A NEW RECORD AND OBSERVATIONS OF VANDERHAEGE'S TOAD-HEADED TURTLE, *Phrynops vanderhaegei* (Testudines, Chelidae) IN SE BRAZIL

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Resumen: Se presenta una nueva localidad de la tortuga *Phrynops vanderhaegei* en Brasil sudoriental. Los especímenes se localizaron en un área de savana (*cerrado*) con pequeños tramos de bosque ripario. Se comenta brevemente el hábitat circundante. El hallazgo de esta población aislada puede ser importante en la conservación de la especie ya que indica que otras poblaciones podrían sobrevivir y reproducirse en pequeños fragmentos con vegetación bien conservada.

Key words: Brazil, Chelidae, conservation, *Phrynops vanderhaegei*, turtle.

Records related to geographical distribution for Brazilian freshwater turtles are relatively rare and the lack of such basic information has caused mistaken interpretations about species range (VANZOLINI, 1994). Since ecosystems are becoming highly fragmented mainly due to human action, all information available should be used to identify areas that harbor threatened species, which would allow the development of appropriate management programs. In this note, we report a new locality record for the Vanderhaege's toad-headed turtle, *Phrynops vanderhaegei*, and provide comments on its conservation and habitat in southeastern Brazil.

Phrynops vanderhaegei is a medium-sized freshwater turtle, with carapace length around 250 mm (ERNST & BARBOUR, 1984; CABRERA, 1998). Few records concerning its natural history are available. Among these, anedoctal information indicates that this turtle is carnivorous and diurnal (ERNST & BARBOUR, 1989; CABRERA, 1998). Shallow water lagoons with dense aquatic vegetation and occasional scattered trees in the margins characterize its habitat (ERNST & BARBOUR, 1989; CABRERA, 1998). The distribution of *P. vanderhaegei* is still poorly known (Figure 1), with its southern limit at Mala Frigo (Santa Fé, Argentina) and the northern limit at Cuiabá (Mato Grosso, Brazil; IVERSON, 1992; CABRERA, 1998).

For the state of São Paulo (Brazil), the only record for *P. vanderhaegei* is from a place around the cities of Perús and Caieiras

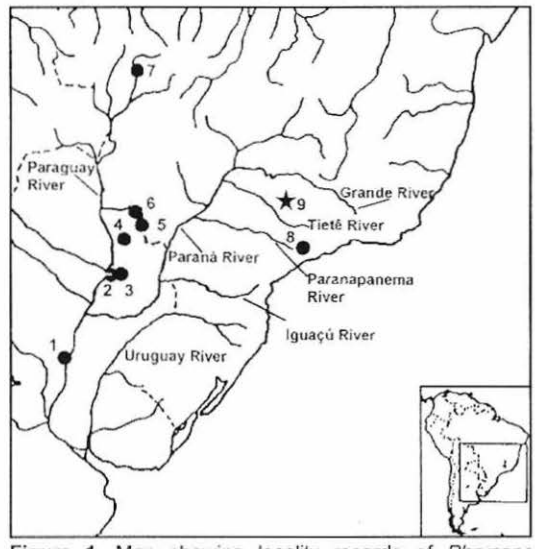

Figure 1. Map showing locality records of *Phrynops vanderhaegei* (modified from IVERSON, 1992). Star denotes the new record, Itirapina, São Paulo state, southeastern Brazil. Argentina: 1 - Mala Frigo; Paraguay: 2 - Asunción, 3 - Tobati, 4 - Nueva Germania, 5 - Capitán Brado, 6 - C. Curó; Brazil: 7 Cuiabá, 8 - Perús/Caieiras, 9 - Itirapina.

Figure 2. A juvenile female of the Vanderhaege's toad-headed turtle, *Phrynops vanderhaegei*, captured at Itirapina, São Paulo state, southeastern Brazil Photo: R. J. Sawaya.

(IVERSON, 1992; IVERSON, *pers. comm.*), which is the easternmost known limit of its distribution (Figure 2). We found the Vanderhaege's toad-headed turtle at "Estação Ecológica de Itirapina" (Itirapina Ecological Station; hereafter Itirapina), which is located within the municipalities of Itirapina and Brotas (22°15' S, 47°49' W), São Paulo state, southeastern Brazil (Figure 1). This locality is about 180 km west of the Perús/Caieiras record. The Itirapina reserve is a 2300 ha tract of savannas (*cerrado*), from grasslands to dense arboreal formations, with small stretches of riparian forests (GIANOTTI, 1988; pers. obs.).

Three individuals of *P. vanderhaegei* (Figure 1) were captured in pitfall traps with drift fence (CECHIN & MARTINS, 2000), which are being used to survey the vertebrate fauna of Itirapina. Two were hatchlings (<1 month old; capture dates 5 and 25 February, 2000) and one was a juvenile female (capture date 3 March, 2000). Turtles were captured after some days of intense rainfall, which resulted in the flooding of the area. Their body measures are in Table 1.

Measures	hatchling 1	hatchling 2	juvenile female
SLC	39.2	41.9	148.7
CCL	44.7	44.4	160.2
CW	25.1	28.2	102.5
PL	28.7	33.1	128.3
PW	18.4	22.0	75.0
W	16.4	16.0	450.0

Table 1. Body measurements of three individuals of *Phrynops vanderhaegei* captured at Itirapina, São Paulo state, southeastern Brazil. Abbreviations are: straight line carapace length (SCL), curved line carapace length (CCL), carapace width (CW), plastron length (PL), plastron width (PW), and weight (W). All measurements are in millimeters; weight is in grams.

The habitat in which these turtles were captured is characterized by a small stretch of gallery forest (around 65 ha) surrounding a shallow, short tributary (about 1 km) of Lobo stream. Grasslands with a few schrubs (*campo sujo*) surround the gallery forest. The Lobo stream runs towards a large man made dam ("Represa do Lobo") about 1 km from the tributary where *P. vanderhaegei* was found. Besides the Itirapina reserve, few other natural habitats occur in the region; pastures and

commercial *Pinus* and *Eucalyptus* forests cover most of the area (GIANOTTI, 1988; pers. obs.).

In contrast with Itirapina and Cuiabá (Mato Grosso, Brazil), where the typical vegetation is composed of several savanna formations, the region of the Perús/Caieiras locality is covered by Atlantic rainforest (*sensu lato*). The Lobo stream belongs to the mid-Paraná river basin and the main river from Perús/Caieiras region, the Tietê river, is also a tributary of the Paraná river. The Tietê river runs through a wide area of the central region of São Paulo state, with its origin located in the west side of the Serra do Mar mountain complex (Figure 2). On the other hand, rivers where *P. vandehaegei* were recorded in Cuiabá (Brazil), Paraguayan, and Argentinean localities belong to the Paraguay river basin. Hundreds of years ago, the vegetation along these river systems was continuous and both the coastal Atlantic rainforests and the upland mesophytic forests extended their domains to wide areas. However, due to human action beggining around the XVII century, these forests were drastically reduced (DEAN, 1996). Thus, species which once could make migrations throughout these vegetation corridors, became isolated in disjunct populations. The dependence of such corridors for migration is recorded for some groups, including reptiles, birds, and mammals (VANZOLINI, 1976; REDFORD & FONSECA, 1986; GUIX, 1997; VIVO, 1997). If the record of *P. vanderhaegei* for Perús/Caieiras region is correct, then probably the species could be once spread throughout São Paulo state, reaching also Mato Grosso. Turtles could have used rivers surrounded by riparian forests, even small ones like those of Itirapina.

Turtle species richness is high in Brazil (PRITCHARD & TREBBAU, 1984; IVERSON, 1992) and several species are often included in conservation programs (IUCN/SSC, 1991; IBGE, 1995; SEMA, 1998). Since species often exhibit specific habitat requirements, such as unpolluted streams and places with dense aquatic vegetation (PRITCHARD & TREBBAU, 1984; ERNST & BARBOUR, 1989; CABRERA, 1998), they are highly vulnerable to becoming restricted to isolated populations. This is an important concern because many turtles species inhabiting areas threatened by human action are disappearing (ROCHA-E-SILVA & KISCHLAT, 1992). The *cerrado* vegetation covers about one fourth of Brazilian territory (*ca.* 2 million km^2; Eiten, 1972, 1992; IBGE, 1993; RATTER *et al.*, 1997), but due to human action, mainly agricultural practices and charcoal production, the *cerrado* has experienced severe reductions in its area in the last decades. Presently, only 1.5% of this biome is preserved as Federal Reserves (IBGE, 1993; RATTER *et al.*, 1997). The finding of juvenile and hatchlings of *P. vanderhaegei* living in small savanna fragments like those of Itirapina, indicates that even small reserves can be important to the conservation of this species, with some populations surviving and reproducing in small patches.

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