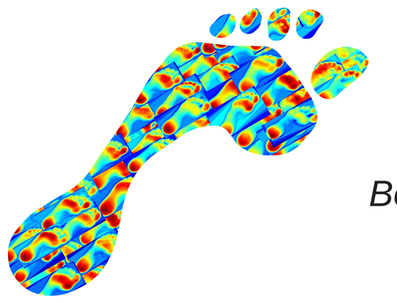
Ileret Footprints: Kenya



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ABSTRACT

Ileret is a small village on the eastern shore of Lake Turkana in northern Kenya close to the border with Ethiopia. In 2009 the village was made famous by the anouncement of a series of fossil footprints dated to 1.5 million years forming the second oldest footprint site in the world (Bennett et al., 2009). The multiple tracks are preserved in flood deposits left on the banks of a former river that drained into a lake and occur in association with numerous animal tracks. While the track-maker remains unknown the tracks were probably made by *Homo erectus*. The tracks were scanned using an optical laser scanner to create digital elevations models of each footprint for comparison with other trackways around the world to explore questions about the evolution of human gait.

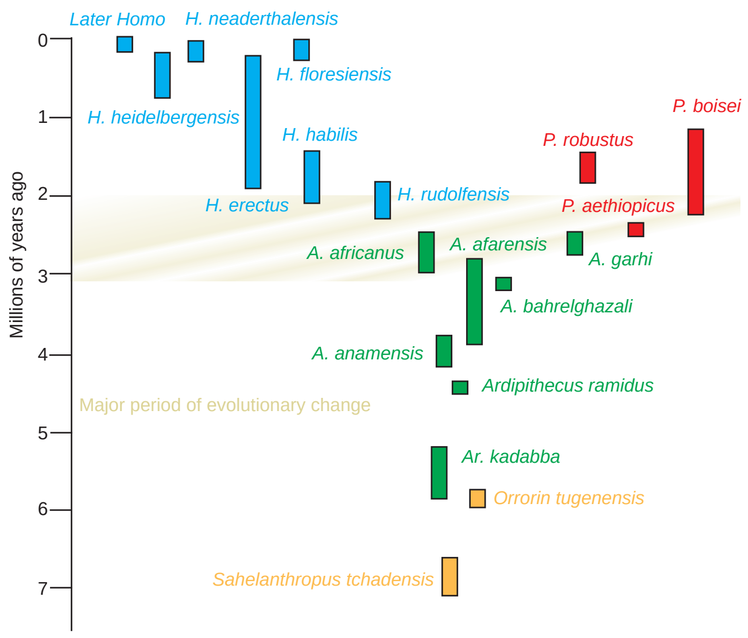
Bennett, M.R., Harris, J.W.K., Richmond, D.R. et al. (2009). Early Hominin Foot Morphology Based on 1.5-Million Year-Old Footprints from Ileret, Kenya. Science, 323, 1174-1201. doi:10.1126/science.1168132

Bennett MR and Morse SA (2014). Fossilised Locomotion: What can footprints tell us? Springer.

A particularly important period in human evolution was the transition from the *Australopiths* to *Homo*; a time of rapid evolutionary change in which body proportions changed and we became adapted to endurance walking and running. It would be logical to anticipate changes in foot anatomy and locomotive style as well. But did these changes actually take place?

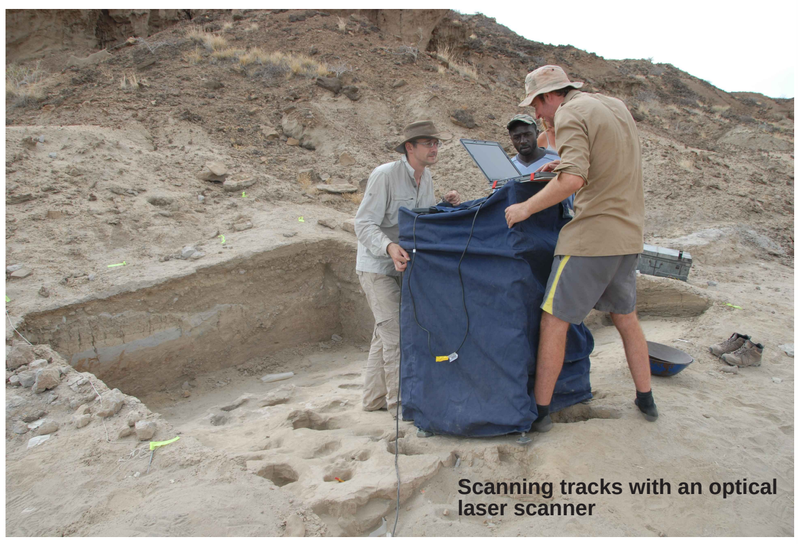
The discovery of a new fossil footprint site in northern Kenya in 2009 (Bennett et al., 2009) attributed to *Homo erectus* provided an opportunity to examine this idea in detail for the first time. In a major piece of research funded by the Natural Environment Research Council (NERC) Bennett, with colleagues at the University of Liverpool, examined this hypothesis.

They developed new methodologies for the study of human tracks, worked in at recent footprints sites in Namibia, South Africa, Argentina and in the UK, as well as in the laboratory to explore new models of how footprints are formed and preserved. In particular they looked at the role of substrate properties as a variable in determining track morphology. New models allow us to understand the way the pressure we apply through our feet are recorded in a footprint, allowing ancinet tracways to be interpreted accurately for the first time.

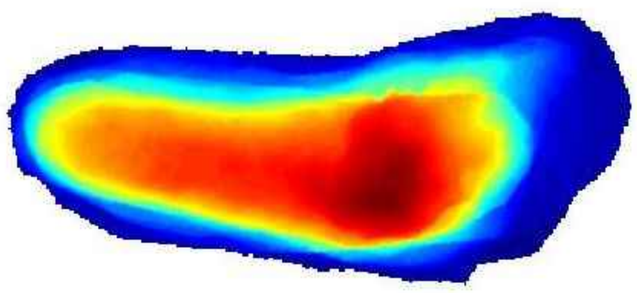


A version of the our evolutionary tree

A view of the footprint site at Ileret in northern Kenya in 2008



Scanning tracks with an optical laser scanner



Digital mean track for a selection of the Ileret prints created by superimposing individual prints to give a mean track.

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