# The discovery of Cuvier's Dwarf Caiman, *Paleosuchus palpebrosus* (Reptilia: Alligatoridae) in Trinidad

Trinidad has a rich diversity of reptiles. Murphy (1997) reported 91 species of reptiles including introduced species, species of questionable occurrence, and waifs. The 1997 summary also included a discussion of three species of crocodilians possibly present on Trinidad. The Spectacled Caiman, *Caiman crocodilus* is the only crocodilian known to have established populations on both Trinidad and Tobago. It can be found in most swamps and water courses from the southern versant of the Northern Range to the south coast (Gerard 1991, Mohammed 2015). Speculation over the past century has suggested that two crocodiles, the American Crocodile, *Crocodylus acutus* and the Orinoco Crocodile, *C. intermedius* may occur as waifs in Trinidad and Tobago waters. However, the evidence for this is scant and summarized in Murphy (1997).

During a herpetofaunal survey of the South Central District of Trinidad, for the Petroleum Company of Trinidad and Tobago Limited, a team led by SHA and two field assistants Daryl Abraham and Darius Baldeo, discovered a specimen of Cuvier's Dwarf Caiman *Paleosuchus palpebrosus* (Fig. 1.). The caiman was found in a tractor wheel track on a logging trail in the Erin Central Field (Grid Reference UTM 20-n 648556m E, 1120213m N) on 26 April 2012. The caiman measured 34 cm in total length. The caiman was identified using the keys in Grenard (1991).

During subsequent surveys at the same location, any caimans found in the surrounding waterways, ponds and swampy areas were closely examined. Three other specimens were found on 11 November 2013, two of which were collected and measured (58 and 53cm). One specimen was deposited in the Zoology Museum, UWI St Augustine (UWIZM.2016.35) and a tissue sample for DNA was collected.

Two *Paleosuchus palpebrosus* were collected at Granville in 2014. These were both very young individuals caught in a stream between Austin Coromandel North and Syfo Trace, Granville in southwestern Trinidad (Grid Reference UTM 20-n 632730m E 1118206m N). One was approximately 25cm long, and caught about 2315 h on 22 February 2014. The second was approximately 26.5cm long, caught at 2105 h on 1 March 2014. Finally, a female, 86.5cm long, was discovered on 11 October 2016 at 2245 h at the Iros Forest between Chattam North Trace and Point Coco Trace Ext. (UTN 20-n 635028m E, 1121110m N).

These are the first reports of this species for Trinidad and Tobago. The first and second sites are almost 16km apart, thus there are at least two colonies, probably three, inhabiting the island. *Caiman crocodilus* were observed inhabiting the same small water courses and thus the

**Fig. 1.** Cuvier's Dwarf Caiman *Paleosuchus palpebrosus*, Erin, 6 December 2016. Photographed by Saiyaad Ali.


**Fig. 2.** The distribution of the Dwarf Caiman, *Paleosuchus palpebrosus*. Adapted from Magnusson and Campos (2010).

species are sympatric on Trinidad as they are over much of their overlapping distributions. Figure 2 shows the distribution of *P. palpebrosus*.

The Neotropical Dwarf Caimans (*Paleosuchus*) and the African Dwarf Crocodile (*Osteolaemus*) are considered to be the smallest crocodilians, with adult sizes between 1.0 and 2.1 m (Campos et al. 2010). In the Amazon, *P. palpebrosus* inhabits a number of aquatic habitats, including flooded forests near the major rivers and lakes (Vasconcelos and Campos, 2007). The species occurs in headwater rivers and streams of ridges with waterfalls around the Pantanal where it faces habitat loss due to mining activities, deforestation, erosion, pollution, hydroelectric dams, urbanization and hunting (Campos *et al.* 1995, Campos and Mourão 2006).

Throughout its range the Dwarf Caiman is known by a variety of English, Spanish and Portuguese names: Dwarf Caiman, Cuvier's Smooth-fronted Caiman, Jacaré-paguá, Jacaré-preto, Jacaré-ferro, Jacarétiritiri, Cachirre, Musky Caiman, and Cocodrilo (Magnusson and Campos 2010).

The Dwarf Caiman is relatively well-studied despite its secretive nature. The male breeds with multiple females and prefers mating at night in shallow water. Both sexes are involved in building a mound-shaped nest. Females lay 10 – 25 eggs which hatch in 90 days. During incubation the female attends the nest until the eggs hatch and post hatchling for several more weeks. The hatchlings remain in the nest for several days until the female digs them out. Male reaches sexual maturity at 1.1m and females at 1.0m. Dwarf caimans mature slowly and it may take them ten years to reach maturity (Campos *et al.* 2012).

The Neotropics hold 30-50% of the world's herpetofauna (frogs, salamanders, caecilians, turtles, crocodilians, lizards and snakes). However, surprisingly little is known about diversity, systematics, ecology and natural history of many species. Simple, accurate inventories of species for a given area can be misleading and give the impression that we know more than we actually do. This makes planning conservation strategies difficult.

The herpetofauna of Trinidad and Tobago should be considered very well-known compared to many locations on mainland South America. The first list of the islands' herpetofauna was published in 1858 and since that time the number of species reported from the islands has grown. In the 1980's JCM was under impression that it would be possible to develop a complete inventory of the herpetofauna in a half dozen trips for field work and a look at existing museum specimens, considering the combined area of both islands is only about 5000 km$^2$. This assumption could not have been more wrong.

New species continue to be described from the islands, and records of species previously unknown continue to be reported. The present example is a reminder that these are not all small, secretive species and that we need to continue to take a closer, more thoughtful look at the herpetofauna. Some may argue that these new records are the result of recent dispersal events from the mainland. This may be correct for some, but clearly not all of the recently discovered species on Trinidad and Tobago are recent arrivals.

**REFERENCES**

**Campos, Z., Mourão, G.** 2006. Conservation status of the dwarf caiman, *Paleosuchus palpebrosus*, in the region surrounding Pantanal. *Crocodile Specialist Group Newsletter*, 25 (4): 9-10.

**Campos, Z., Sanaiotti, T**. 2006. *Paleosuchus palpebrosus* (dwarf caiman) nesting. *Herpetological Review*, 37: 81.

**Campos, Z., Coutinho, M., Abercrombie, C.** 1995. Size structure and sex ratio of dwarf caiman in the Serra Amolar, Pantanal, Brazil. *Herpetological Journal*, 5: 321-322.

**Campos, Z., Sanaiotti, T.** and **Magnusson**, **W. E.** 2010. Maximum size of dwarf caiman, *Paleosuchus palpebrosus* (Cuvier, 1807), in the Amazon and habitats surrounding the Pantanal, Brazil. *Amphibia-Reptilia*, 31(3), 439-442.

**Campos, Z., Sanaiotti, T., Muniz, F., Farias, I.** and **Magnusson, W.E.** 2012. Parental care in the dwarf caiman, *Paleosuchus palpebrosus* Cuvier, 1807 (Reptilia: Crocodilia: Alligatoridae). *Journal of Natural History*, 46(47-48), 2979-2984.

**Grenard, S**. 1991. Handbook of Alligators and Crocodiles. Krieger Publishing Co., Florida, USA.

**Magnusson, W.E.** and **Campos, Z**. 2010. Cuvier's Smooth-fronted Caiman *Paleosuchus palpebrosus.* p. 40-42 *In* **S.C. Manolis** and **C. Stevenson,** eds. Crocodiles. Status Survey and Conservation Action Plan. Third Edition,. Crocodile Specialist Group: Darwin.

**Mohammed, R.S.** 2015. Distribution of the Caiman, *Caiman crocodilus* on Tobago. *Living World, Journal of The Trinidad and Tobago Field Naturalists' Club,* 2015: 66-67.

**Murphy, J.C.** 1997. Amphibians and Reptiles of Trinidad and Tobago. Krieger Publishing Co. Florida, 245p.

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