

## FOSSIL COLLECTING REPORT

OCTOBER 2010

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### October 2, 2010: Weches Formation Wanderlust

Once upon a time an out of state collecting buddy who spent some time in Texas in the military spent his weekends exploring Texas for various echinoid collecting sites, and his systematic approach yielded a few good, underutilized sites in the Weches Formation, an Eocene age marine sequence roughly 50 million years old. A magnanimously generous sort of fellow, soon after I met him he passed me detailed info on the Weches sites and I visited them about 3 years ago with resounding success. They had been on my mind a bit lately, so I sent my friend a courtesy shipment of rare echinoids and paid a second visit to these sites over the weekend.

My late start was a bad idea as the drive was longer than I remembered, resulting in a 13 hour round trip drive of some 750-800 miles, but I made it home the same day with echinoid booty far outweighing the effort to get there and home. Perhaps the locals had something to do with my long drive...at one point I crested a hill and saw two good ole boys standing in the highway waving their arms, their newly built deer blind disintegrated all over the highway while their truck and trailer was pulled off the shoulder. Clearly chagrined by the deleterious results of their decision to omit tiedowns, I tried to assuage their embarrassment by harkening back to the day a buddy and I capsized my bay boat in the surf, ending up shipwrecked on a barrier island for part of a day. I helped them get splinters and screws off the pavement and lift the tattered box blind back onto their trailer before continuing on my way.

But the excitement didn't end there....at the first roadside collecting site my car was pulled off the shoulder. I had my head down looking for Weches goodies as I heard a truck pass, followed by the roar of an extended crash. Walking over to investigate as the driver circled back, I found a large wooden doghouse covered with sheet metal bashed up on the road, having fallen out of the back of the pickup truck and rolling roughly down the road, coming to a stop 2 feet from my car! Again I got to help the driver lift his inadvertently jettisoned cargo back into his truck.

My offer to help him tie it down fell on deaf ears...."I just have to make it down to the end of the road." I don't reckon that vector physics and form drag are discussed in them Piney Woods too often with respect to securing cargo in the back of a truck...usually down home common sense prevails with country folk, but in these cases apparently not.

My attention now returning to my field excursion, I soon found the bench of dirty, gritty brown sandstone chock-full-o *Protoscutella mississippiensis* sand dollars to be nicely weathered and perhaps overlooked by collectors since my last visit....just the way I like it! I got to work and merrily chiseled specimen after specimen from the clutches of the Weches, being very careful in extricating and handling these paper thin treasures. They ranged in size from perhaps 4 to 70 mm across and some stunningly present themselves in a light yellow hue in stark contrast with the deep brown matrix, the ambulacral pores accented in chocolate brown. My favorite specimen was barely exposed when spotted, and careful chiseling wide around it finally exposed the margin of the big and beautiful specimen. A number of nice *Pecten* scallops also came to hand.

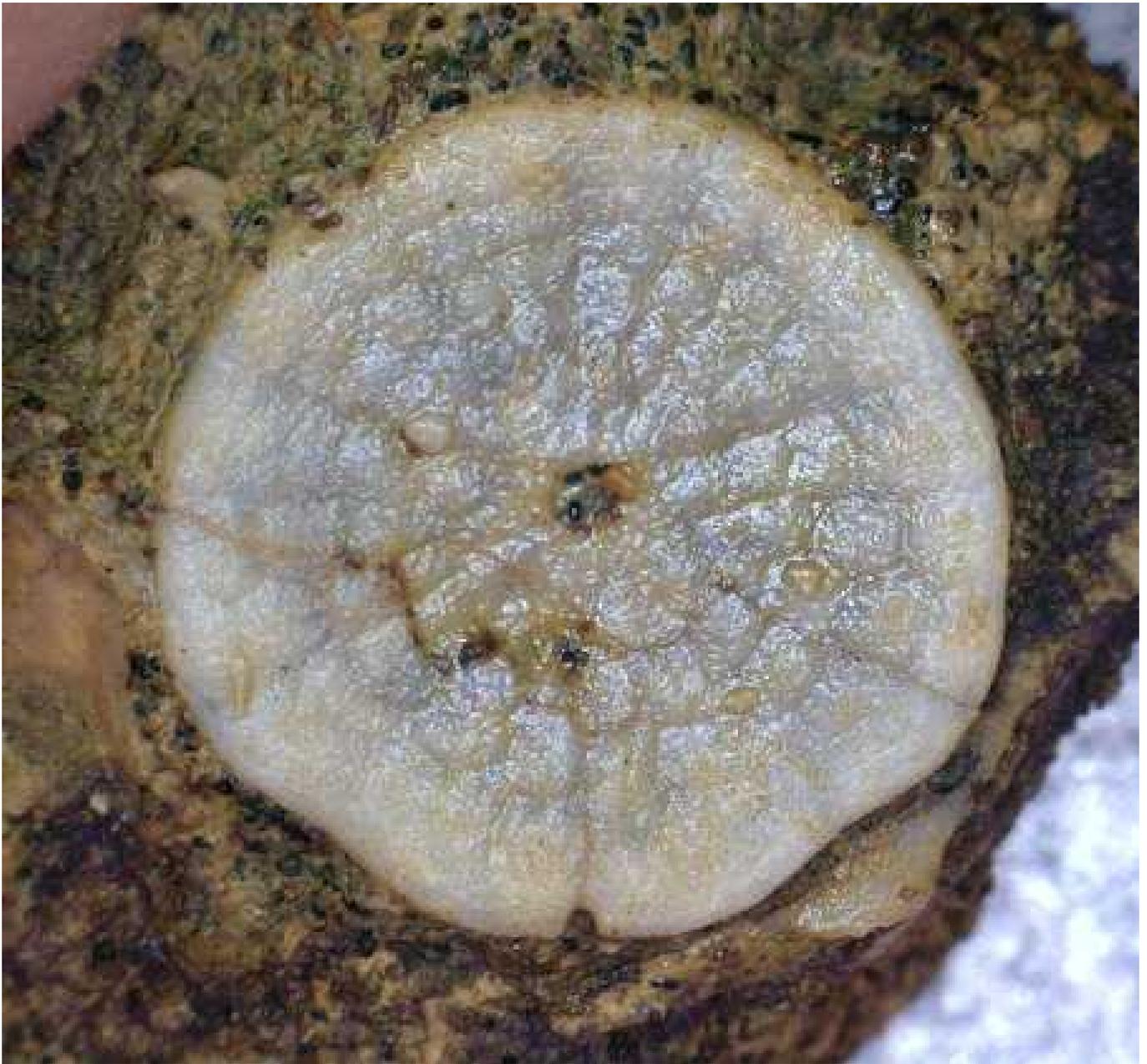


**FIGS 1-18:** A shot of Weches Formation Site 428 followed by shots of sand dollars *Protoscutella mississippiensis* found there next 15 pages, scale in millimeters

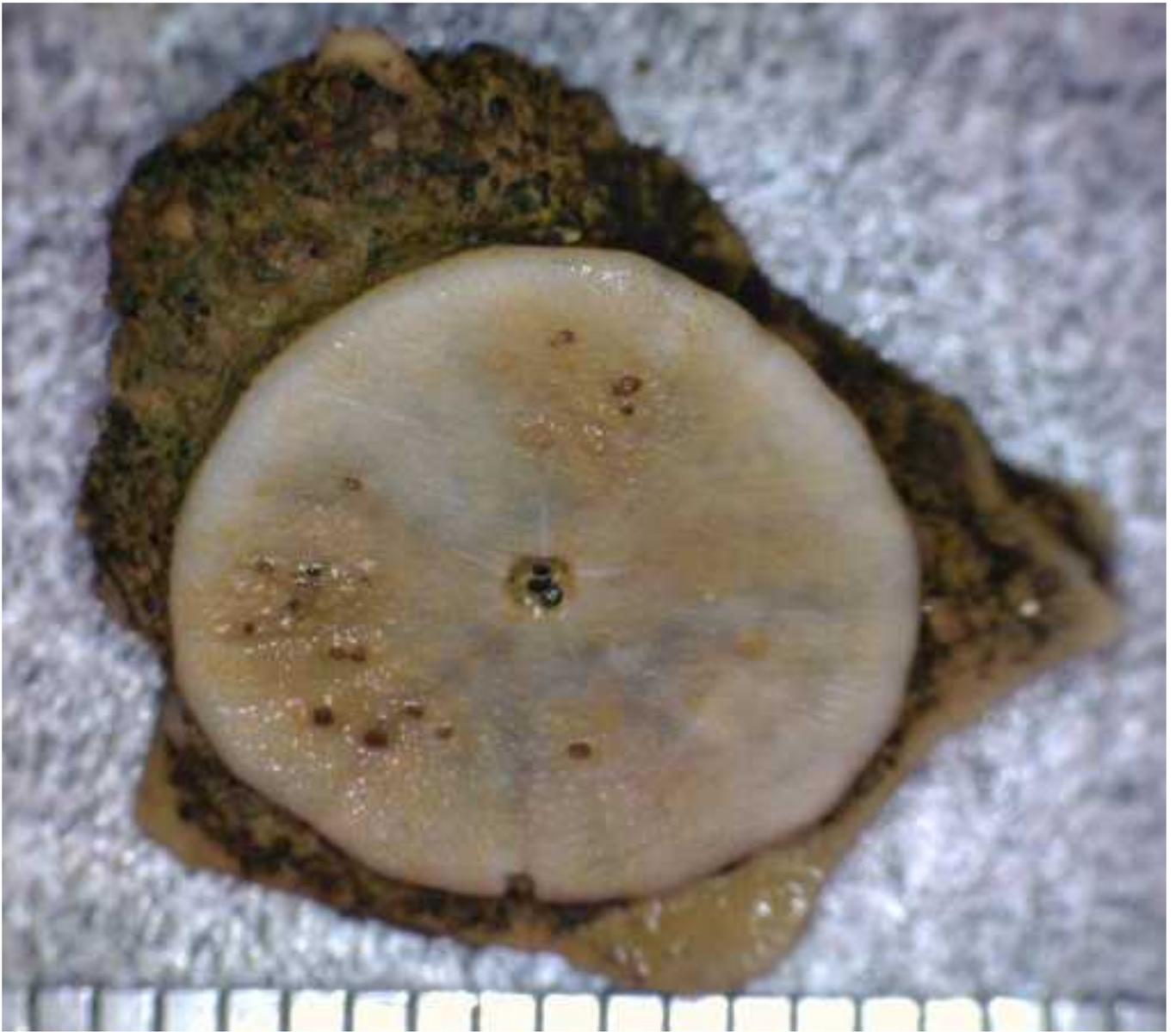
































**FIGS 19-21:** Weches *Pecten* scallops, gastropods, and some form of apparent coral this and next 2 pages (Site 428)





Moving up section stratigraphically a few feet I encountered another bench that was lacking in *Protoscutella*, but choked with innumerable BB to pea sized, highly detailed echinoids *Fibularia texana*, many eroded out free of matrix and others in multi specimen matrix chunks. These things were quite prolific, so much so that I stopped at perhaps 200 specimens and left perhaps a thousand that I could see, tons more surely hidden from view just under the surface. In the end it appeared that I had never even been there. My take was supplemented by a few oysters, gastropods, and crab claw sections.



**FIGS 22-49:** Diminutive Weches echinoids *Fibularia texana* this and next 25 pages, scale in mm (Site 428)











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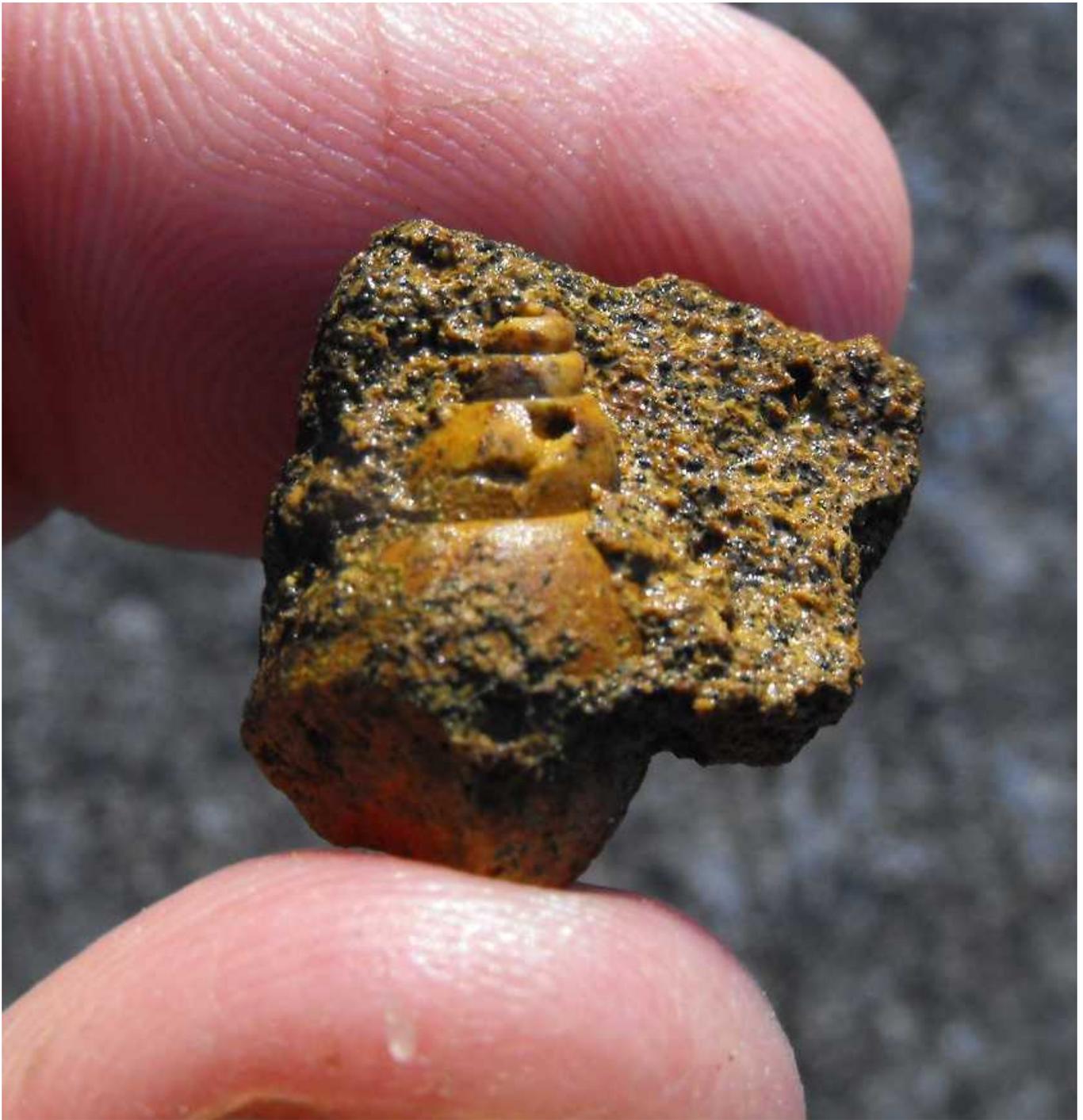






**FIGS 50-53:** Weches Formation crab claws above; *Crassatella* oysters and unidentified gastropods below, *Pecten* scallops next page followed by unidentified gastropod (Site 428)





In waning daylight I visited another roadside site, this one not nearly as productive as the first and not exposing as much vertical stratigraphy. Still, it gave up a handful of *P. mississippiensis* and some were well preserved. So on that happy note I jumped back in the car just in time to make it home by midnight or 1 a.m.....



**FIG 54:** Weches Formation sand dollars *P. mississippiensis* (Site 427)

October 7, 2010: Lunch Hour Shark Tooth Stakeout

On a whim I broke away from work, grabbed a sandwich on my lunch hour then spent 30 minutes poking around a road cut in the Eagle Ford group undivided (90 MYA) near my office that I had left fallow for the last 3 years. I had to perambulate through some high brush, but by following a pulverized oyster layer in the face of the exposure I was able to locate some shark and fish material.

A serrated edge poking out from under an oyster fragment caught my eye, and a hammer swing later it turned out to be a *Squalicorax kaupi* (crow shark) tooth. Other small, conical shapes amongst the oyster hash turned out to be *Enchodus* (fish) teeth, a few of which I chose to take in matrix. The best find of the day was a dime sized shark vertebra protruding half way out of the limestone and out in plain view. A smaller and more hidden shark vert came to hand as well.



**FIGS 55-56:** Eagle Ford age shark vertebrae this and next page (Site 103)





**FIGS 57-59:** Eagle Ford age fish teeth *Enchodus* sp. above followed by unidentified teeth next 2 pages (Site 103)





Giving myself a pat down, I realized that my phone was nowhere to be seen! After quickly tearing my car and trunk apart I retraced my footsteps through the high grass....and found it! Back to the office... This lunch hour saga to be continued next week.....

#### October 10, 2010: Perusing the Pleistocene by Canoe

It was a blue bird fall day so I opted to examine a few sites by canoe that had been hit or miss over the last several hunts. In the end, this trip was rather lukewarm in terms of payback for time and effort expended. In a nutshell the first 3 sites produced just a baggie of bones including a really worn down horse tooth fragment, a barely distinguishable proboscidean vertebral centrum, and little else worth mentioning here. My next site was marginally better, producing the back of the jaw of some small coyote sized mammal, tortoise and deer material, and a worn mammal vertebra.

As I loaded gear down to the water at my second put-in, a sudden realization left me scratching my butt....my paddle and depth finder stick must have fallen out of the canoe as I yanked my gear up the bank at the first put-in. I chose to proceed to the next site nonetheless, hoping that engine trouble would evade me this round or I'd be in serious trouble, "up Coprolite Creek without a paddle".



**FIG 60:** Pleistocene skull fragment, worn mammoth vertebral centrum, bison/cow leg bone, partial horse tooth, and tortoise plastron fragment in matrix (Site 140)



**FIG 61:** Pleistocene deer metapodial, unidentified jaw fragment, turtle and tortoise shell fragments, horse proximal phalanx, unidentified distal humerus and unidentified vertebra (Site 132)

With a pull of the ripcord I was on my way, and the little outboard decided to behave this round. I took my time perusing the target gravel bar, in the process grabbing an old whiskey bottle for my 8 year old son (does this earn me the Parent of the Year Award?), a mammoth carpal or tarsal bone, 3 horse molars, a pristine *Paleolama* or *Hemiauchenia llama* calcaneum (ankle bone), what might be an alligator vertebra, a *Glyptotherium* osteoderm (giant armadillo body armor fragment), a couple pieces of deer antler, and the end of a horse metapodial. This latter site clearly made the day more memorable.

I pulled the plug early because I had to pick up my son early in the evening, but made time to find my \$70 Kevlar paddle before the Friday night fishermen showed up and claimed it, that oversight reminding me that I'm at times a bit scatterbrained but at least it didn't cost me \$ this time. Then again, staying out late the night before and getting only 2 hours sleep could have had something to do with it.....



**FIGS 62-63:** Mammoth foot bone followed by horse upper and lower molars next page (Site 373)





**FIG 64:** Camel astragulus left, horse astragulus right (Site 373)



**FIG 65:** Horse distal metapodial left, glyptodont marginal osteoderm top center, alligator (?) vertebra bottom center, deer antler sections right (Site 373)

October 13, 2010: Fossil Hunt in a Bag

My friend Brian Evans had recently visited the spoil piles at the Lee Creek Mine in North Carolina where visitors are allowed to collect bulk samples (i.e. fossiliferous gravel) to haul off for later scrutiny. This material is Miocene in age, roughly 15 million years old, hailing from the Pungo River Formation. Brian was thoughtful enough to sling a gallon bag of this matrix my way, and I spent a couple lunch hours picking out the tiny shark teeth after wet screening it with 1 mm mesh. A handful of little teeth were well worth keeping, my favorites being the snaggletooth shark teeth *Hemipristis serra*.



**FIGS 66-91:** Shark (snaggletooth, tiger, etc.), ray (striated bars), fish (no root), and dolphin teeth (round cross section) from the Miocene Pungo River Formation of the Lee Creek Mine, North Carolina this and next 20 pages, scale in mm





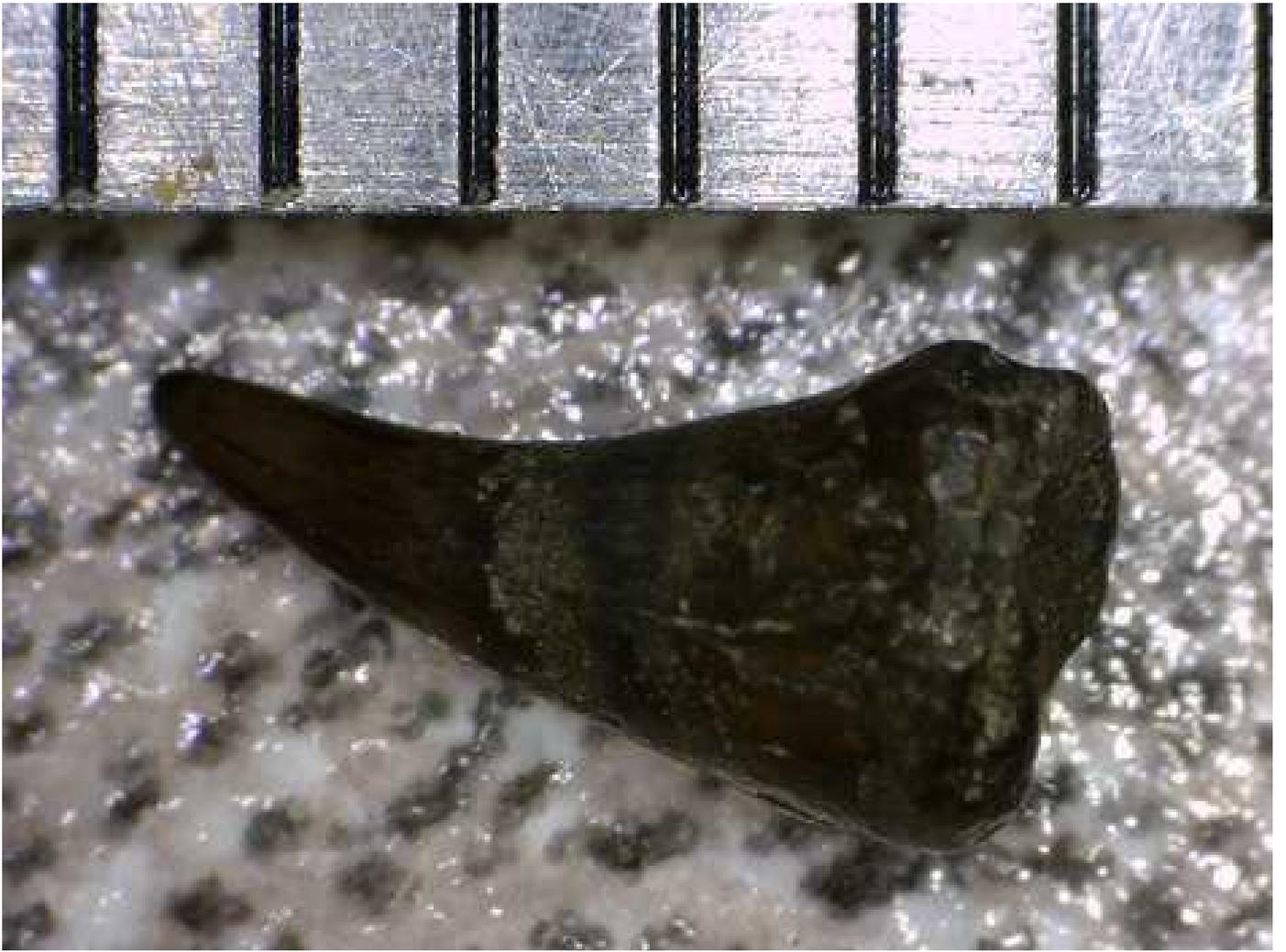




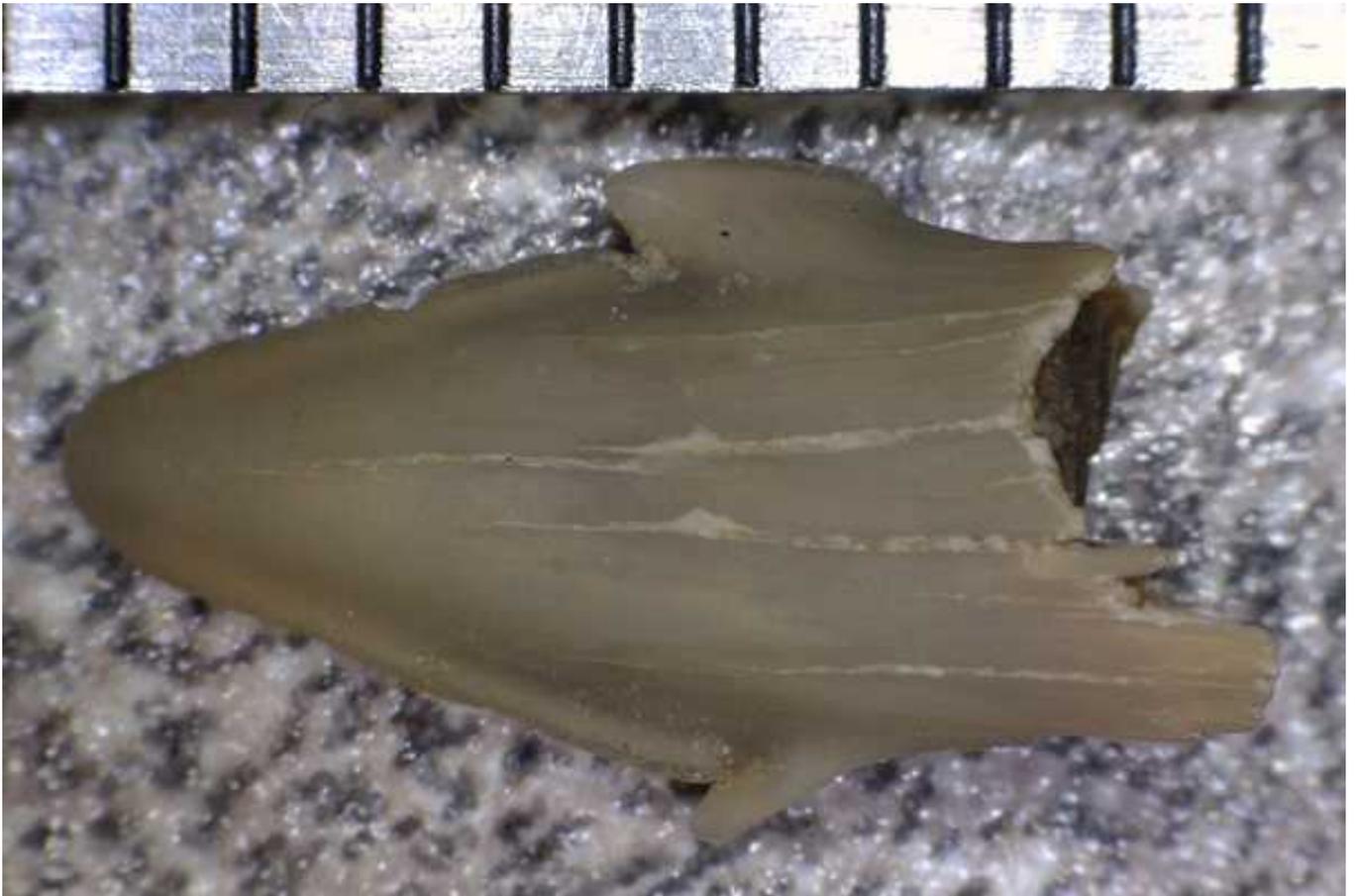


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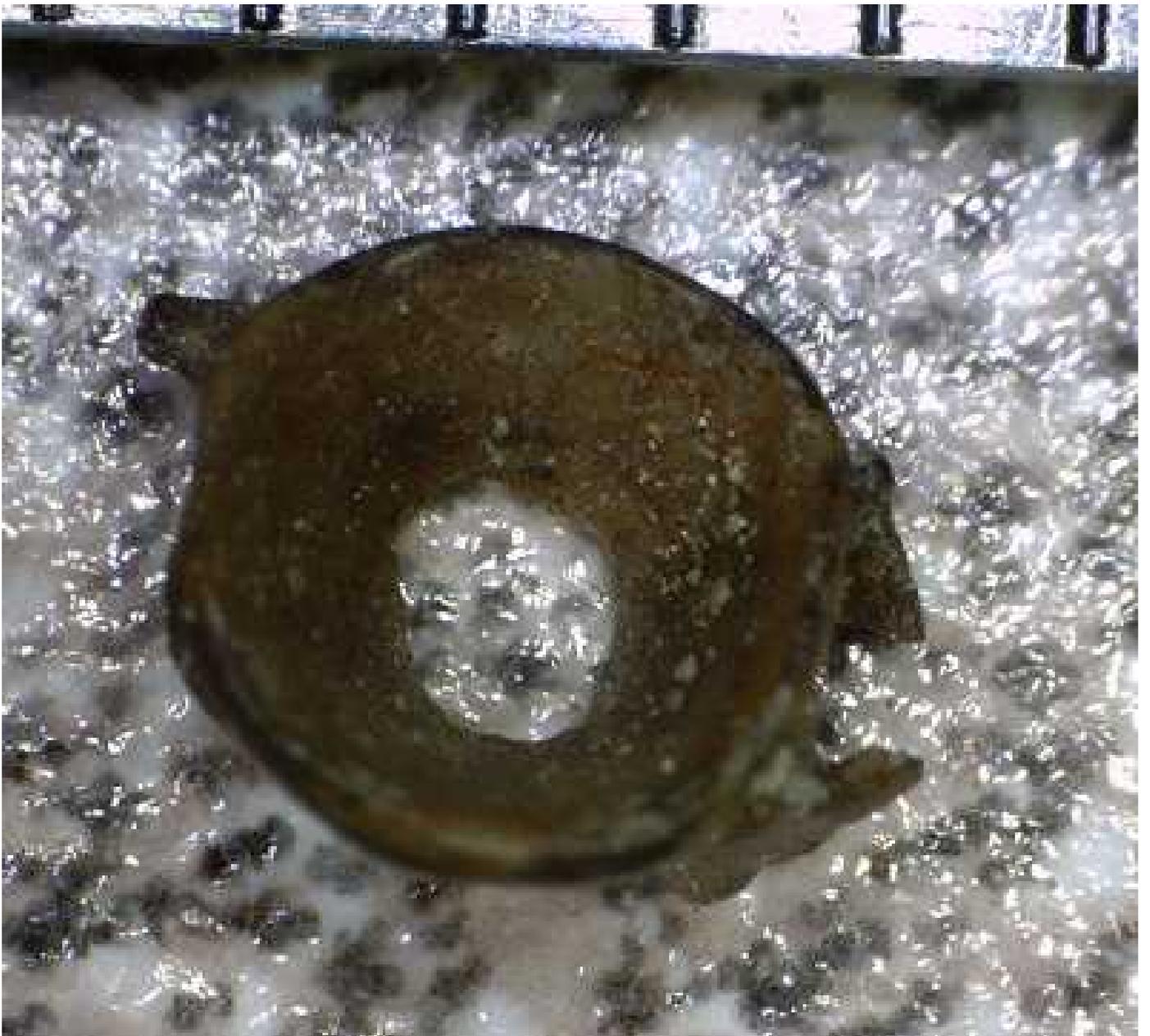














October 14, 2010: Eagle Ford Lunch Hour Revisited

The previous week's visit to this particular set of road cuts had been productive enough for me to come back for a final sweep of areas I had run out of time for previously, this time with a hand firmly on my phone! Only 2 finds were made, one a small shark tooth and the other a fish vertebra broken in section. Still, for the area, they were worth noting.



**FIGS 92-93:** Unidentified Eagle Ford age shark tooth above, fish vertebra eroded in section next page, scale in mm (Site 103)



#### October 16, 2010: Coenholectypus Season

The 21 foot extension ladder strapped to the top of my little car humming like a giant tuning fork as I ambled down the country backroad....the bucolic aroma of an alpaca farm assaulting my olfactory as I clipped off the miles deep in the Texas Hill Country....these are the sensory inputs forever woven into the tapestry of experiences I enjoy in pursuit of quality fossils.

This time I would try my hand in the Walnut Formation (105 MYA), a marly marine limestone outcropping as a thin seam between the underlying Glen Rose and overlying Fort Terrett limestones. Soon my ladder put me eye to eye with my quarry, a nickel to silver dollar sized echinoid known as *Coenholectypus planatus*, and they came out in droves. Omnipresent *Ceratostrean* oysters were a constant reminder that I was in the Walnut, and a few other echinoids made it into my catch bag as well, namely heart shaped *Heteraster texanus* and round, spiny *Loriolia* sp.

Soon the pockets of my tool apron were burgeoning with a bumper crop of some 20-25 *C. planatus*, then a small, round, peculiar shape caught my eye...it was a tiny shark vertebra, uncommon for the site but quite welcome in my collection.



**FIGS 94-96:** Walnut Formation shark vertebra this and next 2 pages, scale in mm (Site 454)







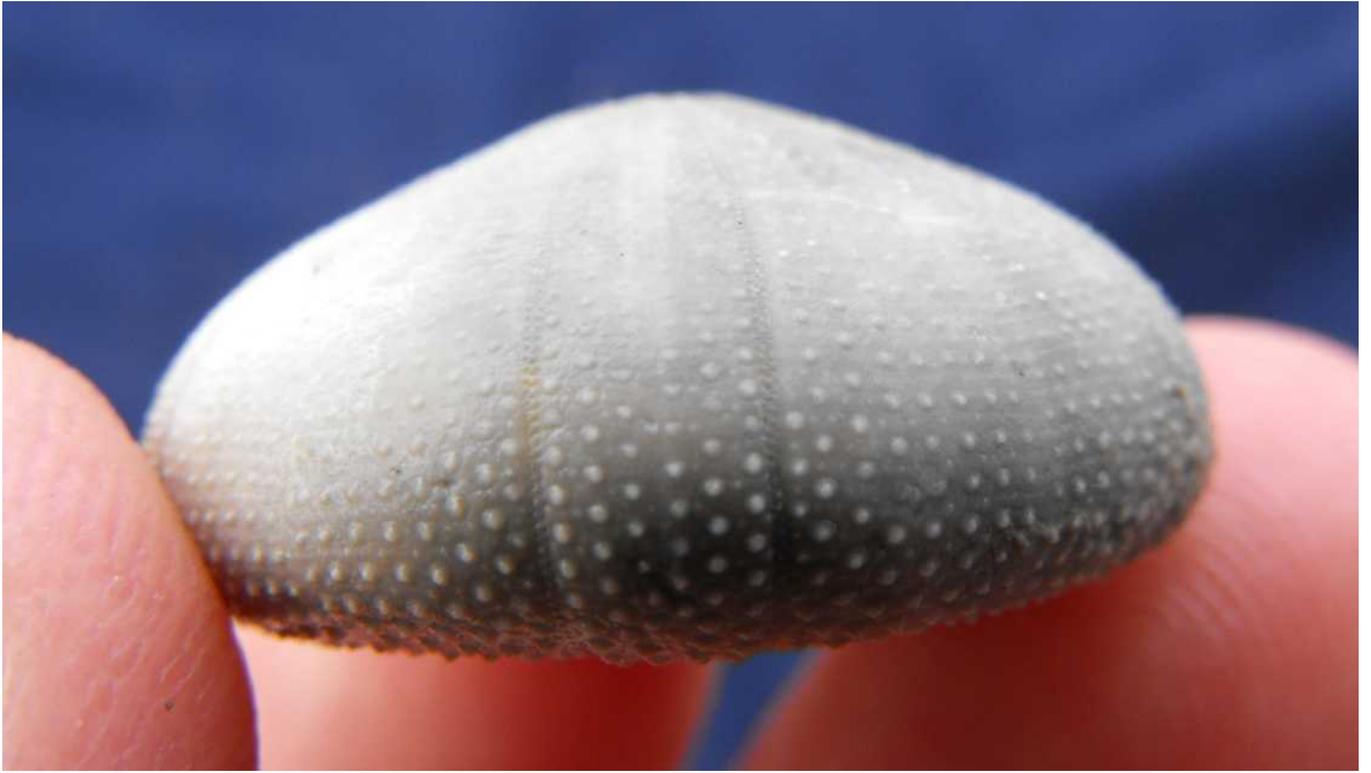
FIGS 97-107: Walnut Formation echinoids *Coenholectypus planatus* this and next 9 pages (Site 454)





















**FIGS 108-110:** Walnut Formation echinoids *Loriolia* sp. above, *Heteraster texanus* and unidentified bivalve below, *Ceratostrean* oysters next page (Site 454)



A final stop in the Glen Rose Formation (108 MYA) produced some fine “algal fruiting bodies” *Porocystis globularis*, and with that I saw it fit to amble on home for a leisurely evening of scrubbing my new finds.



**FIGS 111-112:** Glen Rose Formation algal fruiting bodies *Porocystis globularis* and one bivalve *Trigonia* sp. (Site 32)

October 17, 2010: Shark Tooth Alley

After making the early service at church and then running some errands I got lazy and took a mid day nap...bachelorhood is hard work, you see....and finally around 3 p.m. I convinced myself it was time to find more fossils. While underway I began to wonder if the amount of daylight left would even make this field endeavor worth my drive....in short, good fortune would answer that with a resounding "Yes!"

And so I parked, loaded my tool bucket, and hiked down into perhaps one of the nastiest creeks imaginable, the banks and creek bed composed of Eagle Ford limestone, perhaps South Bosque Formation (90 MYA). I found very little in the creek bed at first or in the float (piled up rock slabs moved by the creek). However, a continuous overhang of gray and tan, gritty limestone presented a continuum of cool finds for someone willing to lie on his back and search the underside of the overhang.

A nickel sized shark vertebra was one of the first rewards, then came a good number of *Squalicorax falcatus*, *Carcharias*, and other shark and fish teeth. I hurried as the evening shadows began to cast down on me from the treetops. I lost as many teeth as I found...gravity was my foe as I worked upside down....at times they shot out into oblivion from my hammer blow or dropped into the gravel below....a third hand would have been helpful. Still, I got enough to make it worthwhile, including a *Ptychodus anonyms* crusher type tooth tapped from the overhang.

Near the end of the ledge several layers had fallen into the creek during the last flood, and a couple of these slabs had the right look about them...gray and tan, gritty, oyster hash, and dark specks indicative of vertebrate and phosphatic material. Closer inspection was in order....the big slab was dotted with common *S. falcatus* (crow shark) teeth which I temporarily passed up as I scanned the surface of the coffee table sized slab...

A "fingerprint" caught my eye, the pattern being the enamel crown of another *Ptychodus* tooth, which I promptly tapped out only to lose sight of it as it rocketed away out of sight....dang it! No problem...there was another similar tooth in the same rock...but I broke it into 3 pieces! Crap! OK, now the biggest *Ptychodus* of the day came into view, again in the same rock, only this time the big hand sledge allowed me to properly work the slab, freeing my prize.

A more slender gleam then caught my eye...it was an inch long *Cretoxyrhina mantelli* tooth, a very good sized shark tooth for this part of the state, and careful tapping brought it out in a palm sized piece of matrix. As I freed it I spotted another curious pattern just inches away in the same slab...I banged it out in matrix, later working it at home with my air scribe, thus confirming my suspicions...I had spotted just the root of yet another bigger *C. mantelli*, and another small enamel tip jutting out of the rock, with a little matrix removal later in the night showed itself as another *C. mantelli* tooth.

Now that was one productive rock! I grabbed a few *Squalicorax* teeth in the last rays of light and made my way home 3-4 hours after I left the house, my efforts rewarded much more handsomely than anticipated going in.



**FIGS 113-117:** South Bosque Formation shark teeth *Cretoxyrhina mantelli* this and next 3 pages (Site 36)









**FIGS 118-124:** South Bosque Formation shark teeth *Ptychodus anonymus* and unidentified fish tooth this and next 6 pages (Site 36)















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**FIGS 125-126:** South Bosque Formation unidentified fish tooth this and next page (Site 36)



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**FIGS 127-133:** South Bosque Formation crow shark teeth *Squalicorax falcatus* this and next 6 pages (Site 36)















**FIGS 134-136:** South Bosque Formation shark tooth (*Odontaspis?*) and shark vertebra in same piece of matrix this and next 2 pages (Site 36)





October 23, 2010: Better Living Through BB Guns and Fireworks

Young Weston was a bit hesitant to join me in a laid back “crick adventure” so, knowing a thing or two about boy psychology, I found an easy way to sweeten the deal....I told him we'd bring his BB gun and a load of fireworks to keep things interesting. I really didn't expect to find much in the way of Pleistocene trophies, and in the end we didn't, but the temperature was nice, stream conditions favorable, and skies a bit overcast, later leading young Weston to express his appreciation for a fun day afield. And so we deployed our canoe in a lazy stream, sometimes motoring, sometimes paddling, and sometimes wading with the boat behind us.



**FIGS 137-139:** Young Weston enjoying a day in a riparian valley equipped with his BB gun and some fireworks this and next 2 pages





We picked up a few Pleistocene vertebral centra, a scute of a turtle carapace, the fossilized base of a small deer antler, and an ancient patella from some beast in the bison/horse/camel spectrum, the latter being my favorite find of the day as I don't encounter patellae often, but still not a banner day in terms of finds. However good times were had when measured in terms of cool father-son moments.

Young Weston got to blast a million cans and bottles with his Daisy BB gun, feel the excitement of holding a half dozen Roman candles as they launched their fireballs over the water, and enjoy a little tomfoolery with the Old Man with a handful of broomstick thick bottle rockets...in fact he fashioned himself as somewhat of a cow chip demolition expert by day's end, laughing all the way. The Old Man thought ahead and had PB&J sandwiches and Gatorade on hand, even a Bandaid or two when required.



**FIGS 140-142:** Pleistocene turtle plastron fragment left, vertebral centrum, possibly horse, right, next page deer medial metapodial section right, possible proximal bison humerus left, close up of possible bite marks on metapodial below (Site 379)





**FIGS 143-144:** Pleistocene deer antler base, horse proximal phalanx, and unidentified vertebral centrum above; Weston's anomalous bone chunk below (Sites 380-381)



**FIGS 145-146:** Pleistocene horse, bison, or camel patella this and next page (Site 426)



In the end Weston grabbed a few interesting old bottles, not old enough by any serious collector's standards, but he felt that he had scored nonetheless, helping him ignore the fact that he went most of the day with his clothes soaked to the skin. I think he'll go again next time I ask.