

- MACROSCOPIC ANIMAL ANATOMY

POST037 - VISCERAL PIGMENTATION IN ANURAN: AN IMPORTANT MORPHOLOGICAL CHARACTER FOR PHYLOGENETIC ANALYSES

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Introduction and Purpose: Visceral pigmentation occurs in several organs and structures of ectothermic animals, such as the integument, heart, lungs, intestines, rectum, peritoneum, liver, spleen, kidneys, gonads, Bidder's organ, thymus, nervous plexus, meninges and blood vessels, comprising the extracutaneous pigmentary system. The function of this pigmentation is not well defined yet, although it is known that melanin is produced and stored inside pigmented cells. Previous studies have demonstrated that the distribution of this visceral pigmentation is neither homogeneous among organs nor anuran species. We described the diversity of visceral pigmentation in 12 organs/structures from 32 anuran species from 8 families in a phylogenetic context. Our objectives are propose a methodology for use in phylogenetic analyses.

Materials and Methods: Pigmentation on anuran organs was classified starting from absent (category 0) to entirely pigmented, with intensely black coloration (category 3 - maximum intensity). Category 0 expresses absence of pigmented cells on organ surface, as observed in Leptodactylidae testes where milky-white coloration and vascularization are evident. Category 1 consists of fews pigmented cells, therefore the pigmentation is considered discrete. In category 2 there is a large quantity of pigmented cells whose presence masks the whitish tone commonly described for these organs. In category 3 the massive presence of pigmented cells renders the structure intensely pigmented with evident alteration of the usual color of the organ.

Results: Differences in testes pigmentation intensity had been observed in some analyzed species of Leiuperidae. Given this fact, and comparing only testes, category 0 can be utilized for taxonomic diagnosis of the family Leptodactylidae and the presence of pigmentation for the family Leiuperidae. Under these categories, inference of taxonomic use would be better supported by an analysis of a greater number of representatives of each family, or even of genera and species.

Conclusion: These findings demonstrate that the visceral pigmentation could be useful character in future phylogenetic studies. This study constitutes the first step towards understanding the evolutionary pathways followed by the visceral pigmentation among anurans.

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