

FOSSIL COLLECTING REPORT

November, 2009

Daniel A. Woehr and Friends

November 19, 2009: Mammoth Memories

With a weekend rainout a strong possibility I opted to burn a vacation day and recruit my good friend John Jackson to accompany me on an exploratory Pleistocene boat trip sampling some areas I've never collected in the past. Weighing all factors there was a certain amount of risk to consider....a looming front could bring winds pumping 25 knots, making our maritime transportation a bit dicey. Then there was the distance....32 miles by water is an aggressive itinerary this time of year with short daylight hours, particularly when navigability is a wild card in uncharted waters. Submerged logs, shallow sandy shoals, and other factors all can affect average speed and possibly result in a night time take out or worse.

We decided to pull the trigger as the potential gains in this adventure were far too great to ignore. So on one hour's sleep I jumped in my vehicle and high tailed it to our assigned take out, then we made it to our put in a little after dawn. We were hopeful that our first several gravel bars would bring bountiful Pleistocene treasures, but instead we drew nothing but blanks and burned a couple hours in the process.

It was soon 11 a.m. and we had only 3 or 4 miles under our belts and 28 remaining before darkness would fall around 5. Winds were picking up as well and creating standing waves in places. Our experience in reading the water came in handy, as did my depth finder stick, so we ran full throttle as many of the remaining miles as possible, slowing in the shallows, and jumping out on selected gravel bars like trained commandoes.



FIG 1: Unidentified Pleistocene limb bone dug out of a clay bank (Site 414)

At one bar studded with large, chunky sandstone slabs I angled for the head of the bar while John made his way to the tail. While wading in shallow water I spied a curious form on the bottom....big and blocky with a pattern of lines down the side.....a MAMMOTH TOOTH!!!! And a big one it was at that, estimated at roughly 10 pounds, my biggest yet. It was quite fragile and with enamel folds beginning to delaminate, and there were a few chunks missing. It is a little rough in condition yet still impressive. Once the algae is cleaned off and the piece stabilized it will be quite a conversation piece in my house.



FIGS 2-11: The author with a mammoth upper molar as found and in various stages of prep (Site 527)



















I dropped John off at the next gravel bar while I swung down to the next bar downstream, beached the boat, and jumped out. Within 5 steps I locked eyes on another curious form....cylindrical in shape with a familiar grain.....a MAMMOTH TUSK!!! While only about 8 or 10 inches long and 3 inches in diameter, this is perhaps the best preserved section of tusk I've found to date, superlative in quality. It came to hand about a half hour after the tooth. It will be quite difficult for me to top this day.



FIGS 12-17: The author's section of mammoth tusk as found and prepped (Site 382)







Completely satiated, I gave John first pick of where he wanted to search most of the remaining bars. He ended up taking a long, skinny camel radius, a very nice find. He supplemented his take with several nice fossil vertebrae including *Bison* cervical and a horse thoracic. I saw several horse teeth in his pouch and he took a large jaw section of some sort as well.



FIG 18: John Jackson's camel radius (Site 426)



FIG 19: The author's horse molars and turtle shell fragment (Sites 303-308)



FIG 20: The author's unidentified limb bone and vertebrae (Sites 303-308)

I too took a couple of vertebrae and a couple horse teeth. But after my 2 mammoth finds I could have found nothing and been completely satisfied. Winds kicked up and then subsided. Light sprinkles entered the picture as well, but nothing could dampen our spirits. We had once again faced the elements and beaten the odds with spectacular trophies to admire for years to come in exchange for taking calculated risks and planning ahead. I suspect that similar excursions will pay out handsomely in the future.
November 22, 2009: Recently Orphaned Echinoids Calling My Name

Hard rain and lots of it fell around San Antonio earlier in the week so on the weekend I decided to brave the pig slop in pursuit of freshly liberated echinoids and other Cretaceous marine treasures. First stop: the Corsicana formation, a 68 million year old marine sequence with discreet zones of abundant and well preserved fossils.

Ahhhhh....how I feel so familiar and confident crawling the exposures that have produced bushels of echinoids and other goodies for me for upwards of the last 4 years....my search this day began and ended on hands and knees slogging through semi liquid drudgery, my knee pads accumulating up to 10 pounds of mud each before I scraped them clean with my screwdriver and began the process again and again. However this tedious detail was well rewarded many times over the course of my visit.

My crawl afforded me 5 or 6 examples of the crab *Dakoticancer australis* represented by legless carapaces, one being remarkably preserved. I'm not one to look a gift crab in the mouth! But more significant was the discovery of the rare and possibly undescribed species of the echinoid *Codiopsis* found while crawling a section of the exposure that I had ignored to date. I also uncovered a very complete specimen of the ornate gastropod *Striatocostatum bexarensis* which will stand out prominently in one of my Riker mounts. A couple nice examples of the echinoid *Plesiaster americanus* supplemented a good take of 40 or 50 more common echinoids *Hemiaster bexari*.



FIGS 21-23: Corsicana formation Crab carapaces *Dakoticancer australis* this and next page (Site 349)





FIGS 24-29: Corisicanan fm echinoid *Codiopsis* sp. this and next 4 pages (Site 349)











FIG 30: Corisicana fm echinoids *Plesiaster americanus* (Site 349)



FIG 31: Corisicana fm echinoids *Hemiaster bexari* (Site 349)



FIG 32: Partial ammonite *Pachydiscus* sp. left and nautiloid *Eutrephoceras* sp. right (Site 349)



FIGS 33-34: Corisicana fm gastropod *Striatocostatum bexarense* this and next page (Site 349)





FIGS 35-36: Corisicana fm gastropods this page, more gastropods and *D. australis* crab claw next page (Site 349)



FIGS 35-36: Corisicana fm gastropods this page, more gastropods and *D. australis* crab claw next page (Site 349)



FIGS 37-38: Corisicana fm bivalves *Trigonía castrovillensis* above, scallops *Neithea bexarensis* and *Protocardia* type bivalve mold below (Site 349)

Indeed the rain had done its job well. At one point a few cars were circling the exposure for a half hour. I assumed these were other collectors hoping I would leave and they finally drove off. I finished my work with a gallon bag busting at the seams with high grade finds, only to move on to another exposure and continue the one man party.

The exposure was small and my mind was thinking ahead to my next site, but fortunately I paid enough attention to the ground to notice a few very collectible oddities. I was very happy to lay hands on the scarce echinoid *Proraster dalli*, then I saw it.....another *Codiopsis* echinoid! This was a very special day indeed. After collecting some 2000-3000 keeper echinoids in the area over the last 4 years I've only taken perhaps 8 complete *Codiopsis* echinoids, and I found 2 on this particular day.....celebration was in order.



FIGS 39-41: Corsicana fm echinoid *Codiopsis* sp. this and next page (Site 348)





FIG 42: Corisicana fm echinoids *Hemiaster bexari* left, *Proraster dalli* top right, and *Linthia variabilis* lower right (Site 348)

A little driving put me in the Glen Rose Formation, a 108 million year old marine sequence featuring well preserved echinoids in certain zones. I met up with my good friend Farley Katz and led him to a spectacular and unknown exposure of the *Salenia texana* zone that I've come to know and love. Here we crawled around for a half hour or so bagging *S. texana* echinoids in addition to well preserved spatangoids dominated by *Heteraster obliquatus*. I couldn't resist taking home a few of the bivalve and gastropod molds either, so for the time spent our baggies were heavy.



FIGS 43-44: Glen Rose fm echinoids *Salenia texana* above, *Heteraster obliquatus* below (Site 445)



FIGS 45-47: Glen Rose fm unidentified gastropod, bivalves, and scallop *Neithea* sp. this and next 2 pages (Site 445)





With family in town Farley opted to head home while I floored it to my final site, also in the Glen Rose formation. And my oh my had the rain done its job well.....I suited up for battle with elbow pads and knee pads to protect my bony prominences from gravel as I did the army man crawl across the soggy mud flat. Actually it was more of a staccato belly flop not unlike a land locked walrus, but appearances aside I had afforded my aging eyes maximum opportunity to spot tiny, perfectly preserved echinoids half the size of my pinky nail.

I put in a couple hours at this site, soaking my pants and front of my shirt with liquid mud. It was well worth the discomfort and inconvenience though as my efforts had netted my best echinoid take from the site to date.....about 20 undescribed *Salenia*, a *Goniopygus texanus*, 2 perfect *Globator hancockensis* and several partially compressed undescribed spatangoids, in aggregate totaling 29 echinoids. I supplemented my take with a few fingers from hermit crab claws *Paleopagurus banderensis* and crinoids columnals *Isocrinus annulatus*.



FIGS 48-49: Glen Rose fm echinoids *Globator hancockensis* (2) and *Goniopygus texanus* this and next page (Site 161)





FIGS 50-52: Glen Rose fm echinoids *Salenia* sp. above, crab claws *Paleopagurus banderensis* and crinoid columnals *Isocrinus annulatus* below and next page (Site 161)



Dusk was advancing as I completed my search in long shadows, so in the interest of avoiding collisions with deer I opted to pull the plug and head home. Such a smashingly successful day would not be complete without an episode of absent minded stupidity attributed to jubilant celebration, so allow me to expound to my chagrin and your amusement on my personal folly below.

I was on the phone with a museum buddy, jaw flapping about the day's finds while I gassed up my vehicle. I remember setting my wallet on the roof (WHY???) then a few minutes later cut my call short when I realized my wallet was nowhere to be found. A quick u-turn and careful scrutiny of the highway entry ramp in my headlights ultimately revealed my wallet in the middle of the road.....RELIEF.....but not complete relief as I would discover two vacant slots where my credit and ATM cards once resided. Wind blown into oblivion, the cards didn't turn up so I canceled them when I got home. Tomfoolery has its price. Good thing a little inconvenience was all it cost me.

November 27, 2009: Going Cold Turkey for Texas Echinoids

My friend Brian Evans has been itching to collect with me lately on a high percentage venue of any kind, and he sweetened the deal with his company van and gas card available for unlimited personal use.....Mama Woehr didn't raise no fool (or did she???).....so off we went at 1 a.m. the day after Thanksgiving, our twin 24 foot extension ladders strapped to the roof; our coolers chock full of cold turkey.

Destination: a well known stretch of highway out near the hamlet of Kent some 400 miles west of San Antonio. There a series of highway road cuts incise the stark desert landscape exposing Ma Nature's riches. The Boracho Formation exposed in the area is a Cretaceous marine sequence roughly 99 to 103 million years old bearing innumerable echinoids and a few other goodies such as ammonites. The formation is divided into 2 members, the Levinson, which is the equivalent of the Duck Creek and Fort Worth Formations of North Texas, and the San Martine which equates to the Denton, Weno, and Pawpaw Formations of North Texas.

Distant as this series of sites may be from civilization, it still receives its share of collecting pressure, so we did our best to up our odds by being more motivated than the average collector. Our approach was simple yet grueling: Get up ridiculously early and drive 5-6 hours, dodging herds of rutting whitetail deer and the occasional mule deer. Collect non-stop from dawn to dusk. Seek sustenance and refreshment only while driving between sites. Lastly, and most importantly, deploy the ladders at every opportunity in order to afford a shot at goodies out of reach of less organized competition.

We actually arrived a little early and had to wait roadside for dawn's first rays to illuminate the rich layers of the San Martine member. But soon we were up our ladders working opposite sides of the road cut, swinging hand sledges and driving steel chisels in a fashion that would make old John Henry proud. In this fashion we extricated a number of choice echinoids from their Cretaceous sepulcher. *Anorthopygus*, *Globator*, and *Coenholectypus* echinoids all came to hand as did some cool slabs of calcite crystals for the yard and for the kids. We spent a couple hours at the first site, but before long I hurried us along in order to maximize use of our 10 hours of daylight.



FIG 53: The author tempting gravity at Boracho fm Site 286



FIGS 54-56: San Martine mbr echinoids *Anorthopygus texanus*, *Coenholectypus* sp. and *Globator parryi* respectively, in situ this and next 2 pages (Site 286)





FIGS 57-58: San Martine mbr echinoid *Anorthopygus texanus* in matrix this and next page (Site 286)





FIGS 59-60: San Martine mbr echinoids *Anorthopygus texanus*, *Coenholectypus* sp. and *Globator* above, calcite crystals below (Site 286)

The next road cut was a huge terraced slice which exposed primarily the Levinson member. The upper terraces gave up little fossil-wise, but just as I was about to pronounce the site sterile I found the first sign of the coveted echinoid *Macraster kentensis*. Over the next hour I found first 3 broken specimens which I superglued back together, then following the same seam I was able to land 4 more complete or nearly complete *M. kentensis* specimens including one I picked up on a whim.....it was encased in a blob of limestone and experience told me that the size and shape could be completely hiding one.....glad I toted the extra weight. Rounding out my take with a nice *Mortoniceras* ammonite we made our way on down the road.



FIG 61: Boracho fm, Levinson mbr Site 276, van below and Brian Evans on upper terrace for scale



FIGS 62-66: Boracho fm, Levinson mbr echinoids *Macraster kentensis* followed by a *Mortoniceras* sp. ammonite in situ and prepped, this and next 3 pages (Site 276)







Our next site also seemed to be relatively unhunted for the last several rain cycles. The preponderance of the distinctive oyster *Ostrea quadriplicata* suggested that we were in the equivalent of the Denton Formation. Here we found *Heteraster texanus* echinoids and lots of them, some with cubic pyrite crystals stuck to them, others stained black in areas apparently by pyrite, all well preserved including the cluster of 8 little *Heterasters* I found in a palm sized chunk of matrix. I rounded out my take with a small but damaged *Salenia* echinoid and a Suzan B. Anthony sized *Phymosoma* plus a small, rough ammonite. And after as many desirable fossils as I've been fortunate to lay hands on over the last few years, I'm not too proud to admit taking a few of those cool little oysters, both in matrix and free of matrix.



FIG 67: Boracho fm, San Martine mbr echinoids *Salenia volana*(?) above and *Phymosoma mexicanum* (?) lower left followed by a *Mortonicerias* sp. ammonite lower right (Site 275)



FIGS 68-71: Boracho fm San Martine mbr echinoids *Heteraster* sp. this and next 2 pages (Site 275)







FIG 72: Boracho fm, San Martine mbr oysters *Ostrea quadriplicata* (Site 280)

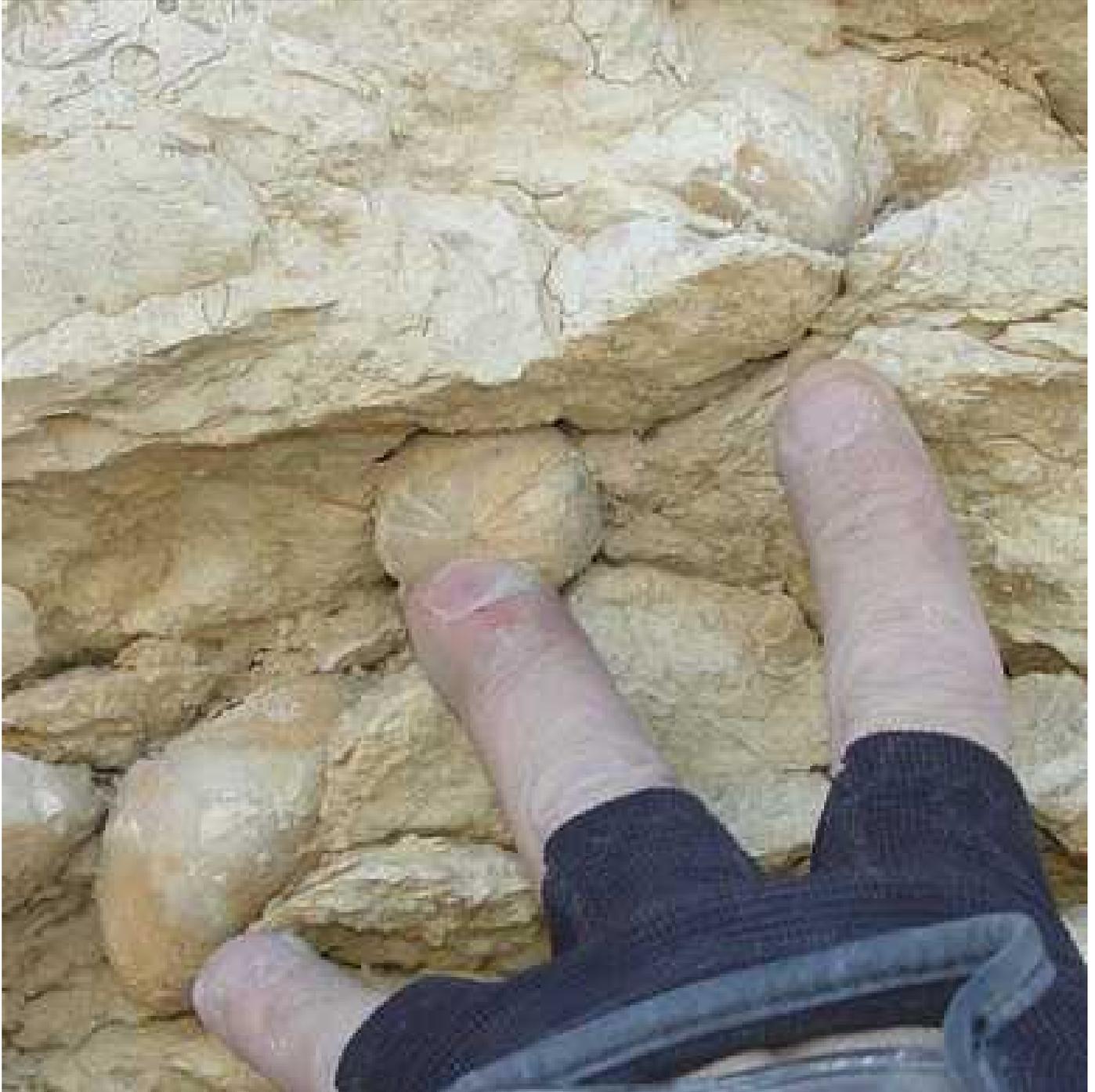
Pressing on we worked a shallow road cut...the results were few in number but pretty cool.....we took a few rough but identifiable echinoids *Goniopygus stocktonensis*, welcome in any collection.



FIGS 73-75: Boracho fm, San Martine mbr echinoids *Goniopygus stocktonensis* in situ and prepped followed by calcite crystals found nearby (Site 528)



Our next road cut was the most ludicrously productive of the day, again apparently ignored by other collectors for a while, both down low and in the nose bleed section. Here we probably spent a couple hours banging more *Anorthopygus*, *Globator*, and *Coenholectypus* echies from their lithic mass grave, at times pulling associations of them out of the wall in chunks of matrix. Unfortunately none were packed as dense as the “grape clusters” I so enjoy finding and prepping, so later on I ended up breaking the blocks to free the singles.



FIGS 76-89: Boracho fm, San Martine mbr echinoids *Globator parryi* and a few *Coenholectypus* sp. this and next 9 pages (Site 529)



















Daylight was waning so we rushed the next several sites, perhaps not being thorough enough but we still managed more of the same goodies from the San Martine. Working another Levinson exposure, Brian inadvertently exploded a *Mortoniceras* ammonite while I laid hands on a couple *Holaster simplex* echinoids, one in spectacular condition when considering the acidic desert environment which solution marked so many of the echies we had found thus far.



FIG 90: Boracho fm, Levinson mbr echinoids *Tetragramma* sp. top left and *Holaster simplex* top right followed by *Gyrodont* sp. gastropod below (Site 280)



FIGS 91-95: Boracho fm, Levinson mbr echinoid *Holaster simplex* in situ and prepped followed by two *Mortoniceras* sp. ammonites this and next 3 pages (Site 274)







With time for one more site, Brian wanted to revisit the *M. kentensis* zone, so there we went. The man had a score to settle. And in the final rays of dusk he did exactly that, expertly hammering out in one piece perhaps the best preserved Mac of the day.

We each started the day on perhaps 2 hours sleep, and in the end we pushed ourselves for 24-25 hours including driving. It was entirely worth our 800 mile trek, especially with the free gas and Thanksgiving leftovers making this the cheapest exotic fossil trip in history. Quality fossils.....desolate wintertime desert scenery.....plenty of productive area for 2 guys to collect.....who could ask for more?



FIGS 96-99: Evening shadows cast by the sun on the hills around Kent

