

## **Adult toad skin *bufo marinus*: surface morphology by light and stereoscopic microscopy and low vacuum scanning electron microscopy**

Gomes, RSLCS.<sup>1</sup>, Lemos, RS.<sup>1</sup>, Gitirana, L.<sup>2</sup> and Britto Filho, J.<sup>3</sup>

<sup>1</sup>Universidade Federal do Pará

<sup>2</sup>Universidade Federal do Rio de Janeiro

<sup>3</sup>Universidade do Estado do Rio de Janeiro

Skin strips of adult toad were examined by light and stereoscopic microscopy and low-vacuum scanning electron microscopy to recognize details of dorsal and ventral skin surface. By light microscopy (LM), skin was submitted to paraffin embedding and colored by different histological techniques: it was verified that the skin of adult toads *Bufo marinus* is two-layered: the epidermis with five to eight living cell layers and with the outermost layer of dead cells composing a thin stratum corneum; flask cells are viewed. The dermis has two connective tissue layers: the subepidermal layer containing alveolar flask shaped glands grow down into the loose tissue; the deeper layer is a multilamellar compacted layer formed by collagen fibers. It was employed simple histological technique: we use fresh skin immersed in 10% formaldehyde, which are washed three times in water before microscopical examination. Stereoscopic views (SW) revealed that the dorsal skin presents three levels of skin projections swelling between areas of smooth skin – “interverruca”; the latter is crossed by a wet of “grooves”. The larger skin rounded or ovaled masses – “verrucae”; the granular spotted areas, rich in melanophores, correspond to little “spines”. Ventral skin present low elevations – “plane verrucae” and deep “grooves”; spines are absent. Many of pigmented areas encircle the ductal openings glands, on the dorsal and ventral skin. By scanning electron microscopy (SEM) the surface squamous cells in both regions are polygonal, commonly pentagonal, and their boundaries are elevated. Dorsal skin is covered by a great number of disc-like structures with fine conical projections – spines - how if the cell membrane was drew off, which are not restricted by the boundaries of them; instead, are formed indistinctly upon them. Deep grooves merging abruptly between planes warts, in the case of ventral skin, but spines were not found. Scattered in the skin are viewed two different openings of duct glands: rounded and oval or elliptical, like a crescent. The dorsal skin presents little mucous glands, which have rounded or lightly ovaled openings with valves bicuspid or tetracuspid. The ventral skin has granular and mucous opening glands rounded or ovaled and both with valves: bicuspid, tricuspud and tetracuspid. Surrounding and making the limits of duct openings we observed two to six epidermal cells of the surface layer. The authors show particular features of gross and microanatomy of the skin of toad *Bufo marinus*.