



Teen Herp Adventures

Robert L. Bezy

Dedicated
to Billy
who shared many adventures



Cover:
Crotalus molossus
(Western Black-tailed Rattlesnake)
by Erik F. Enderson

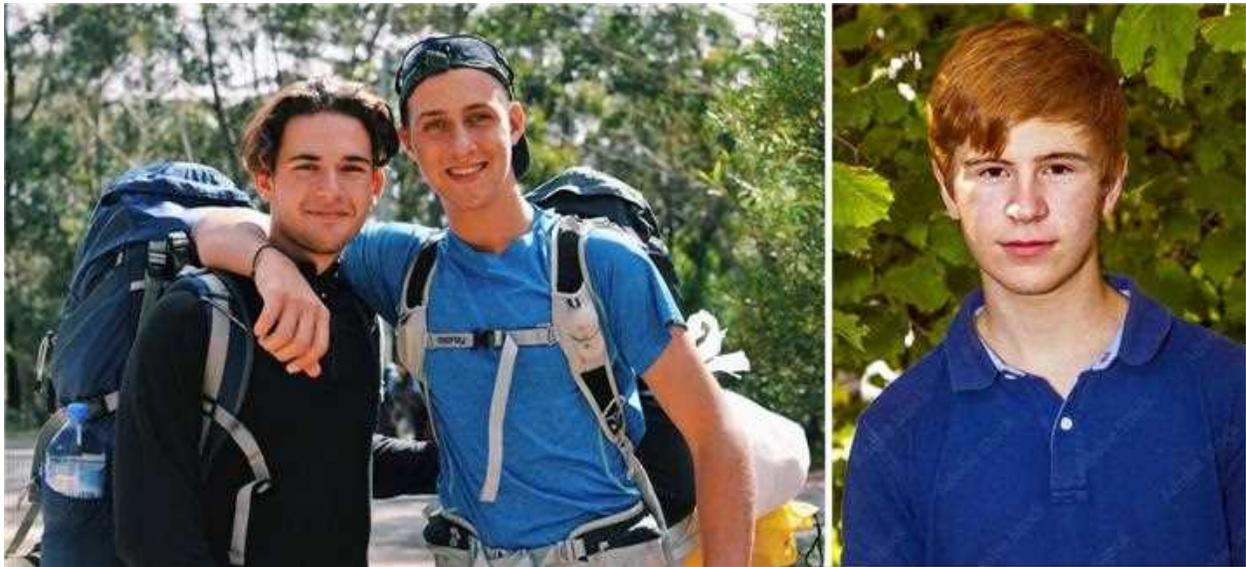
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Abstract. This work of fiction describes the life and adventures of three intimate friends as they metamorphose from thrill-seeking high school herpers to college graduates with a degree in biology wondering what is next in life. It is rooted in my personal experiences, but includes elaborations and ‘flights of fantasy’ that extend far beyond my actual life. The herpetological adventures take the friends to some of the Earth’s most arid regions: the Great Basin, Mojave, Sonoran, Vizcaino, Chihuahuan, Atacama, Namib, Kalahari, Simpson, and Arabian Deserts. They examine the nature and degree of the sand adaptations of the reptiles found in each and begin to ponder the roles of the age, degree of aridity, and size of the deserts in the evolution of the arenicolous features and wonder how such a question might be addressed.

Key Words. Reptiles, deserts, herpetology, field adventure.



Bobby Boy, Best Bud, and Red Bud.

Introduction.

Welcome to the world of the three herp buds, Bobby Boy, Best Bud, and Red Bud. This book describes the life and adventures of these three intimate friends as they metamorphose from high school herpers seeking excitement to college graduate herpetologists seeking answers to questions, a journey many of us have walked.

Along the way they observe and photograph reptiles in some of Earth's major deserts. Their life and adventures are rooted in my personal experiences, but this portrayal includes elaborations and flights of fantasy that extend far beyond my actual life.

Bobby Boy reflects my interests in biogeography, systematics, and museum collections and in publishing the discoveries. But, he differs substantially from my youth in having a large interest in and enthusiasm for photography and a desire not to kill and preserve amphibians and reptiles, even though he curates and examines museum specimens

Best Bud (BB) resembles several people in my life with incredible ability and enthusiasm for all things associated with field adventure. Physical strength and stamina combined with keen eyesight are attributes that contribute much to his field prowess and enjoyment. He is practical and realistic, yet he is the most danger-seeking of the three. As a literary device I ascribe to him a 'fantastic' capacity to identify every herp species encountered.

Red comprises the emotional component of the buds' very strong attachment ("bromance"). He is in touch with his own feelings as well as those of BB and Bobby who have low emotional IQ's. The dances by Red are his efforts to introduce Bobby and BB to the concept of recognizing and expressing emotions. Red Bud is flexible and spontaneous and he "feels" when the time or place are right. He has great "people skills," and convinces BB and Bobby of novel courses of action that turn out to be productive but that the other two would never imagine due to their more limited outlooks.

Midnight hour is a literary device I use to bring the buds together at the end of the day to talk, to share emotions, and to come up with inspirations about where to go and what to do next. It involves marijuana, but it is not my intention to promote the use of mood-altering chemicals. At this point in my life I use only caffeine and do not use alcohol, cannabis, tobacco or other mood-altering drugs (Rx, OTC, legal, or illegal), although I once did. I do not miss these things but I strongly miss the youthful enthusiasm that the buds represent. They eventually make a 'blood pact' not to use such chemicals, feeling the substances had become a drag on their life.

The earliest stories are wild fantasy adventures largely in the imaginations of these teen herpers. I find readers who walked that road understand and enjoy those fantasies thoroughly and I have gotten positive feedback on them from various people, including some well-known herpetologists. There are others who seem to

think “Herpetology” is just a college course and are unaware of the excitement experienced by high school kids searching for amphibians and reptiles.

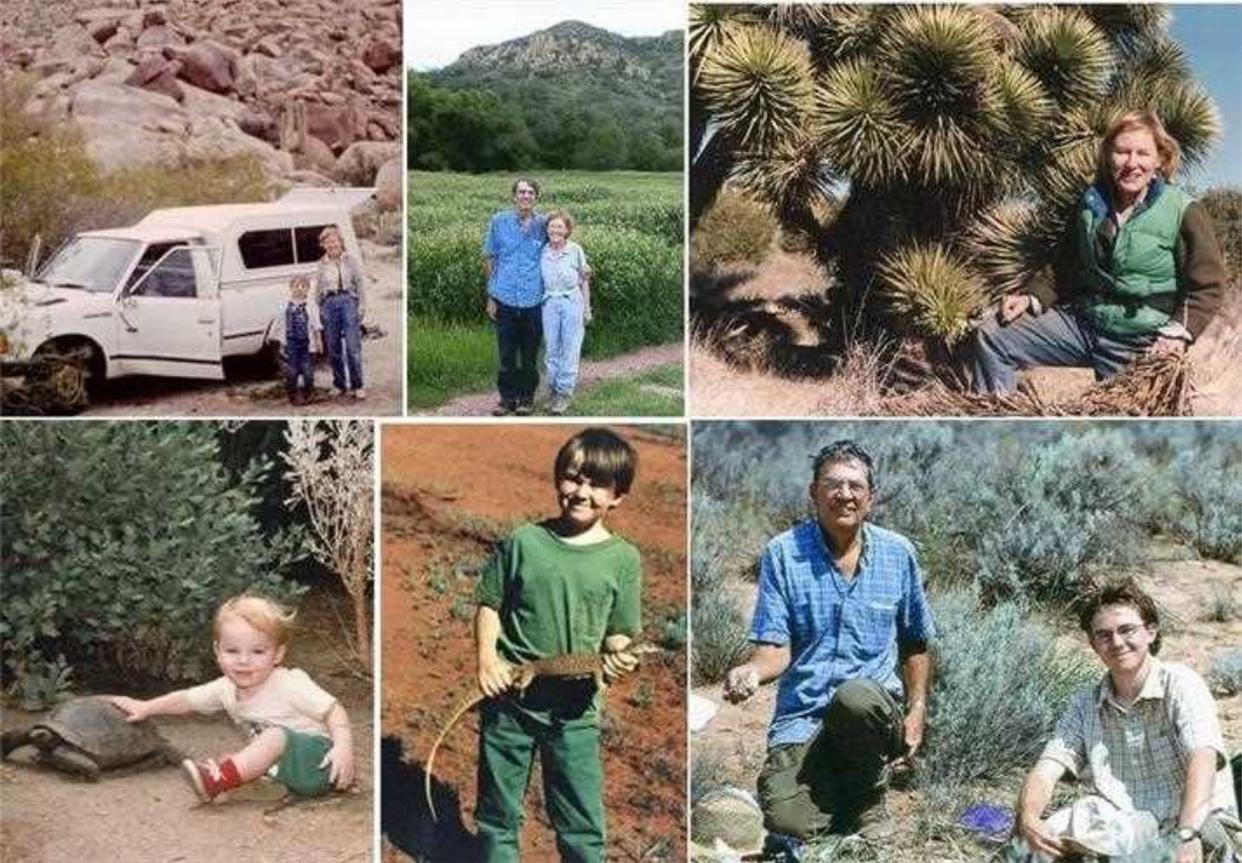
That the three buds are males reflects my personal experience as a youth. My field adventures as a high school student, undergraduate, and even a PhD student sadly included very few females, although much of my subsequent field activities were with my wife and late son, both biologists. But clearly there is a male bias in my history and in my writing, but this is not intended to suggest that herpetology is, or should be, exclusively or predominately, a male subject. Fortunately the gender bias in study of amphibians and reptiles has declined dramatically.

The strong bonding (“bromance”) of the buds portrayed here has its roots in the deep love between my brother and me growing up in Arizona. Except when locked up in the classroom we were inseparable and spent every moment together, played together, worked together, bathed together, and slept together, talking late into the night. You can see in the photos below, we even held our arms and hands in the same way.

Another theme in the stories is Bobby Boy’s falling in love with kids on the adventures. This stems from Kate’s and my loss of our son and expresses my fantasy of somehow finding another kid to fill this void.



The Bezy bros, Bobby (left) and Billy (right) in each photo.



Kathryn Bolles, Kit Bezy, and Robert Bezy

Acknowledgements. I am grateful for the encouragement people have given me to write more creatively, including Amy Muia, Wade Sherbrooke, Neva Sullaway, and Thomas Wiewandt.

Chapter 1 was modified from a paper published in *Sonoran Herpetologist* 2021, 23(3):78-85 and I thank the editor, Howard Clark, for his encouragement on this unusual item in a scientific journal. Robert Villa made several important suggestions to improve the cultural perspective of that chapter. For the first chapter Kathryn Bolles and Thomas Wiewandt helped me steer through complex issues relative to publication of the images. Kathryn Bolles, Wade Sherbrooke, and Robert Villa helped comb out the nits. Chapter one includes high quality images generously made available by Kit Bezy, Kathryn Bolles, Thomas Brennan, Erik Enderson, Tell Hicks, Andrew Holycross, Cal Lowe, Frank Reichenbacher, Russ Schreiber, Wade Sherbrooke, Bruce Taubert, Scott Trageser, and Thomas Wiewandt.

In subsequent chapters the inspiring photos by Erik Enderson, Thomas Brennan, Kathryn Bolles, Kit Bezy, and many others enliven the stories. Many excellent

photos are from the outstanding reptile database and website by Peter Uetz (<http://www.reptile-database.org>), which served also as the source for most of my usages of Latin and English names of species. I was able to credit the photographer of each image of an amphibian or reptile, but this proved not to be possible for many photos of landscapes and people, as the photographer often was not listed on the website where I obtained the image. My apologies to these photographers who sadly remain uncredited.

I am very grateful to Kathryn Bolles for her constant support, encouragement, advice, and suggestions, and for editing of the entire manuscript.

This work of fiction is also dedicated to Charles H. Lowe and his three basic principles of herpetology. All three are themes in these perilous adventures done for love not money.

1. If it isn't fun, don't do it.
2. If it's money your after, buster, go out and rob a goddam bank.
3. If you would not die for herpetology, you do not belong in it.



Charles Lowe, left holding a *Crotalus atrox* (Western Diamond-backed Rattlesnake); right, having fun in 1977 in the Mohawk Dunes, Arizona, with Cecil Schwalbe and Jim Hudnall. One can see here the essential ingredients of herpetology, a great truck, flashlights, meter stick, camera, and fun. Both photos are from charleslowe.net.



Charles H. Lowe Jr. photographed at Rancho de Las Lomas in Tucson while working with Thomas Wiewandt (wildhorizons.com) on a motion picture segment about Gila Monsters for the BBC's "The Living Planet" television series, ca. 1983.



***Carnegiea gigantea* (Saguaros) by Larry Geddis**

Chapter 1. The Bell of Freedom.

1. Nactis.

It was our Junior year at Finger Rock High. Best Bud and I could hardly wait for the bell of freedom to ring on the last day of classes so we could herp non-stop until we drop.

With our first drivers' licenses in hand, we gassed up ol' Nellie, an International Harvester Scout, and headed out on adventure. Spring was in full swing in the Sonoran Desert, the Foothill Paloverdes (*Parkinsonia microphyla*) were glorious, and the Nactis (*Chionactis*, Shovel-nosed Snakes) would be issuing forth just after sundown.

Puesta del sol, a chug of coffee crystals half dissolved in cold water saturated with sugar, and we were cruising by the start of "Nactis golden hour." "Hot dog! Streaking like greased lightning just ahead," yelled BB and I jammed on the breaks. Before Nellie with her bald tires came to a stop, BB did a "roller" out the door of the still moving car and scooped the snake up from in front of big rig barreling down the middle of the road. It was clearly a *klauberi*, Best Bud's first, he gave me a great hug and we did a Nactis dance down the pavement in front of an on-coming 18-wheeler.

I was very excited as this was a new locality for the species and my photo voucher would allow me to publish the record and contribute to the conservation of *klauberi*. My fascination with publishing, and herping with Best Bud was growing rapidly.



Left, Old Nellie, Bobby's Scout, by Stephen Goldberg; right, a big rig.



Sonoran Desert with Foothill Paloverdes (*Parkinsonia microphyla*) in bloom by Thomas Wiewandt (wildhorizons.com).



***Chionactis annulata klauberi* (Tucson Shovel-nosed Snake) by Kit Bezy.**

2. *Cerberus*.

In the midnight hour Best Bud and I poured over Klauber's two volume "*Rattlesnakes*," looking at the old black and white plates and reading the letters from forest rangers declaring they saw "a rattler climb a tree." We became fascinated by *cerberus* (*Crotalus cerberus*, Arizona Black Rattlesnake) and were entranced also by paintings of Cerberus, the multi-headed black hound that guards the gates of Hades and keeps the dead from leaving. In our midnight hour adventures, Best Bud and I had explored the nine rings of Hades, talking with its grateful dead, and it was high time to have another trip.

"Let's head to the Mogollon Rim," enthusiastically exhorted BB. We arrived late afternoon and found a great totally isolated spot to sit quietly and gaze out at the magnificent thunderheads gathering over the vast expanse of virgin Ponderosa forest. A puesta del sol early toking and with our minds and headlamps turned on, Best Bud and I stumbled along in the lighting and thunder, exploring the upper rim of Hades. And then we heard Cerberus, not a growl, but a very loud ominous hissing rattle. We did not want to tangle with the black hound, took only one photo, and left no footprints in the ashes as we danced past the gates of Hades.



Left, *Crotalus cerberus* (Arizona Black Rattlesnake) by Erik Enderson; right, Cerberus of Hades (by Daniel).



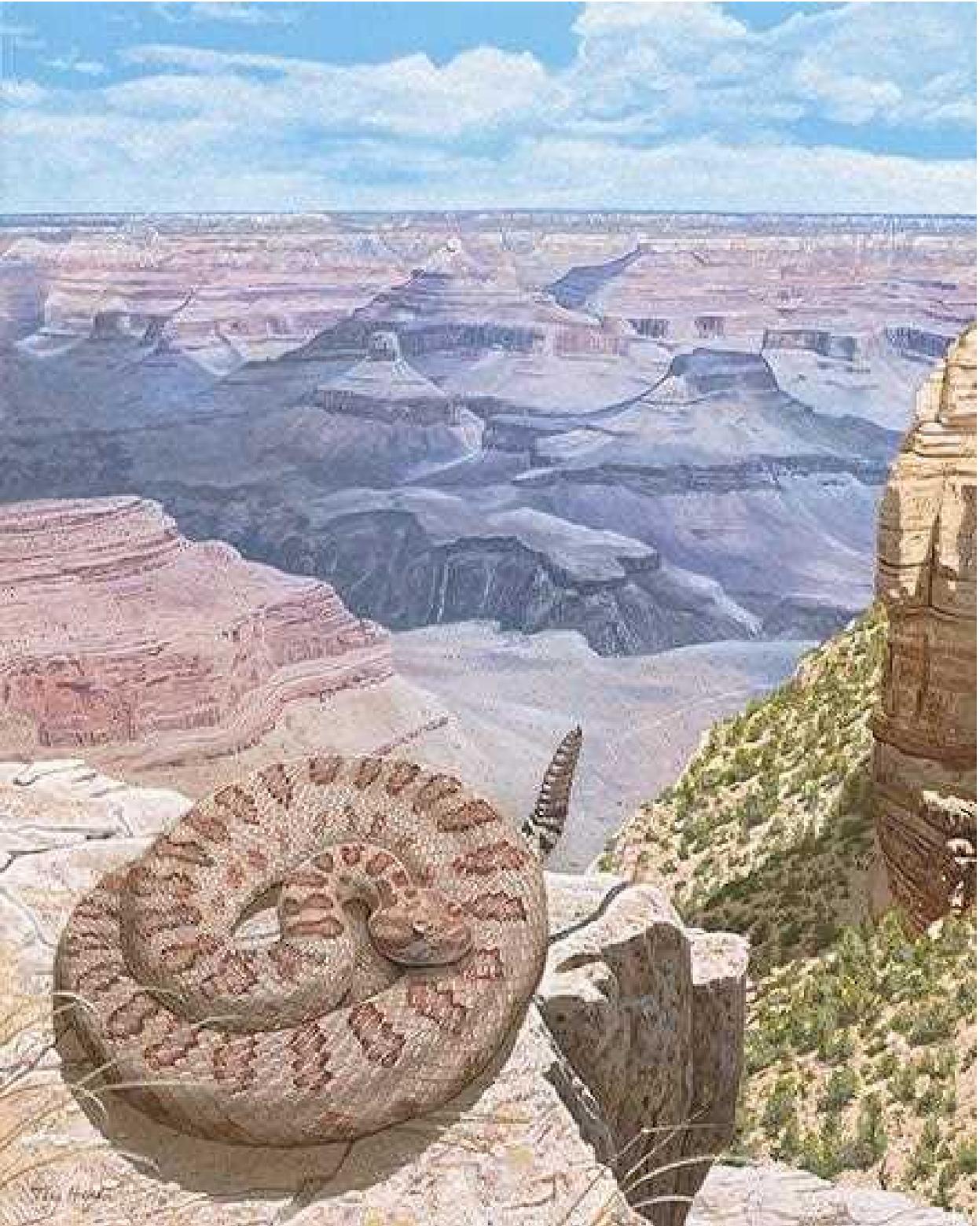
Left, clouds gathering along the Mogollon Rim by Thomas Brennan; right, Bobby wearing his Hillis tree of life pendent and *pyrrhus* shirt; modified from a photo by Wade Sherbrooke.

3. The Abyss.

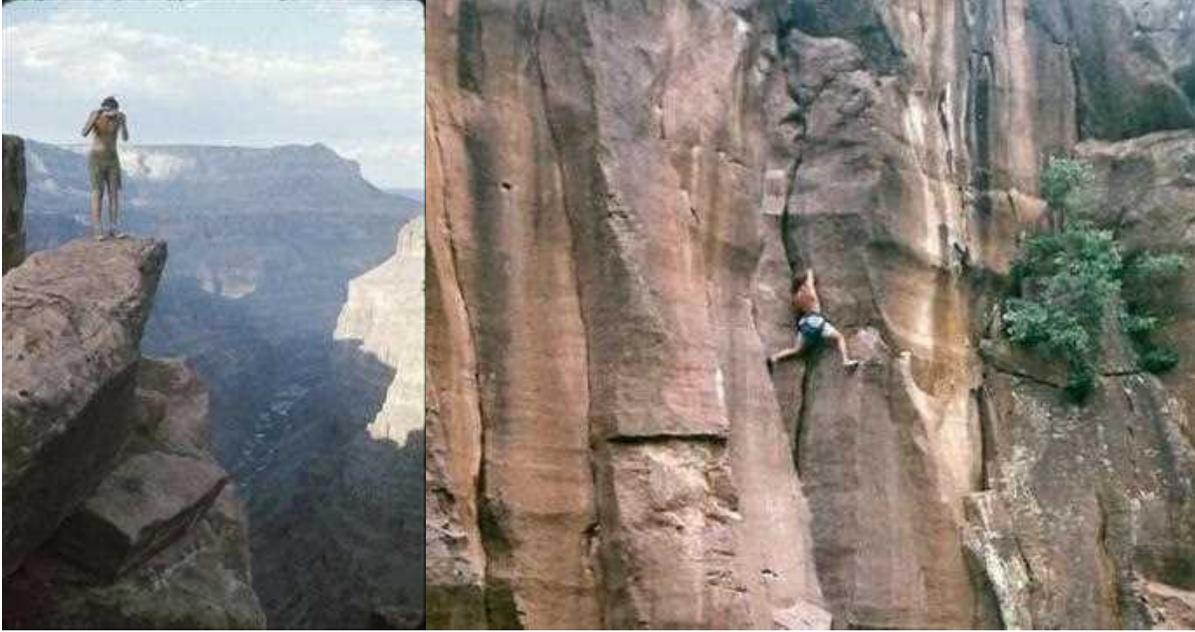
With happy teen hearts, Best Bud and I headed to the Grand Canyon and its endemic *Crotalus abyssus*, the pink ghost of the abyss, once seen, never forgotten. We found a very secluded area to camp along the rim and began the search. We got skunked the first day, but dawn brought renewed hope. The morning was cool and BB, with his incredible vision, spotted an *abyssus* basking on a ledge far below. I took out my Nikon and best telephoto lens, and went out onto the canyon edge. Balancing on a rock far above the river I secured an image of the snake. But craning my neck looking down all while focusing brought on one of my severe dizzy spells. Best Bud saw my plight and came out on the narrow ledge and helped me crawl back to safety.

I had my heart set on getting a gangbusters image for publication. Neither of us were knowledgeable about rock climbing techniques, but BB was not going to let that deter him from what he called a “clinger.” As he reached the ledge far below, the *abyssus* was frightened by falling rock rubble and BB did a “tailer” grabbing the rattlesnake by the tail just as it was escaping into a crevice. He made the return ascent holding the wiggling snake in one hand and using the other to grip the crevices. He gave me a priceless grin as he presented the *abyssus* and helped get a great photo that was selected for the cover of *Herpetological Review*.

We performed the dance of the abyss far out on a ledge, and our whoops of ecstasy rang throughout the canyons and the echoes can still be heard today reverberating in the gran labyrinths.



Crotalus abyssus (Grand Canyon Rattlesnake), painting by Tell Hicks



Left, Photographing from a Grand Canyon ledge by Frank Reichenbacher (photo from charleslowe.net); right, clinging to the canyon wall; photo by Thad Kirkendoll, probably of Andrew Holycross.

4. *Moctezumae*.

Best Bud and I became fascinated with Severino Baraldi's wonderfully romantic painting of the smallpox-ravaged Aztecs gallantly trying to defend themselves from the ruthless conquistadors who murdered and plundered the people of the New World in an insatiable lust for gold.

But gold fever is highly contagious and we came down with it. In an ancient volume we discovered a legend that some of the plundered gold came from Cortes' scouts prospecting up the coast from Mazatlán. We went looking for gold in mines along the Gulf but found none. In an abandoned shaft in Sonora we discovered a real herpetological treasure, an unknown species of rattlesnake. It was akin to *Crotalus molossus* (Western Black-tailed Rattlesnake), but had a very strange color pattern, a bit like *estabensis*. I planned to describe it as *moctazumae* after our favorite Aztec.

Did the elusive rattlesnake live only along the Gulf of California in Sonora? Or were there isolated pockets of the species along the frontera in the Sonoran Desert of southwestern Arizona?

One night our new friend Red Bud arrived for midnight hour and announced he had seen a rattlesnake with a black tail and a peculiar color pattern on a rocky knoll

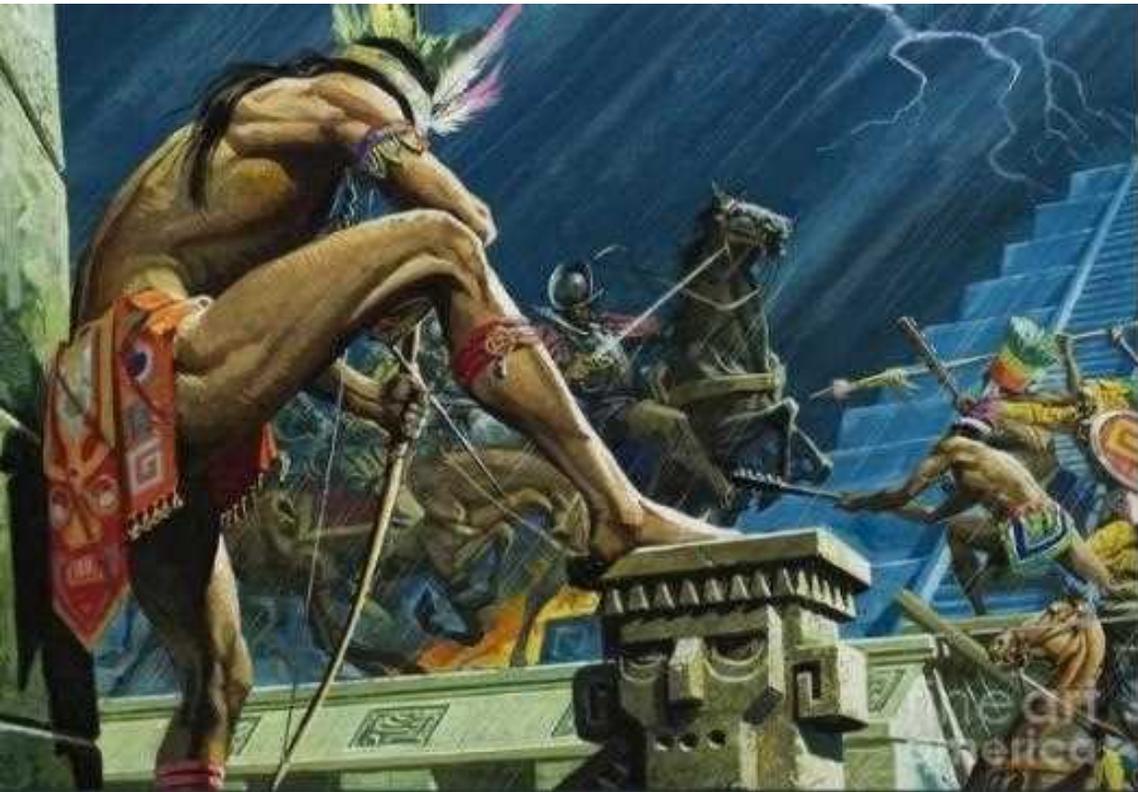
far out on a creosote flat near the Sonora border. Best Bud and I grew very excited and began making plans to go there with him. I had become quite fond of Red Bud and was disappointed when he announced he could not come with us as he had just been selected to perform in *Tommy*, Peter Townsend's stunning rock opera. He drew us a map, and Best Bud and I set out at dawn on an adventure to discover the elusive *moctazumae* in Arizona.

It was difficult to follow the faint track and before crossing the first broad arroyo I got out and locked the Scout's Husky Hubs. Half way across, old Nellie became bogged down to the axle in the sand. Best Bud relished the challenge, jacked Nellie up, filled in the holes under the tires with sand, and put our trusty planks beneath each wheel. BB, incredibly strong, pushed while I got behind the steering wheel, shifted to compound low, and gunned Nellie across the arroyo and up the steep dirt bank on the other side. We were ecstatic to be out of the sand.

It was noon and 105 degrees when we reached the end of the track and set out on foot for the knoll. It was a two hour walk and our shared canteen was nearly empty. We downed the last swig as we staggered up the knoll to search the rocks on top. Using his mirror, Best Bud shined a rattler in a crevice. "Hot dog, here it is!" I took my Nikon and best lens from the pack, but the crevice was too dark to shoot at a decent F stop. "Well, we will just have to get the rattler out into the sunlight. Hand me the snake stick," requested BB. "I thought you brought it," I responded.

"Cheese and crackers got all muddy, we can't walk all the way back to the Scout to fetch the snake stick. There is only one thing left to do. Blacktails are a docile species, so you distract the snake by waving your hand in front of its pit organs, and on the count of three I will reach in and grab it tail and drag it out. One, two, three...I've got it!!!"

I was very disappointed to see it was not a *moctazumae* but a *molossus*. I got a great photo documenting occurrence of *molossus* close to *moctazumae* without a hybrid color pattern. In the scorching sun, Best Bud and I did a shirtless Moctazuma dance around the knoll carrying the *molossus* before returning it to the crevice.



Painting of Aztec defense by Severino Baraldi.



Left, *Crotalus molossus* (Western Black-tailed Rattlesnake) by Erik Enderson; right, Robert Bezy with *Crotalus molossus* by Wade Sherbrooke.



Bobby Boy and Best Bud.

5. Pyrrhus

In our midnight adventures into Greek mythology, Best Bud and I were fascinated by pelirrojo Pyrrhus, son of Achilles, slayer of Priam of Troy. “Lets head to Black Mountain for *Crotalus pyrrhus* (Southwestern Speckled Rattlesnake),” BB proposed. We invited Red Bud who liked red snakes, had explored all the mine shafts in the Cave Creek area, and fed on troglodytic adventure. Besides, I have always had an eye for red-heads and eventually married one.

The mine was high up on the slope and after the long climb in the 110 degree heat, we stopped to rest on the tailings pile and share the last swallows of water from our one canteen. Red was very excited as he extolled the dangers of this mine, “The entrance is mostly occluded by tailings, so we will have to go in on our bellies. The timbers are rotted out and there are several cave-ins plus precipitous drop-offs into deep vertical shafts on both sides. I will go in first with my miner’s light and helmet. You two follow, but at a safe distance in case I cause a cave-in.”

The opening was very tight, but Red, the nimble dancer, had no trouble snaking in. Best Bud and I had to scrape away some of the tailing in the mouth before we

could slither through to savor the cool air of the mine. Suddenly we were shocked by the sound of a metallic “clunk” from somewhere. “What could that possibly be?” I wondered. BB shined his headlamp all along the walls and there it was, a magnificent red *pyrrhus* coiled up in a pocket from which it had struck Red’s metal helmet.

Best Bud did a “tailer” and carried the *pyrrhus* back out into the sunlight for photos and I got a magnificent prize-winning shot. Red, BB, and I performed our Pyrrhus shirtless fire dance in the burning in the Sonoran Desert sun. Of course we slithered back in for more adventures and to savor the cool mine air with its sweet musky fragrance of a colony of *Taderida brasiliensis* (Mexican Free-tailed Bats).



***Crotalus pyrrhus* (Southwestern Speckled Rattlesnake) by Thomas Brennan.**



Left, Russ Schreiber exploring a mine, by Cal Lowe; right, *Taderida brasiliensis* (Mexican Free-tailed Bat) by Bruce Taubert.



La Mort de Priam by Jules Lefebvre (Wikimedia Commons).

6. Thunder in Tohonoland.

After his performance in *Tommy*, Red joined Best Bud and me for midnight hour and asked, "How did it go?" "Your map worked ok but we got stuck crossing the arroyo. I managed to crevice shine a *Crotalus* on the knoll but Bobbie Boy here forgot the snake stick and also had his usual F stop problem. I did a "tailer" and pulled rattlesnake out for a photo. He declared it a *molossus* not a *moctazumae*," reported BB in his usual uninspiring, mater of fact manner.

Red tried to lighten the mood, "Did you guys have a good time? Must have been a grand adventure into the unknown far away from everything else, that is what really matters." Red always emphasized the positive and that is what I liked about him. I mustered the courage to say, "Red Bud, you just can't imagine how much I missed you." "Well, Bobbie Boy, you never asked how my performance went without you, my number one fan, there. We have to learn to go our separate ways sometimes." That hurt, but I tried to cheer up the best I could and Red gave me one of his great broad smiles and passed me the weed with a gentle touch.

"I have been pondering the *Phyllorhynchus* we have seen and I think there is an unrecognized species down by the border. It has a very different pattern, unlike *browni*, *lucidus*, or *decurtatus*, more like *fortitus* in Sonora and Sinaloa, with shorter blotches shaped more like dumbbells and on a paler background. I plan to name it *tohona*." BB enthusiastically chimed in, "Out in far west Tohono there is a road to the border no one ever cruises. Let's hit it tonight. It looks like maybe we might get an early monsoon." "Red, you in?" "Yes I sure am. Tonight's *Tommy* performance has been cancelled due to some sort of virus scare and a "*Thunder in Tohonoland*" performance would be the next best thing.

We hopped into the cab of the Scout, I behind the wheel, Red in the middle straddling the gear shift, and BB always set to jump out the right door for a "roller." BB and I woofed down Big Macs and fries, while vegetarian Red enjoyed a chocolate shake, and we headed west for an adventure in Tohonoland.



Phyllorhynchus browni (Saddled Leaf-nosed Snake) in Sinaloa by Scott Trageser.

7. The Pisinimo Road.

Night fell, the thunderheads gathered, and the flashes blinded us as we turned down the Pisinimo road towards the frontera. The great deluge commenced, bringing the Sonoran Desert's long dry to an end, and giving rebirth to tropical joy. "You emotionless zombies are not going to let this pass uncelebrated. Stop Nellie, let's dance," enthusiastically evoked Red Bud. Out we sprang, ripping off our shirts to feel the warm tropical rain on our bodies as we danced down the road.

A young Tohono walked up. "Holla amigos, puedo bailar con ustedes?" "Si como no," enthusiastically replied Red. Our new friend joined in our spontaneous revelry until it seemed we could float Noah's giant ark once more.

Red brought the gran lluvia dance to a climax, performing an enchanting number from *Tommy*.

**Listening to you, I get the music
Gazing at you, I get the beat
Following you, I climb the mountain
I get excitement at your feet**

As he finished, the rain tapered and the smell of steamed creosote was overpowering. I wanted the delicious moment never to end.

“Cómo te llama, amigo?” inquired Red. “Juanito, y te?” “Rojito, Buenamigo, y Betito.” He asked if he could ride with us to Pisinimo. “Si como no, hop in, Juanito.”

Four in the Scout cab was way beyond a squeeze, and Best Bud was delighted to ride on the hood. On the drive to the frontera we saw it all, *Smilisca fodiens* (Lowland Burrowing Treefrog), *Bufo retiformis* (Sonoran Green Toad), *Gastrophryne mazatlanensis* (Sinaloan Narrow-mouthed Toad), and every frog and snake known from the Sonoran Desert borderlands. With my trusty Nikon I got great photos of the entire herpetofauna and Juanito gave the Tohono name for each, which I scribbled down in my notebook for the “*Herpetofauna of Tohonoland*” I was writing. Red wanted to lick the *Bufo alvarius* but Juanito objected explaining the sapos are revered in his culture.

We photographed five *Phyllorhynchus* (Leaf-nosed Snakes) documenting that they all were *tohona*. I was in ecstasy, and even though exhausted, Red put *Ambrosia deltoidea* (Triangle Bursage) leaves in his nostrils and did a late night leaf-nose dance.

We were sad when the road came to an end at the Pisinimo plaza. “Por favor, ven a mi casa” “Gracias, si como no, Juanito.” The four of us sat in front of his casa on the dirt of the plaza, savoring midnight hour, the balmy breeze, peace, and love.

Juanito invited us to spend the night at his house before the long drive back to Tucson. Unfortunately, BB had a very early morning commitment and we sadly declined Juanito’s generous invitation. But as a gesture of our appreciation and friendship, I gave him my Hillis tree of life pendant. Juanito noticed how I was admiring a magnificent and priceless basket with a *cerberus* stalking a bat. It contained much *Proboscidea parviflora* (Devil’s Claw), one of the most difficult plants to weave. He really wanted to give it to us, but there was no way such a magnificent piece, woven by his mother, a brilliant basket weaver, could simply be given away. Later in the summer BB and I returned to Pisinimo and I met Juanito’s mother and offered her a considerable sum for the *cerberus* basket. She was reluctant to sell it, but enamored that a young gringo held such regard for O’odham basketry.

But this night ended in a tearful goodbye. We promised Juanito we would return, and we did many times to ride the Pisinimo road with him.



Left, *Smilisca fodiens* (Lowland Burrowing Treefrog); right, *Bufo retiformis* Sonora (Sonoran Green Toad), photos by Erik Enderson.



Right. Drawing of an adobe by Cal Lowe.



Left. Juanito (Alamy stock AKT9NN).



Left Photo, Wade Sherbrooke (on left, inspiration for Best Bud) with Robert Bezy (on right, Bobbie Boy) and Kit Bezy (as a kid he is the inspiration for Desierto); photo by Kathryn Bolles. Right photo, Kathryn Bolles (inspiration for Red Bud and Big Red) with Joshua Tree (*Yucca brevifolia*); photo by Robert Bezy.



Kit Bezy (inspiration for Juanito) with the Pisinimo *cerberus* basket. Photo by Kathryn Bolles.



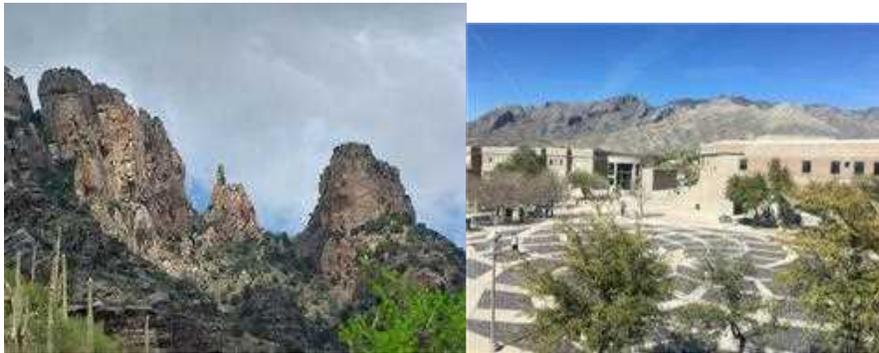
Sonoran Desert by Jack Dykinga,

Chapter 2. A Finger Rock High

8. Desert Ecology.

Best Bud, Red, and I were very sad when the curtain came down on our summer of non-stop herping and we entered our senior year at Finger Rock High School. One bright spot was that we were taking the new Desert Ecology course. The teacher, Dr. Roberto, was just out of graduate school and his every pore exuded enthusiasm for the desert. He was very good looking with a broad smile and walked in appearing like he had just stepped out of the field. “Desert Ecology is not a course, but a way of life. I hope by the end of the semester you will be as totally in love with the Sonoran Desert as I am. Tucson has always been the center for desert ecology beginning with Forrest Shreve up on Tumamoc Hill. We will be visiting there next week to see the Desert Laboratory where it all began.”

Wow, a dream come true, a real connection with a kindred spirit on the faculty, definitely a Finger Rock high.



Left, Finger Rock, Santa Catalina Mountains, Arizona; right, Catalina Foothills High School.



Bobbie Boy, Best Bud, and Red Bud.



Dr. Roberto (by Tetra Images).

9. Saguaro casita.

Red, Best Bud, and I had straight A's in all our courses at Finger Rock, the top ranking high school in Arizona, and we had published three papers together. We would have been snapped up by any university in the country, but we wanted to stay together in the Sonoran Desert. The University of Arizona offered us each an academic scholarship which we accepted even though we did not lack for money. BB's dad, Erik, was planning to move to Australia and felt it was time for us three buds to move in together and he offered to buy us a house in the university neighborhood. He said he would pay cash for it and the way property values were zooming up in Tucson it would be a good investment.

We looked and looked, riding our bikes down every street near the university, but could not find anything we liked. We were exhausted and depressed, about to give up, and then BB rode down a street we had missed and there it was, the casita of our dreams with a for-sale sign in front! It even had saguaros in front and we dubbed it Saguaro Casita. Erik snapped it up immediately and we moved in right away. None of us liked furniture and we just put down three mats with our sleeping bags in the bedroom. I grilled steaks on my hibachi and Red, a vegetarian, prepared a delicious medley. Best Bud had a steak and a little of Red's vegetarian dish. At puesta del sol we ate together sitting outside on the patio floor.

Midnight hour under a full Sonoran Desert moon, and we vowed we would never part.



Saguaro Casita.



Saguaro moon.

10. Tumamoc.

We really took to Dr. Roberto, the young Desert Ecology teacher at Finger Rock, and we often sat in his lab for hours after the others were long-gone, discussing everything from evolution of the deserts to whether atheism or agnosticism was more reasonable. He was particularly fascinated with the life of Forrest Shreve and gave us a copy of his friend Janice Bowers' "*A Sense of Place: the Life and Work of Forrest Shreve.*" He mentioned how Forrest wore his wife's lacy night gown around the house. It was after eleven and I made brave to ask Dr. Roberto, "Would you like to join Red, BB, and me tonight for midnight hour?" "Gee Bobbie, I would like nothing more, but I do have to set my limits with teens no matter how fond I am of them."

The next morning all seven of us students in his Desert Ecology class piled into the school van and Dr. Roberto drove across Tucson and up the winding road to the Desert Laboratory on Tumamoc Hill.

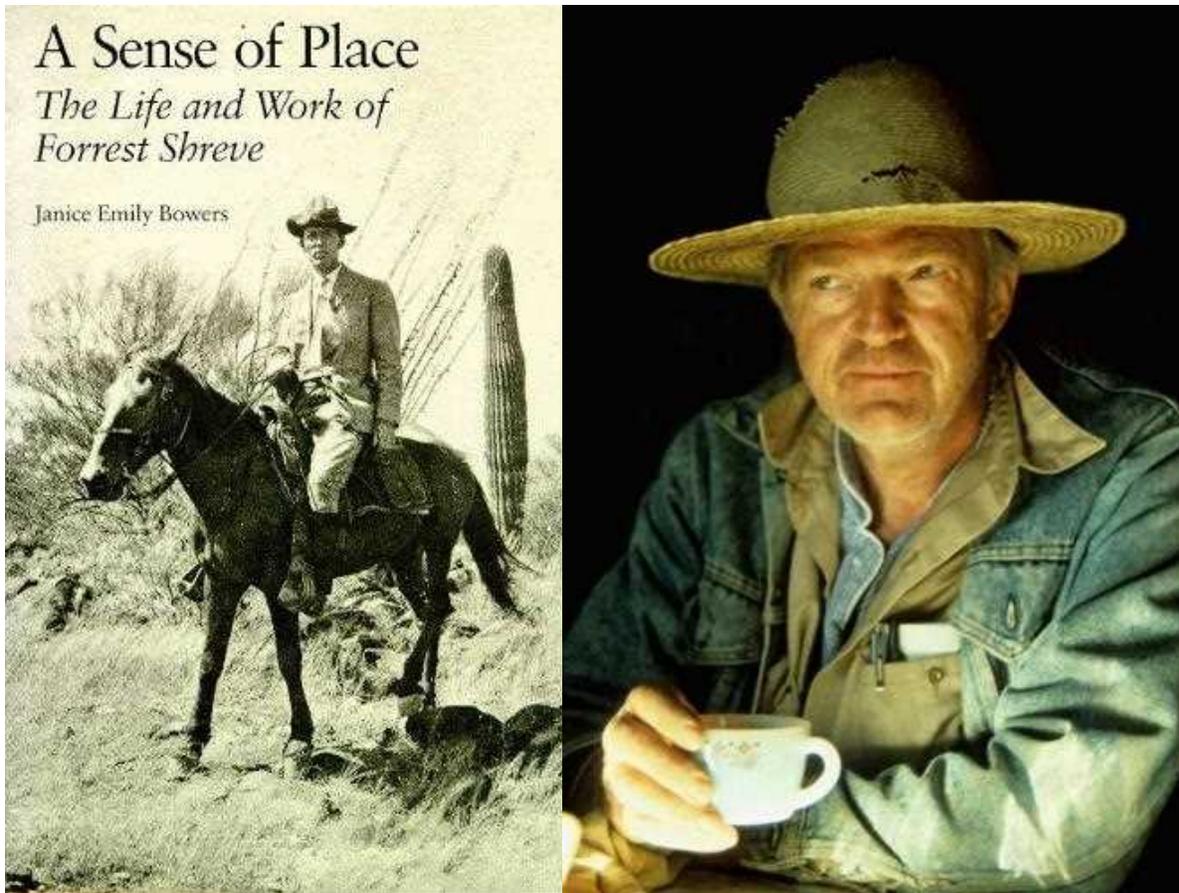
As we climbed out of the van we were greeted by its young director, Dr. Ben MasSalvage and Dr. Roberto gave him a hug. Looking around I was enchanted by the wonderful old stone buildings steeped in the history of desert ecology, hollowed ground if there ever was any.

Dr. MasSalvage gave a lively short introduction to the Desert Lab, built by the Carnegie Institute in 1903, mentioning how in those days Carnegie and other wealthy Americans were pro-conservation. He discussed the lab's original mission to examine heat tolerance of desert plants and animals, its subsequent research over the decades on the saguaros and plants on the hill, the relationship of the lab to university, and of course, Forrest Shreve.

Just then a very tall thin man with a slight limp walked in and Dr. MasSalvage introduced Dr. Paul to us. He was absolutely charming with a broad shy smile and enormous soft-spoken charisma. He mentioned his early interest in the birds and herps of the cloud forests of the Sierra Madre Oriental of Tamaulipas, how polio changed his life, his fascination with the extinctions of the megafauna, and how their timing was different in various places around the globe and coincided with the arrival of humans rather than Late Pleistocene vegetation changes.



Tumamoc Hill, Arizona by Paul Mirocha.



Left, cover of Janice Bowers' biography of Forest Shreve (University of Arizona Press); right, Paul Martin by K. Moore at Batopilas, Chihuahua.

11. The girl with the ringtail.

Up on Tumamoc, Dr. MasSalvage then introduced Robert Via, the horticulturist at the Desert Laboratories. He was young and enthusiastic and eagerly announced he also loved herps and currently was heading up the effort to conserve Sonoran Desert Toads (*Bufo alvarius*). He gave us a short explanation that Red particularly appreciated.

“In the late 70s early 80s, a guy in Texas on a pseudoscience hunch, found an article by Vittorio Espramer that is the first to identify 5meoDMT in the parotid glands and other glands on *B. alvarius*. This led the gringo to drive to Gila, Arizona and ostensibly become the first person to smoke the contents of the glands once they were expressed and dried on his windshield. Ever since, the poor toad has been persecuted for this magic stuff, and falsely associated with ancient indigenous medicine, much to the chagrin of indigenous communities. Today it is getting out of control, and why I and the Tucson Herp Society have started the Sonoran Desert Toad Fund.”

Robert showed us around the green house and gave a lively discussion of each plant. Afterwards he introduced us to Dr. Vandeventer who told us about his early interest in herps, followed by packrats and the treasure trove in their nests for understanding vegetation changes over the last ten thousand years.

I spotted a rattlesnake coiled in the shade next to the steps and it had a color pattern a bit like my *Crotalus moctazumae*. The class watched with delight as I got a closeup with my Nikon and BB did a “tailer.” They were awestruck as BB then opened its mouth and erected its fangs to show them the long hollow structures dripping with a potent excretion.

Robert seemed more than a little hesitant to introduce us to the standoffish-looking guy in front of one of the labs, finally saying, “You are very privileged today to meet the world-renowned Herr Professor Doctor Gerhard Otto Wilhelm Grump.”

Just then out of his lab stepped a “girl” with glorious red hair holding a Havahart trap with a *Bassariscus astutus* (Ringtail). The sight of her with her red hair flying wildly in the wind knocked my socks off and took my breath away. Before I could recover from total paralysis she disappeared down into the desert with the Ringtail. “I know our paths will meet again some day and next time I won’t be so slow on the uptake,” I vowed.



Bufo alvarius (Sonoran Desert Toad) by Warren Savary



Robert Villa, left by Michael Mittermier; right by Robert Villa.



Left, Ringtail “girl” by Robert Bezy; right, *Basariscus astutus* (Ringtail) by National Park Service.

12. Yaqui dancer.

Rarely did we Buds do something that did not involve herps, but Red sometimes asked Best Bud and me to go with him at midnight to the Hydra, a Tucson after-hours club with live soul music. We would sit for hours soaking up the music and watching the rhythmic dancing.

Red loved to dance and sometimes people would just clear the floor to watch him perform either solo or sometimes with a partner. Over time his performances broadened and came to include even brake dancing. Few whites were ever went there and the people really loved watching “carrot top” dance.

I had to be away from BB and Red for a few days to help my parents in Phoenix, the most boring place imaginable. I heard there was an after-hours soul music club and asked if anyone wanted to join me. MK, brother Bill’s spouse, is an adventurous type and said she would like to come along. So we headed out in my trusty Scout on our big adventure into the wilds of South Phoenix.

We had to park some distance from the club, and in the middle of a dark block we were confronted by two teens with knives. “Whatcha honkies doin down here in the ghetto?” “We’re just here to enjoy the music at the club.” “If you two want to get there alive, you better fork over twenty bucks.” I nervously took out my wallet and gave them the money.

I had just enough left to pay the door fee and buy a bottle of booze we set under our table. We sat for hours listening to the great music and watching the dancing. Before the final number at 3 a.m. a teen walked up who I guessed might be a Yaqui from his appearance and our proximity to the Pasqua settlement in Guadalupe. He politely asked MK to dance. Neither she nor I dared say, “Sorry this dance is taken,” as we hadn’t budged from our chairs all night.

He was, in MK’s words, “very over-sexed,” and as the music reached its final climax, he bent her over backward, his mouth lunging for hers. He was on target, but, clunk, his lips landed smack on her hand with the wedding ring that she had managed to clamp over her mouth. I am clueless how she could have learned such a smooth move in Catholic school.



Left, Yaqui dancer (by David Hinejos); right, M. Kathleen Bezy by Kathryn Bolles.



Left, brake dancer (via New York Times); right, Red Bud.

13. *Tarahumarae*.

Word reached me that Tarahumara Frogs (*Rana tarahumarae*) were now extinct in the U. S. I was shocked and saddened; I had swam with them just last year. This was the first extirpation I had directly experienced, a real gut punch. If only I had a good photo to remember them by.

But Red reported that he was swimming in a plunge pool in Sycamore Canyon down very near the border last week and saw one. He was pretty sure it was not a

Rana chiricahuensis (Chiricahua Leopard Frog), *R. yavapaiensis* (Lowland Leopard Frog) or the invasive *R. catesbeiana* (American Bullfrog), all of which also inhabit the canyon.

The next morning Red, Best Bud, and I hopped into the Scout and headed down Ruby Road to Sycamore Canyon. We were very pleased no one else was in the canyon as we walked from the Hank and Yank adobe ruin toward the border. There are many interesting species in Sycamore that we had seen on previous visits, including *Oxybelis aeneus* (Brown Vine Snakes), *Senticolis triaspis* (Green Ratsnakes), *Tantilla yaquia* (Yaqui Black-headed Snakes), and *Plestiodon callicephalus* (Mountain Skinks), but we concentrated our efforts that day on finding and photographing the last living *tarahumarae* in the U. S.

As we walked along we thoroughly scanned the stream, particularly the plunge pools, and saw the other three *Rana* species but no *tarahumarae*. As we approached a very large plunge pool right at the border, BB exclaimed, "Hot dog! there is one on a rock under the water fall." With my binoculars I was able to confirm that it was indeed a *tarahumarae*.

We had been advised to be extremely careful to not spread the fungus by going into the plunge pools with our clothes on. I did not have my waterproof camera, but BB stripped, swam across the plunge pool without a splash, holding the Nikon above water, reached the waterfall, and got a wonderful photo of the last *tarahumarae* before it dove into the pool. I will always cherish Best Bud's "good bye photo" of our departed friend.



Left, Boy swimming; right, holding camera above water (by Olya Maximenko).



Rana tarahumarae (Tarahumara Frog) by Steve Hale.



Sycamore Canyon, Arizona.

14. Harry and the hippie.

Red, BB, and I were enjoying the late afternoon sitting on the casita patio floor planning our next herp adventure, when up walked a handsome kid in uniform.

“Holly shit, it must be the military police. I guess they finally identified me as a ring leader in the Nam protests,” I exclaimed. He had to be the most clean cut guy I had ever laid eyes on, but that was compensated by his charming smile.

“Hola, Bobbie, I’m Peludo Verde, and just flew in from Texas to consult with you about reproduction in *Lepidophyma tuxtlae*.” “Jeez, Peludo do you ever know how to butter a guy up. Well I just pickle them and that seems to stop their reproduction pronto. You know some of these tropical night lizards have completely done away with males. Now, if that isn’t poor taste, I don’t what is.”

Turned out Harry was serious and we had a long discussion of the distributions of night lizards in the tropical forests around the Tuxtla volcanos. Harry soon fessed up, “Well, I have not been so fortunate as to go there yet and have just been looking at the specimens collected by Dr. Pieburn at UT Arlington.” In spite of my joking around, Harry managed to initiate a serious discussion of possible hybridization between the two species of night lizards in the Tuxtlas which have identical chromosomes, and exploring the role it may have played in the origins of parthenogenesis in tropical night lizards.

Harry, talked a lot about Henry Fitch and KU. He also told us how fortunate he felt that he is being sent to Germany instead of Vietnam. “And besides that I get to fly anywhere I want for free.”

“Harry, we have dinner at puesta del sol and hope you will join us.” “Gee, that would be great.” “ Well, I will put an extra T-bone on the Hibachi fer ya, unless you would prefer Red's vegetarian medley.” “I never pass up a steak, especially if done rare.”

It emerged that Harry was also very interested in rattlesnakes. “Let’s head up to Rattlesnake Pass for *Crotalus tigris* tonight, enthusiastically suggested Best Bud. We were chomping at the bit to get on the road and so the steaks were very rare indeed when we wolfed them down. Excited, the four of us piled into BB’s more roomy Falcon station wagon and headed out on a nocturnal herp adventure.

We had just entered the pass when BB yelled, “Hot dog, on the edge of right shoulder.” BB did a “roller,” jumping out the door of the moving Falcon and a “tailer,” grabbing the *tigris* as it was escaping into the boulders. Best Bud relished

showing off his field maneuvers to Harry who was absolutely ecstatic over the *tigris*, his first. I set up the camera timer and promised I would send Harry photos of us with BB “catching a tiger by the tail.”

It was our first midnight hour with a uniformed kid and we unrolled our spare mat and sleeping bag for our new friend that night. That he shares a birth date with Hobart Smith and me says it all.



Lepidophyma tuxtlae (Tuxtla Night Lizard) by Christian Barrizobal.



Crotalus tigris (Tiger Rattlesnake) by Michael Jacobi.



Left, Harry Greene; right, Robert Bezy.

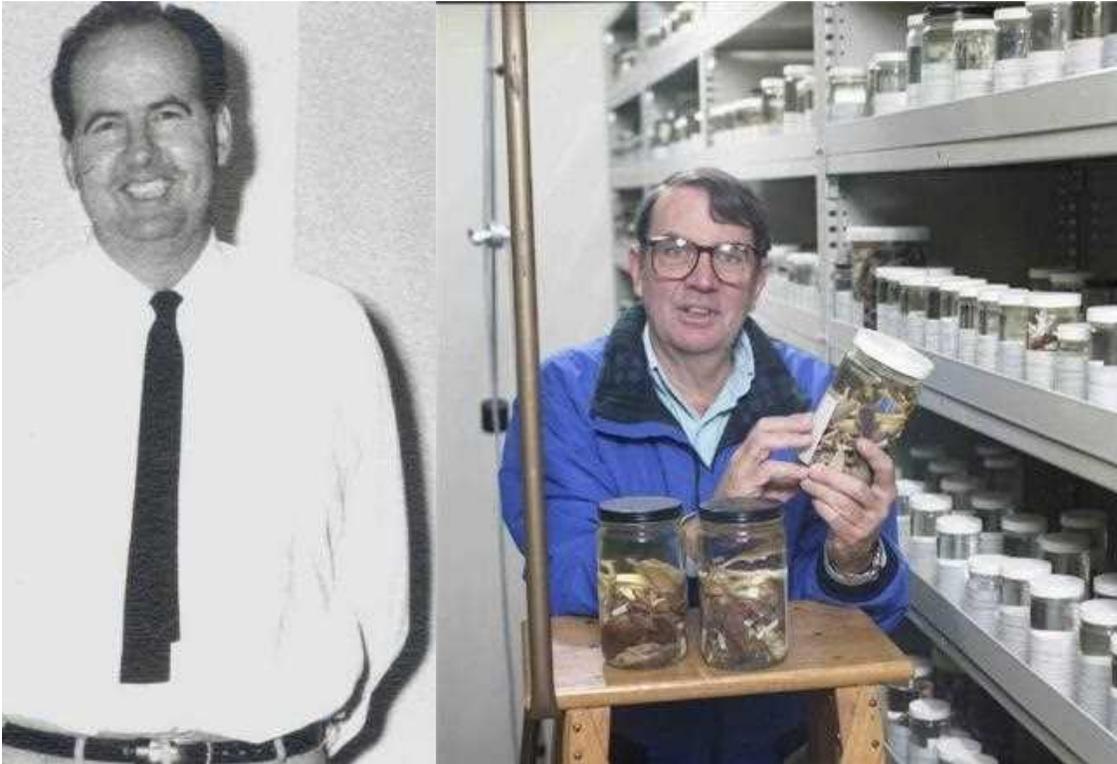
15. Bobbie meets Dr. Bajo.

We continued to enjoy talking with Dr. Roberto after his Desert Ecology lab at Finger Rock High. But I felt our conversations were not as focused on herpetology as I would like. It was getting towards the end of my senior year and Dr. Roberto thought it time for me to head down to the university and meet the herpetologist, Dr. Bajo.

It was with great trepidation that I knocked on the herpetology lab door. It opened and there stood one of the largest guys I had ever seen. He had on a white shirt and narrow black tie, and gave me a big smile. I made brave to say, "I am interested in *Phyllorhynchus* and *Crotalus* and would like to ask a few questions." "Well you have come to the right place. What's your name, handsome?" "Bob." "Pleased to meet you Bobbie Boy." How the hell did he know that's what buds call me?

He opened the door to a room full of bottles, all lined up neatly on wooden shelving, each filled with specimens in alcohol and with a bottle label giving the species name. "Is this what herpetology is all about?" I wondered.

“Bobbie, I have to leave now to be best man in the wedding of one of my students, but the other students here can show you around. See ya later alligator.”



Left, Charles Lowe (modified from charleslowe.net); right, Robert Bezy in the LACM herpetology collection (courtesy of the Museum Archives).

16. Bobbie becomes overwhelmed.

Dr. Bajo welcomed me with open arms into his lab. Whenever I would arrive he greeted me with a big smile and stopped whatever he was doing to “work” with me. Late into the night we discussed my interests in completing “*Amphibians and reptiles of Tohonoland*” and describing *Phyllorhynchus tohona* and *Crotalus moctazumae*. He really liked my photos and took me over to show them to Mr. Saner, the scientific illustration professor across the hall who extolled them. Rather than leave them with Dr. Bajo, I was smart enough to say I would give him copies later.

He seemed very disappointed when I said at 11:30 I had to leave. I did not yield the details of the bud’s midnight hour as I was uncertain how he would react.

When I came in the next afternoon he seemed eager to help me move rapidly down the track of the roller coaster. “All herpetology is based on specimens,” he said pointing to the collection. He then taught me to euthanize a lizard with Nembutal,

inject with formalin, position in the preserving tray, write out and attach a data tag, catalog the specimen, and add it to the appropriate bottle. I was becoming overwhelmed. As I left the lab that night I made brave to divulge a tad more about midnight hour, and I was pleased by his apparent acceptance of it, but he seemed very disappointed to see me go.

The next afternoon the roller coaster accelerated even faster. "Color pattern tells us much, but it is the scales that tell the real story. I will show you how to count ventrals using the method of my friend Heterodon Dolling." Craning my neck to look in the microscope my head started to swim, and I got one of my recurrent severe dizziness attacks and had to lay on the lab floor. "I am feeling sick and need to go home right away," I said as I ran out the lab door.

It took a little long while with dearest Best Bud and Red Bud for me to rediscover Bobbie Boy.



Bobby boy

17. Red puts his foot down.

Spring break was approaching and Best Bud enthusiastically suggested we drive to San Blas, Nayarit. I put together my formalin, syringes, preserving tray, Rapidograph, Higgins ink, tags, field notebook, and a stack of flour sacks. We had a friend who was a pharmacy student and he gave me enough Benzedrine to get through the long drive. We were delighted to see Tucson in the rear view mirror as we headed south for our Nayarit adventure.

And I was happy to be away from the clutches of Dr. Bajo and to be driving through the warm humid inky night of Mexico's Pacific coast with Red and BB. I came to the realization it was the field adventure with the buds that made by heart sing, not Dr. Bajo and the collection.

When he saw a herp in the road, BB would yell the species name, I slammed on the breaks, and he did a “roller.” Red wrote the mileage and species in the notebook and on a tag he placed in the bag.

But with each live herp we bagged the tension started to build. Red finally declared, “I don’t want to be a part of murdering every herp from here to Nayarit. Let me out at the next pueblo and I will make my way back to Tucson, one way or another.” I was torn asunder by this very deep emotional conflict, but listened to my heart. “You know, Red Bud, I feel the same way. I will preserve the herps we find dead and get good photos of the live ones, record the locality, and release them off the road.” Joy returned.



Left, Red Bud; right, Bobby Boy with camera.

18. Into the open arms of the sea.

It was a grueling 30 hour drive to Nayarit. I kept falling asleep behind the wheel, awakened by the tires hitting the gravel of the shoulder or by oncoming trucks turning on a blinding panel of lights as they barreled down the center of the highway. Then there were the “un solo caril” bridges. Who will go first? The big rigs of course.

At four in the morning we arrived in the San Blas area and stopped for three hours of dream time in a ditch right next to the road. In my half-awake delirium I kept

hearing the growls of Cerberus of Hades. At dawn I discovered we were sleeping next to a rotting burro and a pack of dogs were fighting and growling over the last scraps of meat.

As BB and Red slept I preserved the DOR's and the formaldehyde fumes stung my eyes, nose, and throat and the liquid pickled my gloveless hands that I preferred smooth for my nocturnal fun. I came to see more clearly how Dr. Bajo and his collection-mania were robbing me of herpetology's joy. "It's the Nikon for me," I vowed.

As the sun rose above the tropical forest, BB and Red awoke and we had our caffeine and sugar high for the day. I expounded on the region's biogeography, "To the south the Sierra Madre marches proudly into the sea. To the north there is a thousand-mile long void along the coast where the Baja California peninsula once lay nestled against the mainland. The remnants of this connection can be seen in a strange primitive lizard that lives here, *Sceloporus utiformis*. It is related to the primitive *Sator* that survive only on three islands in the Gulf."

Red sprang to life. "Let's head to the coast for a swim and camarones and cerveza beside the sea." I realized suddenly how much Red Bud's spontaneity and zest for life meant to me.

The warm Pacific was absolutely delightful and we stripped and dove in. We really did not want to get out of the water, but hunger drove us up to the palapa. We were the only guests and Desierto, the smiling kid waiter, said, "Tengo camarones, ostras, calamares, y dorado, sabroso y fresco y lo que puedas comer."

We each had two margaritas and then we ate and ate and ate, washed down with bottles of Dos Equis, bien frio. Desierto said there was no one staying in the over the water casitas and he could rent us one with three kayaks, muy barato. Red said, "Gracias, rentaremos la casita y tres kyaks por dos semanas." Red smiled at me, "Bobby, you and BB can head back to Gringolandia whenever you want, I am staying here." "So are we, Red Bud, I wouldn't pass it up for anything. I replied."

Mexico, you can check out any time you like, but you can never leave.



Left, dogs eating dead burro; right, Desierto.



San Blas, Nayarit.

19. The San Blas Road.

It was two very delightful weeks in paradise with Best Bud and Red Bud. During mid-day we kayaked through the mangroves, snorkeled, feasted on the most incredible sea food, sipped margaritas, and even found our long lost shaker of salt. We searched for lizards in the morning hours, for frogs calling at night, and drove the roads for snakes until midnight hour. The bonds between the three of us became incredibly deep and we vowed they would last our lifetime, maybe longer.

My first objective was to photo *Sceloporus utiformis*, the primitive mainland relative of island *Sator*. With BB's acute eyesight we found the mysterious lizard and secured the photo on the second day, getting a great *in situ* shot without noosing and posing the lizard. As we were setting off in our kayaks one afternoon we were shocked by the bright yellow venter of a *Pelamis* on the sand; and that night we were flabbergasted by the almost comical appearance of extreme casque head of a lone *Tripriion* calling at night above a small puddle.

The night cruising was gangbusters, the snakes responding to the unseasonably wet weather and the traffic was very light during Semana Santa, so most snakes could be photographed and released alive. BB is a great enthusiast of venomous reptiles and he was in ecstasy over the *Agkistrodon bilineatus* and *Crotalus basiliscus*, topped off by a giant *Heloderma horridum* sauntering across the road.

Tears were in my eyes as we started the last pass of the San Blas road on our last night in paradise. BB declared, "I want to ride on the hood, I think we may be missing the very small snakes." He hopped onto the hood and soon pounded, I slammed on the breaks, and Best Bud went flying down onto the pavement. But in addition to skinned knees he came up with a small elongate snake, "It looks like an *Enulius*, but none are known anywhere near this far north. We probably have a new species."

We ripped off our shirts to feel the warm tropical rain on our bodies and Red Bud led us in a very long thin *Enulius* line dance. The fate of that new *Enulius* is complex and ironic and I will detail it later on.



Sceloporus utiformis (Large-scaled Spiny Lizard) by Jorge Armín Escalante Pasos.



Triprion sptualta (Shovel-headed Treefrog) by Cheryl Harleston López Espino.



Agkistrodon bilineatus, sensu lato (Cantil) by Matthieu Berroneau.



Heloderma horridum (Beaded Lizard) by Jorge Saucedo.



Hydrophis (Pelamis) platurus (Yellow-bellied Sea Snake) by William Flaxington.

20. *Enulius bestbudi*

After the long grueling drive home I went to see Dr. Bajo and presented him with my specimens. He was unhappy that I had not euthanized and preserved every live herp, but he seemed to understand, and perhaps even sympathize a little with my preference to photograph and release. “Did you record the exact locality for each animal you photographed, Bobby Boy?” “Yes I did.” “Good, you can deposit all your images here in our new collection of photo vouchers.” He was very pleased with me and gave me a pat on the back. He had a surprisingly gentle touch for such a large guy.

“Dr. Bajo, we found a new species of *Enulius*.” “What the hell is an *Enulius*?” he asked. I could not believe my ears, this herpetological giant on whose shoulders I stood had never heard of *Enulius*. I was still a kid at heart and still believed in the existence of heroes, giants, and such, but this took an edge off my happy childhood.

“Well, Dr. Bajo, it’s a primarily Central American genus of small colubrid snakes, but we found one on the San Blas road.” “Do you have the specimen?” “Yes, it was a fresh DOR when BB found it and I photographed it before preserving. Would you like to see it?” “Can’t right now, the dean is calling me on the carpet for not showing up to teach my classes. He is such a worthless asshole. I have to go, but you work it over and let me know what you figure out about it.”

I opened my copy of Smith and Taylor’s 1945, “*An annotated checklist and key to the snakes of Mexico*” and went to work. The generic key was difficult due to the use of dentition and hemipenis characters in several critical couplets; I had not removed the maxilla and this was a female. But the key seemed to lead to *Enulius*. My specimen did not match any of the species of *Enulius* in Mexico. I got out my copies of Taylor’s 1951, “*A brief review of the snakes of Costa Rica*,” and Stuart’s 1963, “*A checklist of the herpetofauna of Guatemala*.” Clearly, it was a new species. I put together a matrix with the scale features of my San Blas specimen and the other *Enulius* taxa.

When Dr. Bajo came back he was high and on a roll. “Well, I ripped the dean a new asshole and he backed off big time and said I could meet my classes whenever I had nothing better to do.”

“Dr. Bajo, here is a chart comparing my specimen to all other *Enulius* using the scale characters you taught me.” “First of all, Bobby Boy, it is a table not a chart. But I see the data do seem to indicate it’s a different species, if indeed it is an

Enulius at all.” Ok I will go ahead and put together the data tomorrow for my paper describing it as *Enulius bestbudi* named for BB who found it.”

Dr. Bajo turned crimson, “You don’t a know fukin thing. Do not mess with the description until you get a second opinion from a specialist in *Enulius* systematics. He threw his cigar on the floor and stomped out. I did not at the time understand why, but I see it clearly now. I had not listed him as an author or named it for him.

Many years later Roy McDermot was visiting to examine UAZ specimens for the monograph he was doing with Mac Harty on the herps of Sinaloa. I was aware he had done a lot work on snake systematics along Mexico’s Pacific and in Costa Rica and I made brave to tell him about my new species, even though he was a student of Jay Salvaje whom Dr. Bajo despised. Roy became very excited, “An *Enulius* from Nayarit, you got to be kidding me.” As soon as he had the specimen out of the bottle he declared it a new species. We decided to work up the description together.

We were about to submit the manuscript when in comes a reprint that floored me: Smith, H. M., R. G. Arndt, and W. C. Sherbrooke. 1967. A new snake of the genus *Enulius* from Mexico. Nat. Hist. Misc. Chicago Acad. Sci. 186:1-4, describing a *Enulius oligostichus* based on a damaged specimen from the San Blas road.

I asked Wade bud about it and he said that on their field adventure through Mexico he and his friend Rudy assembled a collection that was sent to Hobart Smith. He knew nothing about it beyond that. But, herp buds are forever, even if they accidentally scoop you.

Roy and I published a little note. The holotype had a damaged head and we were able to fill out additional details with our specimen. Ours was collected in 1962; the holotype of *E. oligostichus* in 1963; Smith, Arndt, and Sherbrooke appeared in 1967; McDiarmid and Bezy in 1971.



Left, Rudolf Arndt (via Wade Sherbrooke); right, Wade Sherbrooke by Robert Bezy.



Left, Hobart Smith (via Oscar Flores); right, Roy McDiarmid.



Enulus oligostichus (Mexican Long Tail Snake) by Lara-Resendiz and González (2022).

21. Desierto.

Best Bud, Red, and I made a late summer trip to visit Juanito in Pisinimo. With a smile Juanito introduced us to his 6 year old kid, Desierto. "He is from Nayarit, but both of his padres died trying to walk across the desert with him to Gringolandia. He was nearly dead from dehydration when I found him. I was able to carry him in my arms to Quitobaquito and lay him in the shade of the cottonwood. He was still able to swallow small sips and the healing Quitobaquito water gradually brought him back to life. I have been raising Desierto best I can, but I think it is time for him to move to a safer place. Los traficantes y coyotes estan peligroso aqui. Would you guys take him to Tucson and raise him?"

We recognized him as the young waiter kid in San Blas. The smiling sweet boy swept me right off my feet, just as he had in San Blas, but the idea of "adopting" him took BB's and my breaths away. Red Bud, the spontaneous one with a zest for life, did not hesitate, "Si como no."

That was the best decision of our young lives.



Quitobaquito, Arizona



Desierto by Dzmitry Kliapitski.

22. Chilomeniscus.

Desierto was sobbing uncontrollably when we drove away from Pisinimo and Juanito. I stopped after a short distance and Red had a long heart to heart talk with him in Spanish. Desierto said he would live with us for a short, while but would want to return to San Blas as soon as he recovered.

Bringing Desierto into Saguaro casita was a joyous event I will cherish forever. I gave him a sleeping bag and a mat and I was deeply touched when he chose to roll them out next to mine.

We bought a large supply of camarones, langostas and dorado, and I barbecued a bit of each at puesta del sol on the hibachi, careful not to let my steak touch his food as he did not like red meat. He had a large helping of Red's vegetarian dish with his sea food.

After dinner we headed to the Avra for a snake cruise. He was totally in his element herping and even spotted a *Chilomeniscus* BB missed. He was a natural born young herpetologist and remembered the Latin names of every species we encountered. He helped me get good photos of each herp we saw.

We allowed Desierto to join us for midnight hour, sipping a glass of jugo de durazno on the patio and with a portable fan keeping the smoke away from his young rapidly developing lungs and brain. He enthusiastically joined in the conversation talking animatedly about his life in Nayarit, freely mixing Spanish and English words. Then he was out like a light. I carried him in to his bag and felt his little heart beating next to mine. As I zipped him in, he opened his eyes and said, "I love you, Bobicito." "And I love you, Desierto," I replied with a big smile. Delicious sleep overtook me as lay listening to Desierto's breathing as he snuggled against me.

Life had taken on a whole new meaning.



Boy sleeping by ESB Professional.



Chilomeniscus cinctus (Banded Sandsnake) by Brian Hinds.

23. *Callisaurus*.

Desierto's and my life became completely entwined. We made friends with a neighbor boy, Antonio, about his age from Jalisco and the three of us spent many a happy day together. It had a great healing effect on Desierto whose beautiful smile was gradually lighting up his face once more.

Desierto and Antonio both liked to explore the desert and photograph lizards with me. I taught Desierto how to use the Nikon and he rapidly became an accomplished photographer. He never caught and posed the reptiles but carefully and silently inched closer, deciding what angle would be best. He could even get close to the wary *Callisaurus draconoides* (Zebra-tailed Lizards). His talent was incredible and he had a keen eye for composition, angle, and lighting.

One afternoon Antonio, Desierto, and I stopped and sat near a small lake. It was verdant and I could plainly see it sowed the seeds in Desierto of home sickness for Nayarit. That plunged a dagger deep into my heart. But Red Bud spoke to me, "Bobbie, it's what will make Desierto happy that matters, you either love the boy or you don't."

The next morning there was a knock on the casita door and I opened it. There stood Juanito and another young guy. He was Desierto's Tio Memo here to take him back to Nayarit. Desierto walked out my life forever, but his sweet love and smile stayed with me forever and changed the course of my life



Left, Desierto and Antonio; middle, Desierto by Ningen Ilya; right, Tio Memo by Formo.



Callisaurus draconoides (Zebra-tailed Lizard) by Marshall Hedin.



Finger Rock Canyon by Charlie McDonald.



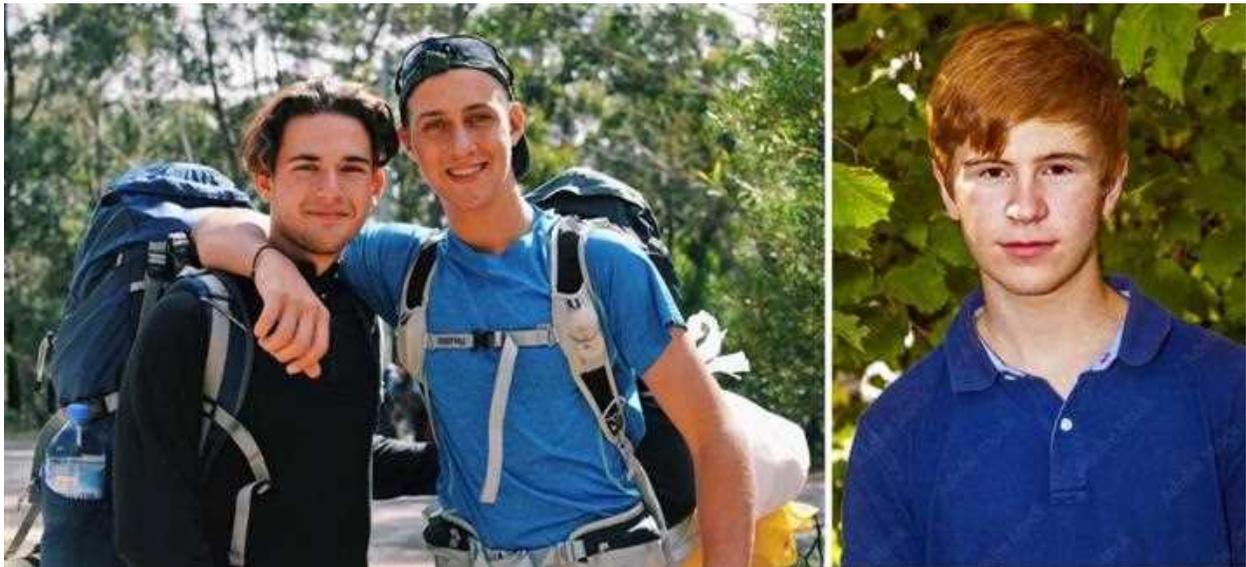
Nayarit mangroves by Jesús Roberto Duarte.

Chapter 3. The Lizard of Oz

20. Oz Arrival.

It was a difficult crawl back to life after the departure of Desierto, but I connected anew with Red and Best Bud. They felt my pain deeply and did their best to fill the huge void in my heart and help me heal. We finished our last semester at Finger Rock with the top grades in the graduating class. We did not do ceremonies and refused to attend graduation, although the school would have done anything to have Red Bud perform a dance at graduation.

BB's dad, Erik, was now living in the Red Center of Australia. As a graduation gift, he sent us three open roundtrip tickets to Alice Springs. Our excitement was overflowing as we boarded the plane for the long flight to OZ where the age of reptiles never came to an end.



Bobbie Boy, Best Bud, Red Bud.

25. *Ctenotus leonhardii* (Leonhard's Skink).

As we flew across the Red Center, we were absolutely awestruck. We had explored the Sonoran Desert, including even the hyper-arid Gran Desierto, but had experienced absolutely nothing like this ever before. We feasted our eyes on the first extreme desert we had ever seen, its vast rolling red dunes, sparse shrubs, and even sparser bright green *Acacia* trees. And, there were no roads, homesteads, or cattle tanks to mar the landscape. It was love at first sight and we wanted to stay here forever.

“This is a real reptile paradise and I can’t wait to start herping non-stop, day and night,” enthused BB. I chimed in with a loud and clear, “Me too.”

Red had been encouraged by his success reining-in my killing of herps and said, “Buds, we have a month in the center, lets figure how to enjoy having fun herping rather than running around going ape shit trying to see and photograph each of the more than 350 species in Cogger’s book. Perhaps each of us should pick out one species we would like to see and photograph. We can concentrate on the three species. This will help focus our outback adventure and make it much more enjoyable. Of course we will enjoy and photographs others we see in the process.”

Red Bud was such a refreshing person. His spontaneity and zest for life was so well balanced with his interest in herps, a sense balance that is very well expressed in his dancing. We three had it all, Red's spontaneity, Best Bud’s enthusiasm and knowledge of all herps, and my passion for herp photography and publishing.

From the airport we strolled along the Todd River seeing and photographing *Ctenotus leonhardii*. We were in ecstasy and ripped off our shirts, rubbed in the red dust in the center of our chests, and Red led us in the first dance of the Red Center.



The Red Center.



Ctenotus leonhardii (Leonhard's Skink) by Brad Maryan.

26. *Pseudechis australis* (King Brown Snake).

As we finished our dance of the red center and were resting in the shade of a large eucalyptus along the Todd River, a Land Rover drove up and stopped. The door opened. "Dad," screamed BB, rushing into his father's arms for a long, long embrace. "You guys are sure a sight for sore eyes. Hop in and we will exit Alice Springs for my station in the Hart Range," said Erik.

That's when Red noticed the passenger and remarked, "You simply have to be David Gulpilil." "No, I am David's son, Biranni. I live with your Dad."

We threw our small packs in back, climbed aboard, and were off in a cloud of red dust for the Hart Range. Suddenly Biranni yelled, "*australis*," shot out the door, and grabbed the snake. "These *Pseudechis australis* can get off the road fast," he said with a fabulous smile. I got my Nikon from the pack and took the photos of our first snake in Australia. Our heads were swimming with questions as Erik turned into his station.



Erik's Rover.



Pseudechis australis male
Shay Gap, Western Australia
© Brian Bush

Pseudechis australis (King Brown Snake) by Brian Bush.



Left, Erik; right, Birrani.



Station in outback by Nick Holdsworth.

27. *Heteronotia binoei* (Binoe's Gecko).

After the grueling 20 hour flight from Tucson to Alice Springs, Best Bud, Red, and I were totally exhausted when we arrived at Erik and Birrani's station in the Hart Range. We all agreed that we would discuss our lives and the month ahead tomorrow after we had recovered. Birrani led us outside to enjoy midnight hour with him and Erik. With a charming smile Birrani shined his light on a *Heteronotia binoei* declaring it to be a parthenogenetic species and I photographed it as we sank into deep delicious sleep in the hammocks with the stars blazing across the inky night of the Red Center.



Heteronotia binoei (Prickly Gecko) by Jules Farquhar.

***28. *Varanus gouldii* (Sand Goanna).**

We awoke in our hammocks to the sun rising like a fireball out of hell. The Red Center is no land for late risers. Birrani and Erik were enjoying morning coffee, bacon, and eggs on the porch and the delicious aroma brought BB, Red, and me up out of our very deep sleep from the long flight to OZ.

“G’day mates. You probably don’t even remember me from last night because you were so tired. I am Birrani. My main interest is in reptiles.” Red, the socially inclined bud, spoke up, “Yes I certainly do remember you. You shoed us the *Pseudechis australis* on the road. You look so much like David Gulpilil. I am Red and this is BB and Bobbie.” “Well, thanks mate, but please try to forget my dad. I have not had an easy life because people just idolize him and do not focus on me as a herpetologist, not an actor.”

“I can sympathize completely. My mom was an acclaimed ballet dancer and everyone thinks of me as her son, 'little dancer,' and are blind to my passion for herps. Having a famous parent can rob one of his identity,” responded Red with

deep emotion. I could plainly see that Red Bud was totally swept off his feet by Birrani.

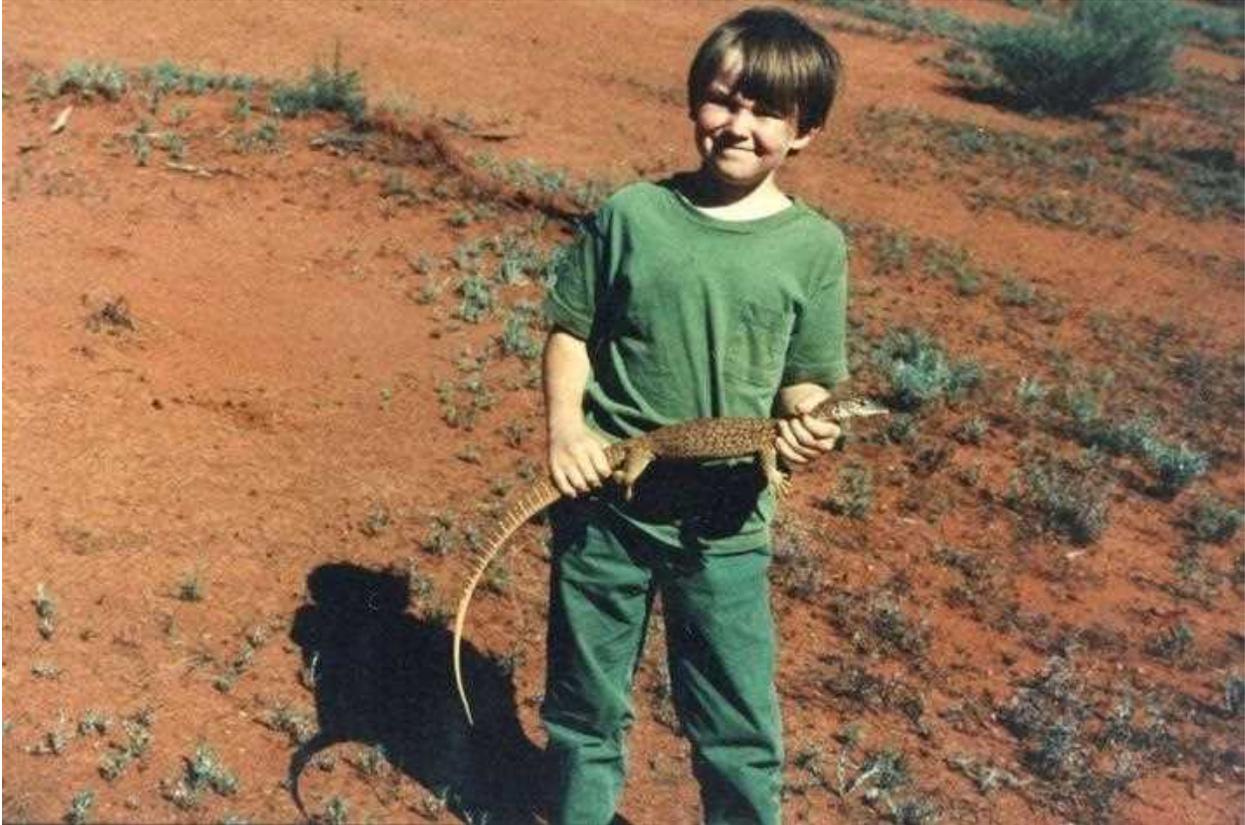
After breakfast, Birrani suggested we go out and get some good photos of the Tingkas (*Varanus gouldii*), Sand Goannas, or Bungaras). “It’s warmed up enough by now that they will be emerging from the rabbit warrens soon.” I donned my Nikon pack and we set out on our first goanna adventure.

“I think you may need to put on your telephoto to get the most natural images of them undisturbed. They have keen eyesight and if you wait until we are close, you do not see the true Tingka spirit,” Birrani advised. BB and Birrani simultaneously spotted one on the horizon. I got out my binoculars to locate the warren and its lizard and focused the telephoto and clicked away.

“This has to be paradise, the age of reptiles never came to an end here,” BB exclaimed.



Varanus gouldii (Sand Goanna) by Jules Farquhar.



Kit Bezy with *Varanus gouldii* (Sand Goanna) by Kathryn Bolles.

29. The lagovores.

We had a wonderful morning watching the *Varanus gouldii* chasing the rabbits and listening to Birrani's lively discussion of the Tingka spirit. We were all three coming under his spell. As a reptile observer he was the perfect bridge between us and the mysterious aboriginal world unknown to us. The sound of his melodious voice struck a deeply human chord in me. We were sad when our morning with him and the *Varanus gouldii* came to an end and we trekked back to the homestead for tucker.

Erik had a leg of lamb on the barbecue and iced bottles of beer waiting. He had also harvested some fresh spinach and snow peas for Red's medley. "Welcome home, mates. The bungara give you a good show?" "Absolutely spectacular. It was exciting to watch them stalking and preying on the rabbits," exclaimed Red.

"Well here in OZ we do everything upside down. We partake in smoko hour before tucker and kip. I have harvested some of my best down-under weed for you, let's have at it."

Smoko, a delicious meal washed down with a fine Australian schooner, and we sank into our hammocks for kip,



Boy in hammock by Lapina.



Varanus gouldii (Sand Goanna) eating a rabbit by S. Sadler.

30. *Underwoodisaurus milii* (Thick-tailed Gecko).

After our kip, Erik put the billy on for a cuppa. As the tea swept away our cobwebs, he asked, "Well, mates, what do you want to do with your month here in OZ?" he inquired.

BB eagerly answered, "I have always wanted to see a *Varanus giganteus*. Perenties are the world's second largest lizards and for me they are the living spirit of the Red Center's continuance in the Age of Reptiles."

"And you, Bobbie?"

"My first priority is to photograph a *Moloch horridus*. Thorny Devils are the pinnacle of convergent evolution, an Australia species with adaptations similar to our North American *Phrynosoma* (Horned Lizards), but even more specialized in behavior, diet, ecology and morphology. This might reflect the more ancient origins of this desert, I speculated taking a fist step down the road to my 'age of the deserts hypothesis for morphological evolution."

Red quickly sprang to his feet to give one of his great performances.

"Australia has an extremely species-rich herpetofauna with more than 375 reptiles and they are all interesting to me. It also has over 500 groups of aboriginal people who have roamed this desert for over forty thousand years. The people are unique on the entire planet in their cultural adaptations to a hyper-arid climate, and reptiles have played an important role in this, as can be seen in their art.

"We have a chance of a life-time to personally experience this in our month down under. There was a myth that the dunes of Simpson Desert are so inhospitable that aboriginal people never inhabited them. This myth has been dispelled, but the groups wandering the Simpson dunes remain among the most isolated and least contacted in the world. So I am proposing that with Birrani's help we undertake a long trek across the Simpson to photograph *Moloch horridus*, *Varanus giganteus*, and the aboriginal people in the heart of the Simpson. I rest my case."

The excitement sweeping across all five of us was nothing short of electrifying. I spoke for us all, "Let's make it so."

While Erik and Birrani loaded up the Rover for the tomorrow's trip to the Simpson, Red, BB, and I walked with our headlamps and were ecstatic to find a stunning *Underwoodisaurus milli*.

We would be leaving before dawn in the morning, so we all retired to our hammocks shortly after midnight.



© Boris Klusmeyer (Germany) – www.herpFocus.com
Underwoodisaurus milii (Thick-tailed Gecko) by Boris Klusmeyer.



Location of the Simpson Desert.

31. *Acanthophis pyrrhus* (Desert Death Adder)

We were off before dawn for our exploration of the Simpson Desert. Erik drove the Rover with BB and Birrani also in the front as they both have very sharp vision for spotting animals on the road. We took what Erik called "the French Line" east and then began negotiating the faint sandy Colson Track north into the Simpson. The vast sea of parallel red dunes was incredible and we were delighted to see there was no evidence whatsoever of other humans anywhere.

Birrani yelled, "*pyrrhus*," and Erik slammed on the brakes. The rusty snake lay stretched across the track ahead. "It's an *Acanthopus pyrrhus*. They are usually nocturnal, rare to see one out and about during the day like this. They have unusually long fangs and seriously potent venom," announced Birrani. I was very happy BB decided not to do a "tailer" and I got out my Nikon and began shooting. Its flattened body seemed to almost sink into the red sand, reminding me of a *Crotalus cerastes* (Sidewinder). I was surprised to see how much an elapid can look like a viperid. Red of course was charmed by its reddish color and similarity to his favorite, *Crotalus pyrrhus* (Southwestern Speckled Rattlesnake) and performed an adder and subtracter death dance.

We climbed back into the Rover and headed deeper into the Simpson. BB sang out, “Echidna.” We were thrilled to see this rare egg-laying monotreme. Birrani expounded, “Echidnas, *Tachyglossus aculeatus*, are very strong diggers and excavate termites from their mounds. The mother incubates a single egg in her pouch for about 10 days, then the baby, called a pubble, uses an egg-tooth, a lot like that of reptiles, to break out of the egg. Even though the mother lacks nipples she nurses the baby in the pouch until the little one starts to develop spines of its own. The pubble lives with the mother for up to a year.”

Erik spoke up, “There's a great acacia grove over there and this would be a good place to camp for the night and to abandon the Rover in the morning for our trek into the dunes. Well mates, this is the good bye to the ‘civilized world.’ I have left over snow peas and spinach for Red and lamb for the rest of us, plus five bottles of ale. We will take weed with us across the dunes, but little else. Lets have a mid day smoko, a last tucker, and a kip.



Acanthophis pyrrhus (Desert Death Adder) by Jules Farquhar



Kit Bezy with *Tachyglossus aculeatus* (Short-beaked Echidna) and termite mound by Kathryn Bolles.

32. *Nephrurus levis* (Knob-tailed Gecko).

It was our last night before abandoning the Rover and setting out on foot into the dunes. We would have to minimize what we carried if we were to survive the long trek. Each of us planned to take a canteen for water, a pocket knife, and a Bic lighter. Erik had a small tin pot for cooking and a trowel for digging down to water. I planned to take my Nikon with only a zoom lens, and BB took a lizard noose, and Red carried a little bag with our stash. It was Austral warm season and we would not need a cover at night when we slept in the sand.

We would have no flashlights out there so BB, Red, and I decided to spend the last night walking the dunes together with our head lamps, leaving Erik and Birrani to themselves in camp. On top of one of the dunes BB succeeded in eye shining a *Nephrurus laevis* and he and Red helped me get great photos of this absolutely charming gecko.

We were very fond of Birrani and Erik, but we missed our time alone with just the us three buds. It was a full moon and we sat on the dune crest, savoring midnight hour, and Red led us in a Son of a Simp dance. We decided not to return to camp this night and fell asleep in the sand gazing at a billion stars.



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Nephurus levis (Knob-tailed Gecko) by Stephen Zozaya.

33. *Varanus giganteus* (Perentie),

As we prepared to abandon the Rover, the last vestige of our culture, a new Birrani emerged. He had been raised in the city, but his father had sent him on a three-year walkabout to learn the ways of his people.

“You white fellas can not possibly survive out there the way you are dressed in t-shirts and shorts. You lack melanin and will not last a day in the sun. And even in the dunes there are plenty of thorns to shred your flimsy skin. You need loose fitting legged pants, a long sleeve shirt, and a floppy hat, all of sturdy but breathable cotton fabric.. I have these things for each of you in my duffel here. I need none of this stuff and will eventually discard my clothing entirely.”

We proceeded to strip and re-dress in the clothes he gave us. How he knew what size each of us would need was one of the many mysteries about him for which we did not have a clue. “I have a paste made from the campfire ashes. Have your best bud paint the mixture on your face and neck,” Birrani advised. He enjoyed painting BB, and Red painted me with a gentle soothing touch and artistic flare and I reciprocated best a klutz like me could do.

“Finally, you can start out in shoes, but they won’t last long in the dunes. Try to walk barefoot a few hours longer each day until you feet toughen up and you can throw the shoes away entirely. I will continue to use words for a little long while as that is your white fella way, but will use fewer and fewer of them as we proceed and learn to communicate in a higher manner on our walkabout,” Birrani said with surprising authority.

Birrani pointed out the last rocky hill before the pure dunes. “We can likely find BB’s *Varanus giganteus* atop those boulders.” And sure enough there on the very summit perched the majestic Perentie surveying his vast kingdom. I took out my Nikon and Birrani silently led BB and me to just the right distance and angle to get good photos of this gigantic lizard.



Birrani.



Australia camp by Robert Bezy.



Varanus giganteus (Perentie) by Kathryn Bolles.

34. The Simpson trek begins.

The essence of adventure is to shed your entire previous life until you forget who you are or why you ever embarked on this journey and come to realize that there is only one real objective in life, survival. Such a metamorphosis takes progress in spurts in response to life-threatening events on the journey.

Red was perfectly correct, a walkabout in the Simpson Desert was the best way to experience the real Australia. To BB, Red, and me, raised in Arizona's Sonoran Desert, the Simpson was familiar and comfortable in many ways, but here near the Equator the intensity of the light gives the entire arid landscape a harsh, uncanny, surreal appearance. We had enjoyed white-trunked acacias in Sonora, but here they were ubiquitous and stunning against the red dunes.

As we trekked on, we gradually became more and more isolated from each other, receding deeper and deeper into our own individual dream time of private thoughts and imagination.

The late afternoon shadows lengthened and Birrani softly broke the total silence. "It may seem easier to walk along the crests, but the dunes originate from the sands that were exposed by the receding water of Kati Thand, that white fellas call Lake Eyre. Thus the dunes are oriented north-south, and to reach the dune people we need to walk east across the crests, deep into the center of the Simpson.

"I see signs that the rabbits are still present here and they will provide meat. You guys hunker down in the shade and BB and I will walk about to find our first water hole and to hunt rabbits."

I was not at all surprised that Birrani chose BB as his hunting partner. Best Bud had powerful, well-coordinated physical movements beyond the rest of us. I have enjoyed watching him in action for many years carefully stalking reptiles like a jaguar. While Red was capable of incredible grace and beauty, BB had the muscular strength and powerful movements of an instinctual hunter. Eventually BB and Birrani became a single hunting unit that could efficiently close in on a rabbit with stealth and precision. While hunting they never spoke, communicating exclusively by eye movements and body language.



Simpson Desert.



Left, Birrani hunting; right, a hunting boy.

35. *Moloch horridus* (Thorny Devil).

For a little long while Birrani walked with BB along the bottom of a deep swale between the dunes looking for the people's well. He had recognized signs this swale had been one of their camps sometime in the last few months. Without a water source they would not have chosen this place. They often disguised the wells to keep them from being discovered and used by white fellas, but this far into the dunes they likely would not have bothered to hide the hole. Using his instinctual sense of the land and the people, Birrani eventually discovered the hole near a large acacia that would provide mid-day shade.

BB and Birrani began developing their hunting technique. BB distracted the lagomorph by slowly approaching it from the front while Birrani silently inched his way towards the rabbit from behind until he was within accurate spear range. By puesta del sol they had four rabbits and Erik, Red, and I joined them near the water hole for smoko, tucker and kip.

“Even though we are nowhere near the center of this enormous dune field, I think we should camp here for several days. It has water, rabbits, and evidence that the dune people come here occasionally. If we build a fire likely someone will sooner or later show up to investigate,” declared Birrani.

I had difficulty seeing due to my sunburned retina, but managed to skin the lagomorphs and Erik built the fire and prepared the skewers. While the rabbits were roasting, Birrani and Red Bud went on a plant walkabout. Red eagerly learned the names of the edible plants and they gathered an abundance of pods, seeds, leaves, and fruits for his meal. We had smoko and tucker, voraciously devouring the rabbits. That night we all fell asleep sprawled in the soft red sand beneath a billion stars.

The sun rose like a fireball out of hell. “Rise and shine, mates, it’s a *Moloch* morning,” announced Birrani, pointing out the distinctive tracks in the sand near the base of the dune. Birrani was a very skilled tracker and led us a long way up and over the dune. “Hot dog, here it is at an ant colony,” sang out BB, delighted that he scored for once before sharp-eyed Birrani. We spent a little long while enjoying watching it snap up the ants and I got some great photos. The strangeness of the Thorny Devil far exceeded my greatest expectations. “Only a truly ancient desert could produce such an extreme bizarre ant specialist,” I declared, taking another step towards building an hypothesis based on the age of origins of the deserts.



Left, Birriani hunting; right, rabbit on a skewer.



Moloch horridus (Thorny Devil) by Wade Sherbrooke.

36. *Varanus tristis* (Sad Monitor)

After we finished photographing the *Moloch*, BB and I decided to explore to the north along the swale. Red said he wanted to hunker down in the acacia shade and meditate, “I need to make contact again with my inner self and rediscover who I am and why I am here in the Simpson Desert.” This was a common practice of Red’s as he was much more introspective than either BB or I. “Well, Red Bud, I know you will love that inner self whoever he or she turns out to be,” said BB with one of his priceless big broad smiles as we wandered away.

It was a productive walk. Dunes are the favored habitat of *Varanus gouldii* and I figured that it was the only monitor here in the sandy Simpson. So I was more than a little surprised when we chanced on a *Varanus tristis* as it is primarily arboreal species. But then I noticed there was indeed the remnant of a half-dead *Acacia* nearby. With BB’s help I managed to photograph this, the third species of monitor we had encountered.

We were tired, out of water, and decided to return to camp, stopping to fill our canteens at the water hole before heading to the inviting shade of the acacia for a kip. When we arrived, Red was sprawled on his back and did not move. Something about his position and stillness alarmed me, “Hey, Red Bud, did you find your self?” No movement. I panicked and screamed. Birrani and Erik came running. We detected short shallow breathing movements and a weak pulse. He was still alive. “Red, can you hear me?” I asked. There were small but detectable eye movements. He still has some cognition.

Birrani looked at the seeds Red had collected and discovered *Datura* (Thorn Apple) among them. “They are hallucinogenic but some people are particularly sensitive to the toxins which can be lethal.”

At 17 I had no concept what-so-ever of death. But here was my dear Red Bud clinging to life far out in the Simpson Desert. My body began to shake uncontrollably, my teeth chattered, and I suffered one of my dizzy spells.

I watched spell bound as Birrani applied white paint to himself and began chanting and dancing in a circle around us. Red Bud opened eyes, smiled, and said, “Can I join you, mate?” We painted each other and put on a *Varanus tristis* dance that cured the monitor forever of its sadness.



Left, *Datura* (Jimson Weed); middle, Red Bud; right Birrani.



Varanus tristis (Sad Monitor) by Kathryn Bolles.

37. *Pogona barbata* (Bearded Dragon).

As the late afternoon shadows lengthened, Birrani and BB set out on their lagomorph hunt. They began at the well and walked north more than a little long while, encountering only one rabbit and it was savvy to their dual hunting technique and escaped. “They do communicate with each other you know,” proffered Birrani. Soon they came to the end of the swale as the dunes joined forces closing in from both sides. The reality of the Simpson was beginning to

make major inroads even on Birrani's outlook. "We are on a tiny island in the vast red sand sea," Birrani confided to BB. "Well, we will just have to dive into the sea and swim for our lives," encouraged the ever-gutsy BB. "If we dive in, we may lose Red because he just isn't getting enough nourishment from his plant diet. Can't you talk to him about that?" inquired Birrani. "Well, he and I have talked about that many times and he always says it is part of who he is. You have to understand that he is at heart a dancer, an artist, as much as a herpetologist, and he believes reality lies inside not outside."

"We just have to convince him that he is what he chooses to be. There is a real world right here and now and if he does not embrace that reality we may all die on this tiny island. You white fellas see me as a type specimen of the black fellas. And yes, aboriginal people have roamed and learned from this desert for forty thousand years. But I roamed it for only three years and only because my dad insisted on it. Best Bud, for the survival of our little group here, you and I have to work closely as a new Bud team, not just on hunts, but back there to help Red and the others survive."

"Let's make it so," answered BB, and the bond between the aboriginal and his hunting Bud, deepened.

Erik and I, and even vegetarian Red, were beyond depressed when BB and Birrani reported that they had not been able to kill even one rabbit. Birrani began to speak with vigor, "We black fellas do not suffer from you white fellers' need to speak the obvious, but for our survival I will try to do so now. Red, this journey to find the people of the dunes was your idea, and we all thought it would be fun. But in this harsh desert, fun can turn into a death march very quickly. If we are to proceed one step farther into the desert, you have to eat more protein." To my shock Red seemed to agree and respond to Birrani's firmness.

"Well, Birrani, I thought deeply about that yesterday under the influence of the *Datura* and I have decided to broaden my diet to include grubs and bird eggs."

Incredibly, Birrani had succeeded where I had failed for years and introduced Red, the Dancing Bud, to the concept of external reality and survival.

That afternoon Red Bud and I took a walk together to photograph a *Pogona barbata*. He spotted a magnificent one and Red coached me on the best angle and lighting for gangbuster photos. Working so close to him renewed our bonds.



Pogona barbata (Bearded Dragon) by John Fowler.

38. *Oxyuranus microlepidotus* (Inland Taipan).

The sun rose like a fire ball out of hell and Birrani sang out, “Oh it’s a wicked witjuti morning. Rise and shine, mates.” Even though we had been caffeine-free now for eight days our sluggish neurons still screamed out for their early morning jolt.

“There is bush tucker here we are failing to avail ourselves of. Our people know them as ‘mako witjuti’; you white fellas call them ‘witchetty grubs.’ Although these days some people use that term for any large grub, it properly is applied only to the nutritious larvae of *Endoxyla leucomochla* (the witjuti moth) that live at the base of *Acacia kempeana* (Witjuti Bush). I saw several of the bushes on my walkabout with BB yesterday.”

In the cool morning, our groggy little procession followed along behind Birrani up the swale past the well for a little long way. “This is it,” he declared pointing to a large bush. At his direction we began scraping away the sand around the base of the trunk. We all had been raised digging in the earth and enjoyed this return to childhood. Red came up with the first grub and showed to the rest of us. Soon we all had our hands full and returned to camp.

“They are best eaten alive, but you white fellas may not be up to that so we will warm them slightly in water over the fire. But first lets have our mid-day smoko.” Afterwards we were surprised that Red took the lead in lightly cooking them, taking care not loose protein into the water. Best Bud commented on their sweet almond-like flavor and there was not a grub left when we retired to the acacia shade for kip.

Afterwards, BB, Red, and I went on a walkabout leaving Birrani and Erik to themselves in camp. BB spotted a thin six foot long snake draped across the top branches of an acacia. We inched our way close enough to the tree to be able to identify it as an *Oxyuranus microlepidotus*. Its venom is extremely potent and a single bite is said to be strong enough to kill several people.

I wanted to get a photo and BB proposed that he would climb the tree, do a “tailer,” and pull the snake down. Fortunately before he could follow through on his dangerous plan, Red was able to find a stick long enough to reach the snake and he succeed in bringing the reptile to the ground. With the zoom lens I was able to get a photo without the snake biting me on the forehead. We decided to sleep that night in the dunes away from camp.



Boy with *Endoxyla leucomochla* (Witjuti); *Acacia kempeana* (Witjuti Bush) by Mark Marathon; Kit Bezy with a large Australian moth by Kathryn Bolles



Oxyuranus microlepidotus (Inland Taipan) by Jules Farquhar.

39. *Ophidiocephalus taeniatus* (Bronze-headed Snake Lizard).

The sun rose like a fireball out of hell and Birrani sang out, “It’s a ‘gaban’ morning. Rise an shine, mates, it’s not Easter but we are going on an egg hunt. I have promised Red that if he will eat eggs we will always leave at least two eggs in any nest we rob.”

We struggled to our feet after a long night sprawled in the soft sand. Red was full of enthusiasm as the increase in protein was having a dramatic effect on him, physically and emotionally. I was ecstatic to see the return of dearest Red Bud.

Birrani led us on another walkabout up the swale. “My people usually eat the gaban mainly of emus; they nest on the ground and the eggs are easy to gather. But Emus seem to be absent here in the Simpson so we will have to climb up to bird nests to get them for tucker.” Not far past the well BB spotted a nest high in an acacia. With the return of his vigor Red was confident he could climb to it. There was a large branch about 15 feet up. Red, the nimble dancer, climbed onto BB’s strong shoulders, reached up, grabbed the branch, did a pull up, threw his leg up and over, and stood up balancing on the limb to peer in the nest. There were six eggs and he took four. Delicately holding two in each hand, Red sprung 20 feet back down to the sand without breaking the eggs. Tree-climbing is one of the return-to-childhood facets of herp adventure that we buds feed on and Red and BB enjoyed working as a team and kept us well supplied with eggs.

On the way back to camp we stopped at a wicket bush to get some more grubs to go with the eggs. Sifting through the sand with his fingers Erik found a very strange legless reptile. He immediately showed it to Birrani, “What the hell is this?” Birrani’s eyes bugged out of their sockets. “It a pygopodid, a weird family of legless lizards related to geckos. I think this may be an *Ophidiocephalus taeniatus*, thought to be extinct. I took out my Nikon and documented the record for publication.

When our camp came into view we were shocked to see an aboriginal teen standing next to the fire. Birrani greeted him, but it was evident they were unable to understand each others languages. By gestures Biranni invited the visitor, Jiemba, to join us in our meal. Red boiled the four eggs and lightly cooked the grubs. Jiemba was delighted to join us for smoko and then savored the meal.

Afterwards Red put on a special dance for Jiemba who seemed absolutely entranced by Red Bud. Birrani knew the importance of dance to Aborigines and began to suspect that the people of the dunes may have never seen a red-head before. This turned out to be an important card in our hand, as Jiemba soon offered to accompany us across the dunes to his people.



Ophidiocephalus taeniatus (Bronzeback) by Brendan Schembri.



Ophidiocephalus taeniatus (Bronzeback) by Jules Farquhar.



Left, Boys boosting into a tree by Kuttig-People; right, boy tree-climbing by Pascal Malamas.



Boy taking eggs.



Jiamba.

40. *Pseudonaja mengdeni* (Western Brown Snake).

Long before dawn we took our last drink from the well, filled our canteens, and abandoned the little swale that had been our island home for several days. We soon came to appreciate the structure of the Simpson. The western dunes are only a couple of meters high but gradually increase in height to over 30 meters in the east. Climbing up and over the crests became more and more difficult as we trekked eastward toward Jiamba's people in the center of the red dunes.

We came to appreciate this was indeed a vast sea of red sand and we never would have made it across without Jiamba's help. He was a very fit teen and knew the Simpson like the back of his hands having spent his young life hunting bush meat and gathering plant food throughout the dunes. Fortunately he was patient and

stayed within BB's and Birrani's sight, stopping to rest with us every little long while. Although they did not share a common language, Birrani is a very good communicator and gradually succeeded in breaking through Jiembra's fear of outsiders. A bond between the two Aboriginals slowly emerged on our long trek and this also would eventually contribute to our survival in ways we never imagined.

After we had been walking for 16 hours we reached a swale and Jiembra signaled we should stop here and rest for the night. He indicated to Birrani that it has a water hole and lots of rabbits and we can walk the remaining eight hours to his peoples' home tomorrow morning.

While BB, Jiembra, and Birrani were hunting, Red, and I explored the swale for snakes. We were delighted to find a *Pseudonaja mengdeni*. It is an extremely venomous and aggressive elapid that forms an S-shape with the anterior portion of its body and then can strike much greater distance than one expects. With the Red's help I was able to get photos without being bitten.

Jiembra hunted using a boomerang and was very skilled with it. Although Jiembra was a bit shy around BB he managed to teach him how to use it and physical BB quickly learned the skill became very good at hunting with it. In less than an hour they returned with five rabbits and even a handful of grubs for Red Bud. Red's Bud's welfare seemed very important to Jiembra.



Left, low dune by Christopher Watson; right, high dune.



Pseudonaja mengdeni (Western Brownsnake) by Stephen Zozaya.

41. *Pseudonaja modesta* (Ringed Brown Snake)

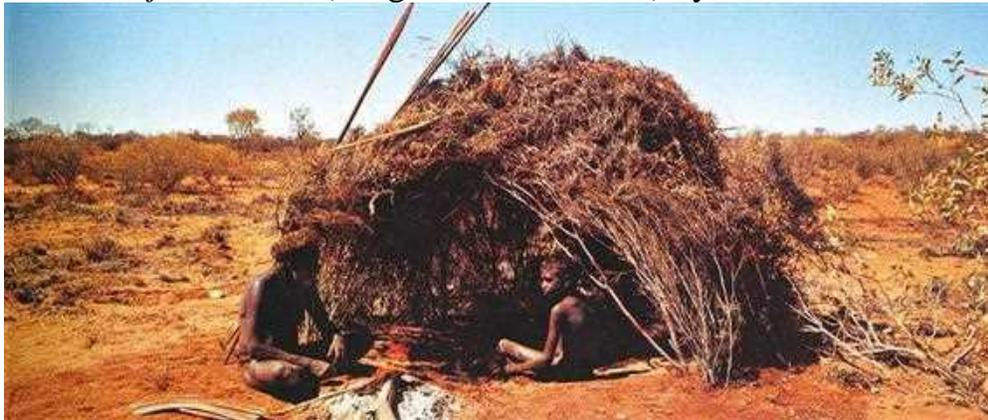
We arose before dawn for the final push to reach the dune people. **Jiamba** knew the least difficult routes up and over each of the enormous dunes. We would never have been able to cross them without his knowledge. On the crest of a dune he stopped and motioned for us to come forward. He pointed to a small snake in the sand under a bush. Birrani identified it as *Pseudonaja modesta* and said that it had weak venom, seldom bites, and there is only one recorded case of an envenomation. Even though they are both considered members of the elapid genus *Pseudonaja* I was astounded to see the difference between this small innocuous species and the large aggressive *P. mengdeni* we photographed yesterday. I took out my Nikon and added the species to my growing collection of Australian reptile images.

We were very encouraged when Jiamba signaled that only two more dunes separated us from his people. The sight was incredible when we topped the last dune and saw an enormous flat with a grove of large acacias shading the bush houses inhabited by the dune people. Jiamba became a bit nervous and pointed out an isolated tree far away from others for our camp. He proceeded on to the center of

the village to talk to the elders and explain why he had brought strangers. By this point it began to sink in that Red Bud was indeed the main reason. In a little long while he returned with water, rabbit meat, and grubs and then left. We had smoko, tucker, and fell off to sleep for the night.



Pseudonaja modesta (Ringed Brown Snake) by Brian Bush.



Bush house.

42. The corroboree and escape.

After two days trudging up and down dune after dune we were exhausted and wanted to sleep the whole day. But at dawn Jiemba arrived and interacted with Birrani. After he left, Birrani told us there would be a big corroboree with all the dune people this afternoon and that Red would perform at the end.

Red Bud was excited beyond belief. None of us could begin to appreciate the importance such a performance held for him, the chance to bring his art to dune

people in the center of the Simpson Desert. Certainly dancing for them would be the climax of his visit to Australia and perhaps of his entire life.

We managed to drag our aching bodies up out of the sand and Jiemba came back with more braised rabbit meat for us and grubs for Red who now ate them alive. Afterwards Jiemba led us to a plaza-like opening in the acacia grove. The entire clan of about fifty men, women, and children were sitting around it. Soon the yidaki players began and after a while a group of seven young dancers performed holding boomerangs and with branches tied to their feet. The dancers were very energized and we could plainly see their great importance to these people. I got as many photos on the sly as I could.

Then the star dancer of the dune people, Waru, the son of one of the elders, took the center. He was exquisite, his body paintings done with a very artistic flare, and his rhythmic movements were absolutely mesmerizing. As Waru was finishing, Red Bud, sporting red body paint and little else, walked on stage and he and Waru performed a short routine looking as if they had danced together for years.

The real Red Bud sprang to life and he danced as I have never seen before. He began with a brief routine based on movements dating from Lully in the sixteenth century. He progressed through various modern dance routines and ending with vigorous brake dancing. The dune people went absolutely wild over his flaming red hair and his entire performance and hoped he would never to stop. He did manage to give them a brief encore of even more energized brake dancing.

After Red's performance everyone, old and young, joined in the dance and we could plainly see the importance of this to uniting the clan.

That is when it happened. Gazing across the plaza I saw a young teen girl with an old woman. I could not avert my gaze from her and as my eyes met hers I could see from her dazed look that the overwhelming attraction was mutual. A thrill gripped my entire body unlike anything I had ever experienced in my 17 years. She seemed to be about 15. "Was I allowed to have such strong physical attraction to a girl her age?" In our culture it was ok as we were not that different in ages and I was still under 18. But what is permitted in an Aboriginal culture isolated in the center of the Simpson Desert I had no notion. But I was not going to let anyone's notions get in the way of the absolute magnetism I felt.

After the corroboree we buds retired to our sleeping area for smoko and kip. But I could not sleep as her image was indelibly etched on my retina. I imagined a night with her ending in an orgasmic explosion that would dwarf the big bang. I began to scheme how I could hook up with her tonight.

Jiemba showed up and wanted to see Birrani right away. A new sense of urgency seemed to have come over him and soon the two of them left together. Hours later Birrani returned and asked for our undivided attention.

“The girl’s name is Moly and the tribal elders want to trade her for Red Bud. Through Jiemba I replied we would give their generous offer consideration and let them know our decision tomorrow.

“Afterwards Jiemba relayed that this whole situation had become extremely perilous and our lives were in danger. Jiemba felt it was a big mistake for him to have brought strangers here. The elder will pull out all stops to keep Red from leaving as he wants him to be Waru’s dance instructor and partner. But, fortunately Jiemba indicated he would help us escape. He had already arranged for Molly to leave on a walkabout with her grandmother to a town east of the Simpson where she has kin that will protect her.

“I have a clear plan for our escape,” Birrani continued. “I have a bag of weed I will present to the elders just before midnight. I have added a bit of a *Datura* to it to assure that it will put them under for a very long time. All you need to do is to be ready with your canteens filled to set out about midnight on a very long non-stop walk all the way back to the Rover.”

“Make it so,” we replied.





The corroboree,



Corroboree



Left, Waru; right, Red Bud.



Molly.



Birrani, Moly, and Jiemba



Simpson Desert sunset by Bjorn Baklien.

Chapter 4. Doing the Arizona Strip

43. The University of Arizona.

Best Bud, Red, and I were back in Saguaro casita in Tucson, but our hearts were still in the Simpson Desert. There are experiences that forever change the course of one's life and we three buds had shared such a profound event in the Red Center.

How could we have a “midnight hour” and not relive our “OZ smokos”? Could we ever again go through an entire day without mentioning Birrani or Jiemba or Erik or Molly? How could BB and I broil our steaks on the hibachi and not wish it was rabbit on a skewer? How could Red get some live grubs to top off his vegetarian medley? Would he ever put on another dance that could hold a candle to his performance for the people of the red dunes? More importantly, would the Arizona herpetofauna ever again hold the magic it had for us before the land of OZ and *Moloch*?

But life goes on and it was the last day to register for courses at the University of Arizona so we trudged onto campus to stand in the miles-long lines. We could no longer be the totally inseparable buds we were at Finger Rock High as our course schedules were quite different. The one exception was Beginning Zoology taught by Joe T. Marshall. It was the one course we shared, and it turned out to be so much more than a “course,” but it was another life experience that we would forever remember.



The University of Arizona, “Old Main,”



Bobby Boy, Best Bud, and Red Bud

44. Joe Trusdale Marshall.

So there we were, the three buds sitting together in Joe Marshall's first lecture, more of a performance actually, in the Beginning Zoology course in the big auditorium at the big University of Arizona. I had just turned 18, delighted to see Finger Rock High in the rear view mirror, and ready for big time science.

In walks Joe Marshall with his polio limp. "Kids, we are gunna start with the shit. This mofuking molecular genetics bullshit is gunna take us all over so you might as well deal with it now and get the crap down once and for all." He went over it all from Watson and Crick, who just seven year previous had resolved the structure of nuclear DNA, to mtDNA, mRNA, coding of amino acids, redundancy of the code, and on and on.

But he wanted to let us know what real biology was like and he concluded by discussing his studies of comparative behavior of owls he conducted nightly up in the Rincons, accessible only by a two hour hike. The real Joe Marshall emerged and he talked with more enthusiasm than I have ever heard in the 60 years of dead-head lecturers I have endured.

"And owl research is well timed. I get back from the Rincons about dawn and the *Ascaris* are just peering out of my son Peter's asshole and I can grab the fuckers with forceps." He held up the vial of voucher specimens for little Peter Marshall's *Ascaris*.

"Next lecture I will discuss the science of the simultaneous orgasm."

In Joe Marshall's very first performance I was beginning to glimpse a world view that stays with me even today. The complete disregard of all social constraints by Chuck Lowe and Joe Marshall strongly influenced my view of life. Their complete disdain of all social customs and their love of nitty-gritty, uninhibited animal behavior in *Homo sapiens* exuded from their every pore as was an integral part of their total commitment to “real biology.”



Joe Marshall.

45. Double your pleasure.

Joe Marshall kept his promise and his second lecture did include a discussion of the science of simultaneous orgasms. As this was not a concern for me with my solo approach at that time, I do not recall what he said except that “practice makes perfect.” More about the origins of his interest in the topic later.

Then he introduced the star of today’s show, Doctor Charles Herbert Lowe Junior. And what a show it was. Chuck covered only his favorite subject, sex. He gave a few *Rana catesbeiana* (American Bullfrog) vocalizations and managed to wrap his arms around himself in an obscene way and hop around the stage to exhibit amplexus. “But this external fertilization isn’t much fun; try it tonight in the swimming pool, you’ll see how much more fun internal action is.

"Now lizards and snakes have the right idea. They have two copulatory organs, usually forked, and with spines that serve as French ticklers. They sometimes use both simultaneously. ‘Double you pleasure, double your fun...’

"But you will never guess who invented OUR penis. Yes it was the turtles; they may be slow but they know what they are doing. And we have them to thank for much. Balanced on their high domed shells they have to reach a long way, and that is how we came to be so well endowed."

What a guy. But he was alive with the love of life and real biology in a way many of my somnolent proper professors could never begin to imagine.



Left, self amplexus; right, *Rana catesbeiana* (American Bullfrog) amplexus by Meghan2.



Left, *Pantherophis obsoletus* (Western Ratsnake) hemipenes by Noelle Easton; right, turtle with penis by André Quincas.



Testudo radiata (Radiated Tortoise) copulation by F. Dany.

46. Is there life after OZ?

We could not quite put our finger on it but we felt something was slipping out of our lives and leaving a big hole. The thrill was still there but fading fast. Fortunately we could not yet see that 18 is the beginning of the end of life.

We had spent a week going to classes at the big U and we were starting to wonder just where that “higher education” was leading us. A few of the professors seemed truly alive and to love what they do, but others seemed to be the living dead who once loved something but could no longer quite remember just what that was. “Is that where I am were headed with my own life?” I wondered.

We needed badly to rediscover our roots. “I heard that Erika up in PEFO is starting to study *Lampropeltis triangulum* and would like some road runners. Let’s head up there for *triangulum*,” BB suggested. “I feel a noose is starting to slip around my neck and I have to get out of here before the summer and all life dies completely,” added Red. “The colors of *triangulum* are magnificent and I bet I can get a gangbusters photo that just might make the cover of *Herp Review*. They got a

drenching this summer and the goldenrods in the red sand will be a knock out,” I tried to enthuse.

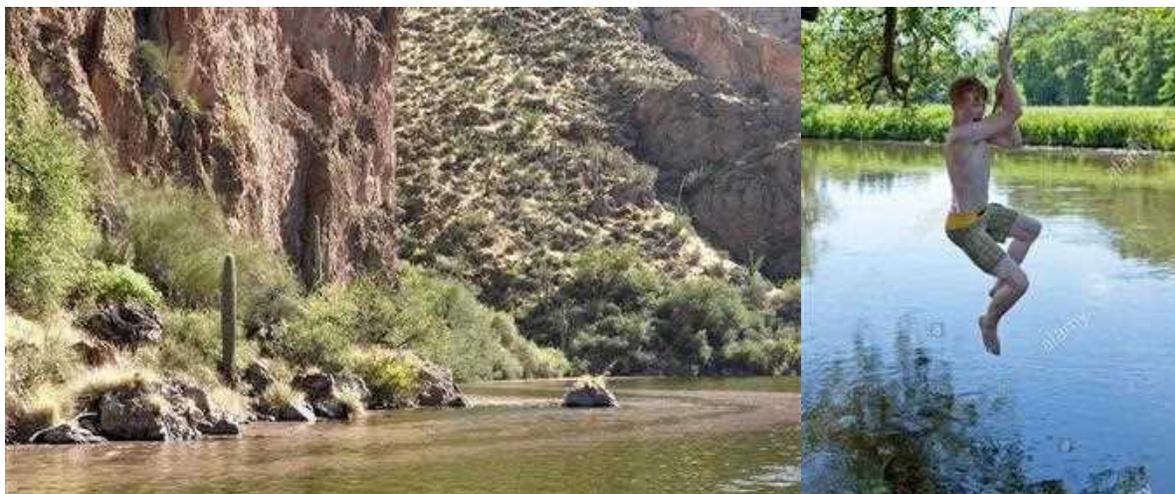
So we piled into the Scout and left the Sonoran Desert for a late summer escape to the Colorado Plateau. As we drove through Pioneer Pass the thunderheads were starting to build up over the Pinals and looked promising. Rounding the sharp hair pin curves of Salt River Canyon the rumbling of the thunder began to shake the boulders and rekindled our lust for life. “Lets stop for a dip in the river,” suggested ever-spontaneous Red Bud.

We found a very rocky road along the river and headed down it, stopping to photograph a *Crotalus molossus* (Western Black-tailed Rattlesnake) on the road. Our track abruptly seemed to disappear out into the river.

We stripped and dove in. There are moments in life when it all seems to come together. Here in Apache Country with the lightning flashes burning the image of the canyon walls into our retinas, the thunder reverberating though the labyrinths, the sweet fragrance of *Baccharis glutinosis* (Seep Willow) hanging in the moist air, and the warm swift current of the Salt flowing over our bodies, we decided there is life after the Simpson Desert.



Crotalus molossus (Western Black-tailed Rattlesnake) by Erik Enderson.



Left, Salt River; right, a boy and a river.

47. *Lampropeltis triangulum* (Milk Snakes).

Eventually we buds did climb out of the Salt River. Peanut butter and jelly sandwiches, a slug of cold coffee, and we piled back into the Scout and headed for PEFO, the Petrified Forest. There we met the first female field herpetologist we had encountered in the wilds.

Only snakers can appreciate what a paradise we had come to. Driving the roads for snakes--now called “cruising”--is very nerve racking with the bright headlights of the oncoming traffic and the tailgaters behind. But the park is locked up tighter than Fort Knox at night to keep people from stealing the fossilized plants. We had it all to ourselves and drove the roads from sundown until dawn.

We found a *Lampropeltis triangulum* and she took data, marked, and released the snake. It was the first one we buds had ever seen--now called a “lifer.” But the *Crotalus viridis nuntius* (Hopi Rattlesnakes) were common, particularly the neonates, and a real delight to see and photograph. They were named *nuntius* by Klauber for their importance to the Hopi in their dances bringing on the monsoons. So, of course Red Bud put on his own *nuntius* dance at 3 a.m., for us in the middle of the pavement and it knocked Erika’s socks off. During the day we enjoyed photographing the *Aspidoscelis neomexicanus* (New Mexico Whiptails) and *A. velox* (Plateau Striped Whiptails), both unisexual.

It was a long and uneventful drive back to Saguaro casita in Tucson, but our Colorado Plateau adventure was a most memorable end of the most event-filled summer we would ever experience. You are 17 only once in life.



Aspidoscelis neomexicanus (New Mexico Whiptail) by Kit Bezy.



Lampropeltis triangulum sensu lato (Milk Snake) by Erik Enderson.



Kit Bezy and Robert Bezy with *Lampropeltis triangulum* sensu lato (Milk Snake) by Erik Enderson.



Crotalus viridis nuntius (Hopi Rattlesnake) by Erik Enderson.

48. Bobbie argues with Joe Marshall.

I took my first mid-semester exam at the university, which was in Joe Marshall's Beginning Zoology class. A couple days later, the exams were handed back and I went into one of my dizzy spells when I saw 80% on top. I had never gotten below 90% on any exam since grammar school. Flipping through the pages I saw that the reason for the low score was that I got no points for my essay on the function of synapsis. I had answered that its primary function was to assure an orderly meiosis in which the resulting haploid cells contain one and only one copy of each chromosome. Joe was looking for the answer that the primary function was to allow crossover and recombination.

I managed to get up the guts to go into Joe's office and argue the point. To my shock, he liked my arguments and happily changed my grade to a 95%. Later, I learned that this tendency to give out unexpectedly low grades extended to even graduate students, some of whom he flunked on their prelim exams because he was fishing for an answer that was unique to him.

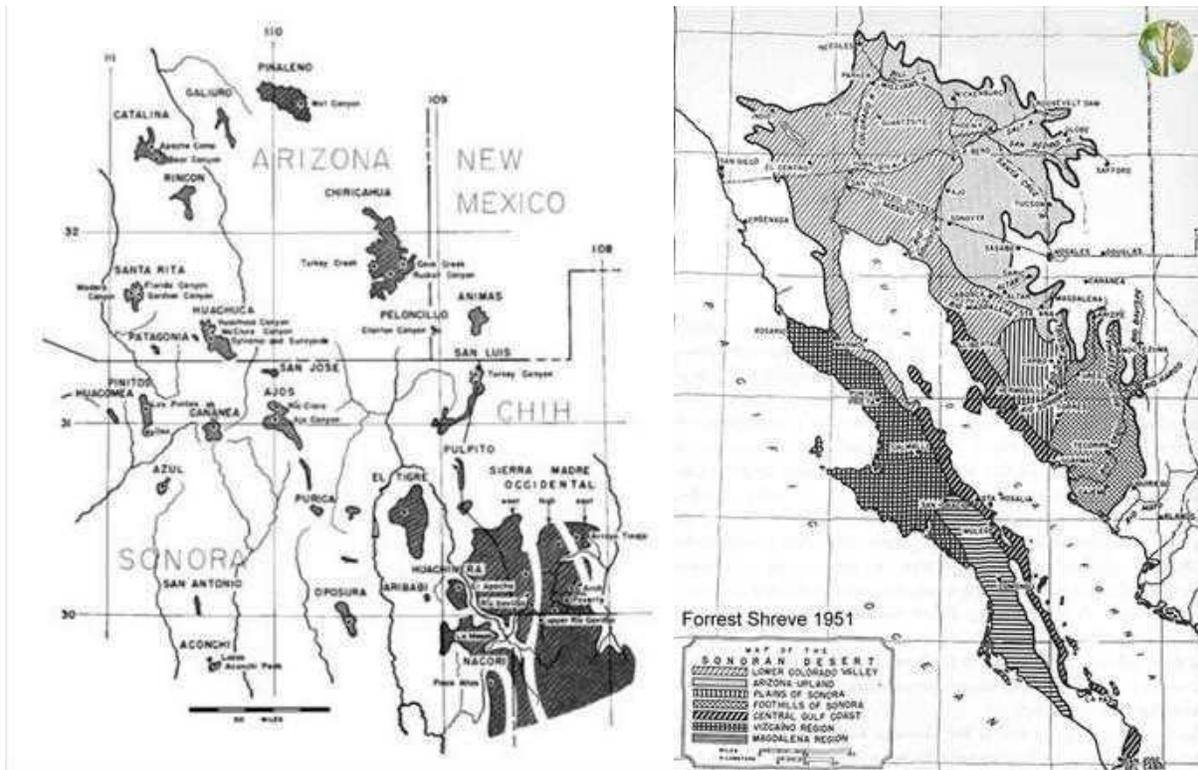
I got to know Joe in an unusual manner. As a freshman I was required to take a PE (Physical Education) class. I took intermediate swimming class as my swimming ability was not what I would like. In the large communal shower after the class the guy next to me struck up a conversation. It was none other than Joe Marshall. He explained that due to his bout with polio he exercised in the gym every day. So three times a week I had a conversation with him in the shower, and I came to look forward to it. Nothing like standing naked with the hot water streaming over your body to spur real conversations.

He talked about his long difficult fight to regain his mobility after polio and his explorations of mountain ranges in Sonora that had no roads, no maps, or in some cases even no accepted names. His 1957 "*Birds of the pine-oak woodland*" put these mountain ranges front and center in biogeography of the Southwest, even though Lowe had not yet coined the inspiring name "Madrean Archipelago" for them. Many decades later I dedicated our paper on the herps of the Madrean Archipelago to Joe Marshall and Chuck Lowe.

I learned that he liked to build harpsichords and to play them in his underwear for house guests. Later from a graduate student I learned that Joe had fallen in love with a prostitute in Nogales and had to decide what to do about it. This seemed consistent with his great interest in the art of simultaneous orgasms that he learned from her and discussed in Beginning Zoology. He chose to stick with his spouse, Elsie, and two of them went off to Thailand and studied Gibbons, co-authoring a much cited paper in *Science* on their songs.

Marshall, Joe T., and Elsie R. Marshall. 1976. Gibbons and their territorial songs. *Science* 4249:235-237.

Marshall, J. T. 1957. Birds of pine-oak woodland in southern Arizona and adjacent Mexico. *Cooper Ornithological Society* No. 32..



Left, Map of Madrean ranges from Marshall (1957); right, map of the Sonoran Desert from Shreve (1951).

49. *Bufo kelloggi* (Little Mexican Toad).

Joe Marshall's descriptions of his explorations of the uncharted mountain ranges of the Madrean Archipelago in Sonora inspired us to head south, down Mexico way. We had a good appreciation for tropical forests based on our experiences in the San Blas area of Nayarit, but just where did the Sonoran Desert stop and the Neotropics begin? Was there a line in the sand somewhere with Sidewinders to the north and Boa Constrictors to the south (Bezy et al. 2017) ?

There were no detailed vegetation maps such as Dave Brown and Chuck Lowe eventually produced, although I had a copy of Marshall's 1957 map of ranges in the archipelago and Shreve's 1951 map of the Sonoran Desert. There were no "data bases" with localities for museum specimens as that information had not

been “electronically captured.” Just what was inside the jars on the collection shelves was unknown to anyone except perhaps Dr. Bajo. It was a wide-open playing field and we three buds were poised to dive in and romp the field big time.

“The coast of Sonora is absolutely enchanting. Lets head down and explore it,” proposed BB. “Yeah, let’s make it so,” Red and I chimed in simultaneously. We threw our sleeping bags into the Scout and headed for the border. A quick stop for a car permit and we were set to go where no herper had gone before. All down the coast the camarones were ad lib as there were no refrigerated fishing boats in the Gulf in those days to haul the crustaceans away.

The monsoonal thunderheads were gathering and west of Hermosillo a horrendous downpour hit. We drove off on some dirt tracks out into this enormous flat on Shreve’s “Plains of Sonora.” Initially the water seemed to slowly meander over the low ground between the creosotes, but eventually it rose up onto the hummocks. Soon the deafening frog chorus began and we were thrilled to find and photograph *Bufo kelloggi* and *B. retiformis* calling from the same bush. At that time there was still some question as to whether they were distinct species and our photos showing their very different color pattern and habitus at this sympatric locality would help put that issue to rest.

When we got back to the Scout the water was nearly a foot high. In the sticky clay mud we had a hell of a time getting out even in four-wheel drive. But eventually we were able to reach a dry spot to throw down our sleeping bags for a little dream time.

Bezy, R. L., P. C. Rosen, T. R. Van Devender, and E. F. Enderson. 2017. Southern distributional limits of the Sonoran Desert herpetofauna along the mainland coast of northwestern Mexico. *Mesoamerican Herpetology* 4:138–167.



Bufo kelloggi (Little Mexican Toad) by Erik Enderson.



Bufo retiformis (Sonoran Green Toad) by Erik Enderson.

50. *Chilomeniscus stramineus* (Spotted Sand Snake).

The sun came up like a fireball out of hell scorching the creosote flat. “Let’s head to Punta Sargento for a swim” enthused Red. At Bahia Kino we stopped for all you can eat camarones washed down with bottles of Pacifico. Even vegetarian Red joined us in the delicious sea food feast.

We camped on the tip of Punta Sargento that can be reached by vehicle only at low tide. We have never seen other humans there and we stripped and dove in, spending the day snorkeling in the warm placid water of the Gulf of California. At puesta del sol we decided to drive to Playa Mancha Blanca to walk the dunes with our headlamps.

We had seen no snakes moving on the dunes that night, but then, just as we were about to give up, BB sang out, “Hot dog here is one.” And wow, what a *Chilomeniscus* it was. It had a peculiar linear variant of the dotted color pattern seen in *C. stramineus* on the Baja California peninsula and I was convinced that it was a new species.

In remembrance of our many nights in the Simpson, we had midnight hour there and Red Bud painted himself with a large white blotches outlined with and led us in a Mancha Blanca dune dance. We spent the night sleeping once again in the soft red sand under a billion stars.



Chilomeniscus stramineus (spotted morph of Sand Snake) from Grismer et al. (2002).



Fouquieria columnaris (Cirio) by Thomas Van Devender.



Cardonal by Erik Enderson.

51. *Crotaphytus dickersonae* (Dickerson’s Collared Lizard).

“In the midst of the word he was trying to say, in the midst of his laughter and glee, he had softly and suddenly vanished away. For the Snark was a Boojum you see.” *“Hunting the Snark”* by Lewis Carroll.

BB, Red, and I lingered at Punta Sargento snorkeling in the warm water for another day before heading north. It was just not possible to pass through Desemboque without at least a brief stop to savor the wonderful Comaac people. A woman had a rattlesnake carving that I just could not pass up. She wanted a steep price for it and I had to throw in all my money, a Rolex watch, a Leatherman tool, and a large Swiss army knife to make the deal.

Leaving Seri-landia and passing Pozo Coyote, a deep sadness gripped our hearts as we had spent so many happy days of our youth with the people of Desemboque (White and Bezy 2021). But we were delighted to see the Seri had kept their rich culture and the exquisite charm in spite of the troubled times that had gripped the planet elsewhere.

We had held out enough money to enjoy a camarones feast in Libertad. Afterwards we drove out to the tracks-end at Punta Cirio in the Sierra de Bacha to camp.

It is difficult to relay the inspiration that this little pocket of Cirios (or Boojum Trees, *Fouquieria columnaris*) gives us. Thanks to Tom Vandeventer I learned that the English name “Boojum” was bestowed on the weird plant by Godfrey Sykes of the Desert Laboratory on Tumamoc hill and is taken from the last line (cited above) of Lewis Carroll’s 1874-1876 epic nonsense poem, *“Hunting the snark. An agony in 8 fits.”* Its upside down appearance and its haphazard branching at the top are Lewis Carroll strange.

The Boojum is endemic to the Baja California peninsula except for this pocket on the coast of Sonora. Dispersalists of course attributed this population to either a transplant by the Seris or “bird poop” as the Gulf is only about 50 miles wide at this point. But a recent study of chloroplast DNA indicates the population of Cirios in the Sierra Bacha has been isolated from those on the peninsula since late Miocene, about 7 million years ago. This speaks to the hazards of attributing all outliers to bird poop (Bezy 2021) rather than tectonic rifting of the peninsula from the mainland.

But the real attractions here for BB, Red, and me were not the Cirios, but our own snarks, *Crotaphytus dickersonae* (Dickerson’s Collared Lizard), named in 1922 for one of the few female herpetologists of the early 20th century, Mary C.

Dickerson, a curator at the American Museum of Natural History. The species is restricted to the coast of Sonora from the Sierra Bacha to near Bahia Kino plus Isla Tiburon. Does its divergence from other collared lizards also date from the rifting of the Baja California peninsula away from the Sonora coast?

Unfortunately the tree of life of collared lizards is difficult to unravel due to historical interbreeding (introgressive hybridization; McGuire et al. 2007). Stay tuned.

We spent a couple of delightful days camped in the Sierra Bacha enjoying the Cirios, collared lizards, and snorkeling in the Gulf and then BB, Red, and I headed for the border, Tucson, and Joe Marshall's course.

North of Caborca we encountered the most amazing thing. The dirt road had become a toll road on which the trafficantes had to pay an exorbitant fee to transport people and drugs in their steady stream of dusty vans with tinted windows, headed to the frontera at Sasabe.

Bezy, R.L. 2021. Biogeographic outliers in the Arizona herpetofauna, *Sonoran Herpetologist* 34(2):49-58.

Martínez-Noguez, J. J., J. L. León de la Luz, J. Delgadillo Rodríguez, F. J. García-De León. 2020. Phylogeography and genetic structure of an iconic tree of the Sonoran Desert, the Cirio (*Fouquieria columnaris*), based on chloroplast DNA. *Biological Journal of the Linnean Society* 130.3: 433-446.

McGuire, J. A., C. W. Linkem, M. S. Koo, D. W. Hutchison, A. K. Lappin, D. I. Orange, J. Lemos-Espinal, B. R. Riddle, and J. R. Jaeger. 2007. Mitochondrial introgression and incomplete lineage sorting through space and time: phylogenetics of crotaphytid lizards. *Evolution: International Journal of Organic Evolution* 61.12:2879-2897.

White, R. S., and R. L. Bezy. 2021. Desemboque, a Sonoran Desert paradise. *Sonoran Herpetologist* 34(1):24-32.



Comaac ironwood carving of rattlesnake (photo by Robert Bezy).



Crotaphytus dickersonae (Dickerson's Collared Lizard) by Erik Enderson.

52. Thermometers

Back at Saguaro casita we trudged off to Monday morning classes at the University of Arizona. It was the heyday of hands-on learning. In Chemistry, Physics, and Zoology, each course had two four-hour labs per week. Biology was a dissect-until-you-drop course, not a theoretical armchair discussion. And starting with Storer and Usinger's classic 1972 text, there was a definite "scala naturae" underpinnings to all zoology.

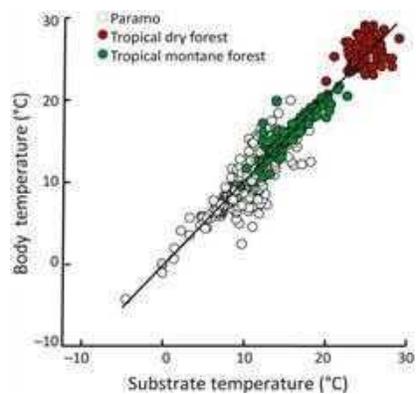
Does the blastopore become the mouth or the anus? This important feature divided the animal kingdom into dos partes. Each phylum added its "evolutionary advancements" until you got to the pinnacle of it all, *Homo sapiens*. A thorough familiarity with these evolutionary advancements via hours of dissection of members of each phylum was the very definition of zoology. If you did not like pithing a frog, dissecting a fetal pig, or breathing formaldehyde fumes, get thee to some other field of study.

Most of the students were frat-rat pre-meds whose only interests in life were making "easy girls, easy grades, and easy money." They used every cheap trick in the book to get a high grade, including bribing the graduate lab assistant to preview

the lab practical the night before the exam and consulting the large collection of previous exams in the course that were on file in their frat-rat house.

The grades of all three of us buds far surpassed theirs as we had two secret weapons: genuine academic interest in biology and hard work, often studying through the night.

I more and more discovered that the only way to keep my spirit from being poisoned by the frat-rat premeds was to volunteer in the herpetology collection. The collection was largely neglected by Dr. Bajo who had come to view himself not as a herpetologist, but as a desert ecologist and a physiological ecologist. He was enamored with temperature tolerance in desert animals and plants, an interest inherited from his mentor Ray Cowles. The Critical Thermal Maximum, the body and substrate temperature, the Schultheis fast reading cloacal thermometer, and the telethermometer reigned supreme.



Example of a graph of the relationship of body temperature to substrate temperature in different biotic communities.



Wade Sherbrooke (left) and Robert Bezy (right) recording data from a telethermometer and from the many Schultheis thermometers inserted in the Saguaro. Charles Lowe believed freezing temperatures were killing the Saguaros. Modified from a photo from Saguaro National Park Archives received via Don Swann.

53. Tien Wei.

Volunteering in the herp collection at the University of Arizona sustained my spirit as an undergraduate. I also got to know kindred spirits who made a huge impact on my life.

Late one summer night, I walked a very tall man carrying several gallon bottles, each housing a live toad. He introduced himself as Tien Wei and his broad infectious smile immediately charmed me. He set the bottles of toads on a table and wandered off into the Ecology lab to look for Dr. Bajo. Late into the night an incredible uproar of hearty laughter emanated from the room.

After he left, I asked Bajo who he was. He explained that Tien Wei had been his first PhD student and had hiked daily from the Avra Valley to the summit of Wasson Peak conducting transects to document the elevational distribution of the flora and fauna of the Tucson Mountains. Dr. Bajo's very deep affection for Tien Wei came through loud and clear.

Each summer Tien Wei would appear with his live toads from all over the Southwest. I remember seeing the rare *Bufo exsul* (Black Toad), a species endemic to Deep Springs in the Great Basin Desert of California. On another visit he deposited a *Heloderma suspectum* (Gila Monster) in an ancient wood box that he gave me, saying it was once the carrying case for a friend's pet cobra.

I eventually learned that he taught at Western Reserve Academy in Ohio and that his wife was the teller at the bank in Tucson to whom Bajo sent us to cash his rubber checks. I came to appreciate that besides toads, Tien Wei had a passion for *Larrea* (Creosote Bush) and traveled around the deserts gathering seeds from different ecotypes. He had done a masters thesis on the distribution of creosote bush in southern Arizona and his seminal work on polypoidy in *Larrea* remains highly cited to this day.

One night while Tien Wei was visiting, a ruckus broke out behind the Zoology building and we went out to investigate. A student was smashing the windshield of a car with a baseball bat. Tien Wei grew very upset and intervened. Being a soccer coach, he was incredibly strong and easily held back the bat-wielding teen student who was angry with the car's owner for "banging a girl friend,"

Much turbulent water had flowed under the bridge when 45 years later Wade bud called me and asked if I would like to join him and Tien Wei for lunch. It was a wonderful experience and the last time I was with Tien Wei. He was every bit the enthusiastic, animated, charming person I had remembered and he still had a wonderfully contagious smile. He told us the following story showing that he held no bitter feelings over his legal battles with Dr. Bajo.

“Dr. Bajo had just arrived as a faculty member in the U. of A. Zoology Department which was then housed in a tiny building next to the old library. A masters student was scheduled to give an oral presentation of his research. Before the talk, the faculty and students went for Mexican food and cervesa at a downtown restaurant. After returning, the student launched into his seminar, which included a detailed analysis of the species’ diet. But by that point the head of the department had already fallen asleep, his usual seminar state. At the end of the talk the department head woke up and asked his standard question, “What do they eat?” Bajo from the back of the room yelled, ‘Enchiladas!’ It was quite a few years before Dr. Bajo made tenure.”



Left, Tein Wei Yan; right, *Bufo exsul* (Black Toad) by Scott Trageser.



Heloderma suspectum (Gila Monster) by Kathryn Bolles.

54. Wally.

I met Wally, one of Dr. Bajo's earliest graduate students, the very first time I visited the herp lab as an incoming freshman. Little did I know that he would become an important part of my life. I would not call him a mentor actually, but rather a loved friend. His uninhibited personality and zest for life buoys my spirit to this day.

He liked to build things and constructed a huge wooden rack for his acclimation water baths for desert fishes. For many years this "Wally Tower" occupied much of the graduate student office as Bajo felt it prevented the administration from moving in a third student. Wally with his screw driver would walk through the herp lab where I was pickling specimens announcing that he was off to play with his screwing machine.

Occasionally Wally and Bajo would put on a can-can dance singing, "We are the girls of Pi Phi." It dated from Bajo's days of performing the dance with Ken Norris for the sorority girls where they both once worked as 'hashers.' Wally and Bajo would also sing a duet, "Wash my sins away, oh what a dirty job for Jesus," that Dick Zweifel used to sing with Bajo. Then there was Wally's perennial favorite, "They're coming over..." referring to the commies with their nuclear bombs.

I once attended a meeting of Wally's campus Bahai group to try to figure out just what it was that he actually believed. I still do not know for sure, but today I think I would call it Biophilia, the love of life.

As an incoming freshman Wally took me on my first "college field trip." He, Ed, Natalie, and I headed out in an old pick-up on the dirt road up over Reddington Pass and down to the Río San Pedro. I sprawled in the truck's open bed, basking in the morning sun, my hair flying in the hot desert wind, and fetching cold bottles of A-1 beer from the metal wash tub of ice water, either for myself or to hand into the cab. I had just turned 18 and I was flying high in every sense of the word.

Crossing the Río San Pedro we drove on a rocky track far out onto the bajada of the Galiuros, high above Redfield Canyon. The four of us got out and we each carried two empty very large 5-gallon bottles down the steep canyon wall to the creek far below. In the cool shade of the *Platanus wrightii* (Arizona Sycamores) we filled the containers with the cold creek water and seined *Rhinichthys osculus* (Speckled Dace), carefully placing a few in each glass bottle for Wally's research on thermal ecology.

Then began the difficult part, as we started the climb back up the steep canyon wall lugging our precious fish in the huge water-filled glass bottles. Wally, always incredibly fit, and Ed, a “Mr. Tucson” weight-lifter, had no problem, but Natalie and I struggled with the heavy bottles. To our good fortune, Ed and Wally eventually came half-way back down to relieve us of our burdens.

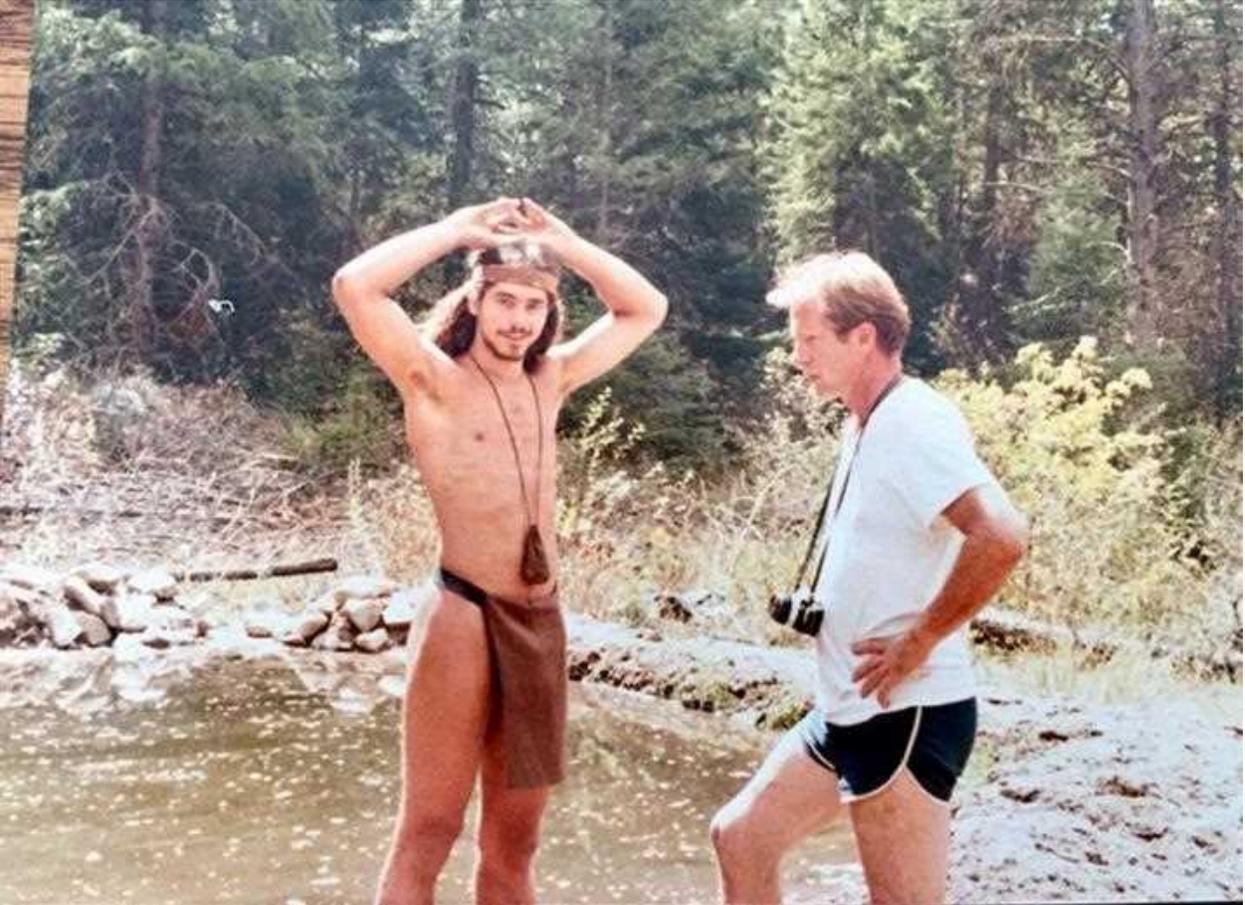
In spite of the ‘lugging’ it was my first college taste of the delicious freedom that is field biology, the play of the human spirit in the wilderness. I will always cherish this gift from Wally.



Rhinichthys osculus (Speckled Dace) by Brian Gratwicke;



Right, Redfield Canyon, Galiuro Mountains, Arizona,



Wally Heath (on right) and his son, Thumbs Heath (on left), by Annette Halpern Hinds, near Wind River, Idaho.

55. The UAZ collection.

When I walked into the University of Arizona herpetology collection as a freshman it was a chaotic mess. Dr. Bajo seldom went in the actual collection room and had little curatorial interest. There was no written catalogue ledger, only a few type written cards, and the full data tags on the specimens were disintegrating.

There was a knock on the lab door, I opened it, and in stepped Joe Marshall, “Chuck, the data tags on the bird alcoholics you insisted on ordering the paper for are turning to goddam mush.” “Well, Bobbie here is redoing all of ours,” Bajo said trying to cover his ass. “Really, Chuck, is that how you curate the herp collection? Rewrite the data tags every few years?” That was one of the very few times I saw Dr. Bajo slink off with his tail between his legs.

I managed to order specimen tags made of heavy-weight Resistol paper stock and also began tying on UAZ catalogue number tags.

Dr. Bajo knew the herps of the Southwest but very little beyond that. In his first few years at the UA he collected amphibians and reptiles throughout Mexico, but the specimens were largely unidentified. There were whole sections of the collection shelving full of bottles of unidentified specimens from Mexico.

Fortunately I did have a copy of each of the three Smith and Taylor volumes containing the checklists and keys to the herpetofauna of Mexico. They were my main tools and I went to work with them trying to bring organization to vast areas of chaos in the collection.

But if I reached a tentative conclusion about the species identification of a specimen I had no means to confirm it. In a large well-curated collection one could go to the shelves and compare the tentatively identified specimen with others previously identified to that species by curators. For many species from Mexico, there were none others on the shelf at UAZ. I wanted to compare my tentative ID's with the descriptions in publications on the herpetofauna of various Mexican states, such as the ones by Bill Duellman and others at KU, but I did not have the monographs..

I told Bajo how helpful it would be to have some publications available.

“Well, Bobbie Boy, you will just have to go over to Remmy’s basement and get the literature,” pronounced Dr. Bajo. For yeas he had rented space in the basement of a men’s clothing store near the main gate of the university where he had stashed hundreds and hundreds of boxes full his life’s detritus. I spent weeks working in a surrealistic daze going through the basura to retrieve reprints.

I could not help but read some of the correspondence that looked interesting, such as a letter from Schmidt saying that the paper describing *Cnemidophorus neomexicanus* with Zweifel was possibly the best herp species description ever written. Another from Mayr criticizing the mixing of Latin and Greek in the name “*neomexicanus*.” One from Inger saying that he had written U of A President Dick Harvill demanding the return of the FMNH specimens of *Chilomeniscus* on loan to Bajo. Then there was a follow up letter from Inger complaining that the FMNH specimen from Alamos finally returned by Bajo appeared to be a fresh specimen and had different scale counts than the one initially loaned!

Eventually I emerged from Remmy's basement with about 10 boxes of herp reprints and monographs and trucked them in the Rockefeller Rocket carryall to the lab to help in my effort to identify the specimens in the collection. I procured an old filing cabinet, filed the reprints in author folders, borrowed a saw from

Wally, and cut off the lip of a table in the collection to sandwich it between the file cabinet and the barrel of isopropyl alcohol. Dr. Bajo chewed out my ass something fierce for sawing the lip off the table, but it served as my “office” for many years.

By my senior year I had brought much needed order to chaos in the collection and the love of curation set down deep roots in my brain.



Left, Hobart Smith (via Oscar Flores), middle, Edward Taylor (via Kraig Adler); their checklist and key to Mexican reptiles.

56. Bajo’s exit.

With the life changes that happen in college we buds were not as close as were at Finger Rock High. But we were able to have dinner together at the casita almost every evening, and we always shared midnight hour. It was difficult for me to disentangle myself from Dr. Bajo’s spider web at the lab some nights but I managed to do it and return to the casita at midnight.

“BB and Red, there is something I need to share with you tonight, for my own peace of mind,” I blurted out. “You’re on, Bobbie,” Red encouraged. “Well, Dr. Bajo has done everything possible to wrangle an invitation to midnight hour, short of following me here. What do you guys think about me possibly inviting him over tomorrow night?” I asked.

“Is there any reason not to?” inquired Red. “I have heard some horrible stories about his social prejudices and behavior. One student told me that Bajo threw a graduate student out the second story window because he thought the student was gay. I just wonder how he would react to us three here socially.”

“Well, we will just have to give him some weed and bend his mind a little,” replied Red. BB added, “OK by me, but I hope he does not come over on a regular basis.”

I was more than a little apprehensive about the situation, but felt I just had to resolve the issue once and for all. The following night when Bajo started to mope because he knew I would be abandoning him alone in the lab soon, I made the plunge, “Would you like to join us, once?” I asked, hoping that the last word would somehow stick. Bajo smiled from ear to ear.

Bajo had to duck below the door jam when we entered the casita and he was not sure what to do as it did not have furniture except for mats and sleeping bags. That is when it happened. There are magnetisms in the world that are totally unpredictable. Bajo was literally swept off his feet by Red Bud. Red got him to relax, showed him how to sit in a lotus posture, how to take a deep breath, and how to pass the weed gently to the next person.

It took a few rounds for it to take effect but it seemed to loosen Bajo in a major way, and tears started to roll down his cheek. Is it actually possible for a giant to cry? We saw the answer with our own eyes.

He started to talk about how his huge body was a curse and that he had no choice except to play the role genetics had dealt him, that of a giant clown. He relayed that Darlene had always said she would leave him as soon as the kids were grown, and she walked out last week.

BB and I were speechless, but Red responded sympathetically and instinctively knew just what to say to a bleeding giant. He was able to sooth Bajo’s wounds and they discussed relationships for a very long time. Red knew a psychological counselor who specialized in “break-ups” and gave Bajo his card.

Two days later Bajo disappeared from the university and nobody knew where he was until he returned over a year later, a totally changed human being.



Charles Lowe (from charleslowe.net) and Red Bud.

57. *Aspidoscelis velox* (Plateau Striped Whiptail).

We were fighting an uphill battle to keep our youthful enthusiasm for herp adventures alive at the University. It seemed that the “system” was designed to strangle all life out of youth and put the yoke of bondage around our necks. Fortunately we did not yet fully grasp that life goes inexorably down hill from the age of 18.

”We just have to get the fuck out of this goddam town or we will suffocate. Lets explore the Arizona Strip,” suggested BB. “Yeah, we have never been up there, lets just do it. And Wade bud did the Arizona Strip, frolicking among the Virgins and atop Mount Bangs, it has to be fun,” Red playfully added. “Dr. Bajo has fled the scene so I don’t need to play with him all evening to keep him company in the lab any longer. And Joe Marshall would never fault our being away from his class for a week of wilderness adventure. The other classes with their dead-head professors are totally worthless. We learned all that crap at Finger Rock.”

Early the next morning we threw our sleeping bags in the back of the Scout and set out on our adventure to do the Arizona Strip. “Lets make a circle out of it and come in from the Kaibab and exit through the Mohave,” suggested BB. “You’re on,

Bro,” I replied. It was hell getting north of the cesspool called Phoenix, but once it was in the rear view mirror, joy returned to our hearts.

Lets stop by the Little Colorado, enjoy Grand Falls, the Chocolate Niagara, and have a dip in the river enthused Red. We stripped and dove in. After the swim, life seeped back into our mud-caked bodies as we lay in the warm red sand basking in the late summer sun, accompanied by *Thamnophis elegans vegrans* (Wandering Gartersnakes) and unisexual *Aspidoscelis velox* (Plateau Striped Whiptails).



Aspidoscelis velox (Plateau Striped Whiptail) by Kit Bezy.



Thamnophis elegans vegans (Wandering Gartersnake) by Kit Bezy.



Grand Falls, the Chocolate Niagara of the Little Colorado River, Arizona.

58. *Masticophis taeniatus* (Striped Whipsnake).

“Lets continue on up to Hopi, there just might be dances on one of the Mesas,” enthused Red Bud who always had a novel take on things, particularly those involving humans and dance that BB and I were totally oblivious to.

Looking for snakes, we took the long nearly untraveled dirt road through Red Lake, a seldom visited region of the Diné lands. Hot dog, *taeniatus* yelled BB, doing a “roller” from the Scout and a flying leap into the Great Basin sagebrush to grasp the whipsnake that can disappear faster than greased lightning. He used the time worn Nasticophis method, slinging it by the tail between his legs and slowly pulling it out tail first until he could grab the serpent just behind the head. Getting a photo was tricky, but with BB’s and Red’s help I managed to snap one just before the whipsnake streaked off into the *Artemesia tridentata*.

We also encountered and photographed four beautiful adult *Crotalus viridis nuntius* (Hopi Rattlesnakes) alive on the road. We made camp, had peanut butter sandwiches, midnight hour, and fell asleep under a billion stars.

In the morning Red inquired from a Hopi kid whether there were any village dances. He was thrilled to discover that today they were being held up at old Walpi atop First Mesa. Ordinarily outsiders were not permitted up there, but Red, the glib one, succeeded in befriendng the kid and wrangled an invitation for all three of us. It was an unforgettable experience sitting with the Hopi in their ancient village high atop First Mesa, watching a ceremony performed, not for tourists, but exclusively for themselves and the Kachinas, their nature spirits.



Masticophis taeniatus (Striped Whipsnake) by Kit Bezy.



Hopi.



Walpi, First Meas, Arizona by Hum Images.



Hopi by Marilyn Angel Wynn.

59. *Crotalus lutosus* (Great Basin Rattlesnake).

There are blank spots on the map we had never focused on. House Rock Valley was just such a place, vast, open, virtually uninhabited and unvisited. “Lets stop

and explore it,” entreated Red. BB and I had finally learned to listen to him as he had a spontaneous sense of time and place we totally lacked. “What can possibly be out there?” BB asked. “Well, we'll never know if we don't go there,” replied Red.

So we headed out into the valley of the unknown. Opening a gate, I was shocked by an unknown lizard and asked “What the hell is this?” Scrutinizing it basking on a rock, BB proffered “I am not sure. It looks like a *Sceloporus magister* but with cross bars. I think there is something up this way called *uniformis*. Get a photo voucher.”

We had no more than climbed back in and started to roll and BB sang out, “*Pituophis*. “Wow, this is nothing like our *affinis*; *deserticola* (Great Basin Gophersnake) has to be a different species (Bezy and Patton (2021),” I declared clicking away.

As we rounded a bend a weird structure came into view. “Holy shit, look at that fukin house. This must be how the valley got its name; let's stop and flip the junk,” Red exclaimed. BB turned a board and yelled, “Hot dog! here is a *lutosus*. Wade bud collected one in House Rock Valley in 1964.”

As we were photographing a girl rode up on horseback. “Whatcha y'all lookin for?” “Lizards, snakes, frogs, n'such,” answered Red. “Well, we got plenty of frogs hollerin every night in the pond at our house.” “Really? Can we have a look tonight,” Red asked turning on his irresistible smile. “Y'all are welcome.”

Puesta del sol, peanut butter and jelly, and the frogs started to scream their guts out. We were delighted to discover that they were *Spea* (Great Basin Spadefoot), a species we had never seen before. We resisted inviting the girl to our midnight hour as she seemed quite young.



Crotalus lutosus (Great Basin Rattlesnake) by Caron Rognan.



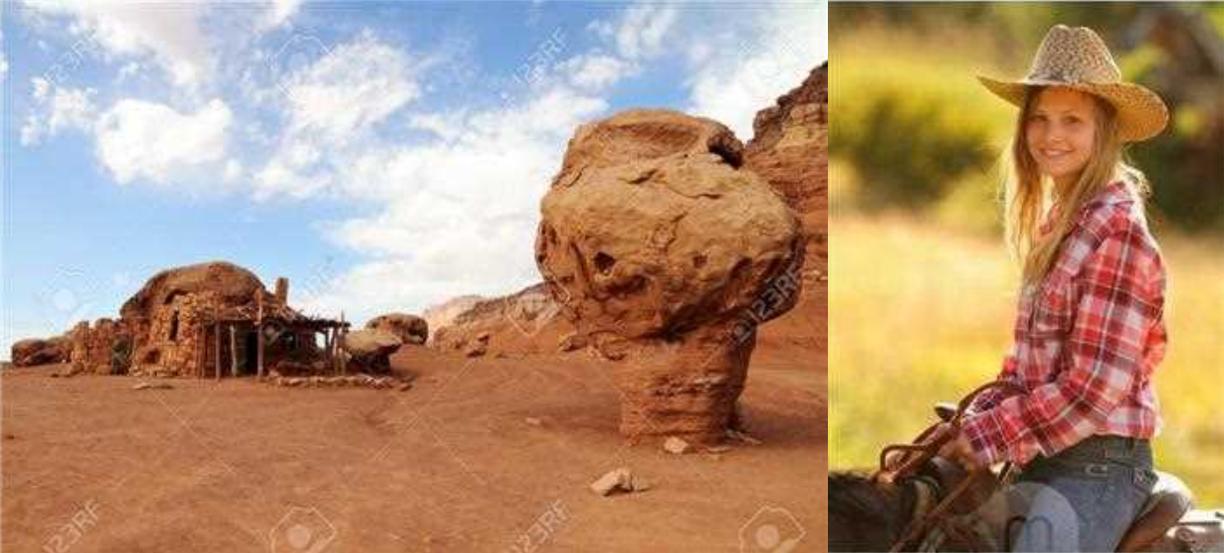
Sceloporus uniformis (Yellow-backed Spiny Lizard) by Paul Freed.



Pituophis catenifer deserticola (Great Basin Gophersnake) by Erik Enderson.



Spea intermontana (Great Basin Spadefoot) by Erik Enderson.



Left, House in House Rock Valley (by Videowokart); right, girl in House Rock Valley by John Warburton-Lee.

60. *Crotalus abyssus* (Grand Canyon Rattlesnake).

Although the Kaibab forest looked intriguing, we did not stop there as humans were in evidence. As we had hoped, people disappeared as soon as we turned down the road to Mount Trumbull.

“*Pituophis*,” sang out BB. I was really interested to see once again how different the Great Basin *deserticola* is from the Sonoran Desert *affinis*. While we were photographing a car came along and the driver asked if she could take our picture. We gave her our broadest smiles and Red even put on a great *Pituophis* snake dance for her.

We drove down to the Toroweap viewpoint of the canyon and after a long search we were thrilled when BB found a *Crotalus abyssus*. Wade bud had collected one at Toroweap in 1964. I was interested to see how similar it was *lutosus* and wondered if the two actually intergrade.

We did not want to camp near the canyon because a tourist might show up. Red was interested in exploring the abandoned Grand Gulch Mine and we took the dirt track there from Mount Trumbull.



Woman photographing by Kristan Rogers.



Copyright 2008 Jason Ksepka

Crotalus abyssus (Grand Canyon Rattlesnake) by Jason Ksepka.
61. *Lampropeltis pyromelana* (Arizona Mountain Kingsnake).

Troglodytic Red was disappointed that there were no shafts to explore at the Grand Gulch Mine, as it was just an abandoned open copper pit. But there was a lot of debris to flip. We were surprised when a young woman emerged from one of the abandoned houses. She said she had been living there a while studying and documenting the mine and the old machinery and vehicles. She cautioned us to take even more care than usual when flipping to not displace or harm any of the historical artifacts.

She had some interest in the herps and pointed to the area where she most often saw *Lampropeltis pyromelana*. BB was over there like a shot, and the third board elicited a very loud, “Hot dog!” Much photography later, Red asked if we could take her photo standing in front of an old truck. She was pleased that Red remarked he really liked her crotch-tight Levis combined with cowboy boots.

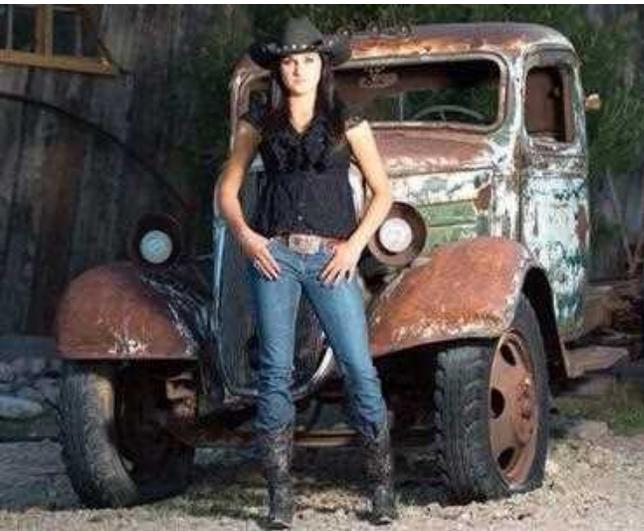
We asked her if she would like to join us for midnight hour and she said she would be delighted. Eventually she revealed she had run out of weed, “And you think you can buy any anywhere in all of tight-ass Utah?” We gave her our stash holding back just enough for two more midnight hours until we got back to “not so tight-assed Tucson.” We about fell over when she said her name was Mary Jane, and fortunately she seemed to appreciate the humor of it all. For many years we referred to *Lampropeltis pyromelana* as the mj snake.

We headed on to our next objective, *Plestiodon skiltonianus* (Western Skinks) in the Ponderosas high atop Mount Logan. It was a really difficult one but on the last flip of the day BB yelled, “Hot dog!” Red put on a dance, “Pleased ta don skill tony anus and our laughter could be heard all the way to the bottom of the canyon.

“Could *Plestiodon skiltonianus* have an ecomorphic relationship involving size and color pattern with *P. gilberti* (Gilbert’s Skinks), as early DNA studies suggest,” I wondered. Stay tuned.



Ponderosa forest on Mount Logan.



Historian Mary Jane at Grand Gulch Mine, Arizona



Plestiodon skiltonianus (Western Skink) by Robert Bezy.



Copyright 2009 Jason Hull

Lampropeltis pyromelana (Arizona Mountain Kingsnake) by Jason Hull.

62. *Lichanura roseofusca* (Rosy Boa).

We hiked up to Nixon Spring on Mount Trumball and BB turned up a second *Lampropeltis pyromelana* near where Wade bud had collected one in 1964.

Our last objective in the Arizona Strip lacked the charisma of the others, but we were interested in securing a photos from a native population of *Pseudacris regilla* sensu lato (Pacific Treefrogs) in the state. We made our way to a long very rocky road that passed south of Mud Mountain toward Whitney Pass where we were delighted to see Joshua Trees and *Xantusia vigilis* (Desert Night Lizards).

There was a great pond near Middle Spring and Red turned on the charm and asked a women working on a fence if we could photograph frogs there and she said, “Y’all are welcome anytime.”

We were very sad to leave the Strip but the curtain came down on our trip and we continued through Whitney Pass down to the Lake Mead area where we

photographed an isolated population of *Rana onca* (Relict Leopard Frog) in a hot spring in which a girl was enjoying the warm water.

We drove all night, getting photos of a *Crotalus pyrrhus* on the Alamo Road and *Lichanura roseofusca* on the Bagdad Road.

Bezy, R.L. and J.L. Patton. 2021. Of Gophersnakes and Gophers: Thoughts about *Pituophis*, *Thomomys*, and subspecies. *Sonoran Herpetologist* 34(4):111-122.



Pseudacris regilla sensu lato (Pacific Treefrog) by Erik Enderson.



Left, ranch woman by Amanda Lucie; girl in hot spring by FMC.



Lichanura roseofusca (Rosy Boa) by Kit Bezy.



Crotalus pyrrhus (Southwestern Speckled Rattlesnake) by Erik Enderson.



Rana onca (Relict Leopard Frog) by Erik Enderson

63. *Sceloporus jarrovi* (Yarrow's Spiny Lizard).

Back at the university we buds were once again struggling desperately to keep our spirit of herp adventure from being smothered. Even though Bajo was away on his "break-up sabbatical," his lab continued down its thermal ecology rut: critical thermal maximum, critical thermal minimum, preferred body temperature, temperature acclimation, on and on.

In desperation to get out into the field we volunteered to help a graduate student study thermal behavior of *Sceloporus jarrovi* in the snow in the Chiricahua Mountains. We went to a road cut in snow-bound Onion Saddle and BB noosed five lizards, and the student inserted temperature probes in their cloacas, taped the wires to their tails, and released each back into its crevice.

We planned to record the temperatures as they emerged to bask in the morning. In those days there was no automatic recording capability on the telethermometers and we would write down the temperatures of each lizard, the crevice, and the

boulder surface every 5 minutes. This would be the first such study of a Madrean lizard in the snow near the northern limit of its range.

It was a very frigid midnight hour but we lived to see the dawn.

As the sun hit the boulders, black *jarrovii* began to emerge to bask, but not ours. Another hour, still no show. Just how many hours would have to wait? After three more hours we pulled out the probes. The lizard on each was just a bloody stump. We had established that *Sceloporus jarrovii*, all taped up with wire probes, can not get deep enough and tight enough in the crevices to avoid being predated, probably by *Peromyscus* (Deer Mice), but possibly by *Notiosorex* (Desert Shrews).



Sceloporus jarrovii (Yarrow's Spiny Lizard by Kathryn Bolles/



Toroweap sunset, Grand Canyon by James Marvin Phelps.

Chapter 5. The Vizcaino Desert

64. *Uma* (Fringe-toed Lizards).

Curating the UAZ herp collection and talking with Joe Marshall, Paul Martin, and Howard Gloyd were starting to have a positive effect on my viewpoint. I was beginning to look at herp adventures as journeys seeking answers to questions, in addition to photographing amphibians and reptiles to document their occurrences. I enjoyed getting photo vouchers and submitting the new geographic records for publication, but started to wonder if there were larger questions we could perhaps address.

I became intrigued by Fringe-toed Lizards of the genus *Uma*. It seemed clear that the presence of comb-like scales on the feet were adaptations for running in sand. Yet the three species then recognized in the Sonoran and Mohave Deserts were separated from the two species in the Chihuahuan Desert by a vast area that lacked *Uma* and mostly lacked dunes. Were these two branches of *Uma* once connected by a huge sand sea across the gap or did the fringe scales evolve independently in the two areas?

Midnight hour began to take on an additional role in my life. I found that both BB and Red had unique views about such questions. Red had more imaginative and creative ideas about them, whereas BB had more practical suggestions as to how to begin to address the questions.

“But we are on the verge of becoming armchair herpetologists. We should go out and look at these lizards instead of just sitting around and talking about them. Let’s head to the Mohawk Dunes Friday afternoon right after our last goddam class,” enthused BB. “Yeah, lets do it,” chimed in Red. To add fuel to the flame I exclaimed, “I’ll have Nellie all gassed up and the engine ‘roaring’ to go. The three buds will ride again.”

Friday classes finished, sleeping bags thrown in, big macs, fries, and chocolate shakes woofed down, and we were off to the Mohawk Dunes on our first *Uma* adventure.



Uma notata (Colorado Desert Fringe-Toed Lizard) by Rafas Lara.

65. *Uma thurmanae* (Mohawk [Dunes] Fringe-toed Lizards).

BB, Red, and I were very relieved to be off the goddam highway and headed south into the Mohawk Valley. We locked the Husky Hubs and drove to the far southern end of the dunes to camp.

We were far past Nactis golden hour but we headed into the dunes with our head lamps anyway and eagle-eyed BB found one. “As you can see *Chionactis a. annulata* lack the dark brown markings that are present in the red bands of *C. a. klauberi*,” I pointed out.

The Nactis skunked me the first night but I managed to find *Crotalus cerastes* (Sidewinder). Much photography later we walked the dune crest back to camp.

It was like being back in the Simpson again, sharing midnight hour, Red Bud doing a sidwinding dance, and the three buds falling asleep in the dunes under a billion stars.

The sun rose like a fireball out of hell. Chugs of cold coffee loaded with sugar and we were off to chase the *Uma*. They were soon up, running, and diving. They seemed to prefer higher active dunes but took refuge most frequently under the *Ambrosia dumosa* (White Bursage).

Many questions started to swirl in my head. How long have the Mohawk Dune *Uma* been isolated from those to the south in the Gran Desierto and Pinta Sands or from those to the west in the Algodones Dunes? Did they occur east of the Mohawk Mountains in the San Cristobal Valley? Could any of this help explain the disjunction of nearly 800 miles between these *Uma* populations and those in the Chihuahuan Desert?

“The longest journey begins with the first step. Lets walk through that gap in the mountains and see whether *Uma* extends to the east,” suggested BB. So off we strode looking for undiscovered eastern *Uma* populations. It was hotter than shit when we emerged from the gap and thought we could see low dunes through the shimmering mirage.

BB was off like a shot into the dunes of the San Cristobal. “Hot dog, here is one, and it looks quite different from the *Uma* in the Mohawk Dunes.”

“Really?” I asked.

Derycke, E. G., A. D. Gottscho, D. G. Mulcahy, and K. de Queiroz. 2020. A new cryptic species of fringe-toed lizards from southwestern Arizona with a revised taxonomy of the *Uma notata* species complex (Squamata: Phrynosomatidae). *Zootaxa* 4778 (1): 67–100.

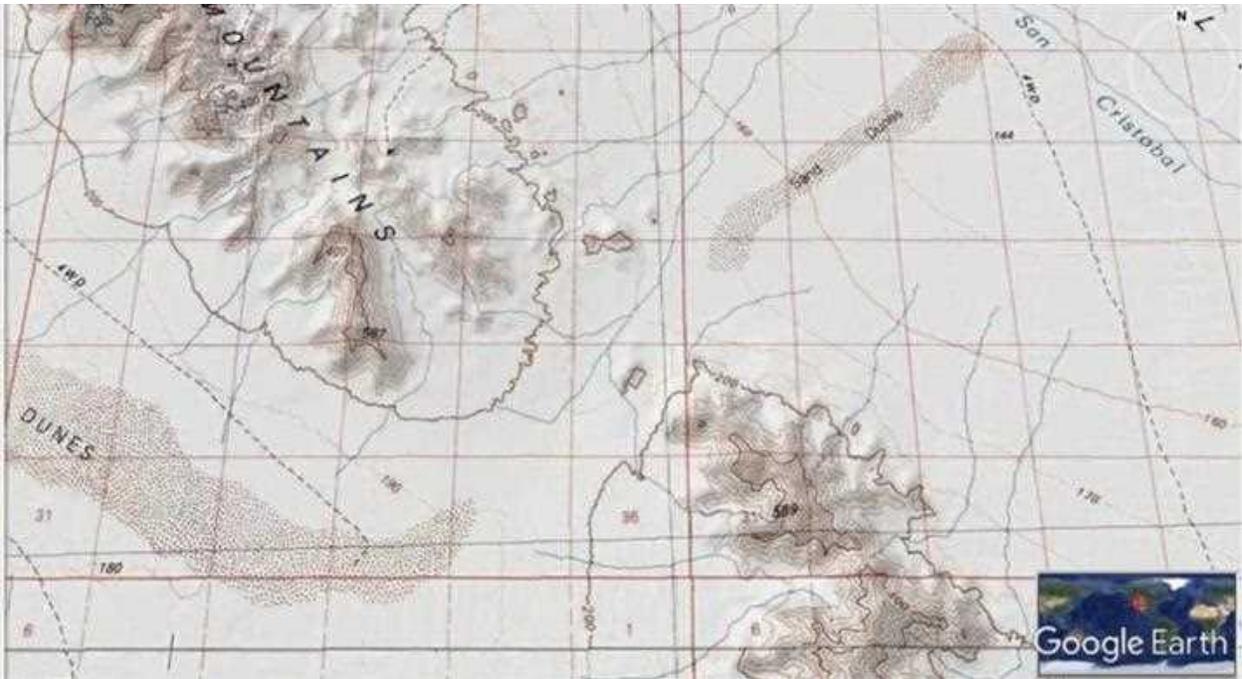
Turner, D. S. 1998. Fringe toes and hot sand. The life and times of *Uma notata* in the Mohawk Dunes. *Sonoran Herpetologist* 11(10):110-112



Left *Abronia villosa* (Sand Verbena); right Mohawk Dunes, Arizona.



Crotalus cerastes (Sidewinder) by Erik Enderson.



Mohawk Mountains and Dunes, Arizona (Google Earth).



Chionactis a. annulata (Colorado Desert Shovel-nosed Snake) by Tom Brennan.



Uma Thurman by Walter McBride.



Uma thurmanae (Mohawk Dunes Fringe-toed Lizard) by A. Gottsch.

6. *Carnegia gigantea* (Saguaros).

As Bobbie Boy I was trying to understand the nature of science. Bajo believed that a scientist sees the answer from the start and gathers only that amount of data necessary to convince others that he was correct all along. For example, some biologists at the University of Arizona thought that the death of Saguaros in the Monument, situated on the bajada of the Rincons, was due to a necrotic disease. Bajo said, "Bullshit, it is due to freezing on that cold bajada and the necrosis is just part of the result, not the cause."

But my feeling was (and is), that if it is not an open question, then there is no sense of adventure and discovery in science. Field experience may give you a glimpse of a question and maybe suggest some possible alternative answers, but then you set out on a grand adventure to discover the most likely answer to the question (i.e. the least rejected hypothesis) and then to pose new ones.

There seemed to be a huge ego issue involved in Bajo's approach, "It's my way or the highway."



Carnegiea gigantea (Saguaro) forest by Sonneillonv

67. *Coleonyx switaki* (Switak's Banded Gecko).

The Buds were back in Tucson trying desperately to keep the spirit of herp adventure alive while trudging off to their classes at the University. During

midnight hour BB got an inspiration, “You know I think we are on to something with this *Uma* exploration. Lets head down to the Vizcaino Desert in Baja California and look at *Callisaurus crinitis*. “Maybe its really an *Uma*, not a *Callisaurus*.” And we just might see a *Coleonyx switaki* on the way,” I added.



Coleonyx switaki (Switak's Banded Gecko) by Chris Mattison.

68. *Petrosaurus repens* (Baja California Rock Lizard).

The Friday bell of freedom sounded, we threw our sleeping bags into the back of the Scout, woofed down Big Macs, fries, and chocolate shakes at McD's, and were off to Baja California, our spirits soaring like eagles. We took the paved road from San Luis, Sonora, to San Felipe, Baja California, beyond which the road soon deteriorated and we got out and locked the Scout's Husky Hubs. As usual with the peninsula roads the arenoso sections were easy compared to the peñasco ones.

At four in the morning we reached the Boojums near Cataviña and threw our bags down for belated midnight hour and a bit of dream time. The sun came up like a fire ball out of hell and we chugged down our potion of half dissolved instant coffee crystals and heaps of sugar.

We had no more than begun our search when BB sang out, "Hot dog, *Petrosaurus repens*." It was an absolutely stunning large colorful lizard sprawling over the

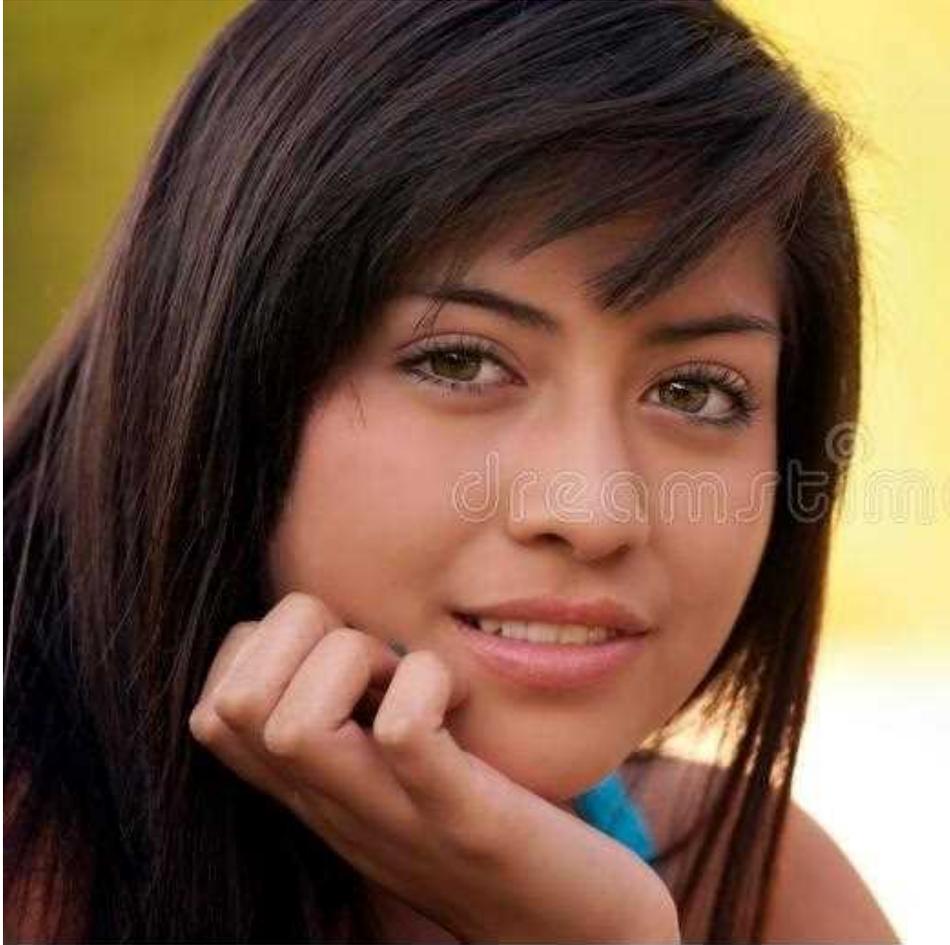
boulders like a spider, often upside down. While we were photographing it a young woman walked up, “*Petrosaurus* is an amazing lizard, no?” We were blown away. It emerged Valentina was a herpetologist from UNAM camped there studying the reptiles and she showed us every species in the area. She and Red jabbered away non-stop in Spanish, but switched to English occasionally for the sake of BB and me with our limited Spanish.

“Its getting hot, lets take a dip,” she said as she led us to a beautiful plunge pool in the palm oasis. “Last one in is a rotten egg,” and she stripped and dove in. We shyly followed her enticing lead.

That night Valentina led us on a grand *Coleonyx* walk and we found and photographed both *C. variegatus* and *C. switaki*. Afterwards we shared midnight hour, and she commented that our Arizona weed was not as good as hers from Michoacan.



Oasis swimming hole.



Valentina,



Left, *Petrosaurus repens* (Short-snouted Rock Lizard); right, Baja California desert.

69. *Callisaurus crinitis* (Perritos del Vizcaino).

The dunes were spectacular, looming high above us as we set out at dawn to find *Callisaurus crinitis* in the fog shrouded Vizcaino Desert. “Hot dog, *Crotalus enyo*,” sang out BB. “Wow it’s really an interesting rattlesnake, I wonder what species it is related to. It looks vaguely like a member of the *viridis* group, but down here in the Vizcaino sand, that doesn’t make a bit of sense,” I mused.

We walked for hours, not seeing another herp. “Well its too damned cold and foggy along coast here. We need to head inland where its warmer and sunnier. And what is a lizard to eat in these high dunes completely lacking vegetation and thus insects,” BB asserted. And as usual he was right. As soon as we walked away from the coast into the low dunes, the sun came out, and the perritos were everywhere wagging their tails.

BB noosed one for me to examined closely. "This looks like a *Callisaurus* all right, not an *Uma*, and its fringes are not nearly as well developed. I am guessing they have evolved fringes independently, convergent evolution in sand lizards related to strong natural selection to adapt to the sand habitat," I concluded.

After we finished the perrito chase, Red led us in a Vizcaino sand dance followed by a roll down the face of the dunes.

A girl came walking up, “Hola! Quieren ustedes ir a mirar las ballenas?” “Si” replied Red. “Mi padre tiene una launcha a llevar ustedes exclusivamente, y despues, mi madre preparare una comida sabrosa de longostos y camarones.” “Vamanos. Como te llama?” inquired Red, “Camila,” answered the charming kid.

And it was a delight to see the California Gray Whales in a boat with just us, Camila, and her father. The lobster and shrimp afterwards were exquisite and we ate several meals with the family while we chased lizards across the Vizcaino Desert.

But when it came time for us to leave Camila my heart was torn apart. Red, the sensitive Bud, perceived my heartache, “You just can’t keep doing this to yourself, Bobbie Boy. Camila, like Desierto, is simply not your child, no matter how much you want one. You just have to have a kid of your own someday.” “Well, Red Bud, I will find a way.”



Left, *Crotalus enyo* (Baja California Rattlesnake) by Blueg9; boy dune rolling by Tamara Kulikova.



Callisaurus crinitis (Vizcaino Zebra-tailed Lizard) by Jorge Valdez.



Left, Camila; right, *Eschrichtius robustus* (Gray Whale) by National Park Service

70. Sand lizard evolution.

Back at the University volunteering in the collection I started to examine specimens of all the species of sand lizards, *Uma*, *Callisaurus*, *Cophosaurus*, and *Holbrookia* “Are they even each others nearest relatives? Is there any real reason *Cophosaurus* should be a separate genus? What really drives their evolution? Is it running over sand, or the need to shimmy bury? Or both? How many times have earlessness or fringed-toes evolved in the sand lizards? Do the sand grain exclusion features of the nasal passages in some *Uma* occur in all species of the genus? How could I address these questions? Could I examine the fine structure of fringes on the toes to detect evolutionary convergences?” So many questions without a way to answer them and I was not aware at that time of Kevin de Quieroz’s extensive research on the topic.



Fringed toes of *Uma notata* (Colorado Desert Fringe-toed Lizard) by Paul Freed.



Uma rufopunctata (Yuman Desert Fringe-toed Lizard) by Tom Brennan.



Holbrookia elegans (Elegant Earless Lizard) by Kit Bezy.



Callisaurus draconoides (Zebra-tailed Lizard) by Thomas Brennan.



Cophosaurus texanus (Greater Earless Lizard) by Erik Enderson.

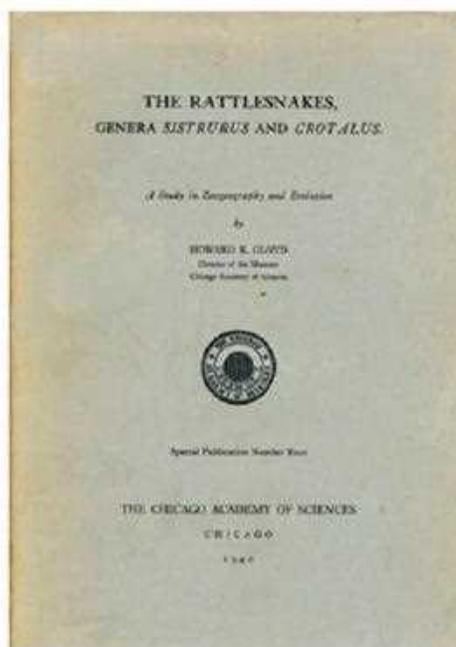
71. Howard K. Gloyd.

During Dr. Bajo's absence I discovered he was not the only herpetologist on the UAZ faculty. There was also Dr. Gloyd, a very low-profile professor. I found I was spending more and more time with him in his office as his positive gentle personality was just what I needed to reinforce that you do not have to be an asshole to be a herpetologist.

He loved to smoke his pipe and talk about his mentors at UMMZ, Frank Blanchard and Alexander Ruthven. He emphasized the importance of deep thorough scholarship and summarizing everything that is known about a genus in a single large monograph.

He talked about the historical figures in herpetology, the biogeography of Arizona, the scheme of color pattern evolution he had learned from his mentors, how to tell which scale to consider the first ventral, how to denote the changes in dorsal scale numbers, and how to properly handle loans of specimens from other institutions.

But, most of all he taught me that to be a herpetologist does not preclude being a considerate sympathetic human being.



Left, Howard Gloyd in his office at the University of Arizona, modified from a photo by Oscar Soule; right, Gloyd's 1940 monograph of the rattlesnakes.



Agkistrodon howardgloydi (Gloyd's Cantil) by Robert Puschendorf.

72. *Gyalopion canum* (Chihuahuan Hook-nosed Snake).

During midnight hour BB had yet another inspiration, "From our adventure into the Vizcaino to examine *crinitis* we have determined that fringed-toes do not an *Uma* make. Maybe the alleged *Uma* in the Bolson de Mapimi are not real *Uma* at all but have independently evolved fringes. Let's head down there and have a look." "And Cuatro Ciénegas is not that far from there, and I have always dreamed of swimming in it," enthused Red. "I will have the Scout gassed up and set to go as soon as the Friday bell of freedom rings," I chimed in to add fuel to the flames. As we piled into the Scout our spirits once again began to soar far beyond most people's richest imagination, three Buds leaving the constraints of civilization to venture into the unknown world of unanswered questions and unsolved mysteries, where no person has gone before.

"I hear that there is new paved road to El Paso right along the border. Snakes are gangbusters on new pavement. Let's cruise it on the way," BB suggested. McD's woofed down and we were on the new road by sundown. "Streaker!" screamed BB, out the door with a "roller" before I could get the buggy stopped. "Hot Dog, a *canum*." Many pictures, juicy cloacal farts, and *Gyalopion* pop dance later, and we were cruising again



Gyalopion canum (Chihuahuan Hook-nosed snake) by Randy Babb.

73. *Uma paraphygas* (Arenera de Chihuahua).

After driving all night we threw down our sleeping bags for a couple hours of dream time. The sun rose like a fireball out of hell revealing the vast desert landscape of the Bolson de Mapimi. A caffeine and sugar fix and we were off to explore the mysteries of the seldom seen *Uma paraphygas*.

"Hot dog," sang out BB. "And look at this, it is emerging from a burrow, not at all like the northern species that spend the night shimmy-buried in the dune sand." We were thrilled to observe many *paraphygas* on our walk and BB noosed one for me to examine. "Wow, the body shape is not nearly as flat as northern *Uma*. They are also very different in having have two dark blotches on each side of the body and no scales between the fringes and the lamellae on the toes. I think we are seeing convergent evolution in arenicolous adaptations here," I suggested.

"That is what we are thinking about them," said a young woman who had just walked up and joined us. We eventually discovered Mariana was a biologist from UNAM studying the herpetofauna of the Mapimi preserve.

We were absolutely enthralled with Mariana and spent three wonderful days with her exploring the entire Mapimi preserve and its mysterious Zona de Silencio. During midnight hour we enjoyed lively discussions with Mariana about the

evolution of the North American deserts, the recency of the arrival of *Larrea* (Creosote), and how much the deserts mean to us.



Left, Mariana; right, Zona de Silencio, Chihuahua.



Uma parapygas (Chihuahuan Fringe-toed Lizard) by Julio Lemos-Espinal.

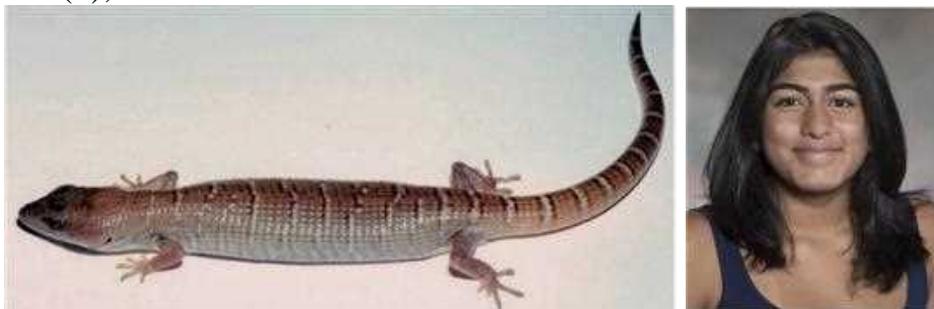
74 *Uma exsul* (Arenera de Coahuila).

We said a sad goodbye to Mariana and the Mapimi preserve and drove off to find *Uma exsul*. The following morning we were up at dawn walking the sandy areas. The fireball soon heated the sands, the fringe-toed lizards emerged, and BB succeeded in catching me one to examine. “Wow, these are sure different from *paraphygas* only a relatively small distance away. They are more like northern *Uma* in having a flatter body and only one dorsolateral dark spot. Yet the fringe scales are just like *paraphygas*, so I am guessing they are closely related,” I pontificated.

We hauled ass for Cuatro Ciénegas and Red Bud fell in love with the beauty of the place, “Last one in is a rotten egg, Red announced and we stripped and dove in. Later we met Isabella studying *Terrapene coahuila*. We had not brought our snorkels and masks so she loaned us some and we spent three wonderful days snorkeling with her and catching the turtles for her data gathering. We were delighted Isabella joined us for midnight hour at our camp on the bajada of the Sierra San Marcos. At the end she joined Red in a stunning aquatic performance of “*Midnight at the Ciénega*.”

In the cool of the mornings we walked the canyons of the Sierra looking for *Gerrhonotus lugoi*. On the last day BB saw one running among the boulders and dove 15 feet to make the catch, nearly breaking his shoulder. “I see it is indeed most like a *Gerrhonotus* but differs so much it may belong in a separate genus,”

Blair, C., Bryson Jr, R. W., García-Vázquez, U. O., Nieto-Montes De Oca, A., Lazcano, D., McCormack, J. E., & Klicka, J. (2021). Phylogenomics of alligator lizards elucidate diversification patterns across the Mexican Transition Zone and support the recognition of a new genus. *Biological Journal of the Linnean Society*, 135(1), 25-39.



Left, *Gerrhonotus (Desertum) lugoi* (Lugo’s Alligator Lizard) by Cynthia Gall Weber; right, Isabella.



Cuatro Ciénegas, Coahuila.



Uma exsul (Coahuila Fringe-toed Lizard) by Julio Lemos Espinal.



Chihuahuan Desert sunset.

Chapter 6. The Lost Treasure of the Sierra Madre.

75. Paul S. Martin.

We were back at the University dragging our asses to classes. During midnight hour BB came up with another winner, “Did you know there is a third herpetologist on the faculty here, Dr. Paul up on Tumamoc. He did a major study on the herpetofauna of the northernmost cloud forest in the Sierra Madre Oriental of Tamaulipas.” “Yes, we met tall Paul briefly when we were up on the Hill with Dr. Roberto. I think he switched from herps to palynology due to a number of factors including a debilitating bout with polio.” “For shits sake lets go up and talk with him some more,” exhorted Red.

Up in the impressive old stone buildings on Tumamoc Hill we just dropped into Dr. Paul’s office without an appointment, but he welcomed us warmly with a big broad smile and was happy to stop his work and discuss his research orientation over the years.

“Actually, my first interest was birds, but there was already someone at UMMZ doing ornithology at Rancho del Cielo, so I switched to herps. And as you can see in the photos in my monograph, that magnificent cloud forest was reduced to logs. It’s a wonder anything survived.

“I began to ponder the historical impact of humans on earth’s biota. To try and get a handle on this I turned to fossil pollen and then to packrat middens to examine vegetation changes over time. The waves of Pleistocene and Recent extinctions of large mammals and reptiles (including Moas) occurred at different times around the world and these times do not correspond with the vegetation changes but with the arrival of humans in each region. We have had a major impact.

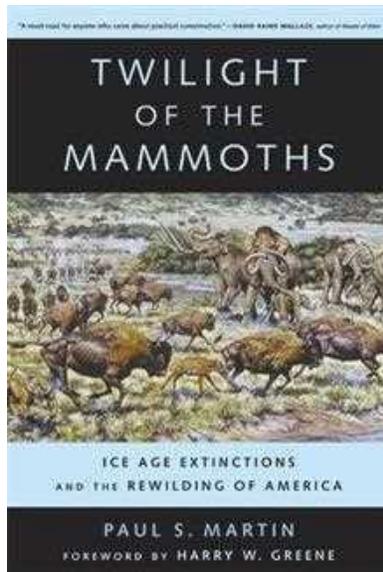
“So you see I have changed approach but I am still examining the same basic issue, the impact of humans on ecosystems and extinctions, whether looking at herps in the Sierra Madre Oriental or at large mammals and reptiles in the last ten thousand years around the globe.

“Its all in here, with a forward written by herpetologist Harry Greene.” He pulled out three copies of *Twilight of the Mammoths*, signed them, and handed us each one.

We were absolutely blown away. Here was a gentleman and scholar of the highest order. “Yet, he teaches some seminar courses with the crass Dr. Bajo. Maybe we were underestimating Bajo,” I started to wonder.



Paul S. Martin by K. Moore, 1990, Batopilas, Chihuahua.



Left, cover of Paul Martin's book on megafauna extinctions, University of Arizona Press; right, Harry Greene with a *Gopherus flavimarginata* (Bolson Tortoise) re-wilded in New Mexico; photo by Cynthia Prado.



Paul Martin by Thomas Van Devender.

76. *Pseudoeurycea bellii* (Tlaconete Pinto).

“I have been reading Dr. Martin’s great monograph on the herps of Rancho del Cielo. It is absolutely amazing that a cloud forest with such herp richness occurs so close to the U S border. You suppose we could go there?” I mused. BB, always rearing to go, “Absolutely no reason not. Lets head out this Friday.” “A herp dance in El Cielo has to be heavenly,” Red Bud chimed in, bringing another inspiring midnight hour to a close.

Driving to Del Rio, Texas, was exhausting. We came to appreciate the saying, “The sun has riz and the sun has set and I am in Texas yet.” But with the help of a few bennies I was able to make it. Border crossing, and we were bound for Paul Martin’s cloud forest high in the Sierra Madre Oriental.

The road up from Gomez Farias was absolutely horrendous, steep, boulder strewn, and slippery in a deluge the likes of which we had never seen. “Old Nellie is just not going to make it up. We will have to abandon her and walk,” I announced. And walk we did, just struggling to keep putting one foot in front of another in the drenching rain of the Sierra. Hours later we heard a vehicle and eventually up drove a young woman in a Power Wagon, “Gustaria un paseo, amigos.?” “Por seguro!” replied Red with a smile that would charm anyone.

Valaria was a liaison between the biosphere reserve and Texas Southmost University that owned the Rancho del Cielo research station. The property had belonged to Frank Harrison who was murdered due to his opposition to settlements in the area.

She showed us to a comfortable cabina and said she knew all the herps and where we were likely to find each species. When we told her we knew Paul Martin she really was impressed and helped us find an enormous array of herps, including absolutely stunning *Pseudoeurycea belli* and *Abronia taeniata*.

During midnight hour Red Bud celebrated the shocking red blotches of *bellii* and put on La Danza de Pintos Rojos del Cielo and his red-haired performance knocked Valaria’s socks off.



Copyright 2011 Ivan Ahumada Carrillo

Pseudoeurycea belli sensu lato (Tlaconete Pinto) by Ivan Ahumado Carillo.



Abronia taeniata (Bromeliad Alligator Lizard) by Matthijs Kuijpers.



Valaria



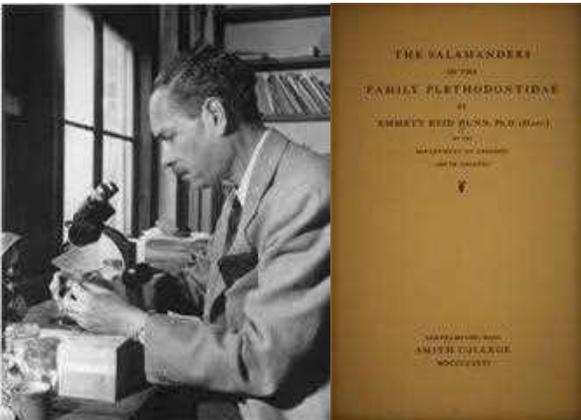
Rancho del Cielo, Tamaulipas; left, cabina; right, preserve.

77. Emmett Reid Dunn.

At midnight hour Red Bud was in absolutely ecstasy, “At long last I have found one other herpetologist that is capable of expressing his emotions, I am no longer alone. I have been reading Emmett Reid Dunn’s 1926 monograph of the Plethodontidae. He says Tlaconete Pinto occurs at Fort Whipple. Let’s go to the Bradshaws on Friday. And just listen to his words, sheer poetry:

“Much water has flowed under many bridges since the January of the year of our Lord one thousand nine hundred and thirteen, when a college Sophomore opened a letter and read a sentence, the results whereof are the following pages. It has been thirteen years since the eighteen-year-old boy read those few words and in

those thirteen years for him the surf has whitened the shores of Caribbean islands; the slopes of the Balsams have been blue in the distance; hawks have soared a thousand feet below the naked peak of Sharp Rock; the iridescent wings of Morpho have fluttered through glades in the rain forest and in the mist of the cataract at Xico; from the mooring at Vera Cruz tall Orizaba has stood against the western sky; the low sun has shone on the ice of Ixtaccihuatl, most unforgettable of mountains; step after step, for him, far out at sea, Chirripo Grande, “nie von Menschenfuss betreten,” has climbed aloft; and from shaken Irazu, while the ash cloud of the eruption rose above his head and floated, a black pall beaten by the fierce wind, he has seen through a break in the clouds, far to the Southwards, the sheer and menacing shaft of rock which is Cerro de la Muerte. And in that letter and in that sentence there was no hint of high peaks or of distant places, of mountains seen and unclimbed and forever remembered, of the coughing of tigers by night in the black forest, there were only these words in that letter from Leonhard Stejneger “I would like to point out to you, however, that Herpetology offers fields more in need of investigation than the snakes, viz., the salamanders.”



Emmett Reid Dunn (via Kraig Adler) and Dunn’s 1926 monograph of the Plethodontidae.

78. *Micruroides euryxanthus* (Sonoran Coralsnake).

TGIF and we were off to the Bradshaws to find Dunn's lost *Pseudoeurycea bellii* from Fort Whipple. We just could not resist stopping to flip the boards around Bumble Bee. "Hot dog, *Micruroides*," sang out BB. It was a real beauty, but I found getting a good photo of such a shy snake was not easy.

We waited until dark to drive the switchbacks up to Crown King and on to the wetter north side of the range. "*molossus* getting off," yelled BB who was out the door with a "roller" and a "tailer," something I hoped he would quit doing as I didn't want to lose my Best Bud. Just as we entered the Ponderosas deep in the Bradshaws there, stretched across the road, was a magnificent very black *Crotalus cerberus*

"Wow this is really a gangbusters drive, but lets take that track and camp for the night. This patch of forest feels moist enough for salamanders," suggested Red. He was right and the track led us a long way into a very thick forest with a stream and lots of Ponderosa Pine and Gambel's Oak logs to flip in the morning.

Midnight hour, a short Tlaconete dance, and we were soon in our bags dreaming of giant red salamanders and Dunn's "mountains seen, unclimbed, and forever remembered."

Up at dawn, caffeine and sugar chugged, and we were out flipping by sunrise. "Hot dog *pyromelana*" exclaimed BB with a broad smile as beautiful as the snake's color pattern. "You know, finding this up in the Ponderosa right after that *Micruroides* down in the Saguaro-Palo Verde emphasizes that they are seldom found together, so how could this mimicry evolve? Our friend Harry Verde was pondering this when he visited us in Tucson. Maybe both snakes evolved their color patterns when it was more tropical and they lived in the same forest," BB suggested.

Turning a heavy oak log I couldn't believe my eyes, a large salamander with spots!!! My heart leaped into my throat. "Tlaconete!!.... Oh, shit the spots are not red, it's an *Ambystoma nebulosum*. I guess we are just not high enough for Dunn's *bellii*. Maybe one just has to smoke a lot more weed to be high enough to visit his mysterious Tlaconete Mountains 'nie von Menschenfuss betreten.' "



Micruroides euryxanthus (Sonoran Coralsnake) by Randy Babb.



Lampropeltis pyromelana (Arizona Mountain Kingsnake) by Tom Brennan.



Crotalus cerberus (Arizona Black Rattlesnake) by Jeff Servoss.



Crotalus molossus (Western Black-tailed Rattlesnakes) by William Wells.



Ambystoma mavortium nebulosum (Arizona Tiger Salamander) by Erik Enderson.

79. Headin for Yecora.

I was absolutely wild-eyed at midnight hour, “Well, we struck out once on finding Dunn’s lost *Pseudoeurycea belli* in Arizona, but we just have to stay after it till we solve this mystery. To understand its habitat we need to go down to the Sierra Madre Occidental of Sonora and see *sierraoccidentalis*. I have been looking at the type series in the UAZ collection and they are really weird. The red spots are not symmetrical and seem haphazard and disrupted. This suggests to me they might be highly inbred. Small populations may be hanging on in tiny pockets of moist habitat in Sonora and Arizona. We could easily stumble right by them and still miss them. There is this guy named Tom Cox who made the original discovery. He lives just north of town. Lets go out and talk to him.”

”Jesus Christ, Bobbie Boy, you are going bananas over this. You need to get yourself under control. Have another puff and calm down,” prescribed Red Bud who understood me intimately.

Dee Cox welcomed us into their great “very-Tucson hacienda.” Tom was not well but said he could visit with us for a short time. “Tom, what can you tell us about the discovery of *sierraoccidentalis*?” I eagerly asked.

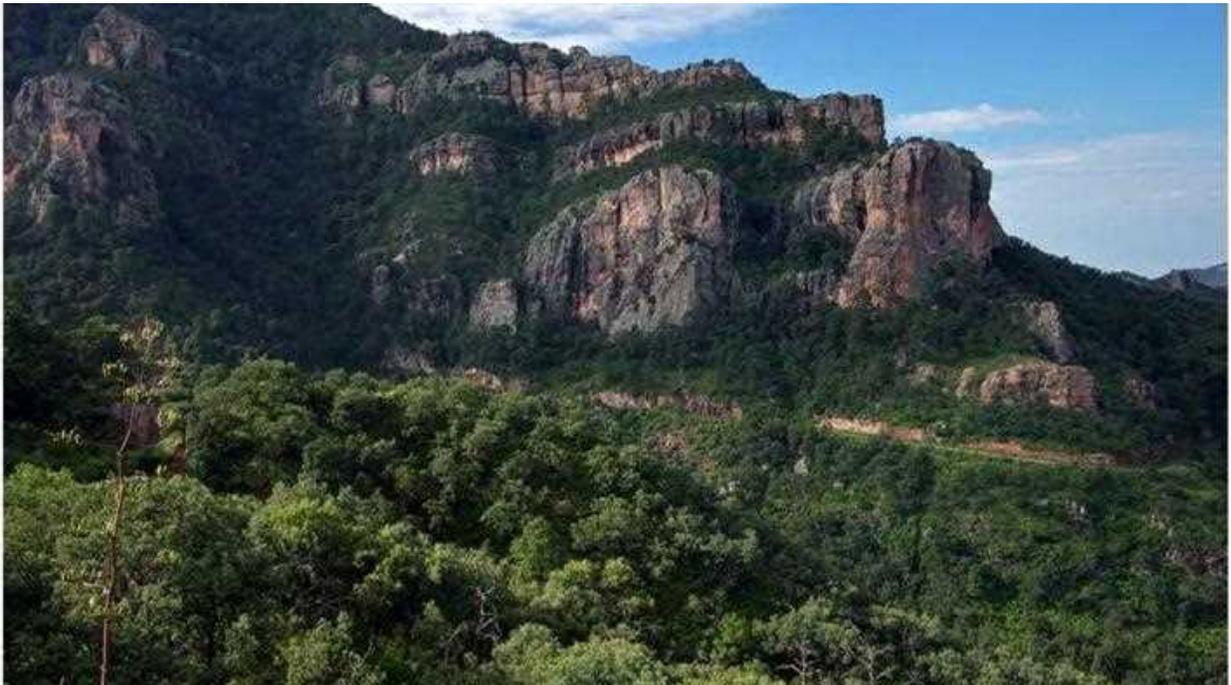
“Well, it was a fuckin painful episode as it involved two of the biggest ass-holes who ever lived, Bajo and Juan Siempre Correcto. It was so goddam awful I do not like to even think about it. I drove four of us (minus Bajo) up the old Yecora road until we could not get any farther in my VW van. It was a hell of a road in a fuckin deluge. I got out to move a log in the road and under it was this goddam salamander. We didn’t know what in the hell it was. When we brought it back to the University, and showed it to Bajo he went ape shit over it. He was so goddam jealous, vicious, and obnoxious I just bowed out and had nothing more to do with it

or with either of those shitheads Bajo and Correcto. If you have a good map I can show you exactly where we were.”

When the bell of freedom rang on Friday we were off to Yecora on an adventure to find *sierraoccidentalis*.



Dee Cox in her Tucson home by Annette Halpern Hinds.



Mesa del Campanero massif, Sonora, by Erik Enderson.

80. *Heloderma exasperatum* (Rio Fuerte Beaded Lizard).

As soon as we buds crossed the frontera into Sonora and headed for the Sierra Madre Occidental our hearts began to soar like never before. We were free once again of the shackles of civilization and headed out on another grand adventure of the buds into the unknown world where no human has gone before.

“Hot dog, *exasperatum!!!*” screamed Best Bud at the very top of his lungs. We all three were out like a shot, abandoning old Nellie in the middle of the road blocking an oncoming 18 wheeler. We were surprised when the trucker stopped and yelled down to us, “Escorpion magnifico.”

We got the lizard far off the road and had a 2 hour photo shoot. Afterwards each of us took a turn holding this huge magnificent reptile. If we did not see even one more herp, this was already the best trip of our lifetime.

To release the *Heloderma* we carried it to the safety of an arroyo a mile off the road. We painted our bodies with black arroyo mud and put on La Danza de Escorpiones Negros.

It was hotter than hell when we came to the Rio Yaqui. We stopped, stripped, and had a long delightful swim. As we were putting our clothes back on, a huge *Drymarchon melanurus* streaked down the bank, and swam across the entire river, disappearing into the thorn scrub on the far side, just as Dr. Vandeventer once described.

We enjoyed watching the large *Aspidoscelis griseocephalus* foraging decided we just were not ready yet to leave the tropical forest for the Sierra Madre, so we found a great secluded spot on the Yaqui to return to for sleeping after we finished cruising the roads most of the night.



Aspidoscelis cf. griseocephalus (Gray-headed Whiptail) by Erik Enderson.



Heloderma exasperatum (Rio Fuerte Beaded Lizard) by Richard Gibson.



Drymarchon melanurus (Indigo Snake) by Dirk Stevenson.



Rio Yaqui, Sonora by Tomas Castelazo.

81. *Agkistrodon bilineatus* (Cantil).

We just could not wait until dark and started cruising early, desirous of every species in the Neotropics. “Nastycophis,” sang out BB. I slammed on the breaks but my reflexes just were not fast enough for Best Bud’s level of excitement and he was out the door with what he calls a “roller.”

The snake shot across the road into the tangle on the slope and BB made a flying leap off the embankment and somehow managed to grasp the whipsnake as he landed in the spiny thornscrub far below. It was a magnificent *Masticophis mentovarius*.

But the blood was spurting from BB’s right upper arm. Red got out his first aid kit and went to work. He was extraordinarily good at all things requiring delicate movements and managed to get the blood stopped, pull the sides of the gash together with several stitches, and bandage Best Bud’s entire upper arm. Red also knew just what to say. “BB, you do not have to do this to yourself.”

It was now dark and we were rolling again trying to keep our excitement reined in. We could not believe our eyes as the high beams illuminated the beautiful black undulating body far ahead. “Cantil,” screamed our Bandaged Bud. The stark narrow white face stripes extending as gold across the top of the elliptical pupils were absolutely hypnotic, and I understood for the why they were in the face paintings of native people around globe. The dashed lines of the white scales

scattered between the contrasting rich brown hues of the body bands, terminating in the gold caudal lure also were totally mesmerizing.

Nikon out, I just could not stop focusing and clicking getting closer and closer to capture the serpent's beautiful face. I looked up for a second, Red's eyes met mine, and he did not even really have to say the words. "Bobbie Boy, you do not have to do this to yourself."

We decided to turn around shortly after the pavement ended on the San Pedro road. There in the headlight, stretched across the entire road, was our third thrill of the night. "*Basiliscus*," screamed Bandaged Bud. But Red and I could feel the danger in the air as BB did a "roller" and rushed towards the snake intent on doing a "tailer" on the huge viper. Once again, Red Bud's eyes met mine for a nanosecond and he knew just what to say, "Best Bud, you don't have to do this, you know we love you and we don't want to lose you."

We just sat there together for an entire midnight hour, the weed eventually calming our over-wrought emotions, as we soaked in the delicious warm air of the tropical night, gazing at the magnificence of the massive rattlesnake, and realizing the intensity of our feelings for each other as well as the reptiles.



Masticophis mentovarius (Neotropical Whipsnake) by John Sullivan.



Agkistrodon bilineatus sensu lato (Cantil) by V. J. Verspui..



Crotalus basiliscus (Mexican West-coast Rattlesnake) by Matthieu Berroneau,
82. *Pseudoeurycea sierraoccidentalis* (Tlaconete Pinto del Campanero).

It was a bittersweet goodbye to the thornscrub and tropical deciduous forest as the buds ascended the Mesa del Campanero clothed in its cool moist pine-oak woodland. We got out the topo map on which Tom Cox had carefully placed an X marking the type locality of *Pseudoeurycea sierraoccidentalis*. Tom had died the following day after marking our map.

After investigating many difficult dead end tracks we eventually found what we judged to be the exact spot. "I wonder which color pattern illustrated by Jim Patton we will find here today," I pondered. With overwhelming anticipation we started flipping pine and oak logs. Three hours later, "Pinchi nada!" declared Red Bud.

Just then up walked a kid, "Que esta pasando, amigios?" "Pinchi nada" replied Red again, but this time with one of his beautiful smiles to charm the kid. Red Bud never passed up a chance to talk with a kid. So he told Juanito the whole story from beginning to end. He asked Juanito if he knew these salamandras.

"Yo no, pero mi tio es biologico y sabe todo. Esta ahorita observando pajaros en el monte, pero el regresara pronto."

Soon Alejandro arrived and was really delighted to meet us. He had been a PhD student at UNAM, but had to return to Sonora because Juanito's mother and dad (Alejandro's brother) had both been killed in a tragic auto accident. "I am the only family Juanito has left and I am raising him the best I can."

Alejo said he knew *Pseudoeurycea sierraoccidentalis* well because they were a special interest of his professor at UNAM. He relayed that sadly they had disappeared in most of the Campanero due to forest thinning to promote grazing, but he knew a small rinconcito de selva humida where they were still hanging on. "It is a four hour hike, but Juanito and I could take you there in the morning."

That night Alejo showed us many species of frogs including the seldom seen *Craugaster taraumaraensis*. Alejo joined us for midnight hour and we all dreamed once more of Dunn's "mountains seen, unclimbed, and forever remembered."

I was delighted that Juanito fell asleep beside me. Red Bud said, "Bobbie Boy, I know your heart will ache when we eventually have to depart and leave little Juanito here with Alejo, just like happened to you with Desierto. But he is happy here in the Campanero with Alejo. You do not have to do this to yourself, you know we love you, Bobbie," and he gave me a wonderful hug.

It was a grueling hike deep into the Campanero. Even with his injury BB had no trouble staying up with Alejo and Juanito, while Red Bud and I lagged far behind. “One more steep climb and we will arrive at the rincconcito,” encouraged Alejo. He and BB had been resting a little long while when Red Bud and I arrived. They gave us a few minutes to catch our breath. Alejo said he did not want to flip much cover here as this was the last remaining Tlaconete rincconcito. He pointed out the most likely log.

BB gave me a big smile and said, “You do the honors, bro, this whole Dunn Tlaconete adventure is your trip.”

And there it was, the lost tesoro of the Sierra Madre Occidental and the campanas could be heard ringing throughout the barrancas.

Enderson, E. F., T. R. Van Devender, and R. L. Bezy. 2014. Amphibians and reptiles of Yécora, Sonora and the Madrean Tropical Zone of the Sierra Madre Occidental in northwestern Mexico. Checklist 10:913-926.



Alejo



Eleutherodactylus (Craugaster) taramaraensis (Tarahumara Barking Frog) by Erik Enderson



Juanito



Pseudoeurycea [belli] sierraoccidentalis (Tlaconete Pinto del Campanero) by Erik Enderson.



Bobbie Boy, Best Bud, Red Bud.



Mesa del Campanero, Sonora, by Erik Enderson.

Chapter 7. The Namib Desert

83. *Crotalus atrox* (Western Diamond-backed Rattlesnake).

Back dragging our asses to classes, but our herp bromance sustained us through the University's total failure to inspire. BB and I had steaks sizzling on the Hibachi and Red tossed a great salad. "I just heard of a road up north called Pump that is paved but has no traffic whatsoever. Let's go cruisen tonight."

"BB you are the fukin light of our life," I declared as we hopped into the Scout and I gave Red a big smile to confirm I was starting to get the drift of this emotions stuff.

And a delightful cruise it was, *Rhinocheilus*, *Hypsiglena*, *cerastes*, and *Chionactis*. BB sang out, "*atrox*, and he did a totally unnecessary "roller" and headed for a "tailer." But Red also sang out, "Remember we love you, Best Bud." And those words worked their magic and he stopped alive in his tracks.

We spent the whole midnight hour sitting there in the middle of the traffic-less pavement soaking in the stunning under-appreciated magnificence of *Crotalus atrox*.



Crotalus atrox (Western Diamond-backed Rattlesnake) by Andrew Holycross.



Rhinocheilus lecontei (Long-nosed Snake) by Thomas Brennan.



Hypsiglena chlorophaea (Desert Nightsnake) by Thomas Brennan.



Chionactis annulata klauberi (Tucson Shovel-nosed Snake) by Randy Babb.

84. *Bufo woodhousii* (Woodhouse's Toad).

"I think we are onto something here. Joe Marshall has been lecturing about species formation using examples from birds and *Drosophila* and discussing 'panmixia' and the allopatric model of species formation. But he seems to be ignoring the very thing he has studied, the evolution of species from small isolated populations such as our Tlaconete Pinto atop the ranges of the Madrean Archipelago in Sonora and Arizona and *Uma* in small patches of dunes," I exclaimed.

"Wow, Bobbie Boy, you sure can see the big picture," declared Red Bud, giving me one of his great smiles. "We have seen *Uma* in the Mohawk Dunes, lets head on up to the Mohave and look at *scoparia*," proposed Best Bed.

T-bones off the hibachi, salad gone from the bowl, and we hopped into old Nellie, three goons headed for the dunes.

Orange blossoms scented the air of the warm May night as we approached the Gila. “Just listen to the *Bufo woodhousii* screaming their guts out for sex, lets go watch them,” exhorted Red. “I want to make *scoparia-landia* by midnight,” I retorted.

“Well, Bobbie, are you going to turn into a mad scientist chasing imaginary pipe dreams and turn your back on the real biology happening now right under your very nose?” asked Red. “Red Bud, you are so fukin alive,” I declared.

So I stopped old Nellie, and we three buds climbed out, donned our headlights, and headed off on an unscheduled *woodhousii* adventure. “Will you look at that, there is a *Bufo woodhousii* amplexing a *Scaphiopus couchii*, inter-familial sex. For shit’s sake, Bobbie, get the fukin photo,” declared BB. Nikon out, image captured, and destined for the cover of Herp Review. “Boy am I glad you got us to stop here, Red Bud,” and I gave him a hug.

Red wallowed in the mud and did a great *woodhousii* out house dance.



Bufo woodhousii (Woodhouse's Toad) by Erik Enderson.



Left, *Bufo woodhousii* (Woodhouse's Toads); right, *Scaphiopus couchii* (Couch's Spadefoots) both by Erik Enderson.



Herpetologists by Sophie Prestigiacomo.

85. *Uma scoparia* (Mohave Fringe-toed Lizards).

The sun rose like a fire ball out of hell scorching the Cactus Plain and broiling us out of our bags. "Where the fuk are the dunes?" BB managed to ask as the caffeine and sugar started to hit our blood streams. "This place does not feel right for *Uma*," Red proffered. "Well, I have examined *scoparia* specimens from this area, the dunes must be here somewhere. Lets drive down that track over there until we get to them," I tried my best to enthuse.

So we threw our bags into the back of the Scout, BB locked the Husky Hubs, and we headed down the track to find the mythical bathed together, *Uma scoparia* dunes of the Cactus Plain. The tracks got more and more sandy and I could feel the wheels sinking deeper and deeper as Nellie started to bog. "If we lose our momentum we will be dead meat," I thought. In desperation I shifted into compound low but that just dug us in worse and Nellie reached her limit. BB tried to get out the door but we were in so deep he could not get it open and he climbed out the window.

“Hot dog, *scoparia*,” sang out BB. Red and I were out the window like a shot. “Fukin A, I just cant believe this,” was all I could muster. The three of us walked together enjoying a gangbusters *Uma* golden hour. We discovered a new way to catch them. Red laid in the sand and BB and I chased the lizard towards him. The *scoparia* would dive under his body and he would gently maneuver his hand through the sand and retrieve the lizard.

“Wow, the *scoparia* up here in the Mohave not only look different, they have a very different habitat from *Uma* in the Mohawk Dunes down in the Colorado, more like that of *exsul* and *paraphygas* in the Chihuahuan. I am starting to get a much clearer picture of *Uma* biogeography and evolution. I wonder if there were once high dunes here but then *Larrea* arrived and invaded, and the *scoparia* are now trapped in a dwindling sandy world,” I speculated.

After the morning activity spurt petered out, we headed back to Nellie and BB got out the shovel, jack, and planks. Strong Bud always came to life in a difficult situation like this where his physical strength and stamina were challenged. He did all the digging, jacking and planking and I handed him the tools when he asked for them.

“I think there is no way we can turn around, we will just have to back up all the way to the main road. Red you get behind the wheel and put it in compound low reverse, and BB and I will push like hell. Just don’t fukin stop gunning it,” asserted BB. And Red gunned it all the way out.

Midnight hour that night was like the old times in the Simpson Desert and Red Bud put on a great Cactus Pain Dune Dance with a Jumping Cholla airplane before we fell asleep in the sand.



East Cactus Plain “sands” Arizona.



Uma scoparia (Mohave Fringe-toed Lizard) by Randy Babb

86. Heading for the Namib.

Back dragging our asses to classes, but I was flying high at midnight hour, “I was up on Tumamoc today talking with Tall Paul and Tom Vandeventer about our *Uma scoparia* adventure and I have a better appreciation now just how damn young our North American deserts are. The sand these *Uma* species live in probably originated when the late Pleistocene lakes dried up. I have also been talking with Joe Marshall and he thinks the isolation of Tlaconete on Campanero, and maybe even its disappearance from the Bradshaws, is probably a result of the same climate changes. We need to look at ancient deserts for a comparison.

“This fukin University is just a downer when it comes to its worthless boring classes, but if you talk to the professors, they are exciting and have great ideas. I am beginning to see there are some very interesting questions that we could try to answer with our herp adventures,” I proffered.

“Well, Bobbie Boy, speaking of herp adventures, this just arrived in today’s mail from Erik and Birani. For my birthday they sent open round trip flight tickets for

the three of us to Windhoek, Namibia, with two months rental of a Rover," announced BB with a big smile.

“Lets have another puff and dream of our *Bitis peringueyi* adventure,” I exhorted ,



Bitis peringueyi (Peringuey's Dwarf Adder) by J. Bernsten.

88. *Bitis arietans* (Puff Adder).

The bell of freedom rang on Friday afternoon, we downed Red's salad and our steaks hot off the hibachi, and began putting together our things for the departure early on Saturday morning for Namibia.

We each had a telescoping fishing rod for noosing lizards, a stump buster, a headlamp for night walks (with batteries that could be recharged in the Rover), two snake bags, and would be wearing a pair of sturdy field boots. Carefully rolled up in socks was a two-month stash. We had determined there was an outdoor equipment store in Windhoek that would have most of the other items we would need.

Lets start in the Namib,” suggested Red at midnight hour. “Yes, its one of the oldest deserts on earth and I have dreamed of going there since I was a young boy,” I enthused. “Good by me,” easy-going Best Bud chimed in.

Excited out of our minds we boarded the long grueling flight to Johannesburg where we changed planes for Namibia. We were delighted to see Windhoek was a little city with all the modern conveniences but lacking the disgusting sprawl of most towns and it subsists exclusively on reclaimed water.

We were intent on not spending the night in town as we felt that would be a sad way to start our adventure. A taxi to the car rental place and the Rover they had waiting for us was perfect. We had requested a two-door, cab-only because three buds sitting on a bench seat was part of our bonding.

We gassed up the Rover and its two red petrol cans, filled the two green water cans, and headed to the outdoors store. We did not need to buy much beyond sleeping bags as desert “camping” requires little and we had the routine down from our many adventures together. We stopped at the supermarket and purchased instant coffee, sugar, and a bunch of canned crap.

By sundown, Windhoek was in the rear view mirror. ”*Arietans*,” sang out BB and he did his first “roller from the Rover.” But Red’s previous declarations had reached him and he restrained his compulsion to do a “tailer” of the giant viper.

We had midnight hour admiring the incredible strong beauty of the large Puff Adder and took a track to a great sleeping spot falling asleep under the star studded night sky, dreaming of Namib dunes “*nie von Menschenfuss betreten.*”





Bitis arietans (Puff Adder) by David Jandzik.

89. *Varanus albogularis* (Savanah Rock Monitor).

The sun came up like a fireball out of hell scorching the Pronamib and driving the buds out of their bags. Caffeine and sugar hit the bloodstream and Red proffered, “Let’s savor this place a little long while before we head into the foggy sands of the Namib.” “You’re on, Red Bud, and you are always ‘so on,’” I responded trying out my new more expressive personality. “O K by me,” BB gave his usual. “For fuk’s sake Best Bud, can’t you show us a little enthusiasm.” And for expressing my feelings I was rewarded with one of BB’s beautiful smiles.

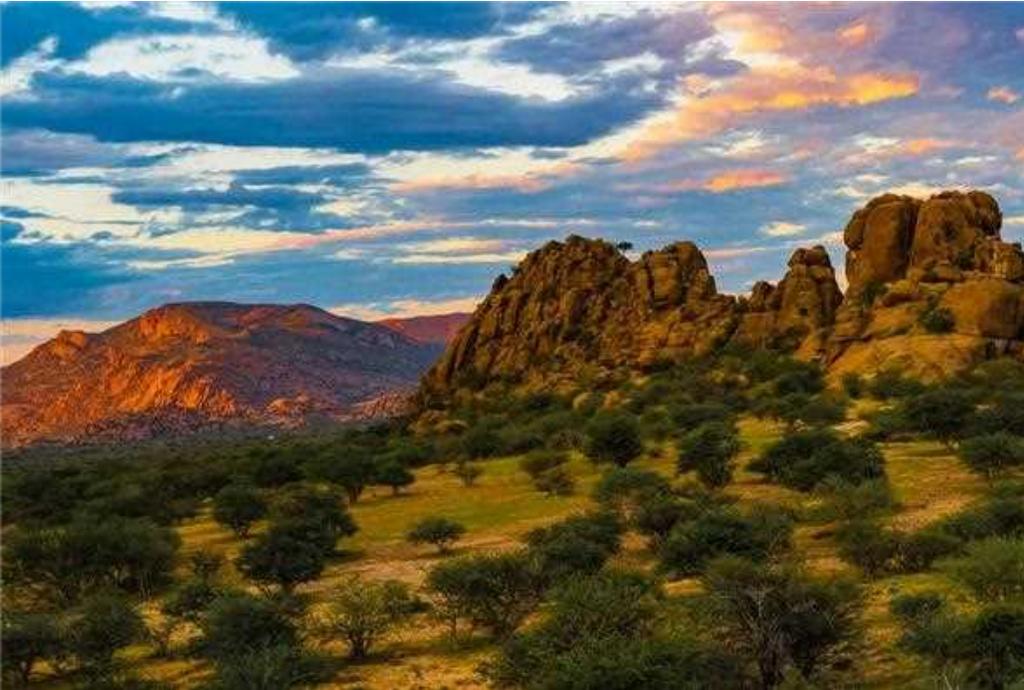
We had a delightful morning walk on the rocky bajada thrilling over an incredible array of seven specie of desert lizards. I was especially intrigued by *Meroles suborbitalis*. “This has to be the *Callisaurus* of this desert,” I remarked as I examined one BB noosed for me.

“*Albogularis*,” sang out BB, and there it was atop a boulder, the most incredible lizard we had seen since the *Varanus giganteus* Birani had showed us at the edge of the Simpson.

“Let’s sit and have an early toke among the boulders, celebrate your 18th birthday, dearest BB, and dream of the experiences we shared in the Simpson with Erik and Birrani who have now gotten us here to Namibia,” proposed Red Bud.



Robert Bezy with *Varanus albogularis* (Savanah Rock Monitor) by Charles Hogue,



Erongo Mountains, Namibia by Ado Filmchen



Meroles suborbitalis (Spotted Sand Lizard) by Henrik Bringsee.

90. *Bitis caudalis* (Horned Adder).

The hot rocky bajadas of the Pronamib reminded us of the Sonoran Desert. We felt at home here and a bit reluctant to leave and head for the foggy sands of the Namib Desert.

“Well, lets explore the Namib from one end to the other. You know we really enjoyed our visit to the foggy Vizcaino,” Red encouraged. “And I am anxious to compare sand adaptations in the ancient Namib with what we saw in North America’s young deserts,” I said. “There are so many species of desert reptiles in Namibia we could never see them all. I am really excited to get started,” added BB. “Best Bud, I really like your new enthusiasm,” and I gave him a big smile.

Late afternoon we said goodbye to the Pronamib and headed for the coast. “*Pseudaspis cana*. It is one of the few diurnal colubrid snakes common in Namibia,” declared ever-knowledgeable BB. “Its an absolutely magnificent snake with its thick powerful body,” I commented as we finished the photo shoot.

Night closed in and we started our first serious road cruise in Namibia.

“*Chondrodactylus angulifer*,” sang out BB. “Holy shit, will you look at this gigantic gecko, that bull-dog face, and those knockout spots are absolutely incredible,” I exclaimed as I started clicking away.

We rolled on. “Hot dog, *Bitis caudalis*!!!,” screamed BB at the top of his lungs. “This is what I came here to see,” I yelled as I bolted from behind the wheel, rushing to see if it was indeed an exact analog of our *Crotalus cerastes*. “Its incredibly similar, but the horns are definitely higher and more curved and I can see its *Bitis* heritage in its heavier body. The power of the desert to mold species is incredible, and nobody even knows for sure exactly what the goddam horns do.”

“I think we have had enough excitement for one night. Lets stop and enjoy this wonderful snake during midnight hour and then take that track over there and dream of the dunes,” suggested Red.



Bitis caudalis (Horned Adder) by Theo Busschau.



Pseudaspis cana (Mole Snake) by Tyrone Ping



Chondrodactylus angulifer (Common Giant Gecko) by Tyrone Ping.

91. *Cordylus (Smaug) giganteus* (Giant Sungazer).

Best Bud and I were trying to learn to take baby steps in the world of expressing emotions, but Red Bud was a master, his feelings always out there for all to share and enjoy. As we entered Kolmanskop, a diamond ghost town, he went into the most incredible state of ecstasy. “Stop the fukin Rover, I need to dance.” And dance he did, across the sand, through the windows out the doors of the abandoned buildings, leaping from the second floor balcony onto the dunes far below and rolling down the slope.

Just then a young woman drove up. “What the hell are you fukin dudes doin?” “We’re just herpetologists having a dance before heading into the Namib,” Red eagerly replied. “I am a herpetologist too, can I join you?” “For shits sake yes, let’s dance,” answered Red Bud and he and Isabella put on a most incredible performance that brought out every ghost in Kolmanskop.

Turned out Isabella was studying *Cordylus giganteus* out in the Sperrgebiet. “Well, these fukin diamond miners have done a hell of a lot of damage and I am putting a little bit of their filthy money to good use. They are paying for my *giganteus* study as well as my friend Lucas’ study of *Naja nivea*. The Sperr is

really a no person's land between the Cape and the Namib and it is totally unexplored. Why don't you come out and join Lucas and me for a few days before waltzing out into dunes?"

"You are fukin on, Isabella, lets do it," Red Bud said, flashed her a smile that would knock the socks off absolutely anyone.



Kolmanskop, Namibia.



Isabella with a *Smutsia temminckii* (Temminick's Pangolin).

92. *Naja nivea* (Cape Cobra).

It was a long and very difficult four-wheel drive far out into the Sperrgebiet. Isabella had told it like it is, a forgotten land. Here and there were a few abandoned relics of old diamond mining equipment but there was absolutely nothing else.

“And keep your eyes peeled for a dead Ostrich. They select diamonds to load their gizzards. I found a corpse with diamonds last year and I was able to pay Lucas a bit of a stipend this year from it,” Isabella remarked.

When we finally arrived at Isabella's field camp we were delighted to meet Lucas, an absolutely charming kid. He immediately took us out to his study site where he was watching the *Naja nivea* in a weaver bird nest. Excitement exuded from his every pore as he raved on and on about the relationship of the snakes with the weaver birds. We could plainly see he swept BB right off his feet.

He captured one of the cobras to show BB. “Like all elapids, if you are careful you can safely handle them by the tail. I do not do this for thrills, but it is the best way to handle cobras when I mark them and take the data.” Red and I could clearly see that we had lost dearest Best Bud to Lucas and we just left the two there together to play with the cobras as we headed off with Isabella to her *Cordylus giganteus* study site.

“Jesus Christ I can not believe the size of these lizards. And to think cordylids are the nearest relatives of our tiny xantusiids. And how can a North American lineage possibly have a sister group in Africa? Doesn't make a bit of sense,” I pondered.

“I have 20 external transmitters and five internal implants, and there are temperature probes in all the crevices where they hang out. The tons of data pore in continuously. But Lucas, when he is not playing with his cobras, is an ace computer programmer and analyzes all the data as soon as they arrive,” Isabella detailed.

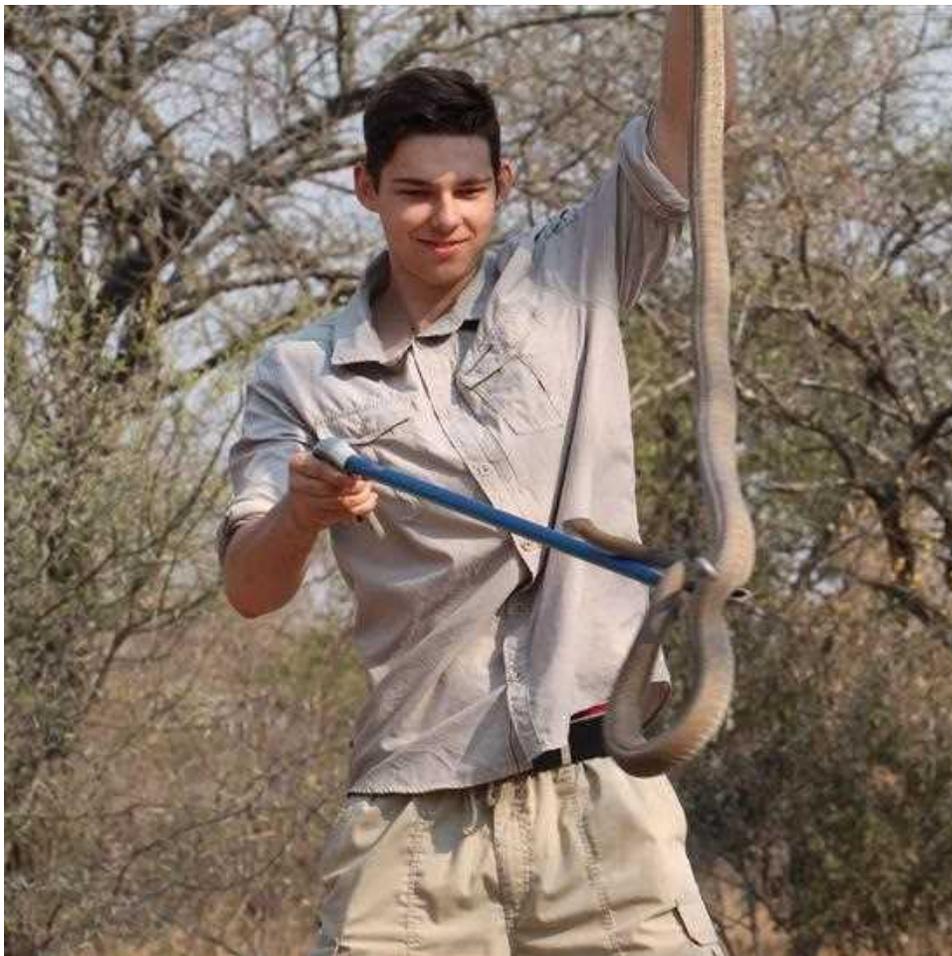
From Isabella's intonation and the twinkle in her eyes we detected something a little beyond bromance here between Isabella and Lucas and noticed there was just one sleeping bag in their camp. That night the five of us shared a delightful midnight hour and when Lucas turned in, he said, "Goodnight, BB."



Naja nivea (Cape Cobra) by Tyrone Ping



Cordylus (Smaug) giganteus (Giant Sungazer) by Eric Johnston.



Lucas with *Naja nivea* (Cape Cobra).

93. *Platysaurus lucasi* (Lucas' Flat Lizard).

We were far enough away from the coast that the sun came up like a fireball out of hell. “Well, you have now seen the largest living cordylid, lets head out and see one of the most specialized, and I dare say, one of the most beautiful. In a mountain range three hours walk from here I discovered a new *Platysaurus* I named *lucasi*,” suggested Isabella.

“Jeez that is really exciting, lets go,” enthused Red Bud. “Lucas, lets head out and see your name sake,” Isabella said with the hint of an emotion that puzzled us.

“Naw, BB and I want to stay here and play with the cobras,” Lucas answered. “BB, this is your only chance on the whole trip to see *Platysaurus*,” I invited. “Well, Lucas and I want to stay here, we have a lot to, uh, talk about right now,” BB asserted.

There was a definite feeling of a deep hole in all our hearts as we trudged off leaving Lucas and BB to themselves. Three hours later we were absolutely stunned to see our first *Platysaurus lucasi*, a beautiful, delicate, shy, flat-bodied crevice dweller. “I see now how cordylids and xantusiids are alike. This could be a goddam *Xantusia henshawi*. Crevice specialization is an important theme in desert reptiles,” I mused.

“It’s a truly exquisite lizard you named for your dear Lucas,” acknowledged Red.

We spent quite a while getting photos of this shy lizard. “Let’s stop and savor this place a little long while,” suggested Red, “No, I want to get back to, uh, camp,” answered Isabella.

When we arrived BB and Lucas were sitting under the cobra tree engaged in deep conversation and did not even look up.

“Goddam it, Lucas, there was a data dump this afternoon and all you seem to want to do is spend your time with BB,” snapped Isabella.

Red Bud’s insight into emotions kicked in and once again he saved the day. He could clearly see Isabella could no longer constrain her jealousy of the bromance between BB and Lucas. And I have to admit I was at least a little bent out of shape by it also.

“Let’s head for the Namib this afternoon,” entreated Red. “I am set to go,” I answered immediately. But from his total silence we could plainly see BB was not set to go.

“Best Bud, you have helped Bobbie Boy here through many a difficult departure just like this very one and we will help you if you let us. You can do this, you know we love you,” Red said baring his feelings.

Red Bud’s emotions and words worked their magic and with a forced smile BB blurted out, “Let’s fukin haul ass.” As he gave Lucas a goodbye hug we all pretended not to see the tears in the corners of his and Lucas’ eyes.

Two hours down the Sperrgebiet track, night fell, we reached the first sands of the Namib, and BB sang out, *Palmatogeocko rangei*. We could tell by the enthusiasm in his voice Best Bud had recovered and returned to us. After a long photo shoot of the absolutely delightful Namib Web-footed Gecko we shared a

very touching midnight hour together talking of the many Namib and Kalahari roads ahead.



Platysaurus intermedius [“*lucasi*”] (Flat Lizard) by Wolfgang Wüster



Pachydactylus (Palmatogecko) rangei (Namib Web-footed Gecko) by Sean Richardson.

94. *Bitis schneideri* (Namaqua Dwarf Adder).

Red proclaimed, “I know you guys do not understand me, but I want to return to Kolmanskop for a little long while. We have two full months in Namibia, and I would just like to spend a little time talking with the spirits in those old buildings where the greed for diamonds has its roots.”

“Red Bud, you know how much you mean to BB and me, and we would be very happy to stay there as long as you like. Your spirit saved Best Bud down in the Sperrgebiet and you know how many times you helped me climb out of the deep holes I just can’t seem to stop falling into,” I managed to say, wishing I had a better way with words.

“I want to spend a little long time dancing with the spirits here in Kolmanskop. There are two dark corners in the human heart, lust and greed. I understand lust all too well, but I have never been able to understand greed. This town was abandoned when the diamonds ran out, but they say that some people just could not leave because they were so loaded down with pockets full of diamonds they just sunk into the sands and died here. Their greedy spirits still roam these old buildings and I want to talk with them,” Red explained.

Best Bud and I watched while Red Bud performed "La Danza de Los Diamantes." After the dance he picked something up that had been uncovered by his bare feet. It was an incredibly large uncut diamond. “I will sink a dagger deep in the heart of greed and give this away when the right time comes,” he declared.

A youth walked up, “Hey, dudes, what the fuk’s happening here?” the feigned Americanisms not fully disguising his polished South African English.

“Well, we are just communing with the spirits of Kolmanskop. What are you up to?” inquired Red. The man answered, “I was just into Luderitz buying supplies. We are camped up at Agate Beach studying vipers.” “Holy shit, I cant believe this, we are herpetologists also,” inserted BB. “I’m Kye, why don’t you guys come on up and join La Mar and me for a little long while,” he invited.

“You are on,” Red replied with one of his irresistible smiles.

When we arrived at Agate Beach La Mar was just riding her last wave in for the afternoon. “I am done, its pretty much over for the day. I am starved, Kye. Did Adem come by with any dassies today?” “Yes he sure did and I will have them off the grill in an hour.”

While we were enjoying smoko together, Kye eagerly filled us in on his research. “Well, as you know, *Bitis schneideri* is the Earth’s smallest venomous reptile. The genus *Bitis* contains a tremendous span of body size from *schneideri* to *gabonica*, and our *arietans* is no slouch either. So, to make a long story short, I am looking at the impact of body size on reproductive strategy and other life history parameters in *Bitis*. Also I have just started a little side project looking at phylogography of *schneideri* and *peringueyi*.”

“Are they really different species?” I asked, chomping at the bit.

“Well, we don’t know yet, the sequences are just coming off the rack and I am designing some better primers down in my professor’s lab at the University of Cape Town,” Kye enthusiastically declared.

Kye was a hell of a chef and the dassies were done to perfection and served with a delicious orange sauce, the first substantial meal we had eaten in Namibia. “I hope you do not think badly of me but I always have a little siesta after lunch and smoko. You guys are welcome to throw your sleeping bags anywhere you like,” welcomed Kye.

We had arrived in Namib paradise and were visited by sweet dreams of red vipers sidewinding across the white dunes.



Left, Kye; right, La Mar.



Bitis schneideri (Namaqua Dwarf Adder) by Niccolau Ecology.

95. Sail away.

The fogged-in Namib sun does not understand even the basics of a fireball's life. But Kye appreciated that we had some serious climatic adjustments to make and prepared us some real coffee. I managed to crawl to it, mix it with equal amounts of sugar, and soon the chemicals entered my blood stream and a few neurons began firing randomly.

Kye waited a little long while before starting his lively *schneideri* spiel. "In spite of reports in the early literature, this is an almost exclusively diurnal species. I usually find the first one about 10. They continue off and on until late afternoon and there is a noticeable activity peak about 4 just before they shut off. This is entirely understandable considering that they are lizard-feeding specialists and that is the peak of lizard activity. But they differ from *peringueyi* in that they use buried ambush less often and are more active sidewindng foragers. This is reflected in the position of their eyes, which are less dorsal than in *peringueyi*."

By 10 we were out on the dunes. Kye was really impressed that BB sang out about twice as often as he did. "Wow, BB, you sure got some field talent. How would

you like to sign up to be my field bud for a year.” Best Bud smiled from ear to ear as he seldom got such praise from Red and me as we mostly took his enormous field ability for “granite.” “How much you pay?” inquired BB, “All the dassies you can eat and free personalized surfing lessons from La Mar.” “Count me in,” BB said with a big smile. Red and I recognized he just might not be kidding. The chance work with the Earth’s smallest viper in such a remote place could easily draw him away from BB and me and especially from the university that had not even the slightest clue about his field talent.

“I can clearly see that both *schneideri* and *peringueyi* are dune specialists far beyond any snake we have in the young deserts of North America. Even the horned *caudalis* here far surpass our *cerastes*. The power of the ancient southern African deserts to mold species is absolutely awe inspiring,” I proudly announced.

At smoko Red Bud stood up, took center stage, and used his tremendous people skills to put on an awe-inspiring show and change our approach to the Namib.

“This is an enormous sand sea and to appreciate the power of this ancient desert to shape the evolution of the fauna and flora we need to let go and sail away far out into the sand sea as we did in the Simpson. Kye here says knows two of the local kids, Adem and Ola, who are quite experienced in Namib exploration and could lead us on a grand adventure into the very heart of the dunes. Let’s do it.”



Namib dunes.

97. Into the dunes.

Before setting sail into the Great Namib Sand Sea, the buds got together with Kye, Adem, and Ola to plan the adventure. We could plainly see the deep love Kye had for these kids of a local couple and how much he wanted to join us on our adventure. Great sacrifices are sometimes asked of a person who dedicates his or her life to field research. “Should I stay here and take data on *Bitis schneideri* or set sail with the kids I love and head out with the buds on the adventure of a lifetime?” This was the ironic inverse of the painful choices that usually confront field biologists.

When we hugged Kye goodbye the next morning we pretended we did not see the tears in his eyes.



Kye, Adem, and Ola

97. *Meroles (Aporosaura) anchietae* (Anchieta’s Shovel-snouted Lizard).

We had heavy hearts as we abandoned Kye and La Mar and trudged off into the dunes. This painful aspect of departure on adventure has been described by many naturalists beginning with Alfred Russel Wallace.

But the fog burned off, the sun healed our gloomy hearts, and we embraced the moment. “*Aporosaura anchietae*,” sang out Best Bud. “This is an Ari Nic O Louse Sam O File surpassing all arenicolous psammophiles” declared BB.

I could not believe my eyes. “I am seeing a pattern here. In the young New World deserts we have a cluster of scarcely differentiated species of sand lizards in *Callisaurus*, *Cophosaurus*, *Holbrookia*, and *Uma*. Here in ancient deserts of southern Africa we have species in three or more different families with such extreme arenicolous adaptations each was once placed in its own genus, *Aporosaura anchietae* evolved out of *Meroles*, *Angolosaurus skoogi* out of

Gerrhosaurus, and *Palmatogecko rangei* out of *Pachdactylus*. Phylogenetic dictates require nomenclature to show relationships but not unique features. I informally continue to use the old monotypic generic names just to emphasize desert adaptations,” I announced expecting a Nobel any moment.

Red Bud sprang to life as he always did around kids and eagerly showed Adem and Ola how to noose lizards. The kids loved it and also sprang to life. A new pack of three movement-talented lizard-stalkers was born, and a myriad *Aporosaura* were noosed and released.



Meroles (Aporosaura) anchietae (Anchieta's Shovel-snouted lizard) by Mark Piazzi.

98. *Typhlosaurus lineatus* (*Acontias kgalagadi*; Lined Legless Skink).

With the addition of the kids, Adem and Ola, the buds needed to find new emotional footing. Red Bud and the youngens became an incredibly tight-bonded

pack noosing lizards together and dancing in the sand and BB and I started to feel left out.

Fortunately Red Bud's emotional insight kicked in and he found a way to mix things up a bit. He would turn the kids over to me for a little long while each day while he and BB renewed their bonds.

This whole situation had a good influence on me because I was, for the first time, experiencing kids without it becoming a pathology. The love between brothers Adem and Ola was so incredibly deep my bonding with them was secondary and this was healthier. I really enjoyed watching the kids' interactions. They did not need words to communicate as they intuited each others every thought and emotion. I especially enjoyed seeing them walking along the dune crests arm in arm. They never needed a cover at night because they slept in a pile sharing their body heat.

I wondered if my ideas about the evolution of desert reptiles was within their reach, so I decided to risk losing my closeness with them by discussing the topic. They took to it like a duck to water. "Well, Bobbie, you are missing an entire realm here, what about "worm lizards?" inquired younger Ola. "Worm lizards? What are they?" I responded. "They lack legs and live in very special places in the dunes and we can show you them."

And show me they did. Like Red Bud, the kids recognized the right habitat by intuition. They walked along the bottom of the dune until they reached a spot they sensed was moist enough and then began digging with their hands and immediately came up with a "worm lizard."

"*Typhlosaurus lienatus*," sang out Best Bud.

I went into absolute ecstasy. Here was not only an arenicole in a fourth family, the Scincidae, but using a different approach to sand adaptation, limblessness, combined with a shovel snout and reduced eyes.

I hugged Adem and Ola until my arms ached.



Typhlosaurus lineatus (*Acontias kgalagadi*), Lined Legless Skink by Aviad Bar.

99. He ain't heavy.

In the desert there is only one "sin qua non," water. Our canteens had been empty for over a day. Adem and Ola encouraged us to keep putting one foot in front of another as we crested dune after dune. "The spring is just five more dunes away," assured Adem.

BB, the strong Bud, was doing o k, but I was at my limits. The dehydration suddenly sent me into one of my severe dizzy spells, something I had suffered from my entire life. I fell to the ground hugging the dune, my face buried in the sand.

"Don't die on me now, Bobbie Boy" cried out BB. "You guys go on ahead and get to the spring and let nature take her course for me. You can fill a canteen and bring it back to me if I am still alive. Go in peace, bros, I love you," I declared.

Best Bud just picked me up and began staggering across the dunes with me on his back, singing, "He aint heavy, he's my brother," just as he had done for more than one Wounded Bud he had saved in Nam.

BB somehow found the strength to stagger up the last dune with me on his back. There at the crest we looked down.

The spring was dry. The temperature-moisture gradient of the Namib had spoken.



He aint heavy, he's my brother,



100. Dehydration delirium.

The five buds lay under the lone surviving tree at the dried up spring. Red waxed philosophical, “We came here to appreciate the Namib and understand how she molds species and favors the evolution of desert adaptations. We now know the real Namib intimately on her terms, not ours. They say death by dehydration is preceded by delirium so we will die happy.”

I could feel us slipping away into terminal dehydration delirium. “Kye,” screamed out Adem at the top of his lungs. Deep sadness gripped my heart at such a lovable youngen succumbing to delirium. “Kye,” sang both Adem and Ola together, bros joining together in a last song.

I was blind, my eyes no longer able to focus, the intra-ocular muscles having stiffened from dehydration.

Then I thought I heard footsteps in the sand, early stages of delirium death I guessed. I felt the cool metal of an old canteen pressed against my dried lips and heard Kye’s voice saying, “Take a very small sip first so as not to send your system into shock and then gradually increase the size of your swallows.”

Within an hour Kye had us sitting up. "How did you find us?" asked the ever practical-minded BB.

"Well, Adem, Ola and I talked about your adventure the night before your departure and we agreed this spring, El Pozo de la Muerte, was the most reliable target for first water. But, yesterday, La Mar got to talking with the kids' mom and she learned there were reports that the spring had dried up.

"I am carrying enough water to get you guys rehydrated. I also brought a gadget loaned to me by a UNESCO person studying water harvesting from fog. After you all are sufficiently recovered we can head nearer the coast where it is foggier and the water is easier to extract. I brought a bit of fishing tackle so Adem and Ola can keep us supplied with dassies.

"THE GREAT ADEMyOLA CENTRAL NAMIB EXPEDITION will make it another hundred kilometers north, deep into the very heart of the dunes," boldly announced Kye.



g
Pachydactylus (Palmatogecko) rangei (Namib Web-footed Gecko) by rustedbones.
101. La Mar.

Kye had saved the buds from sure dehydration death at Pozo de la Muerte. We were now six buds, comfortable in our new camp near the sea. Kye's water extractor was working like a charm in the coastal fog and Adem and Ola brought in a mess of dassies each day.

Our new bud, Kye, was quickly charming our hearts. Red, the prince of emotions, was the first to really reach out to Kye where he actually lived. "What about your *Bitis schneideri* study, are you just going to abandon it?"

"Certainly not. When I learned that El Pozo was dry I simply had to take action right away. But the *schneideri* were about to drop their litters. What to do? In desperation I turned to La Mar. 'Could you monitor the snakes for a few days for me?' She burst into tears. 'Kye, darling, I thought you would never let me be a part of YOUR study so I just keep on surfing day after day hoping that sometime you will realize I exist other than late at night after you have finished all the important things for the day.'

"La Mar and I headed out into the dunes the next morning and I discovered she was an ace *Bitis*-ero, just like BB. She found twice as many snakes as I did and she really liked taking and recording the data and marking the new snakes. She is a natural."

"Well I could plainly see that the first day at your camp. I really liked to sit and watch her surf. She was one with the sea, her beautiful body just seemed to flow with the waves. She is an exquisite work of marine art. I call such physical ability 'movement talent.' It is important in all field activities and it also is the crux of dancing. Have you ever danced with her?" boldly inquired Red Bud.

"Well, no, I never thought of it," responded Kye.

"Just try it, you both will really like it."

Smoko over, a dassie feast, and the six buds fell asleep in Namib paradise dreaming of unknown arenicoles swimming in the red dunes.



Bitis schneideri by Chad Keates.



La Mar

102. *Angolosaurus ademyolae* (Adem and Ola's Plated Lizard).

We had now fully recovered from our near-death from dehydration and we struck out with renewed vigor searching for the ‘heart of the Namib Desert.’ The dune crests rolled on and on, seemingly forever. Camp after camp the buds drank the water harvested from fog by Kye’s magic extractor, enjoyed the dassies pulled in by Adem and Ola on their hand line, and fell asleep dreaming of unknown arenicoles.

“How the fuk we gunna know when we have reached this so called ‘heart of the Namib’ ?” inquired ever-realistic Best Bud. “I will know in my heart,” replied Red Bud, the ‘prince of hearts.’ “Well for fuks sake, can’t we at least set a time limit here?” I chimed in.

“I need to get back to my *Bitis schneideri*. La Mar can’t handle the whole damn study by herself forever. I am drawing a line in the Namib sand. One more night and I am heading back and you buds can keep on trucking looking for Red’s mythical ‘heart of the Namib’ without my water or the kids’ fish.” “You are fukin on, Kye,” I said, daring to give him a big hug.

Adem and Ola came running into camp, “We found it, we found it, the lizard that lives at the heart of the Namib. Follow us and we will show it to you.” We thought we had seen the entire Namib arenicolous herpetofauna and my excitement was palpable as I ran behind the boys. “We saw it in the sand right here,” and the kids started frantically digging with their hands at the base of the dune.

“I’ve got it,” screamed Adem. And there it was in the boy’s hand, a new species of *Angolosaurus*, over a hundred kilometers south of *A. skoogi*.

The readers were astounded as they read the buds' original description of *Angolosaurus ademyolae* and feasted their eyes on the cover photo of Herp Review.



Angolosaurus skoogi [*ademyolae*] (Desert Plated Lizard) by redrovertracy.



Angolosaurus skoogi (Desert Plated Lizard) by Johan Marais.

103. Dr. Michael Robison.

Adem and Ola's discovery of the new *Angolosaurus* brought us incredible joy and our spirits soared like an eagle far above the sand.

“This is truly the very ‘heart of the Namib’ that we have been searching for. This is the dune ‘nie von Menschenfuss betreten,’ the dune ‘seen, unclimbed, and forever remembered.’ Lets dance here at its base, but not step foot on it,” exhorted Red Bud, and the sands of the Namib witnessed a dance the likes of which had not been seen since Gondwana times.

As we departed the heart dune and started the long homeward trek, we were shocked to encounter a young man noosing a lizard. We discovered he was Dr. Michael Robison and he had made the enormous walk south from Gobabeb. He was collecting lizard and snake tissue samples for his study of Namib phylogography.

“I have discovered that the Namib was not always this continuous sand sea we see today. In the late Pliocene it was an archipelago of several isolated dune systems that have subsequently joined up in the Late Pleistocene. I have discovered the

signal from these separate dune systems is deeply embedded in the mitochondrial DNA of the *Aporosaura anchietae*. But to test this hypothesis I need to look at phylogography of several different arenicolous reptile species,” declared Michael.

I was all over poor Mike like a fester of OZ flies. Here in the Namib stood a kindred spirit driven by the same questions that haunt me. A lifelong bond of deep friendship was forged that would lead to many collaborative research projects. We had a new Namib Desert Bud.

Mike had made the long difficult walk alone without the benefit of Kye’s water extractor or the kids’ fishing lines. He was delighted to camp with us for a day and really savored the water and food. After smoko we sat up and talked all afternoon and night discussing every aspect of desert ecology and evolution imaginable. At dawn we said a sad good bye to Mike and continued our long homeward-bound trek.

“Wow, will you look at that ship wreck,” exclaimed Kye. “I have investigated several but this one is clearly much older and seems totally untouched.”

We spent more than a little long while exploring the remains of the old wood sailing vessel. Red Bud performed the dance of the galleon and at the end he bent down and picked up something that had been uncovered by his bare feet. It was a gold Spanish doubloon and he put it in his pocket with the uncut diamond for the right occasion.

Many days and many dunes and camps later we staggered into Agate Beach and the tears of joy flowed from us and from La Mar and from the kids' mom and dad who had nearly given up hope they would ever see us again.

After much celebration, we took Adem and Ola to their home and Red Bud reached into his pocket and presented the kids’ mom and dad with the uncut diamond and the Spanish doubloon. He had plunged the dagger deep into the insatiable greed that plagued the hearts of the ghosts of Kolmanskop.

It had come time to say goodbye to the Namib Desert and our friends at Agate Beach. I was not at all sure I could just turn and walk away from these people I had shared life and near-death experiences with and whom I had come to love. But life is full of changes and a new Bobbie Boy had emerged totally unnoticed.

I had found a new firmer emotional footing and I had somehow learned I could let go when the time came. I just gave a big hug to Kye, La Mar, Adem, and Ola and slowly turned away knowing eventually the tears in my eyes would dry and I would smile again.

As the Namib Desert receded in the rear view mirror I realized for the first time I did not really love it. Where one is raised seeps unnoticed deep into the corners of the heart; the climate, the vegetation, and the fauna stick with one for a lifetime. We three buds were niños de la tierra of the Sonoran Desert where the sun always rises like a fireball out of hell, and the so called “desert” is really a thin version of tropical thornscrub rather than a foggy sand erg.

It was the experience of a lifetime to trek to Red Bud’s dune in the heart of the Namib and see the entire arenicolous herpetofauna. But to rise in the morning to fog? No fukin way, Jose, gimme back my fireball.

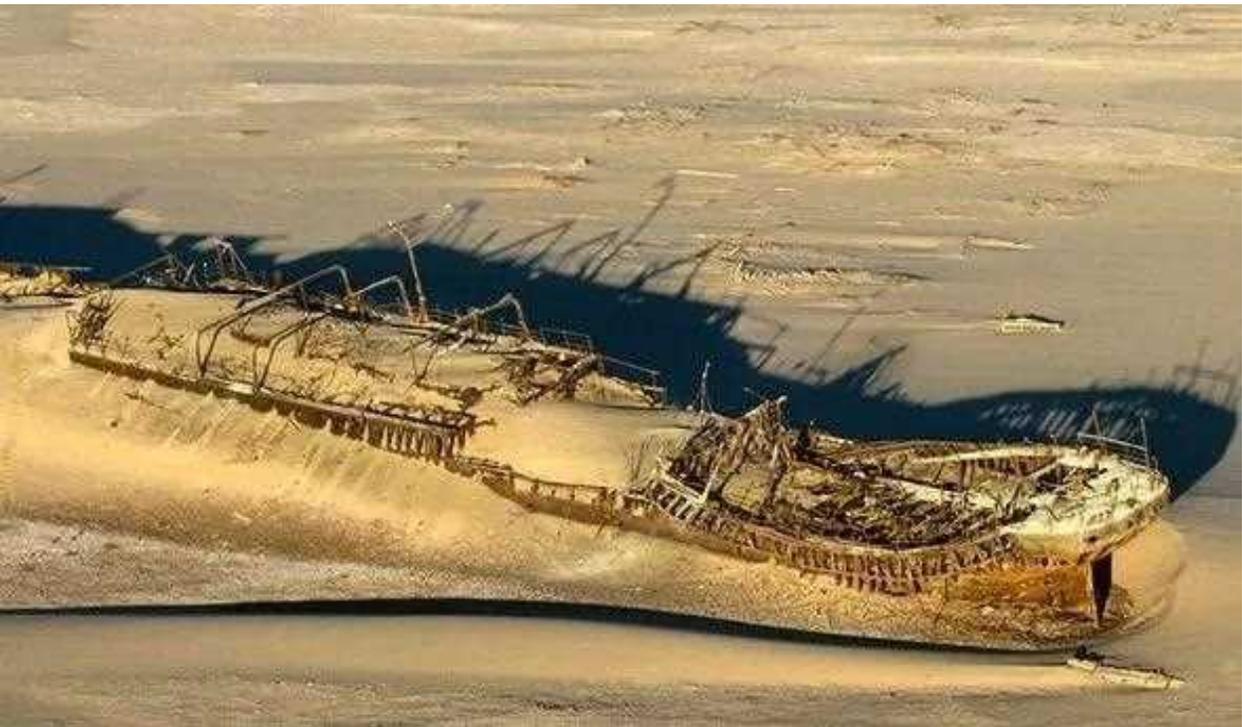
No one, and I mean to tell you absolutely no one, can begin to imagine the pure joy in my heart when years later I started getting emails from Adem and Ola about their biology courses at the University of Namibia. That goddam Red Bud and his fukin intuition are absolutely incredible. He knew in his heart of hearts that the Doubloon and huge diamond would not be squandered by the family and would transform the life of Adem and Ola, who were destined to become the new generation desert ecologists in Namibia.



Left, Michael Robinson modified from a photo by Oscar Soule; middle, gold doubloon; uncut diamond.



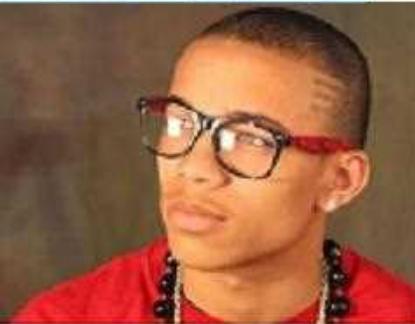
Namib Desert coast.



Shipwreck by Hoberman Publishing.



Adem and Ola's family and home.





Namib sunset..

Chapter 8. The Kalahari Desert.

104. Kalahari Arrival.

The Land Rover started right up and here we were once again three happy buds packed tightly on the bench seat. “*Arietans*” sang out Best Bud, and I realized again how much he and his “singouts” meant to me. “Lets stop and enjoy the snake,” exhorted Red. The magnificent heavy body of the Puff Adder strikes a very deep chord in any herpetologist and we just sat there for an hour admiring the massive snake.

“I remember seeing a restaurant in Helmringhausen, you suppose they have T-bones?” asked BB. “I betcha they do,” I replied salivating. Even vegetarian Red Bud joined us in having a thick steak smothered in mushrooms. After apple pie, ice cream, and coffee we paid the bill and sat for a spell on a front porch bench soaking up the hot Pronamib sun. Two kids were sitting on the adjacent bench and I heard them saying “I love *Ptenopus* the most.” “Nah, they are not nearly as cool as *Chondrodactylus*,” retorted the other.

“Hot dog,” sang out BB, and Red was on them like a shot. Before we even blinked our eyes he had wrangled an invitation to camp on their family’s Kalahari ranch, right up against the Botswana border. The kids, Leto and Luan, were budding young herpetologists and were thrilled to have three genuine herp buds camped on the ranch.

The Kalahari was absolutely stunning and we were spell-bound by the rolling red dunes and magnificent green acacias. The kids showed us the best Acacia to camp under and pointed out which water tank was o k for swimming and which was only for drinking. Home is where the heart is and we were home at last.



Bitis arietans (Puff Adder) by Danny S via Wikimedia.



Kalahari dunes by Hannes Thirion



Leto and Luan

Fantasy 105. *Ptenopus letoluanae*.

Luan and Leto lived and breathed geckos. They talked Gekkonidae morning, noon, and night. “Most people think there is only one species of Barking Gecko here in

the Kalahari, *Ptenopus garrulus*, but we have discovered there are actually two,” pronounced Luan.

“Really? Can you show them to us?” I asked, totally incredulous. “Yep, sure can. We will be back just before sundown,” he promised.

“Are you able to hear that there are two distinct pitches of barks?” Luan asked as the sun dropped below the dune. I do not have much of an ear for music, but Red Bud was able to distinguish that yes indeed there were two slightly different pitches.

They were ace *Ptenopus*-eros. Luan lay perfectly still a meter in front of the mouth of the burrow, while Leto squatted with the shovel a meter behind the mouth. Just like Adem and Ota they seemed to communicate silently by some totally mysterious non-verbal means. When the *Ptenopus* appeared in the mouth Luan somehow signaled it was there and Leto plunged the shovel into the burrow to block its escape back down the hole. They never missed, and they never accidentally chopped a gecko in two.

Luan and Leto repeated the process several times after sundown, showing us each gecko and eventually convinced us that the higher pitched ones had yellow throats and the lower pitched individuals had orange throats. They must be distinct species, just like the kids had claimed, and much later I described the new species as *Ptenopus letoluanae*.

I was so blown away I was speechless. I managed to muster, “How the hell did you kids ever figure this out?” “Well the Barking Geckos are our pals and we have grown up with them and understand their ways,” Leto said with a big smile.

Sometimes a guy just does not really know what to say. “You kids are the greatest was all I could muster,” as I fell asleep dreaming of Luan and Leto presenting a Beethoven’s Ninth performance complete with a glorious *Ptenopus* “Ode to Joy” chorus.



Ptenopus garrulus [letoluanae] (Barking Gecko) by Aaron Bauer.



Ptenopus garrulus (Barking Gecko) by Cowyeow via Flickr
106. *Colopus wahlbergii* (Walberg's Kalahari Gecko).

Leto was a bit shy around the us buds but when Luan invited us to join the two of them in a visit to their special *Chondrodactylus angulifer* honey hole, Leto sprang to life, flashing us an incredible smile.

“Chondros are not common here on the ranch but a day’s walk across the border into Botswana we know a place with a very dense population of them. My San friend Xi showed it to us a few months back,” explained Leto.

We were not about to embark on a Kalahari Safari the scale of our gran Namib trek, but a day’s excursion into Botswana sounded more than a little enticing and we made plans to head out early the next day.

We reached the *Chondrodactylus* locality late in the afternoon and after sun down we donned our headlamps and set out into the inky night looking for giant geckos. Hot dog,” sang out BB and by midnight we had each seen one and Leto an incredible eight. This was the most he had ever found in one night and he was in absolute ecstasy.

Then BB sang out, “*Colopus wahlbergii*.” Luan and Leto could not believe their ears and eyes as they had never seen one before and they both gave dear BB a hug. Many photos later we laid down and fell asleep dreaming of a spectacular array of geckos dancing across the red dunes of the Kalahari.

As the fire ball arose Leto announced that he could see a group of San in the far distance. We were excited out of our minds anticipating an encounter with the spirit people of the Kalahari.

Leto had been raised among the San until he was six when his dad went to work at Luan’s family ranch. How he could signal the people across the vast expanse of rolling dunes was a complete mystery, but I was gradually coming to realize are ways to communicate beyond words.

The San people were absolutely charming and hearing their lingual clicks was a joy. Leto’s San friend Xi shared his love of reptiles and reported that his people had just seen a strange cobra unknown to the clan. It was just another day’s walk north. The draw of adventure was irresistible as was spending another day with the San and we sailed away into the red sand sea.



Chondrodactylus angulifer (Giant Gecko) by Tyrone Ping.



Pachydactylus (Colopus) wahlbergii (Kalahari Ground Gecko) by Gsbri Mtnez.



Xi

107. *Naja nigricincta* (Zebra Spitting Cobra).

The Kalahari sun rose scorching the red dunes and the San were itching to get moving. After a realistic appraisal of the situation we reached the painful conclusion that to find the cobra we would have to split up.

The fast ones, BB and Leto, would try to keep up with the San. The slow ones, Red and I, guided by Luan, would head in the general direction at our own pace. When the San located the cobra, BB and Leto would fall back, find us, and lead us to the locality.

I did not want to be separated from Best Bud, but this seemed the only viable path forward. It was decision time. We either had to take the necessary painful steps, or give up our gran cobra adventure. We either were, or were not, herpetologists. Herp field adventure by its very nature always requires taking risks.

I gave Best Bud a hug, Luan said a tearful goodbye to Leto, and the fast ones set off following the San across the red dunes on el gran Kalahari cobra safari. Separated from Leto, Luan began jabbering non-stop with Red Bud and me. His attachment to Leto had been extremely difficult. His Afrikaans dad was an old

fashioned Apartheid person, but gradually over time he came to accept the kids' relationship and arranged for Leto and his dad to move into a small casita near the main ranch house.

Luan and Leto started building a large collection of live Kalahari lizards and snakes that completely filled another casita and it was visited by ranch families far and wide. But Leto had an epiphany and declared he did not want to capture the reptiles anymore and preferred to observe them living free and wild in nature. Luan was very reluctant to make the change and give up all the live animals he and Leto had captured together. Eventually he was able to make the leap and they released each one exactly where they had found it.

They both became avid observers of reptile behavior in the wild. Red and I could plainly see that Luan had very charming people-skills but taciturn Leto was the real innovator.

We crested dune after dune and the hours dragged on here in the Kalahari just as they had in the Namib. A day's walk for the San is not a day's stroll for me. The sun was getting low on the horizon and we were beginning to think about where to sleep for the night.

Just then Luan heard the whistle. It was a time-worn method of communicating that he and Leto had developed on their many field adventures together. Luan immediately returned the whistle and they continued this long distance form of communication every little long while. Eventually Leto and BB burst forth and I gave them a long hug.

When we reached the San they had the cobra cornered in a patch of grass. BB announced it was a *Naja nigricincta*, never before recorded in Botswana. It is a spitting cobra and we had no goggles. Fortunately our near-death experience from dehydration in the Namib had totally changed Best Bud and he just backed off and let the highly experienced San corral the cobra.

I got out the Nikon with a telephoto lens and began clicking away. A range extension into Botswana of this dangerous species clearly would be publishable. "But, where the fuk are we?" I asked. We had no GPS unit. The San said they did not pay any attention what-so-ever to the border between Namibia and Botswana. I wrote down their name for the place, which to this day remains unlocatable.

We could plainly see that the dunes of the Kalahari had all but petered out and the scrub had taken on a much more tropical appearance. This could explain the presence of this subtropical species of cobra and why this group of San did not know it as they seldom ventured out of the Kalahari.

We prepared to embark on the return trek to the ranch. Leto said yet another tearful goodbye to Xi. Bella, a young San women who had caught a lot more than my eye, gave me a necklace to remember her by and I have worn it ever since.



Bella and her child.



San hunting by franco lucato.



Naja nigrocincta (Zebra Spitting Cobra) by Thea Gaudette.

108. *Nucras tessellata* (Zebra Sandfield Liard).

Thanks to our cobra walkabout with Luan, Leto, Xi, and the San clan I was beginning to understand the Kalahari and its differences from the Namib. The Namib is an extreme hyper-arid, fog-shrouded desert, whereas the Kalahari is hotter but receives some rain.

But the differences in landscape ecology also were now clear to me. The Namib is indeed an enormous, continuous sand sea, but the Kalahari consists of dune crests separated by swales, locally called “streets,” with soil-substrates and luxuriant Acacia trees.

This landscape difference has an enormous impact on the herpetofauna. In the Namib the base of the ecosystem rests on nutrients such as leaf detritus blown in from great distances and the entire fauna is narrowly sand-adapted. In the Kalahari the streets with their lush acacias provide a nearby nutrient resource and the herpetofauna is distributed in zones up the dune slope with sand adaptations increasing toward the crest.

The next morning, after the caffeine and sugar reached our brains, we set out with Luan and Leto to explore the rich Kalahari herpetofauna. Over 20 species of lizards can be seen at one locality. One might see one agamid, one chameleon, six skinks, and seven lacertids during the day, and eight species of geckos at night.

It was time for a Red Bud performance. “Instead of going ape shit trying to see every goddam species in the Kalahari Desert, like in the Red Center, let’s each pick one and concentrate on it.” “Make it so,” BB and I responded.

I soon detected that Leto had the eye to become a photographer but he had no equipment. So I just pulled a Red Bud and let my instincts take charge. I took my camera pack off my shoulders, opened it, and presented Leto with the Nikon digital camera body and a zoom lens that I always carried as a back-up. The shy kid’s beautiful smile was something I will cherish for the rest of my life.

And I had a ball teaching the taciturn Leto the ropes of photography. He started to emerge from his shell and expressed how happy he was that he now had a way to “capture” the reptiles yet let them live free.

Today when I open a National Geographic with a piece on the Kalahari San Reserves overseen by Luan Coetzee and feast my eyes on the exquisite “photos by Leto Bwai” that wonderful smile revisits me and my heart sings with joy.

My target was *Nucras tessellata*. It is a magnificent lacertid with shocking zebra anterior and stunning Kalahari red posterior. Its zebra pattern is very difficult to see as it forages in the patchy shade of the Acacias.

Leto explained that it is a scorpion predator and we enjoyed watching the reptile poking its dark anterior into the arthropod's burrow with only its red sand-colored posterior visible to the lizard's predators. When it emerged with a scorpion, a predator-prey skirmish ensued, and the reptile won every one we observed.

It was hotter than shit when we trekked back and reached the windmill. Red Bud declared, "The last one in is a rotten egg," as the five of us stripped and dove into the water tank.

That night after the kids went home, Best Bud had an epiphany of his own. During midnight hour he made brave to say, "Bobbie Boy and Red Bud, I have something heavy to lay on us tonight. I have been admiring the beautiful young fresh minds of Luan and Leto and it has inspired me to think it is time for us to make a major change in our own lives. Cannabis combined with Red's high emotional IQ has served us well for several years now and we have learned to speak from the heart. But I am thinking it is time for us to move on and enjoy sharing our thoughts and emotions during midnight hour without weed."

Red Bud and I responded, "You are so fukin on, Best Bud, lets make it so."

We continued to share midnight hour together every night and freely express our ideas and feelings, but without mind-altering chemicals.



Water tank used for swimming.



Nucras tessellata (Western Sandveld Lizard) by W. Price.

109. *Typhlosaurus gariepensis* (Kalahari Legless Skink).

The timing of Best Bud's best idea about changing the nature of midnight hour was not without significance. While BB and I were, as usual, blind to the ways of the heart, Red Bud saw it clearly from the onset and instinctively recognized that BB had subconsciously cleared the path for us to invite Luan and Leto to join us in our early smokeless "midnight hour" after our swim.

In this intimate setting the kids came to see that we were beset with deep problems and conflicts, intellectually and emotionally, just as they were. It was a new and exciting experience for us to share such feelings across generations.

They were deeply concerned how southern Africa would find its path forward and how all the people would come to share in its future. And what could two kids who live and breathe reptiles possibly contribute to the metamorphosis?

Quiet Leto gradually emerged from his shell. Having San genes and early life experiences he believed he could help his people share their knowledge of the natural world with others and he saw his San friend Xi as a future partner in this. Thanks to my Nikon gift he also now saw photography as an art form that could play an important role in bringing his dream of the reserves into reality.

Luan had single-handedly changed his dad's Apartheid views and was beginning to see that his tremendous people-skills could play a leadership role in establishing the great Kalahari San Reserves along the Namibia-Botswana borderlands. We were stunned to hear such positive dreams and large plans out of the mouths of these two wonderful "kids." We just sat back and listened to them explore their dreams, Red Bud skillfully asking an occasional leading question.

We eventually got back to talking herpetology and BB was very interested to know more about *Typhlosaurus*, as they were the lizards he had chosen to focus on here. How could there be more than one species of narrowly adapted legless fossorial sand skinks at this locality?

Luan and Leto knew *Typhlosaurus* well and said they would show us all about them in the morning.

And what a glorious morning it was when we greeted the rising sun with our fresh cannabis-free brains.

Luan and Leto showed us their special *Typhlosaurus* rig. It had wire mesh screen stretched across a square wood frame with four short legs. They grabbed it and a shovel and we marched off into the red dunes on El Gran *Typhlosaurus* Kalahari Safari.

We were surprised when newly loquacious Leto took the lead. "The streets are the exclusive domain of *lineatus*," he said as he turned an acacia log and sifted through the sand with his fingers, coming up with one. After the fifth *T. lineatus* we left the street and started up a dune. "Now here on the slope things start to get interesting." The kids worked together as ace *Typhlosaurus*-eros, Luan taking a shovel full of sand from just below the base of a clump grass and dropping it onto the mesh screen, Leto gently moving the sand across the screen to sift out the lizard. "Four *lineatus*." He paced five more meters up the slope and the team swung into action again, "Two *lineatus* and the first *gariensis*." Another five meters up, "two *gariensis* and one *lineatus*." Dune crest, "four *gariensis*," declared Leto.

“They both are termite specialists. Where *lineatus* occurs with *gariensis* it differs in head shape more than when it occurs by itself, competition in action. The two species can co-exist here because *lineatus* is a generalist and *gariensis* is a dune specialist. Together they reflect the very essence of the Kalahari and its herpetofauna,” announced the new self-confident Leto, flashing us one of his still all-too-rare smiles.

We could see we were having a very positive impact on Leto and that he and Luan were destined to peruse their deep passion for herpetology their entire lives and were clearly bound to accomplish great things.

“Last one in is a rotten egg,” I declared and today Luan’s dog Buster joined us in the tank.

“The Kalahari has to be heaven on Earth,” I added with smile.



Typhlosaurus lineatus (*Acontias kgalagadi*); Lined Kalahari Legless Skink) by Aviad Bar.



Acontias (Typhlosaurus) gariiepensis (Mier Kalahari Legless Lizard) by Yannick Francioli.



Boy swimming with dog.

110. *Geochelone pardalis* (Leopard Tortoise).

It was Red Bud's turn to select a herp species to focus on. And leave it to him to think outside the squamate box. "I want to see *Geochelone pardalis*. All the world loves a tortoise and so do I. Besides, our dear friend, Paul Martin, may just have gotten this one all wrong. He thinks *Geochelone* disappeared from North America because people ate them all. Well, here is a beautiful large *Geochelone* living happily with humans."

Our newly loquacious Leto turned defensive of the San, and replied, "My dearest Red Bud, yes, all the world does love a tortoise. And as my friend Xi could tell you, most San would never harm the *Geochelone*. That would incur bad hunting luck, and this belief may be important in the survival of these wonderful animals in the Kalahari. Unlike North American native people, the San have a huge diversity of wildlife to sustain them and do not need to eat tortoises. I do know a tortoise haven and will happily lead us there to admire them."

As with all things Kalahari, it was a bit of a walkabout to get to the *Geochelone* honey hole. But we were happy to be cresting the beautiful red dunes once more and feasting our eyes on the lush green acacias of the streets. When we arrived at the locality we were absolutely blown away. We succeeded in finding seven beautiful adult tortoises.

"How come they are so abundant right here?" asked Red. "Well, my dad is terribly jealous of this rancher as he got rain two years in a row and the annuals and grass have grown on his ranch like you wouldn't believe. Tortoises move slowly, but they know to plod off down the street to where the grass is greenest, and that contributes to their success in the sporadic rains of the Kalahari," replied Luan.

And of course Red Bud put on a *Geochelone* dance. I was a bit worried just what the kids might think about such a performance, but they loved it, and enthusiastically joined the finale, 'El Gran San Pardon of the *pardailis*,' and we gently laid hands on the carapace of each *Geochelone* to wish it a long life.

We trekked back to the water tank. "Last one in is a rotten egg," sang out BB this time. But our swim was a little sad this afternoon because we would be leaving the Kalahari early tomorrow mourning.

This whole experience with Luan, Leto, and Xi had changed my life forever. During our smokeless after-swimming "hour" that afternoon I found I could speak from my heart to these kids and tell them how much I loved them and how painful it was for me to leave them. They were young, yes, but they had already been

through much in their young lives, were much more than “kids,” and did not hesitate to reciprocate my feelings and express their love.

It was quite painful to leave the "kids" and the beautiful red dunes of the Kalahari, but we were optimistic that the future of the desert would be in the good hands with Luan, Leto, Xi, and their dreams.

Kalahari dunes by Oleg Znamenskiy



Geochelone pardalis (Leopard Tortoise) by Bernard Dupont.





Kalahari Desert sunset

Chapter 9. The Atacama Desert

111. *Nasua narica* (White-nosed Coati).

We were back in Tucson and attending the University of Arizona. But our attitude had improved dramatically. We were no longer just dragging our asses to classes but for the first time we had come to enjoy the college experience. We had moved out of the pre-med sewer of classes taught to brain-dead "doctors-to-be" by professors who had not the charisma of an earthworm.

We were now participating in intellectual adventures, three buds excited about the evolution of the herpetofaunas of the deserts of the world. We were in seminar courses discussing topics dear to our hearts with professors enthusiastic about species formation, population genetics, phylogeography, history of Southwestern naturalists, biotic communities of the Southwest, biota of the Madrean Archipelago, Pleistocene vegetation changes, and the extinction of the megafauna. We were three buds in a candy shop.

Art Cecil, a kid from Rincon High School, began volunteering with me in the herp collection and injected new excitement into our field adventures. We started anew to explore the Madrean herpetofauna with his young enthusiasm, and we headed out regularly on overnight field adventures.

Art Riser, a wild-lifer, and I followed a coati troop around in the Galiuros. He and I slept with them and we became accepted as members of the troop. In Ichthyology class we traveled throughout Arizona documenting the fresh water fish fauna of the state. This turned out after all to be a great university and we loved it.



Left, Art Cecil; right *Nasua narica* (White-nosed Coati) by Leofleck via Wikimedia

112. *Microlophus peruvianus* (Peru Lava Lizard).

A gift envelope arrived from Erik in OZ for Best Bud's birthday. It contained three open round-trip tickets to Lima and a month's Rover rental to explore the Atacama Desert of Peru and Chile. It is the driest desert on Earth, and thus of great interest to us as developing desert biologists. But due to the Humboldt current sweeping up from the Antarctic, like the Namib, it is a cold fog-shrouded desert.

Lima was a real night mare and we hoped to rent the Rover, buy a few supplies, and escape in less than a day, just as we had done in Windhoek. In our emails to the car rental agency we had detailed our plans and the nature of our herp adventure, and in retrospect that may have been unwise.

At our scheduled appointment time, a captivating young field biologist, Gabriella, just happened to be sitting in the office of the agency. She was interested in continuing her studies of the desert wildlife, more than just hinting she would like to join us for part of the trip. We said we were delighted to have someone along who knew the desert and the wildlife, and we switched our rental from a two-door to a four-door Rover.

After buying the usual supplies, we were happy Gabriella could tell us the shortcuts and back roads to get us out of this dreadful city as quickly and painlessly as possible. With Lima in the rear view mirror we were off on our Atacama adventure.

We were shocked by the totally barren landscape. This was certainly no Kalahari, and its extreme aridity made even the Namib seem lush. Gabriella pointed out the lomas where condensation was a bit higher and a few plants were in evidence.

“*Microlophus*,” sang out BB. “This is *peruvianus*, the most widespread lizard here in the desert, recognizable by its distinctive gular chevrons,” Gabriella pointed out. She appeared quite knowledgeable about lizards, but to Red and me it seemed her lessons quickly evolved into a very private affair with BB.

Night fell, we were exhausted from our long flight and started to look for a place to spend the night. “I prefer to camp down on the sand of the beach, much softer than the bare-assed desert,” Gabriella exclaimed. We found a convenient track and stopped just above the high water mark and threw our sleeping bags down in the soft sand.

There was a broad expanse of beach, but Gabriella laid her bag right next to mine and got completely undressed, exhibiting her exquisite body in the moonlight..



Microlophus peruvianus (Peru Lava Lizard) by Uwe Schüter.



Microlophus peruvianus (Peru Lava Lizard) by Julio Reyes.

113. *Microlophus occipitalis* (Knobbed Lava Lizard).

The fog was so thick in the morning I could cut it with a knife and I had a lot of trouble waking up. Eventually I managed to crawl out of my bag and chug down my usual caffeine and sugar fix. “When does the fukin fog burn off?” asked BB.

“About noon,” Gabriella answered. We decided to start driving rather than wait for the sun.

Whenever we came across a pod of surfers in the water Gabriella asked me to stop the Rover and she got out her binoculars for a closer look. We started to wonder if they were the desert “wildlife” she had said she wanted to continue studying. About the fifth stop she announced with a smile that these were her friends and she asked me to drive down to the beach to meet them.

She introduced us to Liam, Leonardo, and Jaden. Like all surfers they had very buff bodies and big broad smiles. It did not take Red’s expertise in human affairs to diagnose Gabriella’s dilated pupils, prolonged eye contacts, and darting glances at well-selected anatomical features of the three surf buds. This magnetism was quite understandable, but we were not encouraged by the fact that the smiles of all three surf buds disappeared entirely when interacting with Gabriella.

The wonderful thing about Red is that besides having natural born instincts about affairs of the heart and body, he has even greater instincts about how to deal with them. His incredible people-skills swung into action. He explained to Gabriella and the surf buds our strong interest in understanding the evolution of the Earth’s deserts. He made it clear how exploring them on our own was a very important part of that, and he gave specific examples from our past adventures.

When we climbed back into the Rover without Gabriella and her sleeping bag, she had a big broad smile, but none was to be seen on the faces of the three surf buds.

We were once again three herp buds tightly packed on the front seat of a Land Rover and we started our Atacama adventure anew. “There is no one for a hundred miles around here. Lets just drive out onto the beach and enjoy a dip in the cold Humboldt current. Last one in is a rotten egg,” sang out Red Bud, and we stripped and dove in. It was certainly not the warm Kalahari cattle tank we enjoyed with Luan and Leto but it was the real world here with the Humboldt sweeping up from Antarctica.

We climbed out of the icy water and sat together feeling the warm sun on our bodies. Red Bud got up and put on a most amazing hum bolt current dance, his humming and aerial lightning bolt leaps connected by flowing current movements.

“Will you look at those fukin lizards? This has to be the key to understanding the herpetofauna here,” exclaimed BB. We were shocked to see five *Microlophus*

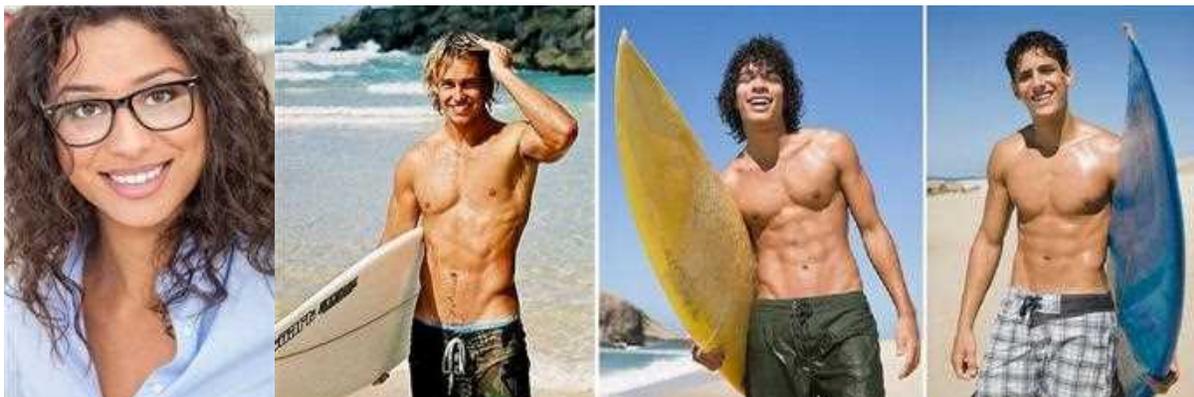
running across the sand just above the high tide snapping up isopods and other crustaceans.

We sat for a little long while enjoying the lizards foraging, ecstatic over our discovery of just how they survive in this narrow strip of cold desert. We realized this discovery was the essence of our herp adventures that Red Bud had so eloquently described to Gabriella and the surf buds.

Eventually BB walked out and noosed a male and a female. “This is *occipitalis* found in the northern part of the desert. It is recognizable by its high dorsal crest and the dark spot on the interparietal scale.” We were absolutely amazed how much BB had learned from his very private lessons with Gabriella, but we refrained from ribbing him about it as we were best buds.



Microlophus occipitalis (Knobbed Lava Lizard) by Nacho Tavera.



Gabiella, Liam, Leonardo, and Jaden

114. *Dicrodon guttulatum* (Peru Desert Tegu).

The Atacama does eventually heat up in the afternoon and we stopped to sit a spell in the shade of a large spreading mesquite. That is where we made our second discovery.

A large teiid that looked for all the world like a giant *Aspidoscelis exsanguis* was foraging with its characteristic jerky movements near the trunk. We expected to see it scratching up some termites but we were absolutely blown away when it ascended the mesquite and devoured a green pod.

“Holy shit, will you look at that. This fukin desert does have its surprises. We have crustacean feeding lizards on the beach and pod eating lizards in the mesquites, *Dicrodon guttulatum*,” sang out Best Bud with a huge smile.

I am starved. There is a small town in the dunes over there, lets go see what they have to eat,” proposed BB. We were absolutely enchanted with Santa Rosa nestled in the dunes around the oasis. There was one small restaurant with metal tables and folding chairs.

“Hoy tenemos barbacoa de chivo, muy sabrosa,” recommended Francisco the kid waiter. “Tres ordines, por favor,” responded Red with a smile.

Anyone who has struggled with addictions realizes that the temptations come in waves that are sometimes very intense. This was such a moment for the buds. There are many fine wines produced in the southern region here and there were several bottles on display in the old wood rack that stood in a corner of the room. But we had made a blood pact to rid our lives forever of mind-altering chemicals, and Red quickly added, “Y tres jugos de manzana, por favor Franciso.”

BB smiled in relief, “Red Bud, you have saved our asses once again.”

The barbacoa was exquisite and we each had two large helpings, rounded out with frijoles and tortillas. “Tambien temenos flan, hoy,” announced Francisco.

Afterwards we sat on a bench in front of the restaurant soaking up the warm midday Atacama sun, Red, BB, and I feeling our bud bonds stronger than ever.

A boy came riding up on a burro carrying containers and asked if we wanted to buy some water. Our water can was nearly empty and Red was happy to have the

kid fill it. Red never passed up a chance to chat with a kid and he and Raffa had a long lively conversation about the desert and its lizards. Raffa said that his friend Renzo knew a loma with a strange lizard that lived only there.

Red always recognized a great opportunity whenever or wherever it presented itself, and his plans were as nimble as his body. Before BB and I had even blinked he had booked us on “El Gran Aventura a la Loma de Lagartijas Mysteriosas .”

That night I developed a new approach to dealing with the incredibly foggy mornings. I prepared the sugar, instant coffee, and water concoction in my tin cup and set it nearby before I finished off for the night.

This worked like a charm and the three of us were up to greet a very foggy dawn. We decided we would enjoy practicing an hour of deep breathing of the cool moist morning air of the Atacama. This helped us immensely to become attuned to the daily rhythm of this fog-shrouded long strip of desert that clings to the narrow Pacific shelf of the Andean Cordillera.

The guia kids, Renzo and Diego, arrived riding Amigo, and accompanied by their perro Brisa. Noticing Diego had a water gourd, Red asked him, “Quanta distancia?” “Esta circuito,” responded Renzo with a charming smile. “Quantas horas?” Red wisely followed up. “Solamente dos o tres.”

We grabbed our canteens and lizard nooses and headed out on El Gran Aventura de la Loma Mysteriosa.



Santa Rosa



Dicrodon guttulatum (Peru Desert Tegu) by Alessandro Catenazzi.



Left, Raffa; right, Renzo and Diego on Amigo

115. *Philodryas chamissonis* (Culebra Cola Larga de Peru).

So we were off with Renzo and Diego on our gran Loma Mysteriosa adventure up into the foothills of the Andes. We had no trouble keeping up with the guia kids even though they were riding Amigo as they stopped and chatted with every muchacho they encountered. They seemed to relish showing off their three pet gringo lagartijeros, especially Red with his bright hair.

I started to get grouchy from all the delays, worrying that we would miss lizard golden hour at the loma.

“For shit’s sake Bobbie Boy can’t you just relax and enjoy life. We are not on a goddam major herpetological expedition here, we are just having a little fun adventure with some kids from Santa Rosa. You have to learn to take life as it unfolds.” “Ah, Red Bud, you are so on all the fukin time,” I said trying to smile.

And Red Bud was indeed right on. One of the kids Red chatted with said his brother Sergio was interested in snakes and could show some to us. “Vamanos, amigo,” encouraged Red.

“You see, Bobbie, how it goes. We have found absolutely no snakes on this entire trip and now we have a lead on one,” Red encouraged again.

Sergio turned out to have a serious interest in nature and was watching birds when we found him. “Me gustan muchas las culebras. Viven aqui en las piedras dos especies, Cola Corta y Cola Larga,” explained Sergio putting his binoculars down.

Sergio immediately started flipping rocks like a wild maniac. “Aqui esta Cola Larga,” announced Sergio. “*Philodryas chamissonis*,” sang out BB. I had no more than gotten my first snake photo of the trip when BB joined Sergio in the

flipping frenzy and sang out, “*Tachymenis peruviana*.” “Cola Corta.” declared Sergio.

After I photographed both snakes, Red gave Sergio a broad smile and a hug. I can just hear Sergio around the dinner table for many years to come, “Y entonces este pinchi pelirrojo lagartijero me dio un abrazo.”



Sergio



Philodryas chamissonis (Chilean Green Racer) by W. Griem. .



Tachymenis peruviana
Manu National Park, Cusco, Peru
© Patrick Campbell

Tachymenis peruvianus (Peru Slender Snake) by Patrick Campbell.

116. *Dicrodon renzodiegoi* (Renzo and Diego's Desert Tegu).

We stopped for the night at the home of yet another kid, Arturo. Foggy dawn arrived and fortunately Arturo had some Nescafe and sugar to get our rusty neurons firing. His friend Beto arrived to join us, so setting out on the gran lagartija misteriosa expedition from Arturo's casa were total of seven of us: Arturo, Beto, Renzo, Diego, Red, BB, and I.

The youngens and BB were like wild horses rearing to go, so they just went streaking on ahead, and Red and I made the climb at our more leisurely pace. It was indeed a Loma Seca and the vegetation was very sparse, but I felt that portended well. I guessed the mystery lizard was a teiid and they thrive in open sunny habitats.

When we met up on top, BB and Arturo were deep in a personal conversation of some sort and did not even look up.

After we rested a little long while, the fog started to burn off and we set off in teams to walk the top of the Loma: BB and Arturo; Renzo and Diego; and Beto,

Red, and I. After an hour I felt the substrate and it seemed warm enough for teiid activity to commence and my anticipation and excitement were palpable.

Another hour and it was hotter than shit, but we kept making our rounds, hour after hour, and no one had sung out. I started to get very, very depressed, but good ol' Red Bud kept encouraging me to keep on trudging. After two more hours Beto, Red, and I laid down in despair under a mesquite. As BB and Arturo approached I could tell just from their walk and expressions they were empty-handed also.

“Maybe it’s the wrong season,” suggested BB. “When did Renzo and Diego see these phantom lizards? You don’t suppose they just made this whole gaddam thing up? Where the fuk are those kids anyway?”

None of us had a clue where they went. “They tied up Amigo back at Arturo’s casa. I bet they just walked back down there and are riding away laughing at us all way back to Santa Rosa,” BB suggested.

I just wasn’t sure what the fuk to do, “Its getting late, but I don’t think we should head back down without those kids.”

“Lets all five just calm down, sit in a lotus position here under the shade of this lone mesquite, fix the image of the smiling faces of those two kids in our minds, and meditate silently repeating, “Sabbe satta sukhi hontu,” “All living beings, may they be well and happy,” suggested Red Bud.

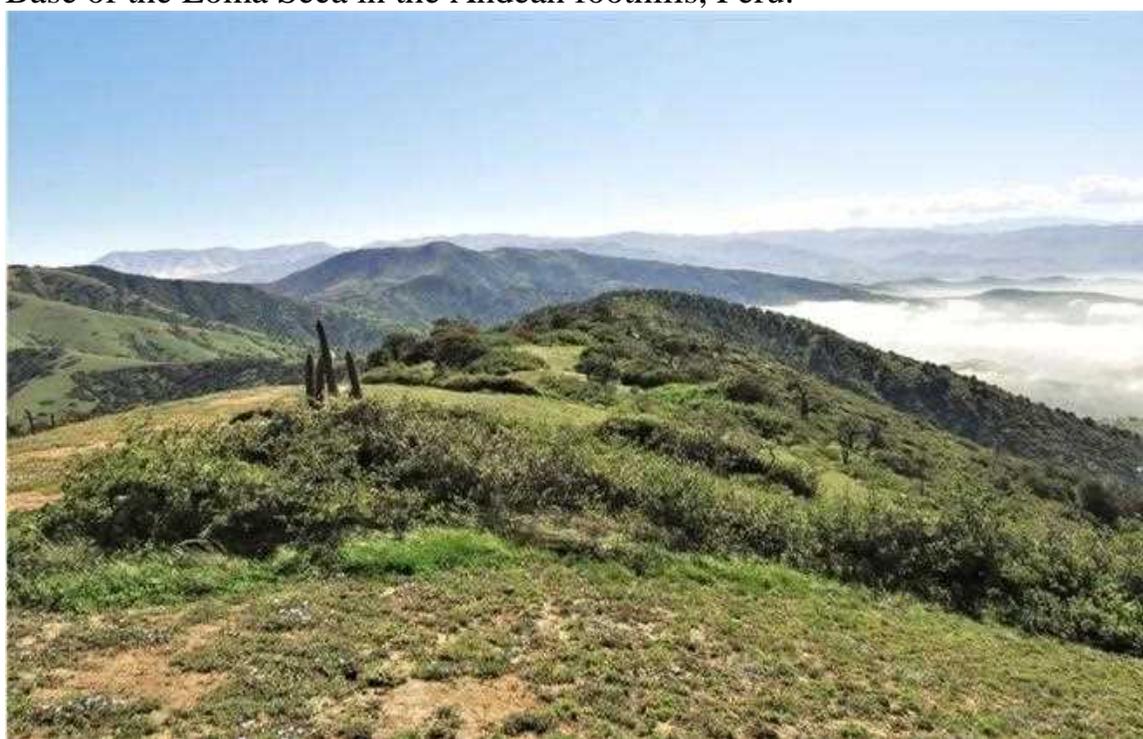
We sat there a little long while and then I thought I could hear laughter far away. And there they were, two bros, arms around each other, walking towards us with the greatest smiles I have ever seen. When they arrived all of us smothered the kids in hugs.

Then Diego pulled a plastic bag out from under his shirt.

In it were seven *Dicrodon* with the keeled posterior dorsal scales of *D. heterolepis* and the spots of *D. gutulattum*. And all seven were females of what was to become *Dicrodon renzodiegoi*, a unisexual species that we hypothesized to have originated via hybridization between *D. heterolepis* and *D. gutulattum*.



Base of the Loma Seca in the Andean foothills, Peru.



Top of Loma Seca, Peru.



View from Loma Seca, Peru.

117. *Rhinella atacamensis* (Atacama Toad).

We photographed and released the *Dicrodon* that Renzo and Diego collected and descended Loma Seca Misteriosa to Arturo's house. We were out of water and he took us to his pozo to fill our canteens. It was too late to continue back to Santa Rosa so we decided to spend the night. Best Bud was happy to have more time to spend with Arturo and the two had become glued to one another.

Arturo said some biologists from Chile had visited last year to study the toads on nearby Loma Neblinosa. They believed the amphibians were an undescribed species related to the Atacama Toad.

We did not bring any headlamps but Arturo lit a lantern for our toad walk. The fog was incredibly thick up on Loma Neblinosa and we were amazed how lush the vegetation was compared to Loma Seca. We soon found our first toads related to *Rhinella atacamensis*, and I got good photos that I planned to email to the Chileans' for their species description.



Arturo's house and well by Tatsiana Volskaya.



Left, Fog on Loma Neblinosa; right, *Rhinella atacamensis* (Atacama Toad) by Pedro Vargas.

118. *Dicrodon heterolepis* (Ecuador Desert Tegu).

The next morning Red had use every tactic in his book to pry BB loose from Arturo for our descent. In Santa Rosa we said a sad goodbye to Diego and Renzo and started the long drive back to the Lima airport to return flight to Tucson.

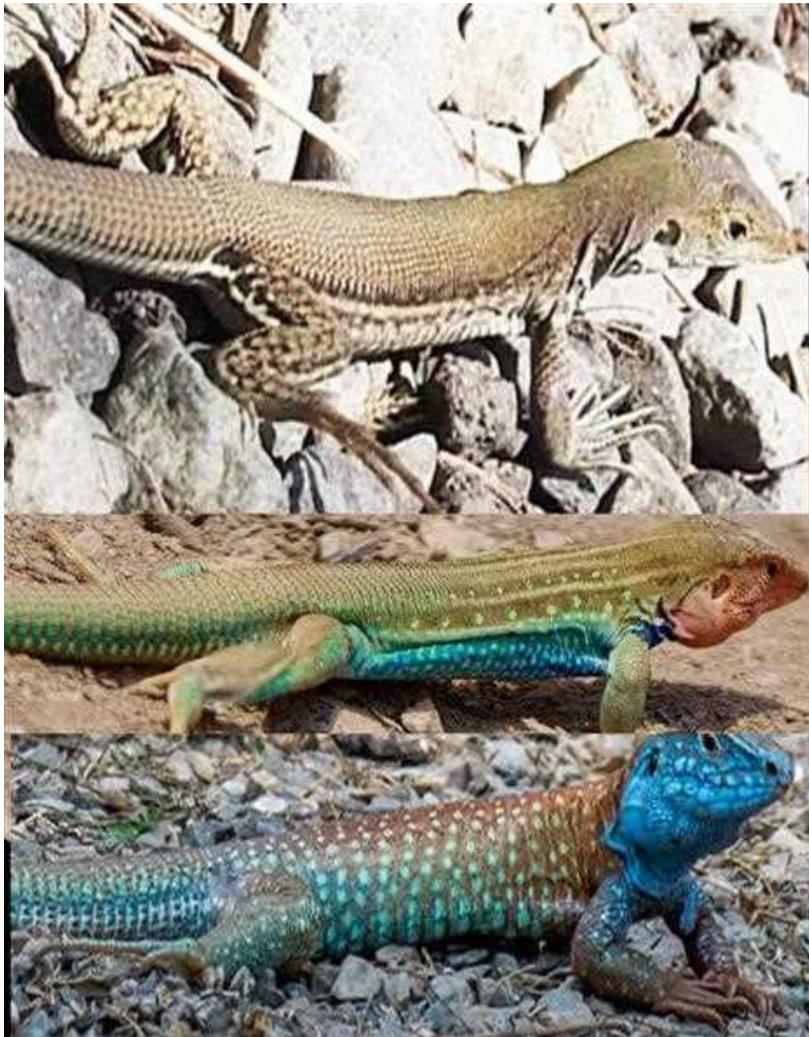
“Herpetologists,” sang out BB. Two women were noosing a lizard from a mesquite near the road. We were interested in relaying our discovery to someone in Peru so we stopped and introduced ourselves.

It turned out Clara was one of the herpetologists on the faculty of the Universidad Nacional Mayor de San Marcos in Lima and was with graduate student Mariana who was studying *Dicrodon heterolepis*. When we told them about our discovery of an all-female species of the genus they were absolutely thrilled and asked if they could see the specimens. We explained that the lizards were photographed and released on Loma Seca as we did not have a collecting permit. We copied our photos onto a thumb drive for them.

They asked if we could take them to the loma. Unfortunately we did not have time to do that as we had reservations to fly out of Lima tonight. We relayed the whole long saga of Renzo and Diego and told them how they could find the kids in Santa Rosa.

We tactfully mentioned our strange experience with Gabriella. Clara laughed and said that Gabriella was no longer a student in Biology but had transferred to Anthropology and was gathering data for her doctoral thesis on sexual behavior of surfers. We laughed, but it turned out it was not a joke and her insightful papers based on a large data set on the topic are well-regarded.

The chance meeting with Clara and Mariana was most fortuitous and the start of a long term friendship and collaboration with both of them on the herps of the Atacama, including the description of the new all-female species, *Dicrodon larenzodiegoi* that originated via hybridization between *D. heterolepis* and *D. gutalattus*.



Top, *Dicrodon heterolepis* (Ecuador Desert Tegu) by [turrifankuki](#) via ArgentiNat; middle, *Dicrodon larenzodiegoi* modified from *Dicrodon heterolepis*, original by Claudia Koch; bottom, *Dicrodon gutullatum* (Peru Desert Tegu) by Juan Palmero.



Arturo



Beto



Renzo

Diego



Gabriella



Mariana

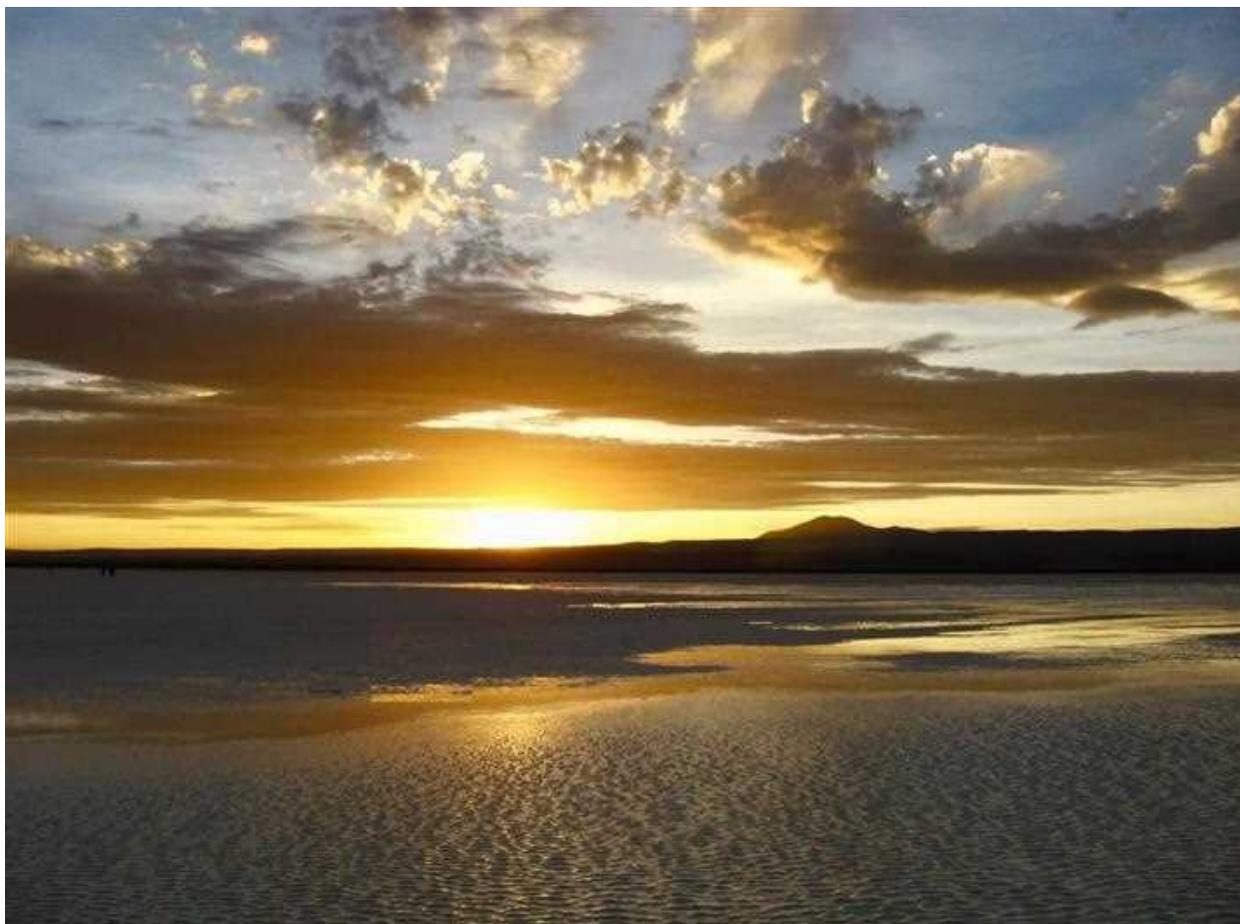


Clara



Bobbie Boy, Best Bud, and Red Bud





Atacama Desert sunset, Peru

Chapter 10. The Arabian Desert.

119. Big Red.

I walked out the back door of the Zoology building and there on the porch she stood, the “girl” with the red hair I had let slip away up on Tumamoc where she disappeared into the desert carrying a Ringtail in a Havahart.

“Bobbie Boy, snap out of it, do something, anything, grasp the moment, don't let her disappear again.” So, I made brave to ask, “Hi, where did you get that fetal pig?” “Its from my embryology class.” She had a very infectious smile and was so easy to talk with that I recovered immediately from my stage fright.

In the Zoology Department she became known as “Big Red,” the nickname Dr. Bajo bestowed on her.

“One thing led to another,” as the standard expression goes, and she invited me to visit her at her casa down near San Xavier del Bac.

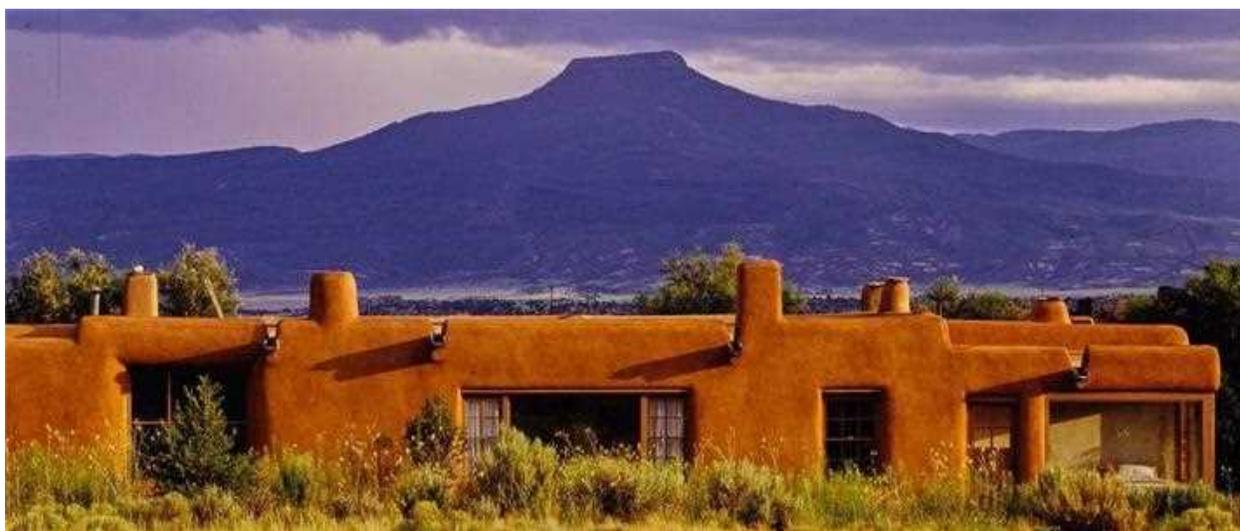
My arrival was announced by a pack of feral dogs. It was a sprawling adobe standing in a *Larrea* flat. She opened the door and her smile was irresistible. The interior was tastefully done with framed prints from Audubon's Quadrupeds that hung on stark white walls above the gleaming Saltillo tiles. We did not chit chat and she led me to a thick pad under a spreading Blue Palo Verde (*Parkinsonia florida*).

We both had Thursday afternoons free and they became our standard hook up time, romping under her Palo Verde. We did not talk much and this suited us both as we were not there for companionship and we just had a lot of physical fun together. I came to fully appreciate Joe Marshall's lecture.

This was a great period in my life and the pleasure with Big Red did not interfere with her life, my pursuit of herpetology, or my relationship with BB and Red Bud. She and I just savored our fun together and lived for the moment without commitment.



Big Red.



Big Red's adobe (Georgia O'Keeffe's house).

120. Oman bound.

An envelope arrived from Erik in OZ for Best Bud's birthday with three open round trip tickets to Muscat, Oman, and a month's rental of a Rover. We were much more excited about this trip than we had been about the one last summer to the cold foggy Atacama Desert.

"I can't wait to get down there and see an Arabian Boa, *Eryx*," I enthused, "It's a *Naja arabica* for me," BB exclaimed with more excitement than I had heard from him in months. "And I want to get to know the belly dancers during midnight at the oasis after we have put our camels to bed," exclaimed Red Bud with a big smile. "Dr. Robison cautioned us to appreciate that this is a very different culture and we need to make a special effort to understand and respect the people's customs, values, and particularly their sexual mores," I cautioned.



Left, *Naja arabica* (Arabian Spitting Cobra) by Matthijs Kuijpers; right, belly dancer.



Left, Michael Robinson modified from a photo by Osacar Soule; Arabian peninsula from Google Earth.

121. *Echis carinatus* (Saw-scaled Viper).

On the long flight to Oman we had lots of time to plan our Arabian Peninsula adventure. “Dr. Robison, whom we met in the center of the Namib, is on the faculty of the university in Muscat and I have been emailing him about our explorations. He can’t join us in the desert as he is tied down teaching his classes, but he suggested three areas to visit, the Hajar Mountains in the north, the Khali Sand Desert in the West, and the Dhofar Mountains in the south. Where would you guys like to start?” I inquired.

Assertive Red Bud emerged, “We should start in the Khali. Sand is a critical habitat of deserts and we need to experience it first to assess the nature and degree of the arenicolous adaptations in the Arabian desert.” “I agree, lets go to the Empty Quarter first,” chimed in BB. “You buds got it,” I concluded.

After landing in Muscat, we followed our usual drill: taxi to the rental agency for the Rover, water and gas cans and tank filled, coffee, sugar, and canned crap purchased from the supermarket, city in the rear view mirror, and we are off into the night on our first Arabian snake cruise.

Echis carinatus sang out BB. “Wow, Best Bud that was fast and what is a great arrival present,” I exclaimed.



Echis carinatus (Saw-scaled Viper) by Mvshreeram.



Echis carinatus (Saw-scaled Viper) by H. R. Ekson.

22. *Varanus griseus* (Desert Monitor).

We were three happy buds, lying in the sands of Oman, gazing up at the star studded sky, thrilled to begin experiencing yet another of the Earth's great deserts.

We arose with happy hearts to greet the dawn and savor our first glimpse of Jiddat al-Harasis, the stony desert. After the caffeine and sugar took effect and the fire ball warmed the sand, we were off on our first Oman reptile walk.

"*Scincus scincus*," sang out BB, grabbing the lizard swimming through the sand. "Wow, would you look at that extreme shovel snout, it's incredible. This skink rivals the gerrhosaurid *Angolosaurus* of the Namib in the sharpness of its rostrum. This has to be a truly ancient desert to have led to the evolution of such extreme sand adaptations," I proclaimed.

Best Bud was more given to logic, "But Bobbie Boy, just how can you tell whether the amount of time, rather than degree of aridity, or the vastness of the sand sea is the more important factor in evolution of these features?" "You have a very good point there and we will eventually figure out a way to address the question. I can envision our graphs showing snout sharpness and supraocular horn height over precipitation, or over sand area, or over geological age of the desert. You don't say much Best Bud, but when you do, you hit the nail right on the head every fukin time," and I gave him a huge smile.

Photos secured, we wandered on savoring the Arabian Desert.

"*Acanthodactylus schmidtii*," announced BB and he adroitly noosed the lizard for me to examine. "Holy shit, this lacertid goes one step further than *Uma*, it has fringes projecting from both sides of the toe," I exclaimed, continuing my appraisal of the degree of sand adaptation.

Just then a magnificent *Varanus griseus* wandered into view eating a snake. "This is a seldom appreciated aspect of some deserts, the top carnivore is a monitor lizard," I remarked.

I think we should spend one full day right here to let the spirit of this place soak in. There is a lone tree over there, let's sit in the shade of that tree for much more than a little long while," proposed Red Bud.



Scincus scincus (Sandfish Skink) by Chris Mattison.



Varanus griseus (Desert Monitor) by Aviad Bar.



Left, *Acanthopus schmidti* (Schmidt's Fringe-fingered Lizard) by Omid Mozaffari; right, meditation tree in the Jiddat al-Harasis, Oman.

124. *Cerastes gasperettii* (Desert Horned Viper).

Red's idea of sitting under the tree for a spell was working and we were starting to feel one with the stony desert. After a few hours, a kid came by on a camel and of course Red trotted off to chat with him.

"Omar says that if we drive down that track for an hour or two tomorrow it will take us to a wadi where we can arrange for camels and a guide to take us deep into the Empty Quarter. He says there is nothing in this region to mark the Oman border and people pass back and forth freely. This seems an excellent opportunity for us to head far out into the very heart of the giant Rub' al Khali sand erg," proposed Red. "Let's go for it," BB and I enthusiastically agreed.

"I liked Omar, but he had a sort of 'standoffish' air about him. I have chatted with kids all over the world, but he is the first one I failed to connect with. Maybe as a stranger I was just a bit too 'forward.' I will try to be more reserved in the future with my interactions here," Red remarked, not hiding his obvious disappointment. We got out our headlamps and walked off into the inky Arabian night with high hopes.

"*Stenodactylus*," announced BB. "Holy shit this sure looks for all the world just like the *Colopus* we saw in the Kalahari. Do you suppose they are closely related, or is this yet another example of desert convergent evolution?" I pondered.

"Hot dog, *Cerastes*," screamed BB. After examining the snake I concluded, "The horns put our sidewinder's to shame, and they are even higher and more pointed than the *Bitis caudalis* we saw in Namibia. Convergent evolution rules supreme in the deserts of the world and it knows no limits," I declared. BB queried, "But how are you going to distinguish convergence and parallelism from homology. Bobbie Boy?"

We stayed awake a long while after lying down in the sand, enjoying a spectacular display of falling meteors, vowing we would always be three buds together gazing up at the stars in the deserts of the world.



Left, *Trigonodactylus* (*Stenodactylus*) *sharqiyahensis* (Oman Striped Gecko) by Salvador Carranza; Right, Omar.



Cerastes gasperettii (Desert Horned Viper) by Eyal Bartov.



Cerastes gasperettii (Desert Horned Viper) by Sari Barazi.

124. *Psammophis scholari* (Schokari Sand Racer).

We were up at dawn set to leave the stony Jiddat al-Harasis and head for the great sand erg of the Empty Quarter. It was a jolting, teeth rattling, rocky track that jarred and shook the Rover until our brains turned to mush. Many grueling hours later the stones finally tapered off and the soft sand under the wheels was wonderfully smooth and comforting.

"*Psammophis*," BB shouted, and he did a roller and was off like a shot, sprinting up the slippery dune slope, making a flying leap into the sand, grasping the snake, and tumbling back down.

"May I present you the with "*Psammophis scholari*, 'the Coachwhip of Oman' for your photographic pleasure, dearest Bobbie Boy."



Rocky track in the Jiddat al-Harasis, Oman, by Stefan Hochreutene,



Digging the Rover out of the sand.



Psammophis schokari (Shokari Sand Racer) by Guy Haimovitch.

125. *Eryx jayakari* (Arabian Sand Boa).

On the smooth sandy track, I suddenly got that “sinking feeling” as the Rover began to bog, lose its momentum, and then stop forward motion entirely. BB climbed out the window, “We are in deeper than our fukin axel,” he declared.

BB liked the challenge of this type of situation and the physical bud sprang into action. Out with the jack, shovel, and under-the-tire mats. I handed him the tools when he asked for them and an hour later he had the holes filled in and the mats in place under all four tires.

BB called the next shot, “We are nearly to the crest of this dune, so we should try to go forward, not backward. Red, you hop in, put it in compound low, and on the count of three, gun the shit out of it, while Bobbie and I push like hell.

“One, two, three, push,” and Red gunned it all the way up and over the crest. We were over-joyed.

But our joy did not last long as the track soon started to ascend the next dune and we bogged again. “OK this is the end of the road for the Rover. Lets just spend the night here and try to figure our way out of this goddam mess in the morning,” declared Best Bud.

We donned our head lamps and set out once again into the dark Arabian night. Two hours later, BB screamed his guts out, “Holy shit, it’s an *Eryx*. We have ourselves a gen u wine Arabian Sand Boa, complete with a shovel snout, elliptical pupils, and eyes on top of the head. This is the most awesome arenicole in the entire universe!”

Many photos later, with a big smile, Red declared, “Behold Eryx, son of Aphrodite, the goddess of love and passion,” and he put on an incredible “son of Aphrodite dance.”

It was hours of lying in the soft sand, gazing up at the meteors before we fell asleep.



Eryx jayakari (Arabian Sand Boa) by Omid Mozaffari.



Eryx jayakari (Arabian Sand Boa) by Omid Mozaffari.

126. *Phrynocephalus arabicus* (Arabian Toadhead Agama).

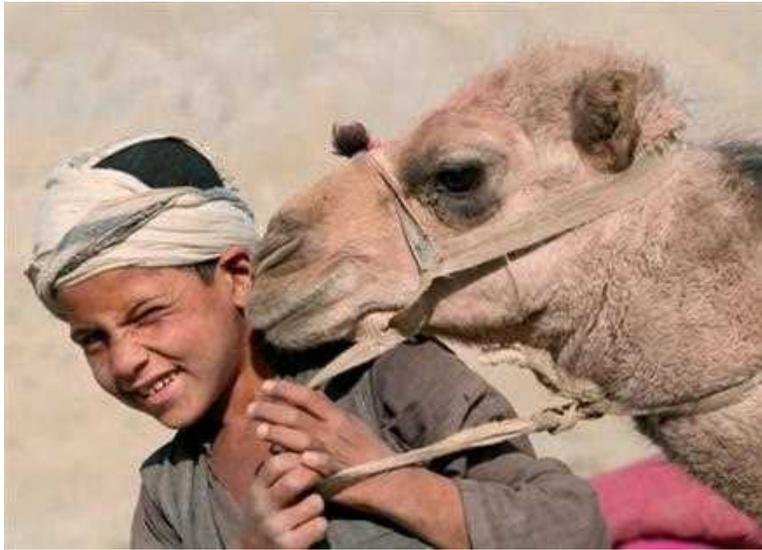
We arose at dawn to the depressing sight of the Rover bogged deep in the sand half way up a dune slope. As the caffeine and sugar reached our blood stream we began to ponder how we could possibly extricate the vehicle and continue with our Empty Quarter adventure.

Just then a kid arrived on his camel. I could see Red was restraining himself to take a slower, more reserved approach with the kids here. It worked well and soon they were buds and Red explained to Abdul what we were trying to do.

“My older brother Jamal and I can help you. We can return with more camels and they can pull your Rover out of the sand all the way back to the rocky track. And if you are interested we could lead you on the camels deep into the desert. We know the small oases for getting water on the journey.”

“That would be absolutely wonderful, Abdul. We would be happy to compensate you and Jamal for this,” Red made brave to suggest. “Jamal and I will be back here in about two hours with the camels,” Abdul assured us as he rode off.

We headed out on a morning reptile walk. “*Phrynocephalus arabicus*,” called out BB while noosing the lizard for me to examine its toes. “This is the only agamid we have seen so far that has toe fringes. They estimate that toe fringes have evolved in lizards an incredible 26 times. The feature must be very effective in increasing speed running across sand to have evolved so many times. It is not known if curling the tail with its black “badge” at the end serves exclusively as predator distraction or also as social communication in *Phrynocephalus*, but it is very much like the tail wagging of *Callisaurus*,” I lectured.



Abdul.

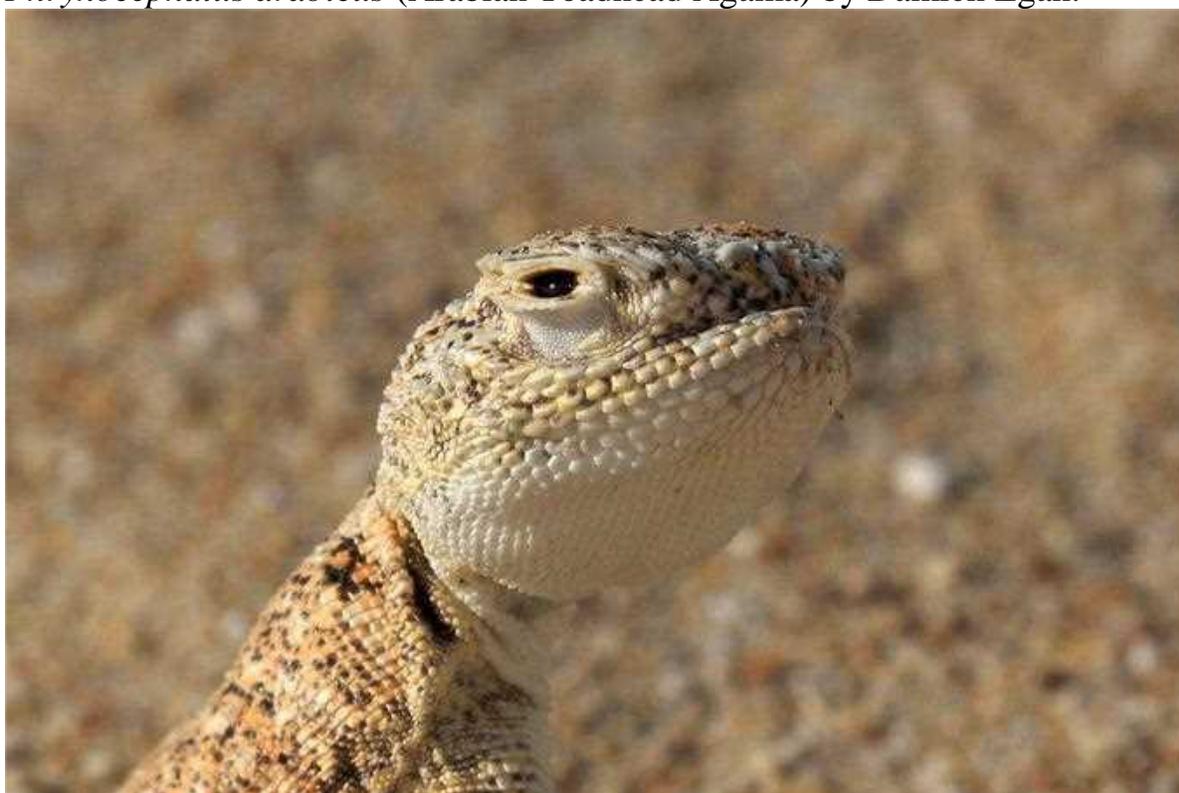


Phrynocephalus arabicus (Arabian Toadhead Agama) by Drew Gardener



56. ARABIAN TOAD-HEADED AGAMA Photo by Damien Egan, National Geographic Al Arabiya

Phrynocephalus arabicus (Arabian Toadhead Agama) by Damien Egan.



Phrynocephalus arabicus (Arabian Toadhead Agama) by Tommy Pederson.

127. *Pseudocerastes Abduljamali* (Abdul and Jamal's Horned Viper).

Abdul and Jamal arrived on their camels leading three for us to ride. They were proficient at hitching all 5 animals to the Rover and managed to pull the vehicle out of the sand and tow it back all the way to the firm rocky track.

We really liked both of these kids and were excited to be off with them on our adventure into the heart of the Empty Quarter. They turned out to indeed know the location of the oases to fill our canteens, water the camels, and sleep each night.

We wandered across the desert at night with our headlamps and the kids searched for snakes nearer the camels. One night when we got back they excitedly reported they had found a snake they had never seen before.

We rushed to the spot and there it was, a previously unknown species of *Pseudocerastes*. We were ecstatic and wanted to give the kids a big hug, but we refrained as we were unsure of whether that would be acceptable to them.

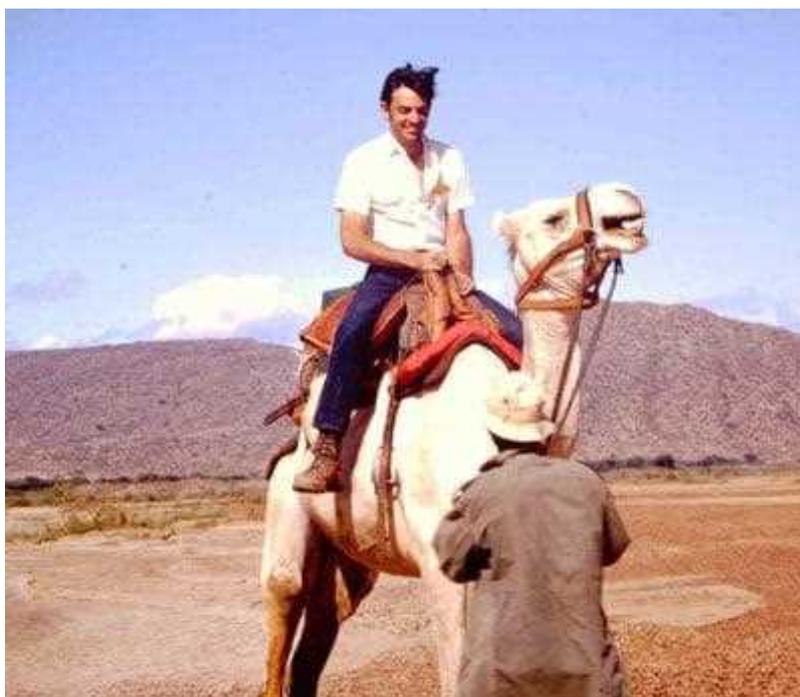
I took a lot of photos to share with Dr. Robison at the university who eventually named the species, *Pseudocerastes Abduljamali*. It is an arenicolous species that differs in having higher supraocular “horns” than *P. persicus* found in rocky habitats on the coast, 200 miles to the east.



Jamal and Abdul



Pseudocerastes persicus (Persian Horned Viper) by Matthieu Berroneau.



Robert Bezy on a camel.



Pseudocerastes persicus (Persian Horned Viper) by Matthijs Hollanders.

128. *Platyceps rhodorachis* (Wadi Racer).

The oasis camps rolled on, one after the other, and we became more and more appreciative of how critical these water sources were to our survival. But we could plainly see they were becoming farther apart and dwindling in size as we headed farther and farther out into the Empty Quarter. Eventually we reached one where Jamal had obtained water in the past, but it was bone dry.

“We and the camels cannot go much farther without water,” he declared with a very worried look.

Fortunately Jamal knew another small oasis a days walk in a different direction that might still have a little water. We dismounted to relieve the camels of their burden and Jamal departed leading all five animals toward the alternative oasis. Fortunately it had not dried up and he was able to water the camels and returned with filled canteens for us to start the homeward journey.

Predictably I was becoming extremely fond of these kids. Red, the ever-the-alert bud, of course saw clearly what was happening and helped me find strength, “If

you love these kids you will see they are one with the desert and belong to the dunes, not you.”

The reptile fauna far out into the erg was absent in the dunes and concentrated in the lush oases. This was more or less parallel with what we observed in the Atacama. There the reptiles were absent in most areas but clung to the immediate shore line for feeding on marine crustaceans or to top of the fog-shrouded cerros. But here there was no fog for water harvesting and no sea shore, but the oases served instead.

I became fascinated by the Wadi Racer (*Platyiceps rhodorachis*) as it embodied the spirit of this desert. It blends into the water with its checkered anterior and into the sand with its braided posterior.

All things have to come to an end and eventually we were back at the Rover saying another tearful good bye to kids we had come to love. Red Bud had refrained from dancing on the trek because he was not sure how these Bedouin kids would react to it. But he made brave to put on a parting Oasis dance and it brought wonderful smiles to the faces of Abdul and Jamal.



Platyiceps rhodarchis (Wadi Racer) by Priscilla van Andel.



Platyceps rhodarchis (Wadi Racer) by Eyal Bartov.



Left, small oasis; right, dry oasis..

129. *Naja arabicus* (Arabian Spitting Cobra).

We left the great sand erg and headed to the Dhofar region. “It’s a verdant tropical paradise as it receives monsoonal rains from the Indian Ocean. It is a beautiful area, it has many reptiles that are found no where else in Oman, and it is well worth a visit,” Dr. Robison had advised when we were planning the trip. After two weeks in the sand erg we were shocked by the wet luxuriant vegetation and waterfalls.

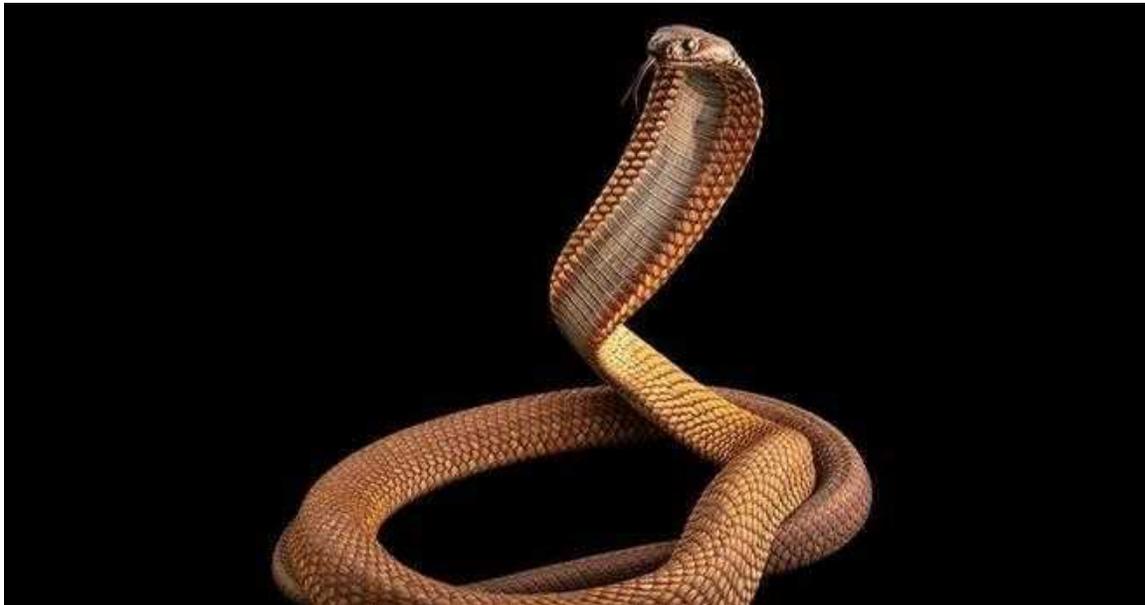
Bitis arietans, yelled BB. We had seen several puff adders in Namibia but this is thousands of kilometers to the north, and we were in the only area where they

occur in Oman. We sat there a long time feasting our eyes on the heavy-bodied adder stretched out in the sand.

A Dhofar kid came up selling a bowl of camel's milk. BB and I were reluctant to drink it as we had heard that bovine tuberculosis occasionally occurs in camels. But good ol' adventurous Red Bud wasn't going to let such a low probability event keep him from enjoying the experience, and he purchased and savored the milk, and of course he took the opportunity to chat with the kid. Hassan said he could show us where he usually sees cobras.

We retrieved a snake stick and goggles from the Rover and were off with Hassan on the grand hunt for *Naja arabica*, a spitting cobra endemic to the Arabian Peninsula. An hour later we arrived at the spot. "There is a long cobra right over there," Hassan said pointing to an absolutely stunning snake coiled at the base of a tree stump. Hassan and Red Bud stayed back while BB and I donned goggles and approached the beautiful serpent for close up photos. I was delighted that BB refrained from molesting the cobra with the snake stick to get it to spit.

We left the Dhofar very grateful that Dr. Robison had encouraged us to visit this beautiful verdant area.



Naja arabica (Arabian Spitting Cobra) by Joel Sartore.



Bitis arietans (Puff Adder) by Julius Rückert.



Ayn Athum Waterfall, Oman, by Mahmoud Ghazal.



Hassan with bowl of camel's milk by agefotostock

130. *Omanosaura robisoni* (Robison's Oman Lizard).

We departed from the Dhofar and headed out across the stony Jiddat al Harasis to the al Hajar Mountains in the far north of Oman. The rugged beauty of the range was spellbinding. It reminded us of the extremely arid ranges in Arizona that we loved to explore and that no one else visited. Some biogeographers have called them the “dead ranges,” but we found they were far from “dead,” but teeming with reptile life.

“Herpetologists,” sang out BB.

We stopped and introduced ourselves to two young women noosing lizards. It turned out that Kaya was a student of Dr. Robison at the University. She and her friend Zoya were studying *Omanosaura*. “We have discovered a new all-female species that arose from hybridization between two species that were previously thought to be just color morphs of *Omanosaura cyanura*. We have a paper in press naming it as *Omanosaura robisoni*.”

We were delighted to meet these enthusiastic students and it was the beginning of a long friendship and collaboration.



Kya and Zoya.



Omanosaura cyanura (Blue-tailed Oman Lizard) by R. Sindaco.



Jibāl al-Ḥajar, Oman, by Lukas Bischoff

131. *Rhagerhis moliensis* (Moila False Cobra).

Kaya warned us that the road deteriorated badly not far above her study area. “We will stop when the road gives out and then head up on foot. Dr. Robison said there are some endemic species atop Jebel al Abyad,” I remarked. We were soon in four wheel drive and compound low.

“Cobra,” yelled BB and he was out the door like a shot, and did a “tailer” on the hooded snake as it was escaping into the rock crevices. “Hot dog, it’s a not a *Naja*, but a cobra-mimic called *Rhagerhis*. Look at that hood. Is it mimicry or just independent evolution of a similar threat display? In North America we have similar display in *Heterodon* and there are no cobras to mimic.” “BB, I don’t know how you can address that question but I hope you can eventually find a way,” I encouraged.



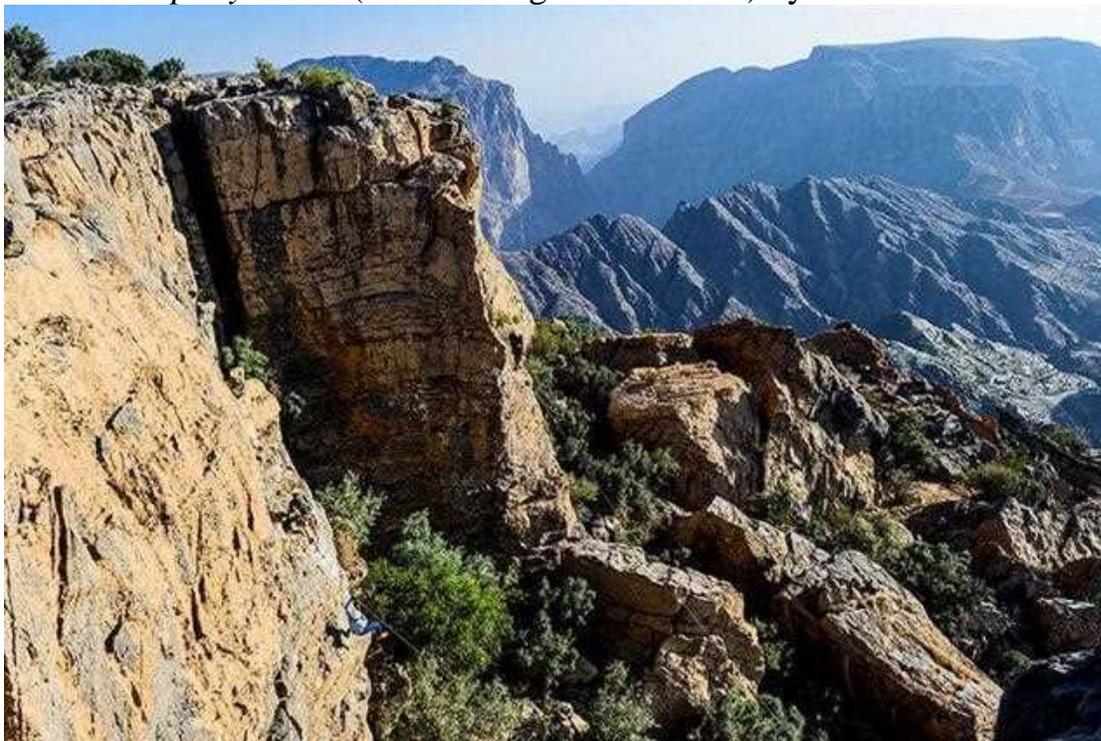
Malpolon (Rhagerhis) moilensis (Moila False Cobra) by Alex Ville.



Naja naja (Indian Cobra) by Kamalnv.



Heterodon platyrhinos (Eastern Hog-nosed Snake) by Laurie Vitt.



Jibāl al-Ḥajar, Oman.

132. *Uromastix bestbudi* (Best Bud's Masitgure).

We tried to gun the Rover up the road, but even in compound low four wheel drive it would not make it another inch forward. There was no place to pull off so we just abandoned the vehicle in the road and struck out on foot.

The sight of the long trail winding up the mountain was overwhelming. But I had met such challenges in the past. I hearkened back to how difficult it was to ascend Weavers' Needle in the Superstitions. But I made that one with the help of Best Bud and we bagged *Xantusia bezyi* in a crevice of the Dutchman's lost vein of gold at the tip of the 4 pm shadow of Weavers' Needle. I was stung by a *Centruroides* scorpion while capturing the lizard, but BB got me down off the spire alive.

BB was chomping at the bit to climb this peak that Dr. Robison believed harbored undiscovered endemics. "I will zoom on ahead and just wait for you two at the top," BB proposed.

"Red and I may or may not make it to the top. If we do not arrive by dark I hope you will come back down and join us on the trail."

The thought of Best Bud going off and climbing that peak solo turned my blood to ice. But Red had finally taught me that you have to give people the freedom to go their own way when they choose, or you are just taking a prisoner.

"Good bye BB, please try to make it back to us alive, we love you." I exhorted. And off he shot to scale Jebel al Abyad.

I actually felt much better once BB set out on his own, as it meant I was no longer holding him back from his own adventure. And Red Bud was extremely supportive as he understood my feelings better than I did.

Red and I stopped and took a five minute rest each hour. Twelve hours later we were only half way up and I could see I just was not going to make it. With Red's encouragement I crawled slowly forward until I hit the "wall," a dizzy spell set in, and I collapsed unconscious due to the glucose and glycogen depletion.

When I opened my eyes there was BB with a beautiful big smile and I knew that he had reached the summit.

"The view was incredible. I could see all the way across the Gulf. And I discovered a new species on the peak. I will show it to you in the morning," BB said with more enthusiasm than I had ever heard from him.

We laid down for the night in the middle of the trail, three buds gazing at the incredible star studded sky above the al Abyad, vowing never to part and it was hours before we drifted off into a deep delicious sleep.

At dawn, BB woke Red and me to see his discovery. “Holy shit, look at that *Uromastix*, it has the loose baggy skin of *Sauromalus*, the spiny tail of *Enylosaurus*, and is even greener than an *Iguana*. Large herbivores that are adapted to rock crevices are another theme of desert lizards,” I exclaimed.

Before we left Oman we stopped and shared the photos of the lizard with Dr. Robison at the University. He was absolutely ecstatic. “It’s clearly a new species. I will name it *Uromastix bestbudi*.”



Jibāl al-Ḥajar, Oman.



Left, Weavers Needle, Arizona; right, *Xantusia bezyi* (Bezy's Night Lizard) by Erik Enderson.



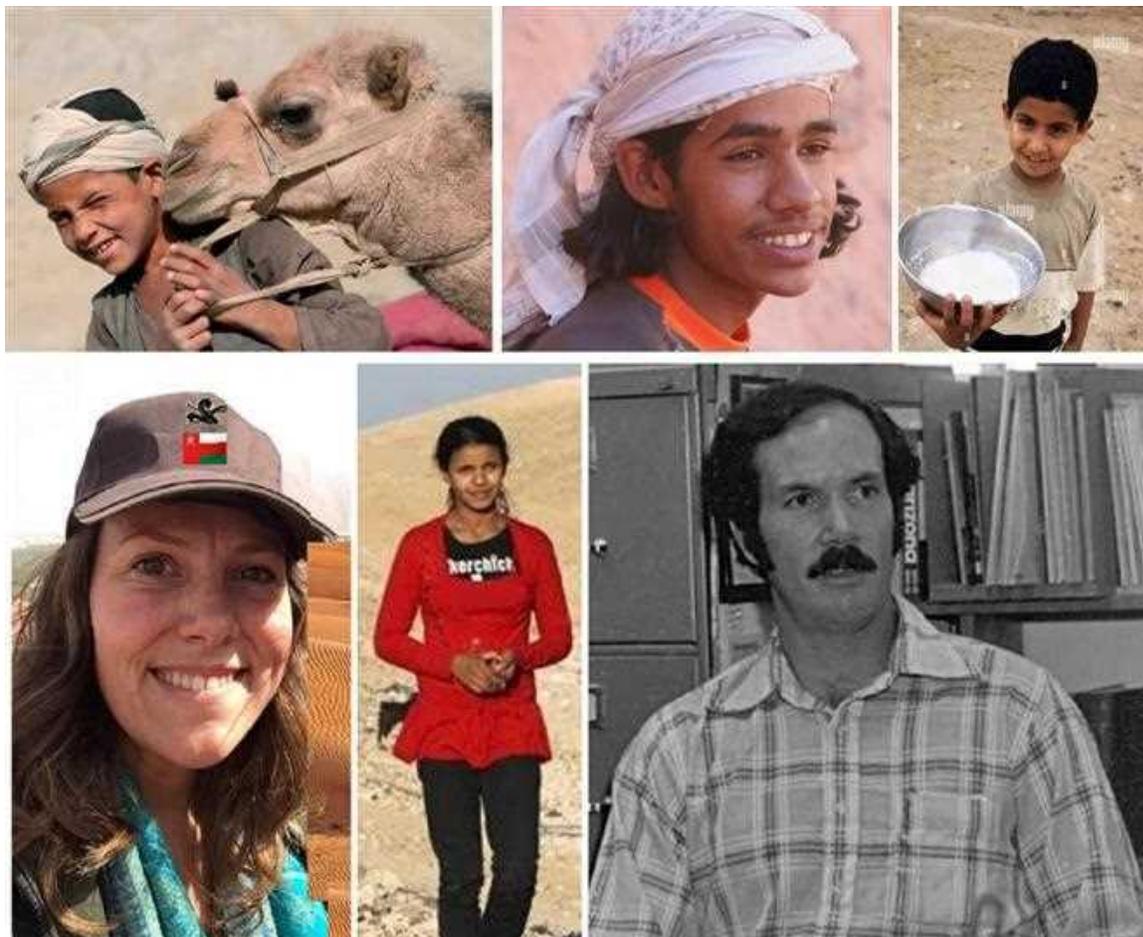
Uromastix aegyptica [*bestbudi*] (Egyptian Mastigure) by Brell Benz.



Ctenosaura (Enyaliosuarus) clarki (Balsas Armed Lizard) by Rosy Badillo.



Sauromalus ater (Common Chuckwalla) by Erik Enderson.



Camel train.



Arabian Desert sunset.

Chapter 11. A New Beginning

133. Ur-o-sore-ass or-nate us.

Best Bud, Red Bud, and I were back in Tucson for our senior year at the University of Arizona. I resumed Thursday afternoons romping with Big Red under her paloverde. But things started to change for us. After we had our fill of physical adventure, I found I wanted to linger longer and longer, pretending to be interested in the *Urosaurus ornatus* on the paloverde.

I started to wonder about our future.

“Are you going to graduate school?” I asked.

“Yes, I have been accepted at the University of New Mexico, but I am not enthusiastic about it,” she replied.

“Have you ever considered having a kid?” I bravely asked.

“Yes, I have and that is something I am very enthusiastic about,” she answered without hesitation.

“Lets have a kid together,” I proposed.

She did not hesitate a second, “Yessss! Let’s do it. I will stop the pills tonight,” she replied with a huge smile. Then

She kissed me in a way that I'd never been kissed before

She kissed me in a way that I want to be kissed forever more.

133. Ur-o-sore-ass or-nate us.



Urosaurus ornatus (Ornate Tree Lizard) by Will Flaxington.



Parkinsonia florida (Blue Palo Verde).



134. The lucky one.

I put down the Rapidograph pen and turned in my final exam for Biogeography. My last undergraduate class at the University of Arizona was over. I joyfully walked back to the casita to celebrate the moment with Best Bud and Red Bud.

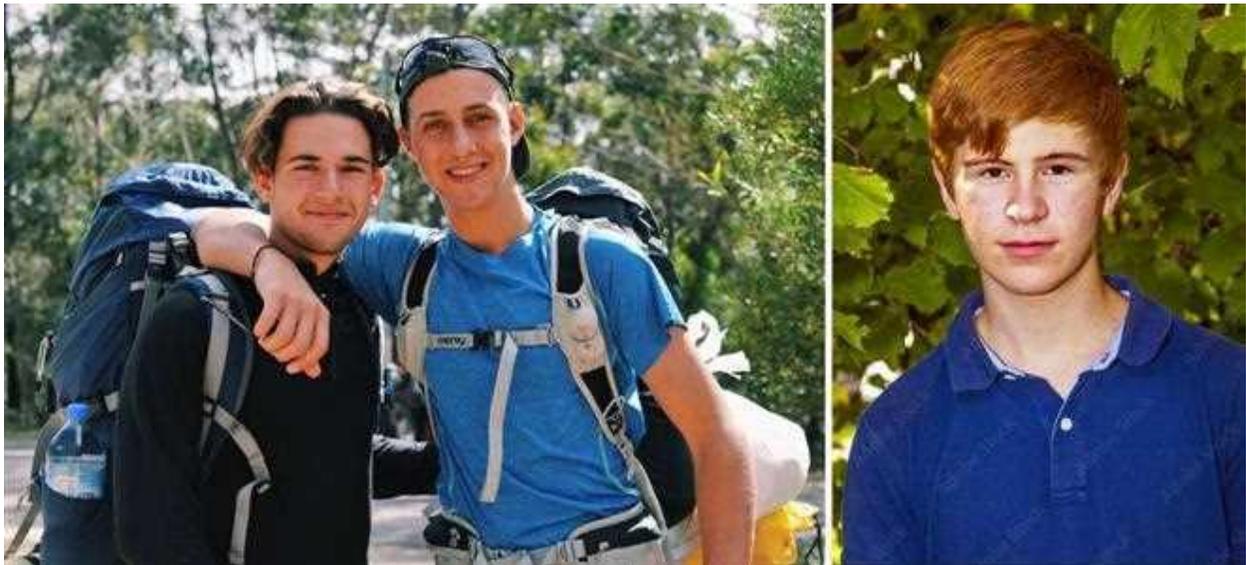
I opened the door and there was no one. On my sleeping bag I found a note.

"We have left on a jet plane and don't know when we'll be back again. Red Bud is joining a dance group in Paris and I am on my way to live with Erik and Birrani in the Red Center. Bobbie Boy, you know we will always love you."

My tears flowed like a river. I drove as best I could without seeing, all the way down to Big Red's adobe near San Xavier del Bac.

She opened the door and she sang out:

**"People smile and tell me I'm the lucky one,
And we've only just begun.
Think I'm gonna have a son.
He will be like you and me, as free as a dove,
Conceived in love.
Sun is gonna shine above."**



Bobbie Bob, Best Bud, and Red.



Bob and Kate by Kit Bezy.



Kit by Kathryn Bolles.



Sonoran Desert sunset by Ron Niebrugge