

# **The anatomy of the feeding apparatus of *Calyptocephalella gayi***

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In continuation of Verena Wiesinger's diploma thesis, in which she investigated the feeding mechanism of *Calyptocephalella gayi* through highspeed video analysis, now the focus will be on anatomy of this frog. Depending on their habitat, frogs use different mechanisms to capture their prey. Aquatic feeding mechanisms include suction feeding, ram feeding, jaw prehension and forearm scooping, whereas in a terrestrial environment jaw prehension or three different ways of lingual prehension (mechanical pulling, inertial elongation, hydrostatic elongation) are employed. *Calyptocephalella gayi* is an endangered aquatic frog species from Chile; nevertheless, Wiesinger found that it can also successfully feed on land. While feeding underwater, *Calyptocephalella gayi* uses suction feeding and its hands to prevent its prey from escaping again. When feeding on land, it uses jaw prehension or mechanical pulling with varying degrees of tongue activity. Considering its aquatic lifestyle, it seems somewhat unexpected that *Calyptocephalella gayi* is also well equipped for terrestrial feeding. Therefore, this thesis will now examine the anatomy of its feeding apparatus and compare it to that of *Leptodactylus pentadactylus* – a fully terrestrial species from northern South America that feeds by using lingual prehension; mechanical pulling to be exact. The two species are rather closely related, as they both belong to the family of *Leptodactylidae*. In order to compare the anatomy of their tongues, hyoid apparatus and jaws, their muscles and the hyoid will be reconstructed from micro CT-scans using AMIRA.