FOSSIL COLLECTING REPORT: SEPTEMBER, 2006
DAN WOEHR AND FRIENDS

September 4, 2006

With heavy rain in Dallas and a 60% chance of rain in Central TX a couple buddies from Dallas opted out of our planned Central TX Labor Day fossil mission. I however opted to go anyway and exploit drought conditions in various creeks before seasonal rains get a chance to fill them again. Many of the creeks I ended up visiting were completely dry, something I haven't seen in those areas before. While I anchored the trip with a few known producing sites, the main objective of the trip was to find some new exposures.

The first creek presented a 50 foot section of Eagle Ford shale which was unfortunately stingy with fossils. I saw a few slabs of broken fish vertebrae and worn calcitic ammonites and left them where I found them. Pressing on I entered a familiar creek exposing what I believe to be South Bosque formation (Eagle Ford group, 80 MYA). A few floods since my last visit had refreshed the area somewhat, and current drought conditions exposed lots of float in the creek bottom. I spent an hour or so there and picked up perhaps 30 teeth including *Ptychodus anonymus*, *Cretoxyrhina mantelli*, and *Squalicorax falcatus*, all standard fare for the formation.

FIGS 1-2: South Bosque shark teeth *Ptychodus anonymus* left and *Squalicorax falcatus* right (Sites 38 and 102)

FIGS 3-6: South Bosque shark teeth *Cretoxyrhina mantelli* above, *S. falcatus* and *C. mantelli* bottom left, fish teeth *Pachyrhizodus*, partial sawfish rostral tooth *Onchopristis* and shark tooth *C. mantelli* bottom right (Sites 38 and 102)

Another exposure of the same formation in the same creek a few miles away produced maybe 15-20 more teeth of the same varieties. At this site all shark teeth were found by crawling under limestone slabs overhanging the creek and chiseling them off the bottom surface. In one place a slab of red matrix had dropped from underneath one of these overhangs and contained several well preserved teeth.

At one point I was peering under a rock and happened to look a little farther underneath and noticed a big coiled snake about 8 inches from my face. After gathering my wits I flipped the rock and this brown banded snake seemed to be asleep. I flipped a pebble at it and it began flicking its tongue. I have no idea what kind of snake it was but it was about 4 feet in length. I decided to give it some space and head up a tributary creek. 15 minutes later while wading up the narrow tributary I caught a glimpse of a 4 foot water moccasin bearing down on me like a serpentine torpedo. Reflecting on the demise of Steve Irwin that same day I opted to vacate that particular site and leave its fossils undisturbed.

My next site was another familiar creek exposing the Fort Worth and Weno members of the Georgetown fm (102 MYA), its clean flowing waters reduced to stagnant pools and its bed dry for most of its length. My first find was a nice 10 inch *Mortoniceras* ammonite which I proceeded to crack in half while trying to reduce the matrix. This was

a major faux pas as the truck wasn't far away and I should and could have just carried the whole heavy slab up the bank and dealt with it at home. ¾ of a mile downstream I searched another large exposure and found one nice 3 inch *Macraster* echinoid near the base of the exposure then another smaller one and a couple giveaways in the float. Almost back at the truck I walked by the first exposure again and couldn't believe the *Holaster simplex* echinoid I had missed on the first pass sitting there like an Easter egg.

FIGS 7-8: Georgetown fm echinoids *Macraster* sp. left (Site 217) and *Holaster simplex* right (Site 173)

Pressing on I decided to work a stretch of Walnut fm (106 MYA) between Belton and Copperas Cove near Fort Hood. A construction site had a pit excavated for my convenience, and I picked up a 4 inch *Engonoceras* ammonite in matrix before moving on. Directly across the street was an excavated hillside also exposing the Walnut. I concentrated on the broken down gray clay and grabbed about 20 nice *Heteraster* echinoids, but nothing special. It began to drizzle a little before dusk but I pressed on to a couple hillside excavations in a housing development. Just before dark the last thing I found was a 2 inch *Phymosoma texanum* echinoid, something that had eluded me for hours.

FIGS 9-10: From the Walnut fm *Engonoceras pierdenale* top left, *Heteraster texanus* (Site 341)

FIGS 11-13: From the Walnut fm *Heteraster texanus* and *H. mexicanum* top right and middle, pyritized *Tylostoma* gastropod lower left (all Site 341), *Phymosoma texanum* lower right (Site 40)

There were no spectacular finds this trip, just a few more examples of familiar species. Still it was a fun way to burn a holiday.

<u>September 5, 2006: Demise of a Good Site</u>

After a day of steady drizzle I negotiated with my wife a side trip to the Corsicana site on the way home from work. The rain wasn't enough to reveal many new specimens, but it did provide some contrast between fossils and matrix so I could see a little better what was already at the surface. High aspirations plummeted as I entered the site as construction had begun the inevitable reclamation of the site. The main road down the middle of the site and its edges were recently graded and heavy equipment tracks in the soft earth tore up the surface where utility lines were being lain. Unfortunately this activity was in the best echinoid and crab zones.

I spent 2 hours crawling what remained of the exposure, pocketing one *Dakoticancer australis* crab and perhaps 10 good *Hemiaster bexari* echinoids. This could be the end of a great site, but in retrospect I've been fortunate to have free reign of the place for 10 months, assembling a comprehensive suite of species comprising 4 large Riker mounts and 4 plastic tackle boxes full of material. In addition I took a half dozen buddies to the site over time and we each found cool stuff we've never seen anywhere else. It would take a huge rain at this point to revitalize the site, but in the meantime I'll need to get on the horn and find some good virgin sites around the state.

FIGS 14-19: Corsicana fm echinoids *Hemiaster bexari* above, crabs *Dakoticancer australis* middle left, bivalves *Neithea bexarensis* and *Ostrea mesenterica* and worm tubes *Hamulus* sp. middle right, gastropod *Striatocostatum bexarense* below (Site 248)

September 9. 2006: Trinity Revisited

I got up at 2 a.m. on Saturday and made the drive to Fort Worth where fellow DPS member Phil Kirchoff was waiting for me on his driveway at daylight. I always enjoy perusing other folks' fossil collections so that is precisely what we did first. Most notable were the remains of a *Protohadros* dinosaur Phil found a couple years ago including teeth, large vertebrae, etc. He also had large crocodile scutes and other cool vert material from this metroplex area Woodbine site.

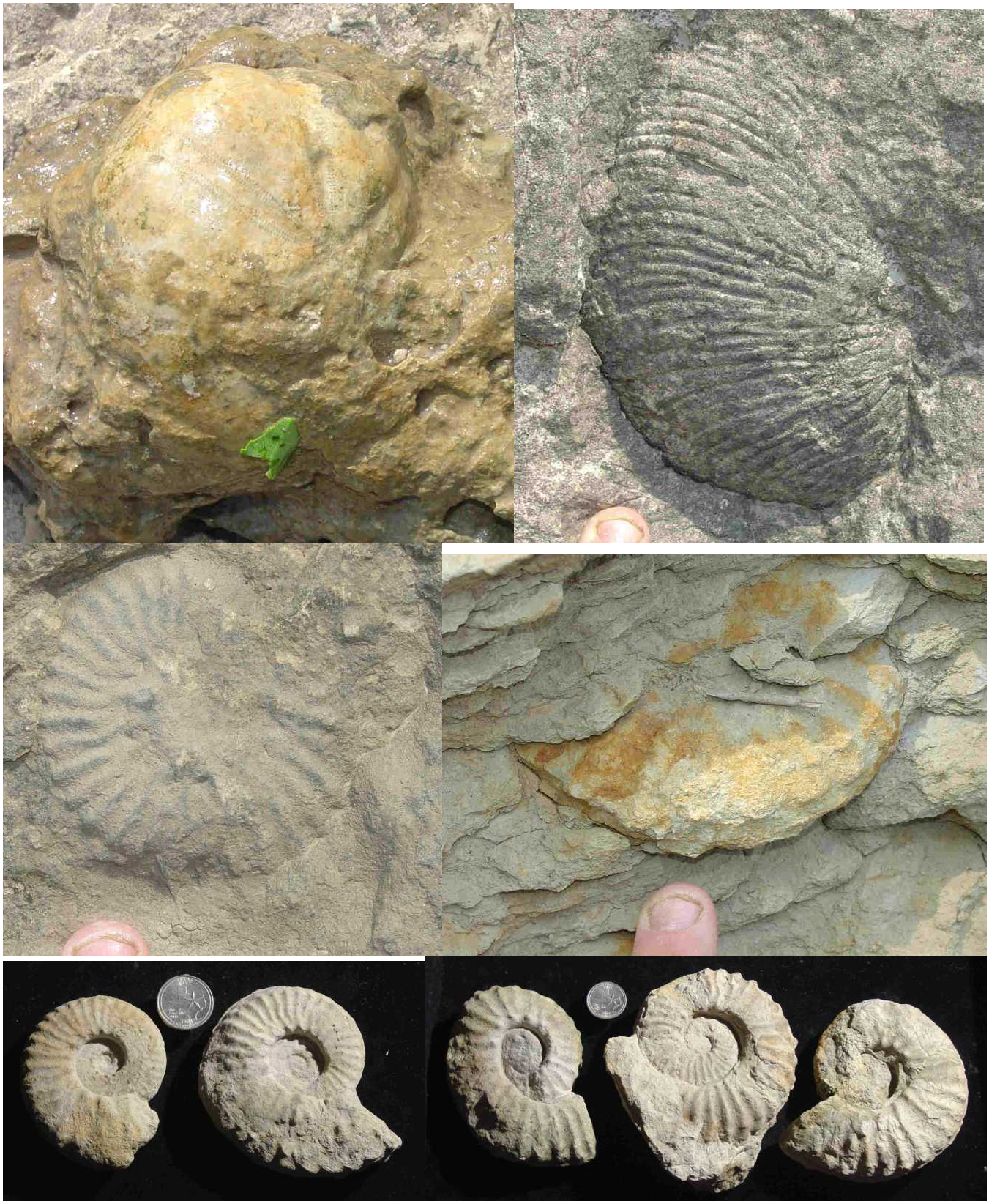
Anyway, by 8 we had my 2 man kayak in the Trinity River with my little engine mounted on the back. It was unsettling to see the kayak go mostly underwater with our combined weight on top of it, but with the engine running the prop sucked the water out of the boat through the 4 scupper holes in the bottom. We topped out at around 6 MPH but averaged more like 4 throughout our 13 mile journey. The first exposure we surveyed appeared to lie somewhere in the Duck Creek/Fort Worth sequence (102 MYA). It was mostly tan limestone with intervening seams of gray marl. Phil was quick to find a shark tooth while I laid hands on what appeared to be a pristine *Holaster simplex* echinoid covered with a little matrix. I spent 10-15 minutes beating on a nice 8 inch *Mortoniceras* ammonite before it finally gave in and came along with us.

FIGS 20-23: Fort Worth fm fossils *Holaster simplex* above and ammonite *Mortoniceras* sp. lower left (Site 342), *Apalone* soft shell turtle scute and various mammalian verts, leg and toe bones of dubious age bottom right (Sites 346 and 347)

We got out and walked the various gravel bars over the next several hours at times grabbing *Mortoniceras* ammonites, *Macraster* echinoids, and occasionally brown unmineralized bones ranging from coyote to bison size. We found more of the same jutting out of vertical mud banks, but as with all the bones encountered this trip and last trip they all had sort of a dark brown river stained appearance but were chalky and hollow sounding. This casts suspicion on their true age so I opted not to take many of these bones. I much prefer the solidly mineralized, glassy bones and strangely colored teeth I find in other rivers around the state.

We also floated up to a couple huntable Weno limestone exposures as well. From one undercut marl seam I grabbed a couple *Holaster* echinoids while Phil grabbed a big brown *Macraster* echinoid set in matrix. I popped 5 ammonites out of the limestone as well before moving on to the next exposure where I beat out a couple 6 inch *Paracymatoceras* nautiloids. I had to leave one nice nautiloid in the Mainstreet limestone as it was deeply inset and I had left my 3 LB hand sledge in the truck to save weight.

FIGS 24-28: Fossils from the Weno fm. including unidentified turtle? bone above and echinoids *Holaster simplex* below (Site 344)



FIGS 29-34: More Weno goodies including Phil's *Macraster* top left, *Paracymatoceras texanum* nautiloid in situ top right, remainder various *Mortoniceras* ammonites in situ and prepped below (Sites 344 and 345)

Phil and I had a pretty good time and managed to keep the yak upright the whole time, and my engine and camera certainly appreciated that! While we had no landmark finds, we were both glad to have made the trip so that we could cross that one off our respective hit lists.

With a handshake I was headed south exploring for new sites in the area and drew a blank for the day. Sometimes it just works out that way. I guess I'm just saving up for a banner day.

September 13, 2006: Reversal of Fortune in the Corsicana

2 inches of rain on Monday and Tuesday piqued my interest in a local mid week fossil excursion so on Wednesday night Weston and I piled into my truck and headed for the Corsicana formation. But this time we blew past our familiar site and encountered an area of new construction so fresh that this appeared to be the first rain to fall on it. Weston was recovering from a cold so I put my disintegrating straw hat atop his head, threw him up on my shoulders, and went for a stroll.

This site is several times larger than the other site and cuts through more zones, so I made mental note of the varying lithology and relative distribution of fossils as we walked the perimeter of the site. Locating and exploring virgin sites and trying to figure out their secrets is one of my favorite parts of this avocation.

We took a break and lobbed big rocks along the edge of a big mud puddle just to laugh at the exploding splat of pudding-like mud. This must have gone on for a half hour. Weston couldn't stand being clean any longer so he took a flying leap into the mud and became mired up to his calves and fell over up to his elbow with one clean hand reaching for the sky as his mournful cries rang out. I plucked him out of the quagmire and admonished him for charging into the unknown without asking me first and let him know there would be no more shoulder rides for such a muddy little kid.

Having sized up the major features of the site we headed to the lithology which to me smelled most like fossils. I crawled around on hands and knees while the boy entertained himself by running along and slipping off the top of a gravel covered drain pipe and later playing javelin with a loose surveying stake. *Turritella* and *Anchura* gastropods quickly came to hand and Weston finally took interest in the fossils and began dropping *Exogyra costata* oysters and a big *Gyrodes* gastropod in my tool apron. I picked up a glob that at first looked like another *Gyrodes* in matrix, but I could see that the whorl was too planispiral (flat and coiled) to be a gastropod. I figured it was a *Eutrephoceras planoventer* nautiloid, quite a welcome find as I only have a half dozen good ones from this formation.

A slender little *Baculites* (straight ammonite) came to hand and then I began running into a few rough *Hemiaster bexari* echinoids. Their leached and broken tests indicated that they had been too close to the surface for too many years so I moved to where the exposure was more deeply excavated in the same horizon and resumed my search. It was getting late and light was fading, but my hurried crawl produced perhaps 8 or 10 echinoids total. Maybe 5 are really nice *Hemiaster bexari* specimens while another has me a bit confused. With its 5 extremely deep amb grooves it could quite possibly be a *Linthia variabilis*.

FIGS 35-43: Good haul from the Corsicana fm including rare ammonite *Anapachydiscus complexus* above, echinoid *Linthia variabilis* middle, echinoids *Hemiaster bexari* below (Site 348)

FIGS 44-47: Killer Corsicana *D. australis* crab specimen with *H. bexari* echinoid, various *Turritella, Gyrodes*, *Striatocostatum* and *Anchura* gastropods along with *Plicatula mullicaensis* and *Neithea bexarensis* bivalves bottom right (Site 348)

I knew I was in the money zone when a familiar white and bumpy shell came into view. It was just a fragment of the crab carapace *Dakoticancer australis* but it was enough to give me confidence in the site and my present location in it. Soon after I noticed another similar sliver of white barely peeking out of an orange marl clod. Closer inspection revealed the edge of a leg eroding out of the side. With that we were on our way home and I was already scheming a way to convince my wife that it was in the family's best interest for me to return immediately. The solution: with my parents flying into town for the weekend I'd propose an all guy excursion for my dad, Weston, and me before we'd certainly get roped into shopping for the rest of the day.

At home I quickly dived into prep work starting with the big crab nodule. I quickly surmised that I was looking at the posterior carapace and fired up the air scribe, knowing that it was critical to first determine orientation of the fragile fossil in the matrix so that I could anticipate surface contours and thereby prevent damage during prep. The specimen prepped out wonderfully, a small 50 mm wide carapace exposing 5 legs and a claw positioned right in front of its cute little face. As an added bonus there is a *Hemiaster bexari* echinoid jutting out the side of the nodule. This is one of the better crabs in my collection and my best one that is still set in matrix.

I next went to work on the suspect nautiloid with a toothbrush and water and soon saw extremely complex sutures to my surprise indicating that I had found some sort of ammonite, the best one I've taken from the formation. A little air scribe work revealed the rest of its 30 mm globose, involute form as well as umbilical bullae. My Akers ammonite reference suggests that this specimen is *Anapachydiscus complexus*, a very rare specimen. They are documented as rare in the underlying Anacacho formation with no mention of occurrence in younger strata such as Corsicana, making this a doubly uncommon find. Other than a little erosion on the venter of the juvenile whorl just above the aperture this is a perfect specimen too and one of the more significant finds in my Corsicana collection.

Now I just hope we get frequent fall rains and my schedule allows me to visit the area often when construction crews aren't there, hopefully resulting in several productive visits for my friends and me before construction reclaims the site.

September 16, 2006: Last Minute Trip

With my parents flying into town late Saturday morning I managed to weasel in a short trip to a Comal County site in the Glen Rose formation (108 MYA) featuring a variety of tiny echinoids and crab claws. Recent rains had sweetened up the site a bit and made for a productive couple hours of crawling beginning at daylight. My first find was a nice specimen of the echinoid *Globator hancockensis* followed by a nice *Goniopygus* sp. specimen. 4 or 5 *Salenia phillipsae* specimens came to hand followed by 2 more *G. hancockensis* and a few crab claws *Paleopagurus banderensis* and crinoid columnals *Isocrinus annulatus*. Just as I was getting ready to leave I made my best find of the day, my biggest perfect *Orthopsis comalensis* specimen about 10-12 mm diameter. It was sort of a rushed morning but I made it to the shower and then the airport on time.

FIGS 48-53: Glen Rose fm echinoids *Globator hancockensis, Salenia phillipsae, Goniopy*gus sp., and *Orthopsis comalensis* top left along with additional views of *O. comalensis* above, crinoid columnals *Isocrinus annulatus*, scallops *Neithea* sp. and crab claws *Paleopagurus banderensis* middle left, echinoids *S. phillipsae* and *G. hancockensis* along with crinoids *I. annulatus* and crab material middle right (all Site 161), echinoids *Loriolia rosana* bottom

September 17, 2006: Family Fossil Fest

With gray skies spitting intermittent drizzle with increasing chances resulting from approaching remnants of a hurricane from the west I hauled my dad and son to the recently expanded Corsicana site (67 MYA) for a couple hour fossil mission. While Weston entertained himself by running up and down hills, throwing rocks, and practicing his balance atop a drain pipe Dad and I kept one eye on the boy and one on the ground. Unfortunately construction crews have been spreading blankets of dry matrix across the site faster than it can weather as they continue to open up a hillside. We were able to locate a few pockets of properly eroded marl and limestone between the heavy equipment tracks and did fairly well there.

I began picking up *Hemiaster bexari* echinoids and showed Dad to give him a visual lock. I was explaining that diagnostic features are often obscured by matrix when Dad interrupted, “What’s this thing with a star on top?” He in fact found a large and well preserved *Plesiaster americanus* echinoid, one of the biggest and best I’ve seen from the area. I later found a perfect *Dakoticancer australis* carapace cleverly hiding in under a veneer of marl.

FIG 54: The Old Man and Weston Woehr learning about the Corsicana fm (Site 248)

FIGS 55-58: *D. australis* carapace (Site 348)

FIGS 59-64: Dave Woehr's *Plesiaster americanus* top left, Dan Woehr's *Proraster dalli, P. americanus*, and *H. bexari* top right, interesting weathering cracks (pyritization?) pattern on *H. bexari* middle, various bivalves and gastropods below (Site 348)

Moving on to the original Corsicana site we crawled around for maybe 15 minutes during which time I found a shark tooth blade and a huge crab claw in matrix. This claw looked big enough to take off a kid's finger in its day. Farley Katz got a little disoriented by my directions and eventually found us at this site and admired my crab claw. Not to be outdone, he whipped out a large shark vertebra he found at a small site he located nearby, so he and I returned there for a little while, bagging several echinoids, *Trigonia castrovillensis* bivalves, and the usual array of Corsicana material. We ran into the construction foreman and were able to spin the encounter into permission, however the company had been sued recently at a similar site by a careless fossil collector who sustained a back injury while collecting. I'll be extra careful not to screw up my permission at this site.

FIGS 65-70: More from Corsicana Site 248 including huge unidentified crab claw top left, gastropods *Turritella* and *Polinices*, scaphopods *Gastrochaena* sp., and scallops *Neithea bexaensis* top right, exceptional juvenile *Proraster dalli* echinoid middle, *Hemiaster bexari* below

FIGS 71-76: Corsicana specimens from Site 349 including incredible shark vertebra found by Farley Katz top left, echinoids *H. bexari* top right, excellent *P. americanus* specimen middle, gastropods *Turritella* and *Gyrodes* and bivalves *Trigonia castrovillensis, P. mullicanensis*, and *N. bexarensis* below

<u>September 23, 2006: Going Coastal</u>

High winds were forecast at the coast for the weekend, prompting me to make some adjustments to original plan. 20 knot winds, 12 foot boats, and open bays don't mix very well, so I decided to do a little land bound fishing instead of braving the waves. With 30 live shrimp in the bucket I began my fillet quest at daylight along the Packery Channel near Corpus Christi, waded out about knee deep, and lobbed my offering where the current could sweep it along the channel edge. The bait thieves were present in droves but I did manage to land a throwback redfish and a keeper mangrove snapper before deciding the bait predation was just a bit too heavy for me.

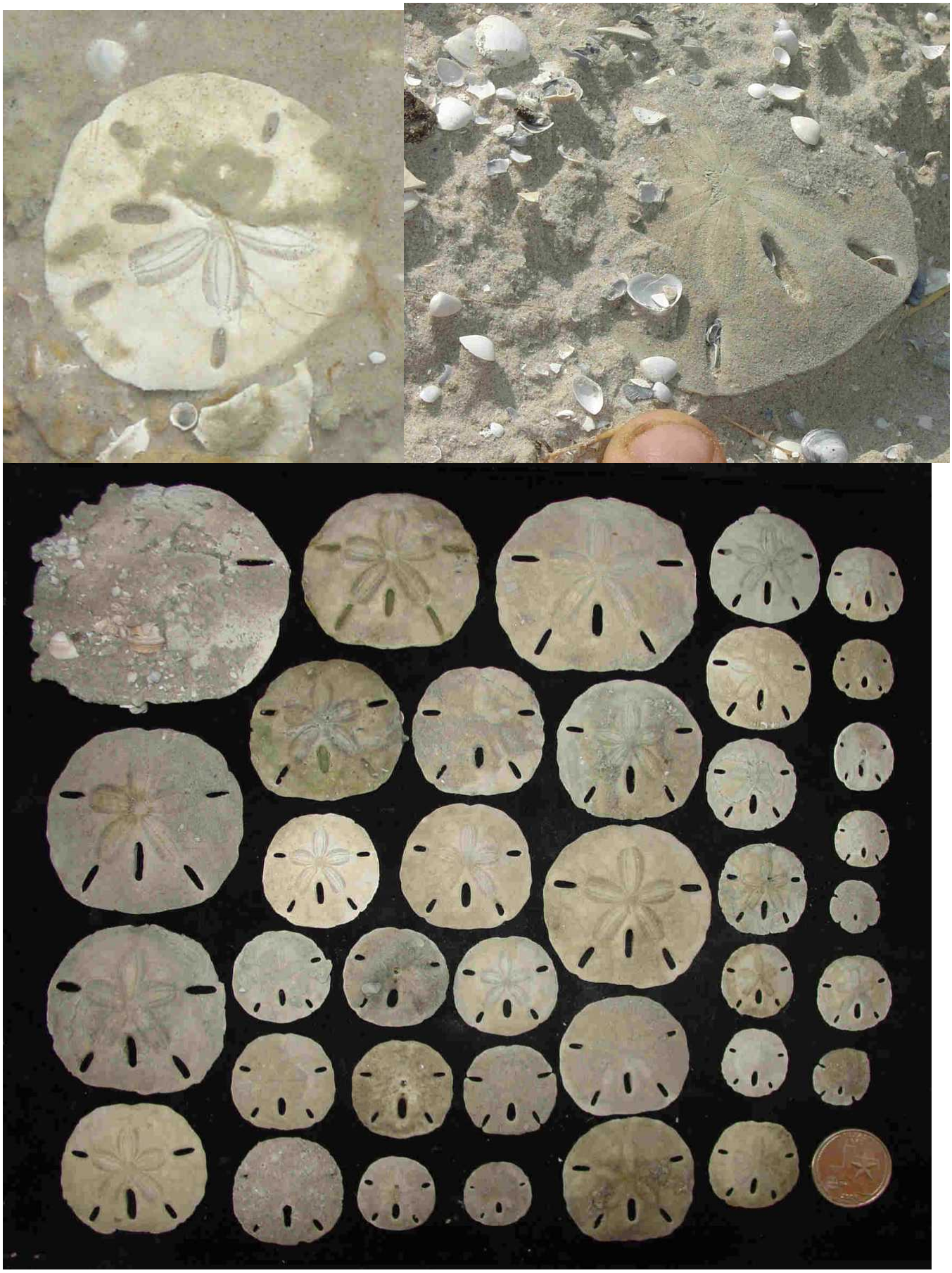
Moving on I decided to check out the new Packery Channel jetties. My ambition was to intercept migrating bull redfish, but this failed to materialize. I did however see a couple other guys land reds over 30 inches and had a pretty good time watching the fight. I pitched a shrimp into the frothing waves and felt a more determined tug that the bait stealers had be giving, so I thumbed freespool and let the fish run for a few seconds before tightening up and setting the hook. I was quite pleased to throw a tasty grouper in my bucket. Pods of mullet, skipjacks, and needlefish worked the surf as SSE winds pounded me in the back. One guy threw a cast net and got a bunch of mullet and I gladly accepted one of them for cut bait. Bait thieves and respectable fish alike took notice and soon I landed another eating size mangrove snapper, my last catch of the day.

FIG 77: 2 mangrove snapper and one grouper that fell to live shrimp and cut mullet at Packery Channel, Mustang Island in rough and windy conditions

While I didn't win any fishing tournaments that day, the best part was that I found a couple new fishing spots that will be quite suitable for my wife and son. I may just run them down there in a couple of weeks.

Switching gears to deceased critters I returned to the Pleistocene sand dollar site I had found a couple months prior. A couple good rains had done the site well. In an hour or so I picked up 55 *Encope borealis* specimens ranging from 15 to 75 mm. Some were impeccably clean and almost modern looking while others had varying amounts of consolidated sand and shells covering them. In addition I found 2 crustacean leg segments and a claw in the same spoil piles. While the claw is filled with sand, I really don't know enough about coastal Pleistocene material to know if I was looking at well preserved old stuff or contemporary material. The best I can gather based on my reading is that the exposure is somewhere in the 15,000 to 100,000 year old range.

FIGS 78-80: Pleistocene sand dollars *Encope borealis* in situ (Site 324)



FIGS 81-83: Pleistocene sand dollars *Encope borealis* (Site 324)

FIGS 84-85: Pleistocene sand dollars *Encope borealis* (Site 324)

FIGS 86-90: More from Pleistocene Site 324 including crab remains of dubious age top left, bleached seashells top right, mystery fossil below (vertebrate remains of some sort?)

While cleaning things at home I had a hard black specimen drop out of the sandy matrix into my bowl of water. This thing is truly problematic. While it could just be a phosphate blob, there seems to be too much symmetry for that. Perhaps it is some sort of fish tooth or crustacean process.

Having taken pretty much what I need from the site I'll probably use it to wheel and deal sites with other collectors as I often do once I've had my fill.

Later I drove past a stream, telling myself I was too tired to continue collecting. A mile later I did a u-turn and decided to give it a whirl since the boat was in the truck and unused that day. I reasoned that I'd kick myself later if I drove all the way down there without putting forth a valiant dawn to dusk effort. This was a fortuitous move.

I ran several miles into the remote coastal riparian environment, enjoying not only the jumping mullet and great blue herons but also the relative lack of prop busting logs in the water. Buzzing along at a back straightening 11 MPH with the shifting wind pushing the bow around and making the boat dart side to side I rounded a corner and cruised right up alongside a 6 foot alligator smiling at me in the water. He obviously had no respect for the paparazzi and submerged as I did a u-turn and whipped out my camera all too late.

Pressing on I nudged the bow into a 50 foot high bank of sand and clay bisected by a ravine. Immediately I found a debris field of fragments from a large bone encountered way too late. Even digging back into the bank I only found bone meal, but did take note that the fragments, although white, were mineralized and had specks of gray, blue, and yellow on and through them which is a mode of preservation I've seen before indicating that I wasn't looking at contemporary cow bones. I found a small turtle shell fragment before moving on to the other half of the exposure and finding a bone fragment at the water's edge.

After climbing a 10 foot bluff at the base of the exposure I began finding lots of vertebrate material eroding out of the gullies. Turtle material was quite common and I bagged every good piece I saw. Then I spotted something that made the day for me – an *Daspyus bellus* osteoderm, or section of bony body armor of an extinct armadillo about 3 times the size of the extant variety. Not only did this add a new species to my collection, it confirmed my suspicions that I was indeed looking at a Pleistocene exposure. I began finding small bird to rodent sized bones including a small skull encased in the same sediments. I'm really not sure if the small stuff is contemporary or old, but picked it up nevertheless.


FIGS 91-92: Pleistocene bank left, "Glyptodont Gulch" right (Site 350)

FIGS 93-98: Pleistocene finds from Site 350 including possible sloth or glyptodont claw above (wishful thinking), 2 *Glyptotherium floridanum* and one *Daspyus bellus* osteoderms (giant extinct armadillo body armor plates) middle left, miscellaneous bone fragments middle right, mammoth tooth fragment below

FIGS 99-105: Pleistocene finds including possible *Alligator mississippiensis* vertebra above, turtle vert middle, turtle shell fragments bottom left, rodent skull of dubious age bottom right (Site 350)

Rounding the corner of the gully I again encountered a good assortment of vertebrate material including turtle scutes, a 3 inch mammoth tooth fragment, a couple nice vertebrae, what could be part of a large claw, and a few large bone chunks. Unfortunately Texas mammoths seem to have worse teeth than English rock stars so I still haven't achieved the goal of a good brick sized mammoth tooth. But it wasn't until I got home and began scrubbing off the sand and clay with a toothbrush and water that I could see in detail all that I had collected. Two of the pieces of "turtle shell" took on a hexagonal form with a hexagonal depression in the middle with lines radiating out to the corners…this was the greatest part of the day's Pleistocene quest. What I had found were 2 osteoderms from the extinct 1500-1800 pound armadillo-like creature called *Glyptotherium floridanum*. Texas Pleistocene material is often poorly preserved, so diagnostic specimens of new species for my collection are always enthusiastically welcomed. Subsequent reading suggests that the exposure may be from 25,000 to 50,000 years old based on the occurrence of glyptodont material. I'll be heading back to this secret honey hole after the next flood!

As a big game hunter I'm familiar with Big Five safaris in Africa where hunters go head to head with elephant, rhino, lion, leopard, and cape buffalo. Scaling things to my level, I am now in pursuit of a self-defined Texas Tertiary Ten Fossil Safari including proboscidean, rhino, saber cat, bison, tapir, glyptodont, camel, alligator, antelope and sloth material. I'm really after teeth, tusks, and claws. While I have partial mammoth teeth, tusk bark, and some big partial bones I'm really after a good tooth. I have good bison teeth and a skull cap as well as the new found glyptodont scutes, and plenty of qualifying horse, camel, antelope, and gator material, but my work is cut out for me with the rhino, cat, tapir, and sloth material. It could take years to meet this lofty goal, but I plan to continue my quest within a few weeks.