

FOSSIL COLLECTING REPORT
JANUARY, 2007
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January 4, 2007: A Cool Boss is an Asset

After a couple phone calls and a nod from my boss I was able to arrange a mid week fossil collecting trip at an active quarry in San Antonio which exposes both Austin Chalk (Dessau formation, 75 MYA) and the overlying Pecan Gap Chalk (72 MYA). Friend and fellow collector Farley Katz was able to arrange a freedom pass from work as well for a few hours that morning.

This particular quarry has a lake that is usually so high that collecting is not permitted around its perimeter. However the current drought situation made it possible for us to access the walls of the pit bordering the lake, providing rare access to the Austin. We were escorted over the entire visit, and overnight rains provided sloppy footing resulting in 10 pound boots and each of us standing 2 inches taller. Heck, it was so sloppy in places that one of us 3 fell a couple times in the mud sideways. Curiously I'm not shown in any of the photos so that may or may not be related to who fell in the mud...good thing we weren't wearing work clothes.

Farley and I had hopeful visions of rare ammonites such as *Peroniceras*, *Prionocycloceras*, and *Parapuzosia*, but we didn't find any ammonites this time. Instead we picked up a few nice *Cymatoceras hilli* nautiloids up to about 20 LBS. At one point I moved off while the other guys were talking and I worked the tail end of the wall as the exposure petered out. I happened to glance at a softer layer in the hard limestone and plucked a nearly perfect, large *Hemiaster texanus* echinoid from the wall, the best of this species in my collection to date.

We didn't make any major finds but were happy to survey the exposure nevertheless as there just aren't many good places to collect in San Antonio compared to other parts of the state.



FIG 1: Quarry exposure showing Pecan Gap Chalk above uppermost bench and Dessau fm (Austin Chalk) below (Site 81)



FIGS 2-7: A closeup of the Austin Chalk above with Farley Katz in the foreground, two natural springs in the quarry floor resulting from recent rains middle row, *Cymatoceras hilli* nautiloid and phosphatic gastropod molds below (Site 81)



FIGS 8-12: *Hemiaster texanus* echinoid from the Dessau fm (Site 81)

January 13, 2007: Weathering the Storm

2 or 3 inches of rain had pelted San Antonio a couple weekends prior and then again late last week, so I opted to stick around town and collect some of the quicker refreshing local sites as opposed to burning fuel to run north and hit more rain in the process. Winter weather was predicted to hit later in the day as a norther was barreling south toward my neck of the woods. I opted for an early start at the Corsicana site (68 MYA) for a jab at some crabs and echinoids and whatever else the site offered. I invited a couple friends from Fort Worth to join me but had to give them a raincheck, resulting in a solo gig for the day, something I enjoy almost as much as collecting with friends.

The site was in perfect form: freshly washed by a downpour and uncollected. In the dim light I took care of my spousal duties first, filling a 5 gallon bucket with big *Pycnodonte mutabilis* and *Exogyra costata* oysters that my wife would use for landscaping our flower beds. My feet slid with each uphill step. This called for some hands and knees 4WD action once good daylight illuminated the fossilscape.

A couple *Hemiaster bexari* echinoids came to hand early but my echinoid take for the day was rather light. Either we've begun to tap the site out or other collectors have found the place and presented me with a little competition. Whatever the reason for the dearth of echinoids, the site was still rich in crabs, most notably *Dakoticancer australis*. With the wet matrix now just a shade lighter than brick red the faint white outlines of crab legs and carapaces broken in section revealed themselves to eager eyes scanning methodically from perhaps 12-18 inches off the ground. Lots of crab pieces came to hand including nearly complete chelipeds (arms with claws) and carapace fragments.

I picked up a marl clod with a nice gastropod on it and it happened to have telltale signs of a crab hidden inside. The specimen prepped out nicely with the gastropod sitting right on top of the crab. My second crab was a bit tattered and was found in a nodule broken in half in the ground with the carapace weathering away. With alternating scribe work and superglue applications I got it to look like a crab, but it is sort of an ugly one. That's the double edged sword of collecting these faster weathering formations – don't let successive rains fall on these fragile specimens once exposed or they quickly disintegrate.



FIGS 13-15: Corsicana crab *Dakoticancer australis* with both claws intact but chelipeds (clawed front legs) flipped backwards near the posterior side of the specimen (Site 248)



FIGS 16-21: Corsicana crabs *D. australis* – specimen 2 top row, specimen 3 second row, articulated chelipeds (claw legs) third row, and echinoids *Hemiaster bexari* bottom row (Site 248)



FIGS 22-26: Corsicana gastropods *Gyrodes* sp., *Turritella vertebroites*, *Striatocostatum bexarense*, *Polinices* sp., and others first 4 frames, (L-R) bivalves *Lima acutilineata texana* and *Plicatula mullicaensis*, straight ammonite *Baculites* sp., and worm tube *Hamulus onyx* last frame (Site 248)

My third crab was museum grade specimen that brought my fist to the ground with a resounding “YES!” It was poking a bit of its posterior carapace out of the matrix, but what I could see was in good shape. Prep work revealed a tangle of legs jumbled in front of its face which I removed to reveal facial features. While the carapace is nearly flawless, the most interesting part is that it has both claws intact, however they tucked behind it in an unnatural position like it had an itch to scratch so to speak. I’ve picked up and prepped nearly 50 of these crabs now and made a couple peculiar observations regarding appendages. First, the legs are sometimes found twisted into yoga-like positions not possible in life. Second, the claws are often preserved missing the movable finger. I have no explanation for either of these preservational states.

I then moved on to a nearby site but scanned a small area I had previously overlooked. This was a fortuitous move as it produced a handful of *H. bexari* echinoids and yet another fine crab, this one missing a little facial detail but had several legs preserved in living position. Another small site not far away produced a worn phosphatic mold of a *Eutrephoceras planoventer* nautiloid, an articulated crab leg, and a single *Plesiaster americanus* echinoid.



FIGS 27-31: Corsicana crab *D. australis* first 3 frames (note tail curled underneath) followed by echinoids *H. bexari* and gastropods (L-R) *Gyrodes* sp., *Turritella vertebroides*, *Polinices* sp. and others and bivalve *Plicatula mullicaensis* below (Site 348)



FIGS 32-33: Corsicana echinoid *Plesiaster americanus* left, gastropods (L-R) *Turritella vertebroides* and *Polinices* sp. right (Site 349)

Pressing on I hit an old site in the Glen Rose formation (108 MYA) which had produced many *Salenia texana* echinoids in the past plus a spectacular and rare echinoid *Phyllacanthus texanus* over a year ago. I've seen many buddies to this site including one just a couple of weeks ago, but the recent rains improved contrast between the fossils and matrix while washing out new ones. I took 6 *S. texana* before moving on to a nearby series of dumped rock piles where I took 16 more plus a couple of crab claws *Paleopagurus banderensis*. These echinoids appeared almost white against the dark gray marly matrix. The cold front hit like a freight train high winds drove the cold rain under my jacket. Good collecting however helped me to weather the storm, although my cold fingers failed to cooperate after a while.



FIGS 34-36: Glen Rose echinoids *Salenia texana* (5) and *Heteraster obliquatus* (1) top row (Site 133), *S. texana* second row and crab claws *Paleopagurus banderensis* bottom row (Site 357)

Arriving at my final site I was glad to see a break in the rain, but the site was more of a playa lake that day and I had to navigate on hands and knees to the "dry" spots which amounted to slippery pig slop. While doggypadding through this quagmire I was lucky to find a 4 mm *Salenia phillipsae* echinoid to boost my confidence and offset my discomfort. This find was soon followed by a nice little *Globator hancockensis* echinoid and then a *Goniopygus* sp. followed by half of a dime sized *Orthopsis comalensis*. I laid hands on a few crinoid columnals *Isocrinus annulatus*

and some small *Callianassa* sp. crab claws before my fingers went on strike again from being submerged in the cold muck. Imagine picking through a chocolate milkshake for fossils and you'll understand why even I elected to pull the plug early and head on back to the house.



FIGS 37-39: Glen Rose echinoids (L-R) *Globator hancockensis*, *Salenia phillipsae*, and *Goniopygus* sp. followed by crab claws *P. banderensis* and *Callianassa* sp., crinoid columnals *Isocrinus annulatus* and finally foram *Nodosaria texana* above, close ups of same echinoids below (Site 161)

I look forward to guiding a couple of out of town friends to some of these San Antonio area sites over the next couple of months. As for the rest of this month I'm sure I'll be found collecting somewhere in the state as conditions dictate.

January 21, 2007: Local Repeat Trip

I opted to save a little ca\$h by doing some local collecting once again, a decision made much easier by a week of ice and rain to freshen things up a bit. My first stop was a small ditch I found a couple years ago exposing the contact of the Del Rio and Georgetown fms (98 MYA) in Bexar Co. The Del Rio is a peanut butter colored clay while the underlying Georgetown is a nodular limestone stained tan by pyrite and the overlying Del Rio clay. I have found numerous ammonites *Plesioturrites brazoensis* and echinoids *Coenholectypus* sp. at this site in the past but such was not the case on this day as the site was half underwater and probably still recovering from my flurry of activity there last year.



FIGS 40-41: *Neithea* sp. bivalve from the Georgetown/Del Rio contact of Bexar Co.

Pressing on I revisited an old exposure of Anacacho limestone (72 MYA) only to find it recently disturbed by construction. Large yellow slabs and boulders were strewn over a small area so I began a purposeful crawl. In the

end I lifted partial ammonites *Trachyscaphites sp.*, and *Scaphites sp.* I also landed a few echinoids *Proraster dalli* and *Phyllobrissus cubensis* in rough condition. Many ornate bivalves were had as well one segment of a crab leg, possibly *Callianassa sp.*



FIGS 42-47: From the Anacacho fm. a *Proraster dalli* echinoid above, *Phyllobrissus cubensis* and unidentified spatangoid echinoid middle left, *Neithea sp.* bivalve middle right, *Baculites sp.* ammonites below (Site 378)

By lunch time I found myself back at the Corsicana site (68 MYA). My efforts were not rewarded as well as the previous weekend, but I did manage to lift a couple broken crabs *Dakoticancer australis*, a handful of echinoids *Hemiaster bexari*, and the usual mix of bivalves and gastropods. 2 of the crabs were questionably complete until I began scribing them, then it became apparent that my 2 complete carapaces of the day were nearly completely hidden in matrix.

This site seems to be petering out to some degree, no doubt due to regular collecting (90% me, 10% friends). This presents a double edged sword of sorts...the more we collect the more good specimens find good homes, but the less we collect the longer the fossils last but come to hand lower quality due to weathering. Rain tends to break down the soft Corsicana matrix rapidly, and the echinoids and more so the crabs tend to fall apart when left exposed for a couple rains or more. So if the site meets the end of its useful life due to hard collecting so be it. That is better than having construction seal it under concrete before we get a chance grab the best specimens. Since I found the site in November 2005 I have taken an estimated 600 echinoids, 50 crabs, 300 bivalves and 800 gastropods, enough to fill six or eight 12" x 16" frames and as many single layer tackle boxes. This is the single most productive site I've ever found.

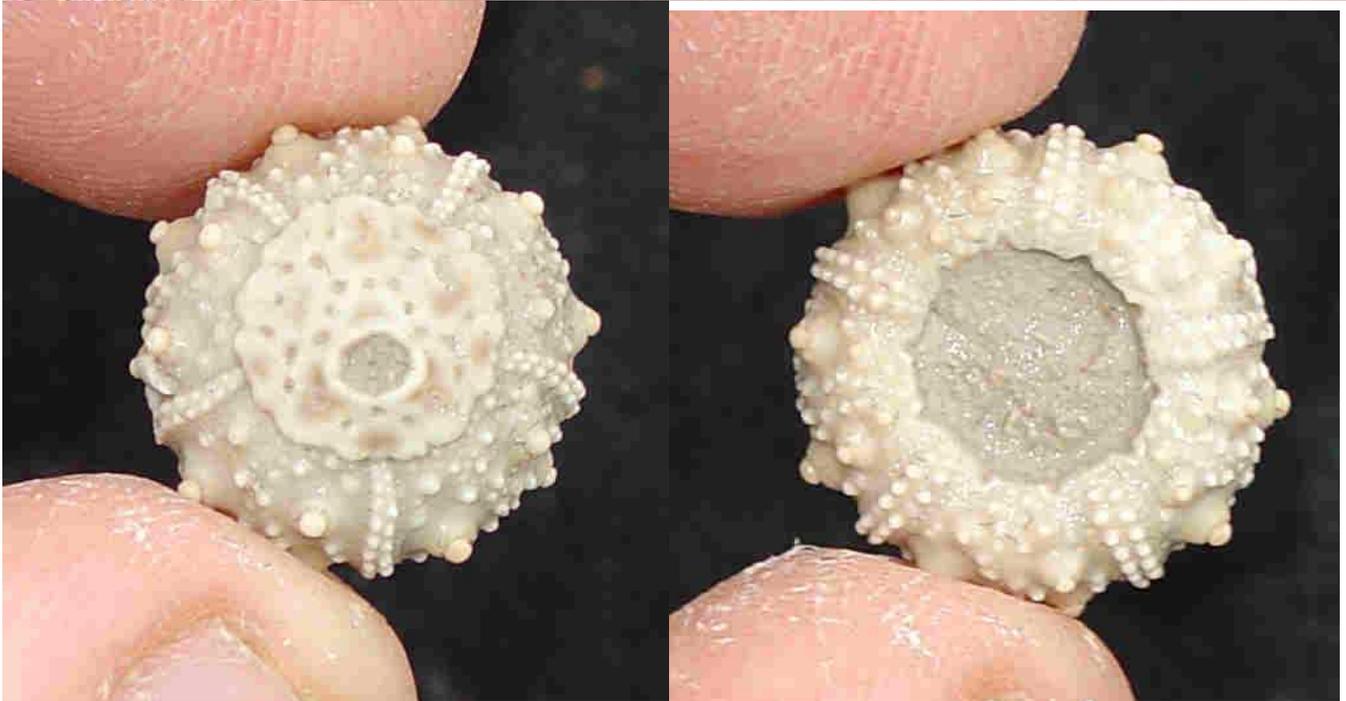


FIGS 48-56: From Corsicana site 248 *Dakoticancer australis* specimens 1, 2 and 3 in first 3 rows (note intact claw on specimen 1), echinoids *Plesiaster americanus* (crushed specimen left) and four *Hemiaster bexari* bottom row



FIGS 57-59: Corsicana fossils including bivalves *Neithea bexarensis* and *Plicatula mullicaensis* above, various gastropods center (both frames Site 248), and *Hemiaster bexari* echinoid, a bivalve, and various gastropods below (Site 348)

Heading north I once again ventured into the Glen Rose fm (108 MYA) for a low crawl in the mud with hopes of locating some micro echinoids. An hour produced echinoids *Salenia phillipsae* in addition to some columnals and crown plates from the crinoid *Isocrinus annulatus* accompanied by crab claws *Paleopagurus banderensis* and *Callianassa* sp.



FIGS 60-63: A visit to Glen Rose fm produced 4 echinoids *Salenia* sp., crinoid columnals and plate *Isocrinus annulatus*, and crab claws *Paleopagurus banderensis* and *Callianassa* sp. above, echinoid *Salenia phillipsae* middle (Site 161), crab claw *P. banderensis* below (Site 34)

I opted to finish the day probing some old road cuts. The first has given up interesting echinoids, crab claws, and corals in the past but only gave up one *Heteraster obliquatus* echinoid and one crab claw *P. banderensis* this time. On down the road I found that the second road cut was covered by topsoil and grass planted within the last few days. This is unfortunate as this cut gave up many well preserved echinoids for the Dallas Paleo Society a couple years back. I personally took 5 species of echinoids here in 15 minutes one time. Sites come and go, but I prefer a final hard look at them before they are gone.

January 27, 2007: Getting My Mind Off Life's Obligations

While doing an oil change I found a coolant leak coming from the new water pump on my truck so I took it back in Saturday under warranty. The shop replaced the water pump but found another leak they weren't comfortable fixing so I got my truck home leaking 10 times more profusely than when I took it in. With a fossil trip planned for Sunday I'm glad this whole mess didn't unfold on the road. At first I assumed I'd have to scrap my trip, then a light went on in my head. Local collecting buddy Tom Fisher had been urging me lately to get him out in the field so I gave him a holler. With a short notice kitchen pass from the wives we were on the road at 5:30 a.m. in his trusty Ford Escort headed for various Cretaceous exposures in Central TX.

Around dawn I spotted a small construction site with a few unassuming rock piles strewn about. Knowing that it doesn't take much exposure of Georgetown fm limestone and marl to spell success we pulled over to survey the scene for 102 million year old marine fossils. I threw back a broken *Mortonicer* ammonite but Tom retrieved it for his collection. I then laid hands on a very interesting and complete 5-6 inch *Mortonicer* of my own with pronounced tubercles and sutures and differential crushing of some of the juvenile whorls. After prep this free standing specimen made a wonderful display piece. Moving to the second pile I located another nice *Mortonicer* and while we were leaving I picked up a gem of an echinoid, a diminutive 1 ¼ inch *Macraster* in perfect form and covered in pyrite. The crystals are broad and thin, coating the test and giving it sort of a "galvanized" look in places. Not much mention of Tom's finds at this new site, but we had a reversal of fortunes at the next site.



FIGS 64-67: Georgetown fm. ammonites *Mortonicer* sp. from Site 385



FIGS 68-73: Pyritized *Macraster* sp. echinoid from Georgetown fm Site 385

Within a half hour we found ourselves dressed in boots and chest waders fording a creek that I found and wrote about last summer. With maps and aerial images I had located a potential site in the Georgetown fm and surveyed a short stretch of it in the middle of the night in my flashlight beam on the way to Dallas on two separate occasions. After finding 4 nice ammonites on previous trips I was anxious to push farther down this creek in the daylight and see what it had to offer.

Tom found a nice 4 inch *Mortoniceras* within 30 yards of the road which I had apparently missed on previous nocturnal sorties. Within a half mile we hit a couple isolated stretches of many *Mortoniceras* ammonites in the creek bed although most had the centers worn out by erosion. Tom found a 12 incher which appeared to be intact

so we both got to work chiseling a channel around it. Working a specimen under 4 inches of flowing water resulted in some splashing, but with patient and careful work we were able to pop this beautiful specimen out whole. It is one of Tom's best ammonites. So this time Tom got all the fossils and I got none but I was content not to carry any extra weight while slogging back upstream in the rushing current while wearing bulky waders.



FIG 74: Tom Fisher with his best *Mortoniceras* ammonite to date (Site 333)

Working back south after a 30 minute ride we again found ourselves in a familiar creek incising the Georgetown fm. The bluffs and float along the creek appeared to expose the Duck Creek and Fort Worth members of the formation, and the first exposure gave up a nice little *Mortoniceras drakei* ammonite with delicate sutures. I gladly pocketed this specimen. Pressing on several hundred yards through the woods we located 2 more fossiliferous bluffs. Tom worked the upstream side while I worked the downstream side. We both found some 3 inch rough *Macraster* echinoids and I picked up a nice *Neithea* scallop and another *Mortoniceras* ammonite. As I was getting ready to turn back I pressed on just a bit farther as the ledge above the deep creek got narrower and the exposure got steeper. By pulling myself along some overhanging tree roots like a baboon in the trees I was able to drag myself along the tail end of the exposure and ultimately plucked a perfect egg sized *Holaster simplex* echinoid plus another *Macraster* from the wall which made it all worth it.



FIGS 75-81: More Georgetown fm goodies including *Mortoniceras drakei* ammonite top row, two *Mortoniceras* sp. and a *Neithea* sp. middle row, *Leptomaria austinensis* gastropod lower left (all Site 173), and a *Mortoniceras* sp. ammonite below (Site 217)



FIGS 82-87: *Holaster simplex* echinoid from Georgetown fm Site 217

While pulling a fossil free of the matrix at one point it let go and my ungloved hand flew back into a sharp rock. The point of the rock drove through my index finger nail, broke off flush and became impaled in my finger. It felt like I had run my finger through a sewing machine. I wasn't aware that I could sustain such an injury without falling or using hand tools. When I caught up with Tom to show him this minor inconvenience he showed me where he had ripped his finger open on a sticker bush, the wound requiring direct pressure as he bled like a stuck pig. Ah, the sacrifices we make for our pastimes.

Doubling back I passed the first exposure we surveyed and decided to take a closer look. I ended up finding 2 more big *Macraster* echinoids in the float and a huge honey bun of a *Leptomaria austinensis* gastropod and two subtly exposed 1 inch *Mortoniceras* ammonites where we had walked by an hour before. These fossils must have let their guard down after our first pass!

Heading south we opted for a different venue. We parked and hiked to a huge creek exposure of the 65 million year old Kemp formation, a dark gray conchoidally fracturing clay representing the very youngest of Cretaceous marine exposures in Texas which ended with the extinction of dinosaurs. I had hoped for ammonites, echinoids, and shark teeth in this formation but was content to take some detailed bivalves and gastropods considering my lack of collecting experience in the formation.

I figured I'd take a shortcut by climbing the exposure and walking back to the car. I hit a layer of quick mud $\frac{3}{4}$ of the way off which sucked both shoes off my feet and almost swallowed my hammer. It took me 15 minutes to dig myself out. At the top of the hill I saw that I had to cross a huge valley to get to the car. Gravity had me running sideways down the steep hillside and the only way to slow myself was to grab onto the only limbs present which happened to be sticker bushes. I showed up back at the car covered in mud and looking like an idiot.



FIGS 88-89: From the Kemp Clay a *Trigonia* sp. bivalve and unidentified gastropod left, two *Gyrodes* sp. and one unidentified gastropod right (Site 386)

With our options running out and less than 2 hours of daylight left I guided us to a little Eagle Ford exposure I had found a couple years prior and hadn't visited in a year. This 10 x 25 foot microsite had produced 700 ninety million year old shark, fish, and reptile teeth in 2 previous trips and had seen enough gully washers since my last visit to be hunttable once again. The site features layers of thinly bedded limestone ranging from crystalline to calcareous and interspersed with bentonite (weathered volcanic ash clay white in color) and thin, gritty, soft layers of broken oyster shells tinged red in places by weathering pyrite. These latter layers were storm deposits rich in shark teeth dominated by the species *Squalicorax falcatus*. We worked two different levels separated vertically by a couple of feet of strata. Tom found a zone which gave him at least a dozen teeth free of matrix. I spent the remaining daylight removing overburden and mining out slabs from a tooth rich layer, some slabs having 5 visible teeth. I filled a 5 gallon bucket and 2 bags full of matrix which when washed and broken down yielded over 50 well preserved shark teeth and just as many broken ones.



FIGS 90-91: *Cretoxyrhina mantelli* tooth from the Eagle Ford Site 165



FIGS 92-94: Eagle Ford grp shark teeth *Carcharias* sp. and a big fish tooth above (Site 165)



FIGS 95-97: Eagle Ford grp shark teeth *Squalicorax falcatus* in matrix above, in middle image *S. falcatus* left of quarter, *Carcharias* sp. below quarter, *Pachyrhizodus* fish tooth far middle right of quarter, *Ptychodus anonymus* tooth upper right of quarter, bottom image fish teeth *Enchodus* sp. left of quarter and *Pachyrhizodus* sp. right of quarter (Site 165)

The day served its purpose well. 2 friends got to spend a day afield in comfortable conditions loading up on quality fossils. All the action took my mind on what I had to face the next day: finding a reliable shop and dumping possibly thousands of dollars into my ailing truck. I hope to be afield somewhere in the state the next weekend!