

## NOTES ON GEOGRAPHIC DISTRIBUTION

### Reptilia, Colubridae, *Helicops angulatus*: distribution extension and rediscovery in the state of Ceará

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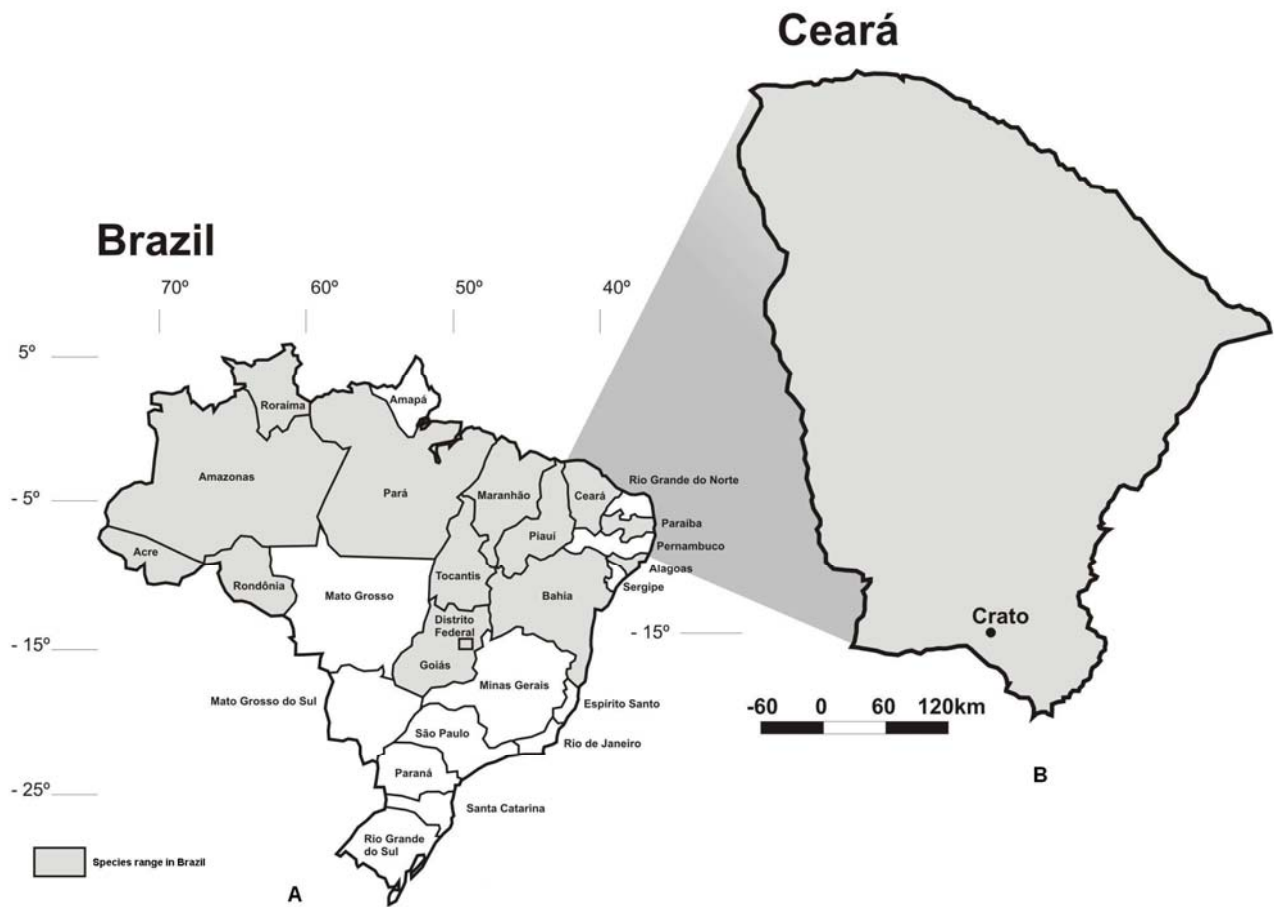
The genus *Helicops* comprises 17 species distributed east of the Andes, in Venezuela, Argentina, Paraguay, Uruguay, Colombia, Bolivia, Peru, Brazil, Ecuador, Guiana, French Guiana, Suriname, and Trinidad (Peters and Orejas-Miranda 1970; Cunha and Nascimento 1993; Bérnils et al. 2007; Uetz 2008). Ten species have been recorded from Brazil: *Helicops angulatus*, *H. carinicaudus*, *H. gomesi*, *H. hagmanni*, *H. infrataeniatus*, *H. leopardinus*, *H. modestus*, *H. polylepis*, *H. tapajonicus* and *H. trivittatus* (SBH 2008).

*Helicops angulatus* is a nocturnal species that inhabits still or slow flowing water in small dams and ponds in forested and disturbed areas and savannas (Martins and Oliveira 1998; Ford and Ford 2002; França et al. 2006). This species occurs in Venezuela, Guiana, Suriname, Colombia, Brazil, Bolivia, Peru, Trinidad, Ecuador and French Guiana (Cunha and Nascimento 1993; Uetz, 2008). In Brazil *H. angulatus* have been reported for Acre, Amazonas, Pará, Rondônia, Roraima, Goiás, Tocantins, Distrito Federal, Maranhão, Piauí, Paraíba, Alagoas and Bahia states (Martins and Oliveira 1998; Vitt et al. 2002; Freitas 2003; França et al. 2006; França and Araújo 2007; Frota 2005; Silva et al. 2006; Santana et al. 2008).

For state of Ceará, there is a historical record of *H. angulatus* in a species list deposited in Rocha Museum, municipality of Fortaleza (Gomes 1918). However, in 1915 Francisco Dias da Rocha sent this specimen to *Instituto Butantan* in São Paulo, but no collection data came with it other than it was collected in Ceará. Thus, this record was considered uncertain by Gomes (1918), who reported only that this specimen was from the northern region of Brazil. Thirty years later, Rocha (1948) published a list of the reptiles from Ceará, and cited *H. angulatus*, without reference to a specific locality for the occurrence of the species, neither to a voucher specimen. It is possible that was the same specimen sent to the *Instituto Butantan* in 1915.

In 5 May 2008, a specimen of *Helicops angulatus* (dorsal scale rows 19; 119 ventral scales, 79 subcaudals; snout-vent length (SVL) 320 mm; tail-length (TL) 164 mm) was collected manually in a small pond inside a sugar cane and rice plantation, in the *Chapada do Araripe*, municipality of Crato (07°13'18.24" S, 39°23'42.40" W; 407m), southern region of the state of Ceará, Brazil (Figure 1). It is a very disturbed site, and in the past comprised the humid forests in the slopes of the Chapada do Araripe, today the only small source of water in the area came from the Granjeiro spring located in the gallery forest in the region.

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**Figure 1.** Distribution recognized for *Helicops angulatus* in Brazilian territory (A); Map showing the new distribution record for the state of Ceará, municipality of Crato, northeastern Brazil (B).



**Figure 2.** Specimen of *Helicops angulatus* (LZ-URCA 492) collected at Chapada do Araripe, CE

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The specimen was collected, fixed in 10% formalin for 48 hours, and conserved in 70% ethanol. After this procedure the specimen was deposited in the Laboratory of Zoology at the *Universidade Regional do Cariri - URCA* (LZ-URCA 492 – Figure 2).

The Chapada do Araripe region is inserted in the *Caatinga* biome, Northeastern Brazil, and it is composed with savannas vegetation in the plateau, *caatinga* dry forest and humid forest in the slopes. The region is considered an area of extreme priority for the conservation of the *Caatinga* biome (MMA 2007), containing a high biodiversity of flora and fauna (see Coelho and Silva 1996; Borges-Nojosa and Caramaschi 2003), including the critically endangered bird, the Araripe Manakin *Antilophia bookermanni*. Until very recently the only species of *Helicops*

recorded in the *Caatinga* biome was *Helicops leopardinus* (Rodrigues 2003). Our finding represents the first vouchered record of *H. angulatus* for the *Caatinga* biome and for the state of Ceará, and extends the species' range ca. 502 km west from nearest knowledge locality, the *Mata do Buraquinho*, a remnants Atlantic forest in the municipality of João Pessoa, state of Paraíba (7°08'42" S, 34°51' 54" W) (Santana et al. 2008).

Therefore, the present record should be considered as a confirmation for the species in the state of Ceará, as previously reported (Rocha 1948). Nevertheless, this record brings the first precise and documented (voucher specimen LZ-URCA 492) information of distribution of the species in the state of Ceará and in the entire *Caatinga* biome.

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