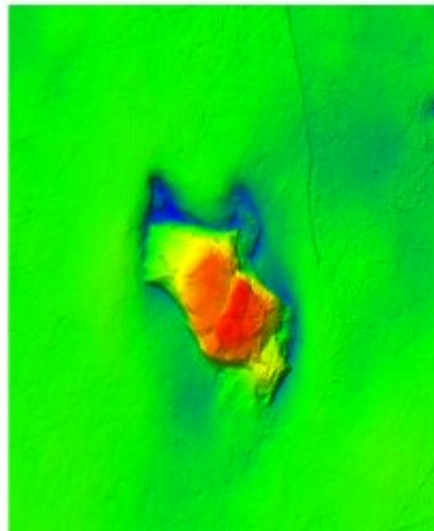
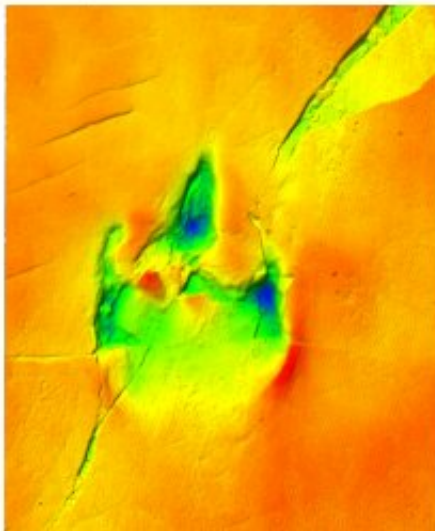
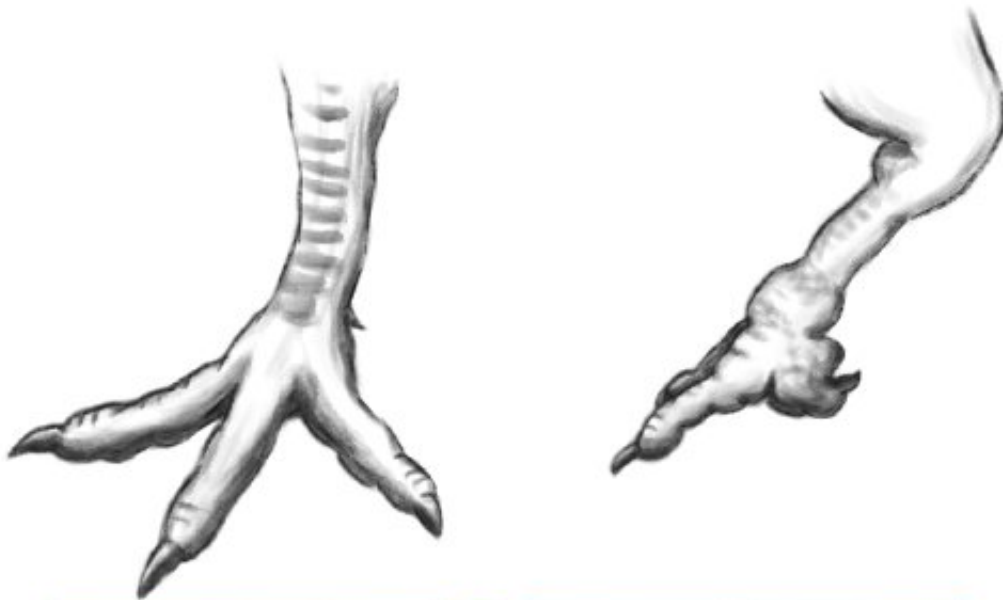


# Injured dinosaur left behind unusual footprints

April 6 2022

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The second toe instead of being extended as common in tridactyl dinosaur feet, was backwardly curled. All the footprints of the left foot show this deformity, differing from the right footprints. Credit: Artwork by Lara de la Cita, and photographs by Las Hoyas research team, Universidad Autónoma de Madrid, Spain, CC-BY 4.0 ([creativecommons.org/licenses/by/4.0/](https://creativecommons.org/licenses/by/4.0/))

A set of dinosaur footprints in Spain has unusual features because the dinosaur that made the tracks had an injured foot, according to a study published April 6, 2022 in the open-access journal *PLOS ONE* by Carlos M. Herrera-Castillo of the Autonomous University of Madrid and colleagues.

Fossil trackways are an excellent source of information on the behavior of extinct animals. In this study, researchers examine an abnormal trackway comprising six [footprints](#) from an unidentified theropod dinosaur preserved at the Las Hoyas Locality in Spain, dating to around 129 million years ago.

The authors used a variety of techniques to describe and model the tracks and to compare them to other trackways. They observed that the tracks made by the right [foot](#) display all three [toes](#), but that the innermost toe on the [left foot](#) is represented only by extremely short and irregularly shaped markings in the sediment, indicating an injury or deformity in that toe. Furthermore, the footprints are spaced more widely than typical theropod tracks, indicating that this dinosaur adjusted its gait to compensate for its injured foot. This is further supported by certain deformations in the right footprints which suggest the animal was putting more weight on that side.

The authors note that similar toe deformities and similar compensating behaviors are also seen in [modern birds](#), and that fossil theropod feet are

often found with injuries on the innermost toes. Taken altogether, this evidence sheds light on how this dinosaur, and perhaps many others, found ways to survive despite pathological setbacks.

The authors add: "We studied one of the best theropod trackway with a foot deformity, printed in a microbial mat that grew in a 129 Ma pond, when hundreds of fish were swimming around."

**More information:** A theropod trackway providing evidence of a pathological foot from the exceptional locality of Las Hoyas (upper Barremian, Serranía de Cuenca, Spain), *PLoS ONE* (2022). [DOI: 10.1371/journal.pone.0264406](https://doi.org/10.1371/journal.pone.0264406)

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