

TEXAS PALEO TOUR FEBRUARY 2005

February 13, 2005

I took a Sunday morning to swing solo west of San Antonio for a perusal of Upper Cretaceous exposures. My efforts began in the Escondido formation in Medina County. The Escondido constitutes the youngest Cretaceous or dinosaur era exposures in my area, about 67 MYA. Recent rains promised great collecting conditions, but hindered access to target sites. I almost buried my 2WD truck on a county road, so I doubled back to town and hiked about 1½ miles to a large pit, my feet sliding with each step. Soon I was climbing the waterlogged Escondido clay, and shark teeth were quick to come out of hiding in the spongy matrix. I was quick to identify a ¼ inch thick hard layer of orange matrix and shark teeth, “shark tooth brittle” if you will. A couple hours of crawling around produced at least a couple hundred shark and ray teeth, 10 fish vertebrae, and other interesting bits of vertebrate material. Most teeth were worn from the redepositing process eons ago, but I still had a blast collecting them.



FIGS 1-3: Shark teeth including *Squalicorax pristodontis*, *Serratolamna serrata*, *Cretolamna maroccana* and *Scapanorhynchus* top two photos, fish and ray vertebrae and teeth bottom photo including *Enchodus ferox*, *Ischyriza mira*, and payment teeth *Dyastis* and *Rhombodus*

Plowing farther west into Uvalde County, I dropped into a streambed exposure of Anacacho limestone, a very gritty matrix resembling soft sandstone. This represents a nearshore environment about 72 MYA. This exposure consisted of a terraced bedrock area the size of a football field with large boulders randomly strewn about. I had never been there or seen documentation on the area, so some exploration was in order.

The first boulder I walked up to was loaded with coveted *Phyllobrissus cubensis* echinoids, a really cool looking sand dollar like critter. I got about 10 from this boulder, with a fist sized chunk of matrix coming out with 3 echinoids exposed. I spent about 2 hours at the site, eventually getting quite a few more *Phyllobrissus* plus a number of larger echinoids in the 50-60 mm range which I can't yet identify. Many are unfortunately in poor condition, eroded on one side. I got three *Phyllobrissus* in excellent condition, rounding out a great day.



FIGS 4-5: Echinoids *Phyllobrissus cubensis* left, unsure of taxonomy of specimens upper right—size is larger than *Phyllobrissus*, and one has proportionally wider and more rounded amb petals.



FIG 6: Mystery regular echinoid. ID left to the experts

February 19, 2005

Our destination changed several times during the week, but ultimately Farley Katz, Marc de Vries and I settled on Tarrant County as our target area for a Saturday fossil hunt. Heading west in the DFW area, we stopped at a large rock pile and began finding large *Mariella brazoensis* ammonites. This diagnostic fossil allowed us to place the exposure in the Mainstreet timeframe, about 99 MYA.

Pressing on we entered a creek in the Duck Creek formation, about 103 MYA. It was obviously hit hard by other collectors as ammonite impressions were everywhere. The beauty of the Duck Creek is in its abundant large ammonites. Other collectors limited out close to the road (you can only carry so many), so we pressed farther downstream and found a number of *Eopachydiscus marcianus* ammonites in the 10-12 inch range. I got 4 and Marc got at least two in addition to his two *Idiohamites fremonti* heteromorphic ammonites. The next creek was also Duck Creek formation, and I only got one small *Heteraster* echinoid there and a couple gastropods.



FIGS 7-8: Two spectacular *Eopachydiscus marcianus* specimens from the Duck Creek fm

By this time we were joined by Brent Dunn and his daughter Jennifer, and with them came great quantity and quality of fossils as we entered another creek in the Goodland formation, about 104 MYA. Brent immediately picked up 2 nice *Engonoceras* ammonites and we all grabbed as many echinoids as we wanted. Several species of echinoids were represented including *Epiaster whitei*, *Heteraster adkinsi*, and Marc's single *Salenia mexicana*.

As we headed downstream we all found as many nice *Oxytropidoceras* and *Engonoceras* ammonites as we wanted, and Farley identified a few of our finds as *Venezoliceras* and *Manuaniceras* as well. Fossils were so abundant that I once again ignored physical discomfort, forded icy water up to belly button deep, and plowed on. Throw in a few nice bivalves and gastropods and we all had full backpacks, making for a cheerful ride home.



FIGS 9-11: Goodland ammonites *Oxytropidoceras* upper left, *Engonoceras* (3) and *Venezolicerias* (1) upper right, echinoids *Epiaster whitei*, *Heteraster adkinsi* below

February 25, 2005

Marc de Vries took Friday off work to head south in search of fossils. He hit some road cuts in the Georgetown formation only to find that they had been recently unloaded by other collectors. Still, he landed 2 *Mortoniceras* ammonites which should prep out well.

We met at noon in Comal County to explore a unique micro zone in the Lower Glen Rose formation, about 107 MYA. This site was no place for bad knees. We crawled around for a couple hours with a focus on tiny echinoids. A steady stream of good finds kept us interested. We each found a few micro *Salenia* in the 3-10 mm range, followed by my coveted *Orthopsis*. I picked up something black from the mud, which later when cleaned up turned out to be a pycnodont mouth plate, 10 pavement teeth from the palate of a fish. This was my first encounter with marine vertebrate material in the Lower Glen Rose.

I found a big *Paleopagurus banderensis* crab claw with claw and finger articulated, followed by a number of loose fingers. Marc's major find was a very nice little *Globator hancockensis* echinoid.

I need to return to this site this spring for my own *Globator* echinoid, a micro *Goniopygus* echinoid, and more teeth.



FIGS 12-15: Pycnodont mouth plate *Lepidotes* top two photos, crab claws *Paleopagurus banderensis* and echinoid *Salenia texana* lower left, *Salenia* and *Orthopsis* echinoids, *Pentacrinus* columals, and *Phylacanthus* echinoid plate lower right

I took Marc to a construction site in the Lower Glen Rose, which we were promptly ejected from by equipment operators. Still, I was able to land 4 *Salenia texana* echinoids on the way out before they yelled at us again.

Our last good site was the gully I found in San Antonio that exposes the Del Rio/Georgetown contact, a zone about 98 MYA. I promised Marc large ammonites and echinoids, and I didn't lie. The site was half underwater, but in an hour we each found several large 50-70 mm *Coenholectypus transpecosensis* echinoids and a couple *Mariella brazosensis* ammonites. I was happy to see Marc get a perfect example of each. Unfortunately, we each trashed a perfect echinoid with our chisels. At one point I thought Marc was winking at me, but instead he had taken a rock chip in the eye. Good thing I wear glasses.

Marc made his first visit to my house to see my collection, say hello to the family, and chow down on pizza before heading back to Killeen.



FIGS 16-17: Echinoid *Coenholectypus transpecosensis* from the Del Rio/Mainstreet contact



FIG 18: Still more *Coenholectypus transpecosensis* echinoids including one covered with pyrite

February 27, 2005

Central Texas was a very wet place on Sunday, but fellow intrepid fossil zealots Brent Dunn and Chris Vencevich came down from Dallas, hooked up with Marc de Vries in Salado, and caravanned to Austin in time to meet me at a large exposure in the Sprinkle formation at 7:30 a.m. Marc led the way into this 76 MYA exposure. The mud was horrible. Before we had gotten 20 yards from the trucks we were each 5 inches taller from a mud ball on each shoe. The stuff enveloped our footwear, giving us the look of Mickey Mouse feet.

We were soon all on our hands and knees pocketing shark teeth up to maybe 12 mm, mostly *Squalicorax* and blades at that. Occasional teeth with intact roots came to hand, keeping us focused. Many of the oysters at this site were quite ornate and well preserved, as were the *Hamulus* worm tubes. I indulged in both. Irregular echinoids along the lines of *Hemiaster bexari*, *Plesiaster americanum*, and *Proraster dalli* all come to hand, with many in impeccable condition. I was on a roll and feeling generous so I gave one or two to Brent.



FIGS 19-20: Sprinkle fm shark teeth *Squalicorax*, *Scapanorhynchus* and others left, *Hamulus* worm tubes, pyritized bivalve, and oyster right

Teaming up with Marc, we crested a hill where I pocketed a couple echinoids on the way up followed by a nice ammonite at the top. I was happy to have seen this ammonite from about 25 feet away. Anyplace we can score ammonites, echinoids, and shark teeth in short order is a stellar site in my book, but the best was yet to come. Following Marc's lead, we hit another hillside of tan matrix with some patches of black, broken down shale at the bottom. Marc began finding shark tooth blades in the tan, while I found a few in the black shale. Uphill I scored another nearly complete ammonite plus two echinoids. Brent and Chris caught up with us and brought a wave of good luck. With Brent next to me I landed a 40 mm *Scapanorhynchus texanus* tooth in pristine condition, prompting elated screams from me.

Moving along a small cliff I got a number of echinoids in rapid succession, including two stuck together. The place was peppered with ammonites as well, and I grabbed 3 quickly in about 30 feet. Brent left his hammer behind, and I was closest to it and turned around to get it, only to be rewarded with another echinoid and a few shark teeth for my efforts. Chris, Brent, and I were so

focused on the ground at our feet that we all made a critical oversight, which Marc would later bring to our attention with humbling success.

The next hill gave Chris a large vertebra of some sort, gave Brent a fish vertebra, and gave me another large *Scapanorhynchus* shark tooth in matrix, the twin of my first one. There was an ammonite laying next to it to boot. While blabbing with Brent and having a good old time uphill, I scored more ammonites, a spectacular *Baculites*, and more shark tooth blades.



FIG 21: Sprinkle fm *Baculites* and ammonites including *Menabites* and possibly others



FIG 22: Shark teeth *Scapanorhynchus texanus*

Retracing our steps back to the vehicles we scored a few more echinoids, but then Marc stated rather matter of factly that a slab 100 feet ahead looked like an ammonite. The closer we got, the sicker the rest of us felt. It appears that Marc found an 18 inch *Menabites* ammonite from 100 feet away that the rest of us missed from mere feet earlier.



FIGS 23-24: Sprinkle fm echinoids *Plesiaster americanus*, *Proraster dalli*, *Hemiaster bexari* left, ammonite *Menabites* right

After lunch I led the boys to a creek exposure in the South Bosque formation of the Eagle Ford group, about 87 MYA. The Eagle Ford has thin lenses of shark teeth between layers of shale and limestone of variable thickness. Happy chiseling filled the air as we split the layers and began pocketing shark teeth such as *Squalicorax falcatus*, *Ptychodus anonymus*, and *Cretoxyrhina mantelli*. I also got a fish vertebra or two, and Brent landed a very cool Plesiosaur tooth. At one point I thought Brent was sleeping in the creek bed as a result of his 4:30 a.m. wake up, but I later found out he was upside down chiseling out teeth under an overhang.

Happy with our finds, but needing a change of venue, we hit another creek exposure in the Austin area in the same formation. Brent and I immediately laid eyes on a 2x3 foot slab of limestone covered with oyster fragments and shark teeth. We extracted about 10 teeth before moving on. We hunted around for a good lens, occasionally finding a few *Squalicorax* and *Ptychodus*. When Brent finally wondered aloud concerning the whereabouts of the *Ptychodus* layer, I felt guilty about the 4 *Ptychodus* and 2 large *Cretoxyrhina* I had just found and called the whole gang over to mine out the same layer. The place was filthy with teeth, but apparently I was on the epicenter of them. Chris was gentlemanly about the whole thing, but soon my other "friends" double teamed me to distribute the wealth a bit more evenly. I'd mine out a slab and Brent would steal it away. When I'd turn to defend myself, lightning fast, opportunistic chiseling from Marc would steal another slab away. Good thing there were plenty of teeth to go around!



FIGS 25-29: South Bosque teeth *Ptychodus anonymous* top left, *Cretoxyrhina mantelli* top right, *Cretodus crassidens* and *Odontaspis ammonensis* mid left, fish vertebrae, *Enchodus* fish jaws/teeth, and Plesiosaur tooth mid right, crow shark *Squalicorax falcatus* teeth below

We had fun swinging the big pick, sliding 300 LB slabs of overburden into the creek with my gorilla bar, and grinding mud into our clothes. With darkness approaching, we were all happy with heavy packs and buckets. We each took good numbers of coveted *Ptychodus*, including Marc's *P. occidentalis*. After all the good collecting the Dallas boys had turned us onto, I'm glad Marc and I were able to lead them to sites where everybody found numbers of good specimens.

I've been collecting with Marc for a little over a year, and sadly a recent promotion within the Royal Netherlands Air Force is taking him and his family back to Holland permanently. This was his last Texas collecting trip as he moved on Monday. The past 6 months of collecting have been our best ever, a combination of increased research on our part and networking with the right people.

After some deliberation at the end of the day, Marc decided that his biggest ammonite of the day would be a logistical nightmare to take to Holland as he only had a few hours the next day to pack. Lucky for me, he slung it my way. What a guy, he even carried it 400 yards to the truck for me earlier in the day! Good thing he didn't decide it was mine when he found it!

At any rate, we will do our best to keep the fossils from wasting away down here, and I'll keep Marc posted on our latest discoveries. Good luck with the promotion, amigo, and feel free to send some Jurassic ammonites our way!

