



NARG NEWSLETTER

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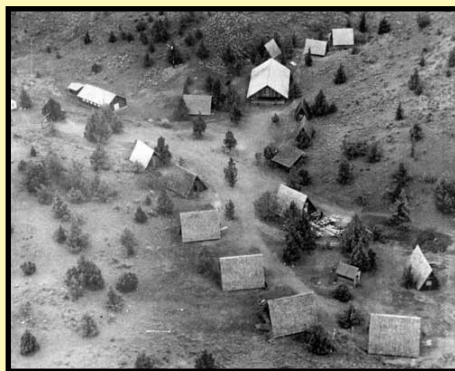
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Happy Memories From Many Trips to the Clarno Fossil Beds

By Sharleen Rice Harvey

My parents, Richard and Helen Rice, were early members of the Oregon Agate and Mineral Society in Portland and most of the club members shared the locations of their favorite "diggings". Lon and Berrie Hancock, Dr. Dake, Al McGuinness, Tom Bones, and others led frequent weekend field trips to these localities. The Clarno Fossil Beds were a favorite with everybody.

Lon and Berrie had property in the area and developed a "camp" to share with collectors of fossils, rocks, and minerals. My memories stem from these field trips in the 1940s, 50s, and 60s.



Left: Early view of Camp Hancock, on display at Berrie Hall. Right: Berrie Hall at Hancock Field Station. F.K. Lentz 1996 (National Park Service).

Lon and Berrie developed the camping site with small cabins and a "dining hall." Berrie became the "camp cook" and the dining hall was named "Berrie Hall." In the summer of 1956, the hall needed a roof. My Dad, Richard Rice, was a logger and had access to sections of cedar that he split into shakes to make the roof. On a nice weekend, my Dad, Mother, husband, and other club members delivered the cedar shakes to Camp Hancock and our volunteer crew installed them to complete the new roof for Berrie Hall. I was carrying our first child, Bill Harvey, Jr. at that time and my job was to help get the shakes up to the roofers. No one did much collecting on that weekend.

In 1963, OMSI was managing Camp Hancock and water supply was still a problem. OMSI's Executive Director, Loren McKinley, called on OAMS [Oregon Agate and Mineral Society] members to help install a water line from a well and pump at the bottom of the hill, up to the kitchen in Berrie Hall. The day of work was a hot summer afternoon. The Harvey's and the Rice's were again part of the crew. We had a truck and camper by that time, so had a full tank of water and a cooking stove, and took our two sons with us, Bill Jr., 7 and Dick, 5 years old. Loren McKinley had his teenage son and friend with him. This hot weekend the pipeline was completed, men in the ditches, ladies managing to supply food and water. The boys helped to deliver water to the diggers, but they also liked to explore the grounds. The older boys sort of took charge of my sons and toured them around the camp grounds, teaching them the differences between bull snakes and rattlesnakes. As I was delivering a jug of water to the guys in the ditch, I looked up to see the four boys coming down the hill and my 5 year old had a snake wrapped around his neck and holding the head in his hand, smiling! I nearly panicked, but the older boys assured me that it was a bull snake and not a rattler. They took a photo of the boys, Dick still with the snake, and for several years, OMSI used that photo in their presentations about their museum and Camp Hancock. No one had time to do much collecting that weekend either.

I have no memories of collecting in the area where fossil animal bones were found. I do remember my Mother telling me that Al McGuinness had told Lon Hancock where he found the large mammoth skull. Lon retrieved the skull, but I don't remember if Al was with him on that trip or not. (Editor's note: In 1941, Lon unearthed the *Miomastodon* skull from this site. He returned 12 years later and found the jaw to complete the skull.)

After Lon passed away, Berrie donated his extensive collection of Clarno fossils to OMSI for preservation and display. Fossil nuts, woods, leaves, and ancient ferns found by the Rice's remain in the Rice Museum collection and samples of the seeds collected by Tom Bones are on display in the Murphy Petrified Woods Gallery at the Rice Museum.



Alonzo "Lon" Hancock with the *Miomastodon* jaw discovered from the Clarno Nut Beds area in 1953



A selection of fossilized Clarno nuts and seeds collected by Tom Bones. Now housed at Smithsonian Natural History Museum, and the Florida Museum of Natural History. Photo from Steve Manchester.

Pictures from:

Beckham, S.D. and F.K. Lenz. (2000) Rocks and Hard Places: Historic Resources Study John Day Fossil Beds National Monument, Oregon. Chapter 7. National Park Services. <http://npshistory.com/publications/joda/hrs/chap7.htm>

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Manchester, Steve. <https://www.flickr.com/photos/53037915@N06/4892208770/>. Accessed May 14, 2021.

My Wyoming Fossil Discovery

By Robert Rosé

As a young geologist I worked for an oil company in central Wyoming in the late 1960's. This is an area with many well exposed rock units of varying ages. I had collected some smaller fossils from several different units but wanted something a little more exciting. That is why I drove west of town one day to look for fossils in the Morrison Formation. This is a Late Jurassic non-marine unit that produces many dinosaur fossils in places like Como Bluff in Wyoming.

I parked my car off the highway near the Morrison outcrop, climbed over the fence next to the highway and began searching for bones. Not much found after a while until there in a gulch under some juniper trees were the bones I was looking for. Was I excited! Fortunately, the bones were well preserved. They included three vertebrae, two small partial leg bones and one badly shattered larger leg bone. Two of the vertebrae come from down on the tail and are 7.5 and 8 inches in diameter (see picture). The largest vertebrae is one foot in diameter but only one-half preserved. The large leg bone is one foot long and has a rugose natural end. The other leg bones are a partial top 6 inches in diameter and the other a pitted elongate shape which had been sheared cleanly from its original unpreserved part.



Fortunately for me my car was only a few hundred meters from the bones so collecting them took only several trips to and from including pushing them under the fence. The next thing to do was to try and identify what animal they might have come from. In the end I have given them the name of Apatosaurus whether correct or not.



Look at how it loves you
how it woke up the earth to you
and gave you the life-heart back
how the days are growing long again, as in childhood,
as if time is being given back to you
as you learn how your soul wants to fill it.

Photo and poem by Joe Cantrell
April 15, 2021

Beulah Reservoir- A Rarely Explored Fossil Site

By Dave Ellingsen

Beulah Reservoir is not in the middle of nowhere, but it's pretty close. Located about 20 miles north of Juntura, Oregon on Hwy 20, the reservoir is a fairly large body of water that is dammed on its southern end. When the water level is low in late summer, the exposed shore is full of rocks that contain fossils of many different kinds of leaves and even some insects and vertebrae.

I learned about the site from a Rockhounding in Oregon book I had purchased awhile back. In 2017 I took a few days to visit a fossil sites in Eastern Oregon and Beulah Reservoir was on the list. It was pretty easy to identify where the fossil bearing layer was located and even easier to find fossils. The white rock split easily and I found a number of complete leaves, multiple species on the same rock, and a few unknown fossils. I could have loaded my pick-up truck with the fossils I wanted to keep.



A view of Beulah Reservoir in Eastern Oregon

I brought a sample of the fossils to the next NARG meeting to show a few of our plant experts. I was surprised they had never heard of the place. However, after some research, I was informed that this site could be part of the Stinking Water Formation which was in the mid Miocene. Obviously, we needed to do a field trip there as a group.

With COVID shutdowns and quarantines this last year, field trips were sparse and fossil hunting was limited to small groups. Nevertheless, in the Fall of 2020 I sent out an email to see if there was interest in a trip to Beulah. There was limited response, but I still drove out and met Greg and Gloria Carr. We camped right by the reservoir and spent the entire Saturday looking for fossils. I took Greg and Gloria to the site where I had previously gone, and we were not disappointed. Lots of fossils, mostly leaves, but Greg and I both found fish bones and Gloria found what we believe to be a jaw of a medium sized vertebrae, perhaps a terrestrial critter.

After lunch, Greg and I decided to explore farther along the reservoir shore. We found some very unique fossils including pinecones, flowering stems, conifer needles, and other plant fossils we hadn't seen yet. We were convinced that we were some of the first to look for fossils in this specific area as it looked undisturbed and fossils were laying out in the open.



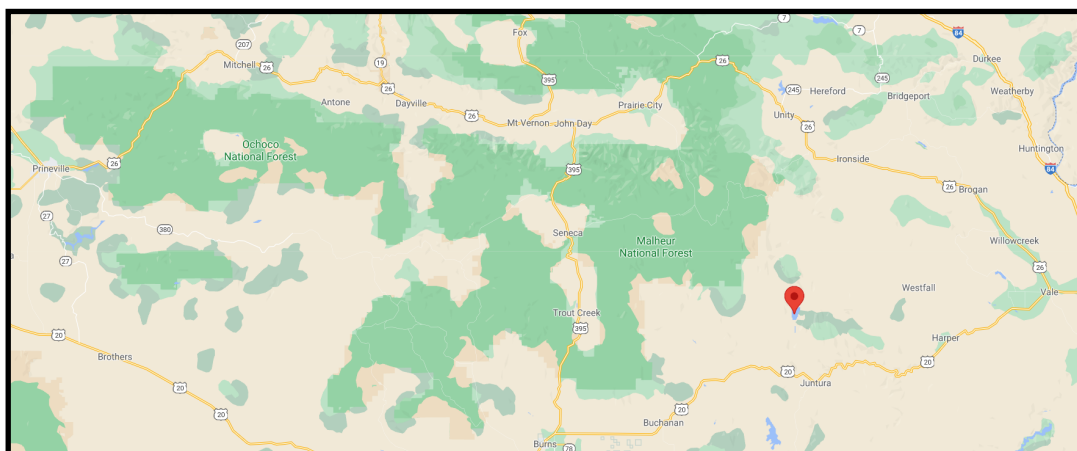
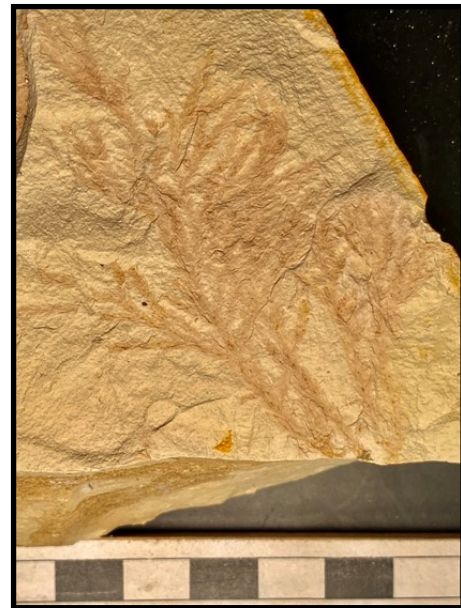


Just our luck, we ran into another fossil digger who informed us that she had been coming out here for quite a few years. She wasn't aware of any other people who came out here to find fossils. Her favorite site was near the dam, an area we had not explored. She showed us some of the fossils she had found that included a well preserved insect, probably a fly or wasp. She also took us to the far end of the lake to show us the remains of a Native American village. There is clear evidence of a long house and smaller structures that existed before the dam was built.

In total we estimated over 30 different species found in one day. It was a quiet, solitary place with easy access to fossils. It is definitely something we need to do as a fossil group when things are back to a state where people can travel safely again.



Greg Carr at site with fossil-rich shale. Beulah Reservoir in Eastern Oregon



For more information about Beulah Reservoir and directions, go to: <https://www.recreation.gov/camping/gateways/1138>.

Chasing a Crabby Riddle in the Smithsonian's Attic

By Bruce Thiel

While visiting the Smithsonian in 2019, I had asked to see the original holotypes of the fossil crabs from the Pacific NW. I wanted to see examples of what I felt were two conflicting named species that I thought might be the same or synonymous. A holotype is the specimen used to describe a species from which all subsequent similar crabs are compared. I had asked Dr. Rodney Feldmann, world-renowned fossil crab expert at Kent State, about the different "type" specimens and how one would go about describing and comparing these two crab species, and perhaps ending up with a new corrected "type." He wrote back:

"Here is a brief summary of the relevant ones. The **holotype** is selected as one specimen by the original author of the species and cannot be changed. All other specimens the original author studied are **paratypes**. Sometimes in years past, the author did not designate a holotype but simply referred to a number of specimens as the basis for a new species, **syntypes**. Subsequently, someone might study the species and examine the **syntypes**, from which the student might select a single specimen (the best?) as the **lectotype**. Thus, any subsequently recognized specimen of that species cannot be a primary type. However, if the specimen was known to be collected at the type locality of Rathbun's specimens, it could be referred to as a **topotype**. Have I now confused you sufficiently? Rod."

Very few fossil crab specimens of what the Smithsonian owns are on public display. Most fossils are kept in unlocked storage drawers however holotypes are kept locked and carefully controlled, in terms of who they are loaned to and under what conditions. Here are two pictures showing how the unlocked fossils are stored, row after row, inside the central area of the museum on the upper low-ceiling floors, referred to as the "attic".



There is a more secure area where fossil crab holotypes are stored. Each cabinet is locked with a removable door covering the case of drawers. Kathy Hollis leads the collections management team that cares for the National Fossil Collection, one of the largest fossil collections in the world, and in the photo on the next page, she is unlocking the covers that secure the drawers, organized by genus and species so we could pull out the drawers and look at the "Type" crabs.

Many of the fossil crabs in the drawers were collected 100 or more years ago and were discovered when rocks were simply broken by early geologists to reveal a crab inside. Some are prepared in a primitive fashion before pneumatic scribes came into usage. Most are unremarkable, however, sometimes a drawer such as the one seen in the photo on the next page (right), revealed a large crab, contrasted with smaller crabs or parts in vials. A small red star indicates a holotype, a small green diamond on the label, indicates a paratype.



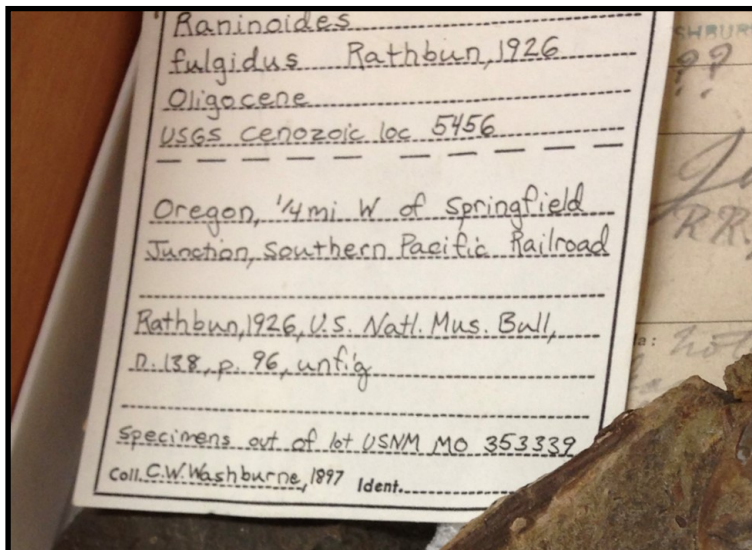
Names change over the years and it helps to know the history of the type of crab you are looking for. I was looking for types of *Pulalium* and forgot that back when it was named in the 1920's it was referred to as *Zanthopsis* by Mary Rathbun and was stored in the "Z's". I was also looking for *Orbitoplax weaveri* and found out that Mary referred to them as *Plagiolophus weaveri*. I was also surprised to see that some early specimens in the next picture were covered with a thick, shiny, goopy, plastic-type coating and not prepared in great detail.



Before visiting the Smithsonian's attic to look at the "Type" specimens, I read up on Mary Rathbun, who is a remarkable person.

Mary Rathbun devoted her life to studying crustaceans with her first publication in 1891. She wrote 166 papers giving descriptions of 1,147 new species, 63 new genera et.al. until 1938. Her 200+ page book published by the Smithsonian in 1926, "The Fossil Stalk-Eyed Crustacea of the Pacific Slope of North America" is the bible for NW fossil crab collectors. (Imagine looking at all the different types of crabs, comparing fossil to living ones, distinguishing between each one and describing it in detail to come up with 1,147 different species!) Her series of bulletins and monographs evolved into 4 volumes, covering both extant and extinct crabs that form the basis for study by future carcinologists. (Google her and you'll find some interesting articles about her dedication and life—particularly a recent write-up for Women's History Month.) [Editor's note: "The Inspiring Mary Jane Rathbun-Women's History Month Highlight" March 30, 2015. https://nmnh.typepad.com/no_bones/2015/03/womens-history-month-highlight-mary-jane-rathbun.html]

I was in awe looking at her hand-written notes or typed cards in the many drawers. Here is a specimen collected in Oregon in 1897, by CW Washburne, with a later card marked with a green diamond, indicating it is a "Type" specimen, probably after being sorted and named by Mary. Below is a close up of the card, showing the Oregon locality. (The specimens were collected during the building of the railroad in the 19th century). The third picture shows other Pacific NW specimens—most in a rather primitive unprepared state.



I did not come away with a quick answer to my question about the two similar species with conflicting--or rather, "synonymous" names, *schencki* and *naseiensis*, of the now-named Genus *Macroacaena* as they both look identical to me. Dr. Rodney Feldmann and his wife Dr. Carrie Schweitzer, fossil crab experts at Kent State, talked about perhaps having one of their new Ph.D. candidates take this on as a project, since it would involve examining and researching all the early-named specimens, comparing and taking measurements. Since then, the pandemic brought about the closures at the University and the Smithsonian, so the project is on hold. We hope someday, for future clarification, the issue is tackled and resolved. (This issue was also discussed in an article in the 2019 Fall NARG Newsletter, Vol. 8 Issue 3).

Organizational Plan for Mitchell Area Ammonite Bed Cooperative Dinosaur Fossil Dig, Late June 2021

SCOPE

This organizational plan covers the logistics, expectations and code of conduct for a fossil dig in the area of Mitchell, Oregon in June 2021. The dig will be done under the auspices of the University of Oregon Department of Paleontology, Dr Greg Retallack, and under a permit from the Bureau of Land Management, USA. The bedrock is the Hudspeth Shale, a Cretaceous shallow water shale deposit approximately 100-110 (Albian) million years old.

GOAL

The goal of the dig is to recover potential dinosaur bones / teeth in the shale from a bloater/floater dinosaur. Some bones have already been found in the area, and more may be present. If present, they will probably be disarticulated bones within the shale so close examination of the rocks will be needed. In addition to dinosaur bones, shark teeth, fish bones, plant materials and unusual ammonites will also be collected for the UO collections. In particular teeth would enable a genus identification.

LOCATION

The location of the dig was chosen in consultation with Dr. Retallack, Greg Carr and Ryan Griffin of the BLM and is approximately 8 miles to the northwest of Mitchell, Oregon on BLM land. The dig site is uphill on the northside of a gravel road. Some rabbit bitter brush will have to be removed, but no juniper trees. This area is part of the informally named "Suture Beds" because of the abundance of ammonite shells, molds and casts, most of which show the suture patterns of the ammonites due to the dissolution of the shell materials. This area has been a source of ammonite fossils for many decades, dating back to Lon Hancock in the 1950's (per Eric Gustafson). The actual dig pit will be confined to a 4x10 meter area. A 1x1 meter grid will be constructed and the location of all significant finds will be recorded (X,Y,Z Coordinates). Z dimension (depth) will be recorded from a laser level reference point. Initially, a trench approximately 1 m deep will be dug to provide a stratigraphic record. Then the area will be excavated in controlled blocks. If a single layer containing bones can be identified, then the entire area will be dug down to that layer to maximize bone collection. Otherwise, digging will proceed based on the availability of labor and the decision of the excavation team. Bones, if found, may be left on pedestals while the surrounding matrix is removed if it appears best.

SCHEDULE

The dig will be held June 15 – 28, 2021. The dig foreman (Greg Carr) will be present most days, other volunteer's schedules are flexible. The dates can be extended if desired.

ACCOMMODATIONS

Accommodations in the Mitchell area are limited but enjoyable. Camping (without services) is available a few miles away at an informal campsite on BLM property alongside Burnt Ranch Road and Bridge Creek, GPS Coordinates approximately 44.6127N, -120.2100 W, or about 1.2 miles up Burnt Ranch Road (Painted Hills Access road) from the junction with highway 26. Camping with services is provided at the Mitchell city park. Hotel accommodations in Mitchell are limited to the:

Oregon Hotel

<http://theoregonhotel.net/>

(541)462-3027)

and the Skyhook Motel

<https://www.skyhookmotel.com/>

(541)462-3569.

Many other hotels and motels are available in Prineville, 50 miles away. My favorite lodging is at the Spoke'n Hostel (<https://www.spokenhostel.org/>) but they will be hosting a number of bicycle races and may not have much housing available during the period of the dig.

There is one restaurant/microbrewery in Mitchell, Tiger Town Brewing <https://www.tigertownbrewing.com/>. And there is a good general store. Another restaurant may be open, but was not last summer.

SITE CONDITIONS

Digging at the site is fairly easy as the shale is crumbly. Power tools and explosives will NOT be used. It will be hot during the day, possibly cool in the night. There is no water at the dig site, but ice water will be provided as well as a small pop-up shelter tent. A bucket toilet will be provided. Covid 19 regulations require that no more than 10 people at a time be digging, and if more than 2 people are present masks will be worn. Normal 6 foot spacing for social distancing should be done. A guard perimeter outside of the actual dig area will be marked and only authorized people will enter. Be prepared for sun with sunblock and hats, loose clothing is preferred. Digging at the site will start early, and may be suspended in the afternoon if things get too hot. Diggers will be often sitting or laying on the ground so carpet pads or rubber pads are encouraged, as is long pants. Most digging will be done with small shovels, garden picks, brooms and dustpans, trowels, etc. – you get the picture. Fossils may need to be stabilized with Vinac® or Butvar® type of glues, wrapped in aluminum foil and carefully removed. Plaster casting should not be required.

There should be a lot of ammonites uncovered during the digs. These ammonites do not have to be collected for the UO as they have enough in their collection, and thus will be available for the volunteers to take home for their own collections. As per BLM regulations for invertebrate fossils, these are not to be sold. Unusual ammonites, with ridges or knobs, will go to the UO collection. All bones and teeth, whether fish, marine reptile or dinosaur(!) will go to the UO, of course. Plant casts and molds may be photographed before removal. Most plant remains have little or no actual plant material, being mostly molds in the shale. Other fossils include sea urchin spines and gastropods (snails). The dig foreman will determine their fate.

Volunteers and visitors will be allowed to dig on their own outside of the warning perimeter as per normal BLM requirements. Holes should be filled in or steps smoothed out after digging to prevent accidents. Wandering around to look for other fossils is encouraged.

VISITORS

Visitors to the dig site will be allowed. The dig site is approximately 100 yards from the gravel access road and is easily visible from the road. This is BLM land so owner's permission is not required. Access to the dig site within the warning perimeter will be controlled, but visitors will have free access to the remainder of the area. It will be a good opportunity for family members to participate in a fossil dig.

Contact Gregory Carr (gpcarr@comcast.net) 503 367 4085 (cell) for more information (and RSVP).

To read about the dinosaur bone discovered at this location, please go to: <https://www.opb.org/news/article/mitchell-oregon-first-dinosaur-fossil-ornithopod/>. Author Erin Ross from OPB writes a good description of the discovery and its significance to Oregon in the article entitled "Meet the 'Mitchell Ornithopod': Oregon's 1st Dinosaur Find."

For a more detailed explanation of the find, you can read the scientific short communications by Gregory J. Retallack, et al. The entire article can be down-loaded for free from: <https://cpb-us-e1.wpmucdn.com/blogs.uoregon.edu/dist/d/3735/files/2013/07/Retallack-et-al.-2018-Oregon-dinosaur-1agfxpi.pdf>.

A recreation of what the Ornithopod, whose fossilized toe bone was discovered by Greg Retallack, might have looked like. Retallack and other researchers are hoping to find more bones at the suture beds during this June dig. (Picture from the University of Oregon Museum of Natural and Cultural History at University of Oregon.)



The Native Fish Committee of the
Oregon Chapter American Fisheries Society and
The Earth Sciences Department of the University of Oregon
Presents

2021 Nongame Native Fish Workshop

The 2021 Featured Species: Sabretooth Salmon

September 1-2, 2021 Near Madras, Oregon

The Native Fish Committee of the Oregon Chapter American Fisheries Society organizes annual field workshops featuring nongame native fish in Oregon. This year, the committee and Paleontologists from the University of Oregon will study the Sabretooth Salmon (from the paleontological record) near Madras, Oregon. We will hear presentations and engage in discussions regarding the species, dig for their fossils in a nearby pit, and observe their past habitat to assist workshop participants' understanding of the species.

There is no charge to participate in the workshop. All biologists and paleontologists are welcome to participate and students are encouraged to attend. The pit is located on private land, so all participants must be covered by health insurance, per landowner requirement. Presentations and camping will occur at the Trout Creek property, owned by Portland General Electric. It is 4 miles down a dirt road beyond a locked gate at the intersection of NE Clemens Dr. and NE Coleman Rd. We will meet in Madras at noon September 1st at the NE corner of the Madras Safeway parking lot and caravan behind the gate together. Electricity, and a restroom occur at the PGE site. Our presentations will occur in a barn onsite. Bring your own water, camping gear, and a camp chair for the presentations in the barn. Dinner and evening refreshments will be provided September 1st (Courtesy of OCAFS), but bring your own food for other meals.

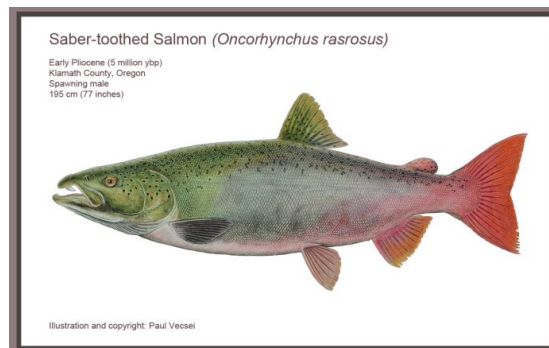
The workshop will start noon September 1 at the NE corner of the Madras Safeway parking lot (80 NE Cedar St, Madras, OR). We will proceed to the PGE property, 4 miles behind a locked gate, where we will engage in presentations and camp. The morning of September 2, we will dig for Sabretooth Salmon fossils at a nearby pit, under the guidance of paleontologists from the University of Oregon. The workshop will end at 1:00 PM on September 2. **If you plan to attend, please RSVP James Capurso, OCAFS Native Fish Committee Chair, at james.capurso@usda.gov, by August 15, 2021.**

Note from organizer, James Capurso:

Please encourage NARG members to contact me directly if they would like to participate. My intent is to have a group of Fish Bios and Paleontologists mixing there. That's where the magic occurs. Based on the rate of Covid vaccinations in Oregon, I expect this workshop is a "go". We should be able to safely and successfully pull it off.

It will have a half day (afternoon of the 1st) of presentations and a half day (morning of the 2nd) in the pit. Would there be anyone in your group interested in presenting? I hope we can at least receive a presentation on NARG....you may even get some new recruits (Fish Bios) out of it!

James Capurso, PhD
Regional Fisheries Biologist
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<http://www.fs.usda.gov/main/r6/plants-animals/fish>



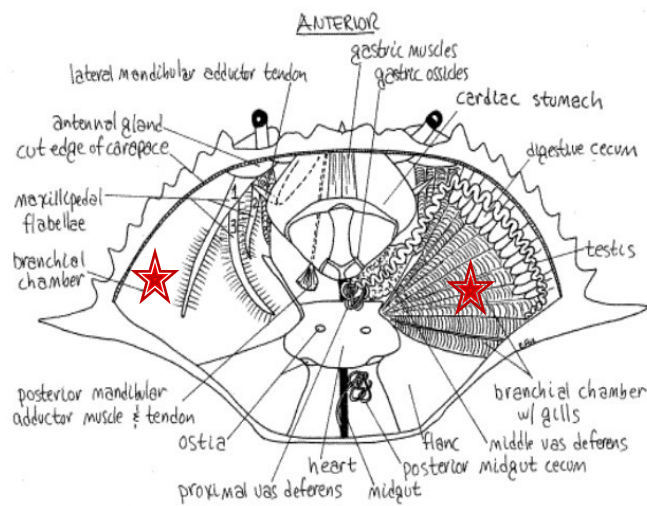
Do Your Crabs have Parasites?

Asking for a Friend

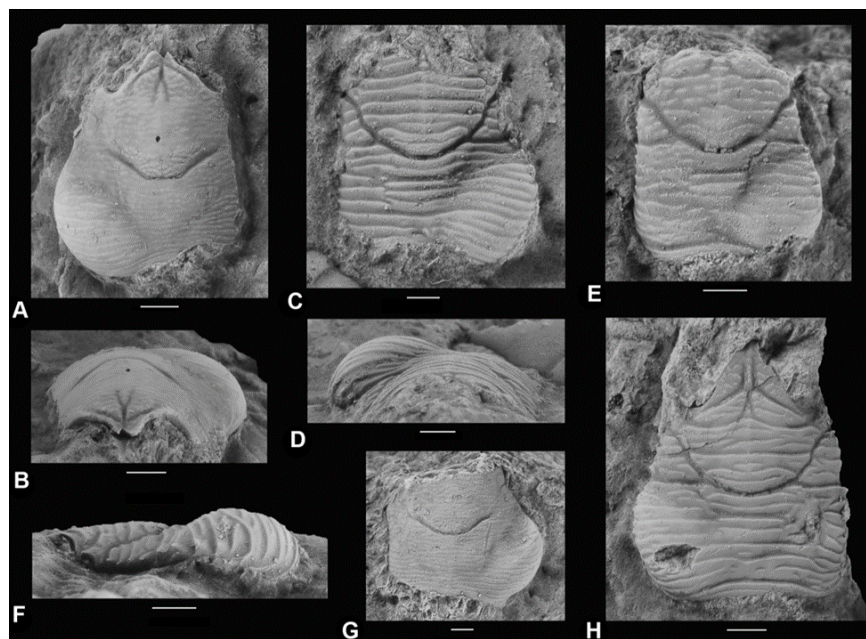
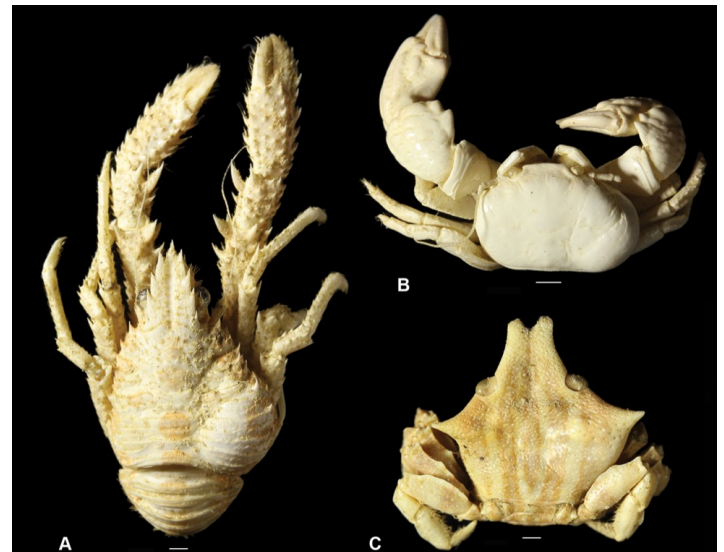
By Bruce Thiel

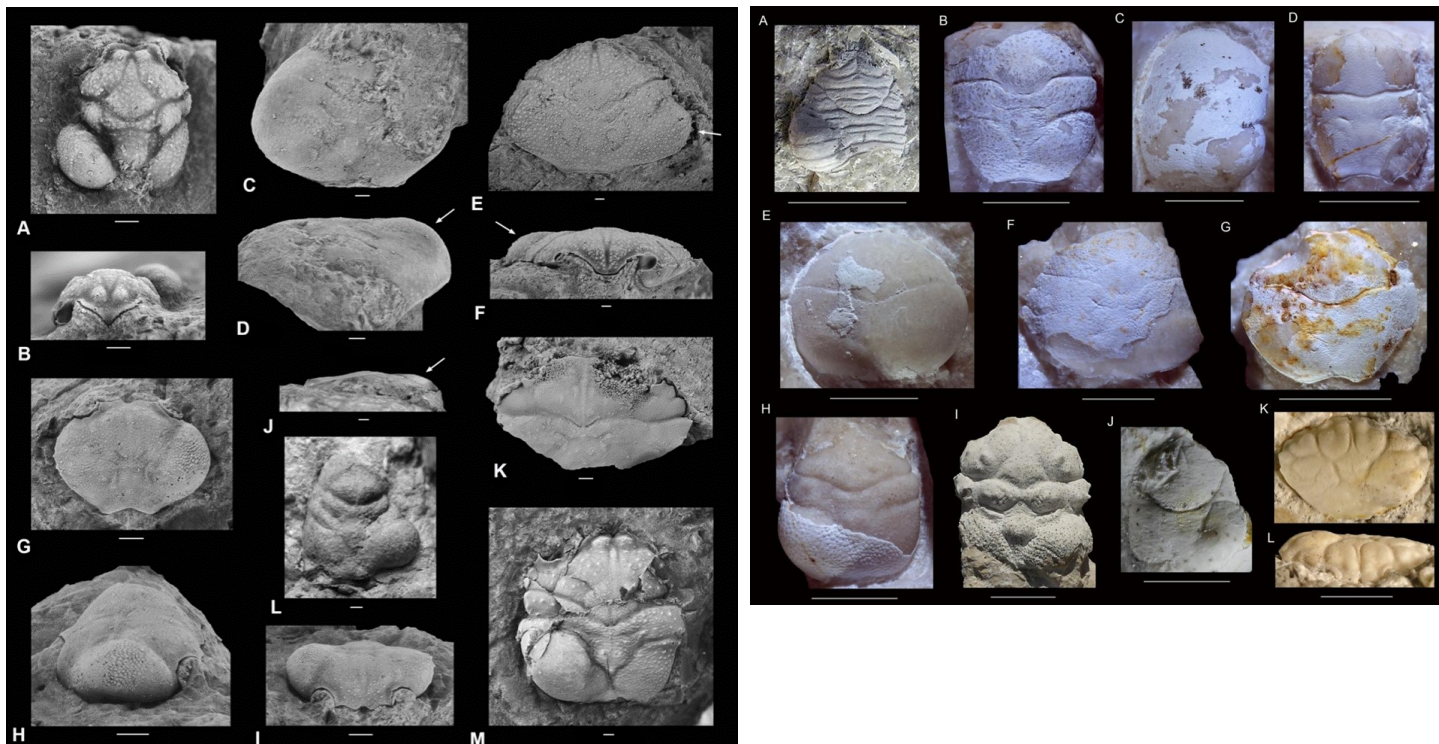
Dr. Adiel Klompmaker has asked NARG members to look for evidence of isopod-infested fossil crabs which may show swelling in some of the branchial regions. It may not always be evident unless one looks at the decapod gill (branchial) regions from different angles as some swellings may be subtle. [Editor's note: See the image below, top right. The branchial chamber houses the gills. Swellings will be seen in the top carapace near where the legs join the body.]

Adiel, originally from the Netherlands, received his PhD from Kent State under Dr. Rod Feldmann and is now curator at the U of Alabama. In 2014, Adiel along with four other authors published an open-access paper in PLOS ONE showing both extinct and extant species that have isopod parasites that have caused swelling in one of the branchial regions.



Crab body diagram. (by Tarek Saad Ibrahim)





A later PDF preprint is also helpful, particularly if you look at the swellings shown in the picture (above right) from the paper. Some are not as obvious. For a more complete analysis and narrative go to this link: <https://www.biorxiv.org/content/10.1101/505495v1.full.pdf>.

I asked Adiel if there were any instances of isopod infestation in any fossil crabs from the Pacific NW. NARG members have found several crabs that have tube worms or barnacles attached to their exterior, from the Cenozoic. This is what he wrote back:

There is not a lot to read about the reported swellings from WA. Schweitzer et al. (2000) mentioned but not figured swellings in *Palaeopinnixa rathbunae*, whereas Schweitzer & Feldmann (1999: fig. 14) imaged one specimen of *Asthenognathus cornishorum* with a swelling, possibly from this isopod parasite. Both were part of systematic description papers, so there are just a few sentences about it. New specimens with swellings of these taxa are also welcome of course."

NARG members are asked to be on the lookout for any similar swellings in our fossil crabs.

Citations:

Ibrahim, TS. (2016) Cambridge IGCSE Biology (2016-2018) classification of living organisms. <https://www.slideshare.net/TarekSaad2/cambridge-igcse-biology-2016-2018-classification-of-living-organisms>.

Klomp maker AA, Artal P, van Bakel BWM, Fraaije RHB, Jagt JWM (2014) Parasites in the fossil record: a Cretaceous fauna with isopod-infested decapod crustaceans, infestation patterns through time, and a new ichnotaxon. PLoS ONE 9(3): e92551. <https://doi.org/10.1371/journal.pone.0092551>

Klomp maker, A. A., Robins, C. M., Portell, R. W., & De Angeli, A. (2018). Crustaceans as hosts of parasites throughout the Phanerozoic. *bioRxiv*, 505495. <https://www.biorxiv.org/content/10.1101/505495v1.full.pdf>

NARG Outreach News

By Tara Baker

One of the tenets of NARG is to promote public education about paleontology. Some of our members are professional teachers in middle schools, high schools, and colleges. Others are professional outreach specialists at museums (OMSI, Rice Museum) and on-line paleontology resources (www.myFossil.org). Many of us participate as educators at annual fossil fests and rock shows. Throw a stick at the audience at any in-person meeting, and whomever it hits will willingly stand and make a presentation on about any paleontological subject that comes to mind. We are a group who are passionate and knowledgeable about our subject areas, and we are enthusiastic to share with anyone who will listen.

I wanted to highlight a couple of recent opportunities NARG members had to educate students about fossils and paleontological sites here in the Pacific Northwest. Greg Carr was asked to make a presentation to junior high school students in Northern California, and I was able to put together a presentation that was shared with two community colleges.

Greg talked to three junior high classes at Grass Valley Academy via Zoom. His slide presentation included basic information (what is a fossil), and then specific information about the expeditions he has been a part of in Northern California. In the past three years, Greg has worked with paleontologists from California universities to retrieve and prepare some amazing finds like the Ichthyosaur in the pictures below. He shared photos and stories of his work in the Hosselkus Limestone. Greg says he loves to teach. This is the kind of presentation by an enthusiastic and real person who participates in authentic scientific discovery that might spur a young person to pursue a career in science.



Fossil Preparation



5th Annual Fossil Preparation
and Collections Symposium

April 12-14, 2012

Burke Museum
University of Washington
www.burkemuseum.org



I have been lucky enough to be on some explorations over the past three years to the Hosselkus Limestone. This is limestone rock from ancient reefs that were in the ocean about 220 million years ago. These limestones contain all manner of ancient sea life. The most exciting finds are bones from ancient marine reptiles called Ichthyosaurs and Thalattosaurs. Bones from these animals were originally found in 1904, and more bones have been found recently.



I teach biology at Portland Community College. There is not a lot of call for me to teach about fossils in my normal teaching load, but I am always bringing in specimens I find to share with colleagues and students (pre-Covid). The geology instructor, Andy Hilt, asked me to prepare a lecture about my Oregon finds for his students in his Evolution of Planet Earth class. I was very excited to do that. I rounded up my favorite fossils, put together a PowerPoint presentation, then made a recording of my Zoom lecture. It included my favorite Oregon locations to find fossils organized by time periods, beginning with the oldest coral specimens from the Grindstone Region in Central Oregon, to the younger seal bone fossils from the Astoria Formation, and the most recent Ice Age fossils at Woodburn High School. Of course, I started and ended with plugs for NARG and included our website. Andy shared the 40 minute video with his class and loved it so much, he offered it to another community college instructor, Daina Hardisty at Mount Hood Community College. She used it in her geology courses as well. I hope I was able to clearly share some of what I know and love about paleontology to these students and encourage them to continue learning about the geological history we have around us here in Oregon.

To see my video, you can go to <https://www.youtube.com/watch?v=9qBiYUeVzs>.

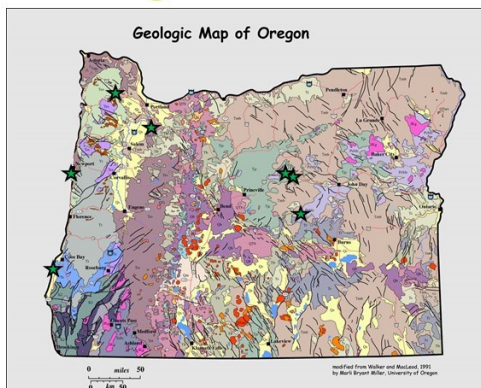
My Favorite Places (so far) to Collect in Oregon

From oldest to youngest fossil areas:

Paleozoic → Izee-Suplee In-lir, Grindstone Formation

Mesozoic → Izee-Suplee area
Mitchell area

Cenozoic → Cape Arago area
Mist/Vernonia area
John Day Fossil Bed area
Newport/Beverly Beach area
Woodburn High School



MY
FAVORITE
PLACE OF
ALL!

Anybody lose a pair of earbuds at the beach ... around 15 million years ago?

By Gerry Lukos

A day trip to the Oregon Coast in April revealed a lot of sand and a few good fossil finds. The north end of Beverly Beach turned out to be the best place for spotting anything. My most interesting treasure was a small, fits-in-my-palm-sized rock with two knobby protrusions of bone. See the front-side photos. The shape of the knobs immediately made me think of Apple Earpods. On the back side, a divot in the rock reveals a bit more bone, probably connecting the two knobs.

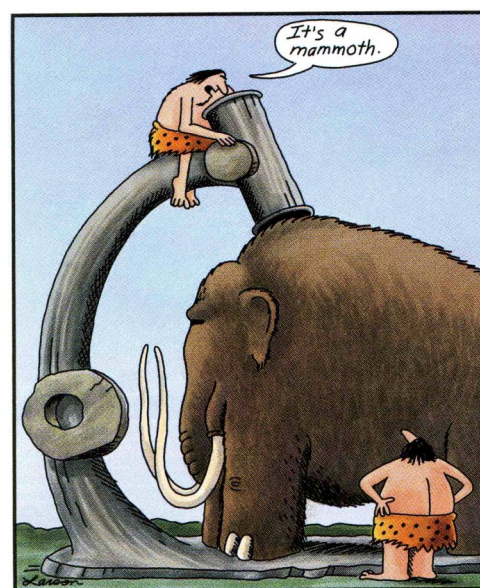
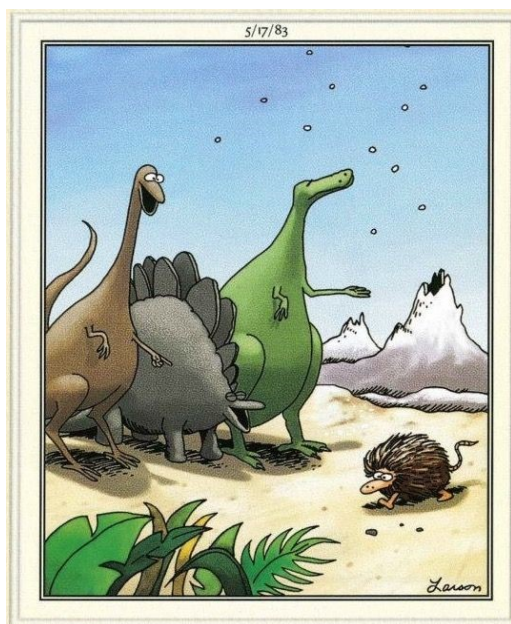


Front-side of discovered bone.

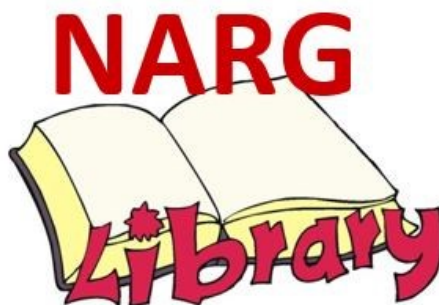


Back-side of discovered bone.

I hesitate doing a vinegar treatment on this item to uncover more bone until expert eyes can offer some suggestions about what might be hidden inside the rock. Since we are not yet meeting in person, I am asking for your ideas based on these three photos. You can send your thoughts to me at GFL3@frontier.com.



Early microscope



The NARG library has just become easier for members to use. The 430 books can be viewed by using the link below. Once you find a book you want, click on it and find its 'index' number. Requests for books using the index number are made to danolough@aol.com. He will notify you if the book is already checked out. If it is not, he will bring it to the next NARG meeting. Members can check out 2 books at a time and should return them at one of the following 2 meetings.

<http://cloud.collectorz.com/danolough/books>

NARG Membership

NARG's membership dues for 2021 are due January 1, 2021

Individual Membership = \$25

Family Membership = \$40

Student Membership = \$10

You may pay for your membership by mailing it to:

NARG
Margaret Johnson
2220 179th Ave E
Lake Tapps, WA 98391

* You can pay your dues thru Pay Pal. You don't need a Pay Pal account to pay this way. You can pay using a credit Card.

Use the following links:

Family Membership \$40 [https://www.paypal.com/webapps/hermes?
token=02B168711E462890G&useraction=commit&mfid=1608708869406_38e2b9635cc59](https://www.paypal.com/webapps/hermes?token=02B168711E462890G&useraction=commit&mfid=1608708869406_38e2b9635cc59)

Single Membership \$25 [https://www.paypal.com/webapps/hermes?
token=6TU30928A8430812D&useraction=commit&mfid=1608708913265_a8f31bac9a8d0](https://www.paypal.com/webapps/hermes?token=6TU30928A8430812D&useraction=commit&mfid=1608708913265_a8f31bac9a8d0)

Student Membership \$10 [https://www.paypal.com/webapps/hermes?
token=3TP31412EK4238444&useraction=commit&mfid=1608708943484_6d99ac05f2720](https://www.paypal.com/webapps/hermes?token=3TP31412EK4238444&useraction=commit&mfid=1608708943484_6d99ac05f2720)

Fossil Calendar

Because of COVID-19, in-person meetings and events are cancelled. However, please join us for Zoom facilitated meetings every first Wednesday of the month at 7PM. For the Zoom meeting information, please contact Aaron Currier, NARG President, at fossils@curriergraphics.com

Please check the web-site and emails for any changes or alternatives.

For a listing of local gem and mineral shows check out:

<http://www.mineralcouncil.org/shows.pdf>

<http://orerocon.com/> Click on Portland Area Rock Clubs, includes PNW Clubs)

NARG Officers:

President: Aaron Currier (503) 364-2979
 Vice President: Greg Carr (503) 754-6392
 Secretary: Tami Smith (503) 620-5317
 Treasurer: Peg Johnson (253) 370-8892

Directors:

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 MacKenzie Smith (503) 403-8941
 Robert Rosé (541) 367-2052
 Linda Harvey (503) 310-3036
 Debbie Shannon (503) 887-7423
 Dan O'Loughlin (503) 866-5997

Honorary Directors:

Michael Santino (503) 981-8902
 Larry Purchase (360) 254-5635

Committees:

Newsletter: Tara Baker
 Aaron Currier
 Dan O'Loughlin
 FossilFest: Linda Harvey
 Dan O'Loughlin
 NARG Auction: Linda Harvey



NARG's Mission Statement

To encourage responsible stewardship of earth's paleontological resources; to promote scientific research, communication, and public education.