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Adaptations Facilitating Facultative Oophagy in the Gray Rat Snake, Elaphe Obsoleta Spiloides [Abstract]

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The gray rat snake (Elaphe obsoleta spiloides), a facultative oophagic colubrid species, exhibits a stereotyped behavior when ingesting quail eggs. The anterior third of the body is contracted in a forceful series of S-shaped curves, and, at the moment of shell rupture, the region of the body posterior to the egg is rapidly and laterally flexed into a U-shaped bend. The ventral aspect of hypapophyses in the cervical region can be palpated along the roof of the dissected esophagus. Scalation along the throat and anterior neck regions is polymorphic, and scale rows are more numerous (increasing distensibility when swallowing eggs) than along areas posterior to the neck. Radiographs reveal that eggs may pass into the gut of large snakes without being cracked. Once the contents are extracted from the shell, it passes through the remainder of the gut, appearing in the feces with sides folded inward to form a narrow cylinder, tapered at both ends. Gray rat snakes appear to possess adaptations facilitating ingestion of bird eggs while not interfering with the potential to ingest other prey types.