

NOTES ON GEOGRAPHIC DISTRIBUTION

Reptilia, Testudines, Chelidae, *Acanthochelys macrocephala*: Distribution extension, geographic distribution map, and hatchling morphology

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Acanthochelys macrocephala is a side-necked turtle found in south-central Bolivia, western Brazil and northwestern Paraguay (Rhodin et al. 1984; Iverson 1992). The species is characteristic of South American open formations (Souza 2005), being a typical inhabitant of the Brazilian *Pantanal* (Alho and Gonçalves 2005; Souza 2005; Junk et al. 2006), Bolivian (Rumiz and Herrera 1998; Dosapey and Montaña 2004) and Paraguayan *Chaco* (Buskirk 1988; Fritz and Pauler 1992; 1999; Ziegler et al. 2002; Métrailler 2003; 2006; Vinke and Vinke 2001; 2008). It is present in the flooded areas under the influence of the Paraguay river basin (Rhodin et al. 1984; Souza 2005) and possibly the swamplands along the upper Guaporé river (Rhodin et al. 1984). It is also found on the upper Mamoré river drainage (Rhodin et al. 1984; Junk et al. 2006).

The species was described in 1984 based on specimens from one locality in Bolivia and three localities in Brazil (Rhodin et al. 1984). The authors also predicted its occurrence in Paraguay, what four years later was confirmed by Buskirk (1988). *Acanthochelys macrocephala* was recorded in many other localities in Paraguay (Fritz and Pauler 1992; Ziegler et al. 2002; Métrailler 2003; Weiler 2006, Vinke and Vinke 2001; 2008) and Bolivia (Iverson 1986; Rumiz and Herrera 1998; Dosapey and Montaña 2004) since then. Field work in Brazil added some new localities in the states of Mato Grosso (Cintra and Yamashita 1989; Iverson 1992) and Mato Grosso do Sul (Bour and Pauler 1987; Iverson 1992; Kinas et al. 2005; Ávila et al. 2006). Localities in

Mato Grosso do Sul are restricted to the municipalities of Corumbá, Aquidauana, and possibly Coxim.

In January 2004, one of us (BF) found three hatchlings *Acanthochelys macrocephala* at the location of *Retiro Novo* (19°49'58" S 56°16'0" W), an area used as *inverno* (winter pasture for fattening cattle), at *Fazenda Caiman*, municipality of Miranda, state of Mato Grosso do Sul. This new record is located about 30 km south from the *Fazenda Rio Negro* (municipality of Aquidauana, state of Mato Grosso do Sul), where *A. macrocephala* was previously recorded (Kinas et al. 2005). Hatchlings were photographed and released. *Fazenda Caiman* is located in the southeastern part of the Brazilian *Pantanal*, in a subregion known as *Aquidauana Pantanal*. Dominant vegetation types consist primarily of savannas and semideciduous forests (Silva et al. 2000). This is the first record for the species at municipality of Miranda and represents the southernmost locality of this species in Brazil (Figure 1).

Rhodin et al. (1984) described the species based on 15 adult and subadult specimens, being the smallest one a subadult male with a carapace length of 132 mm. Buskirk (1988) was the first to describe a juvenile (carapace length of 93.1 mm), based on an empty shell. Other descriptions were made for adults (Cintra and Yamashita 1989; Ernst and Barbour 1989; Fritz and Pauler 1992; Vinke and Vinke 2001; Métrailler 2003; 2006) and juveniles (Métrailler 2003; 2006). Cintra and

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Yamashita (1989) were the first to make a succinct description on a hatchling that measured 38 mm of carapace length and 27 mm of plastron length. According to them "the upper part of the carapace, plastron and sides of neck were covered in orange/red patches. The pupils were gray and the iris buff."

The hatchlings described here measured about 40 mm of maximum carapace length and 30 mm of mid line plastron length. The presence of an egg caruncle (Figure 2), an umbilical scar (Figure 3), and some folds in the shell (Figures 3 and 4) indicated that they had only a few weeks of age. There were no concentric growth lines on the carapace and plastron scutes. Plastron anterior lobe was somewhat oval and wider than posterior lobe. Intergular scute was triangular and longer than broad.

The plastral formula was: intergular > femoral > abdominal > humeral > pectoral > anal. The anal notch was angular but not deep (Figure 3). Carapace was oval with maximum width at the level of the 8th marginal scutes. Marginals 3-7 were slightly upturned. Nuchal scute was almost twice as long as broad. Vertebrales were broad, especially vertebrales 2-4. There was no central groove or keel. There was no supra caudal notch (Figure 4). The head was large. Dorsal surface was covered by large shields of different sizes and irregular shapes (Figure 2). Dorsal surface of neck was covered by very small tubercles. Ventral surface of head and neck was covered by small elongated shields. The chin had two small barbels. Forelimbs had five claws; hind limbs had four claws and large pre-tibial flaps (Figure 3).

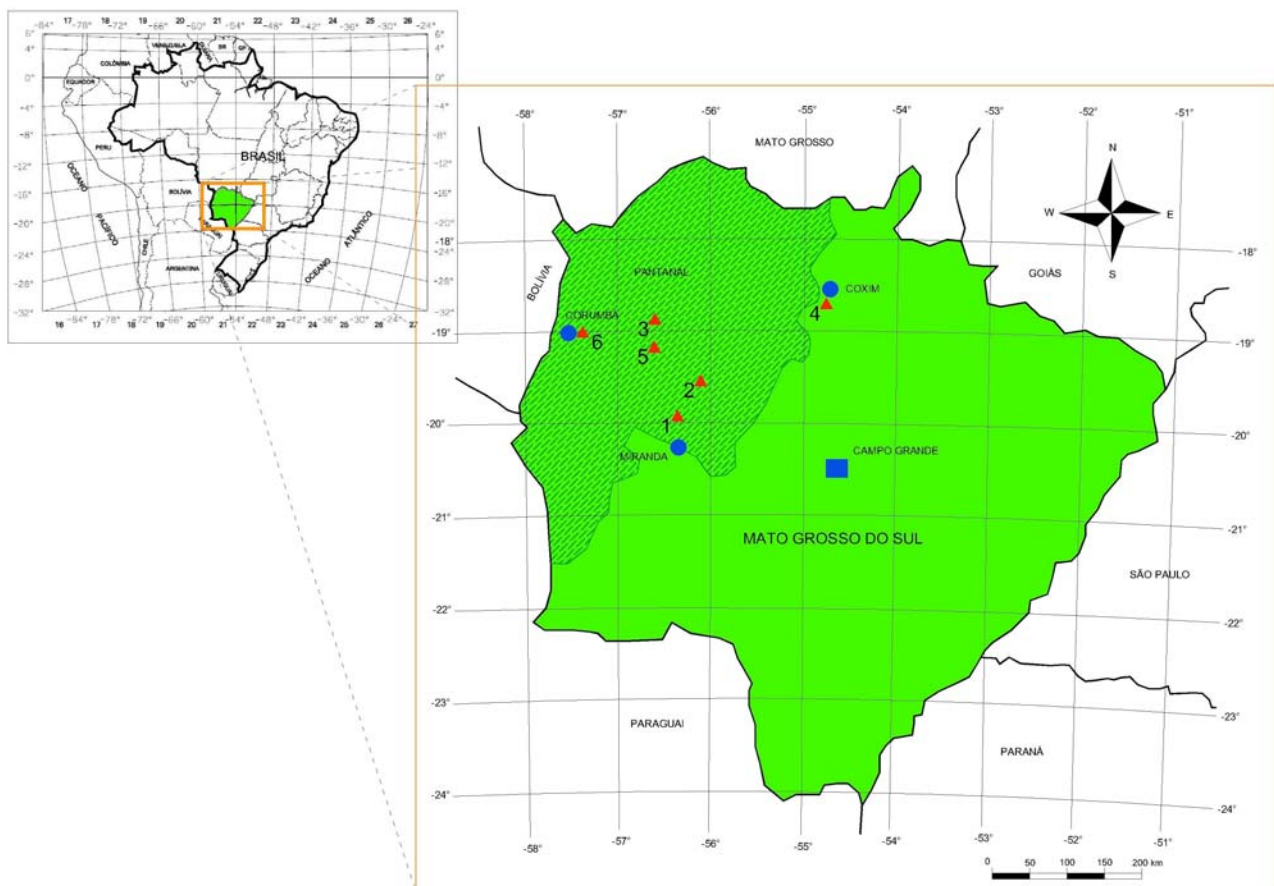


Figure 1. Distribution of *Acanthochelys macrocephala* in state of Mato Grosso do Sul (Brazil). 1: municipality of Miranda (present study); 2: municipality of Aquidauana (Kinas et al. 2005); 3, 5 and 6: municipality of Corumbá (Bour and Pauler 1987; Kinas et al. 2005; Ávila et al. 2006); 4: municipality of Coxim which deserves further confirmation (Ávila et al. 2006).

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Plastron was black with large orange spots occupying most of the center and external side of each plastral scute, creating a reasonable symmetry between right and left sides (Figure 3). Carapace was brown mottled with black blotches. Large orange spots occupied most of the ventral surfaces of the marginal scutes (Figure 3), including the external border of their dorsal surfaces (Figure 4). Dorsal surface of head was light brown mottled with small black spots. Dorsal surface of neck was black. The tympanum was orange and the iris was pale yellow (Figure 2). Ventral surface of head and neck was black with irregular orange markings. The limbs were black with some orange scales and the pre-tibial flaps were orange (Figure 3).

Although the geographic distribution of *A. macrocephala* is apparently restricted by a well defined seasonal climate with wet and dry seasons and by specific habitat characteristics such as the presence of an open canopy (Souza 2005), further investigation is needed to confirm its presence in other regions and habitat types. The species seems to be associated to low lying swamplands, as no confirmed record is available for upland Brazilian *Cerrado* sites, which are dominated by seasonal environments and open habitats as well. Altitude and geomorphology seem to be important in shaping *A. macrocephala* distribution. The species is probably absent from the Brazilian plateaus surrounding the *Pantanal* and Guaporé regions.

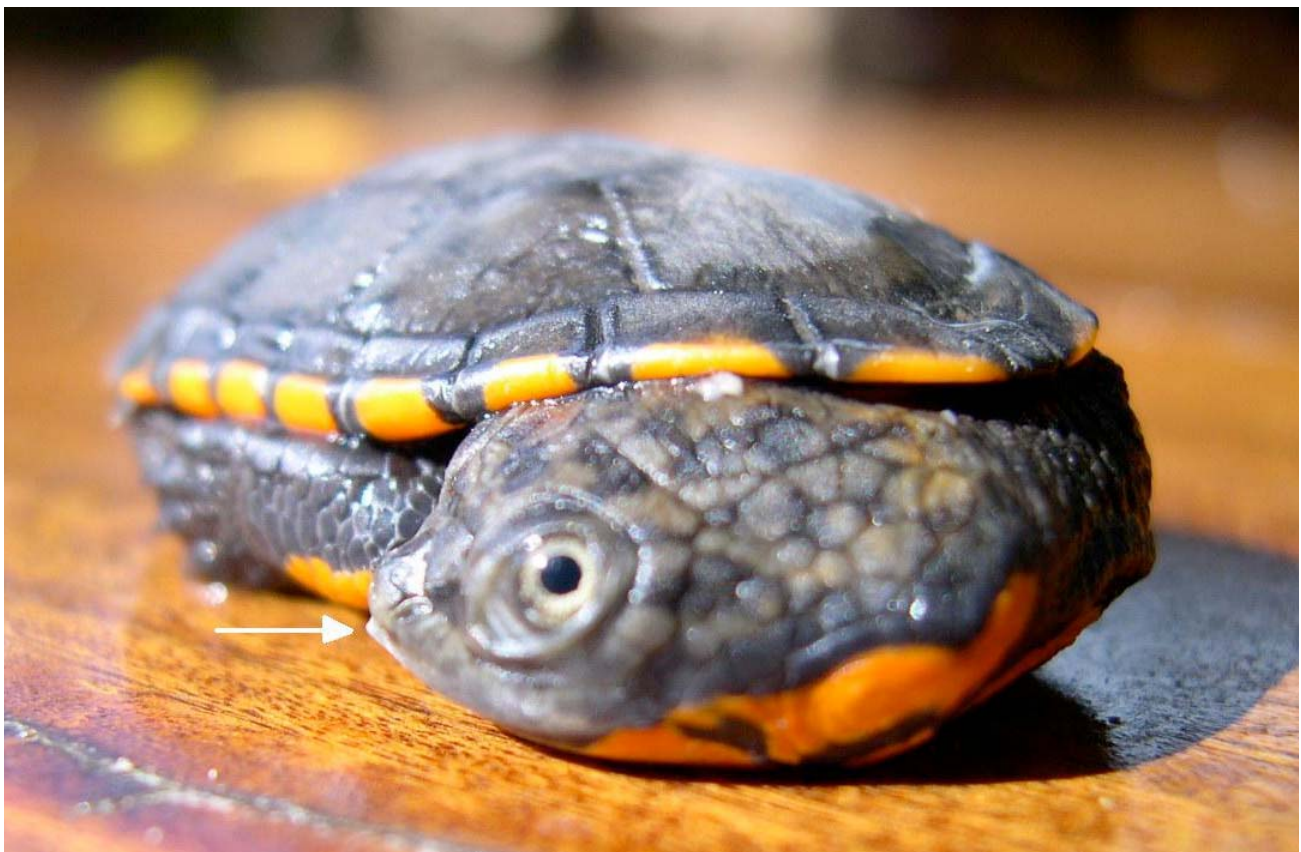


Figure 2. Hatchling of *Acanthochelys macrocephala*. The arrow points at the egg caruncle. Photo by Fernanda Melo.

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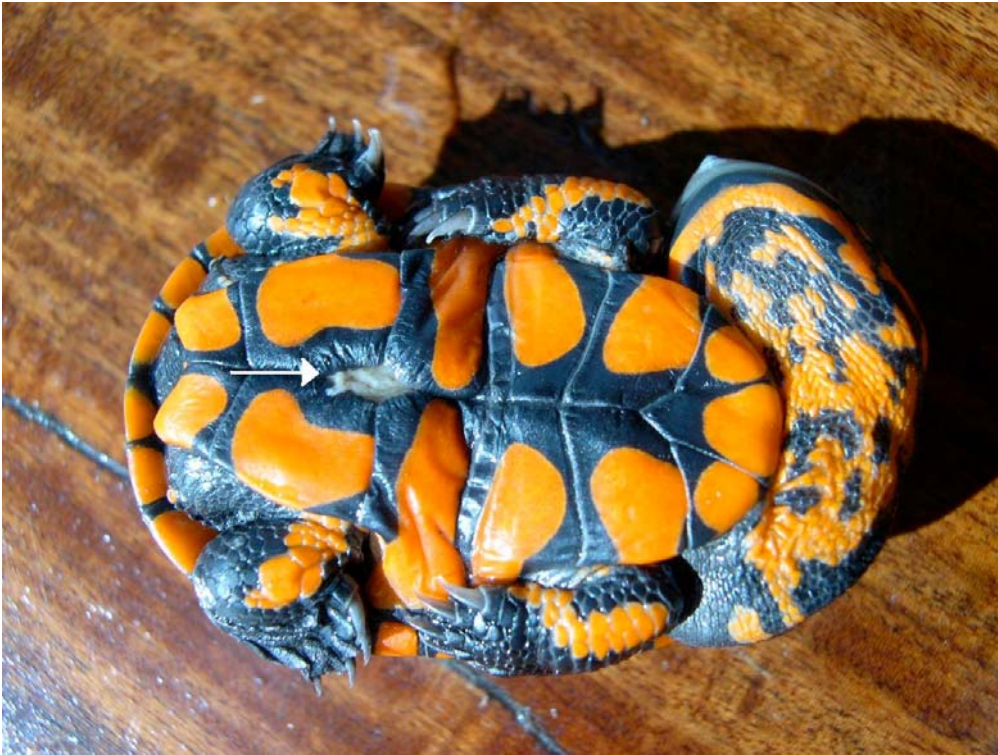


Figure 3. Ventral view of a hatchling of *Acanthochelys macrocephala*. The arrow points at the umbilical scar. Photo by Fernanda Melo.



Figure 4. Dorsal view of a hatchling of *Acanthochelys macrocephala*. Photo by Fernanda Melo.

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