

Four legs good, two better: study tracks lizard bipedalism

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Bearded dragon (*Pogona vitticeps*) is one of the lizards that can switch to bipedal locomotion when running.

Mexico's Jesus lizard got its name from an unusual ability to run over water on its hind legs, its body semi-erect and its front limbs dangling in

the air.

The spiny-tailed iguana and bearded dragon, too, are among lizards that can switch in an instant from four- to two-footed locomotion when running—a skill thought to have evolved due to the need for speed.

On Thursday, scientists said bipedal lizard locomotion is nothing new.

The fossilised footprints of a tiny iguana ancestor discovered in South Korea have revealed that lizards were already running around on their hind limbs 110 million years ago, when the dinosaurs ruled Earth.

Yuong-Nam Lee, a professor of vertebrate palaeontology at Seoul National University, said he discovered 29 tracks, about two centimetres (0.8 inches) long and 1.5 cm wide, in a mudstone slab while out fossil-hunting in 2004.

"At the time, I thought they were just small animal tracks of little importance because I was more interested in pterosaur (an extinct, winged lizard) tracks at the time," he told AFP.

"These lizard tracks were collected and stored in the museum until I checked the slab again two years ago. With new eyes, I examined these tracks again and found out they have very typical pedal morphologies of modern lizards."

The prints turned out to be the oldest-known lizard tracks in the world, Lee said.

The creature that made them was likely an iguana ancestor about 6.8 cm long, minus tail.

"Footprint fossils provide direct evidence of (an) animal's behaviour,"

Lee said.

"Some modern lizards can run bipedally, but we did not know when they developed that ability until this discovery."

Bipedality usually occurs when a lizard with longer hind than front limbs accelerate to running speed.

The study authors found more hind foot than front foot tracks in the slab, consistent with a two-legged running gait, as was the pattern and dispersal of the prints.

Their analysis allowed the team to conclude that the tracks were left "by [lizards](#) running bipedally," the authors wrote in the journal *Scientific Reports*.

This suggested "that bipedality was possible early in lizard evolution."

More information: Hang-Jae Lee et al. Lizards ran bipedally 110 million years ago, *Scientific Reports* (2018). [DOI: 10.1038/s41598-018-20809-z](#)

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