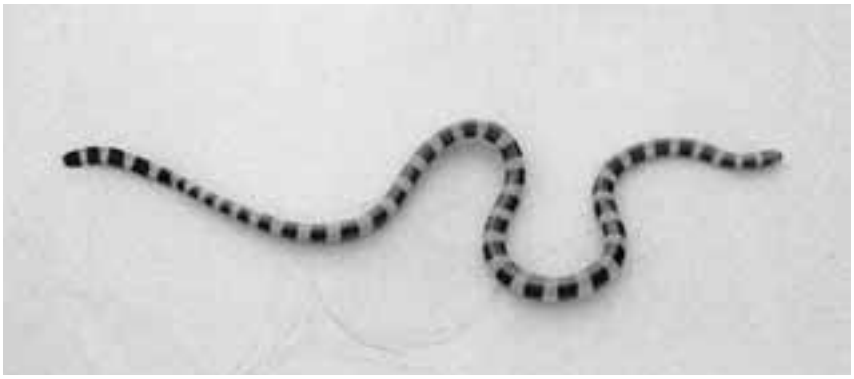
NATURAL HISTORY RESEARCH REPORTS

Foraging Mode and Locomotion

Foraging mode has molded the evolution of many aspects of lizard biology. From a basic sit-and-wait feeding strategy, several lizard groups have evolved a wide foraging strategy, slowly moving through the environment using their highly developed chemosensory systems to locate prey. MCELROY ET AL. (2008. *Journal of Experimental Biology* 211:1029–1040) studied locomotor performance, whole-body mechanics, and gaits in a phylogenetic array of lizards that use sit-and-wait and wide-foraging strategies to contrast the functional differences associated with the need for speed versus slow continuous movement during foraging. Sit-and-wait species used only fast speeds and trotting gaits coupled with running (bouncing) mechanics. Different wide-foraging species independently evolved slower locomotion with walking (vaulting) mechanics coupled with several different walking gaits, some of which have evolved several times. Most wide foragers retain the running mechanics with trotting gaits observed in sit-and-wait lizards, but some wide foragers have evolved very slow running mechanics. In addition, three evolutionary reversals back to sit-and-wait foraging are coupled with the loss of walking mechanics. These findings provide strong evidence that foraging mode drives the evolution of biomechanics and gaits in lizards and that several means of evolving slower locomotion exist. In addition, the different gaits used to walk slowly appear to match the ecological and behavioral challenges of the species that use them.



AMANDA LANE

Melanism in Black-banded Sea Kraits (*Laticauda laticaudata*) is not linked with thermoregulatory efficiency, protective coloration, or protection against solar radiation.

ROBERT POWELL

Anoles, such as this *Anolis stratulus* (top) from the British Virgin Islands, are classic sit-and-wait predators that use elevated perches to scan the area below for prey. In contrast, Dominican Ground Lizards, *Ameiva fuscata* (bottom), employ a wide-foraging strategy, slowly moving through the environment using their highly developed chemosensory systems to locate food.

Is Melanism Adaptive in Sea Kraits?

Ontogenic melanism (progressive darkening of the skin) has been documented in snakes. Black coloration of the skin often compromises the cryptic effects associated with other patterns (e.g., zigzags) and exposes individuals to predation; however, the mortality risk presumably can be balanced, for example, by a thermoregulatory advantage during basking. Such adaptive context has been proposed to explain the appearance and the maintenance of melanism in snake populations. Based on a very large capture/recapture sample (>8000 observations) gathered on two species of Sea Kraits (*Laticauda saintgironsi* and *L. laticaudata* in New Caledonia), LORIOUX ET AL. (2008. *Amphibia-Reptilia* 29:1–5) observed that melanism occurred in only one species (*L. laticaudata*), was infrequent, and affected only adult snakes. None of three adaptive hypotheses respectively linked to thermoregulation, predation, or protection against sun radiation, provided a satisfactory account for the occurrence of melanism in the study populations. Therefore, the authors suggest that melanism was a fortuitous phenomenon.

Signal for Mating Success and Survival

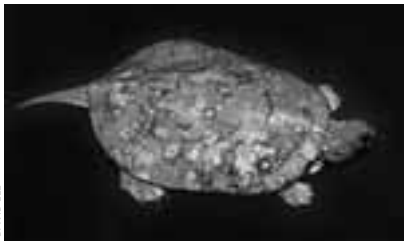
Many species of lizards have colored spots on the flanks that may function as ornaments. SALVADOR AND VEIGA (2008. *Amphibia-Reptilia* 29:117–120) investigated the between-years stability of the blue patch color saturation and the relationships between color saturation, mating success, and survival in males of the lizard *Psammodromus algirus*. Saturation values of the anterior blue patch of males were significantly repeatable across years. Survivors had more saturated patches than non-survivors among paired males but not among non-paired males. The positive relationship between blue patch saturation and survival suggests that this morphological trait acts as a reliable signal of male quality measured by adult survival.


PASCAL DUBOIS

Color saturation of the anterior blue patch of male *Psammodromus algirus* was an "honest" signal of a male's quality.

Courtship Behavior in Four-eyed Spotted Turtles

LIU ET AL. (2008. *Amphibia-Reptilia* 29:185–195) recorded 168 courtship sequences from 12 male and 18 female adult captive Four-eyed Spotted Turtles (*Sacalia quadriocellata*) and described 30 male and four female discrete motor patterns. Male display patterns involved tactile and visual signals to induce female receptivity to mating. In response, females may emit olfactory signals for gender recognition. Female rejection of male suitors resulted in a male success rate of 4.17%. Only seven copulations were observed. Copulation occurred only when a female became quiescent and relaxed her tail for coition.


DAVID LEE

Courtship of male Four-eyed Spotted Turtles (*Sacalia quadriocellata*) involves tactile and visual signals. In response, females may emit olfactory signals.

Reproduction and Sexual Dimorphism in a Night Lizard

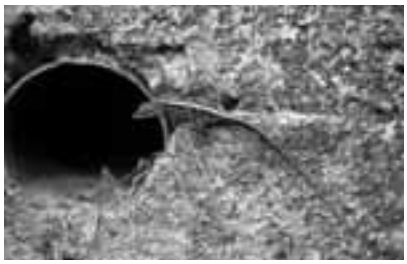
RAMÍREZ-BAUTISTA ET AL. (2008. *Amphibia-Reptilia* 29:207–216) studied reproductive characteristics of the night lizard, *Lepidophyma sylvaticum* (Xantusiidae) from cloud forest in Tlanchinol, Hidalgo, Mexico. Males reached sexual maturity at a snout-vent length (SVL) of 55 mm, and females reached sexual maturity at a SVL of 56 mm. Males and females were not sexually dimorphic in SVL, but males had significantly larger heads and limbs than females. Reproduction in males and females was seasonal. Testicular mass increased in July and August, reaching maximum size in September. Minimum testes size occurred in March. Follicles of females began to increase in size in September when vitellogenesis was observed. Follicles in some females increased in mass during January–March, whereas other females ovulated during that period. Late embryonic stages (35–40) were observed in July with parturition likely occurring in July and August, coincident with maximum rainfall. Litter size averaged 4.7 ± 0.4 neonates, and was not correlated with female size. Similarities in reproductive characteristics between *L. sylvaticum* and other xantusiids (viviparity, long gestation period) suggest that some reproductive characteristics have a historical origin.


TIM BURKHARDT

Reproduction in the tropical night lizard *Lepidophyma sylvaticum* is seasonal, with young born during periods of maximum rainfall.

Predation by Brown Anoles on Spiders in Taiwan

NORVAL ET AL. (2007. *Russian Journal of Herpetology* 14:191–198) analyzed stomach contents in 502 Brown Anoles (*Anolis* [*Norops*] *sagrei*) from an area surrounding a plant nursery in Santzepu, Taiwan. The stomachs of 166 lizards contained spiders, which were removed for identification to establish a basis upon which future studies on spider predation by *N. sagrei* in Taiwan can be based. These spiders comprised 298 individuals from 13 families. Unlike other studies, which found that these lizards prey mainly on web spiders, the majority of the spiders in this study are ground-dwelling species. The results from this study suggest that this exotic invasive species is predominantly terrestrial at this locality.


GERRUT NORVAL

Brown Anoles (*Anolis sagrei*) in Taiwan often are highly terrestrial and feed heavily on ground-dwelling spiders.

Microhabitat Characteristics for Reptiles in Latvia

CEIRANS (2007. *Russian Journal of Herpetology* 14:172–176) examined vegetation characteristics of reptilian microhabitats using 280 circular plots throughout Latvia. The lizard *Lacerta agilis* preferred xeric sites, and, at the other end of the gradient, both snake species (*Natrix natrix* and *Vipera berus*) preferred mesic sites with a tall herbaceous layer and shrubs. The legless lizard *Anguis fragilis* often was associated with relatively intact pine forest, whereas the other reptiles were associated mainly with disturbed sites and grass cover.


GUNTHER KÖHLER

The Slow Worm (*Anguis fragilis*) was more frequently associated with intact pine forest than other Latvian reptiles.