

Unusual Preservation of a Cretaceous Turtle Fossil

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Abstract. A Cretaceous turtle fossil collected from southern India, showing unusual preservation of its carapace, plastron and internal bone elements, is described.

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INTRODUCTION

Highly ossified shells of turtles make them excellent candidates for the process of fossilisation. Indeed, turtle fossils are common in many fossiliferous Mesozoic and Cenozoic rocks and many have been reported from India. The chelonian type specimens available in the Geological Survey of India collections from various localities from Burma to Maharashtra and from various geological horizons from Cretaceous to Holocene, numbering about 120, are represented by complete shells or parts of scutes, vertebrae, plastral bones and in a few instances, by crania. The descriptions on fossil turtles preserved in other institutions are also based on shells and skulls. In contrast, the following is a description of a turtle fossil, the cast of which is unusually preserved.

There is a report on some vertebrate material from southern Indian Cretaceous rocks that Muzzy (1856) referred to as 'parts of what appeared to be two of fossil tortoises'. This, however, remained unsupported by taxonomical data. During the geological fieldwork in the south Indian Cretaceous, a turtle fossil was collected by one of the authors (K.A.) in the calcareous concretions in a clay bed at about 1 km south of Kunnam (11° 14'N : 78° 59'30"E), a village situated some 14 km northwest of Ariyalur in the Tiruchirapalli district, Tamil Nadu. Stratigraphically, this clay bed is referable to the Kunnam Formation of the Uttattur Group (Sundaram and Rao, 1979). The associated fossils from this clay bed include *Mammites conciliatum* (Stoliczka), *Neoptychites cephalotus* (Courtillet), *Spathites (Jeanrogericeras) crassi. testa* (Stoliczka), *Eutrephoceras huxleyanus* (Blanford), *Mytiloides mytiloides* (Mantell), *Sphenoceramus diversus* (Stoliczka) and *Exogyra suborbiculata* (Stoliczka), suggesting this horizon to be assigned to the *Mammites conciliatum* Zone dated as Early Turonian by Sastry *et al.* (1968) (*see also* Ayyasami and Banerji, 1984).

The turtle from the southern Indian Cretaceous is exceptional in that its shell has evidently been physically weathered or more possibly chemically dissolved. The fossilisation process has left an almost complete cast of the shell interior, including details of the undersurface of the carapace, plastron and bridge (Plate I, figs. 1-3). Actually preserved parts include a few vertebrae along with associated neural arches, parts of the right axillary and left inguinal buttresses and an incomplete pelvis,