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EFFECT OF TONGUE REMOVAL ON THE FEEDING BEHAVIOR OF AN ADULT GARTER SNAKE
(THAMNOPHIS SIRTALIS)

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In two experiments, we attempted to assess the relative importance of the vomeronasal and olfactory systems in garter snakes. Snakes used were an adult T. sirtalis sirtalis which had its tongue surgically removed as an adult several years previously, and three normal T. sirtalis controls. In Experiment 1, the tongueless animal and a control were placed separately for a number of trials in a chamber in which the odor of the nightcrawler Lumbricus terrestris was then introduced. Snakes were then allowed access to Lumbricus pieces. The unusual feeding behavior of the tongueless snake, which consisted of lunging around the cage with mouth wide open, a pattern not seen in any of the control animals, seemed to disrupt the normal feeding sequence of stalk and attack. We attributed this animal's bizarre feeding behaviors, which seemed to be triggered by the odor of the prey items, to its tonguelessness. In Experiment 2, the tongueless animal and 3 controls were presented with prey items, first with no extra prey odor present and second with odor introduced. All three controls showed decreased latencies when the prey odor was introduced while the tongueless snake showed an increase in latency. Results suggest that the loss of the tongue decreased the ability of this snake to locate prey in an ambiguous olfactory situation.