

The Morphology of the feeding apparatus in *Aphanius*.

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Aphanius is a genus of pupfishes belonging to the family Cyprinodontidae of ray-finned fish. Unlike other members of this family, which are from America, *Aphanius* species are native to northern Africa, southwestern Asia (as far east as India) and southern Europe. They are present from the Mediterranean coasts of the Iberian Peninsula to the Red Sea and the Persian Gulf basins.

They primarily occur in freshwater habitats or coastal marine environments, characterized by warm water and mesosaline to hypersaline conditions.

Most *Aphanius* species are threatened because of drought, habitat degradation and loss, as well as water pollution, and the introduction of invasive species, like *Gambusia*.

Aphanius feeds on insect larvae, crustaceans and algae. Therefore they use suction feeding as a mechanism of prey capture. This led to some adaptations like a special mechanism of jaw protrusion.

The objective of this thesis is to reconstruct the morphology of the feeding apparatus in *Aphanius mento* and *Aphanius fasciatus* (provided by the Vienna zoo), for comparison with related groups, as well as to prepare a foundation for further kinematic studies.

To investigate the skeletal elements (skull, jaw elements, hyoid apparatus) as well as the pertaining musculature I use micro-computed tomography scans in combination with the software Amira. Furthermore, the specimens' skeletons will get prepared via clearing and staining, a process that renders the flesh invisible, the bone red, and the cartilage blue. Histological sections will be done eventually, if there are any open questions concerning the anatomy.