Built to Bite: Feeding Kinematics, Bite Forces, and Head Shape of a Specialized Durophagous Lizard, *Dracaena Guianensis* (Teiidae)

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ABSTRACT

Most lizards feed on a variety of food items that may differ dramatically in their physical and behavioral characteristics. Several lizard families are known to feed upon hard-shelled prey (durophagy). Yet, specializations toward true molluscivory have been documented for only a few species. As snails are hard and brittle food items, it has been suggested that a specialized cranial morphology, high bite forces, and an adapted feeding strategy are important for such lizards. Here we compare head and skull morphology, bite forces, and feeding kinematics of a snail-crushing teiid lizard (*Dracaena guianensis*) with those in a closely related omnivorous species (*Tupinambis merianae*). Our data show that juvenile *D. guianensis* differ from *T. merianae* in having bigger heads and greater bite forces. Adults, however, do not differ in bite force. A comparison of feeding kinematics in adult *Dracaena* and *Tupinambis* revealed that *Dracaena* typically use more transport cycles, yet are more agile in manipulating snails. During transport, the tongue plays an important role in manipulating and expelling shell fragments before swallowing. Although *Dracaena* is slow, these animals are very effective in crushing and processing hard-shelled prey. *J. Exp. Zool. 00:1–11, 2012. © 2012 Wiley Periodicals, Inc.*


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