

Histological analysis of gonadal sex differentiation of gonads in *Chamaeleo calypttratus*

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Early embryonic development is the period when all internal structures are formed, including gonadal primordia. The gonadal primordia, or gonadal ridge, differentiate into testes or ovaries through sexual differentiation. The process of gonadal development is still poorly understood in many vertebrates, especially in reptiles, especially lizards. The study focused on describing gonadal development, with particular emphasis on gonadal ridge formation and sexual differentiation of gonads in the veiled chameleon (*Chamaeleo calypttratus*). The study used histological staining according to Dubreuil's modifications and immunohistochemistry to visualize the structure of the gonadal development. Gonadal primordia are formed on the ventro-medial surface of the mesonephros. These gonadal ridges are covered with coelomatic epithelium, in which the primordial germ cells complete their migration. In the central part of the gonadal ridge, somatic cells accumulate. This is the first stage of the formation of the gonadal cortex. In differentiating testes, the gonadal medulla grows, while in differentiating ovaries, the cortex grows. A mature ovary is characterized by a cortex that equally surrounds the gonad on all sides. The testis, after differentiation, is a gonad with a reduced cortex and an enlarged medulla. The development of gonadal ridge in the *Ch. calypttratus* showed common developmental features found in representatives of squamate reptiles. On the other hand, the process of gonadal differentiation in the *Ch. calypttratus* analysed in this study revealed a certain diversity of processes the development of gonads that is unusual in reptiles. The analysis indicated that gonadogenesis in reptiles is not a conservative process.