there were fruit trees and prickly pear cactus. The cultivated area was an acre and a half. As we walked along between the segments, one of the men came over to us. He was short, dressed in a white "pajama" outfit like a campesino, was deeply tanned and had big, twinkling brown eyes under some sort of broad-brimmed, vaguely Asian-looking straw hat. He introduced himself as John, and as we walked along together, he gave us a tour and told us his story and the story of the garden in a shy, soft voice with a Jersey accent.

John was indeed from New Jersey and had been a social worker. He had kept a small garden back there, but had never done any commercial gardening or farming. On a visit to 29 Palms, he and his partner had begun talking to realtors and found property was affordable, and within a few years they decided to move out. Once here, John found he would have to commute long distances to sustain his career. In casual visits to the Inn, he got to know the owner and the staff gardener, who was getting burnt out. John offered to help, and began to learn the special conditions and requirements of desert gardening.

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The soil at the oasis is unique, a fine, densely-packed, charcoal-colored soil that looks volcanic and comes out of the seismic fault zone that created the oasis in the first place. It's good for some things and not so good for others, and John is continually learning by trial and error. He goes to seminars put on by UC Riverside to get ideas and moral support from other area gardeners.

The biggest challenge is the unpredictable seasonal outbreaks of voracious insect pests. As I and other desert rats have found, sudden massive outbreaks can occur in any year. Jason noted that desert plants have evolved to deal with these outbreaks in various effective ways, but cultivated plants are like a gold mine for local pests. It can happen so suddenly that an entire crop can be wiped out before you get up in the morning. So John has no weekends off!

I asked him if they were harvesting nopales, which I try to find at local markets every time I go to town. I'd harvest them in the wild if I could ever find young pads, but the timing is always wrong, and there's no new growth in this drought.

John smiled and admitted that the cook won't take the time to shave off the spines, and the city folks who stay here probably wouldn't want to try them anyway, so they're just going to waste. I said I would jump at the chance for some fresh ones right now, and he said I could have as much as I wanted. Neither Jason nor Mo had ever tried them, and even John had never harvested them for himself.

So after about an hour and a half of showing us the eggplants, the figs, the new peas, garlics, asparagus, cilantro, chard, and on and on, all neatly laid out and well-cared-for, John left us, carrying a plastic bag and a pair of tongs, and returned shortly with an assortment of brilliant green young cactus pads for me. It was like being given a bag of precious gems. We all volunteered to come help with the garden any time he needed extra hands, and he smiled and admitted his difficulties in getting local help. "It's so hard to find people who care about the plants," he said. "That's what we need more than any special talent. They just need to care about the plants. This garden will never pay for itself. I'm just lucky the owner believes in it."

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Everything New

Rain! After two days of high wind and unseasonable cold, the dark, low masses of clouds, typical of a winter storm, assembled over the mountains and basins, and this morning, the rains began.

Ever since I moved out here, I've been wondering about my sense of smell. My sinuses had been ravaged by the excessively dry air, and on my hikes across the bajada and into the mountains, I hadn't been able to smell anything. I thought maybe my sense of smell had been damaged. There are so many shrubs out here with pungent odors of their own. What was happening?

Now I know! It wasn't me, it was the drought. As I stepped outside into the rain, I entered a completely new sensory environment, a bath of fresh herbal essences released by all these plants which have been waiting just for this opportunity. I expected the distinctive creosote, which is my favorite, but even the creosote was just one out of many in this rich abundance of smells.

The storm brings everything down to earth; there's a ceiling of low grey clouds over the Pass, fog drifts between the granite towers, and my eyes take a fresh look at the plant community, the gullies, the pools of standing water here and there. As cold as it is, there must be snow on the Providence Mountains, but they're hidden above the clouds. I want to go everywhere, see everything new!

Pine Nut Time

Pine nut time was approaching. I drove to Las Vegas on business, then fled to the northwest, past the nuclear test site, past the nuclear dump site, past the sad-looking trailer-camp brothels and ancient black cinder cones decapitated by smoking shovels and bulldozers, and finally off the main highway and over the pinyon-juniper passes into the ranching valleys with their huge circular mats of alfalfa and obliviously munching cattle.

In Bishop, in the morning, I joined John in a breakfast of raw oats (they swell up when cooked, so you can't eat as much), watching while he tended to their "problem" tortoise, Rocky, a female who was

mauled by dogs a few years ago and is now recovering from a more recent case of gangrene in a hind leg. John and Carolyn don't have children, but their "herd" of rescued desert tortoises have become their family. Most of the tortoises will live longer than Carolyn and John. The new house they're planning for their property at the edge of town is being designed with the tortoises in mind.

Reptile wounds can take many months to heal. Rocky's wound gets cleaned daily, and she gets shots of antibiotic, and she wears a nylon stocking over the rear half of her body which prevents flies from laying more eggs in the wound as she crawls around the back yard. She's finally started to take more interest in eating, but usually only after prompting and laborious hand-feeding by the "parents".

The pine nut harvest is the most romantic social tradition of the native people of the Great Basin. It brought together groups of families for work that was easy and rewarding, in a pleasant atmosphere, and the young people enjoyed much courting, the elders much gossip, and everyone fell asleep at night listening to stories around the fire.

The native pinyon pine are known for producing the sweetest pine nuts. The cones take two years to mature. Scouts would travel to local and distant groves in the months before harvest, to determine the best destinations for the group. Apparently it was customary for the Indians to harvest the green cones before they opened, knocking them down and roasting them to force them open before the birds and animals could take the nuts.

But John had told me that this is no longer necessary, because there just isn't enough wildlife to make a dent in the harvest these days. Still, trees bear cones sporadically, influenced by a bewildering number of factors, and in any given year, a good harvest will only occur in a few scattered locations. For months, John had been watching the nearby trees getting ready to drop their heavy loads, and reports had been coming in that this drought year would produce a record harvest all over the region.

The first day, John took me north up the plateau beside the Owens River Gorge on a scouting expedition. "Most people will just stop at

the first trees they spot and start harvesting. But you shouldn't stop until you've sampled a wide variety of nuts from a variety of trees at a variety of widely-spaced locations. There's a lot of variation in the flavor and nutrient value, and I like to put in the extra effort to find the very best nuts!"

We were at the midpoint of the open-cone harvest season, and it became clear that other people had already been scouting everywhere we went. But as we wound through the trees on the rough Forest Service dirt roads, stopping here and there to walk through the sagebrush and stoop under the canopies, the chestnut-colored nutshells lay everywhere on the ground. After trying a couple locations lower down, we drove into a loop between scattered trees near the high point of the plateau, at the upper edge of the Gorge. Here, the trees close to the cliffs were dying from drought. But the living trees close to the road had dropped masses of nuts, and we could see more in the cones hanging from high limbs.

We crawled under the low branches, immersed in the wonderful odors of sagebrush and pine pitch. The nuts here were huge. I cracked one between my teeth, and tasted an explosion of sweet spice, like cinnamon. The nut meat was cool, juicy, and sweet, with a spicy aftertaste that lingered. John laughed. "Oh, yeah! This is more like it! Get that aftertaste? It's not just the sweetness, it's the stages of aftertaste that really do it! And see how much bigger they are. But let's not stop here. It's still early, we should sample a much larger area before we stop."

We found that the flavor of nuts, not just the size, varied from nut to nut under the same tree, and varied widely from tree to tree and grove to grove. We tried trees on south- and west-facing slopes, and found them to be predictably drier and less sweet. We drove north toward Mammoth, into the higher elevations of the pinyon forest, crossing the highway into a park. Here we ran into Paiute families gathering whole cones in big plastic bags, and John mentioned that the local tribal leaders had been urging families to harvest together this weekend. I gradually learned that the pine nut harvest is a big, and growing, tradition around here, perhaps even more popular among gringos than among native people.

But after trying eight or ten trees here, we concluded that our grove

on the Gorge was by far the best. We would leave this park to the lazier and less discriminating harvesters.

Pinyon trees grow in a fantastic variety of forms. They're typically only two, or at most three dozen feet tall, but they can grow branches densely from the ground up, or sparsely with a walking space underneath. They can grow multiple trunks, twisting trunks, or a single straight trunk like the stereotypical pine. The bark is rough, with a lot of jagged edges, and there are usually a lot of dead branches mixed in with the living ones.

Back at our favorite grove, although there were a lot of nuts on the ground already, John wanted to start by climbing the tree and shaking or knocking down more. So we took turns climbing trees, getting all scratched up and covered with pitch, which John said could be easily removed with cooking oil. We quickly gathered three or four pounds each, cracking and munching as we filled our bags. An old bearded guy in a pickup truck kept passing on the road from time to time, staring at us. It was warm out, but his windows were rolled up, and when I waved he just kept staring and drove on by.

The next day, John and Carolyn had arranged for family and friends to join us. There were her saxophone teacher Eddie, her sister and brother-in-law, their young son, and a friend and her two daughters. What you would call an extended family, just like in the old days. We returned to our favorite grove and set to work, fanning out in groups of two and three, climbing trees, and gathering industriously until late afternoon. We could see and hear other groups working in the distance. At the end, some of us walked over to the edge of the Gorge. Hundreds of feet below, the Owens River wound through a narrow strip of green.

That night, knowing it was my last chance, I got up the courage to introduce John to my work, which draws on scientific learning but looks dangerously like some sort of new-age divination. As I drew my symbols, explaining them and making connections, John was paying close attention, taking it in and nodding. When I got to observation and the role of the senses, he grabbed a pen and a note pad and drew me a quick diagram of the cognitive process of science. When I reached human interactions and drew my symbol for the principle of reciprocity (the foundation of all ethics, otherwise known as the

Golden Rule), he exclaimed.

"Ah hah! That's interesting! That's very interesting! We're finding that in animal populations, even between species, reciprocity can help explain stable patterns of cooperation. You expect individuals to help their kin, but then you find them helping other species! Generosity can be a survival trait!"

Amen.