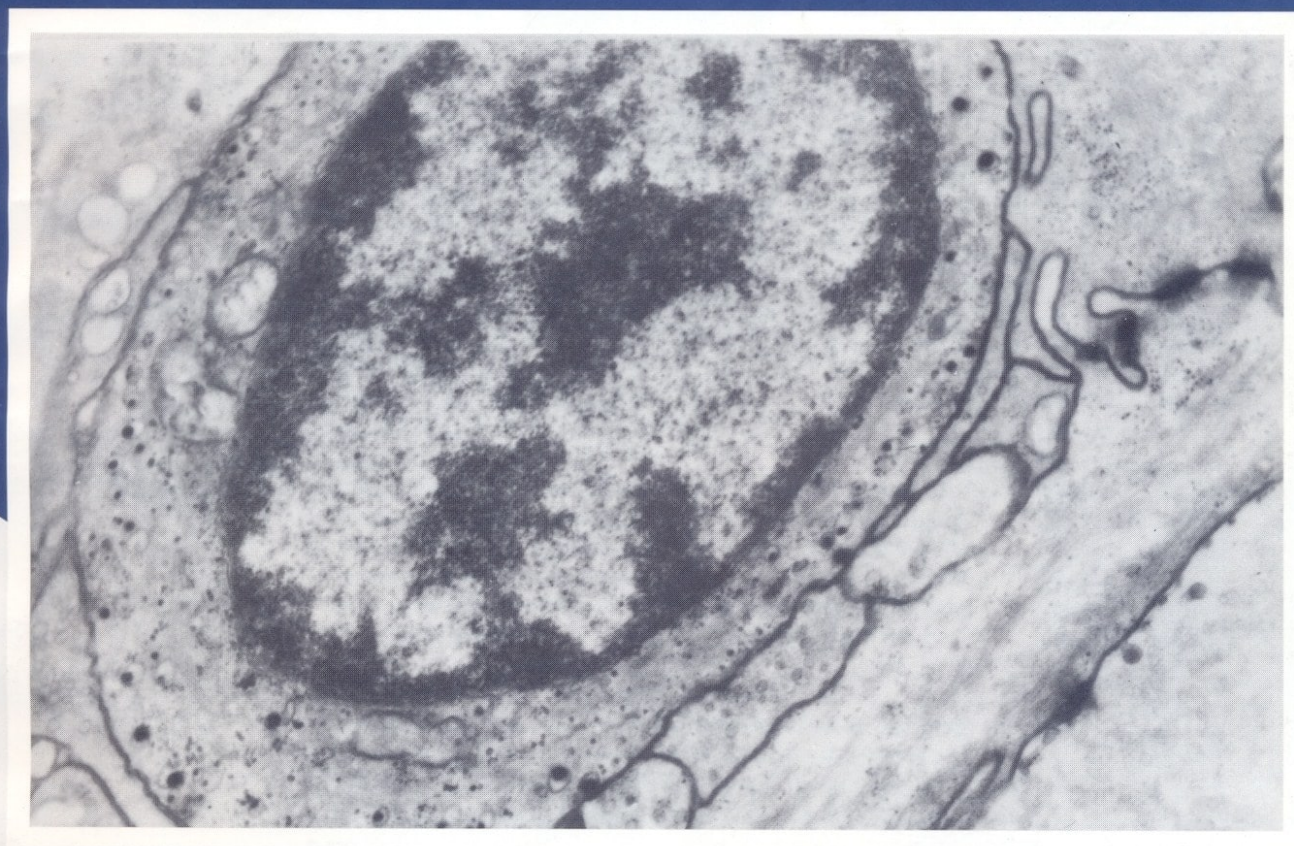




# BRAZILIAN JOURNAL OF MORPHOLOGICAL SCIENCES

REVISTA BRASILEIRA DE CIÊNCIAS MORFOLÓGICAS



OFFICIAL ORGAN OF THE  
BRAZILIAN SOCIETY ANATOMY AND  
PAN-AMERICAN ASSOCIATION OF ANATOMY

IX BRAZILIAN CONGRESS OF CELL BIOLOGY



## 60. ULTRASTRUCTURAL ASPECTS OF THE PIRANHA, *Serrasalmus spilopleura* (TELEOSTEI, CHARACIFORMES, SERRASALMINAE) SPERMIOGENESIS

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In the *S. spilopleura* testis, during the reproductive period, cysts containing spermatids in many developmental stages can be found. In the cysts, the young spermatids present large cytoplasm, rounded shape nucleus, with a fine granular aspect, and a developing tail or flagellum, laterally positioned in relation to the nucleus. During the spermiogenesis, the nucleus assumes a pyriform shape and the chromatin undergoes a gradual condensation. The tail medially-positioned, in relation to the nucleus and electron-dense material deposited around the distal centriole are characteristics of these cells. The spermatids, in an advanced maturation stage, show scarce cytoplasm around the nucleus, condensed chromatin, centriolar complex and tail proximal part inserted in a nuclear envelope depression. The intermediary piece is surrounded by a cytoplasmic projection, where the mitochondria concentrate. The tail shows the typical axoneme (two central microtubules surrounded by nine doublet microtubules), and long lateral expansions of the membrane. At the spermiation moment, the cyst wall is ruptured, liberating the spermatozoa to the seminiferous tubule lumen. The spermatozoa have a spherical-shaped head, nucleus with densely-packed chromatin and acrosome absence. The nuclear fossa shelters the centriolar complex and the proximal part of the tail. The intermediary piece shows cytoplasmic projections where mitochondria are found. The tail is long, contains the typical axoneme and shows lateral expansion of the membrane.

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## 61. EFFECT OF THE *Achillea millefolium* L. FLOWER EXTRACT ON SPERMATOGENESIS

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*Achillea millefolium* L. (Asteraceae) or yarrow was used by Northern European and North American natives as a contraceptive, abortive and emmenagogue. The yarrow flower extract was tested on male mice to study its effect on spermatogenesis. The animals received 200 mg/kg/day, for 20 days, i.p., of the alcoholic extract or 300 mg/kg/day, for 30 days, p.o., of the hydroalcoholic extract. The testes were dissected and processed for histological studies with fixation in Bouin's fluid and ultrastructural studies with fixation in Karnovsky's solution in 0,1M cacodylate buffer. The macroscopic alterations were germ cells necrosis, exfoliation of immature or multinucleated germ cells, seminiferous tubule vacuolization, increased or fibrous interstice and leukocytic infiltration. These are characteristics of an antispermatogenic agent. Animals treated with the hydroalcoholic extract had an increased number of metaphases in the germ epithelium which may be a consequence of cytotoxic substances or substances stimulating cell proliferation. The electron microscopic studies did not show noticeable alterations, except for an unusual image of spermatids of treated animals, which were not inserted directly in the Sertoli cells and were surrounded by strongly vacuolized cytoplasm. However not all seminiferous tubules were affected and the spermatogenesis occurred normally in many regions.

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