North America Research Group

NARG NEWSLETTER

Official Publication of the North America Research Group Winter 2022

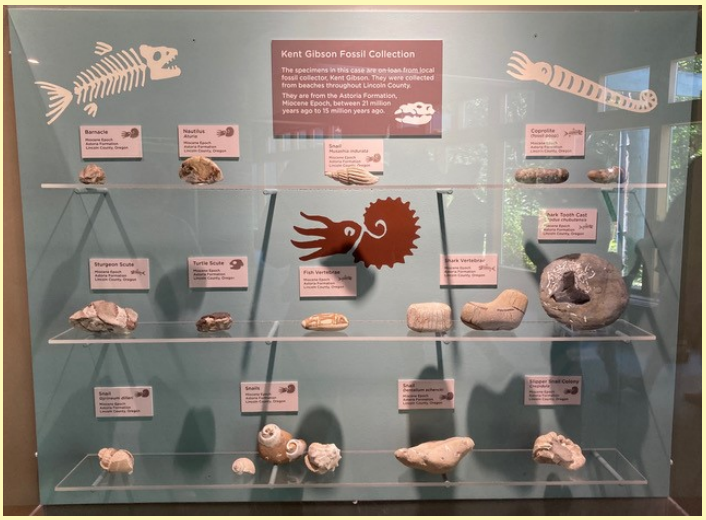
Volume 10 Number 1

"Cruisin' the Fossil Coastline" Showcases NARG Member's Collections

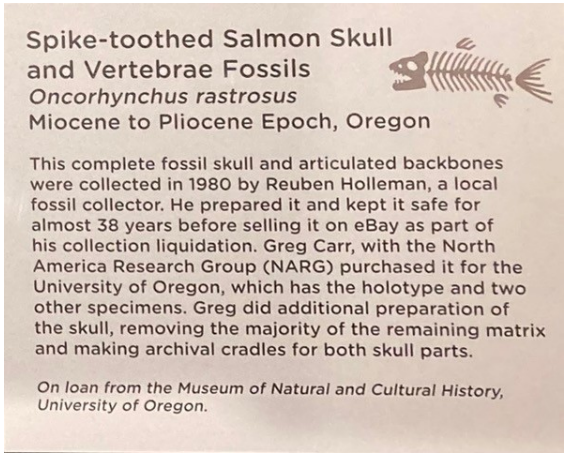
The Ray Troll Art Exhibit opened at the Oregon Coast Aquarium at Newport in June and will continue until August of 2022.

Art from the book " Cruisin' The Fossil Coastline," by Kirk Johnson and Ray Troll was featured along with fossils from the University of Oregon Museum, and several NARG members.

Kent Gibson (NARG member, right) volunteered to help Ray (left) with the set-up and was soon put to work. Additionally, Kent loaned the fossils in this case, along with other cases containing his marine fossil skulls.



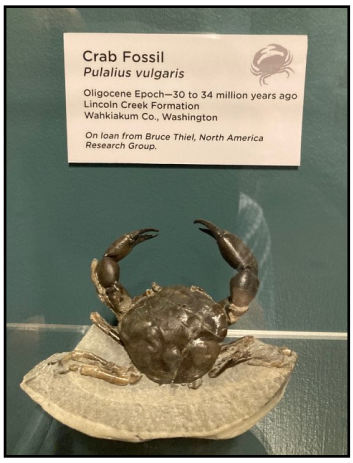
The Spike-toothed salmon is the centerpiece of the fossil exhibits. Here's a close-up of the card describing the fossil and Greg Carr's effort, along with NARG to acquire it for the University of Oregon.



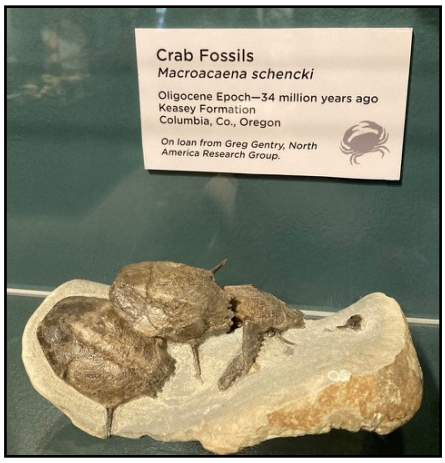
A bison skull also came from the University of Oregon and was exhibited with a sycamore leaf found and prepared by Bob Manley.

A crab found and prepared by former NARG member, Andrew Berkholtz, who donated it to the University of Oregon was also on display.

A case of crabs and shells, some of which were shown in the Fossil Coastline book assembled and loaned by Bruce Thiel, Greg Gentry, and Tim Fisher.



A close-up of one of the crabs shown in Ray's illustration



A grouping of three found and prepared by Greg Gentry.

Several rooms showcase Ray's art along with the fossils. A theater also shows three short videos of Kirk and Ray talking about the making of America, the coastline fossils and the writing of the book.

For more information about the exhibit (directions, cost, etc), go to https://aquarium.org/exhibits/cruisin-the-fossil-coastline/.

Pictures #2, 5, 8 & 11 courtesy of Tina Smith, Interpretive Coordinator, Oregon Coast Aquarium.

More Dolphins than Seaworld:
Kent Gibson's Personal Fossil Collection

By Bruce Thiel

It's been 9 years since I saw Kent Gibson's collection in Newport. Even without the 7 skulls he sent to the Smithsonian in 2013, Kent continues to walk the beach and build an impressive collection that he adds to each year. He has taken to wear a pedometer to measure his miles, and in the first four months of 2021, Kent logged about 230 miles on about 80 different days, averaging out to almost 3 miles a day of beach combing.

Here are some of the highlights of his collection. The picture on the left is Kent holding a whale skull he was working on. On the underside of the large fossil, the intact ear bone, or bulla, is evident.

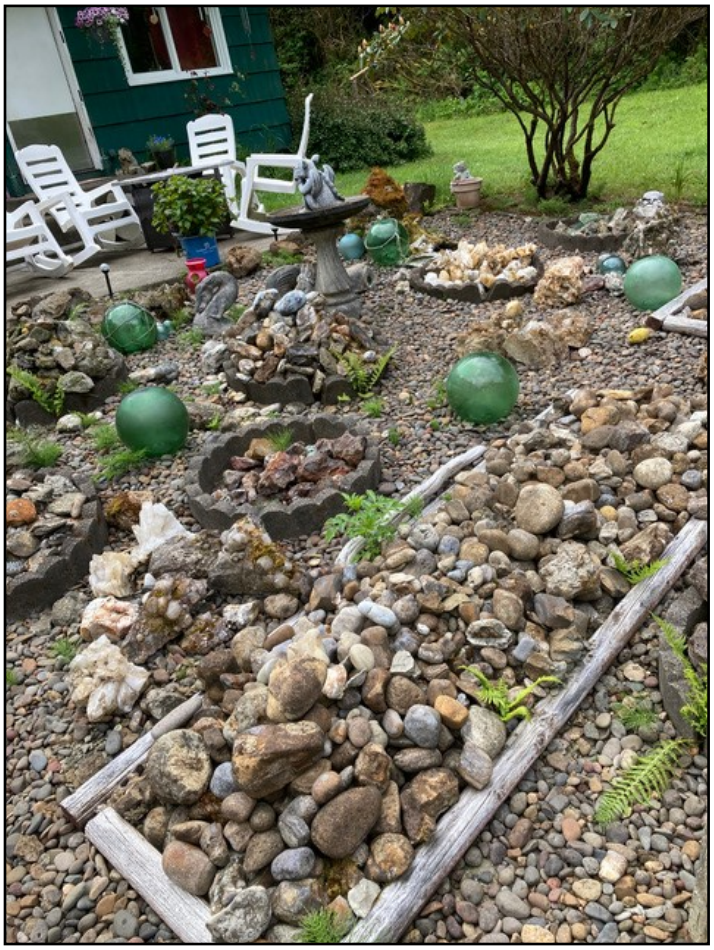
Kent's collection is organized on shelves and buckets in his home, filling a large outdoor shed, and laid out around over his yard. He has an impressive collection that includes many vertebrate mammals, fish, as well as mollusks and even plants. The picture on the left shows just one shelf full of vertebrae, while the shelf on the right is full of mostly *Musashia* shells among other treasures.

Kent finds plant material on the coast as well. He has lots of examples of teredo wood and here is a chunk of what he thinks is petrified palm wood. Kent has donated several pinecones to the University of Oregon. He recently found this one, the only one he now has.

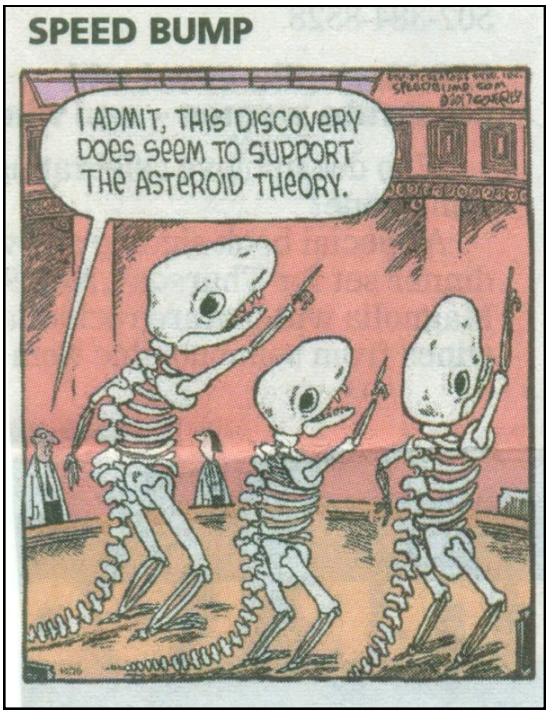
Kent also has nice collections of fossilized fish material Here is a cross section of a sturgeon scute, unprepared. Then another clump of sturgeon scutes that Kent prepared, showing fine detail

Some pieces are just too large to place inside, so they are displayed in his yard. Two blocks containing large whale ribs separated by a calcite seam that broke apart when he was trying to remove them. A 24” whale mandible will probably be his next project to tackle.

Kent's collection also extends out into his yard. In 2012, Kirk Johnson and Ray Troll were touring to promote their "Cruisin the Fossil Freeway" book and together with Marine fossil expert Bobby Boessenecker visited Kent's place for the first time. They spent several hours going through these piles, looking at all the fossils. Later seven exceptional and important skulls were selected to go to the Smithsonian for further study and to be part of the nation's collection. Kent recently retired from the Port of Newport as the Harbormaster for their Commercial Marina, so you may see him even more on the beaches.



You can hear more about how Kent got into fossil collecting by listening to Episode 45 The Coastal Fossil Finder with Kent Gibson, a part of David Strassman's and Ray Troll's PaleoNerds Podcast at https://www.paleonerds.com/podcast/kentgibson.



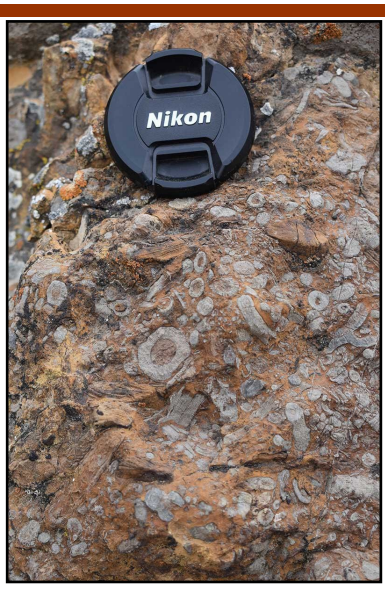
In the News…

Nevada Field Trip Location

Found an interesting article from the Smithsonian about a place a NARG group went to several years ago in Nevada. We collected trilobites and hyoliths, and I picked up a piece of float that had what I thought had corals in it. It was a nice red color with grey fossils - like in the picture in the article! Turns out they are much older than corals, and are part of this early reef building group mentioned in the article. Perhaps we should go back!

Link: https://www.smithsonianmag.com/science-nature/fossils-from-one-of-the-worlds-first-reefs-can-be-found-on-mountains-in-nevada-180979256/

Sincerely, Greg Carr



Up close, the rocks in the Nevada desert bristle with the fossilized remains of ancient life. Mary Lonsdale (Tamisiaea, 2021)

Something Fishy

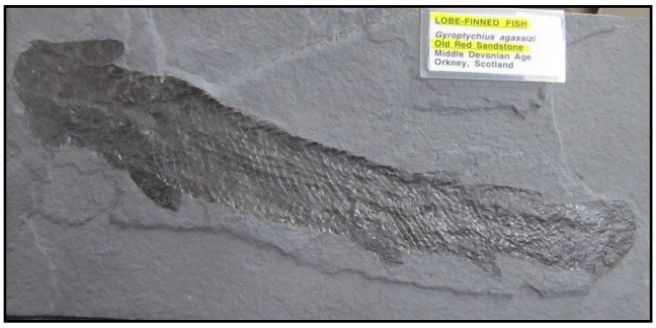
By Robert Rosé

While working on documenting my fossil collection I came across several complete fossil fish. One is Miocene, three are Devonian and one is Eocene. These five are all prepared and all but one was purchased. Two other possible fish are still in the rock and have not been prepared. One comes from Lebanon in the Middle East and the other is a large slab from Wyoming that has several fish and gastropods.

The Miocene fish was collected from locality "X" west of McDermitt in Oregon. It required very little preparing. It occurred in lacustrine (lake) shales along with plant and insect fossils. This fish has not been identified scientifically. It is three and one-quarter inches long and about 15 million years old.

The three Devonian fish come from Scotland in a formation called Old Red Sandstone which also contains many inter-bedded shales. These fish are also non-marine and seem to have been deposited in deeper water lake sediments. They are about 380 million years old. The author Hugh Miller wrote two books about the geology of Scotland and its fossil fish in "The Old Red Sandstone" (1841) and "The Cruise of the Betsey" (1857). The largest fish is called *Gyroptychius agassisi* (a lobe-finned fish) and is 13 3/4 inches long. The scales are diamond shaped. It sits on dark grey slate and is quite a heavy specimen. The next fish is called *Dipterus valenciennsi* and is 5 1/2 inches long. It is on a brownish siltstone. The last fish is called *Osteolepis panderi* and is 3 1/2 inches long. It looks like it is swimming especially with the painted-on side fins. It sits on grey slate.

Unknown Species, McDermitt, OR



Gyroptychius agassisi , Scotland

Dipterus valenciennsi, Scotland

The last fish in my collection is from the Green River Formation of Wyoming. It was a birthday present years ago. It measures 7 inches in length and sits on a bed of light-colored claystone. The name of this fish is *Phareodus testis*. It is about 51 million years old.

The above-mentioned fish are all whole. However, in my drawers I have many pieces of fish fossils from the Green River Formation, one from the Trout Creek Formation, and from locality "X". Hopefully in the next few years I can clean many of these pieces up and have a whole school of fish from Wyoming.

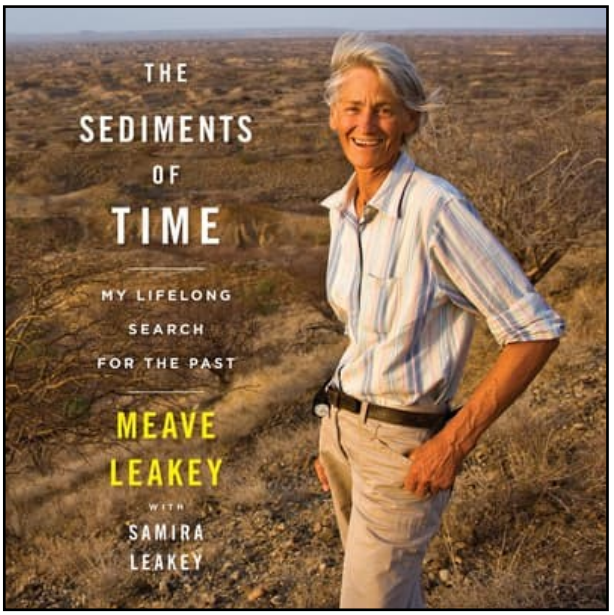
Osteolepis panderi, Scotland

Phareodus testis, Wyoming

A review of: Sediments of Time: My Lifelong Search for the Past

By Meave Leakey and Samira Leakey

By Gerry Lukos



I've often thought that if I were to be restricted to reading only one book genre, I would choose biographies. People's life stories can cover almost all types of non-fiction subjects. History -- of any era. Adventure and exploration. Humor. Hollywood gossip. Sports. Politics and current events. Just about anything you can think of, including paleoanthropology. No one is restricting my choice of book genres, but when I saw that ***Sediments of Time: My Lifelong Search for the Past*** was available in my library's ebook collection, I immediately added it to my wish list. I was very curious about the life and work of a Leakey who is not as well-known as her out-spoken in-laws (Louis and Mary) or husband (Richard) but who is an accomplished scientist in her own right.

Years ago I read *Ancestral Passions* by Virginia Morrell, which, according to the book blurb is a "biography of the 'First Family' of anthropology [that] reveals how their discoveries, collaborations, and rivalries contributed to our own knowledge of the origins of humankind." What has stayed with me from that earlier book was the rivalries, often quite bitter. *Sediments of Time* covers some of the same territory with many of the same players but with more emphasis on the collaborations and less on the rivalries. The author discusses some of the disagreements about which newly found specimens should be assigned to which genus and which should be considered holotypes. And she comments about how "galling" it was to have visited Don Johanson's camp at Hadar, Ethiopia, in 1974, just one day before his team found the fossils that would be named "Lucy," but that was pretty much the extent of any negativism about the success of a rival – or, actually, of a colleague.

More emphasis is on the different skill sets that people brought to the field sites the author and her teams explored in Kenya over several decades. And on the changing technologies that have added to their tool sets. I have to admit that I was not familiar with the names of most of the sites she has worked. Lothagam. Koobi Fora. Kanapoi. All in the vicinity of Lake Turkana, the one geographic name that resonated. I had trouble following descriptions of the landscape, but I expect that readers who have more practice scoping out potential fossil sites will appreciate the detail the author provides.
The parts of the book that I appreciated the most were the discussions about searching for and analyzing evidence of hominin evolution that may have contributed to making humans human. She focuses a lot on the evolution of manual dexterity, which was necessary for tool making but also, even before tools come into the picture, affected how and what early hominins might add to their diet. Of course, tracking changes to the hands of our earliest ancestors over time is frustratingly difficult given the paucity of fossils uncovered to date.

Another focus, which I had not read about previously, was on endurance running. Early bipedal hominins did not have the speed to outrun the prey they sought to include in their diet – neither do modern humans -- but they evolved to continue running longer than their prey even in the heat of the day. This ability contributed to the practice of persistence hunting, a technique that, the author notes, is still used in some contemporary traditional societies

This being a memoir, co-authored with Meave Leakey's daughter Samira, one can expect a share of personal biography, but there is, at least in my estimation, relatively little. So don't be put off if you are not into gossipy who-did-what-to-whom narratives, this is not one of them. ***The Sediments of Time: My Lifelong Search for the Past*** is a (geographically) narrow but deep exploration into our origins by someone who was especially well-positioned by temperament, education, experience and family connections.

Paleontology in the News

Compiled by E. Anne Sivers for February, 2022

UK cave holds fossils of Ice Age creatures
Fossils dating back between 30,000 and 60,000 years ago have been found in a cave in the UK, archaeologists say. The Ice Age fossils, which are undergoing further analysis by scientists, include those of a woolly mammoth, a woolly rhinoceros, a hyena and a reindeer.
https://www.bbc.com/news/uk-england-devon-60234766

Early life might have depended on hydrogen cyanide
A study scheduled to be published in The Astrophysical Journal suggests a toxic gas used in chemical weapons may have been a precursor to life on Earth. Researchers report hydrogen cyanide produces a component of RNA, which creates life.
https://www.livescience.com/first-life-on-earth-deadly-poisonous-gas?utm_source=SmartBrief&utm_medium=email&utm_campaign=0CFA9D5B-9285-47DF-A018-5ED9E96C0C0B&utm_content=ECFFBF14-47C7-46EE-8C54-2623D09A26E4&utm_term=e16254b7-1d2c-488f-a687-e79c531e357e

Ancient fish skull holds strange evidence of scavengers
Scavengers, likely worms, filled a 9 million-year-old fish skull with pellet-shaped feces that fossilized inside the brain-case. Researchers are sorting out which creatures likely left the trove of coprolite bead clusters, described in Research in Paleontology and Stratigraphy, but they say they were mostly created by invertebrates with soft bodies able to fit into the small space.
https://www.livescience.com/fossil-fish-brain-worm-poops?utm_source=SmartBrief&utm_medium=email&utm_campaign=0CFA9D5B-9285-47DF-A018-5ED9E96C0C0B&utm_content=BA1D99F2-13FE-4367-9680-FC1EF410C607&utm_term=e16254b7-1d2c-488f-a687-e79c531e357e

Fossil suggests angiosperms grew earlier than thought
The fossil of a flower bud unearthed in China may be the oldest such fossil yet found and suggests that angiosperms were around much earlier than previously thought. The fossil dates back about 164 million years and is of a bud, a fruit and a branch, detailed in Geological Society, London, Special Publications
https://www.sciencealert.com/researchers-have-found-the-oldest-flower-bud-fossil-yet

Fossil dating method points to earlier human emergence
Humans were likely around about 36,000 years earlier than previously thought, according to a new analysis detailed in Nature. Researchers calculated the age of fossils found in Africa using the single crystal argon-argon dating method, analyzing pumice and ash left behind by ancient volcanic eruptions upon which the fossils were resting.
https://www.inverse.com/science/ancient-man-timeline

Massive ichthyosaur fossil found in UK
A huge ichthyosaur fossil was uncovered during a landscaping project at the UK's Rutland Water Nature Reserve, according to paleontologists called in to handle the excavation. The sea reptile's fossil is well preserved and dates back about 180 million years.
https://www.cbsnews.com/news/sea-dragon-ichthyosaur-fossil-rutland-uk/

Array of fossils offers clues to early Australia
A wealth of fossils of insects, plants and fish has been found in New South Wales, giving researchers a peek at what ancient life was like in Australia. The well-preserved fossils date back about 16 million to 11 million years ago, during a time when the area was transitioning from a rain forest to a more desert-like environment.
https://www.sciencenews.org/article/fossils-ancient-australia-forest-insects-fish-plants

Continued on next page

Ancient sharks may have attacked each other
Marks on four fossils from sharks that lived between 23 million and 2.5 million years ago suggest sharks weren't averse to attacking each other, according to findings detailed in Palaeontologica Polonica. The rare vertebra fossils show tooth marks made by other sharks and one specimen still contains two embedded teeth.
https://www.livescience.com/rare-shark-fossils-reveal-ancient-attacks?utm_source=SmartBrief&utm_medium=email&utm_campaign=0CFA9D5B-9285-47DF-A018-5ED9E96C0C0B&utm_content=B33E615D-9D17-4A32-98C9-FF8F661D6ED6&utm_term=e16254b7-1d2c-488f-a687-e79c531e357e

200M-year-old tracks in Wales may belong to dinosaur
Weathered footprints found on a stretch of beach in Wales likely belong to a Triassic period dinosaur, according to findings reported in Geological Magazine. Each footprint is about 1.6 feet (49 centimeters) long and regularly spaced, and researchers say they could have been made by sauropodomorphs, which were bipedal herbivores.
https://www.cbsnews.com/news/200-million-year-old-dinosaur-footprints-discovered-beach-wales/

Massive arthropod fossil found in UK
The fossil remains of a huge arthropod -- the length of a car -- has been unearthed in the UK and is described in the Journal of the Geological Society. Arthropleura, a millipede ancestor, dates back about 326 million years and may have been one of the largest creatures of its time period, researchers say.
https://www.livescience.com/giant-ancient-millipedes-uk?utm_source=SmartBrief&utm_medium=email&utm_campaign=0CFA9D5B-9285-47DF-A018-5ED9E96C0C0B&utm_content=7FCE4EF3-8EF4-4A31-8BC4-96825A9B9014&utm_term=e16254b7-1d2c-488f-a687-e79c531e357e

Dinosaur egg holds well-preserved embryonic skeleton
The well-preserved unhatched skeleton of a oviraptorid dinosaur dating back roughly 70 million years has been found curled up inside its egg, giving scientists more insights into a dinosaur's life cycle, according to findings shared in iScience. "We were surprised to see this embryo beautifully preserved inside a dinosaur egg, lying in a bird-like posture," which had not been seen previously in non-avian dinosaurs, said lead study author Waisum Ma.
https://www.cnn.com/2021/12/21/asia/baby-dinosaur-inside-egg-scn/index.html

Fossilized tracks indicate speed of dinosaurs
Analysis of fossilized footprints suggests that the bipedal dinosaurs that made them about 120 million years ago moved at a pace of almost 28 miles per hour, according to findings detailed in Scientific Reports. The footprints belong to meat-eating theropods
https://apnews.com/article/science-europe-fossils-spain-f44057e70b36f0289ec80c0701156004

Trove of fossils found in Italian quarry
A wealth of fossils and other material from the Cretaceous Period has been found in a quarry in Italy, according to findings detailed in Scientific Reports. The site includes fossils of a type of hadrosaur called Tethyshadros insularis and researchers concluded the species lived about 80 million years ago, 10 million years earlier than previously thought.
https://gizmodo.com/paleontologists-hit-a-dinosaur-jackpot-in-italy-1848150642

Fossil skull belonged to new species of ancient reptile
A new species of ichthyosaur that lived 130 million years ago has been identified from a fossilized skull found in Colombia and is described in the Journal of Systemic Palaeontology. Kyhytysuka sachicarum boasted "an arsenal of teeth" to help it catch prey, according to Hans Larsson, one of the study's authors.
https://www.cnet.com/news/scientists-discover-monster-marine-reptile-fossil-with-arsenal-of-teeth/

Recommended Paleontology Videos

Opalised Fossils: The Paul Sedawie Collection—Australian Opal Centre, Lightning Ridge. “In this video we look at an incredible donation of more than 450 opalised fossils from opal fields around the world, generously donated to the Australian Opal Centre by Paul Sedawie.” Video by Curiosity Mine. https://www.youtube.com/watch?v=vARKPdCsxzk

Geology of Central Oregon: The Crooked River Caldera. “Rocks tell stories of time passing, climate change and cataclysms. Floods cascaded across the Pacific Northwest. Mountains have roared. Come explore the rich geologic history of our local landscape with retired USFS Geologist Carrie Gordon.” Video by Deschutes Public Library. https://www.youtube.com/watch?v=5GdSoB4Zjuo

Exposing an Ammonite

By Robert Rosé

Several years ago when I was documenting my collections in the Early Cretaceous Hudspeth Formation, I found an ammonite barely visible in a concretion. The series of images accompanying this article document my progress in exposing the ammonite. When you just start you never know what might turn up. As you can see the finished product is most of an ammonite, and well enough preserved to identify as to genus. This ammonite is named *Leconteites* sp. It is 1 3/4 inches in diameter.

The preparation on this specimen was done using Paleo Tools pneumatic tools made for paleontological preparation. I used a PaleoAro and Micro Jack 4 (https://www.paleotools.com/). The Hudspeth Formation crops out in the Mitchell area of Central Oregon.

"Ammonites were predatory, squidlike creatures that lived inside coil-shaped shells. Like other cephalopods, ammonites had sharp, beaklike jaws inside a ring of tentacles that extended from their shells to snare prey such as small fish and crustaceans. Some ammonites grew more than three feet (one meter) across—possible snack food for the giant mosasaur Tylosaurus." nationalgeographic.com

A Case of Mistaken Identity

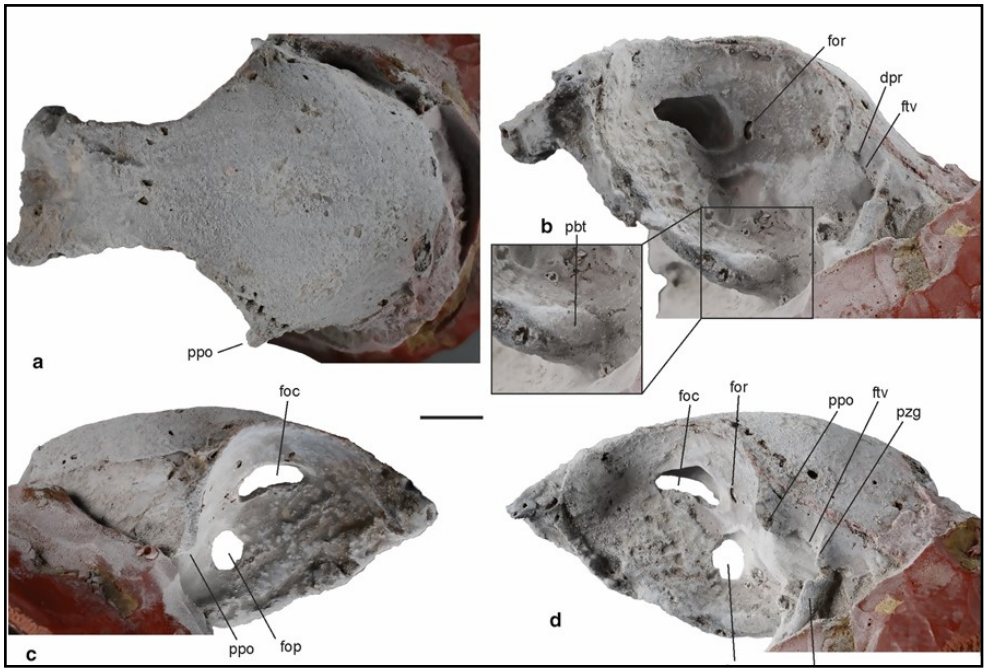
Update by Bruce Thiel

Terry Iversen thought it was a poorly-preserved crab in concretion—turns out to be the only 3-dimensional Paleogene galliform bird skull ever found.

Micro CT scans and a cranial endocast show important nerve and vein features of a land-fowl pheasant-sized bird.

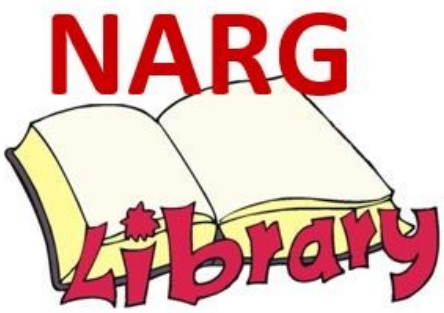
Originally in the NARG Fall 2017 Newsletter —now officially published in an open-access article in the Journal of Ornithology by amateur paleontologist, by NARG advisor and amateur paleontologist, James Goedert, et.al. https://link.springer.com/article/10.1007%2Fs10336-021-01935-4

Original concretion mistaken as poorly-preserved crab fossil



a–d Cranium of a galliform bird (SMF Av 666) from the latest Eocene or early Oligocene Jansen Creek Member of the Makah Formation, Washington State, USA, in **a** dorsal, **b** rostrolateral, **c** right lateral, and **d** left lateral view; the caudal portion of the specimen is attached to synthetic resin (red color).

Mayr, G., Goedert, J.L. & Rabenstein, R. Cranium of an Eocene/Oligocene pheasant-sized galliform bird from western North America, with the description of a vascular autapomorphy of the Galliformes. *J Ornithol* **163,** 315–326 (2022). https://doi.org/10.1007/s10336-021-01935-4



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 were due January 1, 2022.

Individual Membership	= $25
Family Membership	= $40
Student Membership	= $10

You may pay for your membership by:

*** mailing a check 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/cgi-bin/webscr?cmd=_s-xclick&hosted_button_id=AXASMFKA8MZU4
Single Membership $25 https://www.paypal.com/cgi-bin/webscr?cmd=_s-xclick&hosted_button_id=438FVX4E6CTQY
Student Membership $10 https://www.paypal.com/cgi-bin/webscr?cmd=_s-xclick&hosted_button_id=9QCCT4D7FTFRU

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://orerockon.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:		
Lisa Schenk		**(503) 915-5911**
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**	
	Peg Johnson	
	Dan O'Loughlin	
FossilFest:	**Linda Harvey**	
	Dan O'Loughlin	
NARG Auction	**Linda Harvey**	
Portland Regional	**Dan O'Loughlin**	

NARG's Mission Statement

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