

FOSSIL COLLECTING REPORT

February 2013

Daniel A. Woehr and Friends and Family

February 2, 2013: Revisiting the Texas Brine

My son was with his Mom, my wife had to take a class, and forecasted winds and weather looked very inviting for a February Saturday at the coast, so when the alarm went off at 3 a.m., you'd have thought I was shot out of a cannon, I was on the road so fast. With my ugly, hand-me-down twelve foot 1974 Sears jon boat nestled in the bed of my truck, I was prepared for a multi pronged adventure.

Rather than negotiate boat ramp hassles, I pulled up on a nondescript spit of sand in the Texas Coastal Bend, backed my truck up to the water, and unloaded boat and gear at water's edge. The little 3.5 HP 2 stroke Nissan outboard purred like a kitten, quite happy to be pulled out of mothballs.



FIG 1: Launching an abused and weary jon boat in the Texas Coastal Bend

With starting temps in the high 50s, the boat driven wind in my face did little to chill me. My nylon prop was worn down a bit from prior impacts, so I was only making a bit over 8 knots at wide open throttle – usually this boat is capable of 12 or so a good prop – or maybe middle age is catching up with my waistline (!?!). Either way, I was just happy to enjoy the dynamic environment of the Texas bay system, and note to self, change to a new prop.

With a bucket of 50 frisky brown shrimp I eased up to various work docks and bulkheads, dropped anchor, and lobbed the protesting, tail skewered crustaceans toward deep structure with my Shimano Curado reel atop an Ugly Stik Light casting rod. 10 LB line is my preference despite the unforgiving snags accompanying structure;

light line elicits more bites and more spirited fights. Only the bites early on came from menacing pin perch, but I finally set the hook on a keeper mangrove snapper, a fish I see more of in warmer weather. It was first to hit the ice in my Igloo.

Moving on, I spotted some shelly dredge piles at the back of a work dock, so I motored back and jumped out for a beach walk. Inspection of a steep bluff turned up one very nice Pleistocene aged keyhole sand dollar *Mellita quinquiesperforata* and some nice shells in sandstone matrix. This day was going well.



FIGS 2-4: Pleistocene sand dollar *Mellita quinquiesperforata* this and next 2 pages (Site 545)





Sand dollar with bivalve *Anadara brasiliana*



FIG 5: Pleistocene gastropod *Sinistrofulgur contrarium*(Site 545)



FIG 6: Pleistocene bivalve *Dositia discus* above, gastropod *Oliva sayana* below (Site 545)



FIGS 7-8: Pleistocene bivalves *Mulinia lateralis* this and next page (Site 545)



Working my way down the channel, I had to dodge wakes thrown by barges, shrimp boats, and fishing boats while bobbing around like a cork in my little aluminum junker. I jumped out on an island to inspect the shoreline for fossils and found a couple scraps of bone, and one big snail, still alive, so it joined the snapper in my cooler. Escargot fritters would be on the menu alongside snapper....not a bad dinner coming together.

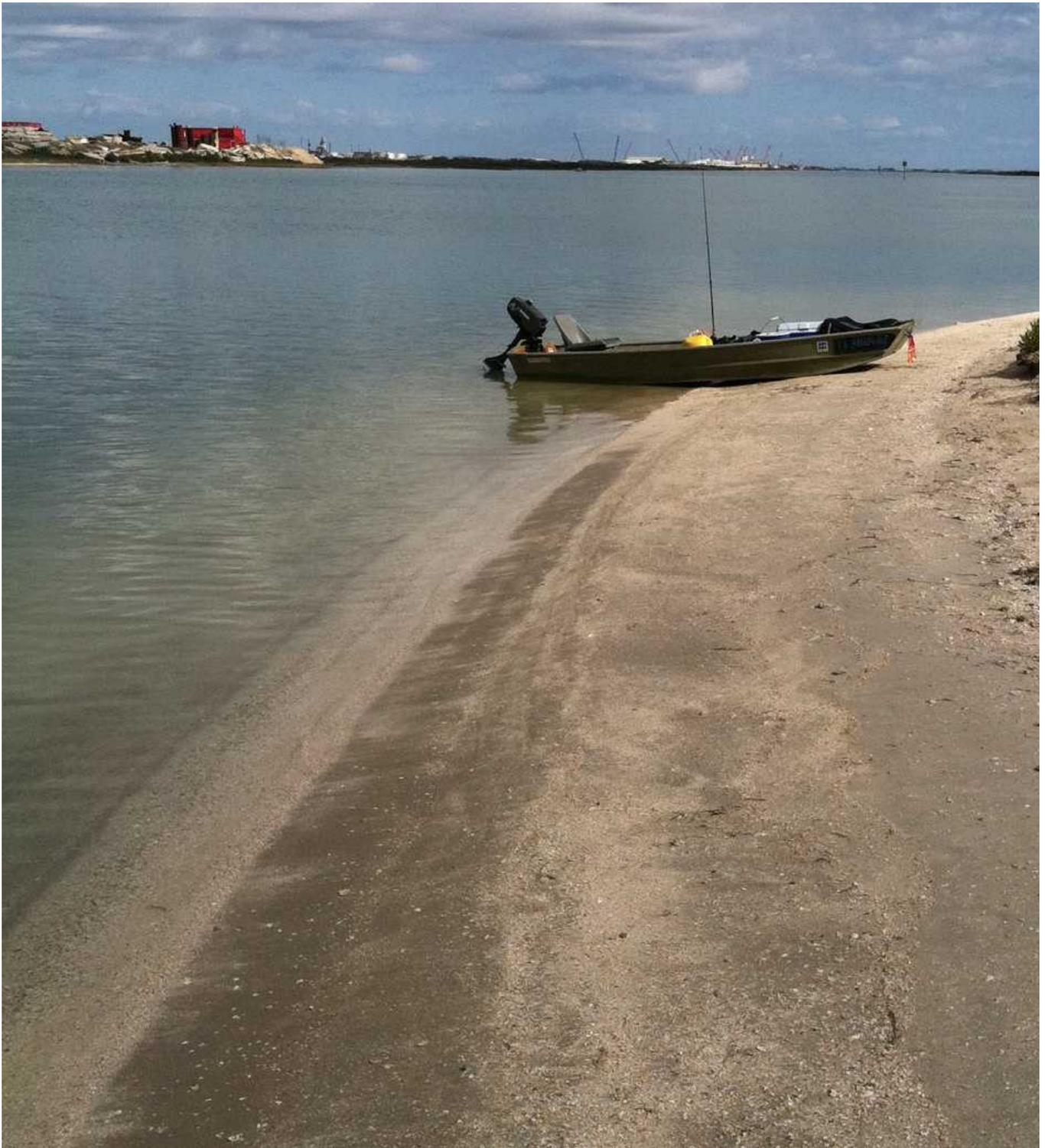


FIG 9: A typical coastal bend shoreline away from the crowds

Next came a little engine trouble. Clearly the engine was flooded, so I drained the carburetor bowl, pulled the spark plug, pulled the rip cord 10 times to clear out the excess gas, sprayed starting fluid onto the piston, torqued the spark plug back in, shot more starting fluid into the carb intake, gave the rope a few yanks and voila, purring once again. My engine hates to be stopped suddenly as this promotes flooding. It responds best when the fuel valve is shut off, then the engine is allowed to starve out as power is cut. One must know his powerplant and carry requisite tools when relying on equipment to get home safely and on time.

In the distance I spied another spoil island, one familiar to me from past exploits that gave up more fossil sand dollars...so I pointed the bow that direction and ran wide open throttle through open bay for a few miles until I hit the intended shoreline. A few bone scraps made it to the bottom of my bag, and I grid searched a small section of beach before it seemed that winds were picking up a bit. Being selective, I took maybe a dozen or so nice sand dollars *M. quinquiesperforata* in brown matrix, very attractive, and quite worth putting my little boat on big water to find them. With a building tail wind I hustled back to protected water.



FIG 10: Gypsum crystals (Site 228)



FIG 11: Pleistocene turtle plastron fragment (Site 228)



FIGS 12-18: Pleistocene sand dollars *Mellita quinquiesperforata* this and next 6 pages (Site 228)













Running out of gas in front of a long strip of undeveloped shoreline, I paddled over and went for a stroll in the black sands with stretches of Pleistocene Beaumont Clay exposed in spots. To my surprise, I found a very well preserved black Pleistocene horse lower molar and a section of Pleistocene turtle carapace along with several nice *M. quinquiesperforata* sand dollars...who could ask for more?



FIGS 19-23: Pleistocene *Equus* sp. lower molar this and next 4 pages (Site 644)











FIGS 24-25: Pleistocene sand dollars *Mellita quinquiesperforata* this and next page (Site 644)





FIG 26: Unidentified Pleistocene marginal turtle carapace fragment (Site 644)



FIG 27: Hermit crabs frolicking in an inch or two of water (Site 644)

“Glug glug glug” went the gas can as I balanced it upside down over my engine’s fuel tank, and with a rip of the cord I was again underway. Winds were now making small whitecaps, but I found a spot out of boat traffic where I could anchor up positioned to cast into some deep pilings with the wind at my back.

I still had live shrimp, and the first throw resulted in one chomped off just below the hook. The second shrimp resulted in a solid hookup, and with my drag set light, I enjoyed a 3-4 minute back and forth battle as the fish stripped off line in determined runs. Soon I saw the telltale black and white stripes of a sheephead, and since I

had forgotten my landing net I opted to play this fish out so that I could lift it by the line and swing it into the boat without thrashing that could throw the hook. All went to plan and the 15-16 inch fish hit the ice.



FIG 28: Best fish of the day, a legal sheephead

Low on gas, I putted back to my put-in after 20+ miles on the water in my diminutive and well used watercraft, once again enriched by the adventure in nature, and this time with ample rewards to take home and enjoy. Good times!

February 8, 2013: Lunch Hour Lesson

I've been shooting messages back and forth with Joe Cooper, a collector new to the San Antonio area, for several months finally had a chance to meet him on a lunch hour and show him around a local Austin Chalk (85 MYA) site that just might have a little potential left in it. Our goal was a bowling ball sized *Eutrephoceras* nautiloid for Joe, and with a little walking we found one in hard limestone which Joe marked for future extraction.

It was a little stream worn in once spot, but sutures were clearly visible and most of the surface of the specimen was buried in bedrock. This situation presented a double edged sword...a well protected fossil requiring 2-3 hours of patient, hard work to trench around it with a 4 LB hand sledge and inch wide chisel in order to produce a pedestal that can be snapped off, taking the fossil with a little extra matrix.

Pressing on, we saw several ammonite impressions where either streams had claimed the ammonite, or perhaps I did in years past (what?)...thrill of discovery hit me once again as I spotted the edge of a barely exposed, strongly ribbed ammonite. I called Joe over and told him it was his, but we'd need to proceed with care as this was somewhat of a rare specimen, perhaps *Prionocycloceras* or *Submortonicerias*.

I tapped around the perimeter to show Joe how to assess difficulty of extraction. Hollow hammer taps and visible vibration mean spalling rock and easy digging, at the expense of possible crack propagation. Solid taps mean a fossil anchored in hard rock. This ammonite presented a little of both.

We started our trench and I had to leave for work. I urged Joe to take his time, trenching wide and tangent to the fossil at all times until the pedestal is complete, but reminded him that many ammonites break outside of our control. As it turned out, this tenacious specimen held tight and broke into 3 pieces as is often the case. At least we could finally see at this point that it was not even a complete specimen, with a section eroded out, so it was a good field exercise with no net losses.



FIGS 29-30: Progressive shots while freeing a *Submortonicerassammonite* from the Austin Chalk (Site 14)



February 10, 2013: Sharing a Little More

Sunday took place on a rather tight schedule. Another Fossil Forum member, Mike Reagin, was in South Texas on business and had only Sunday to play. I planned to go to church that morning and then catch a plane to Hartford, CT on business later in the day, so we met in the Corsicana Formation at daylight, and I invited another friend and Fossil Forum member, Anthony Talutto, to join us.

No rain had fallen since my last visit except for light sprinkles the night before, and 2 more houses had sprung up on the best zone at the site over the previous 2 weeks, so my hopes weren't terribly high. But we all started crawling and quickly a number of *Hemiaster bexar* echinoids came to hand.



FIG 31: Mike Reagin surveying the Corsicana Formation (Site 349)



FIG 32: Anthony Talutto's *Diplodetus americanusechinoid* in matrix (Site 349)

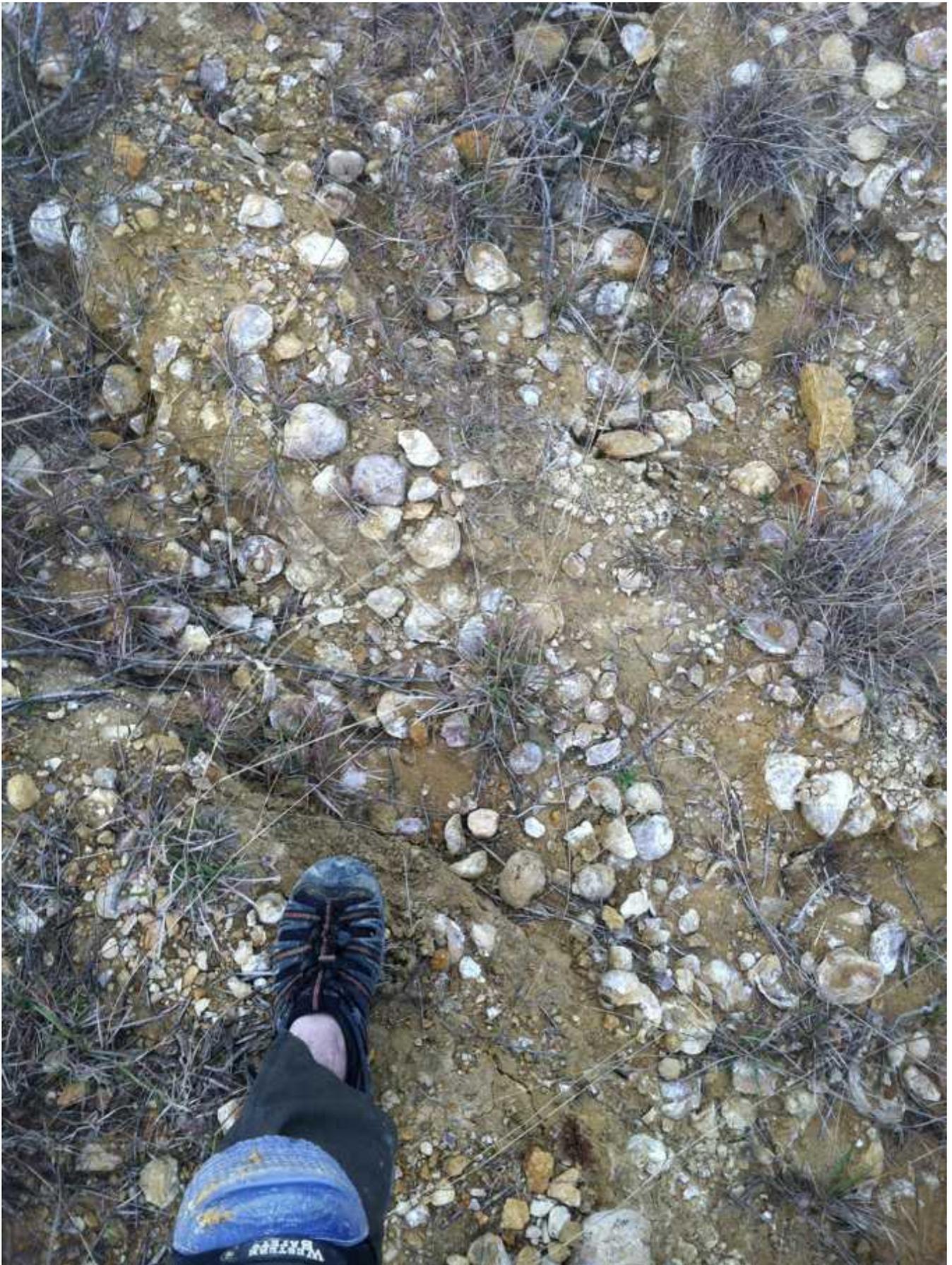


FIG 33: *Pycnodonte mutabilis* oyster bed (Site 349)

I grabbed one exploded *Dakoticancer australis* crab, one *Pyropsis* gastropod, and a few other odds and ends. Anthony found a cool *Diplodetus americanus* echinoid. Mike found some *Hemiasters* and *Pterotrignia castrovillensis* bivalves of his own, and received my finds in his take home bag.

I pulled out early, and was glad to hear that the Glen Rose Formation (108 MYA) site that I had recommended to Mike the day before produced for him 5 nice *Leptosalenia texana* echinoids despite the lack of rain. In summary, he took home enough goodies to take the pressure off of me!

February 13, 2013: Redemption in the Anacacho

Three years ago young Weston and I were collecting in the Anacacho Formation (78 MYA) and the lad found a nice ammonite that we were too undertooled to remove before we had to leave that day. I had also found some associated mosasaur material at the same site on a previous hunt and collected everything that could be seen from that animal at the time, and just hadn't made it back to the site since. In the meantime there had been one good flood roll through, and in the back of my mind were Weston's ammonite, which I remembered as a rare one I had never found before, and I also had occasional thoughts of more of that mosasaur.

One of my collecting friends had mentioned to me recently that same site, which he found independently through his own site research. I armed him with very specific information on the whereabouts of the ammonite and the mosasaur, plus other high percentage areas of echinoids etc., and sent him on his mission.



FIGS 34-35: Weston Woehr and his prized *Placenticer* ammonite from the Anachacho Formation this and next page (Site 496)





FIGS 36-44: More of the author's Anachacho Formation mosasaur this and next 6 pages (Site 503)













The result was a resounding win-win-win! Weston ended up with a beautiful 15.5 inch *Placenticerasa* ammonite studded with a prominent row of umbilical tubercles, and I bought him an easel to display his find in his room. I ended up with 5 more vertebrae from my mosasaur plus some basioccipital pieces...I'm quite pleased to see the growing yellow vert string displayed on my shelf. And my friend ended up with some mosasaur verts of his own, some turtle chunks, a wonderful *Menabites* ammonite, and a bumper crop of *Mecaster texanus* echinoids. It was fun for me to arm my aspiring paleontologist friend with solid information, then root for his success while I was tied up with business travel and health issues. In the end, it was a great outcome for us all.

February 22, 2013: Start of a Cave Man Weekend

After a couple weeks of business trips and sobering health issues, I decided to celebrate life by killing myself with a grueling 3 day paleo odyssey. Rain had fallen to the north, so I headed that direction, working with buddies part of the time and solo the remainder of the time. This trip turned out to be exactly what I needed in terms of physical exercise as well as slaking my thirst for adventure, at least temporarily.

My first stop hadn't seen much rain in a while, but it was en route, so I strapped on my kneepads and gave it a whirl anyway. This Glen Rose Formation (108 MYA) site features echinoids on a diminutive scale, so it was a game of nose to the ground. The site has become more popular in recent years as many sites have, and I'm sure others have worked the area since last good rain (my wedding week so I missed the party!).

However, I eventually found a "zone of neglect" that gave up 9 cute little echinoids. I was recovering from a bout of Bell's Palsy, which paralyzed half my face, and made it hard for one eye to blink and hydrate properly, so chronic dryness in that eye sent my focus way out of whack. My confidence began to be restored when the first echinoid encountered was a 2.5 mm *Goniopygus*, followed by another larger example of the same, then a cute little *Pygopyrina*, then a procession of *Salenia*. Either my vision was better than I thought, or I just scared the fossils out of the ground with a Texas sized dose of ugly!



FIG 45: Glen Rose Formation echinoid *Goniopygus* sp. (Site 161)



FIGS 46-47: Glen Rose Formation echinoids *Goniopygus* sp. right and center, *Pygopyrina hancockensis* left, this and next page (Site 161)





FIG 48: Glen Rose Formation echinoids *Salenia* (Site 161)

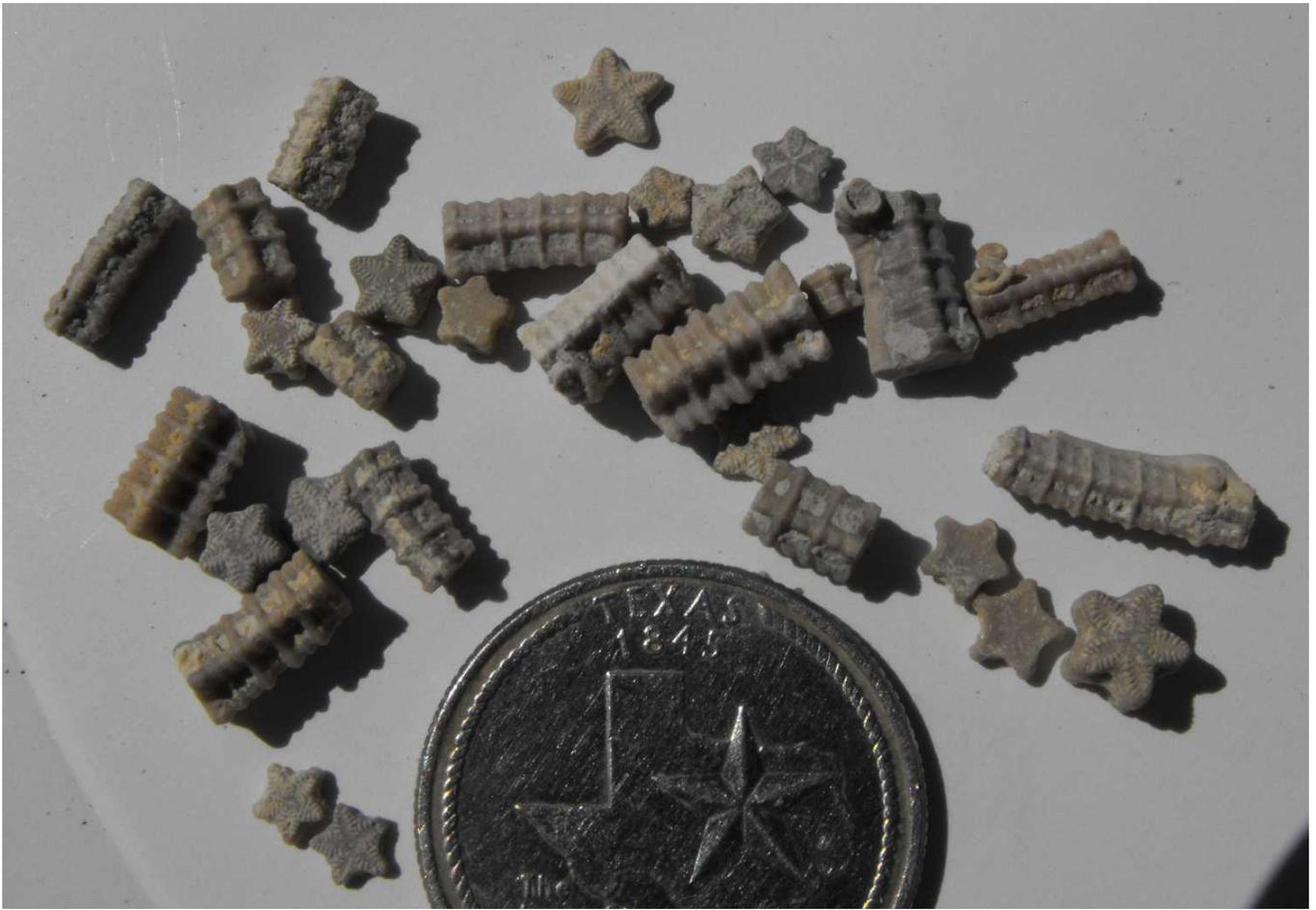


FIG 49: Glen Rose Formation crinoids columnals *Isocrinus annulatus*(Site 161)



FIG 50: Glen Rose Formation starfish ossicles below, hermit crab claw finger *Paleopagurus banderensis* above (Site 161)

I'd be spending most of the weekend collecting with my good friend Brent Dunn in Dallas, but he didn't want to get started until 9 a.m. on Saturday...on my drive up to the DFW area I decided that I had too many new site prospects to hit during daylight hours alone, and I wasn't tired yet, so I broke out the headlamp late at night and investigated 3 or 4.



FIGS 51-54: Weno Formation *Macraster* sp. echinoid this and next 3 pages (Site 646)







Around 11:30 I found myself crawling around a cow field amidst the ploppin's scattered across a flat of Weno Formation (99 MYA) clay and limestone rubble. My first find was the big gray blade of a once respectable shark tooth gleaming in my headlamp. Finds were scant, but just before midnight I lay hands on a nice 2 inch *Macraster* echinoid to make it all worthwhile, then finally found a spot to crash on Brent's couch.

February 23, 2013: A Day for the Books

Brent and I met with a PhD student in a parking lot Saturday morning to stage for our team outing in the Upper Britton Formation (91 MYA) known for its ammonites and crabs preserved in brick red ironstone concretions. But the real purpose for inviting the PhD student was much more noble than merely building our private collections. Brent produced and donated without reservation an extremely rare pterosaur upper jaw and beak found at the site we were headed to. As a result, Brent may end up with a new taxon named after him. Stay tuned!



FIGS 55-56: Upper Britton Formation pterosaur upper jaw found by Brent Dunn this and next page (Site 75)



The guys walked the exposure while I decided to crawl, given my temporarily impaired vision. Brent was quick to grab a wonderful *Astacodes* lobster tail, while I picked up the first *Notopocorystes dichrous* crab carapace, albeit rough. Over the next couple of hours Brent dominated the scene, spotting quite an array of crabs and shrimp plus some nice ammonites.



FIGS 57-58: Brent's Upper Britton Formation lobsters: *Astacodes*(?) tail this page, *Linuparis* carapace next page

(Site 75)



I was happy to pick up 3 or 4 Noto crabs with 1 being a very nice juvenile in matrix. I was also pleased as punch to take home good examples of the ammonites *Sciponoceras gracile*, *Worthoceras vermiculus*, *Metaioceras whitei*, and *Allocrioceras annulatum*, all white aragonite in red matrix. These fossils, once prepped, will provide a welcome splash of crimson to my collection.



FIGS 59-66: Upper Britton Formation crabs *Notopocorystes dichrousthis* and next 7 pages (Site 75)











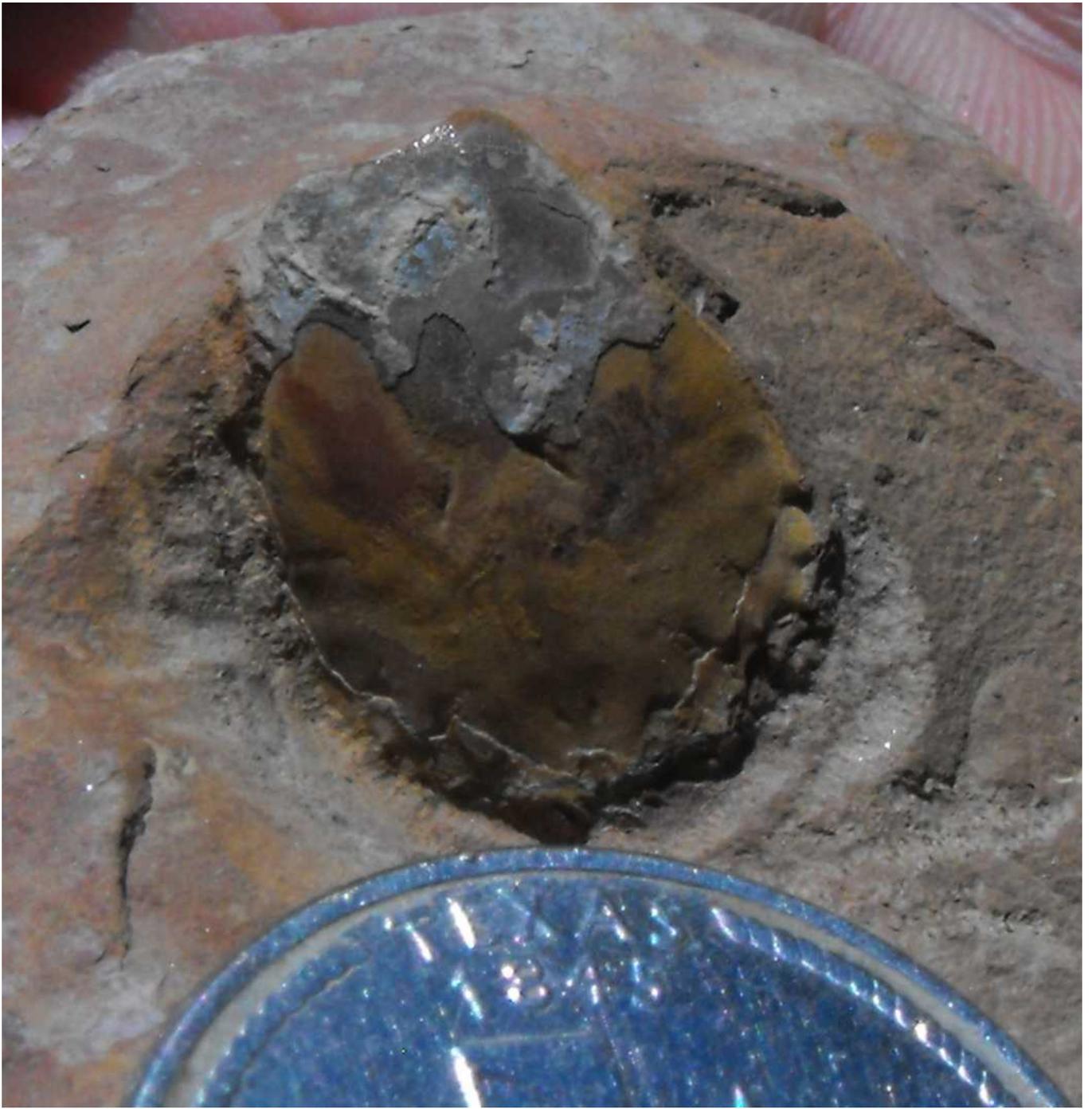






FIG 67: Upper Britton Formation *Upogebia* shrimp (Site 75)



FIG 68: Upper Britton Formation ammonite *Allocrioceras annulatum*(Site 75)



FIG 69: Upper Britton Formation ammonite *Metaioceras whitei*(Site 75)



FIGS 70-71: Upper Britton Formation ammonite *Worthoceras vermiculus*(Site 75)





FIG 72: Living chamber of Upper Britton Formation ammonite *Yezoites delicatulus*(Site 75)



FIGS 73-74: Upper Britton Formation ammonites *Sciponoceras gracilethis* and next page (Site 75)





FIGS 75-76: Found amongst Upper Britton Formation fossils was this unidentified fish otolith (earbone), possibly modern, this and next page (Site 75)





FIGS 77-78: Upper Britton Formation gastropods, mostly *Naticasp.*, this and next page (Site 75)



Great start, but it was just the start. A quick stop in a temporary exposure of Arcadia Park shale ensued.



FIGS 79-80: Brent's Arcadia Park Formation gastropod cluster this page and nacreous partial ammonite next page



Next we chose to survey the Pawpaw Formation (98 MYA), known for its diminutive pyritized fauna. Brent had patiently waited for a good site to weather, then invited me in for the harvest....and quite a bumper crop it was of cool little finds. In short order Brent found 5 *Linuparis* lobster carapaces, a huge *Xanthosia aspera* carapace, and a nice *X. wintoni* among other things. Before we pulled the plug, I found a wonderfully preserved rare crab carapace *Cenomanocarcinus renfroae*, two *X. wintoni*, a couple shark teeth, a couple nice fish verts, 3 pyritized ammonites, and many partial crab claws, some large. This was shaping up into a pretty good day.



FIGS 81-86: The author's rare and well preserved Pawpaw Formation crab carapace *Cenomanocarcinaus renfroae* this and next 5 pages (Site 541)







Nice ventral detail







FIG 87: Brent's Pawpaw Formation lobster carapaces *Linuparis grimmeri*(Site 541)



FIG 88: Brent's Pawpaw Formation crab carapaces *Xanthosia wintoni* above, *Xanthosia aspera* below (Site 541)



FIG 89: The author's Pawpaw Formation complete and partial crab carapaces including two *Xanthosia wintoni* below, *Cenomanocarcinus renfroae* top right, unidentified top left (Site 541)



FIGS 90-91: Pawpaw Formation lobster carapace this page, unidentified next page (Site 541)





FIGS 92: Miscellaneous Pawpaw Formation crab and lobster claw fragments (Site 541)



FIG 93: Pawpaw Formation *Cretolamna* shark teeth left, unidentified shark tooth blade center, and a couple fish vertebra right (Site 541)



FIGS 94-95: Unidentified Pawpaw Formation ammonites this page, heavily weathered ammonite next page, possibly *Engonoceras*(Site 541)





FIG 96: Pawpaw Formation foraminifer *Nodosaria texana* (Site 541)

Next I took Brent to a Pawpaw site I had found some months ago. Although I had found a couple shark teeth and fish verts there in the past, this zone produced mainly small, flattened pyritized ammonites, and once again they were present in abundance. We gave the site 20 minutes, picking up 1-2 ammonites per minute. A fun little diversion.



FIGS 97-101: Unidentified Pawpaw Formation ammonites this and next 4 pages (Site 624)









A lot of driving followed as we checked out some of my exploratory sites, most of which turned out to be duds. On that note we went for a slam dunk, a large, abandoned quarry in the Duck Creek Formation (103 MYA) which had not gotten any systematic scrutiny from me in years. Our first stop there was a small patch of eroding marl,

and there I picked up a nice *Cretalamna appendiculata* shark tooth and a *Poecilocrinus* floating crinoid, while Brent grabbed two diminutive fish vertebra. Good warm up!



FIG 102: Duck Creek Formation shark tooth *Cretalamna appendiculata* (Site 138)







FIG 105: Another Duck Creek Formation fish vertebra (Site 138)

Dropping deeper into the pit, we worked the rakish angle of the slope. My footing was a little better than Brent's as I had donned high topped metal baseball cleats, affording me billy goat-like agility. I worked the high road and Brent worked the low road, and over the next hour, he took 4 nice little *Mortonicer* ammonites, while I reduced to possession 3 *Holaster simplex* and two *Macraster elegans* echinoids. My echs didn't come the easy way, in fact at one point my feet went out from under me and I did a 50 foot slide down slope, bloodying my butt and calf through my pants. No worries though; I found another *Holaster* at the end of my slide. We both walked out satisfied.



FIG 106: Jocularly is the rule when Brent Dunn and I hit the field, and here he is retrieving a *Mortonicerias* ammonite from the Duck Creek Formation (Site 138)



FIGS 107-109: Duck Creek Formation echinoids *Holaster simplex* this and next 2 pages (Site 138)



With spines





FIGS 110-112: Duck Creek Formation echinoids *Macraster elegans* this and next 2 pages (Site 138)





Daylight was quickly fading, but the fun didn't end there! We dropped onto one last, worn out Pawpaw site, and there I put on my headlamp and grabbed 3 cute little pyritized ammonites before we pulled the plug for the day, grabbed some Pho at an Asian restaurant, and retired on Brent's couches for a lazy night in front of the big screen TV.

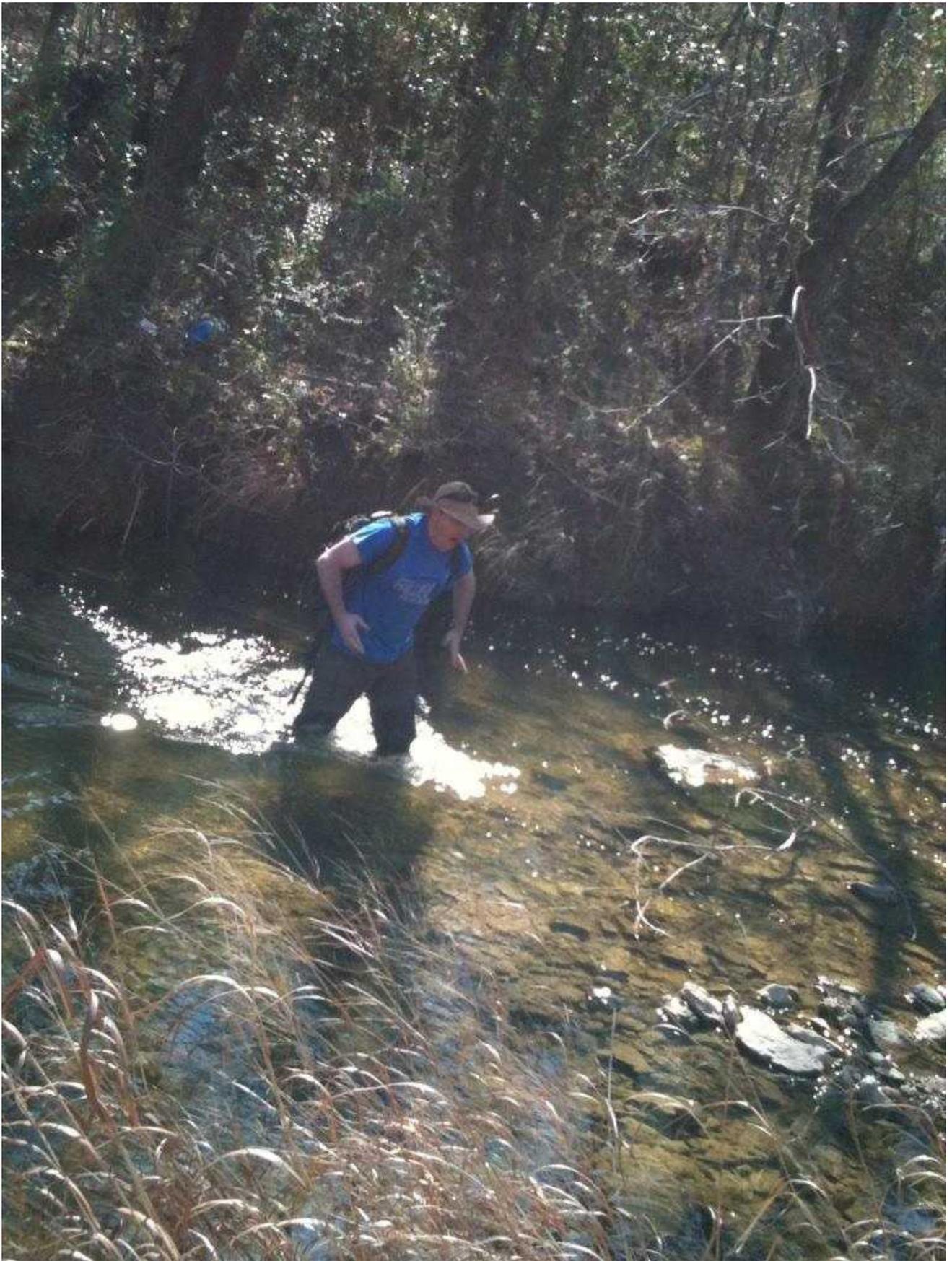


FIG 113: Unidentified ammonite from the Pawpaw Formation (Site 176)

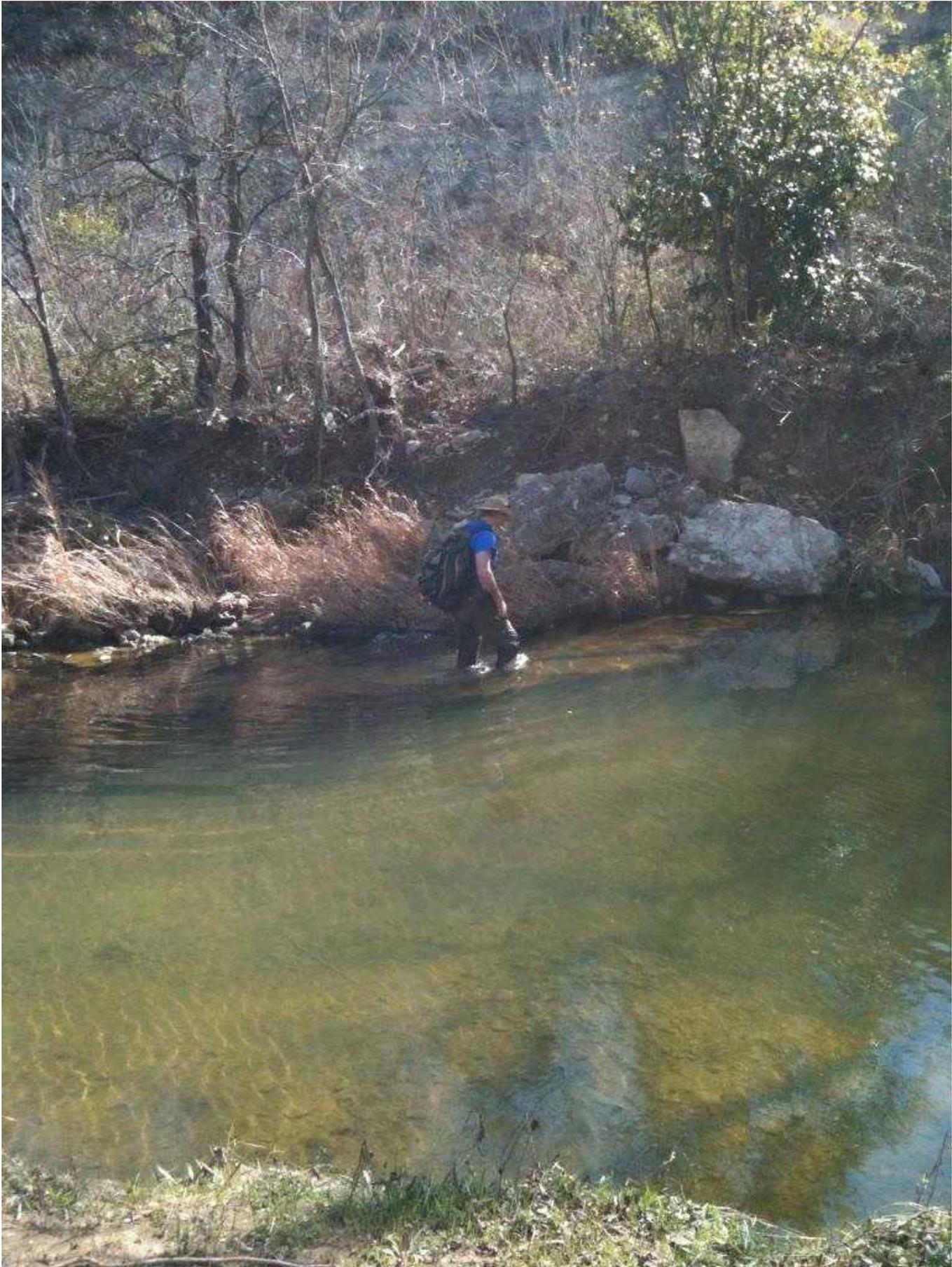
February 24, 2013: Good Huntin' Part 3

We were on a roll, but flying seat of the pants. I guided us this time to some Weno Formation (99 MYA) stream exposures that just might have a little potential left, mainly *Mortonicer* ammonites, and this site has produced more with the rostrum intact than I've seen anywhere...in any formation...ever.

After some cold February stream wading, I finally landed us at the base of a tall bluff of Weno marl and limestone. This bluff wasn't particularly kind to me in the past, having produced a couple rough echinoids, but we were desperate so we gave it a try. Near the end of our cliff walk we managed to spot some things in rock falls near the base. Brent got a very nice *Paracymatoceras texanum* nautiloid with great sutures while I found a double and a single *Mortonicer* block in good preservation, along with a weathered *Engonoceras* ammonite. Good start to the day.



FIGS 114-115: The author not "doing the Robot", but enduring a brisk February wade en route to an exposure of the Weno Formation (Site 201)





FIGS 116-117: Brent's Weno Formation nautiloid *Paracymatoceras texanum* this page, the author's oysters *Rastellum carinatum* next page (Site 201)





FIGS 118-122: The author's Weno Formation double ammonite block *Angolaites drakei* and next 4 pages (Site 201)









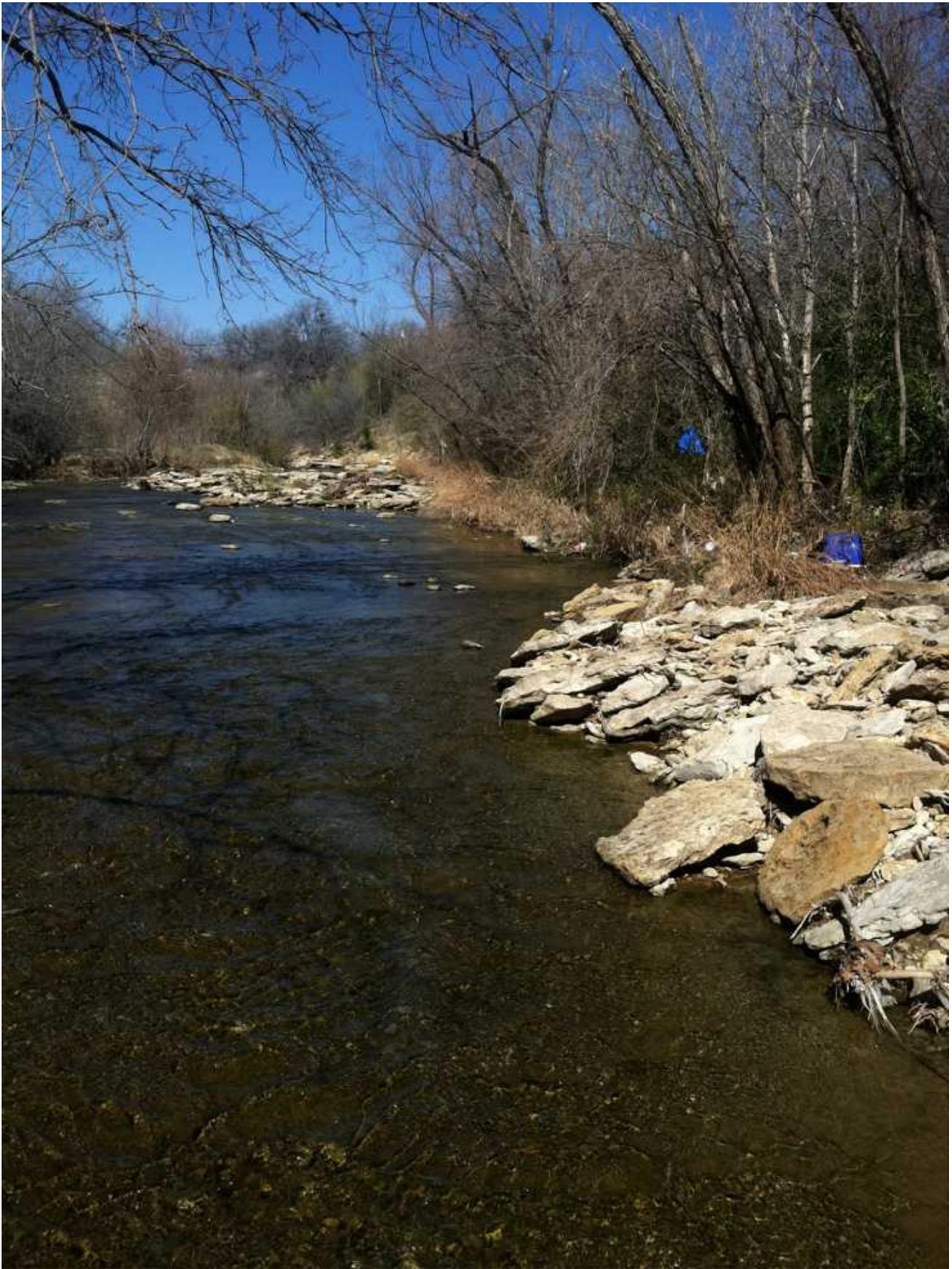


FIGS 123-124: The author's Weno Formation single ammonite block *Angolaites drakei* this and next page (Site 201)



We pulled out and drove to a different section of stream, also Weno, and commenced our wade down the slick bottomed channel, bouncing from bluff to bend to bar, scanning all the way. Brent more than once performed his famous "algae ballet", somehow avoiding a prostrate attitude in the industrial waste fouled water. Our brush with water borne pestilence did not go unrewarded.

In short order I grabbed a complete but worn *Cymatoceras hilli* nautiloid while Brent pulled the best *Trigonia claviger* bivalve I've ever seen. At that point luck swung hard my direction, and I picked up 8 *Mortoniceras* ammonites or so, these Weno forms looking noticeably different than their Duck Creek and Fort Worth Formation counterparts. Some even had rostra intact...very nice!



FIGS 125-126: A view of this Weno Formation site this page, Brent's screamer *Trigonia clavigeran* next page (Site 201)





FIG 127: A worn Wenon Formation nautiloid *Cymatoceras hilli*(Site 201)



FIGS 128-131: More Weno Formation ammonites, mostly *Angolaites drakei*, possibly one *Mortoniceras wintoni*, this and next 3 pages (Site 201)



Note rostrum



Possibly *M. wintoni* left, *A. drakei* right



FIGS 132-133: One more Weno Formation ammonite *Angolaites drakei* accompanied by a *Macrasterochinoid* next page (Site 235)



My friend Steven Ward hosted the rest of my afternoon, and it was a full service invite complete with T-bone steaks on the grill. Pretty high falootin' by my road food standards. Rains had fallen on the Grayson Formation (97 MYA) in the preceeding days, so with gloves and kneepads we gave chase to long dead vestiges of marine critters of yore.

Cretolamna appendiculata shark teeth came fast and furious, and I took one *Squalicorax* as well. Steven found a big shark tooth blade that may have been *Leptostryx*...hard to tell with the root missing. He also found a wonderful shark vertebra that he gave to me, and I think it was the nicest find of the day. But I had no qualms about picking up a few cool echinoids including a pyritized *Hemiaster calvini* and two little *Holaster nanus* specimens toward the end of my crawl.



FIGS 134-138: Grayson Formation shark teeth *Cretolamna appendiculata* this and next 4 pages (Site 633)





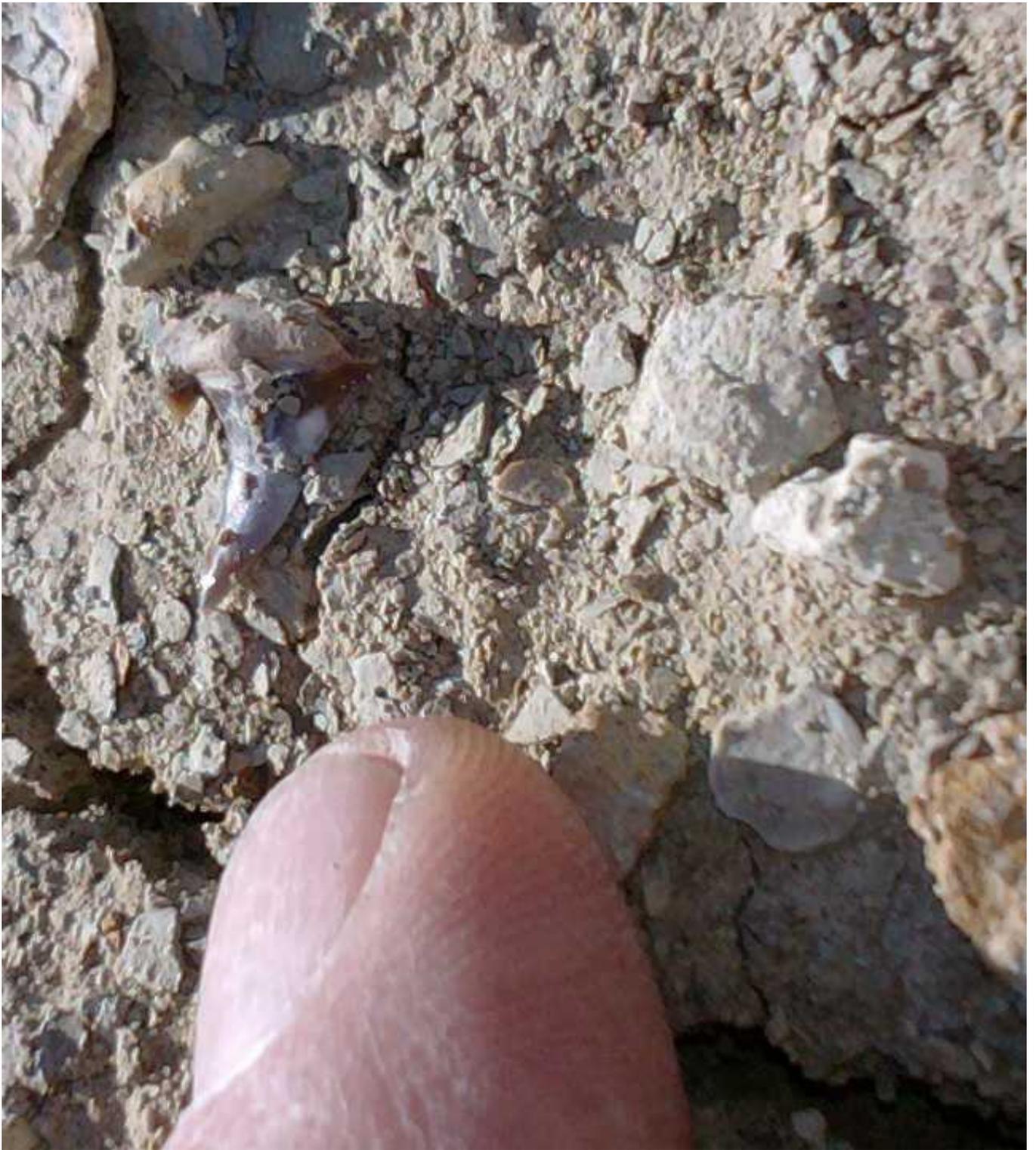






FIG 139: Unidentified Grayson Formation shark tooth blade, possibly *Leptostyrax*(Site 633)



FIG 140: Grayson Formation shark teeth *C. appendiculata* above, *Squalicorax* sp. lower left, possibly *Leptostyrax* sp. lower right (Site 633)



FIG 141: Unidentified Grayson Formation fish teeth and jaw (Site 633)



FIG 142: Unidentified Grayson Formation fish vertebra (Site 633)



FIGS 143-147: Spectacular Grayson Formation shark vertebra found by Steven Ward this and next 4 pages

(Site 633)











FIG 148: Our combined take of Grayson Formation shark and fish vertebra (Site 633)



FIGS 149-151: The author's first Grayson Formation echinoid of the day, *Holaster nanus*, this and next 2 pages (Site 633)







FIGS 152-154: Grayson Formation echinoids *Hemister calvinthis* and next 2 pages (Site 633)







FIG 155: Grayson Formation echinoids *Holaster nanus* left, cidarid plate and unidentified spines center, crushed and pyritized *Hemiaster calvinii* right (Site 633)



FIG 156: Grayson Formation ammonites *Mariella* sp. (Site 633)



FIG 157: Unidentified Grayson Formation gastropods left, pyritized *Mariella* sp. ammonite directly above quarter, *Neithea* scallop far right (Site 633)

The skin on my knees let me know that they had had their fill of bearing my weight over broken oysters over the course of 3 days, so I bade Steven farewell and thanked him for the tremendous hospitality. Brent had outdone himself in that department as well. Looks like some reciprocity is in order from my end.



FIG 158: Dessau Formation ammonite *Baculites* sp. (Site 14)