NATURAL HISTORY RESEARCH REPORTS

MINISTERIO DE EDUCACION Y CIENCIA DE ESPAÑA

Female Iberian Wall Lizards (*Podarcis hispanica*) might base their mate choice on male "quality" as indicated by the composition of their chemical signals.

Asian Snake Stores Toad Toxins

The Asian snake *Rhabdophis tigrinus* possesses specialized defensive glands on its neck that contain steroidal toxins known as bufadienolides. **HUTCHISON ET AL.** (2007. *Proceedings of the National Academy of Sciences of the United States of America* 104:2265–2270) hypothesized that *R. tigrinus* does not synthesize these defensive steroids, but instead sequesters the toxins from toads it consumes as prey. To test this hypothesis, the authors conducted chemical analyses on the glandular fluid from snakes collected in toad-free and toad-present localities and performed feeding experiments in which hatchling *R. tigrinus* were reared on controlled diets that either included or lacked toads. They demonstrated that the cardiotonic steroids in the nuchal glands of *R. tigrinus* are obtained from dietary toads. Hatchling snakes had bufadienolides in their nuchal glands only if they were fed toads or were born to a dam with high concentrations of these compounds. Because geographic patterns in the availability of toxic prey are reflected in the chemical composition of the glandular fluid, snakes in toad-free regions are left undefended by steroidal toxins. The ability to sequester dietary toxins underlies geographic variation in antipredatory behavior in this species.

NIK BROUNTAS, HTTP://GDIMENSION.TYPEPAD.COM

Hatchling Asian Grass Snakes (*Rhabdophis tigrinus*) have toxins in specialized defensive glands only if they consume toads or were born to a dam with high concentrations of poisonous compounds.

Male Scents Signal a Better Immune System

Despite the importance of chemoreception in sexual selection of lizards, few studies have examined the composition of chemical signals, and whether and how chemicals provide honest information is unknown. Chemical signals might be honest if they indicated a trade-off between sexual advertisement and the immune system. **LÓPEZ AND MARTÍN** (2005. *Biology Letters* 1:404–406) showed that proportions of cholesta-5,7-dien-3-ol in femoral secretions of male Iberian Wall Lizards (*Podarcis hispanica*) were related to their T-cell-mediated immune response. Thus, only males with a good immune system may allocate higher amounts of this chemical to signaling. Furthermore, females selected scents of males with higher proportions of cholesta-5,7-dien-3-ol and lower proportions of cholesterol. Thus, females might base their mate choice on the males' quality as indicated by the composition of their chemical signals.

Lizards "Shout" in Noisy Habitats

Many acoustically communicating animals compensate for background noise by using acoustic properties that enhance the transmission of vocalizations in noisy habitats. **ORD ET AL.** (2007. *Proceedings of the Royal Society B: Biological Sciences* 274:1057–1062) showed that visual noise from windblown vegetation has an equally important influence on the production of dynamic visual displays. They found that two species of Puerto Rican lizards, *Anolis cristatellus* and *A. gundlachi*, increase the speed of body movements used in territorial signaling to improve communication in visually "noisy" environments of rapidly moving

vegetation. Together with previous work on acoustic communication, these data show that animals with very different sensory ecologies can face similar environmental constraints and adopt remarkably similar strategies to overcome those constraints.

ROBERT POWELL

Puerto Rican Crested Anoles (*Anolis cristatellus*) increase the speed of body movements used in territorial signaling to improve communication in visually "noisy" environments.

ROBERT POWELL

Populations of larger St. Vincent Dwarf Geckos (*Sphaerodactylus vincenti*) living in more mesic environments at higher elevations are less resistant to water loss.

Natural History of St. Vincent Dwarf Geckos

STEINBERG ET AL. (2007. *Journal of Herpetology* 41:326–332) documented population densities, microhabitat preferences, desiccation rates, and diets of *Sphaerodactylus vincenti* on St. Vincent, West Indies. The authors predicted and observed high densities (to 5,625/ha) in moist, shaded leaf-litter. Such microhabitats provide refuges, access to prey, and protection against water loss, as *S. vincenti* is vulnerable to high desiccation rates. They found significant differences in mass-specific water-loss rates and body mass between conspecific populations at differing elevations, with larger geckos less resistant to water loss living in more mesic environments at higher elevations. Stomach content analysis suggests that *S. vincenti* is a dietary generalist that feeds on a variety of small arthropods primarily by day.

NEWSBRIEFS

Virgin births at the London Zoo

Four Komodo Dragons (*Varanus komodoensis*) hatched at the London Zoo were the result of parthenogenesis, the development of an egg without fertilization by a sperm. A clutch of dragon eggs laid in August 2005 fascinated reptile keepers. The female had arrived in London on loan from Thoiry Zoo in France in early 2005, and the clutch of eggs was laid more than two years after she had last lived with Thoiry's male. Initially, keepers suspected sperm storage, but Curator of Herpetology, Richard Gibson, wasn't entirely convinced and resolved to investigate further.

Genetic fingerprinting techniques at Liverpool University confirmed that the four dragons were actually the result of parthenogenesis. The female later mated with the London Zoo's male and subsequently laid a second clutch of eggs from which a single, "normal" dragon hatched, demonstrating that Komodo Dragons can switch reproductive strategies depending on the availability of a mate.

Richard Gibson said: "I am delighted that the mysterious parentage of our Komodo Dragon babies has been solved, and that we have discovered something new to science at the same time. Knowing that the world's largest lizard can reproduce like this suggests that many other reptiles may also do this more often than we thought, and may lead to changes in the way we manage this and other species in breeding programs. This discovery also raises important questions about the natural history of dragons in the wild, and will therefore help to safeguard the future of the species."

TROOPER WALSH, NATIONAL ZOOLOGICAL PARK

Four Komodo Dragons (*Varanus komodoensis*) hatched at the London Zoo were the result of parthenogenesis, the development of an egg without fertilization by a sperm.

Zoological Society of London
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Homing Behavior in Baby Snakes

We all know that children behave like their parents in many ways, especially as they grow older (even though many children deny it!) — and most of us suspect that the similarity is partly due to learning, and not just genetics.

Researchers from the University of Sydney have discovered that baby snakes also behave like their parents, and probably for similar reasons as in humans. For more than a decade, Drs. Greg Brown and Rick Shine have been studying the ecology of small non-venomous Keelback Snakes (*Tropidonophis mairii*) on the floodplain of the Adelaide River, on the outskirts of Kakadu National Park in the Northern Territory.