

## *Rajasaurus narmadensis* – A new Indian dinosaur

Subsequent to the recent press announcement (Mumbai; 13 August 2003) of the discovery of a new dinosaur species from India – *Rajasaurus narmadensis* – the details of the scientific study that led to the announcement have been published<sup>1</sup>.

Possessing a regal body-frame (9 m long and 3 m high), the epithet of Raja (= king) befits the Indian dino. To ensure its princely appearance, *Rajasaurus narmadensis* was crowned with a double-crested horn on its forehead. Its specific name, originating from Narmada (Narmada River), denotes its habitat environs, stretching from Jabalpur in Madhya Pradesh to Kheda in Gujarat, all along the length of the Narmada River. Although the basic fossil material for the present study was unearthed from the locality in Gujarat by the scientists of the Geological Survey of India (GSI), previous studies have shown the presence of bone fragments of *Rajasaurus* from the Jabalpur fossil locality also.

*Rajasaurus narmadensis* is the first Indian dinosaur of its kind for which preserved associated cranial and postcranial skeletal remains are available. The excavation of the fossil bones of *Rajasaurus* was done at a site in the Rahioli village of Kheda district, Gujarat, from a series of connected pits. The pits were precisely mapped for the exact location of the bones buried therein. This has helped in identifying associated bones of *Rajasaurus* from amongst several other bone fragments belonging to other dinosaurs. From a collection of 33 bones, including braincase, vertebrae, jaw, limbs, tail bone, etc. the morphological details regarding the size and form of *Rajasaurus* have been conceived. The availability of a relatively large number of associated bones, including the braincase (the latter for the first time in the reconstruction of

an Indian dinosaur), has imparted greater precision to the palaeontological assessment of the skeletal structure and anatomy of *Rajasaurus*. With precise details in hand, it appeared quite attractive to the project team to make an attempt towards reconstructing skeletal details of the head and the overall appearance with fleshy cover of *Rajasaurus*; although these reconstructions do not form part of the scientific publication<sup>1</sup>. Such an attempt has however been made for the first time for an Indian dinosaur.

The sediments yielding the fossil remains of *Rajasaurus* are dated 67 m.y.



**Figure 1.** Reconstructed head of *Rajasaurus narmadensis*.



**Figure 2.** An artist's impression of *Rajasaurus narmadensis*.

And this was the period in the earth's history when the primordial supercontinent of Gondwanaland had already dismembered into the present-day continental fragments or Plates, which were drifting in different directions to ultimately attain the present geographic locations. At 67 m.y. the Indian Plate consisted exclusively of its present peninsular part, in isolation, in the form of a big 'island'. It was drifting northward eventually to collide with the Eurasian Plate, some 1.5 m.y. later, resulting into the formation of the Himalayan mountain chain. The habitat of *Rajasaurus* in such an 'island' situation indicates strong possibilities of indigenously evolved morphological characters. *Rajasaurus narmadensis* can aptly be called truly an Indian dinosaur. The well-known North American dinosaur *Tyrannosaurus rex* was, in all probability, a contemporary of *Rajasaurus narmadensis*, but the two never met.

1. Wilson, J. A., Sereno, P. C., Srivastava, S., Bhatt, Devendra, K., Khosla, A. and Sahni, A., *Contrib. Museum Paleontol. Univ. Michigan*, 2003, **31**, 1–42.

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