

# World's oldest turtle shells stand test of time

October 24 2012, by Mary Sibierski

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A fossil of one of the world's oldest-known turtle shells with a limb bone dating from 215 million years ago, discovered in clay deposit northwest of Krakow, is examined at the Institute of Paleobiology of the Polish Academy of Sciences in Warsaw.

Plucked from a pit of grey clay next to a rubbish dump in southern Poland, fossilised turtle shells resembling the battle-scarred shields of ancient warriors are the world's oldest and most complete.

Dating back 215 million years, experts say they could provide invaluable

clues in solving the riddle of the origin of this [ancient reptile](#), venerated by cultures across the globe.

"Late-Triassic turtle fossils are extremely rare. There are around eight spots on Earth where you might find them, and here in Poland we've unearthed the oldest and most extensive collection," said Tomasz Sulej, a paleobiologist with the Polish Academy of Sciences (PAN) who made the discovery in a region known as the Polish Jurassic Highland.

"I'd say my guardian angel led me here," Sulej told AFP of a hunch that inspired him to poke around a landfill near the southern town of Poreba in September 2008.

Euphoria came after just 15 minutes as he unearthed a prized turtle fossil, which recent tests confirmed to be the world's oldest.

The prestigious [Journal of Vertebrate Paleontology](#) and National Geographic Polska recently published details of the discovery.

"Finding something that has been in the mud for 215 million years, it's like bringing it back to life!" Sulej exclaimed on a trip back to the site.

While turtle fossils of a similar age were also discovered in Germany, the Polish find includes shells, along with neck and tail vertebrae, as well as [limb bones](#) that are unique.

"We've discovered two species, including one which is unknown," Sulej said.

His team identified a Proterochersis-type turtle similar to a single Proterochersis robusta fossil found in Germany, while another appears to be of a smaller, as yet unknown species.



A fossil of one of the world's oldest-known turtle shells with vertebrae dating from 215 million years ago. Experts say that the fossils could provide invaluable clues in solving the riddle of the origin of this ancient reptile, venerated by cultures across the globe.

This region's picturesque, craggy countryside shaped during the [Jurassic era](#) and known for vast nearby [coal reserves](#) has proven to be a prehistoric [treasure trove](#).

Sulej's discovery came on the heels of a new 200 million-year-old dinosaur species unearthed in nearby Lisowice in 2006-7. It was christened the Smok Wawelski -- Wawel Dragon -- after a fabled fire-breathing dragon, whose lair was in a cave at the foot of Krakow's 14th century Wawel Castle.

Digs in the area have turned up several hundred fossils from six species including [turtles](#), sharks, scaled fish and dinosaurs.

Now, Sulej says his mission is to find a turtle skull.

Though fossils carry no organic material for DNA testing, their structures hold precious clues to the origins of species.

"Each new turtle fossil is invaluable as it could provide clues to their origin, which up to now has been a bit of a mystery," he said.

These most ancient of creatures are thought to have evolved from Procolophons, a type of parareptile living in the Permian period up to 300 million years ago.

The *Odontochelys semitestace*, a 2008 find in China dating back 220 million years has also been classed by experts as a turtle ancestor, which like them had a belly shell, but unlike them had teeth and no full top shell.

DNA tests on modern-day turtles suggest they may be related to crocodiles, according to Sulej. Adding to the intrigue, Procolophons are not thought to be related to crocs, he said.

The bright yellow spokes on the shell of a Radiated Tortoise native to Madagascar catch the eye of school children visiting the Warsaw Zoo.

"They're like army tanks with their heavy armour!" exclaims 12-year-old Wojtek.

But the shells that have afforded turtles protection from predators for aeons are no match for humans.

Hunted for meat, traditional medicine or caught in the illegal pet trade, this species could become extinct during Wojtek's lifetime.

About half of the globe's 328 recognised species of fresh water and marine turtles and land-faring tortoises could vanish in the coming decades, according to the Turtle Conservation Coalition, an alliance of wildlife societies around the globe.

"After being here for a couple hundred million years, dozens of species of turtles are now on the verge of extinction, quite simply due to being captured or eaten on an unprecedented scale, particularly in Asia," says Mariusz Lech, reptile keeper at the zoo.

Known to live up to 130 years, these ancient creatures carry deep meaning as primordial symbols of longevity, stability, security and wisdom and feature in creation myths from India to native North America. Yet their future seems bleak.

"Being realistic about the modern-day threats they face, especially in southeast Asia—China, the Philippines, Indonesia or Madagascar — turtles are disappearing fast. Some species could vanish within 20 years if radical steps aren't taken to protect them now," Lech warned.

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Citation: World's oldest turtle shells stand test of time (2012, October 24) retrieved 9 May 2024 from <https://phys.org/news/2012-10-world-oldest-turtle-shells.html>

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