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RAJASTHAN: FOOTPRINTS OF 3 DINOSAUR SPECIES FOUND IN THAR DESERT

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Footprints of dinosaurs found in Jaisalmer district of Rajasthan. Photo: Special Arrangement

In a major discovery, footprints of three species of dinosaurs have been found in the Thar desert in Rajasthan's Jaisalmer district, proving the presence of the giant reptiles in the western part of the State, which formed the seashore to the Tethys Ocean during the Mesozoic era.

The footprints, made in the sediment or silt of the seashore, later become permanently stone-like. They belong to three species of dinosaurs — *Eubrontes cf. giganteus*, *Eubrontes glenrosensis* and *Grallator tenuis*. While the giganteus and glenrosensis species have 35 cm footprints, the footprint of the third species was found to be 5.5 cm.

Virendra Singh Parihar, Assistant Professor, Jai Narain Vyas University, Jodhpur, a member of the team of palaeontologists that made the discovery recently, told *The Hindu* on Friday that the footprints were 200 million years old. They were found near Jaisalmer's Thaiat village.

The dinosaur species are considered to be of the theropod type, with the distinguishing features of hollow bones and feet with three digits. All the three species, belonging to the early Jurassic period, were carnivorous, said Dr. Parihar.

Eubrontes could have been 12 to 15 metres long and weighed between 500 kg and 700 kg, while the height of the Grallator is estimated to have been two metres, as much as a human, with a length of up to three metres.

Careful geological observations enabled the scientists to interpret ancient environments in which the rocks of the footprints, which were once soft sediments, were deposited. Geochemical analyses and calculation of weathering indices showed that the hinterland climate was seasonal to semi-arid during the deposition of the footprints.

Fieldwork in the Kutch and Jaisalmer basins has suggested that after the main transgression during the early Jurassic period, the sea level changed several times. Spatial and temporal distribution of sediments and traces of fossils and post-depositional structures provided an indication to this phenomenon.

Dr. Parihar said some features of the *Grallator tenuis* footprint, involving a wide angle of digits, very narrow toes, and long claws, had strong similarities to the early Jurassic ichnogenus of Stenonyx. There could be taxonomic variation between the Grallator tracemakers from North America and the findings in Rajasthan, he said.

Jan Schlogl of Comenius University in Slovakia and Grzegorz Pienkowski from Warsaw University in Poland were the first to discover dinosaur footprints in India after the 'Ninth International Congress on the Jurassic System' was held in Jaipur in 2014.

Dr. Parihar said the possibility of finding more evidence of dinosaurs in the Jaisalmer and Barmer districts, forming part of the mighty Thar desert stretching to both the sides of the India-Pakistan border, is very strong. "It is just the beginning of the findings of dinosaur remains in Rajasthan. More discoveries of dinosaur fossils will be made in the near future," he said.

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The study has been published as a letter in the ‘Astronomy and Astrophysics’ journal

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