

Meat-eating dinosaur comes alive in imaginations

Thousands of enthusiastic children, including me, are celebrating news this week that a dinosaur has been discovered in Washington state. For dino-fans, this is akin to a preteen learning Taylor Swift moved into a house down the block.

Spotted by chance in 2012 on Sucia Island in San Juan County by two visiting research associates from the University of Washington's Burke Museum — they were looking for something else entirely — the fossil bone came from a theropod dinosaur, “the group of two-legged, meat-eating dinosaurs that includes *Velociraptor*, *Tyrannosaurus rex* and modern birds.” See tinyurl.com/WashingtonDino for the Burke's write-up.



Matt Winters

This particular animal lived and died about 80 million years ago when dinosaurs were as dominant on earth as we are today. Supremely successful, they still had 14.5 million years to go before a six-mile-long space rock speared into the ground where Mexico's Yucatan Peninsula now sits.

So how is it that we aren't all tripping over dinosaur fossils? Washington and Oregon were under the ocean then. We have oodles and oodles of ancient seashells, but little evidence of large animals from tens of millions of years ago. Soon after its death, the individual represented by the Burke fossil might have been swept by waves or carried by scavengers into offshore sediments, which eventually solidified around its bones. Since then, the inexorable and ongoing repositioning of our planet's crustal plates carried the land now comprising the San Juan Islands to where they are today.

Washington becomes the 37th state where dinosaurs have been identified. Oregon's status is unclear. The John Day Fossil Beds National Monument, the state's best known pre-human site, dates from *only* 45 million years ago, long after the dinosaurs faced their armageddon. But in 1995, OPB reported excavation of a possible “duck-billed” dinosaur, a hadrosaurid, at Cape Sebastian in the southwestern corner of the state. A paleontologist named David Taylor collected the fossil but apparently never prepared a formal scientific description of it for academic publication. This specimen's whereabouts are unknown.



Dinosaurs were my go-to topic for kindergarten smalltalk. One of my friends recalled decades later that members of our gang were impressed with how pretty the ladies were in a Playboy magazine he purloined from his dad's collection and brought for show-and-tell — taking no special notice that they were wearing fewer clothes than grown-up mommas usually wore. But we were all wild about dinosaurs and I could then rattle off their names better than I can today.

Growing up in Wyoming, having dinosaurs around was a familiar part of life, especially in a family headed by a semi-professional geologist. No trip to Laramie was complete without a visit to the Geological Museum and its life-size, copper-plated *T. rex*. On the way, we passed Como Bluff, where an entire cabin is constructed from fossil fragments blasted out of a nearby hill. In the late-19th century, competing collectors raced to recover some of the best dinosaur specimens known up until that time — taking many shortcuts and wasting examples that would be treasured if found today. (My former colleague Tom Rea details this intriguing story in “Bone Wars,” one of several books about the Como dinosaurs.)

While other 1960s families went to



A fossil fragment recovered from a seashore in San Juan County, Wash., sits beside a casting of a complete left thigh fossil from the same group of dinosaurs, which included *Tyrannosaurus rex*. Scientists were able to determine the complete femur from the specific animal represented by the fragment would have been slightly smaller than a full-sized *T. rex*.



Penny Higgins photo

The bone cabin at Como Bluff, constructed from dinosaur fossil fragments from a famous nearby deposit, is a Wyoming landmark.



Photo courtesy of the Burke Museum

The shore where the fossil was found is on the southwest tip of Sucia Island State Park, part of the San Juan Islands in northwest Washington state.

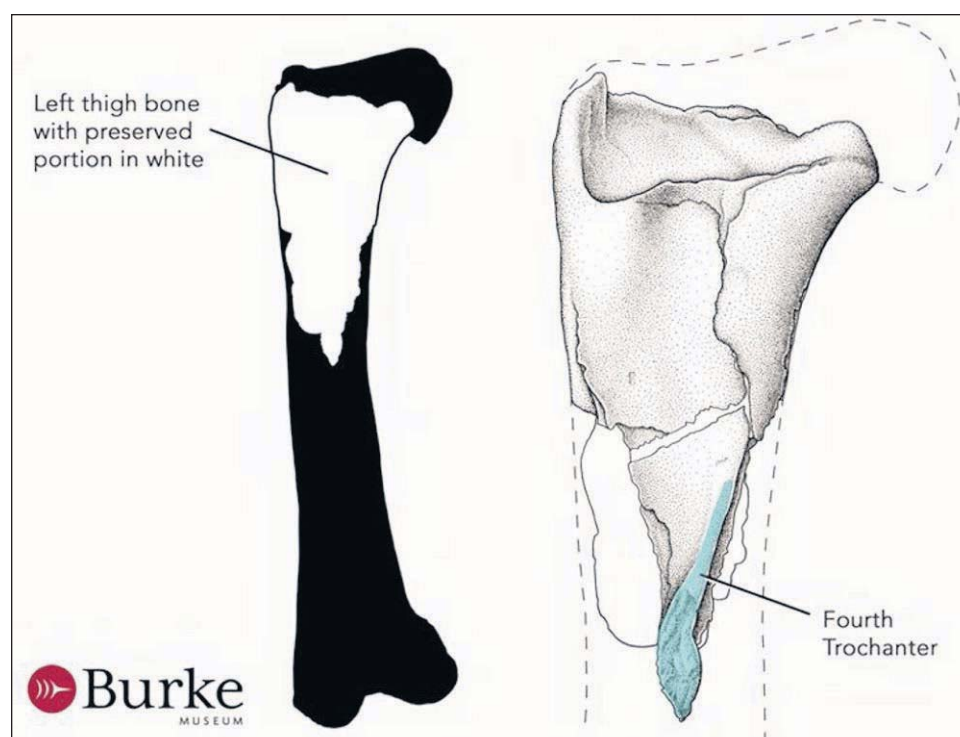
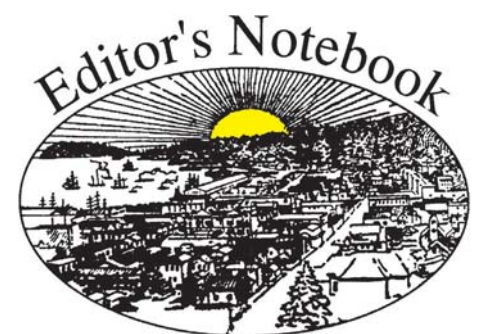


Illustration courtesy of PLOS ONE, modified by the Burke Museum

The first dinosaur fossil described from Washington state is a portion of the femur (thigh bone) from a theropod dinosaur. The detailed illustration shows the fourth trochanter highlighted in blue.

church and watched football on Sundays, we headed for the mountains and desert to hunt fossils, crystals and arrowheads

— after picnicking on fried chicken. Little did we know we were eating the distant descendants of the gigantic beasts whose



The John Day Fossil Beds National Monument dates from only 45 million years ago.

bones-turned-to-stone and gastroliths we occasionally found.

Like chickens and other domestic poultry, plant-eating dinosaurs swallowed rocks which they held in their gizzards to help grind and digest coarse leaves and stems. It's believed that dinosaurs vomited them up when they became too smooth to be effective, as birds do. In a desert setting, these gastroliths stand out like Easter eggs scattered on a beige carpet. We could usually count on finding a few — though it's possible some were just random glacial pebbles Dad said were dinosaur gizzard stones in order to give me a victory.



I only ever found a couple of unambiguous fossilized dinosaur bones, both in a small, odd-colored deposit eroding out of a hillside near what we used to call Johnny Lee's Corner. The best was a knuckle bone the size of a small cantaloupe that went astray somewhere along my migration to the Pacific Northwest coast. It sat on a shelf in my boyhood bedroom. Partly tinted vivid red by mineral deposits, I imagined it still surrounded by bright blood inside a living creature, perhaps hunting for a little mammal such as myself.

For me, these early experiences meant I never harbored illusions about the permanence or entitlement of humanity. We live in a world where the eons turn ocean bottoms into mountaintops, and pieces of mighty monsters become knickknacks for small boys. In a universe where nothing ever really goes to waste, the air we breathe and the canned peas we have for dinner contain uncountable millions of atoms that once were parts of *Velociraptors*. The persistence of life is as reassuring as it is humbling.

— MSW

Matt Winters, editor and publisher of the *Chinook Observer* and *Coast River Business Journal*, lives in Ilwaco, Wash., with his wife and daughter.



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