Fossil Collecting Report
September, 2010
Daniel A. Woehr and Friends and Family

September 3, 2010: Kicking Around in the Corsicana Formation

As it turned out, my Friday after work hunt was limited somewhat in productivity by less than expected rainfall on my local go-to site, a shrinking exposure of the Corsicana Formation (68 million years of age). I pawed at the parched earth for some two hours on hands and knees and the rewards were sparse, yet worth the effort: 2 crab carapaces *Dakoticancer australis*, several echinoids *Hemiaster bexari* plus one juvenile *Plesiaster americanus* (lost it since then, still scratching my head) and one small shark vertebra (can't find that either at this point). Oh well, it was just a way of warming up for bigger things that weekend.

FIG 1: From the Corsicana Formation, top row two echinoids *Hemiaster bexari* and unidentified gastropod, middle row two crab carapaces *Dakoticancer australis* and bivalve *Lima acutilineata*, bottom row two bivalves *Trigonia castrovillensis* left, oyster *Exogyra costata* middle, two scallops *Neithea bexarensis* right (Site 349)

September 4, 2010: Taking Texoma by Storm

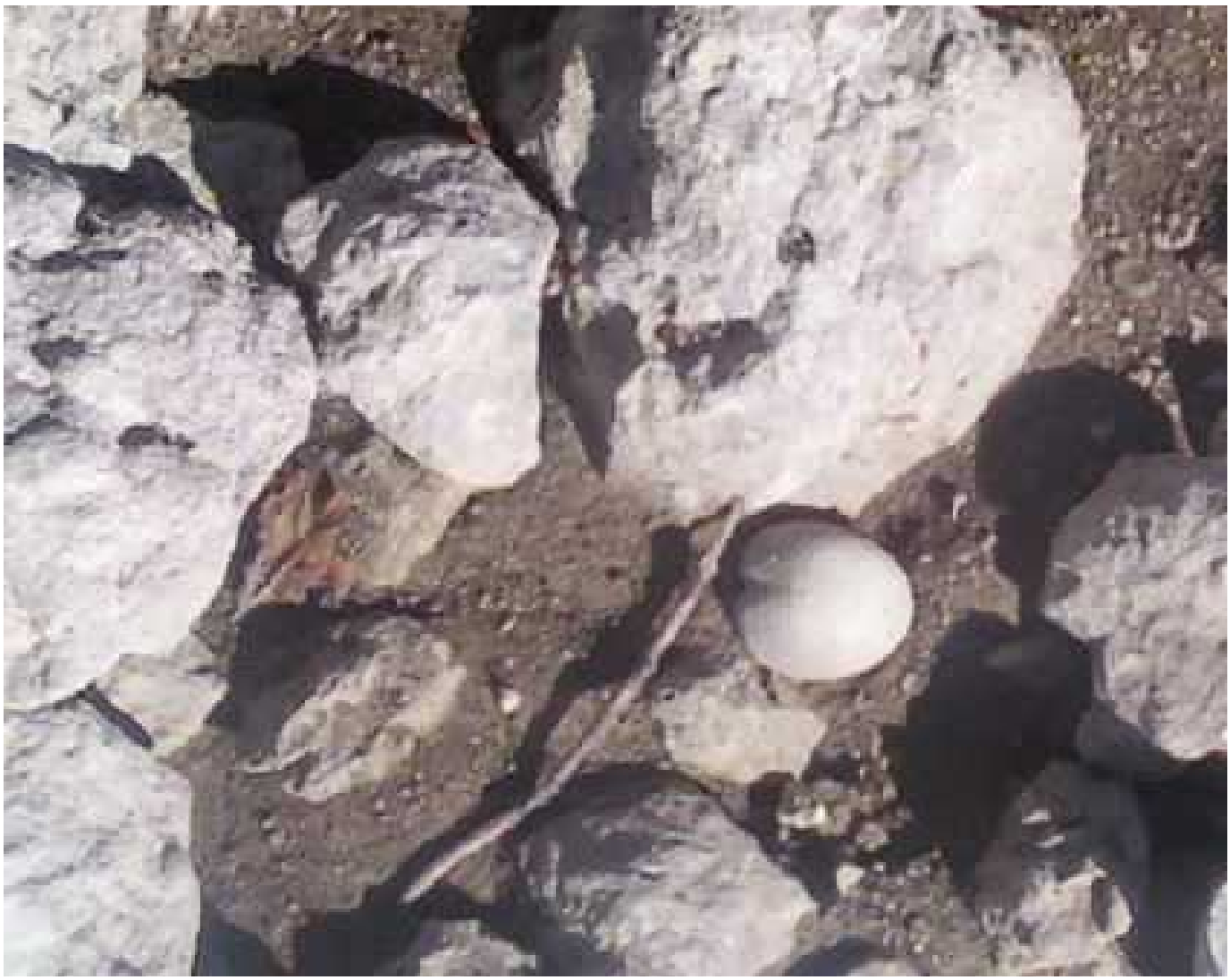
After reassembling my little outboard motor and testing it on the driveway late Friday night in a garbage can full of water, I wasn't completely satisfied with my attempts to keep it from stalling at high RPM, but it ran consistently

enough at high throttle for me to make the 750 mile round trip drive to Lake Texoma with a good chance of the engine not completely conking out on the water.

My first stop around 9 a.m. was a series of bluffs in the Fort Worth Formation, some 101 MYA, a sequence of alternating marine limestones and marls chock-full-o'fossils. Lake level was still higher than I preferred, but it was a blue bird day with light winds, Labor Day weekend, a day begging for me to be on the lake. The Fort Worth did not disappoint. In fact, *Holaster simplex* echinoids aplenty could be plucked from the pockets between the limestone rubble in the lapping waves. I found at least a couple several inches underwater, the telltale "flattened egg" profile distinctly symmetrical amongst the randomly jagged slabs and slivers of limestone.

Higher up the banks, soft seams of marl gave up quite a clutch of *Holasters*, many uneroded, undistorted, and impeccably preserved over the eons in preparation for this very day. I think I took 16 in varying condition, with at least half in very good to perfect condition, quite welcome in my collection, while I'll be sure to find new homes for the others. *Macraster* echinoids made the scene as well, just not in the obscene numbers of the quite populous *Holasters*. I think I took 5 or 6 Macs, with maybe 3 in reasonably good condition.

FIGS 2-5: A view of Fort Worth Formation Site 184 and the bumper crop of nice *Holaster simplex* echinoids found there, this and next 3 pages



FIGS 6-9: Also from the Fort Worth Formation a bevy of *Macraster* echinoids this page and various *Mortoniceras* ammonites next 3 pages (Site 184)

FIG 10: Also from the Fort Worth Formation various *Mortoniceras* ammonites top row, then bottom row left to right *Gyrodes* gastropod, unidentified bivalve (*Plicatula*?) and unidentified spatangoid echinoid (Site 184)

Let us not forget the ammonites. I took maybe 6 or 8 *Mortoniceras* from 1 inch to 11 inches diameter. Some will prep well while others might look best in matrix as hauled out.

Regardless, the bottom of the motorized canoe was beginning to load up with lithified paydirt, evidence that I had been working some areas not recently or systematically dissected by other collectors.

The Weno Formation (100 MYA) soon loomed into view, its light gray limestone bench overlain by a bluff of gray clay bearing red ironstone concretions. Some of these concretions were full of well preserved bivalves and gastropods with nacreous (mother of pearl) preservation, but I was really after the ammonites. Again, water level was high, covering many of the ironstone nodules in the rework zone, so pickings were slim. I took 2 partial *Engonoceras* ammonites which won't make the cut now that I've seen them prepped.

A slight change of venue was in order, so I worked back into time to the Duck Creek Formation (102 MYA), another marine sequence with more limestone and fewer fossils than the Fort Worth, and directly underlying it. I followed one of the marlier seams in the tan bluff and soon stumbled onto a half dozen small *Macraster denisonensis* (?) echinoids, some in great shape.

FIG 11: *Macraster denisonensis*(?) echinoids from the Duck Creek Formation (Site 540)

After 20 minutes or so of hauling finds and equipment back to the truck I headed for a different section of the lake and redeployed, this time in the Grayson Formation (98 MYA). This marine clay and limestone formation hosts a different fauna than the other rock units mentioned. Again water level was high, obscuring some of the bedded clays that made up the shoreline. But persistence paid off in the form of a few good finds.

An inflated, almost spherical form caught my eye and it turned out to be a large and reasonably well preserved echinoid *Hemiaster calvini*, a species I don't run into too often. The same shoreline revealed what looked like a little cluster of grapes in the bedded clay…it turned out to be a pod of 25 little echinoids which might be *Washitaster inflatus*. I was quite pleased with this find.

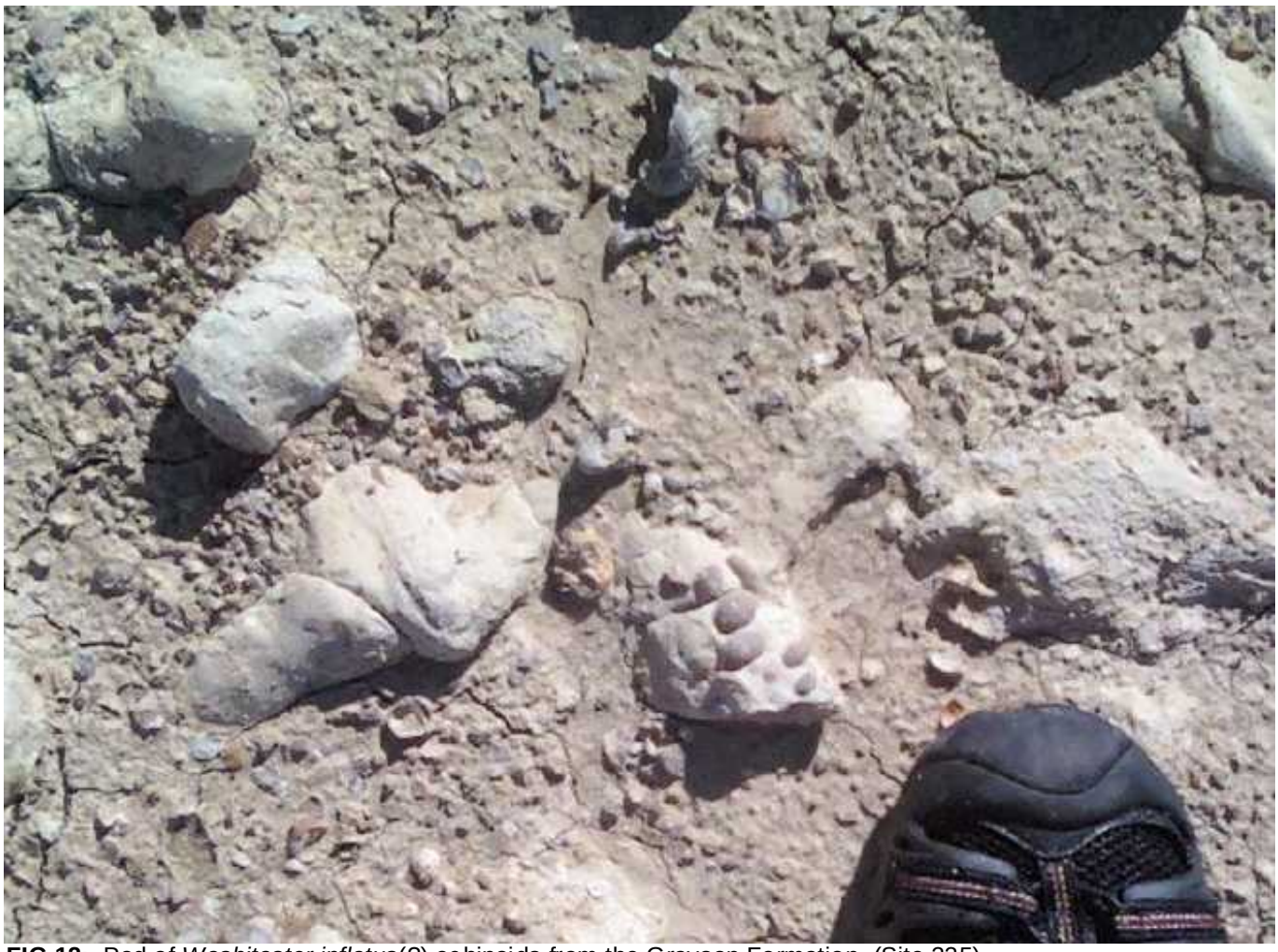


FIG 12: Pod of *Washitaster inflatus*(?) echinoids from the Grayson Formation (Site 335)

FIG 13: Same *W.inflatus*(?) echinoids from the Grayson Formation along with a large *Hemiaster calvini* echinoid and a *Neithea* bivalve (Site 335)

Systematic searching revealed another shoreline exposure of the Grayson which was new to me. Stingy in terms of finds, its still gave up one nice little ammonite *Stoliczkaia crotaloides*. Both sites produced a number of well preserved *Neithea* scallops.

FIG 14: Ammonite *Stoliczkaia crotaloides* from the Grayson Formation along with two *Neithea* bivalves (Site 539)

As 6 o'clock neared I decided to end my paleo blitzkrieg and return to my home base 350+ miles to the south. I rolled into my driveway around midnight thanking God for a safe day on the road and water with no run ins with cops, snakes, serious mechanical failure on the water, bad weather, falling asleep at the wheel, and whatever unmentioned perils could plague a guy just trying to enjoy the outdoors. And yes satisfying heft of the finds registered as I lugged them into my garage at midnight…

September 12, 2010: In the Wake of Hurricane Hermine

6-8 inches of rain had fallen a few days earlier on the Corsicana site, so Brian Evans, my son Weston and I headed over to the site within the first hour of daylight one muggy Sunday morning. I was quick to find 2 crab carapaces *D. australis*, but it was soon evident that this heavy rain had done little to uncover fossils commensurate with the rainfall when comparing to past results. I took a handful of *H. bexari* echinoids, one large and distorted *P. americanus*, and one lone juvie *Proraster dalli*, definitely a keeper. But beyond a few bivalves and gastropods, it was slow going.

Despite having his trusty BB gun on hand to keep him company, young Weston soon grew bored with his surroundings and started working the Old Man to head out. Due to lack of finds and unseasonable heat and humidity, I didn't argue. I sat out with The Kid for a while and Brian rounded up more goodies, mainly *H. bexari* plus a *D. australis* or two, including one apparently rigged with an IED which detonated when he touched the carapace, but in the end Brian and I both were slightly underwhelmed by the payout this go round.

FIG 15: Corsicana Formation fossils, clockwise from top left: crab carapace *Dakoticancer australis*, gastropod *Gyrodes rotundus*, 2 echinoids *Hemiaster bexari*, echinoids *Proraster dalli* and *Plesiaster americanus* (Site 349)

<u>September 17, 2010: Midnight Mortoniceras and Macraster Massacre</u>

Yes, you read it right. Sometimes I get just a bit too gung ho, so on this night I opted to slip into a stream bed in the Georgetown Formation (101 MYA) for a peek at some freshly washed bluffs, courtesy of Hurricane Hermine. With headlamp engaged and locked in combat position I navigated a maze of spiderwebs, eventually getting too lazy to walk around them or even brush them out of the way as I broke through them. After slogging through waist-deep water teeming with snakes and frogs I arrived at my destination.

First find was a perfectly preserved *Mortoniceras* ammonite about 3 inches in diameter just begging to be plucked from the still wet marl. An inch diameter Mort specimen soon followed. But then my real quarry showed itself en masse – *Macraster* echinoids, possibly of the species *pseudoelegans.* My light's cone of illumination grid searched the exposure and turned up one after another, some partially squashed, others missing sections of the test, others covered in oysters. In the end I took 9 with perhaps 3 being good enough to be annexed into the Woehr Collection.

Large and spectacular gastropods *Gyrodes* and *Leptomaria austinensis* came to hand, as did 3 good examples of the obscure bivalve *Rastellum carinata*. One final exposure released a large *H. simplex* echinoid from its clutches before I ambled back to the truck and continued my drive.

FIG 16: Georgetown Formation echinoids *Holaster simplex* lower right (Site 173), the rest *Macraster* sp. (Site 218)

FIG 17: Georgetown Formation fossils including razor clam *Rastellum carinata* top row, ammonites *Mortoniceras drakei* and *Mortoniceras* sp. bottom left followed by gastropods *Gyrodes* sp. and *Leptomaria austinensis* lower right (Site 218)

<u>September 18, 2010: Better Collecting Through Adaptability</u>

It was a wonderful night to rough it by wadding my lanky body up in the back seat of my truck…pleasant temps and no skeeters. By 7 a.m. I had my canoe on a particular stream for a leisurely paddle and perusal for all manner of relics and such. The first bank hinted of Indian habitation: a piece of bone in the bank, some fire rock, and lots of snails. But to make a long story short, miles of paddling put not much more than air in my catch bag. Time to switch gears.

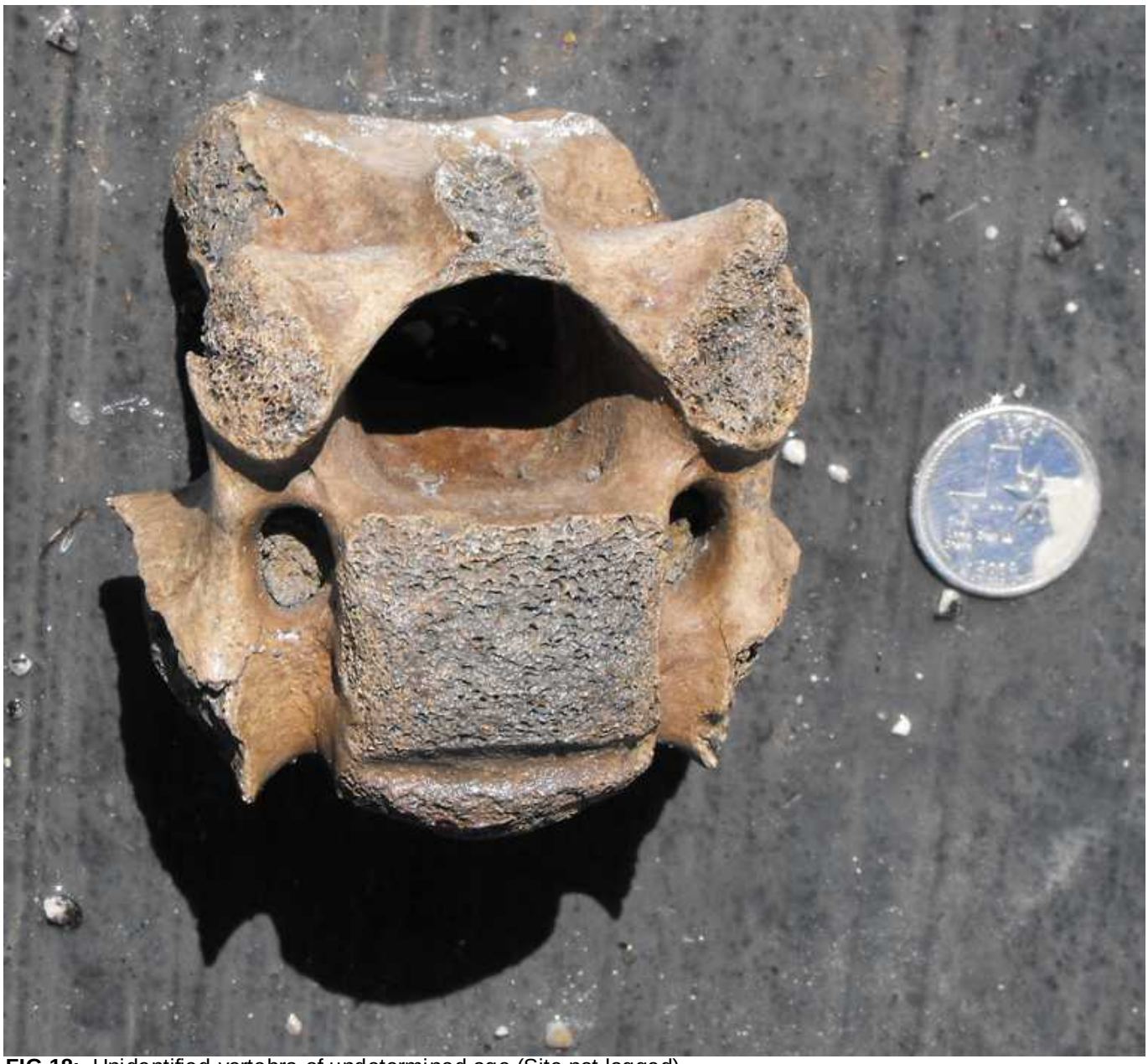


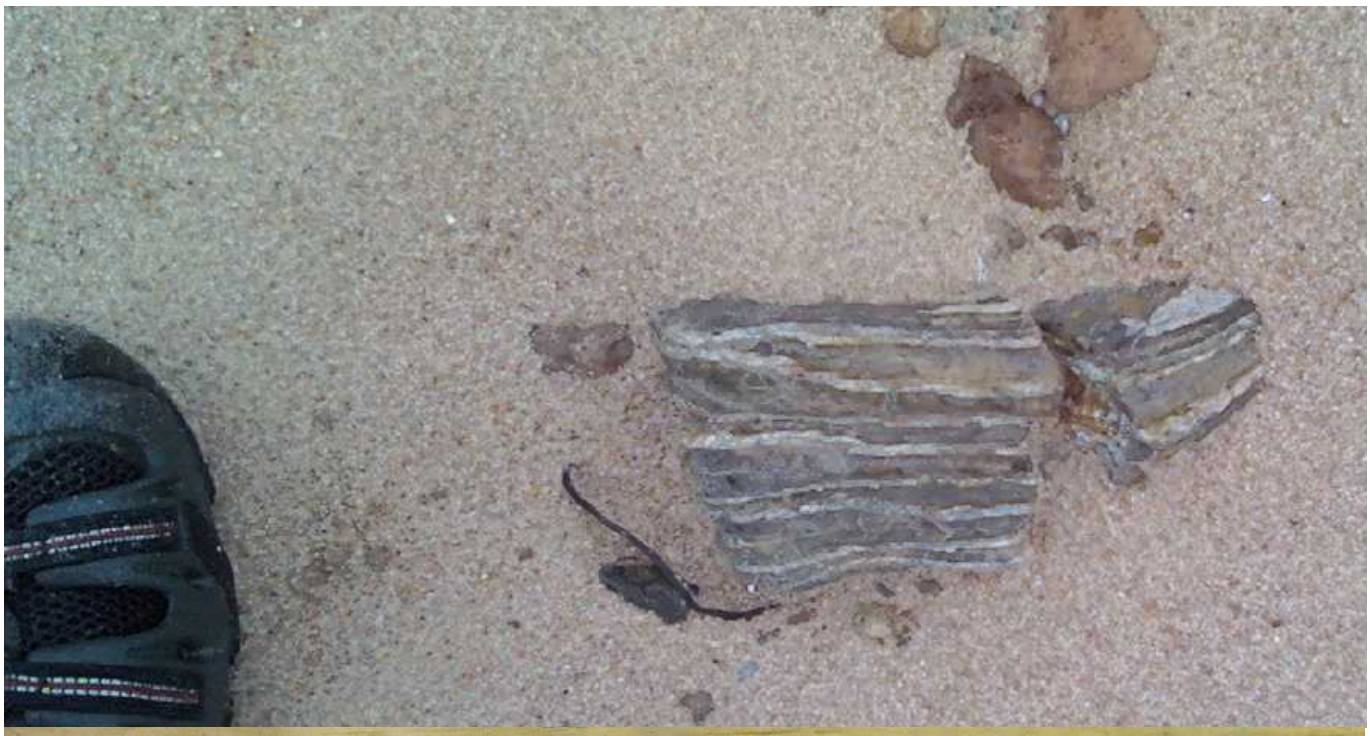
FIG 18: Unidentified vertebra of undetermined age (Site not logged)

I got my Mom on the phone in Cincinnati and taught her the ins and outs of a couple websites that would give me real time stream and lake data. With that info plus local weather forecasts in hand, I decided to run the rain gauntlet and see what could be found on a particular body of water “bigger than a bar ditch and smaller than a bay”.

I dropped the boat in the stream around 3 p.m. pulled the rip cord on the motor, and glided to some exposures of Pleistocene gravel, mud, and sand. To my delight the engine was running well this time all the way up to WOT…could it have had something to do with the work I did on the water pump, or the Lucas fuel additive I slipped into this tank of gas? I may never know. Let’s just hope the engine behaves for a while.

FIG 19: Unidentified Pleistocene femur above, box turtle carapace fragments lower left and center followed soft shelled turtle *Apalone ferox* carapace fragment (Site 379)

A major find came early in the game. I beached my boat and within 10 steps said aloud, “Hey…that’s a mammoth tooth!” I had the sense to step back and take photos as found, and there was more of it underground than above, but it was cracked all the way through. With 5 complete enamel folds roughly 10 inches tall, it appears to be about 40% of an adult upper molar, not a perfect specimen but quite welcome in my collection. You can never have too many mammoth teeth, I says…

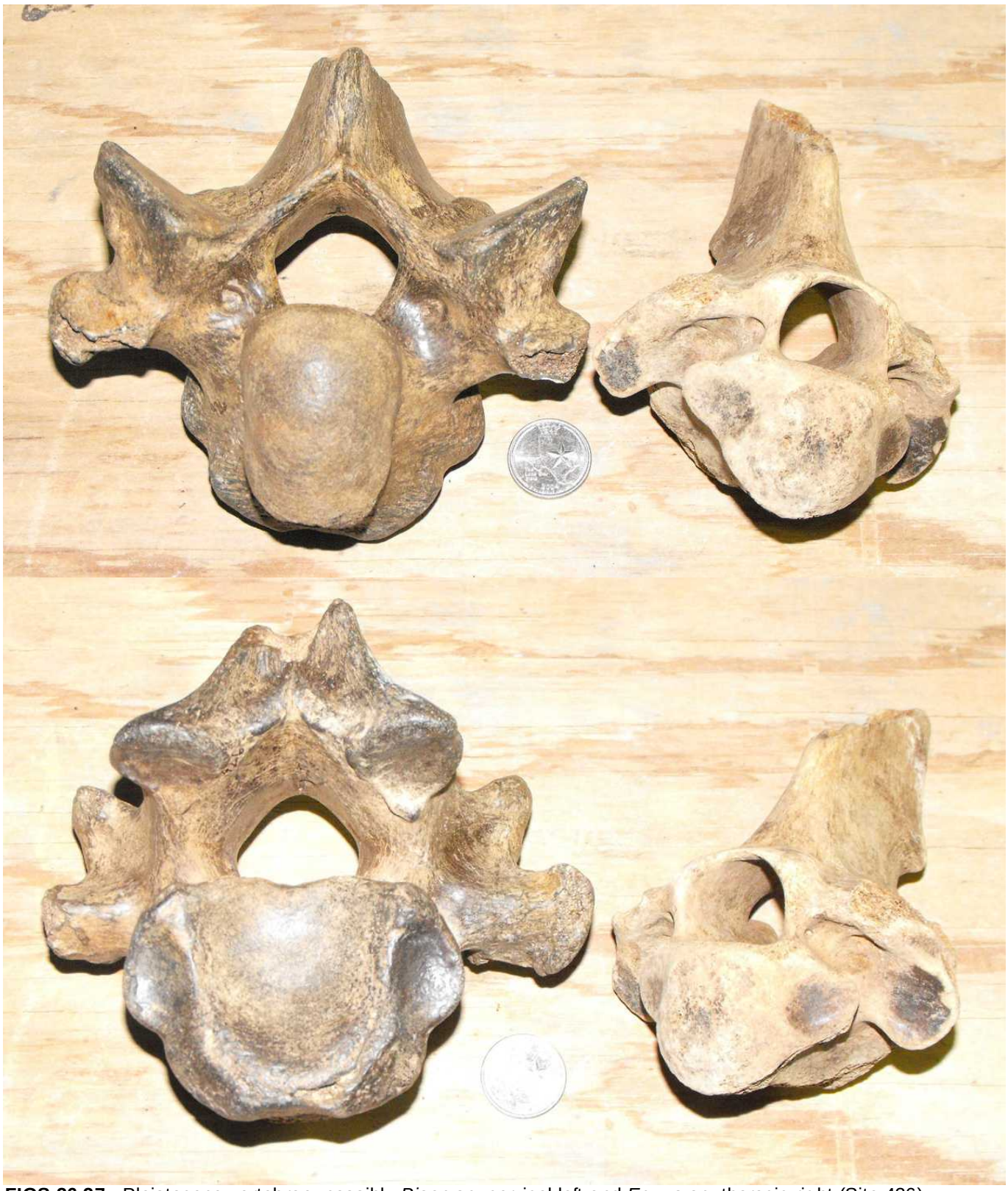


FIGS 20-22: 40% complete mammoth upper molar this and next page (Site 381)

My next stop produced a huge bison cervical vertebra, an unfortunately toothless jaw which later scrutiny suggests is just cow, and a very thick and robust *Glyptotherium* osteoderm (giant armadillo body armor piece) among other things. Just as I wondered where all the horse teeth were, a subsequent stop put me on a collision course with a spectacular section of horse mandible with 3 lower molars bound together by caliche and a little bit of bone on either side.

FIG 23: Osteoderm, or piece of interlocking bony armor of the Pleistocene giant armadillo-like creature *Glyptotherium* sp. (Site 426)

FIGS 24-25: Same *Glyptotherium* osteoderm above along side deer(?) cervical vertebra and partial mandible which turned out to be a false alarm as it is probably only cow (Site 426)



FIGS 26-27: Pleistocene vertebrae, possibly *Bison* sp. cervical left and *Equus* sp. thoracic right (Site 426)

FIG 28: Pleistocene turtle carapace and plastron fragments (Site 426)

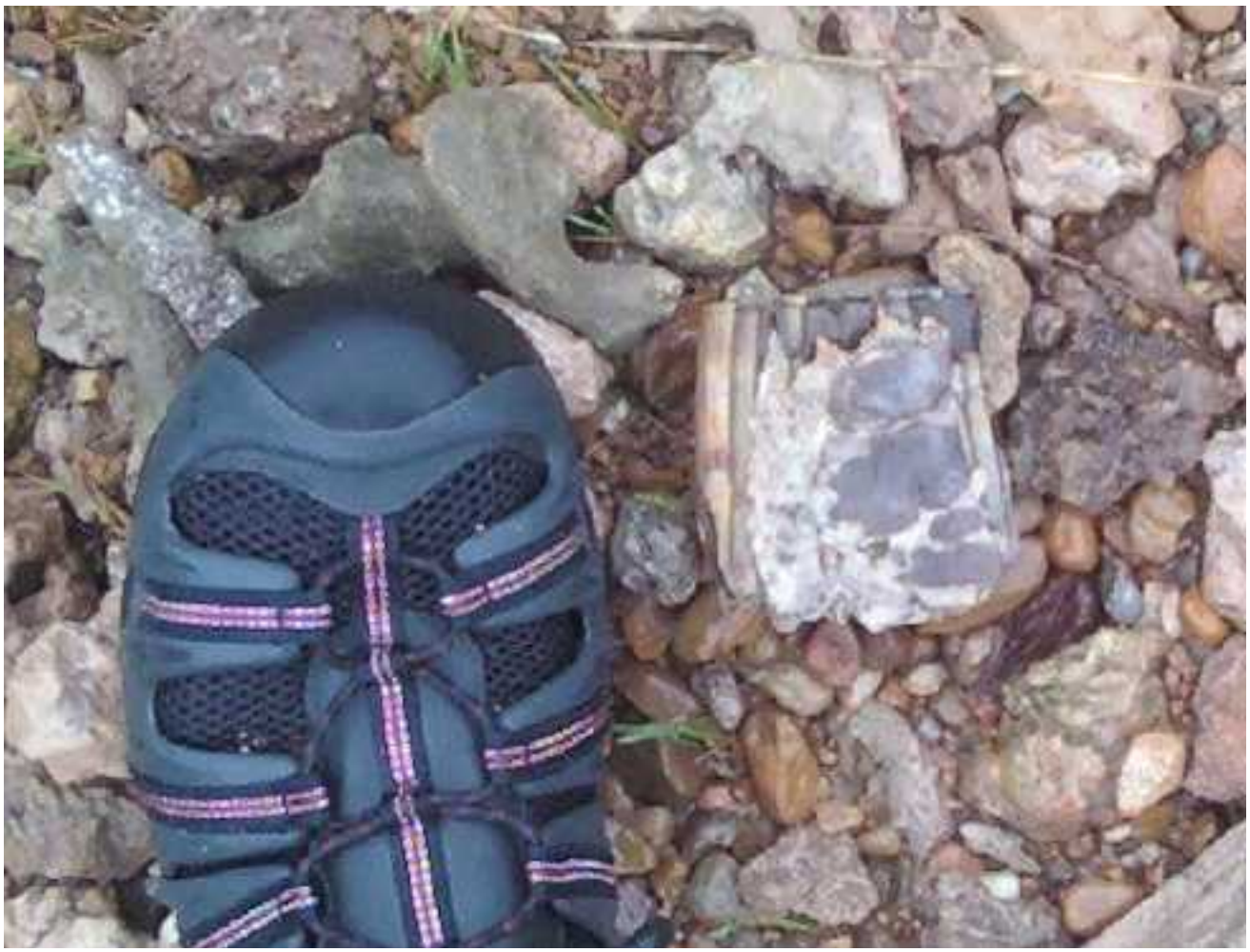


FIG 29: Pleistocene horse mandible with 3 molars intact (Site 393)

FIGS 30-32: Same Pleistocene horse mandible this and next 2 pages along with premaxillary section, possibly tapir, and turtle carapace fragment (Site 393)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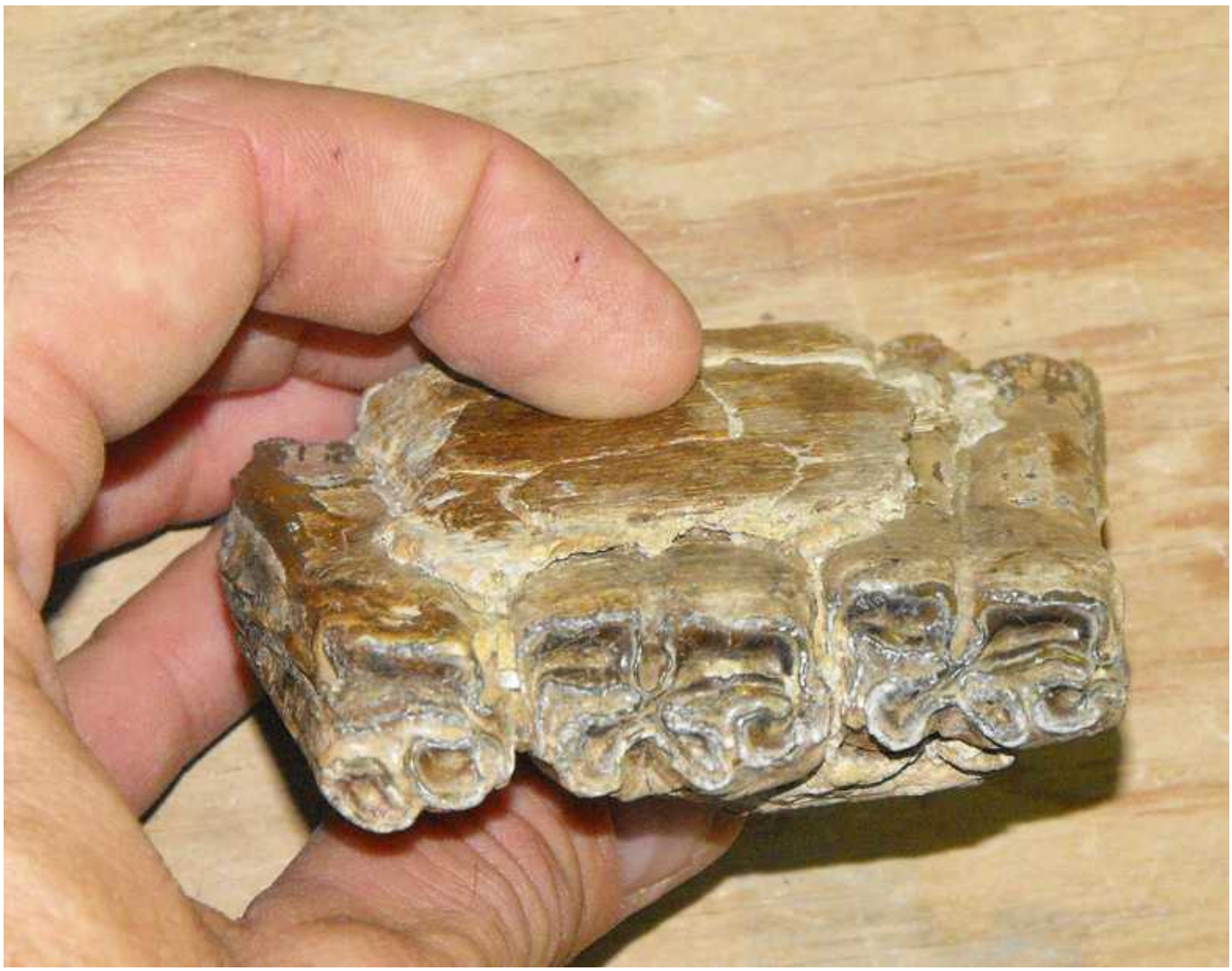

A hodge podge of deer phalanges, deer vertebrae, bison and horse vertebrae, turtle and tortoise shell fragments rounded out my take for the day. I spent the drizzly, clammy night again in the back seat of my truck super gluing my mammoth tooth back together for stability, then got up every hour or so to keep the skeeters at bay with a can of spray – not the makings of quality slumber by any means.

September 19, 2010: Survival of the Wettest

Back on the water at 7 a.m. I was soon clipping off the miles at WOT. I ran hard this particular day without the voluminous paydirt of the day before, but still some nice finds. Two in fact come to mind over the others, a colossal, honey colored horse upper molar and a large and colorful camel molar. Both are prized finds.

FIGS 33-35: Superb example of a Pleistocene camel molar this and next 2 pages, possibly from *Camelops* sp. or the long legged llama *Hemiauchenia megacephalus* (Site 308)


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FIG 36: Deer phalanx or toe bone along with turtle shell fragments (Site 308)

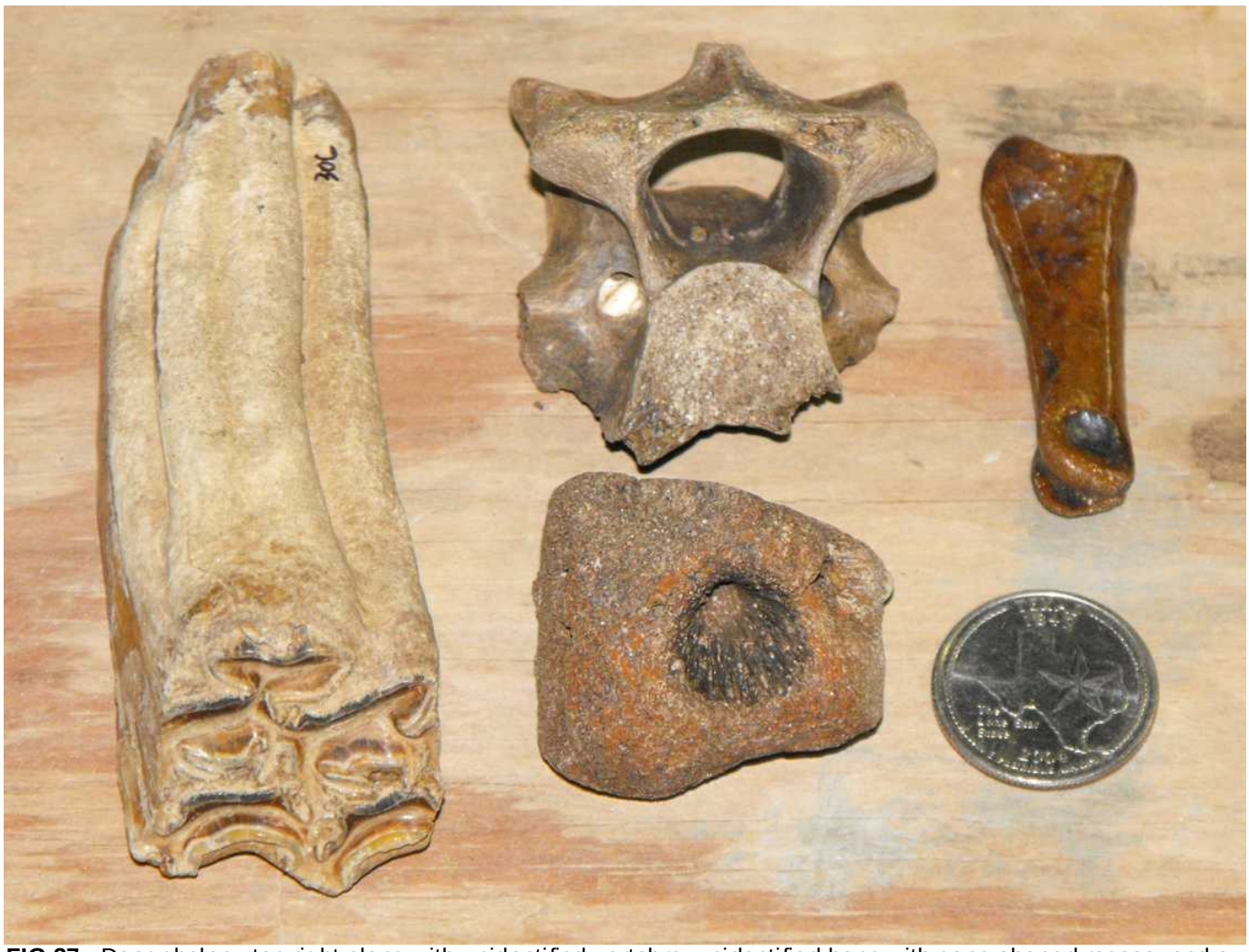

FIG 37: Deer phalanx top right along with unidentified vertebra, unidentified bone with cone shaped recess, and a gem grade horse upper molar (Site 308)

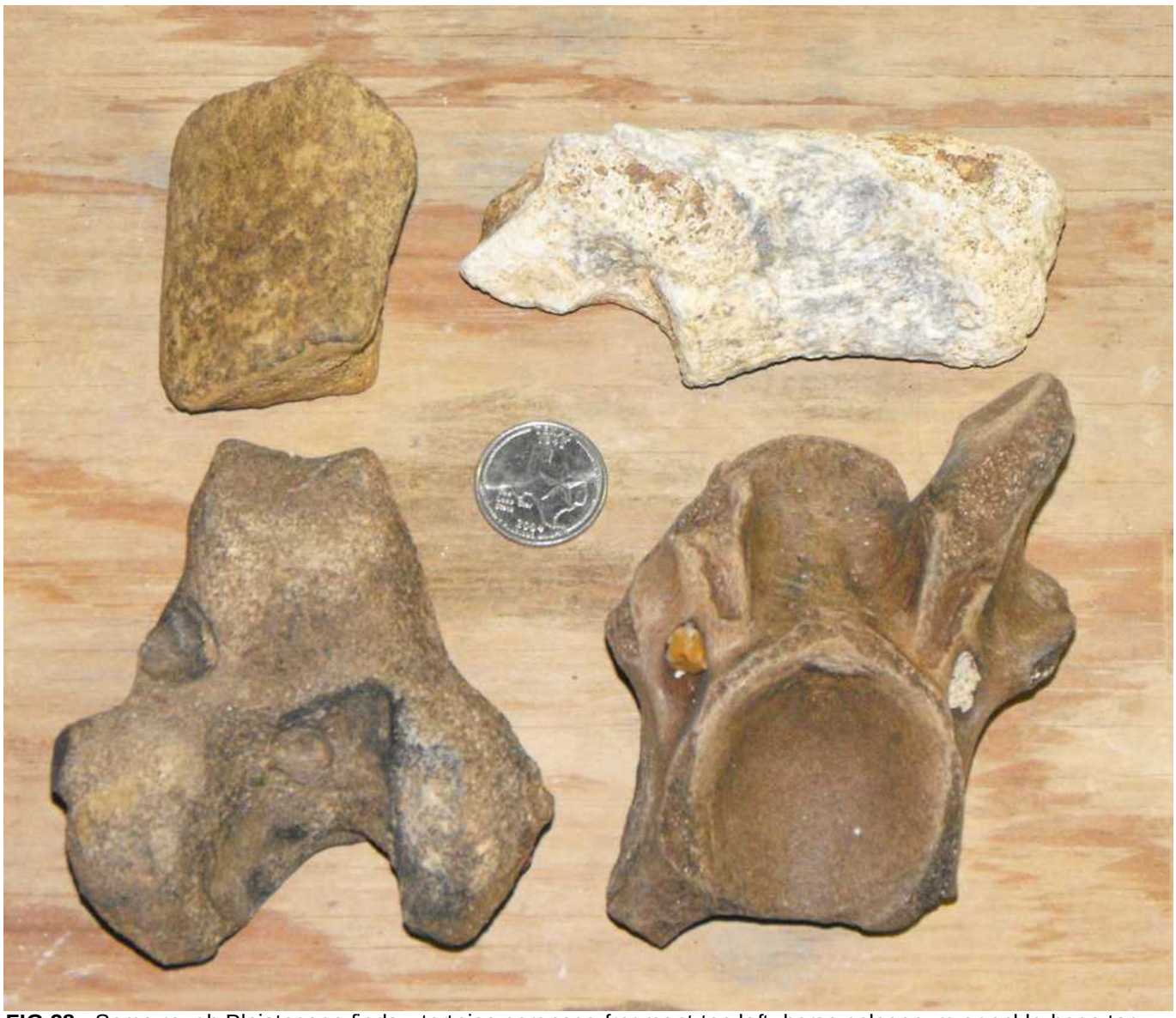

FIG 38: Some rough Pleistocene finds…tortoise carapace fragment top left, horse calcaneum or ankle bone top right, unidentified vertebra and distal femur below (Site 306)

FIGS 39-40: Soft shelled turtle *A. ferox* and unidentified turtle shell fragments above along with tumbled lower horse molar and shingle of mammoth tooth enamel top image, unidentified vertebra and *Hesperotestudo* tortoise shell fragments below (Site 305)

FIGS 41-42: Unidentified distal mandible (Site 304)

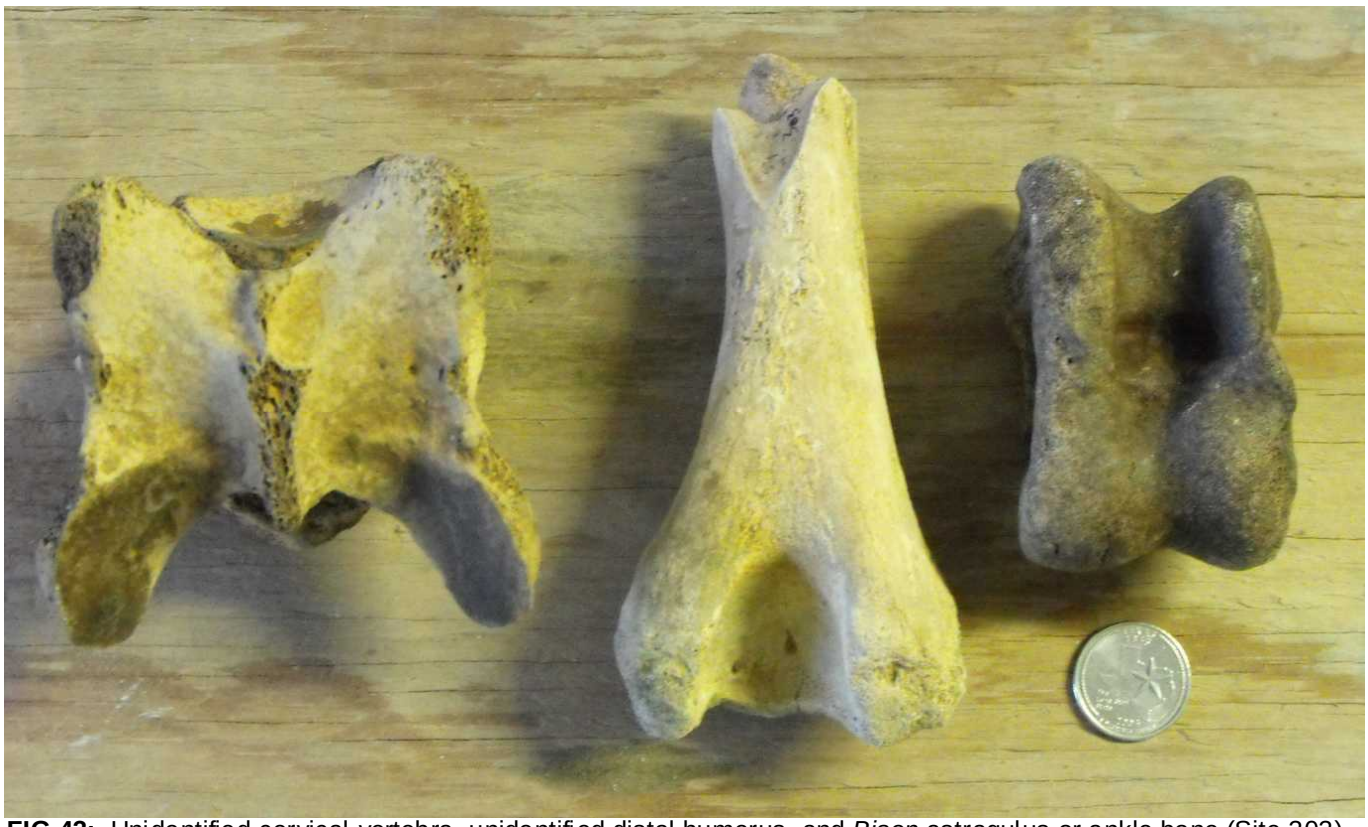

FIG 43: Unidentified cervical vertebra, unidentified distal humerus, and *Bison* astragulus or ankle bone (Site 303)

En route back to my put-in point the sky over my shoulder turned black and soon I was met by a cool breeze and heavy downpour. I'm glad it wasn't gusty or whitecaps could have disguised submerged logs and other navigational hazards. Good thing my motor chose to work that day! It was a sloppy mess on previously dry land, particularly working my gear back uphill, so much though that I had to rely on some simple Engineering to get my gear back to the truck.

A little closer to home it was still raining and my trusty rain jacket came back into play as the Glen Rose Formation (108 MYA) called my name, the wet conditions bringing out the echinoids in high contrast to the surrounding sediments. My first site was untouched by other collectors this rain cycle and gave up a number of *Salenia texana* echinoids. They weren't in the best condition, but I knew of another site where they would be, so I set off in that direction.

FIG 44: From the Glen Rose Formation…top row scallop *Neithea* sp., bivalve *Trigonia* sp., and spatangoid or heart urchin *Heteraster obliquatus* top row, unidentified gastropod and echinoids *Salenia texana* remaining specimens (Site 445)

The second Glen Rose site produced not just 10-12 nice *S. texana*, but also some striking hermit crab claws *Paleopagurus banderensis* and one extremely rare floating macro crinoid, only my second of this type.

FIGS 45-47: From the Glen Rose Formation…unidentified floating crinoid this and next 2 pages (Site 357)

FIG 48: From the Glen Rose Formation…hermit crab claws *Paleopagurus banderensis* (Site 357)

FIG 49: Glen Rose Formation echinoids *Salenia texana* top two rows followed by echinoids *H. obliquatus* and *Palhemiaster comanchei* center, finally *Trigonia* bivalve (Site 357)

It was 4 p.m. with heavy rain and I almost opted to throw in the towel, yet continued to the Walnut Formation (106 MYA) for more marine goodies. The first site gave up a nice *Phymosoma texanum* echinoid, quite rare for this area. A few *Coenholectypus planatus* and *Heteraster* echinoids rounded out my take after 20 minutes at this small, one man site.

FIG 50: Walnut Formation echinoids *Heteraster* sp. top left, *Coenholectypus planatus* top center, top right, and lower left followed by *Phymosoma texanum* lower right (Site 459)

The final Walnut site produced pretty much the same, one *P. texanum* that was too soaked and fragile to take home followed by a procession of *C. planatus* echies.

FIGS 51-52: Walnut Formation echinoid *C. planatus* this and next page (Site 455)

FIG 53: Walnut Formation echinoids *Heteraster* sp. and *C. planatus* bottom two rows, bivalves *Trigonia* sp. top left and unidentified top right, unidentified gastropod top center (Site 455)

This was quite a long weekend but I enjoyed it more than normal despite the heavy rainfall. It could have been the confidence and wiggle room which rainy days sometimes afford due to lack of competition in the field but regardless, it was worth all the skeeters and bad sleep required to make it all happen.

FIGS 54-55: Just back from the lapidary guy….cut and polished *Sphenodiscus pleurisepta* ammonites from the Escondido Formation (Site 417)