

Cataclysmically Power-Washed Out to Sea: Analyzing Svalbard Dinosaur Footprints, and an Offshore Plateosaurus Burial in the Norwegian North Sea's Snorre Oil Field Mudstone, Illustrating Genesis 7-8

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Speculated scenario of Svalbard Ornithopods' Last Day at the Beach

[picture image credit: *Science Nordic*, AD2016-02-01]

They that go down to the sea [yâm] in ships, who do business in great waters [mayîm rabbîm]; these see the works of the LORD, and His wonders in the deep [metsûlâh]. (Psalm 107:23-24)

When you think of Norway, and its geographic environs (including the Norwegian North Sea, or further north to Svalbard), **do you think of dinosaurs?** Probably not. Yet two paleontological finds indicate that dinosaurs – including Plateosaurus (as well as theropods and ornithopods) once roamed a warmer version of Norwegian shorelands, but those dinosaurs were catastrophically washed out to sea, by enormous land-scouring waterflow. But how?

Ironically, petroleum buried in the Gulf of Mexico's deep-sea sand formations may be a clue to this mystery, accordingly to geologist-paleontologist Dr. Tim Clarey, whose adventurous career has included dinosaur fossil digs, service as exploration geologist (for Chevron USA, Inc.), teaching as a professor (and geoscience department chair), authoring books on dinosaurs, and current work mapping out oceanic-sedimentation megasequences that occurred 4½ thousand years ago, during global flooding of Earth.

But, before explaining, a quick introduction (to those dinosaur tracks) is needed.



Deposit-filled, hardened dinosaur footprints at Spitsbergen, Svalbard, with map of prints

[picture image credit: *Science Nordic*, AD2016-02-01]

THREE-TOWED DINOSAUR TRACKS, PRESERVED AT SVALBARD

It is amazing to find any evidence of dinosaurs in the Svalbard archipelago, either fossil bones or trace fossils. Yet hardened footprints, a type of trace fossil, have been found at Svalbard's main island, Spitsbergen, in a sedimentary layer labeled as Lower Cretaceous (Barremian) "at Isfjorden consist[ing] of sandstones and interbeds consistent with an alluvial flood plain". The investigators conclude, from their study of the paleontological evidence, that Svalbard once had "a diverse dinosaur fauna", including theropods and ornithopods. [See Jørn H. Hurum, Jesper Milàn, Øyvind Hammer, Ivar Midtkandal, Hans Amundsen & Bjørn Sæther, "Tracking Polar Dinosaurs: New Finds from the Lower Cretaceous of Svalbard", *NORWEGIAN JOURNAL OF GEOLOGY*, 86:397-402 (2006).]

In 1960, the discovery of ornithopod dinosaur footprints from Svalbard was received as a sensation [as] the first indisputable evidence that dinosaurs had inhabited the polar latitudes. ... Later, in 1976, tracks of a medium-sized theropod were discovered at a second locality in the same formation at Kvalvågen, eastern Spitsbergen. ...

These two records [along] with a find from Kempendajay, Siberia, were isolated discoveries until the late 1980s and polar environments were not considered of further importance for dinosaur research.

However, this has since changed, and in the last 20 years, more than ten arctic areas have yielded both skeletal remains and footprints of dinosaurs, ranging from the Late Jurassic to Late Cretaceous [layers] in North America, Siberia and Svalbard ... demonstrating that the finds of dinosaurs at polar latitudes were not isolated phenomena.

[Quoting Jørn H. Hurum, Jesper Milàn, Øyvind Hammer, Ivar Midtkandal, Hans Amundsen & Bjørn Sæther, "Tracking Polar Dinosaurs: New Finds from the Lower Cretaceous of Svalbard", **NORWEGIAN JOURNAL OF GEOLOGY**, 86:397-402, 397 (2006).]



Paleontologists at Boltodden, Spitsbergen (Svalbard), during AD2014

[picture image credit: **Science Nordic**, AD2016-02-01]

This research was later re-analyzed as Jørn H. Hurum, Patrick S. Druckenmiller, Øyvind Hammer, Hans A. Nakrem & Snorre Olaussen, The Theropod that Wasn't: An Ornithopod Tracksite from the Helvetiafjellet Formation (Lower Cretaceous) of

Boltodden, Svalbard”, within **MESOZOIC BIOTAS OF SCANDINAVIA AND ITS ARCTIC TERRITORIES**, edited by B. P. Kear, J. Lindgren, J. H. Hurum, J. Miln, & V. Vajda (**GEOLOGICAL SOCIETY, LONDON, SPECIAL PUBLICATIONS**, 434:189-206 (January 2016), posted at <https://doi.org/10.1144/SP434.10> .



Dinosaur tracks in now-hardened rock at Svalbard, AD2016

[picture image credit: **Geological Society, London**, AD2016-01-06]

The abstract and conclusion of the AD2016 re-examination admits that the (preserved) dinosaur tracks escaped destruction-by-erosion **due to flooding** --- an important point that will be reconsidered below.

We re-examine a Lower Cretaceous dinosaur tracksite at Boltodden in the Kvalvågen area, on the east coast of Spitsbergen, Svalbard. The tracks are preserved in the Helvetiafjellet Formation (Barremian).

A sedimentological characterization of the site indicates that the tracks formed on a beach/margin of a lake or interdistributary bay, and were preserved by flooding. [*emphasis added*]

In addition to the two imprints already known from the site, we describe at least 34 additional, previously unrecognized pes and manus prints, including one trackway. Two pes [*walking on hind-paws*] morphotypes and one manus [*walking on fore-paws*] morphotype are recognized. Given the range of morphological variation and the presence of manus [*walking on fore-paws*] tracks, we reinterpret all the prints as being from an ornithopod [*i.e., bipedal-or-quadrupedal walking beast, like iguanodon-like dinosaurs*], rather than a theropod [*i.e., bipedal-only walking beast, like T. rex*], as previously described. . . .

The Barremian tracksite at Boltodden, Svalbard presents an important high-latitude dinosaur tracksite, which we reinterpret as made by [iguanodon-like] ornithopods rather than a theropod, as previously described. The ornithopod prints were formed while the animals walked along a lake margin or on a beach within an interdistributary bay. **Mud deposited from river flooding or raised water/sea level preserved the tracks.** [*emphasis added*]

[Quoting Jørn H. Hurum, Patrick S. Druckenmiller, Øyvind Hammer, Hans A. Nakrem & Snorre Olausen, The Theropod that Wasn't: An Ornithopod Tracksite from the Helvetiafjellet Formation (Lower Cretaceous) of Boltodden, Svalbard", **GEOLOGICAL SOCIETY, LONDON, SPECIAL PUBLICATIONS**, 434:189-206 (January 2016).]

The prints' claw-like appearance was explained away as "erosion". (This is quite interesting --- maybe this imprinted shape deserves more than a quickly dismissive conclusion that "claw" indentions are merely "erosion" impressions.)

Paleontologist Dr. Jørn Hurum and his team report, in their earlier report, how they used *in-situ* laser scanning to investigate the dinosaur tracks that they found on Spitsbergen. (Maybe the difficulty explains why more are *not* found.)

We constructed a simple laser profiler with a horizontal laser line that was projected obliquely onto the bedding plane and [*dinosaur*] tracks. The equipment consisted of a laser with a cylindrical lens and a digital camera with remote control, both mounted on an aluminum frame. ...

Because of the limited width [*of the rocky crevice*], the apparatus had to be moved laterally 14 times to cover the full length of the crevice. Each of the 14 strips was aligned manually using the computer. A total of 3,850 laser profiles were scanned and later converted to 3-D coordinates and triangulated using in-house software. Finally, the resulting polygonal 3D mesh was visualized on a Silicon Graphics workstation. ...

Additional footprints were also identified without laser scanning.

[Quoting Jørn H. Hurum, Jesper Milàn, Øyvind Hammer, Ivar Midtkandal, Hans Amundsen & Bjørn Sæther, “Tracking Polar Dinosaurs: New Finds from the Lower Cretaceous of Svalbard”, **NORWEGIAN JOURNAL OF GEOLOGY**, 86:397-402, at 397-398 (2006).] In other words, these dinosaur tracks played “hard to get”.



Dinosaur footprints at Boltodden, Spitsbergen (Svalbard), during AD2014

[picture image credit: **Science Nordic**, AD2016-02-01]

Also, as one expects from evolutionist paleontologists (like Dr. Jørn Hurum, who is faulted for his “*Ida*” exaggerations), this find was accompanied by a lot of “discussion”, i.e., speculation, inter-weaving outlandish assumptions (about unobserved dinosaur herd behaviors, as well as imaginary fairy-tale-like scenarios of scores-of-millions-of-years of “deep time”) that fail forensic evidence rules of real-world trial courts.



Ornithopod footprints at Spitsbergen (Svalbard), in rock (Svalbard Posten photo credit)

All of the proffered “deep time” etiological scenarios, for the geologically preserved shoreline track imprints, fail to explain **how** those tracks were preserved (i.e., by rapid waterborne sedimentary deposition of sand, mud, slurry, etc., that later hardened into rock) from the usual processes of erosion -- while the dinosaur corpses left no fossils there.

Eventually, Dr. Hurum and his team provide their summary conclusion.

The newly found ornithopod [*i.e., iguanadon-like dinosaur*] tracks from Festningen, Svalbard, demonstrate that previous finds of dinosaur footprints from the area were not isolated phenomena, and that dinosaur tracks occur at several stratigraphical levels [*as if catastrophic flooding/sedimentation occurred there, serially, close in time!*] within the [*sedimentary rock “pancakes”*] Lunde Formation, proving a spatial presence of dinosaurs in the area ... [*likely blending*] iguanadontians, basal euornithopods, nodosaurid ankylosaurians, brachiosaurids and various theropods.

[Quoting Jørn H. Hurum, Jesper Milàn, Øyvind Hammer, Ivar Midtkandal, Hans Amundsen & Bjørn Sæther, “Tracking Polar Dinosaurs: New Finds from the Lower

Cretaceous of Svalbard”, **NORWEGIAN JOURNAL OF GEOLOGY**, 86:397-402, at 402 (2006).]

What about those non-eroded (because quickly buried) footprints on the shoreland? One explanation is that the dinosaurs were suddenly washed out to sea, by a tsunami-like wave that dumped sedimentary slush atop their footprints, preserving their morphology as a trace fossil – proof that they once were there.



PLATEOSAURUS, as sketched by modern artist

(PHYS.ORG image credit, AD2006-04-24)

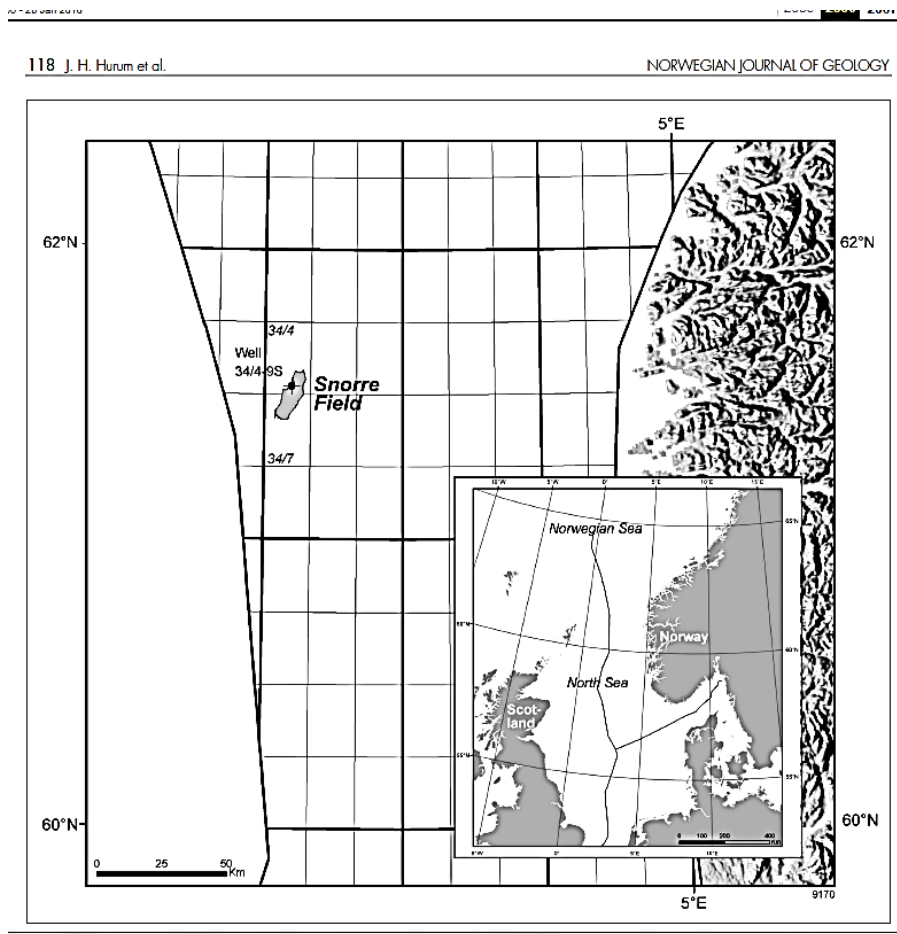
DINOSAUR BONE FOSSIL BURIED OFFSHORE, DEEP IN THE NORWEGIAN NORTH SEA

On rare occasions, near Norway, offshore drilling (for petroleum) has resulted in cores containing fragments of dinosaur bones, such as plesiosaurs or ichthyosaurs -- marine monsters that one would expect to find in the muddy depths of oceanic offshore waters. However, would you expect any recognizable bone fragments from a land dinosaur, about one-and-a-half miles deep, more than 70 miles away from shoreland? What scenario could explain that outcome?

The bone slice [*of what appears to be a Plateosaurus*] was discovered during the description of a core retrieved [*>70 miles from Norway's coastline!*] in February 1997 from well 34/4-9S in the north-western

part of the Snorre Field (61°30'45"N and 2°10'18"E). It occurs in a reddish-brown, mudstone interval referred to as the upper member of the Lunde Formation The mudstone is composed of dominantly compound and cumulative paleosols that formed in distal to fluvial channels in a flood-plain forming the uppermost part of the upper member of the Lunde Formation.... The paleosols are characterized by carbonate nodules, pedogenic mud aggregates and slickensides, root traces and mud cracks. The presence of root traces suggests that the flood-plain was covered with small trees and bushes, vegetation suitable for herbivorous animals living on the alluvial plain.

[Quoting Jørn Harald Hurum, Morten Bergan, Reidar Müller, Johan Petter Nystuen & Nicole Klein, "A Late Triassic Dinosaur Bone, Offshore Norway", **NORWEGIAN JOURNAL OF GEOLOGY**, 86:117-123 (2006), at 118.]



Map of Snorre Field in the Norwegian North Sea (Norwegian Journal of Geology credit)

Based upon comparative studies of fibro-lamellar “longbone” tissue (especially the radial fibro-lamellar bone tissue, which appears to be from the metaphyseal region of the bone, not the middle of the bone shaft)), birds and mammals were eliminated as posthumous providers of the bone tissue found in the core that was drilled offshore, in a location about **1½ miles deep** --- more than **70 miles away** from Norway’s shoreline.

Comparative histology analysis, the paleontologists infer, indicates this find as a Plateosaurus bone, the Plateosaurus being a terrestrial dinosaur that somewhat resembles a quadruped sauropod (like a thick-thighed version of a Brontosaurus/Apatosaurus), yet with hind legs much larger than the forelimbs, such that bipedal locomotion was likely (like a T. rex with serious forelimbs).

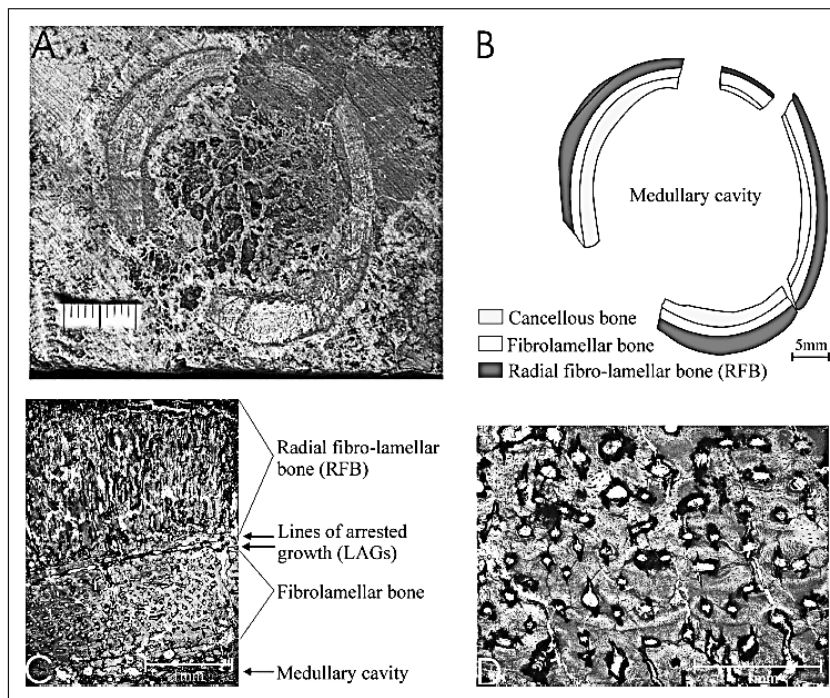


Fig. 3. Detail of bone found at 2615 meter in well 34/4-9S. B. Schematic drawing of section. C. Thin section of bone showing three different histologies. D. Detail of the fibro-lamellar bone, showing few secondary osteons.

Bone found in core 2.6 km. deep, Norwegian North Sea (Norwegian Journal of Geology credit)

Footprint analysis of Plateosaurus, elsewhere, indicate that Plateosaurus walked sometimes on all fours and at other times on the two hind feet.

But, as this offshore find indicates, this Plateosaurus was washed way out into the oceanic waters before being buried in sandy sediment-slush, quickly becoming buried in what became offshore mudstone, more than a mile-and-a-half deep!

With an approximate width of 400 kms between present mainland Norway and the Shetland Platform ... [*this “Lunde Formation” part of the Norwegian North Sea, with the Snorre Field being >70 miles away from the west coast of Norway*] ... was flooded during a marine transgression from north to south ... [*a long time ago*].

[Quoting Jørn Harald Hurum, Morten Bergan, Reidar Müller, Johan Petter Nystuen & Nicole Klein, “A Late Triassic Dinosaur Bone, Offshore Norway”, **NORWEGIAN JOURNAL OF GEOLOGY**, 86:117-123 (2006), at 117.]



PLATEOSAURUS skeleton, Tübingen, Germany (Wikipedia photo credit)

But the tsunami wave that explosively scour-blasted this Plateosaurus out into oceanic waters was catastrophically powerful!!!

How else would this Plateosaurus (or any other land animal) get washed out to sea (as if catapulted by a tsunami), quickly buried (to escape ordinary oceanic disintegration), offshore, more than 70 miles away from Norway's shoreland?

In other words, what enormous watery force could cause that result?



SAUROPODS fleeing rising floodwaters, as sketched by modern artist

(ICR.ORG image credit, AD2018-02)

For starters, consider how large sand/mud formations are found at the mouths of major river systems, e.g., where the Mississippi River dumps into the Gulf of Mexico. But, how far from shore should we expect to find river-driven sand/mud sediments (that were washed out to sea)?



MISSISSIPPI RIVER DELTA, showing sediment wash-out (World Ocean Review image credit)



DEEP-SEA OIL DRILLING PLATFORM (Radaractive photo credit)

MEGA-FLOOD TSUNAMIS CAN POWER-WASH SAND (AND A LOT MORE), FAR FROM SHORE

Consider the powerful flooding that was needed to form the “Whopper Sand”, an enormous and amazing petroleum-bearing sand formation in the deep-sea sediments of the Gulf of Mexico.

In one case, creationist geology not only supports facts reported in Genesis, it [also] explains why **petroleum companies delayed finding billions of barrels of oil, because they erringly assumed uniformitarian ideas about where to look for this deep-sea treasure.** Specifically Genesis 8:3, relating the recession of the floodwaters, is now supported by petroleum geologists’ stratigraphic data gathered from 1,544 widespread locations across North America, South America, and Africa.

After 40 days and 40 nights of unprecedented rainfall at the start of the Flood, combined with “the fountains of the great deep [being] broken up,” worldwide oceans rose (“increased”), rose more (“prevailed and greatly increased”), and rose even more (“prevailed exceedingly”)! Eventually floodwaters overwhelmed (“covered”) what were then

Earth's highest mountains by a depth of 15 cubits. The catastrophe's zenith occurred on day 150, after which the flooding reversed—actively receding until the deluge drained and the landmasses dried out.

That pivotal reversal left its marks all over the world's stratigraphic rock layers. One example is “a large, unusually thick and extensive sand body in the deep water of the Gulf of Mexico [7,600–10,000 feet deep]...so large and completely unexpected that the oil industry dubbed it the ‘Whopper Sand.’”

Whopper Sand [is] a result of this rapid drainage shift at the Zuni/Tejas (K-Pg) boundary, when water suddenly began to drain off the North American continent...into the GOM [Gulf of Mexico], permanently reversing the earlier direction of flow. This shift is marked by the sudden change in deposition from the uppermost Zuni layer (the Lower Paleocene Midway Shale) to the lowermost Tejas (Paleocene-Eocene Whopper Sand). In a Flood model, this would coincide with the change in water direction described for Day 150+ of the Flood.

Before day 150, transcontinental tides drenched continents with layer after layer of sedimentary sheet washings. “From the end of day 150” (literal Hebrew in Genesis 8:3), a remarkable reversal (“return”) occurred, followed by continual widespread and powerful drainage dynamics.

Initial drainage rates in the Paleocene, coinciding with a sudden drop in sea level at the onset of the Tejas, were likely high volume and highly energetic, providing a possible mechanism to transport the thick Whopper Sand into deep-water. Over time, the drainage volume lessened, lowering the energy available for transport, until the present-day pattern developed.

Uniformitarian thinking [*which ignores the historic impact and geologic effects of the Genesis Flood*] cannot account for the Gulf's deepwater Whopper Sand formation, so oil companies were slow to discover it.

If this is a post-Flood deposit, what local catastrophe can explain this massive sand unit?...[T]he size and scale of the Whopper Sand is beyond any deposit like it in the world. The erosive power to

produce this much sand and to transport it so far would have likely affected most of the contiguous [lower 48] USA...making it nearly impossible for animal and human survival. As described above, the best explanation for the Whopper Sand is at the onset of the receding water phase of the Flood.

If earlier Gulf of Mexico explorers had operated from these Flood-geology insights rather than uniformitarian assumptions, they could have found the Whopper Sand formation and its billions of barrels of oil [*and thus billions of dollars in oil sales*] much earlier than they did.

[Quoting James J. S. Johnson, "Receding Floodwaters Buried Deep-Sea Oil", *Acts & Facts*, 47(8):21 (August 2018), *quoting from* Timothy Clarey, "The Whopper Sand", *Acts & Facts*, 44(3):14 (March 2015).

So what does petroleum geologist/paleontologist Dr. Tim Clarey think is the best explanation (1) for the dinosaur tracks on the shorelands of Svalbard, as well as (2) for the cataclysmically power-washed Plateosaurus, who was buried (and thus fossilized before decaying) in deep water more than a 70 miles from Norway's shoreline? ***The global Flood, as reported within Chapters 7 & 8 of Genesis.***

Here is the take-away summary, provided by Dr. Clarey: "Only a massive, high-energy flow of water and muddy sand could transport a dinosaur over 70 miles offshore. And only repeated high-energy flows could bury it about 1.5 miles deep. We are talking unimaginable energy needed here, greater than any tsunami witnessed in historic (post-Flood) times. And similarly, the Whopper Sand in the Gulf of Mexico needs massive, high-energy sheet-flow off the (North American) continent. Something again, beyond anything happening today (geologically speaking). These features, and the dinosaur footprints on Svalbard, are difficult to comprehend without recognizing a catastrophe as big as the great (global) Flood described in Genesis. There is just no other conceivable explanation (that fits the observable facts)."

[Quoting Dr. Timothy Clarey, summary provided in writing AD2019-04-25.] **WOW!** It was a terrible day at the beach when the ornithopod dinosaurs were tsunami-blasted into the sea. Likewise, the doomed Plateosaurus, buried (~1.5 miles deep!) in sea sediments, off the shore of Norway (70+ miles away from his "home") had no clue about what had just hit him. profjjsj@aol.com ><> JJSJ