

# 3D models related to the publication: A new, tiny dichobunoid artiodactyl from the Eocene of India revisits the lower body size limit in artiodactyls

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## Abstract

This 3D dataset contains the 3D models of the fossil specimens of *Lilliputia gujarorum*, a new tiny dichobunoid artiodactyl from the early middle Eocene of northwestern India. The material includes the holotype, GU/RJ/003 (Rajouri Collection, H.N.B. Garhwal University), consisting of an associated left mandible fragment preserving the distal part of p4 and m1–3 (GU/RJ/003a) and a left maxillary fragment preserving P4 and M1–3 (GU/RJ/003b), as well as the referred specimen GU/RJ/005, a right mandible fragment preserving m1–2. The exceptionally small body size of *Lilliputia*, among the smallest known in Artiodactyla, together with its mosaic of primitive and derived dental characters, provides new insights into the early evolution, palaeobiogeography, and ecological diversification of artiodactyls during the Eocene.

**Keywords:** Body mass, Dispersal corridors, Mammals, Phylogeny, Subathu Formation

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| Inv nr.    | Description                                                      |
|------------|------------------------------------------------------------------|
| GU/RJ/003a | left mandible fragment preserving the distal part of p4 and m1–3 |
| GU/RJ/003b | left maxillary fragment preserving P4 and M1–3                   |
| GU/RJ/005  | right mandible fragment preserving m1–2                          |

**Table 1.** List of models of *Lilliputia gujarorum*. Collection: Department of Geology, Garhwal University, Srinagar, Uttarakhand, India.

## INTRODUCTION

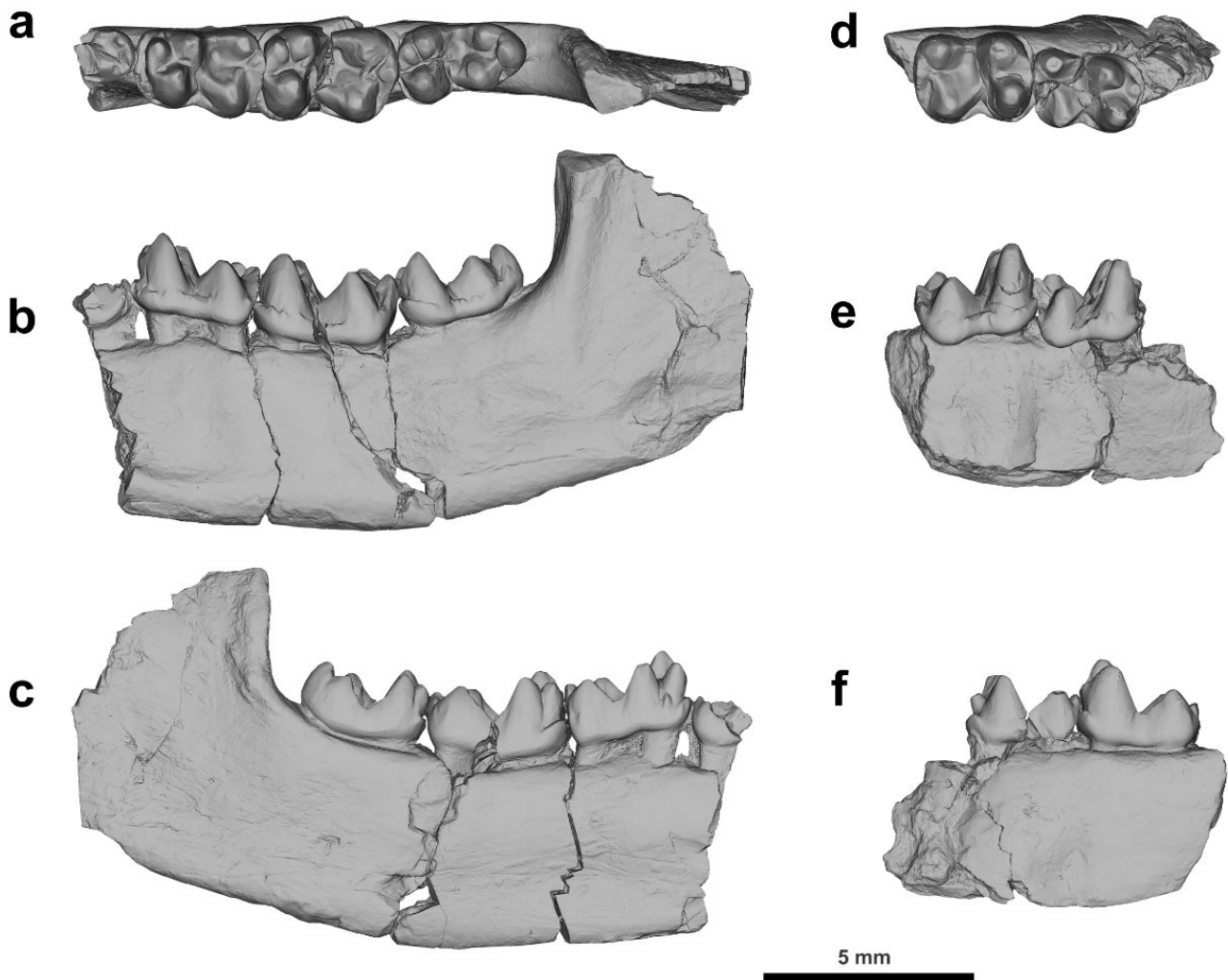
Early artiodactyl evolution was marked by a rapid diversification of lineages, pronounced body-size disparity, and complex biogeographic patterns during the Eocene. Among these early forms, small-bodied dichobunoids remain poorly documented despite their importance for understanding the origin and early diversification of the clade. In their contribution, Weppe et al. (2026) describe *Lilliputia gujarorum*, a new tiny dichobunoid artiodactyl from the early middle Eocene Subathu Formation of northwestern India. The associated upper and lower dentitions preserve a unique combination of primitive and derived dental characters, documenting one of the smallest artiodactyls known and providing new insights into the early evolution, palaeobiogeography, and ecological diversification of the group. X-ray micro-computed tomography was performed on fossil specimens to investigate their external dental morphology and generate the three-dimensional models presented in this contribution (Figs. 1–2 and table 1).

## METHODS

The new fossil specimens are housed at the palaeontology laboratory of the Department of Geology at HNB Garhwal University, Srinagar, Uttarakhand, India. The fossil specimens described were collected from the East Aiji-2 locality (33°29'48"N, 74°29'04"E) in the Kalakot area, located in the eastern part of Aiji village along the Moghla Metka-Rajouri road in Jammu and Kashmir, northwest Himalaya, India. Fossil preparation was done in the palaeontology laboratory at HNB Garhwal University and finalized at the Royal Belgian Institute of Natural Sciences (RBINS, Brussels), using a binocular magnifying glasses (x10) and other specialized equipment. Micro CT-scanning was performed at the RBINS using a RX-Solution Easy Tom 150 scanner with a voxel size of 9.6 micrometers (µm) under a voltage of 120 kV. Segmentation and measurements were performed using Avizo ® 9.3 (Thermo Fisher Scientific-FEI).

## ACKNOWLEDGEMENTS

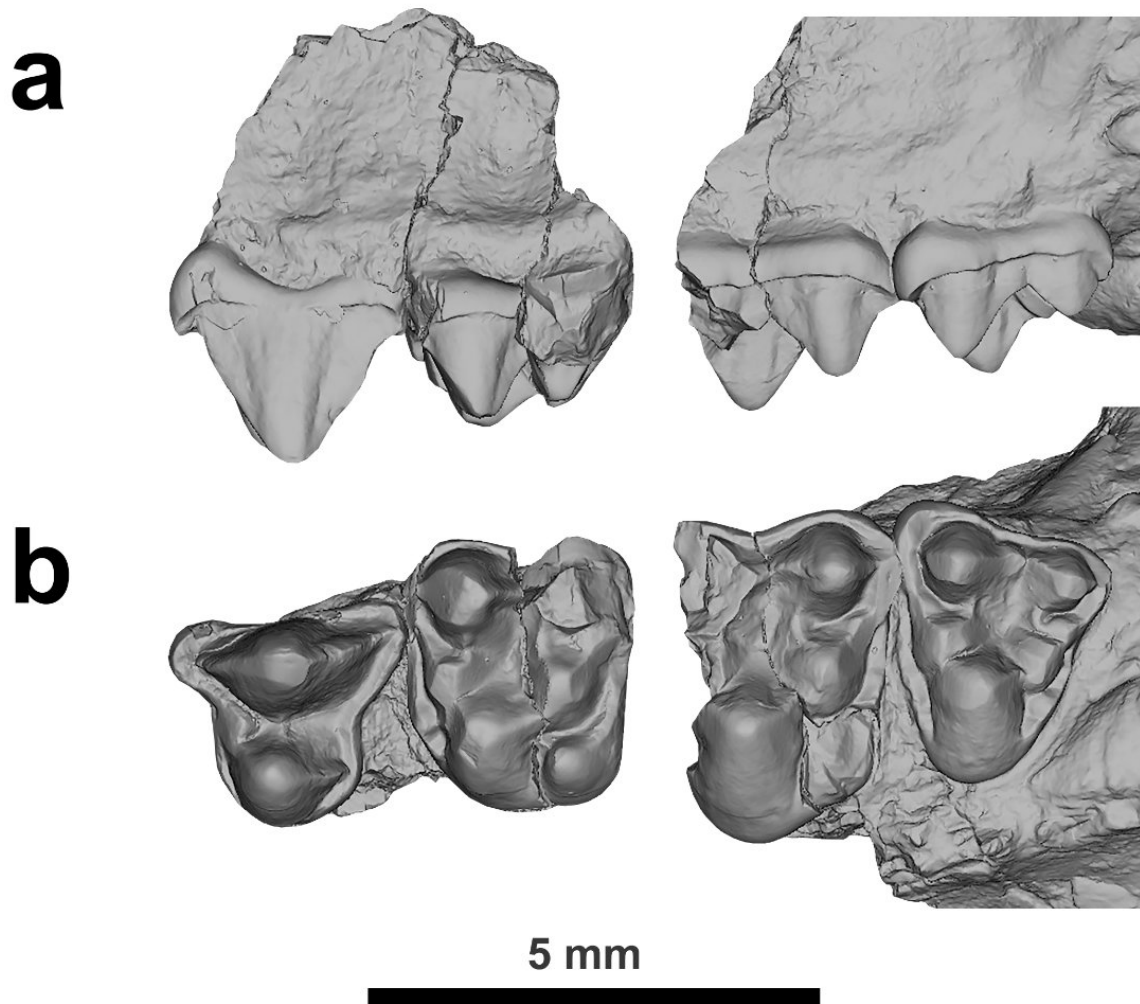
We thank Nathan Vallée Gillette from the Royal Belgian Institute of Natural Sciences (Brussels, Belgium) for assistance with the preparation of the fossil specimens and Camille Locatelli for performing CT-scans of the specimens. We also thank Mr. Parbat Singh and his colleagues (former and present workers) of the Department of Geology and Mining, Jammu and Kashmir for their help during the field investigation. We are grateful to R. Moriya, A. Mishra, K. Raza, P. Mirza, P. Rana and M. Asif who participated in paleontological expeditions at Kalakot. This work was financially supported by the HNB Garhwal University (Srinagar, India) and the FYSSSEN foundation (Paris, France).



**Figure 1.** Digital reconstruction of the lower dentition of *Lilliputia gujjarorum*. (a-c) holotype GU/RJ/003a, left mandible fragment with the distal part of p4, and m1-3. (d-f) GU/RJ/005, right mandible fragment with m1-2, m1 broken distally. (a, d) occlusal, (b, e) buccal, and (c, f) lingual views. Scale bar equals 5 mm.

## BIBLIOGRAPHY

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**Figure 2.** Digital reconstruction of upper dentition of *Lilliputia gujarorum*. (a-b) holotype GU/RJ/003b, left maxillary fragment with P4, M1 broken distally, M2 broken mesially, and M3; in buccal (a) and occlusal (b) views. Scale bar equals 5 mm.