

## Fossil Collecting Report

Daniel A. Woehr and Friends  
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### January 12, 2010: Lunch Hour Ammonite Round Up

Between New Year's festivities and winter weather I've been slow on the draw with fossil collecting this month. But a lunch hour scouting mission on Monday turned up a nautiloid and a couple ammonites in an area creek bed comprised of Austin Chalk, probably Dessau member (82 MYA).



**FIGS 1-5:** Austin Chalk ammonite *Submortoniceras* sp. this and next 3 pages (Site 14)









**FIGS 6-7:** Austin Chalk nautiloid and unidentified ammonite this page, close up of ammonite and negative next page (Site 14)



I went back on Tuesday with my 4 LB sledge and chisel and got to work. In short the stuff I found the previous day was in too poor of condition to keep, but while beating out the nautiloid a sheet of rock peeled up, revealing a small ammonite, possibly *Texanites*. I also stumbled upon another ammonite about 4 or 5 inches in diameter and banged it out of the bedrock as well. I believe it is a *Submortoniceras* and it is in excellent condition, the largest and best of its kind in my collection. Not bad for a little lunch hour fun.

#### January 13, 2009: Pleistocene Playground

I got the urge to make a boat run so I took Wednesday off work, loaded up and headed out early, sliding the boat in the stream by about 7:30 a.m. I had high hopes for this network of sites but at day's end had nothing spectacular to show for my efforts, just a handful of nice examples of common material. Perhaps I'm spoiled by a steady run of "finds of a lifetime" in recent trips. At any rate, here is how it all went down.

The first bank was a complete dud, although it has produced wonderful mammoth, horse, tapir, bison, and camel material in the past. The site was clearly untouched by other collectors, however Ma Nature chose to be stingy this time around. A nearby gravel bar surrendered a big horse molar and a couple bone fragments, but it was mostly underwater and unhuntable. An adjacent gravel bar that routinely gave up dozens of good bones and teeth per trip in years past produced a couple nice vertebrae and limb bones but little else.....hmmmm.....The next bar and bank were pretty sterile as well, so I pulled out the boat, drove an hour, and put in a second time in hope of more rewarding results.



**FIGS 8-11:** Pleistocene horse molar (Site 140) followed by 3 frames of a juvenile horse metapodial this and next page (Site 132)





**FIGS 12-13:** Pleistocene horse teeth and metapodial, unidentified distal tibia, vertebrae, and distal femur this page, jaw section, turtle shell fragment, and distal humerus next page (Site 132)



Several miles later I set foot on a good sized gravel bar that has produced hand over fist in the past. This time...not so much the case. I grabbed a big section of horse or bison pelvis, a nice horse molar from underwater, and a fist sized lump of mammoth ivory that readily soaked up a tube of superglue to keep it from self destructing. I was too late however on another larger section of mammoth ivory....it was reduced to a pile of blue, white, yellow and orange dust.



**FIGS 14-15:** Pleistocene horse molar this page, exploded mammoth tusk section next page (Site 373)





**FIG 16:** Pleistocene horse molars, two calcanea, tortoise shell fragment, deer antler tine, white, eroded section of mammoth tusk (Site 373)

It was still fun to make a run mid week, and the mediocre trips make the slam dunk trips that much sweeter. Next winter trip however I may wear knee high rubber boots instead of freezing my feet in river shoes.....

#### January 16, 2009: Boracho or Bust

My fossil buddies Brian Evans and John Jackson jumped at the opportunity to make a run to the Kent area in West Texas to join me in working area road cuts with extension ladders for a bumper crop of fossil echinoids issuing from the Boracho Formation (100 MYA). Brian and I had made this run around Thanksgiving and run out of daylight before looking at all the cuts we could in one day....ladder work is slow work.

Anyway, after an evening with my girlfriend and her daughter that ended around 11:30 Friday night, I met the other 2 guys on my driveway at 1 a.m. and piled into Brian's van which he so graciously offered up along with some gas money...my kinda trip....heck yeah! The guys took turns driving while my sorry carcass lay prostrate on the floor of the van for the next 400 miles comfortably propped with various pillows.

I awoke in time only to relay a few foolish stories from my childhood, and with a few breakfast tacos in my belly it was time to work the first exposure starting 30-45 minutes before first light with the aid of a high powered LED head

lamp. Again ladder work is slow work as safety is of paramount importance when considering loose rock both above and below. So we spent 6 hours on the first network of exposures, and in that time we each moved probably less than 100 yards, scrutinizing the cuts from ground level up to perhaps 20 feet.

The San Martine member of the Boracho Formation revealed its riches to us that morning. Plenty of echinoids made it back into the van including genera *Salenia*, *Goniopygus*, *Anorthopygus*, *Globator*, *Coenholectypus*, *Phymosoma*, and *Heteraster*, some in great shape, more in so-so condition, others only a kid could appreciate. Pressing on to other cuts we worked the San Martine and Levinson members as well as the apparent contact in between.



**FIGS 17-20:** *Coenholectypus* echinoids from the San Martine member of the Boracho Formation this and next 3 pages (Site 273)









FIGS 21-32: *Globator parryi* echinoids from the San Martine member of the Boracho Formation this and next 5 pages (Site 273)













FIGS 33-34: *Anorthopygus texanus* echinoids from the San Martine member of the Boracho Formation (Site 273)



**FIGS 35-37:** *Phymosoma* echinoids from the San Martine member of the Boracho Formation this and next 2 pages (Site 273)







**FIGS 38-40:** *Salenia volana* echinoids this page and partial *Goniopygus stocktonensis* next page, both from the San Martine member of the Boracho Formation (Site 273)



One marly cut gave John a nice *Mortoniceras* ammonite double while I found a *Paracymatoceras* nautiloid and a *Macraster* echinoid. We hit a few sparsely productive areas before one of us found a huge, perfect *Coenholectypus transpecosensis* echinoid in the Levinson that another of us walked right by (names withheld).



**FIG 41:** Nautiloid from the Levinson member of the Boracho Formation (Site 274)

Still another exposure in fading light gave John another Mort while I took another *Paracymatoceras* nautiloid. Following a marl seam around the hill, in fading light I grabbed a few *Holaster* and *Macraster* echinoids in rough to keeper condition – more than I expected out of this particular site.



**FIGS 42-45:** The author hiking Site 277 followed on next 2 pages by images of the *Paracymatoceras* nautiloid and *Macraster* echinoids found there





We spent remaining daylight finishing up the eastbound side of a road cut we had worked on the westbound side on our November trip. Finds weren't particularly abundant but by scaling the wall like Spiderman as passing motorists honked away, I was able to retrieve nice examples of both *Phymosoma* and *Coenholectypus* echinoids.



**FIGS 46-47:** Good examples of *Coenholectypus* and *Phymosoma* echinoids from Site 286 followed by a glimpse of the author worn down by the day's exploits



Although I offered at one point to share the driving responsibility, somehow out of the kindness of their hearts John and Brian elected to let me slumber in the back seat for the entire 6 hour drive home. Perhaps it was the best way to shut me up.....one can only conjecture. At one point my phone rang and I woke up with jaw agape and a severe case of cottonmouth.....now that's dog tired! All I can say is that if the sun were shining, I would have sunburned my tonsils.....

January 18, 2010: Right Under my Nose!

With good weather and a pioneering spirit I spent a couple lunch hours systematically working faulted exposures of Austin Chalk, probably Dessau Formation (85 MYA). Not far from my office. Instead of lazily working just the seams where I've taken *Hemiaster texanus* echinoids in the past, this time I gave the entire exposure an unbiased look.....and I'm so glad I did!

In years past I had laid hands there on a large, inflated example of an undescribed *Cardiaster* echinoid, so I had that species and *H. texanus* in the forefront of my mind. After a couple *H. texanus* in the soft marl I spotted the eroded edge of a barely exposed echinoid poking out of a harder layer of chalky limestone. I figured it was just another *H. texanus*, but upon alternating sessions with my air scribe and a wet wire brush something different took form.....another undescribed *Cardiaster*, and this egg sized specimen will display nicely in a matrix pedestal.

The fun didn't end there. I was fortunate to lay hands on a couple more large but damaged *Hemiasters*, then I spotted a perfect little unidentified regular echinoid half the size of a dime sitting atop a limestone nodule...*Phymosoma hilli*? This is quite a rare find in the Austin Chalk.



**FIGS 48-49:** Undescribed *Cardiaster* echinoid from the Dessau Formation of the Austin Group this and next page (Site 16)





**FIGS 50-56:** Second, whopping 3 inch undescribed *Cardiaster* echinoid from the Dessau Formation of the Austin Group this and next 5 pages (Site 16)













**FIGS 57-60:** Unidentified *Hemiaster* echinoid from the Dessau Formation of the Austin Group this and next 3 pages – note scrobiculated tubercles on the underside of the specimen as shown in Fig 60 (Site 16)









**FIGS 61-62:** A second large, unidentified *Hemicaster* echinoid of another species this and next page (Site 16)





**FIG 63:** Two *Hemaster texanus* echinoids and one partial *Baculites* ammonite (Site 16)



**FIGS 64-66:** Unidentified regular echinoid from the Austin Chalk, possibly *Phymosoma hilli* this and next 2 pages (Site 16)





Picture : 0156 - 20100130\_213721.bmp

Finally I spotted the shattered edge of yet another echinoid, the sunlight casting a familiar reflection off of a calcite test exposed in section. Over the years I've learned to chisel wide and take out a larger matrix chunk than seems necessary, and this time the benefits of this habit became abundantly clear. After a couple hours of air scribe work this broken echinoid transformed into a nearly complete 3 inch diameter *Cardiaster* sp., the largest I've ever seen and quite possibly one of the largest examples of this genus ever found in North America. This was quite a fortuitous find and quite an odd looking thing.

January 20, 2010: After Work Bonus

I guess I didn't get enough mid week collecting by this point, so I went out after work, this time in the Glen Rose formation, roughly 108 MYA. Knee pads, gloves, jacket, head lamp....an hour of crawling produced 5 *Salenia* echinoids, one extremely tiny, and one *Goniopygus*, this one a completely hollow test...fragile but interesting. Once again cool *Isocrinus annulatus* crinoid columnals were found en masse, a few coming home with me. Good times!



**FIGS 67-70:** 5 *Salenia* echinoids from the Glen Rose Formation along with *Goniopygus* echinoid lower left and *Salenia* spine upper left, close ups of *Goniopygus* and smallest *Salenia* next 2 pages, final frame shows crinoid columnals *Isocrinus annulatus* (Site 161)





Picture 0157 - 20100208\_211819.bmp



January 23, 2010: Paleo Posse Invades South Texas

On this particular day the cadre of paleo enthusiasts consisted of my good friend, fellow Cincinnatian, echinoid expert, and President of the Dallas Paleontological Society, Frank Holterhoff accompanied by my friend Brian Evans and his young daughter Allison, myself and my favorite field buddy, Weston Woehr.

Our personal schedules were all over the map that day, but we were able to converge on some sites in the Corsicana Formation for a couple hours, the men gung ho that nearly 3 inches of rain had recently fallen on the site, the kids just happy to have someone their age to hang out with.

With shrinking sites, construction equipment on the move, and this many collectors we opted to move slowly and look thoroughly, our knee pads saving us from the agony of broken oyster shells. It is clear to me now that the best days of collecting are over at these sites, but diminishing returns can still be sweet.

I was happy to land 3 nice crab carapaces *Dakoticancer australis*. The first came just as I explained the stratigraphy to Brian, then noted that runoff could move some down hill.....then almost on cue I bent down, lifted a round object, and realized it was a nice crab! The last one was a blind find I made just by flipping a rock. The ugly, insignificant blob on one side of the rock that caught my eye prompted me to flip the rock, exposing the cast of the top of a crab carapace. Digging down a little produced a superbly preserved carapace that had been protected from the elements.....gotta love chance finds.

I also grabbed 4-5 shark teeth and a handful of echinoids including one nice *Plesiaster americanus*, a squashed *Linthia variabilis*, and the remainder *Hemiaster bexari*. The other guys grabbed several *H. bexari* each as well and Brian picked up a small fish vertebra. We all took nice bivalves and gastropods, and the kids picked up a few goodies themselves.



**FIG 71:** 3 Corsicana Formation crab carapaces *Dakoticancer australis*- top left is an impression of the top carapace shown lower left (Site 349)



**FIG 72:** Corsicana Formation echinoids *Plesiaster americanus* (left of quarter), distorted *Linthia variabilis* (below quarter), remainder *Hemiaster bexari* (Site 349)



**FIG 73:** Corsicana Formation bivalves *Plicatula mullicaensis*, *Trigonia catrovillensis*, and *Neithea bexarensis* above, unidentified gatropods below (Site 349)



**FIG 74:** Corsicana Formation oyster *Pycnodonte mutabilis* top left, unidentified bivalve molds below, two unidentified gastropod molds right (Site 349)



**FIG 75:** Corsicana Formation bivalves *Trigonia catrovillensis* left, *Lima guadalupensis* center, *Neithea bexarensis* top and center right, *Lima acutilineata* lower right (Site 349)



**FIGS 76-77** Corsicana Formation echinoids above, largest *Proraster dalli*, remainder *Hemaster bexari*, various bivalves and gastropods below (Site 348)

Brian had car trouble to deal with at home while Frank and Weston and I still had a mission to complete. So off we went to a distant stream bed exposing the Anacacho Formation, an 80 million year old marine sequence exposing both vertebrate and invertebrate material in a yellowish gritty limestone and marl.

The first site was a bluff with boulders scattered around. I landed a nice little strongly ribbed ammonite before pressing on. Weston soon screeched, "I've got an ammonite!.....and it has good sutures!" Frank and I secured a few *Mecaster texanus* echinoids nearby and then I finally got to work on Weston's ammonite, and in the meantime Weston spotted a group of *M. texanus* echies in the same boulder as his ammonite.

My hammer was too small and I ended up banging on the ammonite for an hour before a nearby landowner dropped by to investigate all the racket. While the local game warden had assured me we were collecting the area legally, the ammonite wasn't worth upsetting the adjacent landowner so we pulled the plug and began the hike back to the truck. Too bad I had to explain to Weston that we couldn't bring his rare, spectacular 14 inch ammonite home.

On our return hike we crossed through a phosphatic zone in the marl and slowed down long enough to bag a number of nice *Baculites* sections as well as a handful of *Scapanorhynchus texanus*, *Squalicorax kaupi*, and other shark teeth.



**FIGS 78-81:** Weston Woehr pointing out his big find of the day in the Anacacho Formation, a large ammonite this and page, followed by the author attempting to pound out Weston's ammonite and finally Weston posing with a big ammonite found by Frank Holterhoff (Site 496)









**FIGS 82-88:** A sharp eyed Weston Woehr points out *Mecaster texanus* echinoids he found protruding from his ammonite boulder followed by the same matrix specimen prepped and ultimately a suite of *M. texanus* echinoids found by the author this and next 4 pages (Site 496)











**FIGS 89-92:** Two unidentified ammonites found by the author this and next page (Site 495)





**FIGS 93-94:** From the phosphatic zones of the Anacacho Formation - *Baculites* ammonite sections and gastropods above, below another *Baculites*, a *Gyrodes* gastropod, two bivalve molds, a partial crab claw, and *Squalicorax kaupi* and *Scapanorhynchus texanus* shark teeth (Sites 495 and 496)

With some daylight remaining we stepped on the gas, secured permission to collect a clay pit in the Escondido Formation (66 MYA) and began our surface crawl. In short we were able to pick up scores of shark and fish teeth including *Ginglymostoma lehneri*, *Serratolamna serrata*, *Squalicorax pristodontus*, *Rhombodus binkhorsti*, *Enchodus ferox* and some small shark vertebrae.



**FIGS 95-99:** Escondido Formation Site 86 this and next 4 pages with Frank Holterhoff and Weston Woehr for scale











**FIGS 100-103:** One more close up shot of phosphatic zone bulk sampled followed by a few of the better shark and one reptile tooth, next page showing fish vertebrae, ray teeth *Rhombobodus binkhorsti* and 3 nurse shark teeth *Ginglymostoma lehneri* and finally a pile of lesser, broken teeth (Site 86)







**FIGS 104-106:** Sometimes in the field one runs into things that words cannot adequately describe (Site 86)





But the real reason we visited the site was that Dr. Chuck Ciampaglio at Wright State University asked me to provide him with a bulk sample from the site so he and his grad students could pick through it for micro teeth. So during my surface hunt I noted some areas rich in phosphatic debris and studded with macro shark teeth then later scraped the top 1-2 crusty inches of clay off the ground from those areas, boxed up 75 pounds of dirt and shipped it to him. The bulk sample will be broken down in water and then run through successively smaller screens to allow micro teeth to be sorted by size by his grad students.

So we got to find a few goodies for ourselves while Weston ran around the hoodoos screaming like a pint sized madman, and at the same time make a modest contribution to science. With a belly full of the area's best chicken schnitzel and an earful of live tunes we rounded out our adventure. Weston had held up like a trooper until the ride home when his little head clunked against my seat back and his arm slumped between my seat and the door. The Texas Outback certainly takes its toll.....

#### January 30, 2010: Cod(iopsis) Compliance

Aching back, 30 degrees at dawn, no takers from my Dallas invite list...with 4 hours sleep I made it out to the Corsicana site and commenced to crawling with a brand spanking new pair of gel knee pads. I realized I just had a couple buddies and our kids on the exact same, small patch of exposure but an inch of rain had fallen within the last couple days and warranted a recursive look.

The ground was deep orange in color, recent rains leaving it damp enough to provide color contrast with the freshly washed fossils yet a day of drying time meant I didn't end up with 10 pound mud caked knee pads for every 10 feet of crawling. These were optimum conditions for what is left of this waning site, and I'm wringing the place out just like Krispy Kreme hanging onto what's left of the donut market. Just because its not as good as it used to be doesn't mean its not worth the effort today.

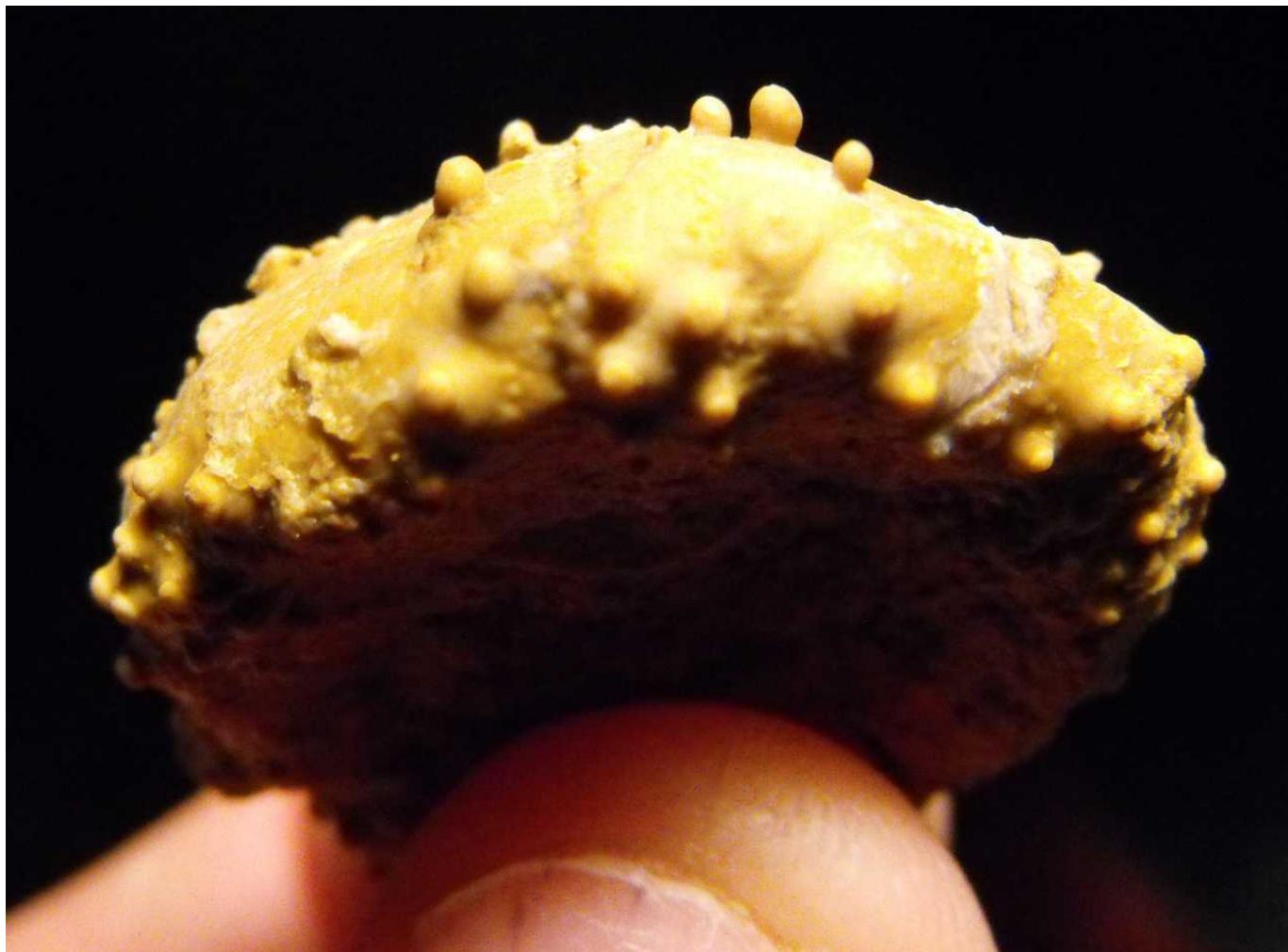
Anyway, a brief synopsis of finds is in order. I really enjoyed laying hands on a whopping, outsized *Plesiaster americanus* echinoid and didn't thumb my nose at the handful of *Hemiaster bexari* echinoids that made it into my tool apron either. A tiny shark tooth *Squalicorax pristodontus* caught my eye and a bevy of cool gastropods added heft to my catch bag as well. A few rough crabs *Dakoticancer australis* came to hand as well.



**FIGS 107-113:** Corsicana Formation echinoids Codiopsis sp. and *Plesiaster americanus* this and next 4 pages  
(Site 349)











**FIGS 114-117:** Corsicana Formation echinoids *Codiopsis* sp. and *Plesiaster americanus* above, *Hemaster bexari* below and top of next page, various gastropods including *Cypraea* and *Turritella vertebroides* next 2 pages (Site 349)





At one point a police car nosed up to see why my car was parked where it was. From 100 yards away he could see fleeting glimpses of me crawling around in the weeds. At one point he honked his horn at me, but I figured if he wanted to talk to me badly enough he could get out of his car and walk through the mud to me. I was prepared to drop the name of the construction foreman who had granted me permission to collect the site.

Then a studded subpentagonal profile caught my attention, my brain's pattern recognition instantaneously registering the image before me....I had found yet another example of an undescribed echinoid *Codiopsis* sp., and it sat there waiting to be grabbed while bedded in the same zone I had mentioned to Frank the previous weekend, thus confirming my earlier suspicions of the outcropping horizon. Mr. Policeman would just have to wait.

I heard his car peel out in reverse and pull up next to my car again. When I got back there I found a big orange illegal parking sticker on my window. Sorry man.....no disrespect....but I figure you get paid to get out of your car and walk over to talk to law abiding citizens such as myself.....

Another hillside cut surrendered its share of *H. bexari* echinoids and gastropods, however the *Codiopsis* was clearly "the find" of the day and alone justified my efforts many times over.

#### January 31, 2010: One More Good Measure

My back was a little tweaky so I opted to only collect a few hours a day this weekend, strategically timed for when the ladies were sleeping the morning away. Soooooo.....early to rise, then off to the Walnut Formation. I only hit a couple sites and grabbed one decent *Coenholectypus planatus* echinoid per site. I actually had to crack ice on the surface of the ground to extract the fossils, quite an infrequent dilemma here in South Texas.....



FIG 118: Walnut Formation echinoids *Coenholectypus planatus* and unidentified bivalves (Sites 455 and 459)