TEXAS FOSSIL AND ARTIFACT COLLECTING REPORT

March 2013

Daniel A. Woehr and Friends and Family

March 3, 2013: Upper Cretaceous Scouting Strikeout

A Sunday after church afforded me the opportunity to indulge my wanderlust, and I pointed my car for an area of South Texas mapped as Escondido Formation (66 MYA). In short, my exploratory efforts netted me no new viable collecting localities, so I re-examined one found several years back.

I must have nailed all the obvious *Sphenodiscus* ammonites last round, but missed one cool fossil until now. Entombed in a huge slab of sandy limestone was a very colorful section of marine turtle shell, identified by George Phillips of the Mississippi Museum of Natural Science as belonging to the genus *Peritresius*, the most common sea turtle in Escondido seas.

FIG 1: Typical exposure of the Escondido Formation with abundant ripple marks

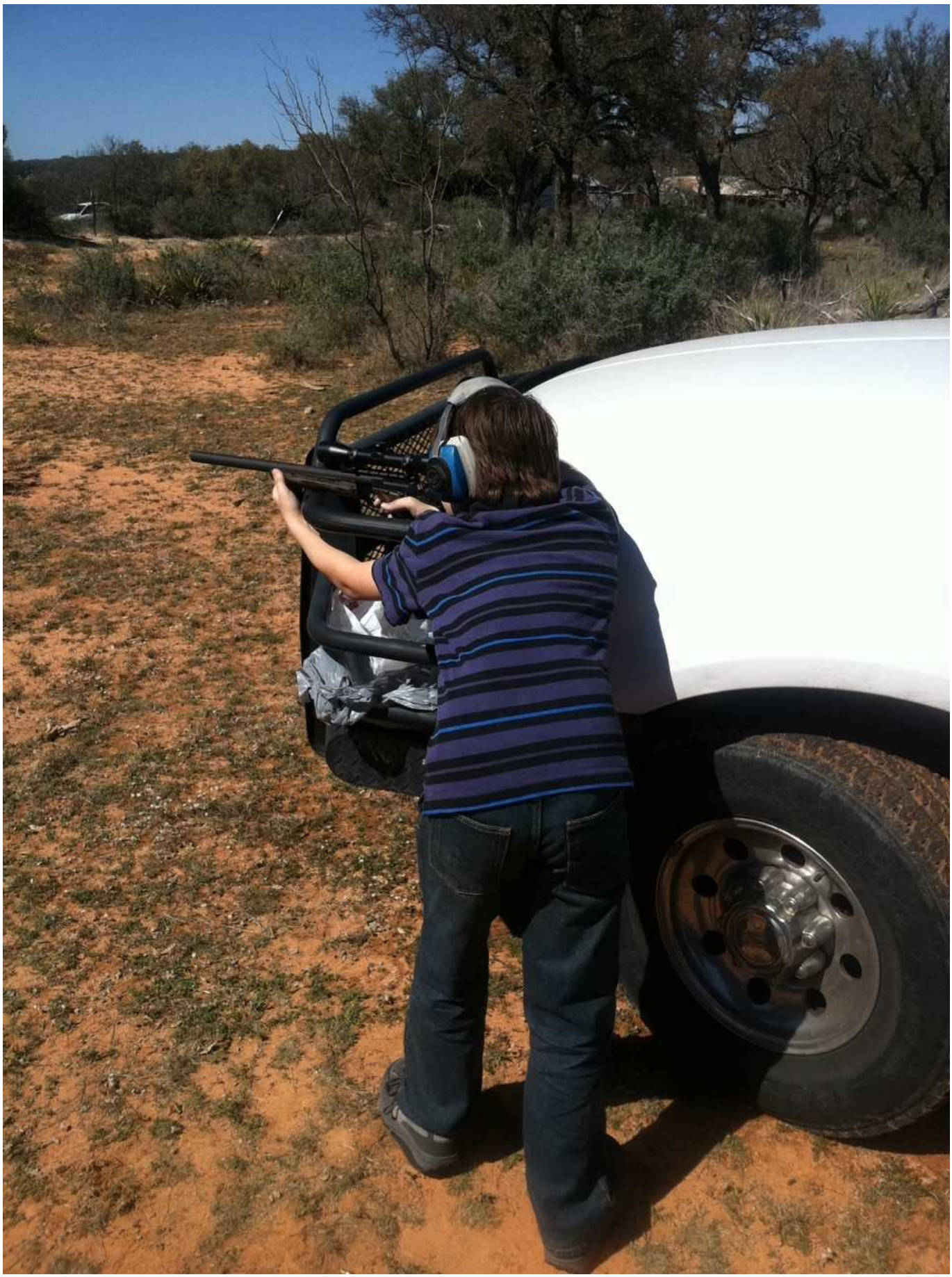
FIG 2: Marine turtle shell fragment *Peritresius* sp. from the Escondido Formation (Site 446)

This was all wonderful, but I had one major problem…the fossil was so imbedded in the huge, hard limestone slab that without a rock saw, it made most sense to leave the specimen in the field or I would surely destroy it. Maybe I can show up prepared to take it on a future visit to the site.

March 10, 2013: Projectiles Old and New

For a change of pace one Sunday I joined a coworker on his family land in the Texas Hill Country with my wife and son for a two prong adventure. Our outing began with some spirited family gunplay. My 9mm handgun broke the morning silence, followed by my friend's 12 gauge pump shotgun, my son Weston's .22 rifle, then ultimately we took turns with my Colt M4 rifle, our hands down favorite.

FIGS 3-4: Mrs. Woehr and her stepson Weston enjoying some spirited gunplay this and next page



Moving on, we canvassed an old Indian campsite on the property. A midden was exposed by ranch road work, and through methodical grid searching we turned up a handful of partial artifacts via surface collecting.

FIG 5: Collective Woehr family take of broken artifacts and debitage from the Texas Hill Country

I gave the landowner a nice *Mortoniceras* ammonite and a few other fossils, shook hands, indulged my family in some good German food on the way home, then clipped off he remaining miles in relative silence as my troops had konked out from all the excitement and fresh air.....

March 13, 2013: Loving on Some Lower Cretaceous Echinoids

A little rain fell around South Texas over the course of the weekend, so one work night when my wife was working late and my son was enjoying Spring Break, I took advantage of extended daylight hours at a couple Glen Rose Formation (108 MYA) fossil exposures.

My expectations were low at the first site, since we didn't get as much rain as North Texas, but apparently it was enough. An hour or so of crawling (forgot the kneepads and gloves!) produced a nice clutch of small echinoids in the *Salenia* spectrum. But the hands down King Kong find of the day was a large (for site) example of the echinoid

Paraorthopsis comalensis. And following this came a nice little *Pygopyrina hancockensis*, some crab claws, isolated and articulated crinoid columnals and a rare partial arm of *Isocrinus annulatus*.

FIG 6: A bad picture of a nice echinoid, *Paraorthopsis comalensis* from the Glen Rose Formation (Site 161)

FIG 7: Glen Rose Formation echinoids *Pygopyrina hancockensis* foreground, *Paraorthopsis comalensis* center, *Salenia phillipsae* background (Site 161)

FIG 8: Glen Rose Formation clockwise from 9 o'clock position: *Balanocidaris* plate, *Pygopyrina hancockensis*, *Paraorthopsis comalensis*, remainder *Salenia phillipsae,* and the remainder variants of *Salenia* and/or *Hyposalenia* (Site 161)

FIGS 9-11: Glen Rose Formation crinoid arm *Isocrinus annulatus*? this and next 2 pages (Site 161)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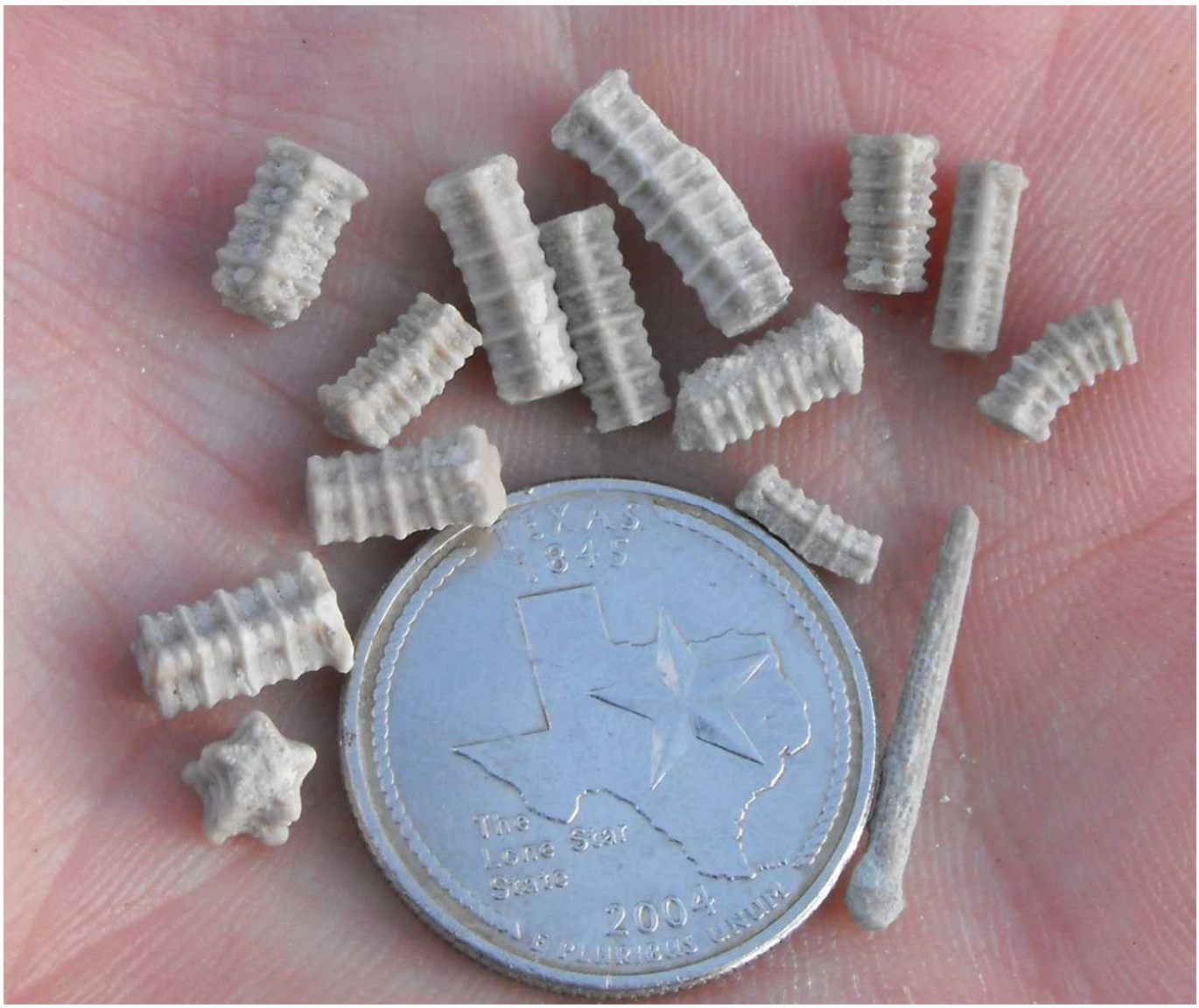

FIG 12: Glen Rose Formation crinoid columnals *Isocrinus annulatus* and a regular echinoid spine (Site 161)

FIGS 13-14: Glen Rose Formation hermit crab propodus *Paleopagurus banderensis* this and next page (Site 161)

Moving on, I gave a quick look to another Glen Rose site that I hadn't visited in months. Letting it go fallow had done the site some good, and with my headlamp I was able to pick off a dozen or so nice echinoids *Loriolia rosana* along with a few crab appendage segments and a dactyl (movable claw finger).

Pleasant temperatures...generous sites...what a wonderful way to spend a week night.

FIGS 15-17: Glen Rose Formation echinoids *Loriolia rosana* this and next 2 pages (Site 249)


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FIG 18: Glen Rose Formation crab appendage fragments (Site 249)

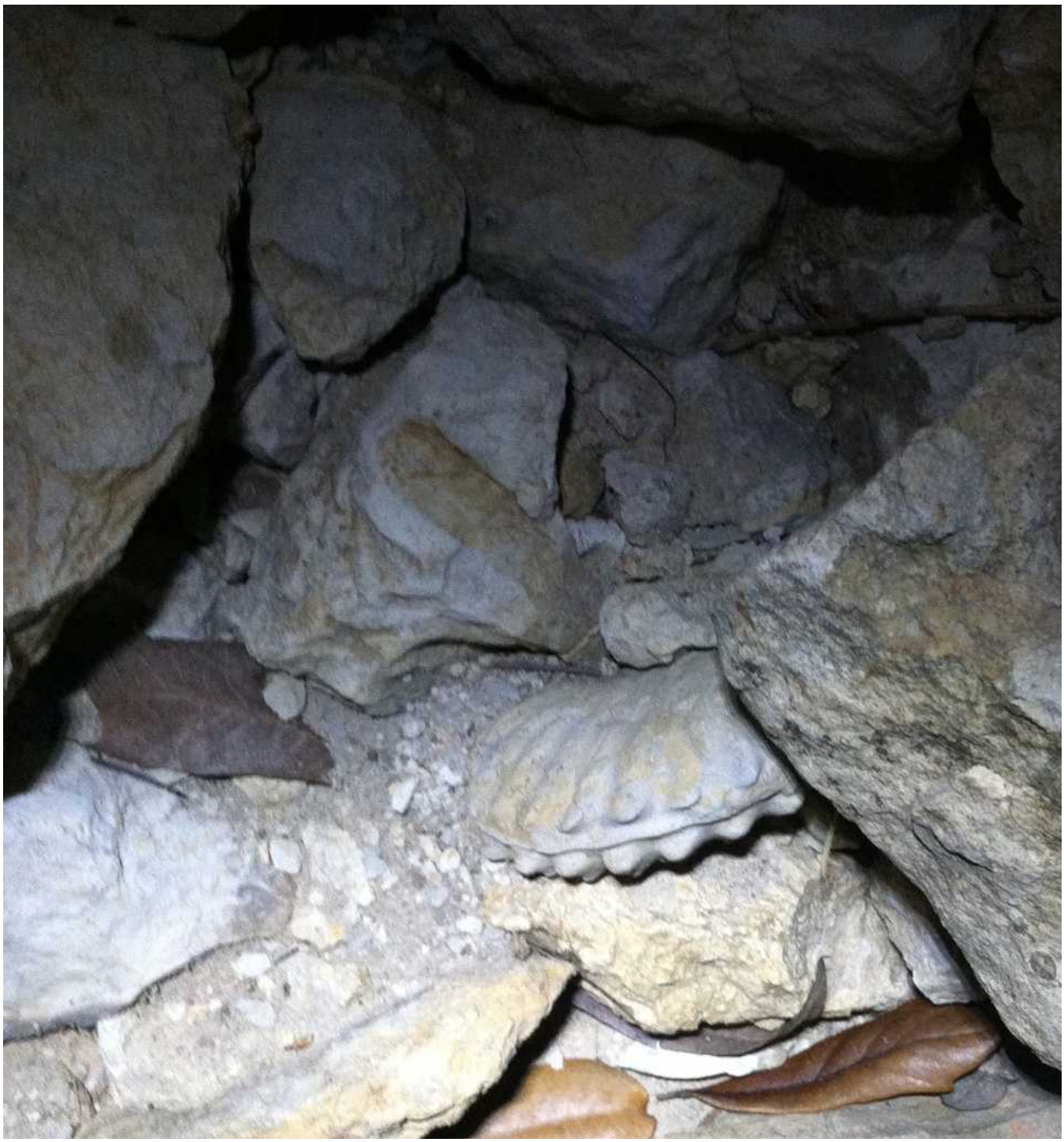
March 15, 2013: Nocturnal Weno Wanderings

My boy was with his Mama this particular weekend, and my wife announced a last minute trip to Atlanta late in the week, prompting me to throw together an impromptu collecting trip in North Texas for Saturday. With the drought hampering things a bit, I didn't have any slam dunk sites to visit, so I spent my Friday lunch hour studying satellite photos cross referenced to geological maps, and threw together an itinerary of some 16 sites I had never visited.

With all those sites and only so much daylight available Saturday, I rolled into North Texas around 10 p.m. Friday night, strapped on a headlamp, and began wading creeks. I'm not one to squander opportunity, even if there is no daylight available. The first creek was a complete dud. The second one was not. However, a long, cold wade was required to reach the Weno Formation (99 MYA) bluff I had spotted from the air.

With my headlamp piercing the night's gloom with its fresh batteries, I was a little startled to see yellow eyes glaring back at me from the creek bank 20 yards ahead. This particular furry quadruped refused to leave until I lobbed rocks its direction. Perhaps it was guarding the fossils on the adjacent gravel bar.

FIGS 19-20: Weno Formation night finds: *Paracymatoceras texanum* nautiloid left, *Mortoniceras* ammonite right, *Angolaites* ammonite next page (Site 201)



FIGS 21-23: A honkin' big *Homomya* bivalve from the Weno Formation this and next 2 pages (Site 201)

FIG 24: *Paracymatoceras texanum* nautiloid from the Weno Formation (Site 201)

My finds fell short of spectacular, but not bad for a Friday night after dark. I took 2 nautiloids, 2 *Mortoniceras/Angolaites* ammonites, and a honkin' big *Homomya* clam before hoofing it up the bluff and making my way back to the car on dry ground as opposed to reversing course and wading cold water over algae slimed rocks. Most of the fossils from this site will work their way into the kiddie pile.

A rough night of sleep in my car did little to prep me for my vigorous Saturday collecting itinerary. I had pulled into a big parking lot, and the parking lot lights flicked on and off several times that night, shining in my face, not the makings of restful slumber.

March 16, 2013: Lower Cretaceous Paleo Push

I hadn't collected with my good friend Frank Holterhoff in quite some time, but he was able to hook up with me not long after daylight Saturday morning, and in the minutes before his arrival (daylight burning!) I had located a few cool Weno Formation goodies. Early in my search came a *Holaster* echinoid that I thought would prep well, but a void relegated it to the kiddie pile. I took a large *Macraster* echinoid as well, but it was partially squashed. Still a fun find. Two very nice ammonites came to hand, namely a small *Mortoniceras drakei*, and a 4 inch

Angolaites. A rough *Cymatoceras* nautiloid made the scene as well, destined for the kiddie pile. Not a bad first half hour.

FIG 25: Weno Formation (Site 646)

FIGS 26-27: Weno Formation ammonite *Angolaites* sp. this and next page (Site 646)

Partial rostrum preserved

FIG 28: Weno Formation ammonite *Mortoniceras* sp. (Site 646)

FIG 29: A rough Weno Formation nautiloid (Site 646)

FIG 30: A partial Weno Formation *Engonoceras* ammonite and *Turritella* gastropod (Site 646)

FIG 31: Best view of a non-keeper Weno Formation *Holaster* echinoid (Site 646)

With Frank following me, my hastily prepared map led us to a Pawpaw Formation (98 MYA) site with which Frank was familiar, and he was able to led us to a productive area. With gloves and kneepads in place we dropped down close to the ground for a hard look, and a half hour produced some nice micro fossils. Specifically, we both picked up a number of cool little *Poecilocrinus* floating crinoids, then I got a small pyritized ammonite and two little *Cretolamna appendiculata* shark teeth, an upper and a lower.

FIGS 32-34: Pawpaw Formation *Poecilocrinus* floating crinoids this and next 2 pages (Site 647)


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FIG 35: Pawpaw Formation crab dactyl (movable finger) and pyritized micromorphic ammonite (Site 647)

FIGS 36-37: Pawpaw Formation shark teeth *Cretolamna appendiculata* this page and pictured with unidentified gastropods next page (Site 647)


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FIG 38: Unidentified Pawpaw Formation bivalve (Site 647)

In transit we spotted a fresh exposure of Weno and Pawpaw formations, a little too fresh to produce much. I made one decent find, however, a nice Weno nautiloid with impressive sutures.

FIG 39: Spectacular Weno Formation nautiloid *Cymatoceras hilli* (Site 651)

As we were leaving, we were joined by Frank's friend Cathy, and we headed down section into a stream exposing a lower section of the Weno Formation. We found a few small bluffs and good gravel bars loaded with large slabs of blue Weno limestone, but fossils were sparse. In the end I took a nice *Mortoniceras* ammonite, but little else. Upstream I was faked out by concrete dumped at the water's edge for erosion control…from satellite photos I thought I was seeing eroding limestone. All part of the game.

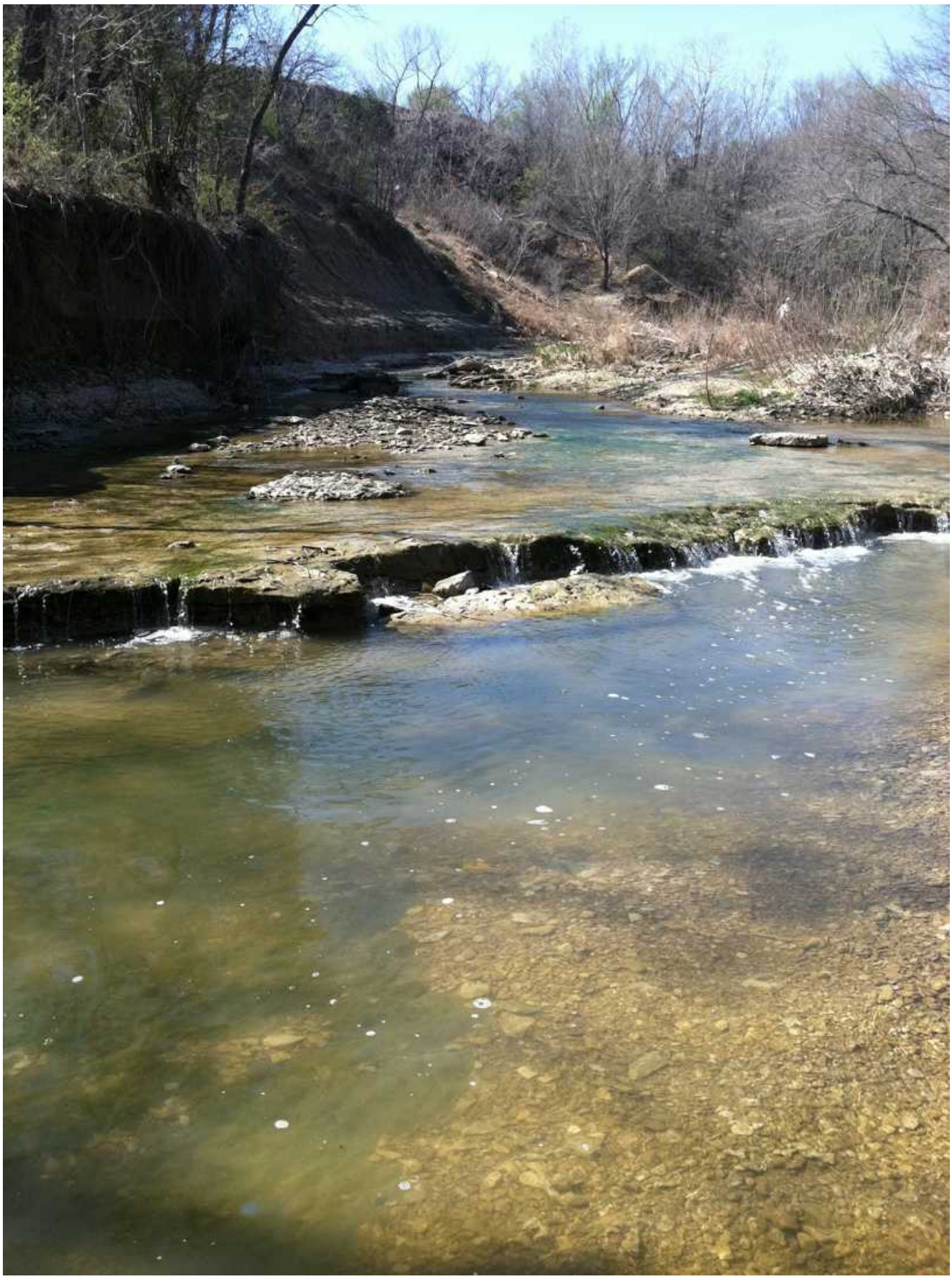

FIG 40: Weno Formation (Site 648)

FIGS 41-43: A nice *Mortoniceras* ammonite from the Weno Formation this and next 2 pages (Site 648)


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FIG 44: Heartbreaker *Paracymatoceras texanum* nautiloid from the Weno Formation (Site 648)

FIG 45: Weno Formation lithified burrow, just in time for Easter (Site 648)

After a sandwich I steered us to another stream exposure of Weno Formation in which I had little confidence. To my surprise, I clobbered 4 nice ammonites in short order. Cathy departed and Frank and I continued on. "Let's go get some echinoids," I wishfully told Frank.

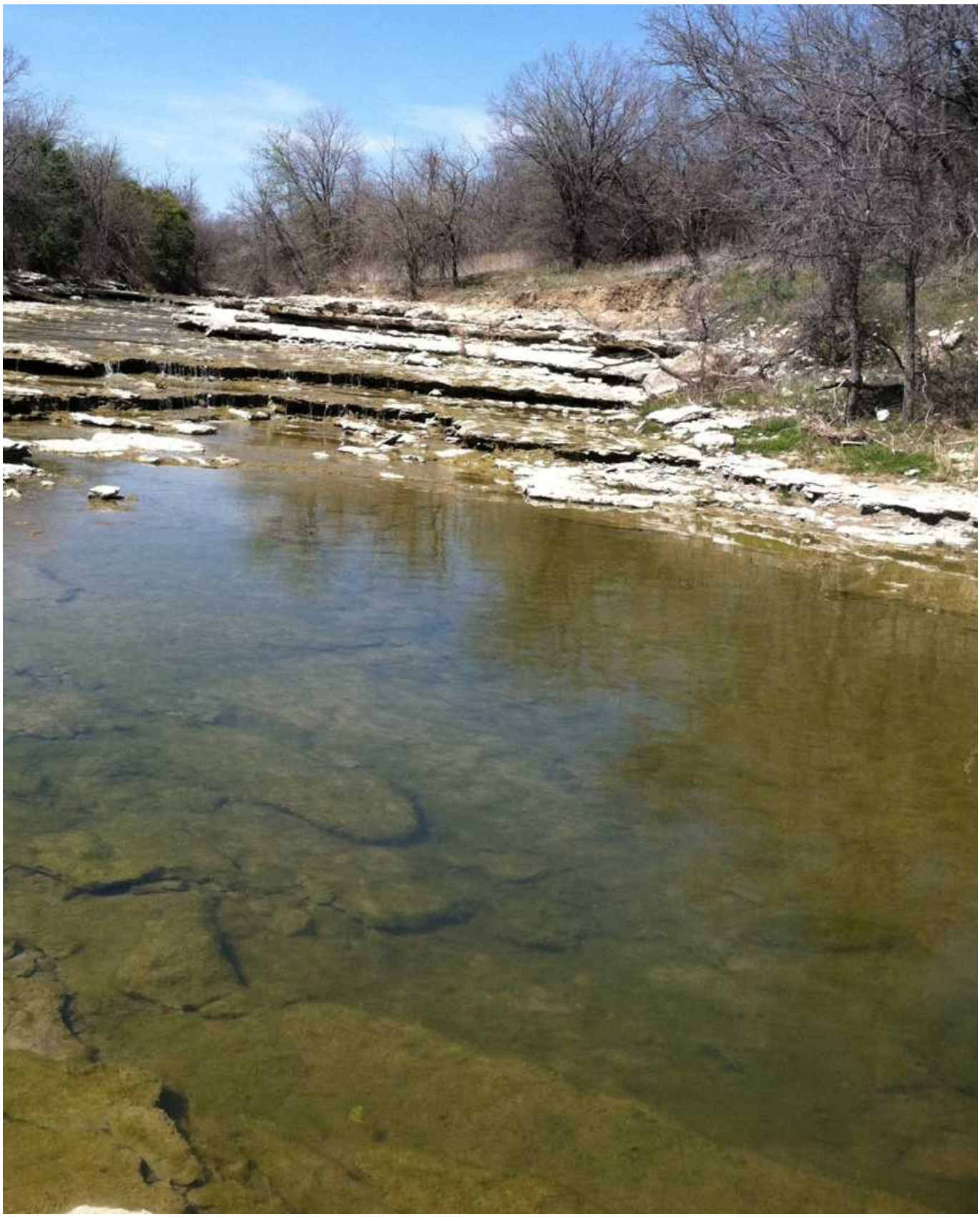

FIG 46: A pretty stream exposure of the Weno Formation (Site 649)

FIGS 47-52: *Mortoniceras* and *Angolaites* ammonites from the Weno Formation this and next 5 pages (Site 649)

M. drakei

M. drakei

Angolaites sp.

Pulling out and heading to yet another Weno stream exposure, I was elated to find a large and inflated *Macraster* echinoid jutting out of a marl seam just as I entered the stream bed. As it turned out, we got a nice *Macraster* echinoid every 20 minutes, and I ended up with 4, some in very good condition. Frank got a great *Mortoniceras/Angolaites*, while I picked up a rare, keeless ammonite in matrix that I think is probably rare for the formation, later identified as *Anisoceras*.

FIG 53: Weno Formation (Site 650)

FIGS 54-63: Weno Formation *Macraster* echinoids this and next 9 pages (Site 650)


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Macraster wenoensis


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FIGS 64-66: Rare Weno Formation heteromorphic ammonite *Anisoceras* sp. this and next 2 pages (Site 650)

Frank was able to get permission from a mutual friend for us to visit the friend's Pawpaw Formation site, so after a short drive, into the ditch we went. My knees were shot, but crawling this site was still fun. Frank produced a cute little *Leptostyrax* shark tooth, and my first find was a pristine little black fish vertebra. We both began finding *Poecilocrinus* floating crinoids, then I produced a nice little *Carcharias amonensis*(?) tooth, followed by most of a large *Onchopristis* sawfish rostral tooth, the latter rare I'm sure.

FIGS 67-69: Pawpaw Formation shark tooth, perhaps *Carcharias amonensis* this and next 2 pages (Site 653)

FIG 70: Pawpaw Formation fish vertebra (Site 653)

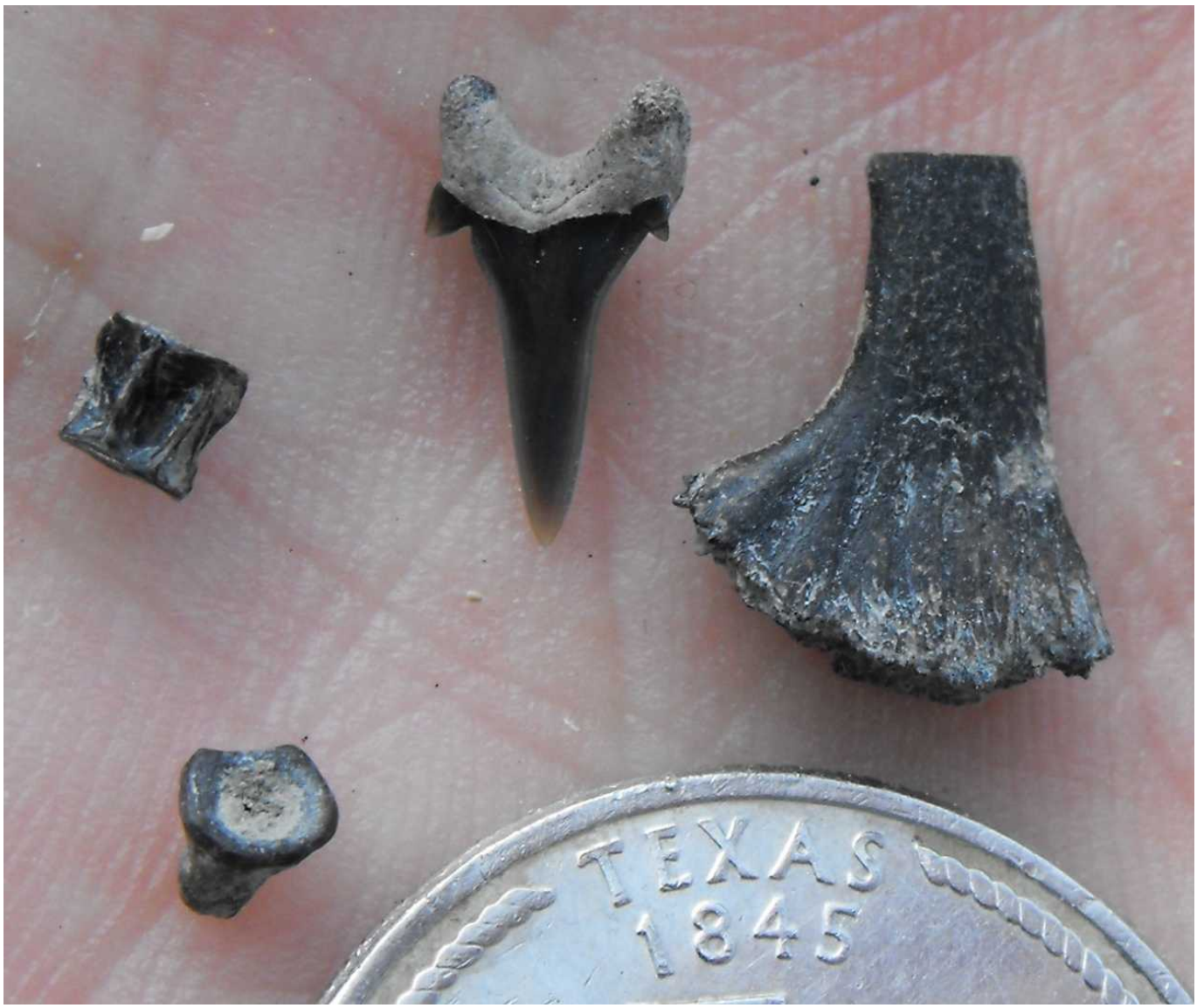

FIG 71: Pawpaw Formation fish vertebrae, *C. amonensis* tooth, far right half sawfish rostral tooth *Onchopristis* (Site 653)

FIG 72: Pawpaw Formation crab dactyl left, floating crinoids *Poecilocrinus* right (Site 653)

FIG 73: Pawpaw Formation worm tubes, unidentified gastropod, and oyster *Ostrea quadralipicata* (Site 653)

Frank had to leave after about 20 minutes, and the skin on my knees convinced me to depart as well….but I wasn't yet finished. My next stop was another creek, this time in the Fort Worth Formation, and here I grabbed a slightly compressed *Holaster* echinoid from the marl bank and worn *Macraster* echinoid from a gravel bar. A cute little *Mortoniceras* ammonite presented in the bluff, and after working on it, I was on my way.

FIGS 74-75: Fort Worth Formation *Holaster* echinoid this and next page (Site 654)


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FIG 76: Fort Worth Formation *Mortoniceras* ammonite (Site 654)

Recharged by Gatorade and the setting sun, my body agreed to one last site. This one required a bit of a hike, but eventually I located the big Goodland Formation (104 MYA) bluff I was after. Ammonites were sparse along the scree slope, however I found one fragment I opted to hang onto. It's a diagnostic partial *Dipoloceras cristatum*, an ammonite used as a zonation fossil of this age of strata worldwide. With daylight waning, I was pleased to hit a marl layer with very well preserved and abundant *Hemiaster whitei* echinoids...I must have taken 25.

FIG 77: Goodland Formation (Site 652)

FIGS 78-80: Rare partial Goodland Formation ammonite *Dipoloceras cristatum* this and next 2 pages (Site 652)

FIGS 81-86: Goodland Formation echinoids *Hemiaster whitei* this and next 5 pages (Site 652)


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FIG 87: Goodland Formation *Lima* bivalves (Site 652)

Driving home in the dark, coffee in hand, my headache was all but gone….or was it the second wind provided by the day's good fossil finds? Either way, I was hopeful that wind would stay in my sails for Sunday, and I had still more paleo pursuits on the roster…..

March 17, 2018: Upper Cretaceous Upshot

After 4 hours of sleep I heard a knock at the door…an expected one. I had invited fellow collector Anthony Talutto to join me in some Upper Cretaceous collecting well west of San Antonio. First stop: a clay pit in the Escondido Formation which in the past had given up some decent shark and fish teeth. Since I had rested the site several months, enough rain had fallen to freshen the place up a bit.

Anthony and I were finding teeth almost immediately, and I gave him the most productive stretch. We spent an hour or so crawling around picking up cool little teeth, most rather abraded from being redeposited several times over the eons. Best finds were the reptile teeth, possibly crocodile. I found 4 or 5 of them, but Anthony found the biggest, best preserved one. We added to the take some very nice *Enchodus ferox* and barracuda type teeth, *Serratolamna serrata* (mackerel shark), *Squalicorax pristodontus* (crow shark), *Ginglymostoma lehneri* (nurse shark), ray teeth *Rhombodus binkhorsti*, and perhaps others. I bulk sampled one of the more productive areas for later scrutiny and then we were on our way.

FIG 88: Anthony Talutto in the Escondido Formation (Site 86)

FIGS 89-97: Anthony Talutto's better Escondido Formation finds this and next 8 pages (Site 86)

Unidentified reptile teeth....possibly from the river crocodile *Leidyosuchus*

Crow shark *Serratolamna serrata*

Unidentified shark tooth – possibly *Serratolamna serrata*

Nurse shark *Ginglymostoma lehneri*

Rostral denticle spine from sawfish *Ischyrhiza mira*

Unidentified fish tooth

Rhombodus binkhorsti ray tooth

Dermal dentical from the eagle ray *Brachyrhizodus mcnultyi*

FIGS 98-99: The author's reptile and possibly fish teeth, this and next page (Site 86)

Possibly *Leidyosuchus* on the right

FIG 100: Escondido Formation shark teeth, *Serratolamna serrata* and perhaps *Odontaspis* (Site 86)

FIGS 101-102: Escondido Formation crow shark teeth *Squalicorax pristodontus* this and next page (Site 86)

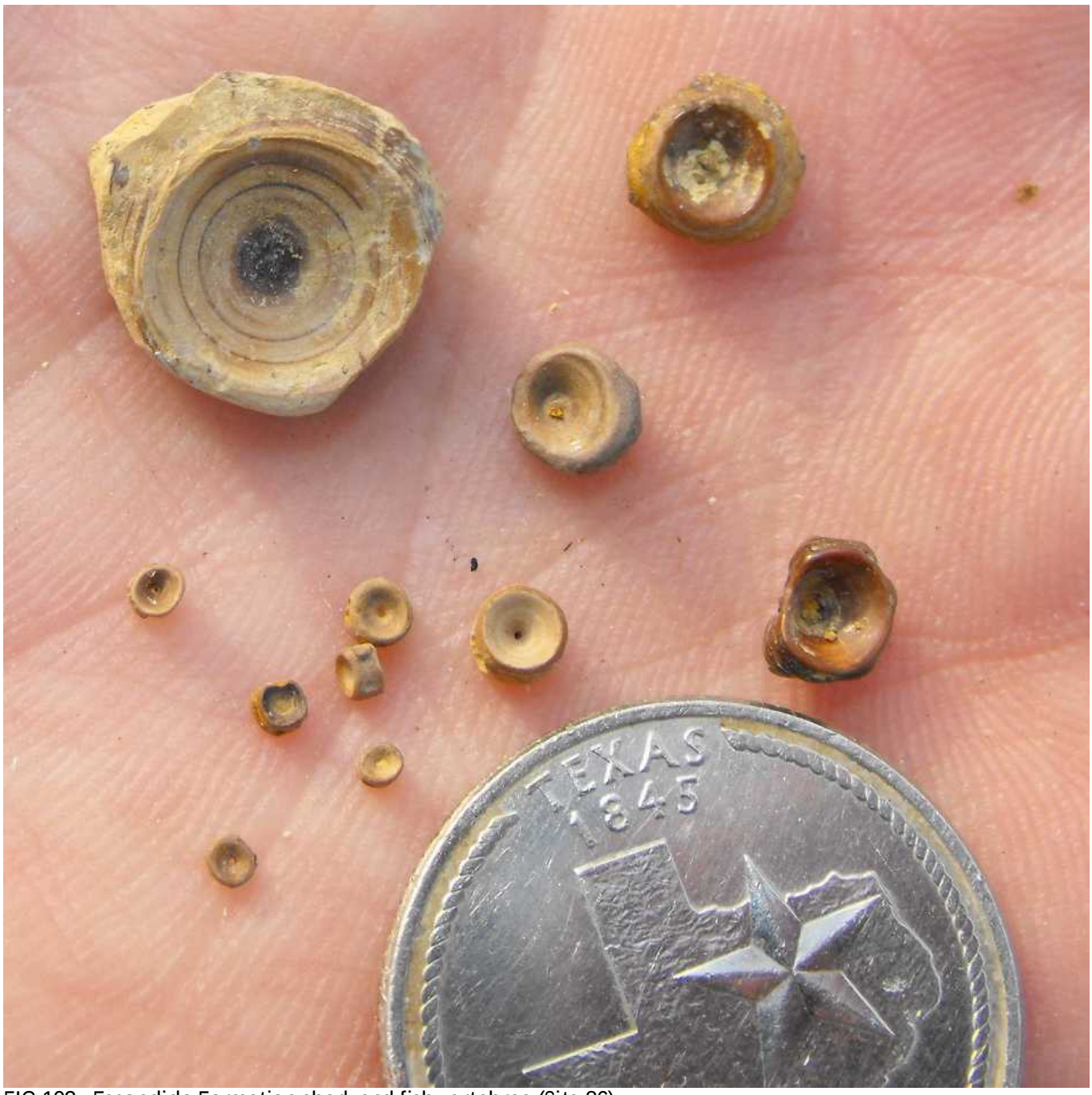

FIG 103: Escondido Formation shark and fish vertebrae (Site 86)

FIGS 104-105: Escondido Formation bone fragments, possibly marine turtle, this and next page (Site 86)

FIG 106: Escondido Formation nurse shark teeth *Ginglymostoma lehneri* (Site 86)

FIG 107: Escondido Formation fish teeth *Enchodus ferox* (Site 86)

FIG 108: Unidentified Escondido Formation fish ear bones known as otoliths (Site 86)

FIGS 109-110: Escondido Formation phyllodont teeth (round) *Paralbula casei* and possibly a few ray teeth (polygonal) *Rhombodus binkhorsti* this and next page (Site 86)

FIGS 111-112: Escondido Formation ray teeth *Rhombodus binkhorsti* this and next page (Site 86)


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FIG 113: Escondido Formation shark teeth in matrix (Site 86)

FIG 114: Escondido Formation "junk" shark teeth (Site 86)

Pressing on, we ultimately arrived at an exposure of Boquillas Formation (90 MYA) that I like to search for echinoids every year or so. This was another new formation for Anthony so he was "digging it." I took a little time to point out the stratigraphy and faunal zones, then we got to work. I wore a pair of notably utilitarian metal baseball cleats to aid me in going vertically up the slope.

Mecaster batnensis echinoids were coming in hand over fist, usually singles, but sometimes in clusters within concretions. Loose *Mecasters* were available in all sizes up to maximum size of just upward of an inch. We spent a little time in a soft marl seam where not only more *M. batnensis* could be had, but tiny *Coenholectypus nanus* echinoids were abundant as well. We each took a handful of them.

FIGS 115-128: Boquillas Formation echinoids *Mecaster batnensis* this and next 13 pages (Site 448)

Anthony's *Mecaster* slab

The author's *Mecaster* cluster


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FIG 129: Boquillas Formation echinoids *Mecaster batnensis* below, *Coenholectypus nanus* above (Site 448)

FIGS 130-135: Boquillas Formation echinoids *Coenholectypus nanus* this and next 5 pages (Site 448)


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Late in the game, I spotted an odd, lens shaped concretion high in the exposure. As it turned out, it was just a hollow, calcite filled concretion, but next to it was a big *Coilopoceras* ammonite surrounded by *Mecaster* echinoids. 15 minutes of digging later, the ammonite was found to be imcomplete and broken into pieces. I left it there, but when Anthony climbed up to see what I was doing, he found his best *Mecaster* cluster of the day.

FIG 136: Boquillas Formation ammonite *Coilopoceras* sp. (Site 448)

FIGS 137-138: Boquillas Formation shark tooth, possibly *Scapanorhynchus rhapiodon* this and next page

(Site 448)


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FIG 139: Boquillas Formation oysters *Nicaisolopha bellaplicata* and unidentified phosphatic specimen (Site 448)

A small town BBQ sandwich and many miles later, while doing some scouting around dusk, we made one last rare find – a Texas Land Tortoise that we held for photos, then released. 14 hours on the run left me a little tired, but somehow I held it all together for a productive Monday at work.

FIGS 140-143: Texas Land Tortoise, the first ever seen by the author, this and next 3 pages

Note neck guards far right

FIG 144: “The kiddie pile”