

DINOSAUR NESTING SITES OF INDIA: A REVIEW

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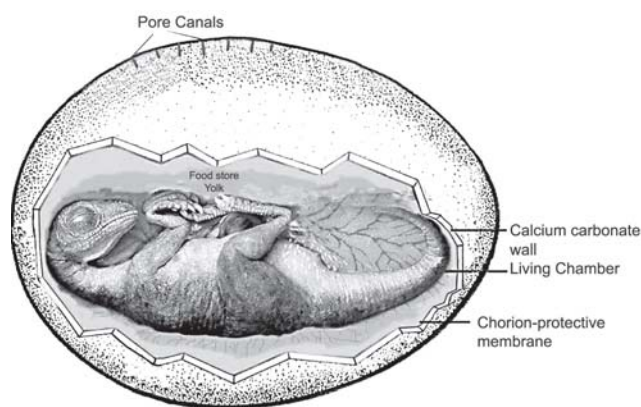
Nearly 30 years have passed since the first eggs and nests of dinosaurs were discovered in extensive areas of peninsular India. These finds are one of the most spectacular in the world for reasons of the vast area that they occupy (over 10000 sq.kms); the fact that they represent thriving populations of dinosaurs in potentially hostile environments of Deccan volcanic activity and they represent a wide variety of morpho-structural groups ranging from the large titanosaurid sauropods to the carnivorous theropods.

Introduction

During the course of over 3.5 billion (3.5×10^9) years of the origin and progression of life on this planet, evolutionary processes have produced a myriad of strange and remarkable organisms, but many evolutionary biologists believe that the most simple yet most perfect example of evolution is the development of the amniote egg, the most common example of which is the chicken's egg. Usually calcified, it still incorporates all that is marvelous in biological engineering. It is a cosmos unto itself. The embryo grows with food supplies that are already stacked inside it, there is a pouch for waste material and there is the provision for the induction of oxygen for the growing embryo through canals in the shell (Fig.1). It can be laid in camouflaged surroundings where temperatures for incubation are optimum. For the embryo to become a hatchling and emerge out of the shell to an unknown world, it must break the hard resistant calcite shell which encompasses it. In large plant-eating dinosaurs the shell may be as much as three to four mm thick. In order to achieve this, enzymes released from the growing embryo absorb the calcium from the inner side of the shell which then helps in forming the bones of the growing embryo with the concurrent decrease in thickness of the shell itself.

This process weakens the shell and allows the hatchling to emerge.

Interest in dinosaurian eggs was ignited in the 1920's by the Roy Chapman Andrews expedition of the American Museum of Natural History, New York when nests of *Protoceratops* were found for the first time at the Flaming Cliffs Site in Mongolia¹. Subsequently, nests and eggs of dinosaurs were found in other localities with the Indian finds being the most spectacular mainly because of the vast area in which they occur ranging over 10000 sq. kms and the fact that they represent a wide variety of species including plant and meat-eating dinosaurs^{2,3,4,5,6}. Some 65



The Dinosaur Egg House

Fig 1. The features of an amniote egg illustrated by example of a dinosaur embryo.

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