

NATURAL HISTORY RESEARCH REPORTS

A New Genus and Species of Salamander from the United States

CAMP ET AL. (2009. *Journal of Zoology* 279:86–94) described a striking new species of the lungless salamander family Plethodontidae from the Appalachian foothills of northern Georgia. The new species is named *Urspelerpes brucei*, and the authors' suggested common name is the Patch-nosed Salamander. This miniature species (ca. 25–26 mm adult standard length) is so distinctive genetically and morphologically that the authors erected a new genus, the first new genus of amphibian described from the United States in nearly 50 years. The species is unique among plethodontids from eastern North America in displaying sexual color dimorphism. Also, although many miniaturized plethodontids exhibit a reduced number (four) of digits on the pes, this species possesses a full complement of five toes. A plethodontid phylogeny derived from mitochondrial and nuclear DNA sequences places it in the tribe Spelerpini as the sister taxon to *Eurycea*. Genetic divergence between the new species and *Eurycea* for the nuclear gene Rag-1 (4.7%) is among the higher levels observed between long-established spelerpine genera (2.6–5.3%). This new form appears to be rare and is of immediate conservation concern.



TRIP LAMB

An adult male *Urspelerpes brucei* (top) and an adult female from Stephens County, Georgia.



JASON BOND

A larval *Urspelerpes brucei*.

A New Species of Iguana from Honduras

HASBÜN AND KÖHLER (2009. *Journal of Herpetology* 43:192–204) described a new species of *Ctenosaura* from the Pacific versant of southeastern Honduras (Departments of Francisco Morazan and Choluteca). The new species, named *Ctenosaura praeocularis*, occurs in a restricted area between the ranges of *C. flavidorsalis* (southwestern Honduras, El Salvador, and southeastern Guatemala) and *C. quinquecarinata* (Nicaragua and Costa Rica). The new species differs from *C. quinquecarinata*, *C. oaxacana*, and *C. flavidorsalis* in scalation, osteology, and coloration. The suggested phylogenetic relationships of the new species are ((*C. flavidorsalis* + *C. praeocularis*) + (*C. quinquecarinata* + *C. oaxacana*)). Iguanas of the new species were found mostly in hollow trees and branches no more than 2 m above the ground. The habitat was dominated by shrub and tree vegetation. These lizards feed mainly on young leaves and insects. Local people occasionally hunt them for food and consider them to have become rarer in the last two decades, primarily because of habitat loss.



GUNTHER KÖHLER

Ctenosaura praeocularis is a new species of Spiny-tailed Iguana recently described from southern Honduras.

Railroad Tracks Block Gene Flow in Marbled Salamanders

Habitat fragmentation reduces gene flow between isolated populations, thus increasing the risk of extinction through reduced genetic diversity due to the possibility of inbreeding and genetic drift. Ambystomatid salamanders are known to have limited vagility and high breeding site fidelity, rendering them especially prone to the negative effects of fragmentation. BARTOSZEK AND GREENWALD (2009. *Herpetological*

Conservation and Biology 4:191–197) compared gene flow between two populations of Marbled Salamanders (*Ambystoma opacum*) that are separated by railroad tracks. They also compared the genetic diversity of one population across two consecutive years. Observed heterozygosities within sites indicated that the populations may be inbred, and additional results corroborated the interpretation of semi-isolated populations. Over 60% of individuals were correctly assigned as residents, whereas only two individuals at each site were identified as immigrants. These data suggest that the railroad track may act as a barrier to gene flow in these two populations.



SUZANNE L. COLLINS, CMNH

Barriers as seemingly inconsequential as a railroad track may act as a barrier to gene flow between populations of Marbled Salamanders (*Ambystoma opacum*).

Turtle Vocalization

Narrow-breasted Snake-necked Turtles (*Chelodina oblonga*) are long-necked, freshwater turtles found predominantly in the wetlands on the Swan Coastal Plain of Western Australia. Turtles from three populations were recorded from dawn to midnight in artificial environments set up to simulate small wetlands. GILES ET AL. (2009. *Journal of the Acoustical Society of America* 125:434–443) described a vocal repertoire of 17 categories with calls consisting of both complex and percussive spectral structures. Vocalizations included clacks, clicks, squawks, hoots, short chirps, high short chirps, medium chirps, long chirps, high calls, cries or wails, hooos, grunts, growls, blow bursts, staccatos, a wild howl, and drum rolling. Also, a sustained vocalization, hypothesized to function as an acoustic advertisement display, was recorded during the breeding months, consisting of pulse sequences that finished rhythmically. These turtles often live in

environments where visibility is restricted due to habitat complexity or poor light transmission attributable to tannin-staining or turbidity. Thus the use of sound by turtles may be an important communication medium over distances beyond their visual range.



GERALD KUGHLING

Narrow-breasted Snake-necked Turtles (*Chelodina oblonga*) have a vocal repertoire of 17 categories with calls consisting of both complex and percussive spectral structures.

A New Land Iguana from the Galápagos

GENTILE AND SNELL (2009. *Zootaxa* 2201:1–10) described *Conolophus marthae*, a new species of land iguana endemic to Volcan Wolf of northern Isla Isabela in the Galápagos Archipelago. The new species is morphologically, behaviorally, and genetically distinguished from the other two congeneric species *C. subcristatus* and *C. pallidus*. Besides the taxonomic implica-

tions, *C. marthae* is extremely important as it provides evidence of a deep divergence within the Galápagos land iguana lineage.

Gila Monsters and Urbanization

To assess whether urbanization influences the spatial ecology of a rare and protected venomous reptilian predator, the Gila Monster (*Heloderma suspectum*), KWIATKOWSKI ET AL. (2008. *Journal of Zoology* 276:350–357) compared home range (HR) size and movement parameters at three Sonoran Desert sites varying in degrees of urbanization. The authors predicted that the urban population of *H. suspectum* would exhibit smaller HRs, avoid human structures, and show less movement. Multivariate analysis indicated that males generally exhibited larger HRs and had higher movement rates and activity levels than females at all three sites. Contrary to the authors' predictions, however, HR size and movement parameters did not vary across the sites in relation to the level of urbanization. At the urban site, individuals often crossed narrow roads and regularly used artificial structures as refuges for extended periods. Water and prey, including the eggs of ground-nesting birds and neonatal mammals (rodents and rabbits), are common in human altered environments, facilitating the adaptation of Gila Monsters to those areas. Furthermore, the population sex ratio at the urban site was female-biased, consistent with the expect-



ERIK BETTINI

Home range size and movement parameters of Gila Monsters (*Heloderma suspectum*) did not vary in habitats subjected to various levels of urbanization.

tation that occupation of larger HRs and higher movement rates result in higher mortality for males in urbanized areas. Gila monsters did not appear to alter certain aspects of their spatial ecology in response to low levels of human activity but additional work will be required to assess population viability and possible effects in the long term and with higher levels of urbanization.

Color Affects Social Costs

Australian Painted Dragon Lizards (*Ctenophorus pictus*) come in three head colors: red, orange, and yellow. In addition, some individuals have skin flaps called bibs hanging from their necks. HEALEY AND OLSSON (2009. *Austral Ecology* 43:636–640) demonstrated that some lizards suffer a higher 'social cost' than others. Red and



GABRIELLE GENTILE

The Pink Galápagos Land Iguana (*Conolophus marthae*) was formally described as a new species from Volcan Wolf on Isla Isabela.



PETER MARLOW

Head color in male Australian Painted Dragon Lizards (*Ctenophorus pictus*) elicits a 'social cost' in some individuals.

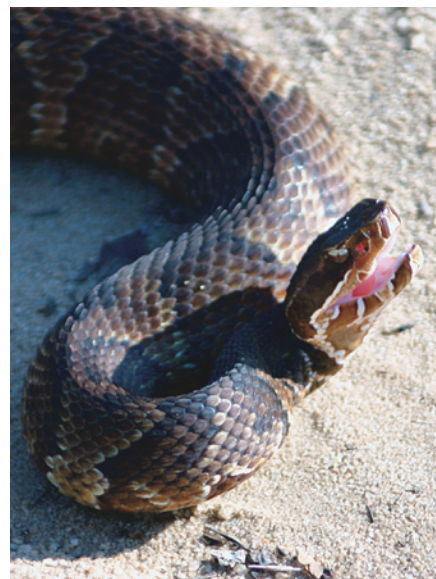
orange males with a bib have better body condition than red and orange males without bibs. In contrast, yellow males who lack bibs have a better body condition than yellow males with bibs. Especially red males are more aggressive and have higher testosterone levels than yellow males. When

exposed to a high number of aggressive neighbors (red), all males suffer losses in body condition, but those with bibs experience more severe losses — especially yellow males. Exposure to red neighbors incites confrontations and fights, disproportionately affecting and thus eliciting a higher ‘social cost’ in yellow males with bibs.

Effects of Human Encounters on Cottonmouths

The increased encroachment of humans into natural areas is typically viewed as stressful for many wildlife species. A common stress response of many animals, including snakes, is the elevated release of the adrenal hormone, corticosterone. To test whether human encounters elicited a stress response in snakes, BAILEY ET AL. (2009. *Journal of Herpetology* 43:260–266) monitored the levels of circulating corticosterone in free-ranging Cottonmouths

(*Agkistrodon piscivorus*) during staged interactions. When exposed to a high-level disturbance (i.e., capture and confinement in a bag) for 30 min, Cottonmouths exhibited a significant corticosterone stress response as predicted. This response was four times that of the control treatment (i.e., immediately bled snakes) and showed that Cottonmouths exhibit strong corticosterone responses to confinement. Conversely, blood corticosterone values for low-level disturbance (i.e., nearby human presence for 30 min) did not differ significantly from the control treatment. The lack of a strong stress response to low-level disturbance indicated that Cottonmouths possess a seemingly adaptive mechanism of not being overly alarmed by the mere presence of a potential predator. This suggests that the occasional foot-path encounters humans commonly have with snakes may not be stressful for some species.



GENEVIE POWELL

Capture and confinement in a bag for 30 minutes elicited a much greater stress response in Cottonmouths (*Agkistrodon piscivorus*) than capture, extraction of a blood sample, and release.

NEWSBRIEFS

Tadpoles Feast on Eggs

In April 2009, 50 endangered Mountain Chickens (*Leptodactylus fallax*), large frogs now restricted to only two West Indian islands, were airlifted from Montserrat after a deadly fungus swept through the island, devastating the population. Now several breeding programs are under way to save the frogs. Once numbers have been boosted in captivity, researchers hope to reintroduce the frogs back into the wild within the next two years.

Remarkable footage (<http://news.bbc.co.uk/2/hi/8185125.stm>), testifying to the success of the captive breeding programs, was recorded at the Durrell Wildlife Conservation Trust, in Jersey, which took in 12 of the rescued frogs. Twenty-six others went to Parken Zoo in Sweden, and 12 are now housed in ZSL London Zoo.

So far, four pairs of Mountain Chickens have started to breed, which could result in hundreds of frogs — and this has given researchers an insight into the way that these unusual amphibians care for their offspring. Professor John Fa, director of Durrell, said: “Mountain Chickens have very peculiar breeding habits because they form foam nests in burrows in the ground.” The females lay their eggs in these nests, which eventually hatch into

tadpoles. However, as the nests are underground, food is scarce — so the frogs need to find a way to provide nutrition for their young. Professor Fa explained: “In the case of Mountain Chickens, we have discovered that the female comes into the nest and starts laying a string of infertile eggs.

“We thought that the eggs would come out and drop to the bottom of the nest and then the tadpoles would start eating them, but the footage shows about 40 tadpoles congregating around the female and eating the eggs as they come out of the female’s body. Every now and again, the female uses her back legs to push the tadpoles away from her body so another set can come up and eat as much as they can.” He added: “It is really weird — it is an alien

scene. This is the first time we have caught this on film.”

The Mountain Chicken is one of the world’s most threatened frogs. The frog is so called because its meat tastes like chicken. It once was found on seven Caribbean Islands, but thanks to hunting and environmental pressures it is currently found only on Montserrat and Dominica. Now, however, the deadly chytrid fungus, which has devastated amphibian populations around the globe, has also ravaged Dominica’s Mountain Chickens. The fungus was first detected on the island in 2002, and within 15 months, 80% of the Mountain Chicken population had been obliterated.

Conservationists were extremely concerned when they found that the chytrid fungus had spread to Montserrat earlier this year, and was sweeping quickly through the Mountain Chicken population. The team made a decision to airlift some of the last healthy frogs and bring them into captivity in a bid to save the creatures from extinction. Professor Fa said: “Things are not going terribly well in Montserrat because chytrid has now infected the safe population — or at least the one we thought was safe.”

The breeding success has offered scientists a ray of hope in an otherwise bleak sit-



Mountain Chicken (*Leptodactylus fallax*) tadpoles feed voraciously on strings of infertile eggs laid by females for that purpose.

MATT GOETZ, DURRELL WILDLIFE CONSERVATION TRUST