

Abstract

The present thesis provides the first study on dental embryogenesis of Varanidae, one of key taxa of the important group of lepidosaurian reptiles, Toxicofera. Macromorphological and histological analyses applied on a series of 15 embryos of *Varanus indicus* (from 10th to 160th embryonal day) enabled to map in detail beginning and essential stadiality of odontogenesis, including pathways of morphological development of dental lamina and teeth primordia of individual teeth generations, embryogenesis of egg tooth, dynamics of ankylosis and contextual factors of the odonotogenetic dynamics.

In comparison to other model reptiles, mangrove monitor exhibits extremely long period of embryonal development lasting for 6 months. The odontogenesis begun in 24 embryonal day with placodal thickening of the odontogenetic epithelium which immediately produced teeth of the 1st embryonal generation characterized by quite a small founder cell populations and developing in a very shallow invagination only. Teeth of the functional generation originated much later, at the beginning of the second third of the embryonal period, from a very large cell populations along the apical extensions of the deeply invaginated bilaminar dental lamina. The differences between the teeth of the both generations were remarkably large, much larger than those observed in any other group of Lepidosauria.

Primordia of the functional generation teeth were extremely large and showed even certain structures hitherto not described in Lepidosauria but known from the mammalian teeth primordia (stellate reticulum, stratum intermedium, heterotopy of IDE histodifferentiation, extensively developed cervical loops etc.) except for the enamel knot. The egg tooth originated in form of a functional tooth but from a shallow invagination at the mesial extension of dental lamina. First is shows a symmetrical appearance of two primordia, of which the right one is subsequently reduced and disappeared. Since 63th embryonal day the pleurodental ankylosis of the functional teeth to inner facies of jaw bones was observed, apparently initiated by conspicuous asymetry of cervical loops. The prolonged embryonal development and large cell populations characterising teeth of the functional generation dispose obviously the teeth to fine adaptive rearrangements. An extreme span of such rearrangements were illustrated by comparison of the postnatal dentition of the focused species and that in *Varanus niloticus* - the differences exceed the level of variation within any mamalian genus.