

## Amphibian Parasites and Conservation



Cluster of *Oculotrema hippopotami* on eye of hippo



*Oculotrema hippopotami*



Marginal hooklets of *Eupolystoma vanasi*

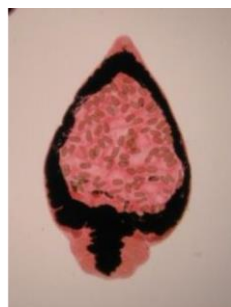


*Polystoma* in urinary bladder of frog

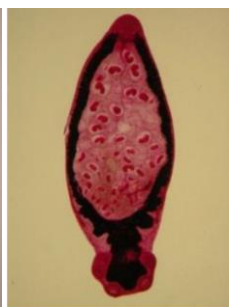
In general frogs harbour a lot of different parasites from protozoans, roundworms, flukes to tapeworms. In most cases frogs play an important role as intermediate or definitive host for many parasites. The clawed frog (*Xenopus laevis*) alone is host for no less than 25 different genera of parasites including all major parasitic groups except acantocephalans. Monogeneans are mainly parasitic in fish but the family Polystomatidae radiated onto the tetrapods and are known from the skin and gills of the Australian lungfish, kidneys and urinary bladders of frogs, gills and skin of salamanders, cloaca and phalodeum of caecileans, on the eye, in the nose, mouth or urinary bladder of freshwater turtles and on the eye of the hippopotamus. These parasites vary from 2mm to more than 30mm in length. The body is elongated or somewhat pyriform, tapering anteriorly, with a haptor posteriorly.

The Haptor is either bilobed with two suckers as in *Sphyrnura* or discoid with six suckers, with or without hamuli and with 16 marginal hooklets. The terminal or subterminal mouth is surrounded by an oral sucker. The crura of the bifurcate intestine are with or without diverticula, united posteriorly or not. Single, double or multiple testes. The median genital pore is situated in the region of the intestinal bifurcation and the cirrus is with or without genital spines arranged in a single or a double ring. The compact ovary is usually lying in front of the testes. Vitellaria are follicular diffuse throughout body, restricted in two lateral fields or densely compacted. Vaginae, when present, are in an antero-lateral position.

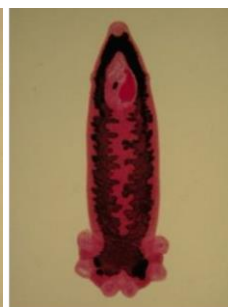
Polystomes co-evolved and speciated with their hosts. They are usually very host-specific and by studying them at molecular level we add new insights on the early evolution of amphibians in the Mesozoic era. In the light that fossil records of amphibians are relatively rare, polystome parasites provide valuable information on its host phylogeny. They provide us with biological prints assisting us to unravel the secrets of amphibian evolution over close and distant geological periods.



*Eupolystoma alluaudi*



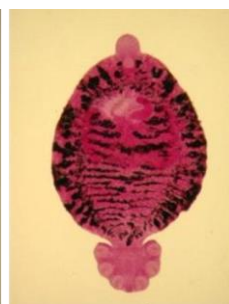
*Eupolystoma vanasi*



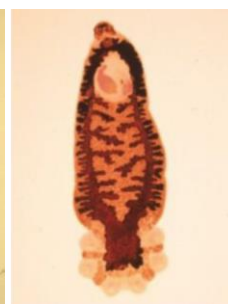
*Polystoma dawiekoki*



*Neopolystoma liewi*



*Protopolystoma xenopodis*



*Polystoma galamensis*