

## HISTORY OF DINOSAUR FINDS IN INDIA: LATE CRETACEOUS EVIDENCE

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The initial most discovery of the dinosaur from the Indian subcontinent was made in the year 1828 when Captain W. H. Sleeman (Sleeman, 1844) of the Bengal Army collected the first dinosaur bone from the Lameta Formation near Jabalpur. The bones collected were passed on to a series of learned amateur paleontologists namely from Spilsbury to James Princep (1832) and finally to Oldham Thomas- the first Director General of Geological Survey of India, Kolkata in 1862. The bones were further handed over to Hugh Falconer who identified them as reptilian bones (1868). Richard Lydekker studied these bones along with the bones collected by H.B. Medlicot from the overlying horizons at Jabalpur and established a Type species *Titanosaurs indicus* – the first dinosaur to be described from India. Unfortunately, the original specimen is not presently traceable and possibly lost in the British Museum of London and only the cast is available. During the period a few more finds of dinosaurs were recorded that included collection of bones by W.T. Blandford from Lameta of Pisdura, later described as *T. blandfordi* and *Laplatoosaurs madagascariensis* by Lydkker (1877). Meanwhile Hislop (1860) also made collection of a few specimens including vertebrae and femur associated with coprolite, turtles and fishes from the Pisdura section. Also a single tooth named *Massospondylous rawesi* was described by Lydekker (1890) from the intertrappen beds of Takli (Nagpur). Medlicot between 1871- 1872 made a further collection of dinosaur bones from the Lameta of Jabalpur and adjoining areas the Thus, the majority of the initial discoveries in India came from the Late Cretaceous sediments of Central India between the period 1828-1872) that was a first *Golden Age of Dinosaur discoveries in India*.

1917-1933 was an another Golden Age of dinosaur research in India when the serious studies on dinosaurs were pursued by Charles Matley who carried out a systematic excavation in two expeditions (1917-1924 and 1932-1933) at two stratigraphic levels- the Carnosaur bed and Ossiferous Conglomerate in the Lameta sediments at Bara Simla and Chota Simla at Jabalpur and also the Lamea bed at Pisdura. He published his monumental work on systematic of Indian Late Cretaceous dinosaurs in 1933.

Following years 1960 onwards witnessed excavations of thousands of dinosaur bones from the Late Cretaceous sediments mostly Lameta of Jabalpur in Madhya Pradesh and Pisdura-

Dongargaon in Maharashtra and Kheda in Gujarat and to mention the intertrappean of Anjar in Kutch, mostly by GSI and ISI, Kolkata. Maiden discovery of associated dinosaur nest sites in the Lameta sediments and associated skeletons of titanosauria and abelisaurid dinosaurs in 1982 (Mohabey, 1983, Dwivedi et al 1984, Srivastava et al 1986) was another break through. The find revived interest in the researches on Indian dinosaurs particularly with reference to their nesting behaviour, habitat and environments. The discovery of plant bearing coprolites attributed to sauropods in the year 2000 (Mohabey, 2001) provided a rare insight in to the dietary habit of the Indian sauropods.

Of the vast collection over the last 180 years since 1828 of dinosaurs bones, very few associated bones could be collected. Based on the study of the isolated and fragmentary bones at lest twenty species of sauropod and theropod dinosaurs have been so far described from India. However, based on the revised taxonomy only two sauropod genera of Titanosauria viz. *Isisaurus* and *Jainosurus* and three large-bodied abelisauridae theropods- *Rajasaurus narmadensis*, *Indosuchus matleyi* and *Indosaurus raptorius* and a small bodied theropod *Laevisucus* are presently considered valid. Till date the *Rajasaurus narmadensis* and *Isisaurus colberti* are the only two Indian species that have been excavated as partial associated skeletons.

The unique specimen in the world of a late Cretaceous madtsoiidae snake *Sanajeh indicus* predating upon hatchling dinosaur excavated from the Lameta of Dhoridungri, Gujarat (Mohabey 1987, Wilson et al 2010) has provided insight in to the feeding ecology of early snakes. The partial skeleton of the hatchling sauropod though found in anatomical articulation in association with sauropod (megaloolithid) eggs, is not sufficiently diagnostic for species level identification.

Mentioning for the pre-Cretaceous-Gondwana Sediments, the dinosaur bones have been mostly excavated from the Triassic and Jurassic sediments of Pranhita-Godavari valley in the states Maharashtra and Andhra Pradesh. Till date only two) skeletons from Jurassic (Kota Formation) have been restored (based on partial articulated skeletons) and mounted. These are *Barapasaurus* at Indian Statistical Institute Kolkata and *Kotasaurus* at Birla Science Museum, Hyderabad by GSI.

The recent studies have strongly favored that the Indian dinosaurs were terminated at least 350 K years before the Cretaceous-Paleogene (K-Pg) Boundary and the Deccan Volcanism may be responsible for their termination.

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