

INTRODUCED SPECIES

Hemidactylus frenatus and *Gymnophthalmus underwoodi* in the Dominican RepublicDaniel P. Scantlebury¹, Julianne Ng¹, Miguel A. Landestoy T.², and Richard E. Glor¹¹Department of Biology, University of Rochester, Rochester, New York 14627-0211, USA (dscantle@mail.rochester.edu)²Ministerio de Medio Ambiente y Recursos Naturales, Santo Domingo, Dominican Republic; Sociedad Ornitologica de la Hispaniola, Santo Domingo, Dominican Republic (hispanioland@gmail.com)

During recent herpetological surveys of the Dominican Republic, we collected the first known specimens of two species on Hispaniola: *Hemidactylus frenatus*, which is native to southeastern Asia and which has an almost circumtropical distribution, but has not been recorded previously from anywhere in the West Indies; and *Gymnophthalmus underwoodi*, a parthenogenetic native of northeastern South America that is being discovered on an increasing number of Lesser Antillean islands (Henderson and Powell 2009), but was not previously known from the Greater Antilles.

Several species in the genus *Hemidactylus* (including *H. frenatus*) are included among the most successfully colonizing species of amphibians or reptiles (Bomford et al., 2009). Several African and Asian species have become established in the Western Hemisphere (*H. angulatus*, *H. frenatus*, *H. garnotii*, *H. mabouia*, *H. platyurus*, and *H. turcicus*), with most or all benefiting from human mediation. *Hemidactylus angulatus* (West Indian

populations were formerly assigned to *H. haitianus*; Weiss and Hedges 2007) and *H. mabouia* are widely distributed in the Greater Antilles, and *H. turcicus* occurs locally on Cuba (Henderson and Powell 2009). In August 2008, one of us (JN) collected a subadult male *H. frenatus* (Fig. 1) from beneath the exfoliating bark of a fence post at Balneario La Zurga (an oasis along highway 46 between the towns of Jimaní and Duvergé in Independencia Province, Dominican Republic). That lizard was taken during the morning hours, and no others were observed. We have been unable to survey the area at night, although the senior author conducted an extensive nocturnal survey in La Descubierta (ca. 10 km northeast of Jimaní) in 2009. The only geckos observed were *Aristelliger expectatus*, *H. angulatus*, *H. mabouia*, and *Sphaerodactylus elegans*.

The occurrence of *H. frenatus* at a rather isolated site in the xeric western Dominican Republic is puzzling, as this species is typically associated with warm mesic or edficarian habitats. Illegal Chinese immigrants often cross the Haitian border into the Dominican Republic in this area, and this record might be related to such activities. The failure of the species to spread farther could be limited by the oppressively xeric conditions of the Valle de Neiba. However, a general attitude of indifference by herpetologists to invasive species of *Hemidactylus*, as well as difficulty distinguishing between species of *Hemidactylus*, might have caused *H. frenatus* to go undetected. Careful surveys of the gecko fauna throughout the Dominican Republic should be conducted in order to clarify the status and monitor the potential spread of this highly invasive species.

Gymnophthalmus underwoodi is widely distributed throughout northeastern South America and in the southern Lesser Antilles (Williamson and Powell 2004). Some insular populations may have been founded by ancestors that arrived by natural over-water dispersal, but many are undoubtedly human-mediated (Powell et al. 2011). In September 2009, one of us (ML) collected an individual in leaf litter surrounding the research station at the Punta Cana Resort in La Altagracia Province (Fig. 2). Further searches produced an additional specimen and two other lizards, which we failed to secure. We initially were puzzled by the occurrence of this species in a formerly remote area of the country, but we soon realized that these animals were taken in an exotic fruit-tree garden established by the resort decades ago. These small, parthenogenetic lizards were almost certainly introduced as stowaways in tree containers. Leaf litter surveys of surrounding regions (Boca de Yuma, Bávaro, Bayahibe, and Isla Saona) have not revealed any additional *Gymnophthalmus*. Other lizards collected in proximity of the *Gymnophthalmus* consisted of *Aristelliger lar*, *Celestus* sp., *Hemidactylus angulatus*, and *Sphaerodactylus savagei*.

The voucher specimen of *H. frenatus* is in the Museum of Comparative Zoology (MCZ-R-186874). The specimens of *G. underwoodi* have been assigned numbers from the Richard E. Glor field series (Glor 6813 & 6845). Jimmy McGuire and Tony Gamble confirmed the identity of the *H. frenatus* from photographs, and the identity of the *G. underwoodi* was confirmed from photographs by Robert Powell. We thank Jonathan Woodward who provided photographs of the *H. frenatus* specimen.



Figure 1. Dorsal and ventral views of a *Hemidactylus frenatus* collected in the Dominican Republic. Note the lightly tuberculate dorsal surface, light stripe on the rostrum, and subdigital lamellae that reach the palm on the fourth digit. Photographs courtesy of Jonathan Woodward and The Museum of Comparative Zoology.



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Figure 2. *Gymnophthalmus underwoodi* from the Dominican Republic: A. Dorsum with pattern and coloration typical of this species; B. Venter showing enlarged, imbricate scales.

Amphisbaena fuliginosa (Reptilia: Squamata: Amphisbaenidae) in the Lesser Antilles

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Seventeen species of amphisbaenians representing two families (Cadeidae and Amphisbaenidae) and two genera (*Cadea* and *Amphisbaena*) are known from the West Indies, with a distribution restricted to Cuba, Hispaniola, and the Puerto Rico Bank (Henderson and Powell 2009). No species are known to occur in the Lesser Antilles. Here we report on two specimens of *Amphisbaena fuliginosa* collected in the Lesser Antilles: One from St. Lucia and the other from Grenada. *Amphisbaena fuliginosa* is a South American species with its origin in Amazonia (Vanzolini 2002). Both specimens are in the museum collection at the University of the West Indies (UWITT) in St. Augustine, Trinidad. Both compare closely with published descriptions of *A. fuliginosa* in overall external morphology (Hoogmoed 1973, Murphy 1997, Vanzolini 2002; Table 1).

The St. Lucia specimen (UWITT 2010.12.24) was collected at Barre de L'isle on 4 April 1994 by Christopher K. Starr. The Barre de L'isle area is

forested and mountainous. A discussion with the collector suggested that it was not taken in an area disturbed by humans, although hotels and human modified habitats are within 4 km of the Forest Reserve.

The Grenada specimen (UWITT 2010.12.28) was collected by Garth Underwood. The jar with the specimen contained a slip of paper with a hand-written "Grenada 4-4." This number was also associated with a jar containing specimens of *Anolis aeneus* and *A. richardii* that had been collected by Underwood between 12 and 22 December 1961 at localities from throughout the island and from near sea level to more than 500 m above sea level; therefore, we have no specific locality data for the *A. fuliginosa*. That Underwood did not mention this specimen in his 1962 publication or the supplement that was published in 1964 is puzzling. Perhaps he considered the specimen a "vagrant" and not worthy of mention, but that seems unlikely. Why did he not consider it an addition to the Grenada herpe-