

A TEXAS CRETACEOUS SAMPLING

December 2, 2004

I burned a vacation day last Thursday in order to give San Antonio area exposures "proper stewardship" after recent floods. I'd hate to let the elements claim some of the nicer fossils which are available in my area with a little research and effort.

My travels began at a local construction site in the Upper Taylor Clay or lower Navarro, I'm not sure which. At any rate, on hands and knees I was able to grab a few gastropods, a nautiloid, a bunch of *Baculites*, and about a dozen echinoids of 4 species. This particular formation appears to preserve fossils decently, but weathering destroys them rapidly. For instance, an echinoid in matrix is usually well preserved where hidden, but the test may be completely eroded away where exposed. I spent an hour or so here and moved on.



FIGS 1-4: Navarro echinoids *Phyllobrissus cubensis*, *Proraster dalli*, *Hemiaster weatherbyi* and/or *Hemiaster bexari* top left, bivalves and gastropods top right, *Baculite* septum detail lower left, *Baculites*, nautiloid, and partial ammonite lower right

A Pecan Gap exposure presented a perfect 120 mm *Pachydiscus paulsoni* ammonite in the first 5 minutes. It was pretty well encased in a large slab of chalk with no fissures for me to exploit. My ears are still ringing from hammer

blows, but I extricated my prize in decent shape and moved on. A few more *Pachydiscus* and *Trachyscaphites* ammonites as well as some *Echinocorys texanus* echinoids came to hand as well, rounding out a successful visit.



FIGS 5-8: Pecan Gap ammonites *Pachydiscus paulsoni* upper left and right, *Trachyscaphites spiniger porchi* lower left, echinoid *Echinocorys texanus* lower right

A road cut at the Upper/Lower Glen Rose contact zone also benefited from all the rain. The first 15 minutes gave up 5 species of echinoids including *Loriolia texana*, *Salenia texana*, *Coenholectypus planatus*, *Heteraster obliquatus*, and *Palhemiaster texanus*. I quit while I was ahead in order to look at the other exposures I had planned for the day.



FIGS 9-10: Lower Glen Rose echinoids *Salenia texana* left, *Loriolia rosana* (bumpy) and *Coenholectypus* (smooth) right

At another exposure in the Glen Rose I was pleased to lay hands on a half dozen *Paleopagurus banderensis* crab pinchers. My next site produced more of the same, with bonus finds of 3 tiny *Salenia* echinoids from about 4 to 9 mm diameter. I've never found these things before, and I'm not sure if they are described species. At any rate, they are in decent condition. They were found so close together, it may pay to bulk sample the area at a later date.



FIGS 11-12: Lower Glen Rose crab claws *Paleopagurus banderensis* left, micro *Salenia* echinoids right



FIG 13: Lower Glen Rose gastropods *Tylostoma*

The last hour of daylight found me back at a great *Salenia texana* site where I ran out of light the week before. In short I snagged another 20 *Salenia* with about 10 being in pretty good condition. I didn't luck into any *Coenholectypus*, *Tetragramma*, or *Phyllacanthus* echinoids this time, but the next rain could change all that. Still, I felt pretty good about the day's haul including some good ammonites, a handful of crab claws, and 10 or so species of echinoids.

December 3, 2004

I get out of work at 4 on Fridays, allowing me to kick off the weekend with a quick fossil hunt when normal folks are working on their first beer. This week was a quick peek into the Eagle Ford group, which is mapped undivided in the San Antonio area. Shark teeth are pretty scarce in San Antonio, but I lucked into 4 teeth of 3 species in an hour. *Ptychodus anonymous* and *Squalicorax falcatus* were the better defined teeth, and the ugly specimen with broken root and blade was possibly and *Cretolamna* at one point.



FIG 14: Eagle Ford shark teeth *Squalicorax falcatus* (right 2), *Ptychodus anonymous* (center)

December 4, 2004

With fossil buddy Marc de Vries soon moving back to Holland, we continued making some final rounds together last Saturday. This time we opted for the Dallas/Fort Worth area, and I called on my network of contacts to help pull this one together.

Since I first saw the Woodbine ammonite *Calycoceras tarrantense*, I've wanted one. I'm not one to buy fossils; I like to collect my own. I prefer to sweat for personal finds, lovingly prep them out, then gaze fondly upon them around the house while recounting the adventure to visiting friends (perhaps boring them and their wives to tears in the process). At any rate, we were referred to a gentleman who has mastered the Woodbine formation and was willing to take us out for the morning.

We planned for a 7 a.m. rendezvous, but ended up running an hour late. We were penalized for this in terms of fresh footprints at the first 2 or 3 sites we visited. See, the DFW area, while known for great fossils, is also home to a small army of very knowledgeable and dedicated collectors. So timing, patience, and perseverance are all required to hit paydirt.

Our 3rd or 4th site was a small eroding bank in the transition zone between the Woodbine and Eagle Ford. It was a peanut butter colored, workable clay that has a thin concretion zone. These concretions often encase the very ammonites we were after, so recent collecting pressure prompted us to blindly mine the exposure for concretions using a big two handed pick. Marc and I took turns moving matrix and inspecting concretions.

I was first to score a coveted *Calycoceras*, its lustrous ribs and sutures showing through the mud. It was about 150-200 mm in diameter and in a 20 LB concretion which burdened me all the way back to the truck. Marc was quick to jump in where I left off, and within a couple minutes lifted a specimen of his own weathered free of matrix. Muddy high fives were in order. I got one more nice one with calcitic veins attached to the shell, and we each got a few small ones with minor damage. We considered all this a great success for our first time ever exploring the Woodbine.



FIGS 15-18: Woodbine ammonites *Calycoceras tarrantens*, top two photos front and back of same specimen



FIG 19: Woodbine ammonite *Calycocheras tarrantense*

Our new friend very generously gave us each a large *Calycocheras* specimen cut in half on a rock saw and polished, revealing the colors and crystallization of the internal septa, or chambers. We were stunned by his generosity. They will proudly go on display in our homes. While we didn't personally find these specimens, they were quite a handsome bonus since now we don't have to slice open our personal finds to have a cut one on display.

With a handshake we were off to the Britton formation, guided by another friend I made earlier this year. Crabs and ammonites were on the menu, and our buddy couldn't have done a better job of leading us right to them. In short we scoured part of a construction site, looking for convex crab carapaces and white ammonite shell material highlighted on slabs or nodules of red Britton matrix. We spent about 3 or 4 hours blabbing and leisurely hunting, with each of us collecting about 10 specimens of the crab *Notopocorystes dichrous*. Most were just carapaces 25-35 mm in size, but a few still had articulated legs and claws begging to be meticulously prepped out. Our friend found a monster specimen in the 60 mm range, his biggest ever.



FIGS 20-22: Britton crabs *Notopocorystes dichrous* top left, claw detail of same top right, ammonite *Metoicoceras whitei* below

There were a few bonus finds as well. Ammonites in the Britton are typically nacreous, i.e. they still have the original white shell material intact. Marc landed a nice *Worthoceras* ammonite microconch as well as the shark tooth *Cretolamna appendiculata*, the latter rare for this formation. Our friend found a couple cool ammonites including *Desmoceras scotti* and *Metoicoceras whitei*. Thinking it was broken, our friend gave me a *Metoicoceras*

specimen...a little aircscribe work revealed that the juvenile whorls were in fact intact, just hidden by matrix.
THANKS!

But my favorite find was a 100 mm *Metengonoceras dumbli* ammonite that was 80-90% complete. A little scribe work revealed beautiful sutures, and by picking up a similar looking partial in the field, I was able to doctor up a decent looking composite specimen that will display nicely at the house.



FIG 23: Britton ammonite *Metengonoceras dumbli*

After admiring our friend's museum quality collection that is light years beyond my own, Marc and I were each given a baggy of *Ptychodus whipplei* shark teeth from the Arcadia Park formation, nacreous ammonites from the Pierre Shale of Montana, and various Tertiary echinoids from the East Coast.

As competition is stiff in the DFW area, I opted not to spotlight our buddies or their sites. We would not have done this well without these guys. We gave each guy a sampling of fossils from our respective stomping grounds including ammonites, echinoids, and nautiloids from the Walnut, Escondido, Pecan Gap, and Dessau formations. I also threw in some buffalo meat to sweeten the deal. When these guys opt to head down my direction, I plan to have a few less frequented "honey holes" to show them.