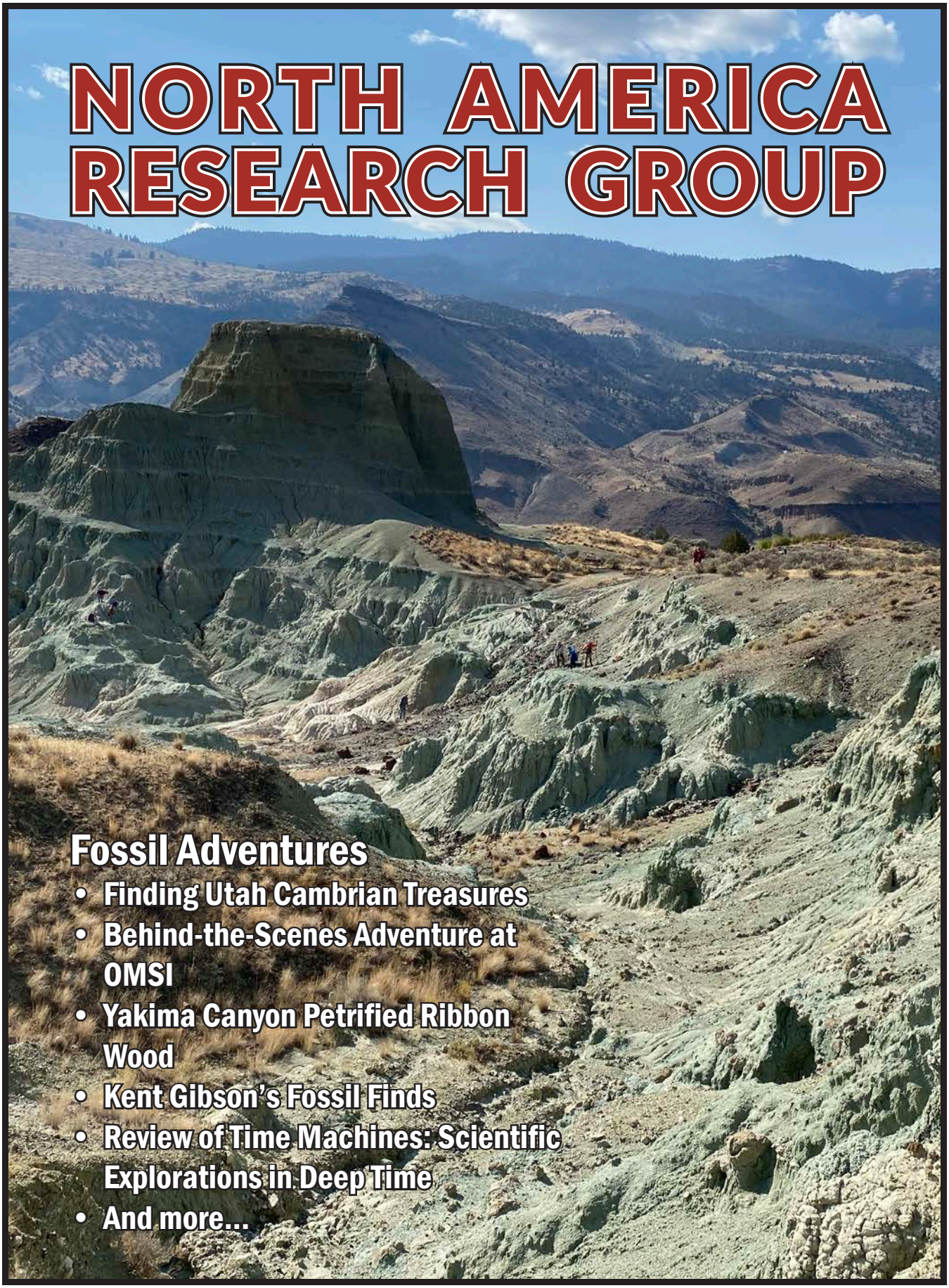
NORTH AMERICA RESEARCH GROUP



Fossil Adventures

- Finding Utah Cambrian Treasures
- Behind-the-Scenes Adventure at OMSI
- Yakima Canyon Petrified Ribbon Wood
- Kent Gibson's Fossil Finds
- Review of Time Machines: Scientific Explorations in Deep Time
- And more...

Vol 14 No 2 SPRING 2025

NORTH AMERICA RESEARCH GROUP
SPRING 2025
Vol 14 No 2

TABLE OF CONTENTS

Exploring Utah's Paleo Treasures, Part 2 Utah's Cambrian Treasures ... 3
A Behind-the-Scenes Adventure at OMSI ... 6
Fossil Wood Spotlight: Yakima Canyon Ribbon Wood ... 8
Northwest Fossil Fest: Trace Fossils & Other Oddities ... 9
Discovering the Past 80-65 MY: Book Review of Time Machines ... 10
Member Fossil Adventures ... 14
Kent Gibson's Fossil Finds ... 15
In Memoriam: Margaret (Peg) Johnson ... 16
John Day Fossil Beds 50th Anniversary ... 17
NARG Membership ... 18
NARG Library ... 18
NARG Calendar ... 19
NARG Officers and Committees ... 19

ON THE COVER

Volunteers search for vertebrate fossils within the Turtle Cove Member of the Oligocene John Day Formation. Foree, Sheep Rock Unit, John Day Fossil Beds National Monument, Grant County, Oregon. Photo credit: James Verheyden.

MISSION STATEMENT

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

EXPLORING UTAH'S PALEONTOLOGY TREASURES
PART 2: UTAH'S FAMED CAMBRIAN FOSSILS

By David Klubert & Jerry Dodson

In Part 1 of our 2024 field trip report (*see Winter 2025 NARG issue*) we discussed our work in the lower Cretaceous period at Lorrie's Quarry and our excavation of the Gastonia bonebed. Following our time in the Cedar Mountain Formation, we travelled 175 miles east to Delta, Utah, for the next segment of our adventure. We were looking to explore Utah's famed Cambrian fossils and to find specimens we could take with us for further study.

Brief History of Cambrian Fossil Collection and Study in Utah

The history of fossil collecting and study of Utah's Cambrian strata is interesting. The plentiful fossil deposits and surface finds were known to the residents for years. The Pahvant Utes who lived in that region often wore fossil trilobites as amulets. During an expedition in 1859, Capt. James Simpson camped in the Antelope Springs area. In the nearby Wheeler Amphitheater of the House Range, his civilian geologist, Henry Engelman, collected Cambrian fossils for study. Intermittently between 1884 through 1906, Charles D Walcott, then the Director of the United States Geological Survey before becoming the Secretary of the Smithsonian Institution, described other Cambrian areas in Utah including the House Range. He spent 1905 in the House Range collecting in the Wheeler and Marjum Formations. If his name sounds familiar it is likely because of his discovery of the incredible Burgess Shale site in the Canadian Rockies of British Columbia in 1909. That discovery occupied the rest of his scientific career.

Interest was renewed after 1950 when Utah became a training ground for Cambrian studies. It has been a favorite place for amateur collectors. Robert Harris of Delta obtained the first legal permit for commercial collecting in the 1960's. This became the U-DIG Site that was our destination.

Description of Cambrian Utah and stratigraphy of the House Range

During the Cambrian Period, Utah was part of the continent of Laurentia and sat just above the equator. Western Utah was covered by a shallow sea. Through the Late Cambrian rivers carried sediments eastward extending the sea floor and the environment of siltstone, sandstone and shale we encounter today. Anoxic conditions in some areas account for the preservation of soft body fossils. The stratigraphy of the House Range is shown in the following chart.

Stratigraphy of the House Range. Source: Hintze LF and Robison RA, Middle Cambrian Stratigraphy of the House, Wah Wah, and adjacent ranges in Western Utah Geological Society of American Bulletin 86(881-891)

Reaching the U-DIG Fossil Quarry

There are many trilobite bearing areas in Utah. Initially we did explore parts of the terrain outside Delta on our own. We ended up in the Antelope Springs area. The scenery was amazing: mountains thrusting up from the Basin floor and wide expanses of desert populated with antelope. However, being totally unfamiliar with the location we decided that our odds were much better with a known quantity, and the quarry was our best bet.

Our destination in Western Utah was the U-DIG Fossil quarry. The quarry is in the Wheeler Amphitheatre of the House Range. This was about 50 miles from Delta. Beware the last 20 miles is on a desert gravel road. There are no services nearby though the road itself was well maintained when we were there.

Approach to the quarry (top & bottom).

Digging for fossils

The quarry has made it very easy to locate the exact rock layer to explore. They strip off the topmost layers to expose the fossiliferous shale. The staff also is very informative and helpful. The quarry provides all the tools necessary. The Wheeler shale is easily split.

The most common trilobites are generally easy to liberate from the matrix because a calcite cover has formed over their carapaces. Be sure to look at both side of any shale that you split and on the ground for trilobites that have fallen out or discarded by other collectors.

The Wheeler and Marjum Fm are known to contain soft-body fossils typical of the Burgess Shale though they are less common here.

Photo showing shale layer where we worked.

Certain sections of these formations qualify them as Konservat-Lagerstätten (conservation Lagerstätten) because of the extraordinary preservation of these life forms, especially the soft parts.

Studies of the taphonomy of the Wheeler Shale show that where soft-bodied organisms are present trilobites are generally not and vice versa. So *Elrathia* trilobite laden fossils and those with soft part preservation are mutually exclusive.

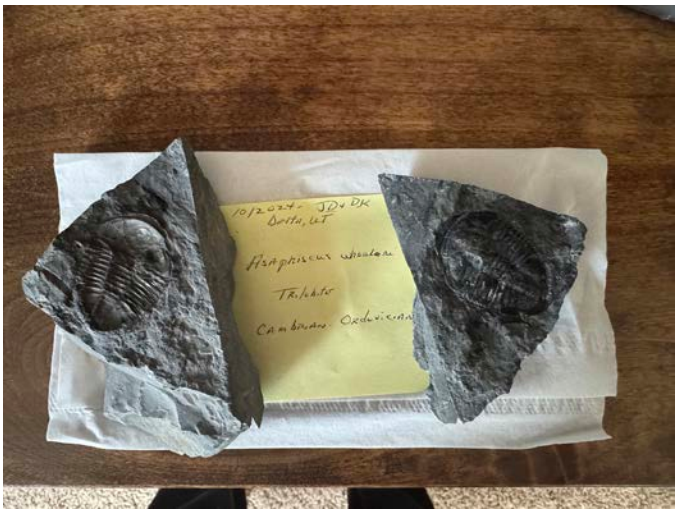
The most common specimens in the area where we were searching are listed below. An excellent resource for Utah's Cambrian fossils is available from the Utah Geological Survey.

Elrathia kingii
Asaphiscus wheeleri
Ignaostus interstrictus formerly *Peronopsis interstricta*
Bolspidella housensis
Olenoides nevadensis
Altiocculus harrisi – rare
Margaretia dorus – green algae
Phyllocarida – crustaceans
Brachiopods

References

A new hypothesis for organic preservation of Burgess Shale taxa in the middle Cambrian Wheeler Formation, House Range, Utah. Gaines RR, et al., Palaeogeography, Palaeoclimatology, Palaeoecology 220. 2005. 193 – 25. https://trilobyte.ucr.edu/sites/default/files/2020-07/gaines_et_2005.pdf

Exceptional Cambrian fossils from Utah: a window into the age of trilobites. RA Robison, LE Babcock, VG Gunther - 2015 – Miscellaneous Publication 15-1. Utah Geological Survey. https://geology.utah.gov/exceptional-cambrian-fossils-from-utah-a-window-into-the-age-of-trilobites/



Some examples of our fossil findings (top, middle, bottom).

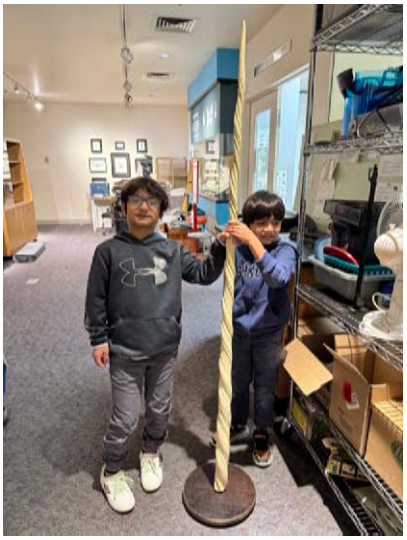
A Behind-the-Scenes Adventure at OMSI

By Tara Baker

At last November's NARG Holiday Potluck and Auction, I was thrilled to win a special experience: a behind-the-scenes tour of the Oregon Museum of Science and Industry (OMSI) with longtime volunteer Greg Carr. Greg, along with other members of NARG, has volunteered in the museum's Paleontology Lab for years. His enthusiasm for fossil preparation and storytelling—especially with kids—is infectious.

On January 4, 2025, I met Greg at the OMSI lobby with my two godsons: Theo, age 9, and Tad, age 6. From the start, Greg treated us to a true insider's tour. He led us through the back corridors, explaining how the museum receives large exhibits via the loading dock. We peeked into the design room, where parts of future exhibits are assembled. The boys were especially excited to ride in the industrial freight elevator—a no-frills lift with exposed concrete and electrical wiring that made it feel like a hidden passage.

Upstairs, one hallway was lined with large storage cabinets packed with older specimens and teaching materials. Greg explained that every inch of space is used—OMSI is bursting at the seams with scientific treasures. In one of the storage rooms, we stumbled upon a 7-foot narwhal tusk resting on a stand. The boys couldn't stop touching the smooth surface and marveled aloud at its size and mystery.



Next to it stood a fully articulated cave bear skeleton from the Clarno Formation, surrounded by retired poster boards from past Sustainability and National Park exhibits. The walls were decorated with detailed insect art.

We continued on through the biology department's backrooms, where live insects and small vertebrates are bred for exhibit. Terrariums lined the shelves, and the boys were fascinated by the walking stick insects and tiny frogs.

Finally, we entered the Paleontology Lab through a back entrance. Here, Tad and Theo got to see an enormous fossilized turtle shell, carefully reassembled from fragments. They examined triceratops bones in plaster casts, as well as dolphin vertebrae and ribs collected from the Oregon Coast by NARG's own Kent Gibson.

While museum visitors observed fossils from the public side of the lab, we were on the working side of the counter. Greg couldn't resist sharing his knowledge—he demonstrated how vertebrae from an extinct mammal could be compared to bones of modern species to learn about their biology and lifestyle. He even invited Tad to help, handing him modern vertebrae to show to other visiting kids.

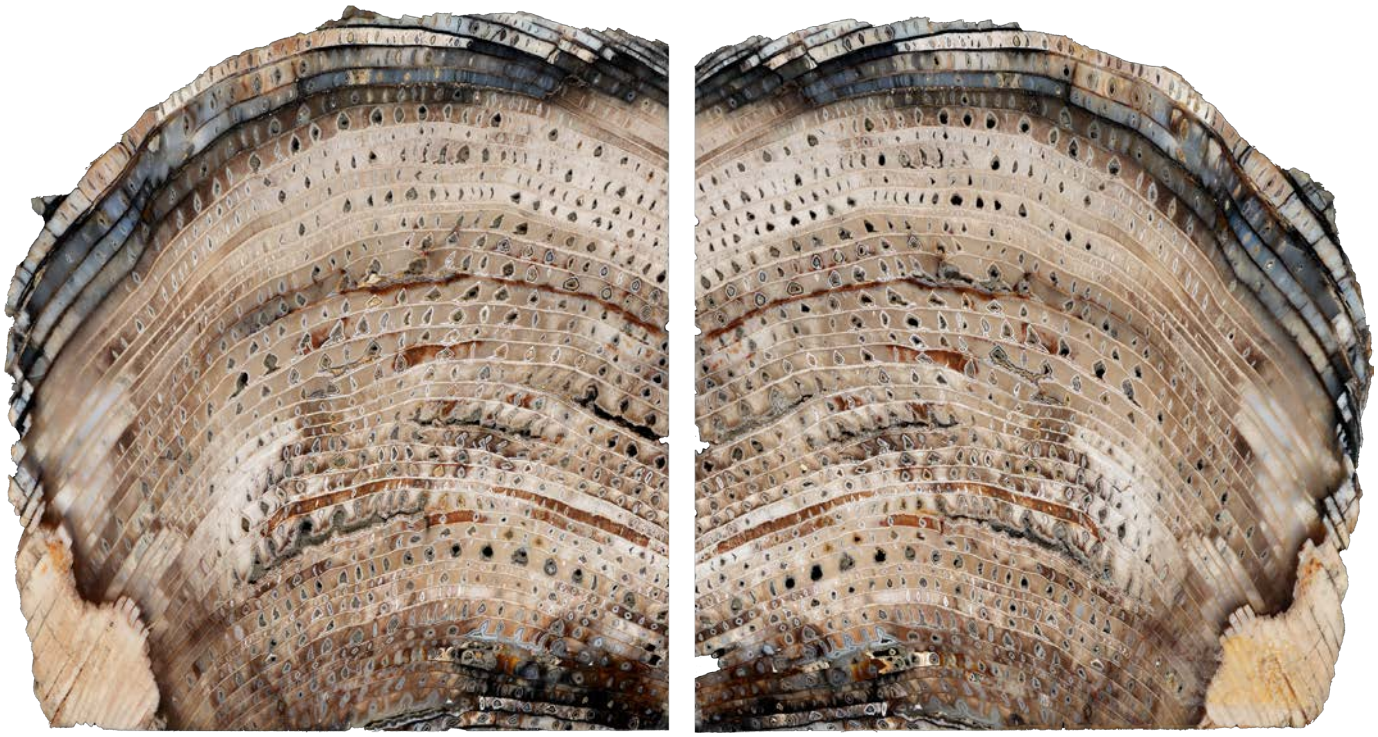
The learning didn't stop there. Greg showed Theo and Tad how to use an air scribe—a vibrating tool that removes rock from fossils. Though the boys had used them before at Fossil Fest and in my garage, they were mesmerized, especially Tad, who was more focused than I've ever seen him (yes, even more than when he's on YouTube!). Watching them learn by doing—hands-on and fully engaged—was a joy.

I'm incredibly grateful to Greg for giving us this memorable tour. The boys learned so much without even realizing it—that's the magic of a museum. It invites us to see, touch, and interact with science in ways that a classroom or a screen simply can't match.

Winning this auction item was such a gift, and I'm already looking forward to future adventures with my fellow NARG members.

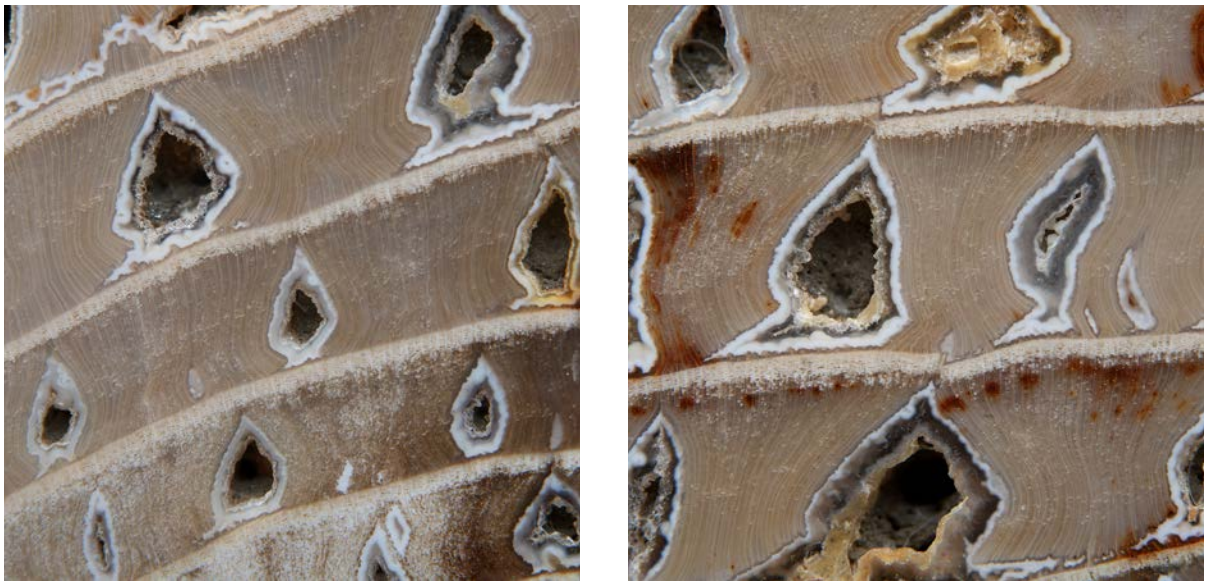
FOSSIL WOOD SPOTLIGHT: YAKIMA CANYON RIBBON WOOD

By James Verheyden



Cypress (*Taxodium*), Dry Creek Flow, Sentinel Bluffs Unit, Grande Ronde Basalts, Miocene, Yakima Canyon, Washington.

Some specimens of *Taxodium* from Yakima Canyon contain small crystal-lined cavities, known to local collectors as 'ribbon wood.' These features likely formed from dry rot while the tree was still standing.



NORTHWEST FOSSIL FEST
TRACE FOSSILS & OTHER ODDITIES

Saturday, August 2, 2025

Presented by the North America Research Group

Join us for the Northwest Fossil Fest!
Presented by the North America Research Group

- Saturday, August 2, 2025
- 10:00 AM – 4:00 PM
- Tualatin Heritage Center
  8700 SW Sweek Drive, Tualatin
- Free Admission. All Ages Welcome!

This year's theme is "Trace Fossils and Other Oddities." It will be a celebration of the strange clues ancient creatures left behind. From mysterious footprints to unusual fossil formations, there's so much to explore and learn!

What to Expect:
• Fossil exhibits and displays
• Hands-on activities and games for all ages
• FREE fossils for kids (while supplies last)
• Live fossil preparation demonstrations
• Expert talks on paleontology topics
• Fossil identification – bring your own fossils!

Whether you're a curious beginner or a seasoned enthusiast, this is a fun, educational day you won't want to miss.

Last year, over 400 people attended! Come be part of this year's excitement!

Admission is free, and everyone is welcome. Bring your family, bring your fossils, and bring your curiosity!

DISCOVERING THE PAST 80-65 MILLION YEARS AGO

A REVIEW OF TIME MACHINES: SCIENTIFIC EXPLORATIONS IN DEEP TIME

By Harold Hines, Jr.

Peter D. Ward, Time Machines: Scientific Explorations in Deep Time (New York: Corpernicus, 1998)

Peter D. Ward, a paleontologist at the University of Washington, Seattle, specializes in mass extinctions. And he is the author of numerous popular science works, which are "remarkably lucid presentation[s] of a complex subject… reminiscent of Stephen Jay Gould's books" (jacket).

Indeed, Ward is a remarkably gifted writer: in clear, concise, often colorful, insightful prose, he elucidates complex scientific subjects and their historical development. In particular, he focuses on paleontological field work, geological landscapes, and key figures in the history of paleontology.

Time Machines is a loosely connected series of essays, all of which have some connection to the upper Cretaceous Nanaimo Group strata in the Vancouver Island, British Columbia, regions, and particularly the rocks of Sucia Island. As a young graduate student, Ward had intended to study fossil whales. Then a chance meeting led to a gift of an enormous collection off fossils, mostly ammonites, including fine examples from Sucia Island. Initially, now focused on Sucia Island, young Ward thought that discovering the age of the sediments where the Sucia specimens had been collected would be easy. Wrong! He would spend the next three decades figuring that out, as well as much more about the region's geology and ancient inhabitants.

Chapter 1: "Fossils and the Birth of the Geological Time Scale"

An early lesson, learned the hard way, by Ward, was the law of superposition of strata (time units labeled stages and zones). "Higher [strata] meant younger, lower meant older, and fossils found at the same level were about the same age" (p. 12). Ward's instructor in stratigraphy repeatedly stressed, do not just collect fossils, but first describe the types of rocks, measure the strata's thickness, then collect fossils, recording their precise position in the strata. Once Ward mapped the strata and noted each

strata's type of ammonite, he concluded that the specimens could establish the "correct succession of rocks" (p. 26). Especially useful was that each species of ammonite, in particular of *Baculites* ammonites, (common on Sucia), "lasted on earth a short time…thus they are among the best of all time markers…[and] they can allow precise correlation between distinct rock assemblages" (p. 36). But only some types of sedimentary rocks could be dated by their associated fossils, and other types of rocks (igneous and most metamorphic rocks) lacked fossils. Some additional means of dating rocks would be needed.

Chapter 2: "Radiometric Clocks"

The rate of radioactive decay (for example potassium to argon K/Ar), as measured by a mass spectrograph, can be used to date rocks in volcanic rocks. But the majority of sedimentary rocks which contain most fossils cannot be so dated, unless "ashes or lava flows can be found interbedded with ancient sedimentary rocks" (p. 41). The key is the presence of "bentonite, a thin orange layer of lithified volcanic ash found in sedimentary rocks" (p. 41). Unfortunately, interbedded lava flows in sedimentary rocks are "relatively rare" (p. 41). This problem, for Sucia Island, was further compounded, since the type of fossils found elsewhere that had been correlated with radiometric dating were entirely missing.

Chapter 3: "Magnetic Clocks"

"The age of Cretaceous on the western margins of the North American continents was decoded by using the earth's magnetic field" (p. 43). Earth's magnetic poles wander, even reverse polarity, although not at regular intervals. One key reverse is known as "the first reversal after the Cretaceous long normal" (p. 49), when "the earth's magnetic field was stuck in one direction" (p. 61). But for an accurate reading, the sampled rocks must not have been reheated: "If the rocks had been reheated enough, the tiny magnetic rods of magnetite [embedded "in volcanic and in some sedimentary rocks" (p.53)] that had so faithfully recorded the ancient magnetic field present at their consolidation…would have reoriented themselves to the direction of the earth's magnetic field at the time of reheating" (p. 63). Luckily, despite reheating of the Cretaceous-aged strata in the Vancouver Island region, a reliable paleomagnetic record elsewhere when combined with the particular ammonite species found on Sucia Island, and in France (with its paleomagnetic record) produced a probable age of relevant Sucia Island strata between 81 to 79 million years ago (see p. 69).

Chapter 4: "Baja British Columbia"

Ward wondered, was Baja California "sedimentary strata identical [by "coincidence? Or continental drift? (p. 27)] to "the green fossiliferous shale exposed on Sucia, Hornby, and the other islands of the Vancouver Island region" (p. 76)? Yes! A paleomagnetic record can "tell you the ancient latitude of the rocks… sampled" (p. 58). And samples from Baja and Horby and Texada Island produced identical records. Both were 25 degrees North latitude when deposited 80-70 million years ago. Sucia and other nearby islands had slid northward along the San Andreas fault!

Chapter 5: "Ancient Environments and the Level of the Sea"

Changes in sea level may be caused by "long-term changes in the ocean basins. These changes, called eustatic sea level changes, take

place over time scales measured in thousands of years. Eustatic changes appear to be caused by the same processes that bring about continental drift" (p. 116-117). Five such changes are observable in the Late Cretaceous rocks in the Vancouver region, in the succession of limestone and shale sedimentary rocks: "Limestone and shale: a dance of ancient rock, one telling of a deepening sea, the other of dropping sea level" (p. 123). Correlating particular ammonite species with different sedimentary rocks is the basis of yet another deep time clock.

Chapter 6: "The Bite of a Mosasaur"

With Chapter 6, the book's focus switches from time machines to the book's subtitle, "Scientific Explorations," i.e., other types of scientific explorations.

A mosasaur skeleton was discovered in the Vancouver region. At many localities, ammonite shells with numerous circular holes have been discovered. These holes seemed to "match the size and shape of mosasaur teeth" (p. 113). Were these holes evidence of mosasaur predation? Initially, the consensus was, yes. But ammonite shells' pattern of holes rarely resembled "a row of biting teeth arranged along a linear jaw" (p. 140). And experiments applying pressure to nautilus shells (very close approximation to ammonite shells) produced cracked shells, not shells with holes. Thus, Ward, concludes that the holes were most likely produced by limpets, not mosasaurs!

Chapter 7: "Virtual Ammonites"

Ammonite shells generally become more complex over time. Why? Several theories failed to provide a satisfactory reason. Virtual ammonites were created using computers. Then, these reconstructed ammonites were subjected to "various computer-simulated pressures, stresses, and strains" (p. 150). Unexpectedly, "increasingly complex sutures led to weaker" (p. 151), not stronger, shells. When fossil ammonites were sectioned (cut in half), septa over time did not become stronger, rather they became thinner. Then, computer application of finite element analysis ["subdividing complex structures into small elements and then monitoring forces that act at junctures, or nodes, of each of these elements," (p. 164)], was applied. This revealed that ammonites had probably abandoned a septa design permitting greater shell strength, for one which allowed for habitation at greater depths. Correct? Study of living nautilus provided a probable answer: still-living nautiluses with more complex sutures are able to refill chambers quickly and thus escape predators, escaping to greater depths. Probably ancient ammonites did as well, but Ward concludes, that while this is likely, it's still not certain.

Chapter 8: "The Ancestry of the Nautilus"

Combining multiple lines of analysis, and especially genetics and comparative anatomy, led Ward and an associate, Bruce Saunders, to a surprising conclusion. There are not hundreds of Nautilus species, but rather only three (and perhaps four). And *Nautilus pompilius* is a living fossil.

Chapter 9: "Of Inoceramids and Isotopes"

Inoceramids are a type of Late Cretaceous giant clams with shells only 1/8 inch thick. "These clams may have been the most abundant type of life on earth in the Cretaceous" (p. 198); and they are found in the Nanaimo group formations of the Canadian Gulf Island north of Sucia Island, as well as on Sucia Island. Inoceramid shells

were subjected to isotopic analyses, which can reveal the temperature of the water the clams lived in. The warmer the temperatures that the clam shells formed in, the less Oxygen-18 there is in the shells. Inoceramid shells collected from shallow water and from very deep-water deposits yield similar temperatures, ca. 95° F! The Late Cretaceous ocean was a very warm period, but how to account for similar temperatures regardless of depth? Different environments can produce similar results: hydrothermal vents in the deeper sea and cold seeps associated with volcanic areas "are [both] characterized by localized concentrations of hydrogen sulfide and/or methane-rich fluid that are generated and then expelled on the sea floor" (p. 202). And the inoceramid clams "presumably all [were] living on methane" (p. 204). Furthermore, Ward concludes that not only was the Late Cretaceous ocean very warm, but the ocean was chemically distinct from today's ocean.

Chapter 10: "Cretaceous Park"

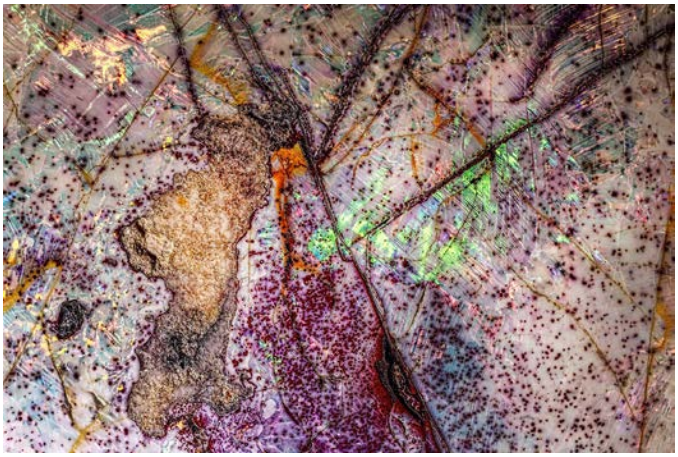
Ward uses science fiction to construct a past world populated by the species and environments explored in the previous 9 chapters: he conducts a thought experiment to produce "the best guess I can make, on the basis of the evidence, about what a time-travel expedition to the locality of Sucia Island in the late Mesozoic World would encounter" (p. 208).

While the individual chapters are essentially independent essays, all of which in some way touch on Sucia Island, or ammonites in the Late Cretaceous, each chapter is a delight of popular science writing. Highly recommended.

Should you find this collection, which will be donated to our library, interesting; I would also recommend Ward's Gorgon: The Monsters

MEMBER
FOSSIL ADVENTURES

Above: I fly back to the Midwest every Summer and often have a layover at O'Hare International Airport. I know I am close to "home" when I see the giant Brachiosaurus skeleton in front of the Field Museum kiosk between Terminals 1 and 2. —Tara Baker



Right: Macrophotography of petrified wood vascular structure by Joe Cantrell.

KENT GIBSON'S FOSSIL FINDS

Kent Gibson's homemade fossil carrier. Photo by Kent Gibson.

A 600 pound boulder with exposed fossil bone. Photo by Kent Gibson.

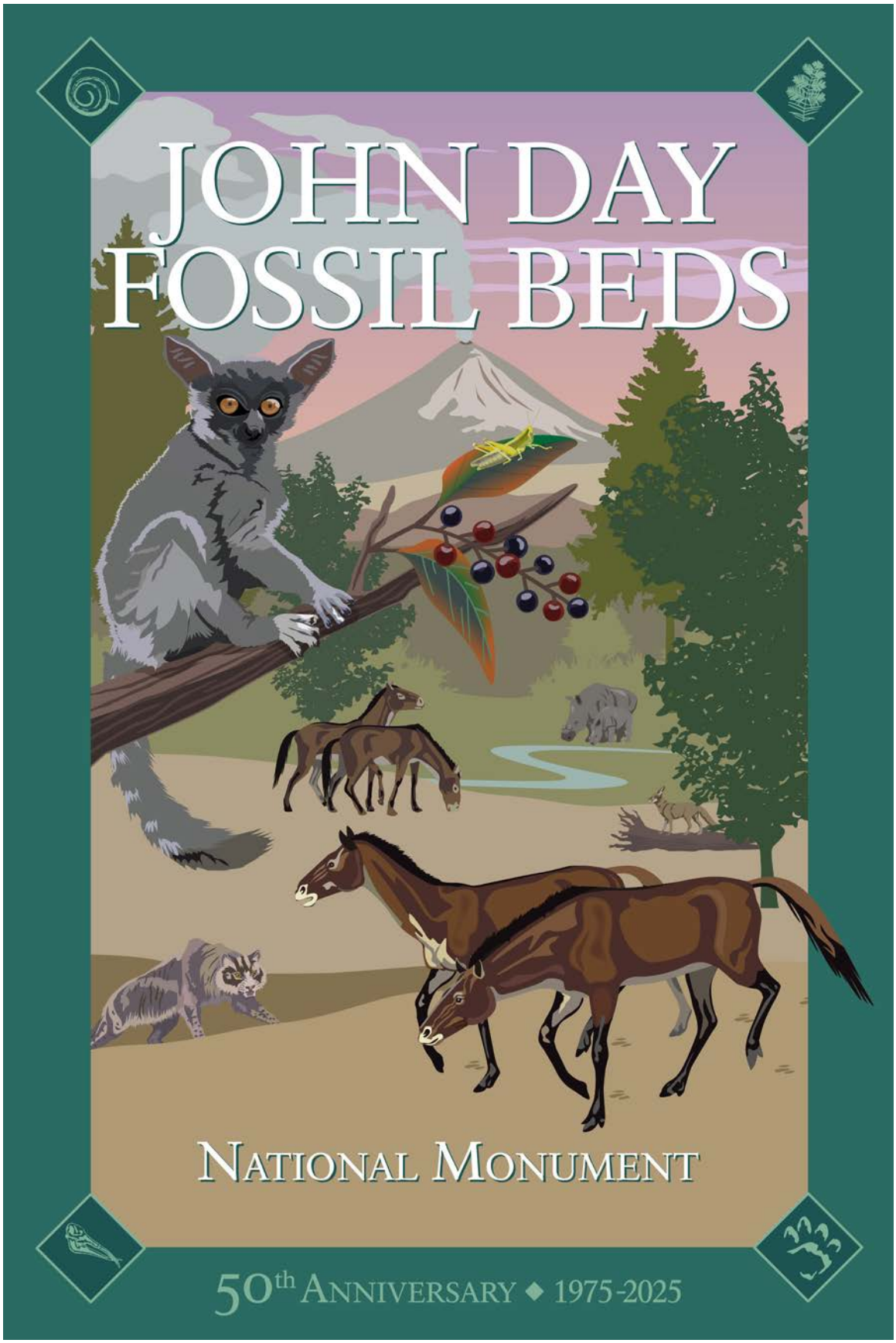
Kent's "small" display of fossil bones on display at the Langlois rock show. Photo by Kent Gibson.

Kent posing next to a 600 pound boulder he recovered off the beach with the help of Weylin Charland.

IN MEMORIAM
MARGARET (PEG) JOHNSON

Peg holding an exceptionally well-preserved crab she found in the Keasey Formation. The crab was prepared by Bruce Thiel and is currently on display at the Rice Museum of NW Rocks and Minerals until April 2026, and will eventually go to The Smithsonian.

Long-time NARG member Margaret (Peg) Johnson peacefully passed surrounded by family on June 16, 2026, Peg bravely fought cancer for more than five years. Peg and her husband Rick joined NARG within the first year it was formed and Peg served as treasurer for the club. She attended nearly every meeting and fossil fest (driving down from Washington) and many of our crab camps and field trips for about fifteen years (until she was diagnosed). Peg also edited the newsletter for a number of years and was the go-to person for information, contacts and club events. Because Peg was a retired school teacher she was a natural leader in keeping us all on-track. Many of us had deep friendships with Peg and Rick and we offer our condolences to the family.


JOHN DAY
FOSSIL BEDS
NATIONAL MONUMENT
50th ANNIVERSARY ◆ 1975-2025

NARG MEMBERSHIP

Annual NARG membership dues are due January 1st of each year.

Membership Types

Individual	$25
Family	$40
Student	$10

New Members: Please fill out and mail an application to the below address

Pay your membership dues with one of two convenient methods:

Mail a check to:
NARG (North America Research Group)
Membership
PO Box 233
Tualatin, OR 97062

Pay via credit card with PayPal:
Family Membership
Individual Membership
Student Membership

NARG LIBRARY

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

NEWSLETTER ARTICLE SUBMISSION

Interested in submitting an article for the newsletter? We are looking for your articles, fossil collecting reports, book reviews, photos of your recent finds, and more. Send your contribution to james@verheydengeological.com for inclusion in the NARG newsletter. Make sure to attach photos separately in the email and do not include them in your manuscript.

FOSSIL CALENDAR

July 2	NARG Monthly Meeting: New Modern Albatross from the Pacific NW
July 13	Mist Bluff Field Trip: Crinoids & Echinoderms
Aug 2	Northwest FossilFest: Trace Fossils and Other Oddities
Aug 6	NARG Monthly Meeting: John Day Fossil Footprints
Aug 22-25	B.C. Paleontology Symposium
Sept 3	NARG Monthly Meeting: TBD
Sept 13	Vernonia/Jewell Field Trip: Crab Concretions
Oct 3-5	PRGMS 44th Show of Gems, Minerals, & Fossils, Wingspan Center, Hillsboro

NARG meetings typically occur on the first Wednesday of the month at the Tualatin Heritage Center at 7pm Pacific Time. Check the website nargpaleo.org and Facebook for meeting updates or meeting day variances.

For a listing of local gem and mineral shows, check out:
https://mineralcouncil.wordpress.com/ https://orerockon.com/

NARG OFFICERS

President:	Aaron Currier	paleorun200@gmail.com
Vice President:	Tara Baker	tbakeror@yahoo.com
Secretary:	Greg Carr	greg.fossil.hunter@gmail.com
Treasurer:	Megan Gagner	meganmonagagner@gmail.com

Directors:

Lisa Schenk	mountaingunthunder@gmail.com
Robert Rosé	bobrosay@gmail.com
Debbie Shannon	dsbshann@gmail.com
Dan O'Loughlin	danolough@aol.com
Tami Smith	dtm.smith3@frontier.com
James Verheyden	james@verheydengeological.com

Honorary Directors:

MacKenzie Smith
Michael Santino
Larry Purchase

Committees:

Newsletter:	James Verheyden (coordinator) Dan O'Loughlin, Peg Johnson, Tara Baker, Bruce Thiel, Robert Rosé (proof-readers)
FossilFest:	Tara Baker Debbie Shannon
Holiday Party:	Tara Baker Debbie Shannon
Portland Regional:	Debbie Shannon Tara Baker Dan O'Loughlin