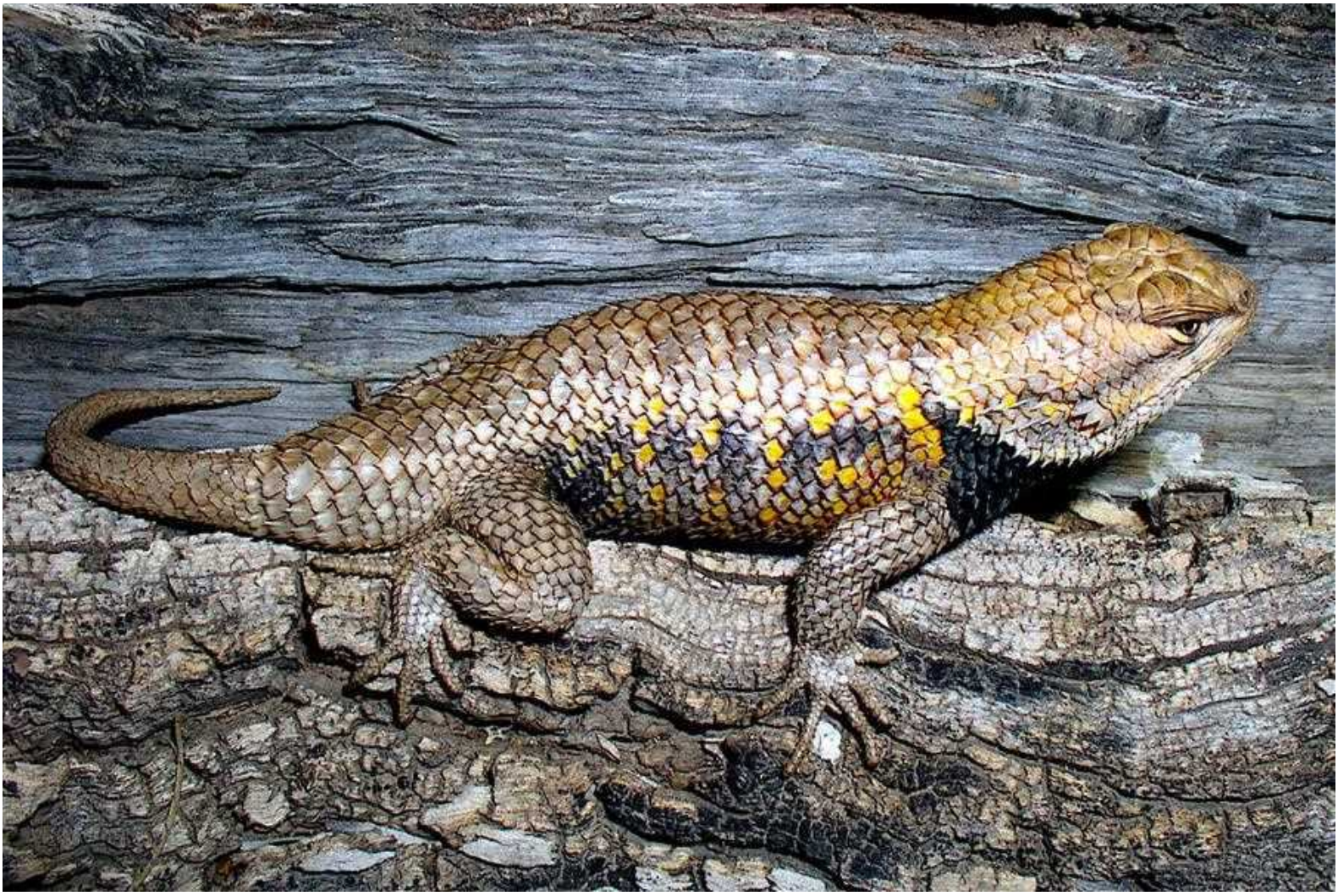


Sceloporus

A herpetological fantasy

Robert L. Bezy

***Sceloporus magister*.**
He showed up in town every once in a while, bought a few things at the market, and then evaporated as quickly as he had appeared. One day I happened to to see him as he left the market, and his shy smile touched me deeply. I asked Jimmy, the bag boy, who he was.

“No one in town really knows who he is. We just call him Drifter.”

“How long has he been around?”

“Hard to say, been coming in occasionally for a year or two, I reckon.”

“Where does he live?”

“No one knows. Somewhere back in the Winchesters I’d guess.”

“Well, I would like to chat with him. Appreciate it if you lemme know when you see him again”.

“I will try, but I never know when he will show up, and he doesn’t hang around long.”

Weeks later Jimmy called and said Drifter had just come into the store. I jumped on my bike and peddled as fast as I could to the market. I was not sure how to approach this. But, Drifter really interested me and I needed to do something, even if it did not work out.

“Howdy!” I said, using my usual slow-going approach.

“Howdy,” he replied with a shy smile.

“I am Bobby. You live round here?”

Drifter

“Well, I move round a lot, so people just call me Drifter.” And he gave me a smile and I started to dream he might like me.

Drifter checked out the few items he had and paid cash for them. He loaded them in his back pack, and said “See ya later alligator,” flashing me a wonderful smile as he walked away.

I wondered if Drifter might actually actually like to see me later.

So, I asked Jimmy to phone me if ever Drifter came into the store again.

Next time I noticed that Drifter had a small spool of fishing line among his items and I saw an opening and went for it.

“That’s good fishing line. You an angler?”

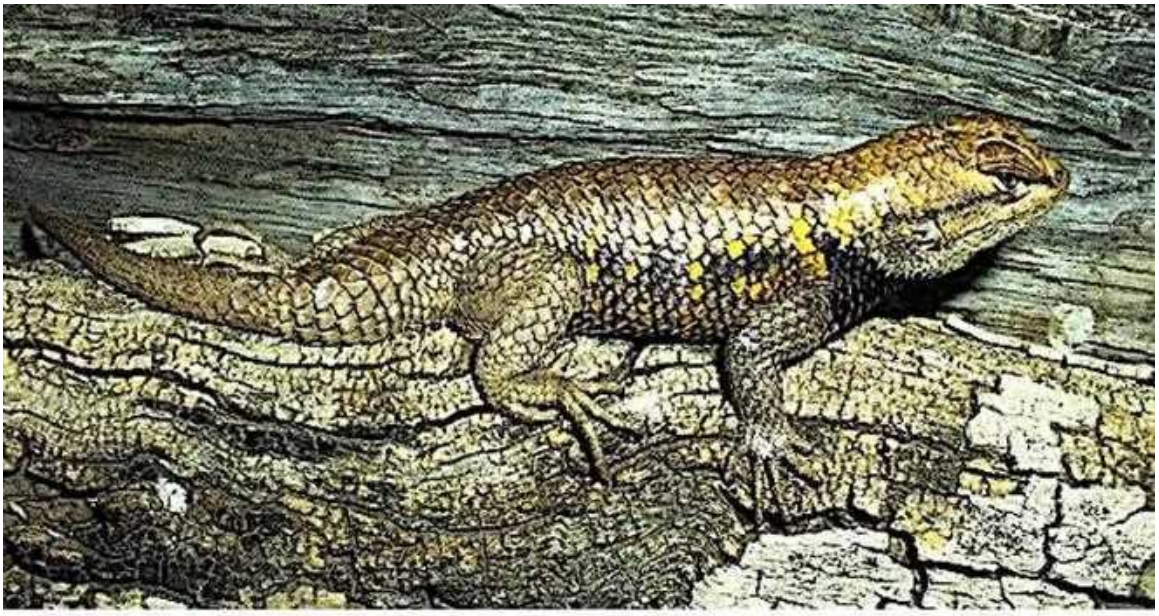
“Nah, I use it for other things.”

“Like?”

“Like noosing lizards.”

“I like lizards, too. What species do you noose?”

“*Sceloporus magister*.”



***Sceloporus magister* by Kit Bezy**

“There are some great magies round here,” I made brave to say.

Wow! Was I ever thrilled to discover Drifter was a fellow reptile enthusiast. But, he started to panic because I had intruded a little too far into his private space and he quickly paid for his items and put them in his back pack.

But, this time it was I who said. “See ya later, Alligator.”

“After while Crocodile,” he replied and he flashed me a beautiful smile as he left.

I could see that I was beginning to connect with Drifter. But, I knew from sad experience that I needed to back off and go slower, or he would panic.

So, next time I saw Drifter, I just said, “Howdy,” and waited for him to say something.

“Seen any neat magies?” he shyly asked.

“Yep, I saw a gorgeous big male doing push-ups on the Cottonwood yesterday.”

“Where ‘bouts?”

“At Cottonwood Spring. Ya wanna go see the magie with me?”

“You’re on, bro,” he replied, and my heart began to sing.

On the walk to the *Populus fremonti* (Fremont Cottonwood) I said very little as that seemed to be what Drifter liked, and he slowly started to come out of his shell. He grew very animated when he talked about lizards, and I just listened. The quieter I got the more he seemed to like me. But I returned his smiles, and I could see that was what touched his heart.

Populus fremontii

Drifter spotted the *Sceloporus magister* on the trunk from a long way away, and wanted to sit at a distance and observe its behavior. He took out a pair of binoculars and started to write in his notebook. I could see he obviously was a serious student of reptile behavior. I did not have my binoculars that day and he shared his. I really liked that he held his head close to mine while pointing out something interesting. I could easily see that he understood lizard behavior much better than his own.

We spent the day sitting together and I wanted to suggest a dip in the spring. But Drifter was so shy that I decided to back off lest he panic. He said he needed to go home, and I wondered where that was, but did not dare ask. He suggested we meet here at the cottonwood mañana. Something about the way he said “mañana” with an authentic Spanish flavor caught my attentions and puzzled me. I made brave to put my hand on his shoulder when we said goodbye, and he seemed to accept this little expression of my growing affection.

Drifter seemed very sad when he arrived at the spring the next morning. I wondered why, but did not ask. When I glimpsed tears rolling down his cheek, I made brave to put my arm around his shoulder, and he started sobbing and buried he face in my shirt. He cried for a long while, but I asked no questions and gave him his private emotional space.

When the first magie appeared on the trunk, Drifter recovered completely and his beautiful smile once again lit up his face. He took out his pen and notebook and began writing.

“What aspect of their behavior are you studying?” I inquired.

“I am examining the relationships of the beta male to the alfa male. People are overly focused on the dominant male and his interactions with the alpha female. But what role does the subordinate male play in the sociobiology of the species? No one has really looked at the question.”

“I brought my binoculars today so you won’t have to share,”

“But I like sharing with you, Bro.”

The real drifter was gradually emerging from his shell, and I really liked what I saw. When the subdominant male *Sceloporus magister* emerged on the trunk of the Cottonwood, Drifter pointed it out, holding his head close to mine.

“Bobby, go slow so you don’t scare your new shy Bro,” I said to myself.

***Sceloporus magister* by Mike Dechter**

A

I discovered that if I refrained from making overt moves, Drifter eventually came slowly around to making them himself. So I just enjoyed waiting for him to show.

At sundown the magies disappeared into *Neotoma* nests. That left Drifter without lizards for distraction, and he burst in tears again. I put my arm around him and he blurted out, “I can’t go home tonight.”

Drifter decided it had come time to tell me his sad story. He had moved in with a bro named Sebastián in a one-room cottage next to a spring, a few miles away from here. But Sebby eventually became jealous of Drifter’s passion for lizards. And also he felt what he really wanted was a fellow Latino bro who understood him better.

One day a guy named Luis came by the cottage and visited for a while. It did not take long for Sebby to fall in love with the Latino. For a couple of months Drifter had remained in the casita with the two of them because he could not leave Sebby.

But eventually animosity with Luis developed and last night Drifter made the very difficult decision to move out of the casita.

“But I need to go back one last time and get my field notebooks and sleeping bag. This is the most painful thing I have ever done, will you help me get through it?”

You betchum, that is what a bro is fo.

We woke at dawn and I was delighted that Drifter had slept with his head on my shoulder. When he thought about going to the casita, his tears started flowing again, and I put my arm around him.

We walked silently from Cottonwood Spring to Sabastián’s casita. But part way, he had a total breakdown and I hugged him again until he recovered.

The casita was charming, nestled beneath towering Cottonwoods, next to a delightful little spring. Sebby and Luis acted like they had been expecting us. I immediately took to them both. There is something about the Hispanic culture and Latino personalities that appeals to me deeply. Sebby was sweet, but a bit too serious for my taste. Luis was lively, and upbeat, with a charming smile and I really took to him.

***Sceloporus magister* by Kit Bezy**

Luis and Sebastián

We sat outside and chatted for a while. I could see that Sebby and Luis were a good match for each other, and that Drifter and Sebby were not. First loves are often like that. One is attracted to someone who has traits that they themselves lack and always wanted to have, but as a result the two have little understanding of each other.

I would have enjoyed spending more time with these guys, but I felt that for Drifter's sake we should make this a very short visit. He went in and collected his notebooks and sleeping bag. As he stood there in the doorway the tears started to flow. Sebby put his arm around him and declared, "I will always love you deeply Drifterbro," and we walked off.

I was pleasantly surprised that Drifter quickly recovered. It was like a weight had been suddenly lifted off his shoulders and a new person emerged. For the first time

since we met he seemed to appreciate me and he began to reciprocate my feelings more.

I was glad to be back at Cottonwood Spring with Drifter and we sat together and brotalked for the rest of the day. I was finding the post-Seby Drifter much more interesting. He was now more self-confident, as well as more reciprocating. I had enjoyed playing the role of a "strong bro" for him, but that is not the real me at all. My first love had been a strong bro but he had absolutely no appreciation for my sensitivity.

With Sebastián out of the picture Drifter and I could focus together on what really mattered to us. His study of *Sceloporus magister* sociobiology fascinated me and I wondered if it might be somehow be combined with my interest in phylogeny. We enjoyed spending the day sitting beneath the Cottonwood observing *Sceloporus magister* social behavior.

"I may not be your Sebby, but when you can't be with the one you love, love the one you are with. In healing my heart I have found returning to to our natal environment works wonders. Les take a dip right now."

"You're on Bro."

We enjoyed stripping and diving into the cool spring water.

Afterwards we returned to magie observing. Drifter was into behavioral observations, but not data-taking, and I saw a role I could play. I liked drawing and I produced an ethogram of the magie's behavioral postures. We developed a routine. He observed the lizards with binoculars and called out the posture number and I wrote it in the data matrix for later analysis. Drifter and I were good together..

***Sceloporus magister* by Team Buck Fievre**

Bro, how did you come by the name Drifter?"

"Well, I like moving from place to place."

"The people in town said you have been around here a year or two."

"Well, that is true. When I met Sebby he invited me to live with him in the casita. That was not my style, but that is what he wanted, and I wanted him."

"All that is over now. Do you want to start drifting again?"

"Yes, Bobby I do," and Drifter broke out in song:

I love to go a-wandering,
Along the mountain track,
And as I go, I love to sing,
My knapsack on my back.

OK, Bro, we are in agreement, You are Drifter and I am Wanderer, and together we will explore *Sceloporus*," I declared and gave him a hug.

We began charting our new life together. We had both barely survived devastating first loves and did not want to repeat the experience.

"Drifter, I really like your name. Now that you are free, would you like to wander with me?"

"You betchum, Wanderbro."

"Well, I am interested in phylogeny and biogeography. There are over ninety species in the genus *Sceloporus*. What you say we wander around and study the evolution of their sociobiology?"

"You are on, Wanderbro."

"So, Drifter, what are you finding out about the sociobiology of magies?"

"Well, the alfa and the beta males comprise a pair that together keep the alpha female happy. The alpha male allows the beta male to copulate with the female. In some ways the alpha male seems bonded with the beta male more strongly than he is with the female that they share."

“Wow, Bro that is really something. How do you know you are not just projecting your social view point onto the magies?”

“That could well be the case, Wanderbro.”

“That is where my statistical analysis will come through. You just assign and call out the posture numbers and I will enter them in the cells of the data matrix. The analysis will generate an objective picture of the sociobiology and the roles of the two males and the female. Then we can look at other *Sceloporus* and can evaluate the effects of phylogeny, species, and habitat on the behavior.

We studied the magies for several more weeks. I liked it here at Cottonwood Spring with Drifter and we wanted to stay around until the eggs hatched. Then Drifter and I became noosing bros and took tail tip tissue samples from all the magies. The samples would yield the DNA data to see how many of the offspring were sired by the alpha male compared to the beta male. We planned to test Drifter’s hypothesis that both males were heavily invested in the paternity.

Sceloporus clarkii

"I think it makes sense to have a look next at *Sceloporus clarkii*. It is another member of the spinosus group and occurs nearby," I proposed.

"Yeah, Bro, les go a drifting until we find the perfect clarkii study site."

I really liked roaming with Drifter. He was one with the landscape and we explored many magnificent canyons in the Winchesters. We wanted a place that was good for observing *Sceloporus clarkii*, had a swimming hole, and was shady enough to camp in. We had very high standards for the site as that spurred exploration, and we were delighted to be roaming together for long happy days.

I liked it that Drifter held his head near mine as we studied each canyon together. He instinctively knew what made me happy, but we never talked about such things. He had natural instincts for bromance, and talking about it would have ruined it for him.

***Sceloporus clarkii* by Marco Polo amarillas vargas**

We liked one of the canyons. The walls were nothing short of spectacular and provided afternoon shade. We surveyed the canyon for the best spot to observe the lizards. The lived on the tree trunks as well as on the boulders. That gave me an idea.

“Hey, Drifterbro, why don’t we compare the sociobiology of the clarkii on the tree trunks with that on the those living on boulders?”

“That’s a gangbusters idea, Wanderbro.”

Due to our weeks of experience with *Sceloporus magister* we were able to find several *Celtis reticulata* (Netleaf Hackberries) with good trunks for observing clarkii. We decided to concentrate on the trees first, and then look for ideal boulders to watch.

The clarkii postures on the Celtis were slightly different than the magies so I began working on a new ethogram. I enjoyed Drifter holding his head close to mine watching me draw. I wondered if he liked that as much as I did, but knew it best not to spoil the fun with words

The clarkii’s Celtis were much smaller than the magies’ Cottonwoods and we wondered if tree size would impact social behavior. We found behavior of the clarkii on the Celtis trunks to be generally similar to what we had observed for magies, in that there was an alfa male, a beta male, and an alfa female on each trunk.. The two males seemed bonded and took turns with female. Later we would get tissue samples to evaluate the relative extent of the paternity of each of the males. There were slight differences in the social postures of the clarkii from those of the magies and I was able to capture them in my renderings for the ethogram.

We took a break from the Celtis and hiked up the canyon looking for a good spot to study clarkii ethology on the boulders. Up at the edge of the Madrean woodland we found what Drifter felt was the perfect study site. There was a large boulder that was is contact with a smaller one and he spotted clarkii on both boulders.

Boulder camp soon became our new base and we were eager to begin the clarkii observations. There were two males and a female on each of the boulders. They had a larger repertoire of postures than on the tree trunks and I began drawing a new ethogram.

Celtis reticulata

The clarkii on the rocks were somewhat of a surprise. Each boulder had the usual alpha male, alfa female, and beta male, plus an arrays of subadults and juveniles. But unlike the Celtis trunks, the boulders were adjoining, and the clarki sometimes visited each other. What was the function of these visits? We were clueless.

My clarkii ethogram from the Celtis served well for the boulders, but Drifter observed one additional posture, involving up and down head moves. This seemed to be an infrequent posture and we started to wonder about its context. In looking

the data matrix that I had assembled I noticed that it occurred only when a subordinate male was visiting an adjacent boulder and encountered an alpha male. This really puzzled both of us and we spent a lot of time looking for this becilat behavior and were able to see it only nine times. When the babies appeared Drifter and I got out our nooses to obtain tail-tip tissue samples from all the clarkii on the boulders and Celtis for paternity analyses.

***Sceloporus clarkii* by Kit Bezy**

over We walked up the canyon to a pond and enjoyed stripping and diving into the cool water. I ventured into a new subject with Drifter.

“Hey Bro, you ever think about paternity yourself?” I made brave to ask.

“I have thought about it a little bit, as it was a big issues with Sebby and me. He really wanted to adopt a kid or two, but I wasn’t ready. What are your thoughts?”

“Well, I would love to adopt a kid.”

“I need to linger a little while longer as a kid myself before considering adoption.”

“I hear ya talkin Drifterbro. I guess for the time being it is best for it is best if we delay adopting a kid.”

Sceloporus jarrovii

“Hey Drifter, I think these Winchesters might have *Sceloporus jarrovii* higher up. Les climb the peak and see if they are up there. They are a rock-crevice species and be interesting to compare them with the clarkii we observed on the boulders.”

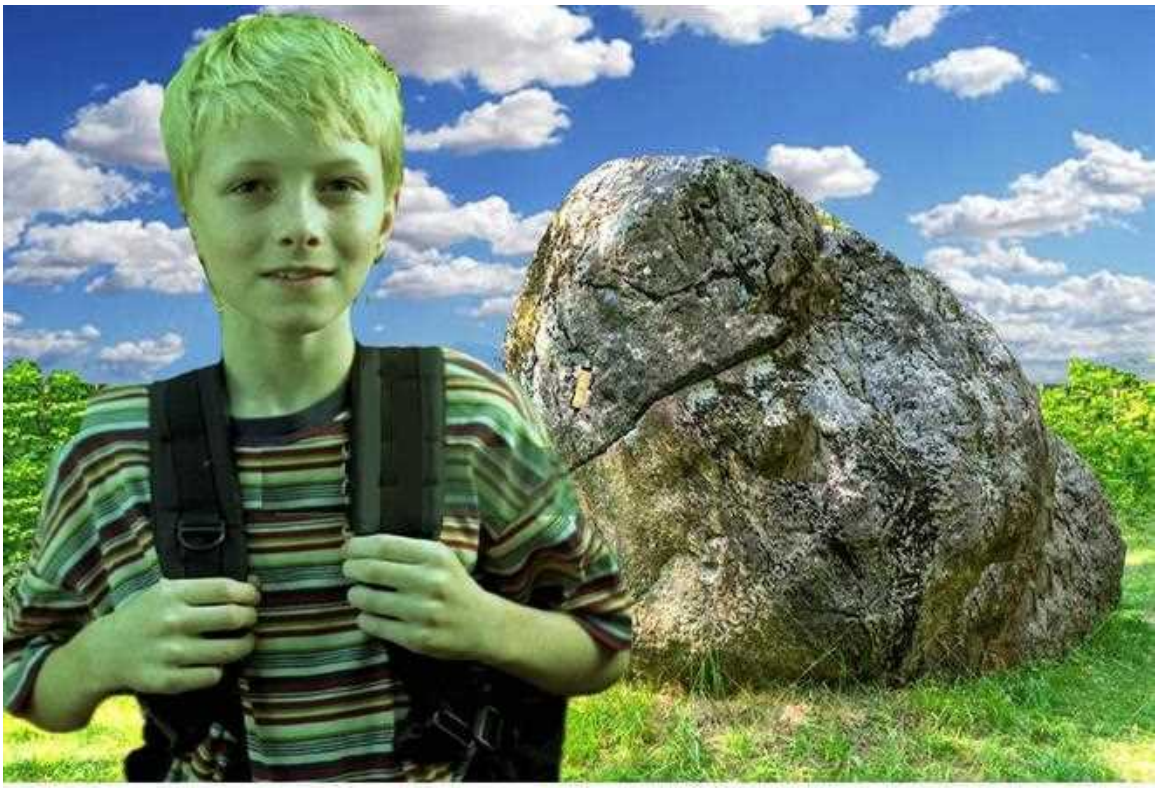
“Lesgobroro.”

It turned out to be a very difficult limb, quite a struggle for me. Drifter wanted to get a good workout so he hiked ahead and then waited for me at a convenient shady spot. After we rested he would zoom on to the next rest spot. I did not like being separated from him and we made the final climb to the peak together.

There we were shocked to see a kid standing beside a boulder.

“Hey guy, what you doin’ up here all alone? I asked.

I aint alone, my dads are over yonder noosing *Sceloporus jarrovii*. What are you guys doin’ up here?”



We are also studying *Sceloporus*. I am Bobby, this be my bro, Drifter.”

“I am Muir and we can walk over to the jarrovii boulders an see how my dads are coming with the noosing.”

When we got there one of the guys was noosing a *Sceloporus jarrovii* (Yarrow’s Spiny Lizard). Wallace was a student at the University of Arizona studying the phylogeography of the species on all the mountain ranges. He introduced us to his herpbro, Linne.

“We have tissue samples from all the ranges now. Besides their evolutionary history we want to study the impact of climate change. We are wondering if some of the populations will get pushed off the top of their mountain range and become locally extirpated,” Wallace explained.

Wiens, J.J., Camacho, A., Goldberg, A., Jezkova, T., Kaplan, M.E., Lambert, S.M., Miller, E.C., Streicher, J.W. and Walls, R.L., 2019. Climate change, extinction, Sky Island biogeography in a montane lizard. *Molecular ecology*, *28*(10), pp.2610-2624.

***Sceloporus jarrovii* by Kathryn Bolles**

and

"Wow, that is really interesting. We are studying sociobiology of different species of S*celoporus*," I explained.

I was worried that shy Drifter would retreat back into is his shell in this social situation and was shocked when he opened up and enthusiastically described the study in detail to Linne and Wallace.

This was a most important chance meeting for Drifter and me. We had never interacted with other field biologists before, and Linne and Wallace were both very interested to hear the details of our study of *Sceloporus* sociobiology. We sat up half the night discussing the biogeography of the reptiles in the Southwest.

But the real impact of this chance meeting was of an entirely different nature. Drifter was totally charmed by young Muir and that made him more aware of his paternal feelings.. Muir spent the days with us as he liked observing the jarrovii. He was a very talented artist and helped me produce a more esthetic ethogram.

“Muir, I like very much you choosing to spend the day with Drifter and me.”

“Well, I like you guys and I prefer observing the lizards to noosing them. And you two seem to appreciate my interest in art. Bobby, would you like to paint with me?”

“Boy would I ever!”

Muir got out his paints and a fold up easel and began giving me lessons. He produced a magnificent painting of a *Sceloporu*s.

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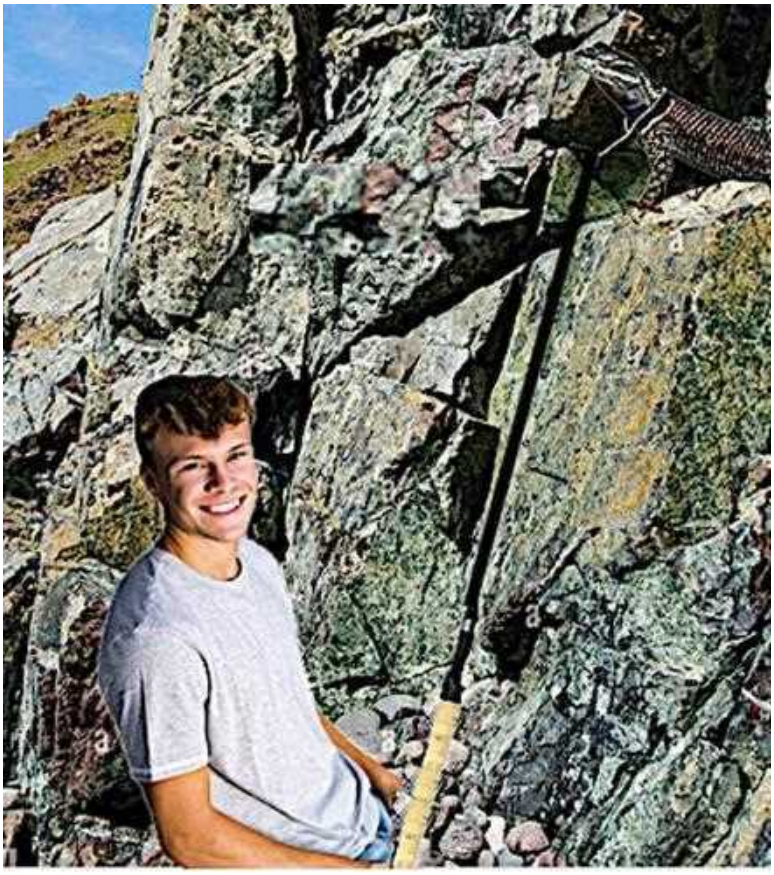
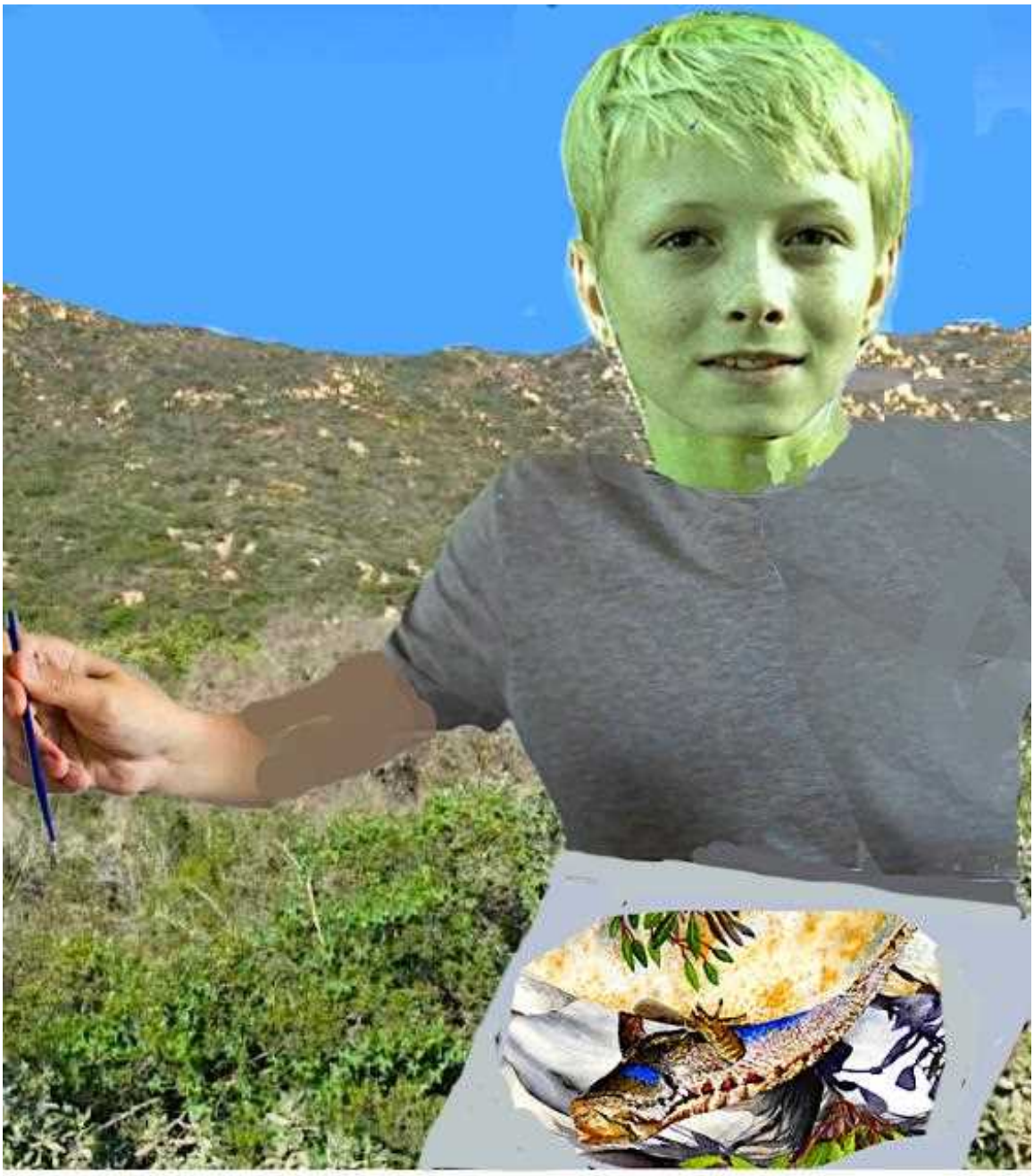


Wallace with *Sceloporus jarrovii*



Muir painting a *Sceloporus*

“Muir, I think what I would really like to paint is a portrait of you. Would you be willing to sit for it?”

“Wow, Bobby, that is a great idea. You’re on.”

I just relaxed and let my feelings for this shy boy control my brush and the result was like magic. Muir loved my painting and I was delighted to gift it to him.

Bobby painting a portrait of Muir

These were very happy days for me spending time with Drifter and Muir. We began our study of jarrovii in earnest and Muir had a good eye for details of the postures and coached me on how to do better drawings for the ethogram. Jarrovii was very difficult to understand. The dominant males seemed to have large territories and they mostly ignored the females and the subordinate males. They had postures related to territorial defense, but we observed no others.

“Bobby, I just don’t get it. This species seems completely different from magister and the clarki.”

“I don’t understand it either, Bro.”

“You guys should talk to my dads. They are studying jarrovii evolution,” Muir suggested.

So that night we sat up late talking about the evolution of *Sceloporus* with Wallace and Linne. They were very interested in the relative impacts of phylogeny and habitat on the sociobiology. Linne carried forth:

“*Sceloporus jarrovii* is a member of the torquatus species group that is adapted to rock-crevices, and this is near their northern distributional limits. As tropical species occur farther and farther north they are forced to live at higher and higher elevations to meet their moisture requirements. But at high elevation and high latitudes they reach their limits of cold tolerance. Here the jarrovii aggregate around protective rock crevices in the winter, and that may strongly influence their sociobiology.”

Drifter saw an opportunity, and dove after it. “You know, Linne, I think we could collaborate on a great study here. Bobby and I could observe and document the sociobiology of the species of *Sceloporus*. And we already gather tissues for paternity studies, and they would serve for phylogenetic studies by you and Wallace. Together we could examine the impact of phylogeny on sociobiology.

This was the start of a long friendship and collaboration by Drifter and me with Linnaeus and Wallace. And they also explained to us us all the details aout adopting a kid.

Sceloporus slevini.
Drifter and I decided to descend the Winchesters and head to Empire Cienega to look at the sociobiology of *Sceloporus slevini*.

The Empire Cienega was gloriously lush as the monsoons had been very generous. We surveyed the area and found a little pocket *of Sceloporus slevini* (Slevin’s Bunchgrass Lizards) for the study. The lizards were very challenging to observe as they spent much of the time hidden in the Bunchgrass clumps. But we were persistent as I was really anxious to get data for a member of the scalaris species group, and Drifter wanted to compare the popul ation down here in the Cienega with those atop the Madrean ranges.

***Sceloporus slevini* by Bruno Téllez**

We camped in a grove of cottonwoods and enjoyed dipping in the Cienega to cool off in the afternoons. One afternoon two cowboys came riding up.

“Howdy, I’m Gunner and this here is my bro, Kid. Could we join ya in the water?”

Gunner and Kid

“Absolutely, I shot back”

Gunner and Kid striped, dove in, and began chatting and wedescribed our study. They suggested we examine the scalaris along a ransect from the Empire Cienega to the top of the Santa Rita Mountains.

“Wow, that would be some walk,’ I exclaimed.

“No need to walk. We can supply the horses and I know the trail up into the wildest part of the Ritas.”

“You’re on, Bro,” Drifter enthusiastically accepted.

At Dawn Gunner and Kid rode up with two extra horses saddled. I had no riding experience and lacked confidence. They say horses can detect rider who is unskilled and that worried me. But I surprised myself and soon got the hang of it. Gunner knew a trail from the Cienega to a wild area atop the Santa Ritas. It was a long tiring ride and I was very relieved when we finally dismounted in a Bunchgrass meadow.

I was pleasantly surprised that Kid turned out to be an ace herper and he spotted several slevini and we began our observations. The lizards were easier to observe up here. It was cooler and they spent more time basking away from the grass clumps, and I soon developed my ethogram. We were excited to find some behavioral differences from what we observed in the Cienega.

Fortunately, Gunner had brought steaks to grill for all four of us and afterwards we sat and bro talked late into the night. Gunner expressed how unhappy he and Kid were because they had to keep their relationship low profile. The ranching culture was very restrictive.

“It’s so amazing that technological advancement moves so quickly, but social evolution occurs at a snail’s pace. But people do change. Just a generation ago you two might have been killed like Mathew Shepard.

Gunner in the Santa Rita Mountains

***Sceloporus slevini* by Kit Bezy**

Gunner got out his harmonica and we fell asleep listening to his playing Red River Valley under a glorious star-studded sky.

We spent three days studying the scalaris up top. I began to feel a need to to diversify our activities. Drifter was inclined to observe rather than search, but both Gunner and Kid were more physical and we were eager to flip the cover object objects for snakes.

“There are some great Madrean rattlesnakes up here. Let’s see if we can find one,” I proposed.

“You’re on, Bro,” Gunner responded.

***Crotalus willardi* by Benjamin Genter**

We wandered into a patch of forest with *Pinus engelmannii* (Apache Pines) and *Pinus leiophylla* (Chihuahuan Pines) and started flipping the logs. I was delighted that Gunner chose work close to me, but it was sharp-eyed Kid that spotted the magnificent *Crotalus willardi.* When we were photographing Gunner held his head close to mine.

“Wow, we are on a roll. You guys know the way to any rockslides?” I asked.

“There is a big one over yonder,” Gunner proclaimed.

“Les go look for pricei,” I suggested,

And off we went, I showed them all how to roll a rock down the talus slope and get the *Crotalus pricei* (Twin-spotted Rattlesnakes) to buzz. It turned out that Kid was not just keen-eyed, but keened-eared as well, and he was able to lead us to the exact spot of the faint rattling. Gunner worked close to me catching and blood sample six pricei.

“It will be interesting to see if these show the same relationships among the Madrean ranges as that found among the jarrovii,” I proclaimed

We spent a few more days atop the Santa Ritas to tack down the ethogram of the scalaris. Then we gathered tail tip samples for DNA assessments of paternity. Gunner stayed close to me the whole time.

“Strangely, there are some behavioral differences between this high elevation population from that in the Cienega,” Drifter declared.

***Crotalus pricei* by Benjamin Genter**

“Well maybe we should look at a population between the two,” Gunner proposed.

“Are there any, Gunnerbro? I inquired

“Yes, I know a patch of Bunchgrass down yonder that is at an intermediate elevation.”

“Les go Bros,” Drifter chimed in.

As we were mounting for the ride down slope Gunner gave me a boost into the saddle and we both liked the contact.I found that smile of his absolutely irresistible. I needed to get control of myself. He and Kid were a couple, as were Drifter and I, and we did not want to ruin things for any of us.

I pondered this dilemma for some time. “Bobby, you got to be rational,” I told myself. But love is by definition not rational. I decided to face this head on, and that night, when everyone was together at the new Bunchgrass locality, I blurted out, “Gunnerbro, I love you.”

“And I love you, Bobbybro.”

But no one was surprised. They all had seen our sparks all along.

“So, Gunner, what should we do?”

“I dunno, Bobby.”

“Maybe we should all spend a night together and then decide.”

“You’re on Bro”

And indeed that solved the problem. In the morning light I decided to stick with Drifter and Gunner stuck with Kid.

We were now at peace with each other and started collecting behavioral data on the intermediate slevini locality. I recorded the data from Drifter’s observations and and he and I collected tail tip tissue samples for DNA comparisons among clumps and among localities.

I announced, “This population appears to be intermediate in behavior.”

“So just what does that tell you and Drifter?” Gunner inquired.

“It tells us a lot, Gunnerbro. What we seem to be seeing is that even though the Bunchgrass habitat is more or less the same, the temperature decreases with elevation, and that produces an observable cline in behavior perhaps involving thermoregulation,” I explained.

Drifter and I decided it was time to leave Empire Cienega and move on. Gunner and I enjoyed a long rib-crushing hug and there were tears in our eyes when we separated.

Sceloporus virgatus

“Drifter, where we gunna study *Sceloporus virgatus*?”

“The Chiricahuas, I guess. That is about the only place they live in the U.S.”

“Gee, Bro, I just do not want to go there. Too many people.”

“Well, then, how about the Peloncillos. They are off the beaten path and few people go there.”

“You’re on, Bro, Les go.

”

***Crotalus molossus* by Erik Enderson**

I fell in love with the Peloncillos and indeed we we saw no one else in the range.

While searching for *Sceloporus virgatus* (Striped Plateau Lizards), the clouds rolled in and a hellacious thunderstorm storm thrilled us. After the deluge we found a beautiful *Crotalus molossus* that I picked up and held while drifter got the blood sample.

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your
design

Sceloporus virgatus by tyficker

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***The virgatus were abundant and it was not hard to find a site to study them. They were easier to observe than the slevini that often hid in the Bunchgrass clumps. After a few days Drifter and I had the ethogram and we noosed the lizards for tail tip samples.

“Drifter, I have become fascinated by *Crotalus*. Les see if we can find obscurus.”

Les go, Bro.”

And off we went on our great obscurus adventure. We roamed the Peloncillos far and wide for days finding pinchi nada. We were about to give up when we spotted a guy near the summit. I smelled herpetologist and we hiked up to where he was standing. He turned out to be none other than Andrés SantaCruz and he led us to several *Crotalus willardi obscurus* (New Mexico Ridge-nosed Rattlesnakes) to photograph. I was ecstatic.

Davis, M.A., Douglas, M.R., Webb, C.T., Collyer, M.L., Holycross, A.T., Painter, C.W., Kamees, L.K. and Douglas, M.E., 2015. Nowhere to go but up: impacts of climate change on demographics of a short-range endemic (Crotalus willardi obscurus) in the sky-islands of southwestern North America. *PLoS One*, *10*(6), p.e0131067

***Crotalus willardi obscurus* by David Barker**

Sceloporus consobrinus

“Bobby, *Sceloporus consobrinus* lives around the base of the Peloncillos. Like virgatus it is a member of the undulatus species group. Let’s go observe it and see if it the two species have the same sociobiology."

“Let’s do it, Bro”

We descended the Peloncillos and headed out into into the grassland. I was looking up in a *Yucca elata* (Soaptree Yucca) trying to spot a *Sceloporus* and almost stepped on the *Crotalus scutulatus* (Mohave Rattlesnake) coiled beside the trunk. It took me quite a while to regain my composure. We got some photos and I needed to hold the viper so Drifter could get a blood sample, but Bro talked me out of such foolish and dangerous behavior with the feisty scutulatus..

"Bro, I do not want to see ya meet the same fate as Fred Shannon."

Drifter was a master woodworker and went to work producing what he called his “palo de sangre” from a forked stick. On the end of one fork he secured a yucca

spine to prick the skin of the rattlesnake and on the other he attached a capillary tube to collect the blood. He soon had the sample.

I gave Drifter a long hug for coming up with such an ingenious device to keep me safe.

Drifter with "palo de sangre," Bobby, and *Yucca elata*

***Crotalus scutulatus* by Erik Enderson**

After we recovered from the scutulatus episode we found a good place to observe *Sceloporus consobrinus* (Prairie Lizards) on the *Yucca elata.* We soon had the ethogram tacked down and Drifter found the results of our data very interesting.

“Bobby, its behavior seems very close to that of virgatus. I am beginning to think that phylogeny may have a much stronger influence than habitat on sociobiology. It looks like here in this grassland consobrinus may be restricted to the yuccas that protrude above the thick grass. Let’s get tail tip samples from different yuccas to test the hypothesis that the lizards on each plant are closely related.”

“The bros, tail-snippin we goes”

We were hot and sweaty when we finished, and Drifter declared,

“I see a pond on the horizon. We haven’t been in the water for days. Lesheadferit.”

Distance is difficult to judge out in the treeless grassland and it turned out to be quite a long walk. When we reached the pond we were shocked to see a kid there.

“Watcha doin here, guy?” I asked.

“I come here all the time to enjoy the pond.”

“Do you swim in it?”

“Sometimes when I am not watching the snakes.”

“What kinda snakes are they?”

“*Thamnophis eques*.”

“ Wow, can you show ‘em to us? Bro Drifter and I are really into *Thamnophis* and have never seen an eques.”

Linne led us around the pond, found and caught a *Thamnophis,* and gently handed it to Drifter.

Do you mind I take a tiny blood sample?” Drifter asked.

Linne with *Thamnophis eques*

“It’s ok, as long a you don’t hurt Gertrude.”

Linne had given names to each *Thamnophis eques* (Mexican Gartersnake) around the pond. He joined us in a dip and showed us where to swim with minimal disturbance to the snakes and the habitat.

We had a long bro talk with Linne about his interest in snakes and found his knowledge was incredible. He completely charmed Drifter and me, and we made our up our minds that someday, someway we would have a kid like Linne.

***Thamnophis eques* by Erik Enderson**

Sceloporus poinsettii

"Drifter, let's head on over to the Mogollon Mountains in New Mexico to observe *Sceloporus poinsttii* behavior. It is member of a species group we have not yet studied."

"Lesgobro."

As we approached the Mogollons I was swept off my feet by the vista of the spectacular range.

"Wow this is something and I see a talus rock slide up there. Les hike up and look for Madrean *Crotalus*."

It was quite a climb up the bajada to the talus.

When we finally reached it we were shocked to see two youths standing there.

“Hey guys, watcha doin up here?” I asked.

“We’re lookin for snakes.”

“So are we. Seen any in this talus?”

“Just one *Crotalus lepidus*.”

“Really, where bouts?”

“Next to that big boulder over yonder.”

We walked over to the boulder and, sure enough, there was a beautiful *Crotalus lepidus* coiled next to it. We got lots of photos and then Drifter got out his “palo de sangre” for the blood sample. Garto and Culebro were amazed by the device. It turned out that that they were exploring the herpetofauna along the Gila River.

***Crotalus lepidus* by Erik Enderson**

Garto Culebro

There are wild places and wild guys that command my spirit. The Mogollon Mountains was such a place, rugged, uninhabited, and untamed. Garto was a wild child, a niño de la tierra, a free spirit. He had a rare combination of body and spirit that grabs me and when Gartobro's eyes met mine I melted. He was totally uninhibited and responded by putting his arm around me.

I said to myself, "Bobby, first you fell for Gunner and now it's Garto. You have to learn to control your emotions. Stick with Drifterbro" But that is easier said than done.

But. Garto solved the problem himself. fFee spirits make attachments easy and as quickly as he had charmed me he took up with Drifter.

Bobby Garto

Garto knew *Sceloporus poinsettii* (Crevice Spiny Lizards) intimately and took Drifter and me to a good observation spot on the Middle Fork of the Gila.
We observed the poinsettii for several days. Drifter was shocked by their behavior that was nothing like the jarrovii we had studied. The poinsttii were extremely warry and we had to sit a long way off and observe them on the boulder with binoculars. And the ethogram we finally obtained was totally unique.

This is very hard for me to understand. The poinsettii group is the sister of the torquatus group that contains jarrovii and these are all rock-crevice specialists. Why in the hell are the two species so different in behavior?" I pondered.

"It is really quite simple. Here the jarrovii are active even in the snow, and they share crevices to survive the northern winter. That is the controlling factor in their social life," Garto eaxplained.
Drifter and I tried to noose the poinsettii to get tail tip tissue samples. But no way, José, could we get anywhere near them. Then Garto calmly walked up to the boulder and caught the three by hand.

"How the hell did you do that?" I asked.

"I am wild like they are and they accept me as a bro."

***Sceloporus poinsettii* by Zachary Tonzetich**

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***Sceloporus poinsettii* by jkopachena**

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Sceloporus poinsettii by wizardpuppy

***Sceloporus poinsettii* by Arica Shields**

“Culebro, do you know where there are any other neat reptiles here in the Mogollons?” I asked.

“Well, I really like pyromelana and know a honey hole that has never failed.”

“Where is it?

“It’s way up top.”

“I would love to see a pyromelana. How long would it take to climb up there?”

“We could do it in a day.”

“Lesgobros.”

And off we went on our grand adventure to look for *Lampropeltis pyromelana* (Arizona Mountain Kingsnakes) . I had hoped that Garto would would walk with me. No such luck, he had now glammed onto Drifter every minute. But Culebro really liked me and flet I was sort of his mentor. Hhe chatted with me every step of the tre, revealing many painful details about his private life, including how a bully had physically abused him, teased him about his interest in snakes, and called him “Culobro.” That brought tears to his eyes and I put my arms around the boy and he recovered.

We reached the top by puesta del sol and Culebro thought it wisest to wait until the morning to begin flipping.

We were up at dawn and headed for the pyromelana honey hole in the pines. We flipped like maniacs and by noon Drifter and I had each found one.

I want to get blood samples to see if this is pyromelana or knoblochi. I declared.

Just as we were finishing with the pyro/meal we encountered a large *Ursus americanus* (American Black Bear) in the forest. It scared there shit out of Culebro and he rushed to my arms for security. I began to really enjoy my paternal emotions.

ions.

***Lampropeltis pyromelana* by Cecelia Alexander**

We decided to spend the night up in the Ponderosas atop the Mogollons. As we were settling down in our sleeping bags, thunderheads rolled in and a violent electrical storm began. Culebro was terrified by the lightning bolts and hugged me tightly and I thoroughly enjoyed holding the boy.

After the storm passed Drifter heard an anuran chorus in the far distance.

“Hot dog, it’s wrightorum,” he declared.

We donned our headlights and started following the calls. Eventually we arrived at a pond in a meadow with a deafening chorus of *Hyla wrightorum* (Arizona Treefrogs) screaming their guts out for sex.

“Wow, this is one beautiful treefrog,” I exclaimed.

“I want to get photos and tissue samples to compare with the populations in Arizona and Sonora.”

I just was not ready to leave the Mogollons, Garto, and Culebro.

“Culebro, do ya know any other snakes we could explore?”

“*Thamnophis.*”

“What species of *Thamnophis* you talkin, Bro?”

“I know a locality on the middle Gila that has both cyrtopsis and elegans. It used to have rufipunctatus also, but they are now extinct in the range.”

“Drifter and I love *Thamnophis.* Would you take us to your locality?”

“You betchum, Red Ryder.”

And off we went on our Gila adventure. The climb down into the canyon was absolutely spectacular, and I was enchanted by the river at the bottom. On the walk Culebro chatted with me continuously and it was clear telling me about the abuse he suffered was helPi.ng him heal,

***Hyla wrightorum* by Erik Enderson**

He had been emotionally scarred by abuse until Garto came along and rescued him. Now he was afraid Garto would leave him for Drifter.. I managed to get him to stop worrying about things and start just enjoying the moment. I was touched that the boy seemed to take my advice and he began to smile again a bit.

It was sunny and warm when we reached the Gila and we decided to go for a dip. Culebro was a bit shy but eventually got the courage to join us. Garto stuck close to Drifter and the two of them started following a *Thamnophis cyrtopsis* together in the river. All of a sudden Culebro burst into tears, sobbing “Don’t leave me, Garto.”

I decided it was time for me to take action. Culebro had won my heart and I simply had to help him now. I called a four bro meeting right then and there in the middle of the Gila.

“Garto, you owe it to Culebro to assure him that regardless of your relationship with another, you will not abandon him, if that is the case. The boy has suffered enough pain in his life and he needs you desperately.”

***Hyla wrightorum* by Kit Bezy**

I was pleasantly surprised that free-spirited Garto responded whole heartedly.. “I hear ya talkin, Bobby. Culebro, I will always be your bro and I will never leave you for anyone else.”

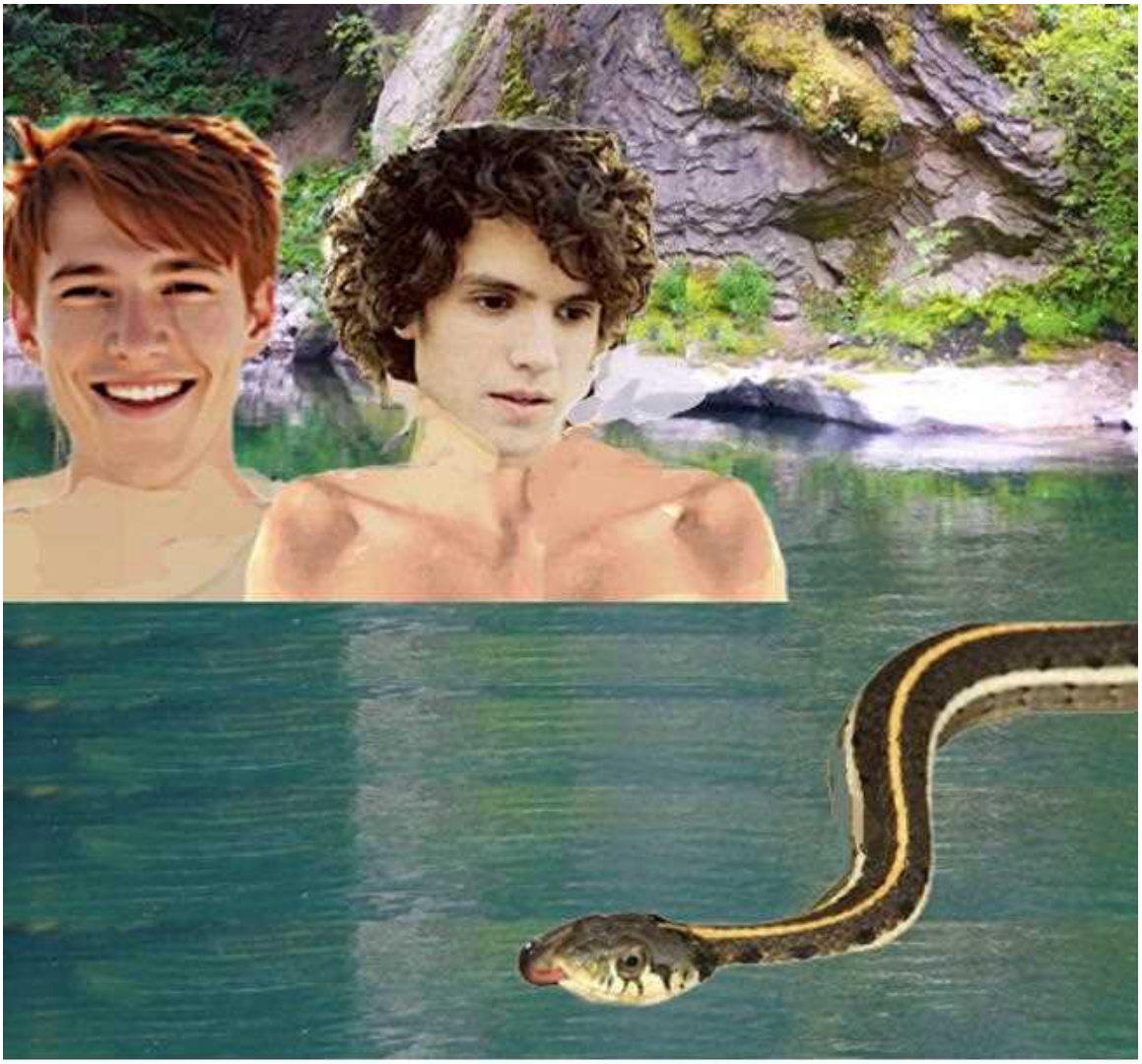
They threw their arms around one another and contributed their tears to the flow of the middle Gila.

The joy returned to our hearts and we spent a delightful day catching *Thamnophis cyrtopsis* (Black-necked Gartersnakes) and *Thamnophis elegans vagrans* (Wandering Gartersnakes) and taking blood samples. we found and my heart sang when Drifter started workin closely with me again.

Drifter was interested that the two species seemed to have very similar habitat preferences, both living right along the bank and wondered why neither species inhabited the large pools.

“I think it’s because they are both frog-predators and the pools were the habitat of fish-eating *Thamnophis rufipunctatu*s before they and the native fish were extirpated,” Culebro replied.

“You are one smart herpetologist, Culebro,” Drifter remarked.



Drifter and Garto with *Thamnophis cyrtopsis*

***Thamnophis cyrtopsis* by Kit Bezy**

Thamnophis elegans vagrans by Kit Bezy

Drifter felt we were becoming sidetracked by too much searching for snakes high up in the Mogollons and he wanted to return to studying lizard sociobiology. Garto was enchanted with both lizards and Drifter and this intensified their bonds, which continued to worry Culebo. I had become attached to the boy and enjoyed helping him survive Garto's attachment ti Drifter.. I was old enough to appreciate that everything works out in life, if I just relax and accept things as they unfold.

I could plainly see that Garto's attachment to Drifter was typical young romantic infatuation, such as I had experienced long ago with my first love. And it was equally obvious that Culebro' s attachment to me included elements of the boy's love of a father as well as of an older brother. This was all quite good with me as it avoided parsing attractions and relationships into artificial categories. For my part, I just wanted to protect Culebro from suffering more painful emotional trauma.

We began to walk two separate paths, Garto with Drifter, and Culebro with me. They were the lizard bros and talked non-stop about their sociobiology. I began to see this as key. Culebro loved snakes, but had no drive to do any project. I felt I needed to help the boy find a goal for his interest in snakes as part of the healing process.

“Culebro, what is it about snakes that you like?”

“I dunno, Bobby, I just like the way they look.”

“Have you tried to capture that look in digital images?’

“Not really.”

“Well, I detect you have considerable untapped artistic talent. Maybe you could get gangbuster images of all the snake species found along the 1000 km run of the Gila River and publish them in a book, “Snakes of the Gila.”

“I’ll try it, Bro. Will you wrangle that *Heterodon o*ver there for my first image?”

“You betchum Red Ryder.”

And Culebro did get great photos of the *Heterodon kennerlyi* (Mexican Hognosed Snake). He had now embarked on producing “Snakes of the Gila” and was recovering from his emotional scars.

***Heterodon kennerlyi* by chrispreston136**

Bobby and Culebro

***Heterodon kennerlyi* by Brian Hinds**

***Heterodon kennerlyi* by diomedea_exulans_li**

***Heterodon kennerlyi* by Todd La Pittus**

Sceloporus tristicus

After Culebro finished up his photographing of the *Heterodon kennerlyi* we looked around for Drifter and Garto, but they were nowhere to be seen. I guessed they might be enjoying some private fun time together, but did not mention that lest Culebro have a relapse of insecurity. Eventually Culebro became very worried and we decided to climb to the top of a boulder on the hill to see if we could see our lost bros. With binoculars we spotted them way down the bajada.

We hiked down to them and found they were having fun exploring *Sceloporus tristicus* (Plateau Fence Lizards) rather than each other. But they were stalled as neither could draw the ethogram. I rendered it and was very happy that Drifter recognized my talents as being crucial for his research.

“This is really interesting. The behavioral profile of *Sceloporus tristicus* here on *Juniperus monosperma* is virtually identical to that of its nearest relative, *Sceloporus consobrinus*, on the *Yucca elata*, suggesting phylogeny may be more import than habitat in sociobiology,”

Drifter hugged me, and Culebro fell into Garto’s arms.

***Sceloporus tristichus* by Robert Bezy**

Culebro and Bobby

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Sceloporus cowlesi

The time had come for Drifter and I to say good bye to Culebro, Garto and the Mogollons.. But, I felt good that my mentoring had succeeded in helping them to more fully understand and accept their feelings for each other.

“Where we gunna head now, Drifterbro?”

“I want to visit the Alamogordo Trinity site.”

“Why on earth ya wanna go there?”

“The site is very important in the history of the world and as well as the history of herpetology.”

“How so, Bro?”

From 1947 to 1950 Lowe worked there and that led to the discovery of *Aspidoscelis neomexicanus* that was described by Lowe and Zweifel in 1950 The New Mexico Whiptail eventually proved to be the key to understanding the origins of all-female species.”

***Aspidoscelis neomexicanus* by Kit Bezy**

“Lesgobro.”

Coming down from the lush Mogollon Mountains and heading out into the arid Tularosa Basin was not inspiring. But that is what Drifter wanted and that is where the twists and turns of the road of life had led us.

By puesta del sol we reached the imposing fence barring entry to Trinity and we were clueless what to do next. Drifter and I decided to sleep in the sand next to the fence and try to figure out how to tackle the problem in the morning with fresh heads.

As I opened my eyes at dawn and gazed at the ominous fence I thought this whole idea was absolutely loony. What are we doing here? But as I looked over at Drifter and he smiled at me, I realized there was nothing I would not do for Bro.

The Tularosa sun rose like a fireball out of hell, and I chugged down my Nescafe and sugar concoction hoping it would give me strength to face the day. As the sugar and caffeine was starting tp hit my blood stream a youth came walking toward us.

Trini

“That is some fence,” he exclaimed.

“It sure is,” I returned.

“Well they have lots of secrets to protect,” Trini shot back.

“Like what?”

“Too many to list, but we are in the process of investigating some of them right now.”

“Who’s we?”

“Me ‘n my bros.”

“You guys know how to get in there?”

“You betchum Red Ryder.”

Trini and I chatted for quite a while before he came out of the bushes and led us to the Trinity Gang camp.

Cal Bajo and his Trinity Gang

At the camp Trini introduced Drifter and me to the gang leaders, Raphael, Cal, and David. Cal was holding a *Pituophis catenifer* (Gophersnake) and he set about explaining the mission:

“Pop’s field notes and specimens were confiscated by the Atomic Energy Commission when he and Dick finished their field work in late 1950. But a year ago I was rooting around in the attic and came across a bottle with three of their original specimens of neomex. They were preserved entirely in ethyl alcohol that is great as he lab can extract DNA from ethyl-fixed specimens.

“The specimens are topotypes of neomex from the McDonald Ranch headquarters. Tomorrow we plan to sneak back to the ranch through our tunnel, and collect some neomex to compare their DNA with that of the 1950 specimens. I bet we will find greatly accelerated mutation rates here at Trinity compared to populations away from the site. Radiation induced mutation is something the AEC has tried to keep hidden for years.”

‘Wow, what an exciting research project. How ya gunna get onto the site?” I inquired.

“Well, just follow me and I will show you.”

I was shocked out of my mind. The gang had spent months using dynamite and picks to excavate a tunnel deep into the site.

“The mouth of the tunnel is only a mile from the McDonald Ranch house and we have observed the guards long enough to know their schedule, so we can noose topotypes during Aspie golden hour tomorrow. You two like to join us on the McDonald raid?”

“We sure would,” Drifter replied with hesitating a second.

We entered the tunnel at 9 am and made our way to the mouth, emerging as soon as the guards left. I was thrilled to be at the neomex type locality, McDonald Ranch headquarters, walking in Lowe and Zweifel footsteps 70 years later. I am a very skilled nooser and I wowed everyone in catching five *Aspidoscelis neomexicanus* (New Mexico Whiptails).


Rafael
Cal
David

Bobby noosing *Aspidoscelis* at McDonald Ranch

In all we managed to secure tissue samples of ten *Aspidoscelis neomexicanus* (New Mexico Whiptails) from around the McDonald Ranch house. Calboy departed from

the Trinity gang's camp to hand carry the samples to University of Arizona lab that was planning to sequence a large number of nuclear and mitochondrial genes.

David supplied additional details:

"This will be the first study examining the long-term effects of radiation on genomes of a parthenogenetic species. The Atomic Energy Commission has for many years tried to stop all research aimed at revealing the high mutation rates of the fauna and flora on the Trinity site. For that reason we have kept this study entirely hidden."

Drifter came out of his shell and chimed in:

"That sounds like a really important study. I am interested in sociobiology of *Sceloporus*. Chuck Lowe and his bro Ken Norris described the White Sands undulatus as a separate subspecies that they named for their mentor, Ray Cowles. Does cowlesi occur anywhere on the Trinity Site?"

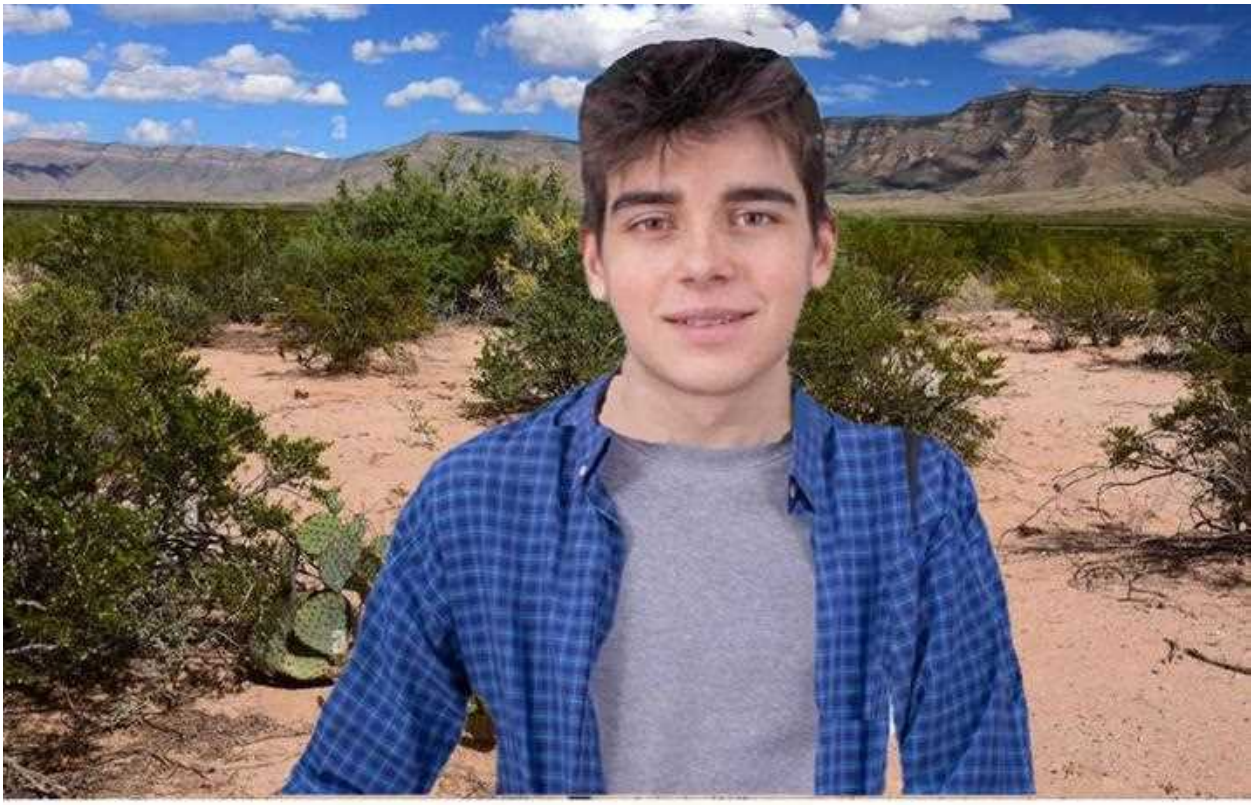
"Yes it does, Drifter. They occur at Trinity Dunes that is isolated from White Sands. One of our gang members, Carlos, is studying them. He will be back this afternoon and you can talk to him when he arrives."

Carlos emerged from the tunnel and turned out to be a breath of fresh air. The other Trinity gang members were just plain not on our wave-length They loved mystery and secrecy. Carlos was a herpetology graduate student at the University of New Mexico and his love of amphibians and reptiles exuded from his every pore. Moreover, he was a scientist and quickly laid all the cards on the table.

"They were rushing so fast to test the bomb in 1945 they did not let the ranchers in the Tularosa basin know what they were up to. Chuck Lowe told me about one of the ranchers he talked to who was growing rhubarb. The poor guy was shocked and clueless when the unseasonable deluge came down right after the blast. The rancher ran out of his house shouting, 'Will the rain hurt the rhubarb?'? Chuck used that expression frequently.

"It happens that the rancher's three sons still live in the house, which is right next to Trinity Dunes where I am doing my field study, and I have gotten to know them quite well.. They have many physical anomalies caused by the radiation. But, the federal government refuses to acknowledge their mutations as they do not want to

trigger the many lawsuits that would develop if it became known that the blast caused genetic damage all over this part of New Mexico.



Carlos

After Carlos rested up for a day Drifter and I went with him back into the tunnel and emerged onto the Trinity site after the guards had left. It was a long hot walk to the Trinity Dunes where he was studying *Sceloporus cowlesi* (Southwestern Fence Lizards). But we really liked Carlos. He was an enthusiastic herp guy and we talked amphibians and reptiles non-stop every step of the way,.

Carlos and his rancher bro Diego were concerned about the genetic damage done by the blast to the largely Hispanic population in this region of New Mexico. Among the questions they were investigating was whether there were more mutations in the the population of cowlesi here in the Trinity Dunes than there were in the White Sands population farther away from the blast.

I am a Hispanophile and really liked Carlos and Diego. And Drifter and Carlos were in *Sceloporus* heaven and planned to do a comparative study of sociobiology of cowlesi here and at White Sands. They worked together while I drew the ethogram. We were shocked that cowlesi here in the dunes had so few behavioral differences from consobrinus on the *Yucca elata* we had observed around the Peloncillos.

Once we had the ethogram tacked down we took tail tip tissue samples for DNA analysis of paternity. It was now time to head to White Sands, but Drifter and I were hesitant to go there with Carlos. We avoid parks like the plague as they attract tourists. Carlos assured us that his study site was in a far back corner of White

Sands where there are no tourists. And he managed to lead us on a route in which we encountered absolutely no tourists.

I really liked the gypsum dunes and enjoyed sleeping under the stars with Drifter and Carlos. The three of us were up at dawn and sat close together enjoying the glorious sunrise on the dunes. As the fireball from hell warmed the sands Drifter and Carlos went into high gear observing the cowlesi and I constructed the ethogram.

Drifter was totally shocked to find behavioral difference of this White Sands population from that at Trinity Dunes.

“This is really something. It looks like White Sand and Trinity may have independently evolved arenicolous adaptations. In doing so they fixed a slightly different behavioral repertory. This suggests that genetics and phylogeny may be more important than habitat in sociobiology,” I declared.

We spent another night sleeping in the soft gypsum sand, gazing up at a billion stars and bro talking.

Carlos led us on a different route to Trinity camp so we did not have to pass through the site. I spotted something far off in the sand and suggested we trudge out there and see what it was. And there lay little Chico unconscious in the sand. His parents had died on the long trek from Guatemala to New Mexico.

Drifter and I soon adopted Chico and he brought us joy for the rest of our life together.

Chico

THE END