

FAILED PREDATION OF A NEWBORN CALF BY THE CENTRAL AMERICAN COMMON BOA (*BOA IMPERATOR*: SERPENTES: BOIDAE) IN COSTA RICA

INTENTO DE DEPREDACIÓN DE UN TERNERO RECIÉN NACIDO POR UNA BOA COMÚN CENTROAMERICANA (*BOA IMPERATOR*: SERPENTES: BOIDAE) EN COSTA RICA

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Resumen.– Se presenta un intento de depredación fallida de una Boa común centroamericana adulta (*Boa imperator*) sobre un ternero de un día de nacido. La serpiente logró matar al ternero pero no consiguió tragarlo al no poder superar el ancho de la cabeza del bovino. Después de varios minutos desistió y se retiró a pocos metros del sitio donde permaneció con signos evidentes de agotamiento. Estos errores de cálculo en la depredación no son raros en las serpientes, y aunque usualmente logran liberarse de la presa, en ocasiones no pueden y mueren por agotamiento u otras circunstancias.

Palabras clave.– Reptilia, Serpentes, interacción presa-depredador, dieta, comportamiento alimenticio.

Abstract.– A failed predation attempt by an adult Central American Common Boa (*Boa imperator*) on a one-day-old calf is presented. The snake managed to kill the calf but was unable to swallow it as it could not overcome the width of the bovine's head. After several minutes he gave up and retired a few meters from the place where he remained with obvious signs of exhaustion. These miscalculations in predation are not uncommon in snakes, and although they usually manage to free themselves from prey, sometimes they cannot and die from exhaustion or other circumstances.

Key words.– Reptilia, Serpentes, predator-prey relationships, diet, feeding behavior.

Central American Common Boa (*Boa imperator*) ranges from Mexico to Panama and the island of San Andrés in Colombia (Boundy, 2020). In Costa Rica, it is found in rain and dry forests along both slopes and the Central Valley, from sea level to 1650 m elevation (Savage, 2002; Sasa et al., 2010; Solórzano, 2022). It is a large snake, reaching a known maximum length of 5 m, although specimens larger than 3.80 m have not been recorded in Costa Rica, where the usual average size of adults is 2-2.50 m. Usually hides or move among the ground vegetation, on bushes or trees at low heights, or passively sunning itself in varied places. It can also be found in houses, and warehouses, where it will rest or hunt domestic and farm animals (Solórzano, 2004, 2022). To our knowledge, there is no previous record of an attempt to capture a calf by this boid species. Their diet consists of a wide variety of small and medium-sized mammals, including rats, agoutis,

coatis, raccoons, opossums, monkeys, squirrels, bats, felines, anteaters (tamanduas), and even young deer, as well as various species of birds and lizards (green and black iguanas among others), and domestic animals such as dogs, cats and poultry (Savage, 2002, Solórzano, 2022), but there are not officially recorded cases of calves in their diet.

At approximately 7 a.m. on June 16, 2022, an agricultural worker on a cattle farm in Santa Clara de San Carlos, Alajuela province (10.35871° N, 84.51474° W; Datum WGS84, 113 m a.s.l.), found a Central American Common Boa, ca. 3 m total length, coiled around the neck of a one-day-old calf nearing death. A newborn calf has an approximate average weight of 35-40 kg (Nugent et al., 1991). The worker observed the event for about 30 minutes as the snake began to swallow the calf head first (Fig.

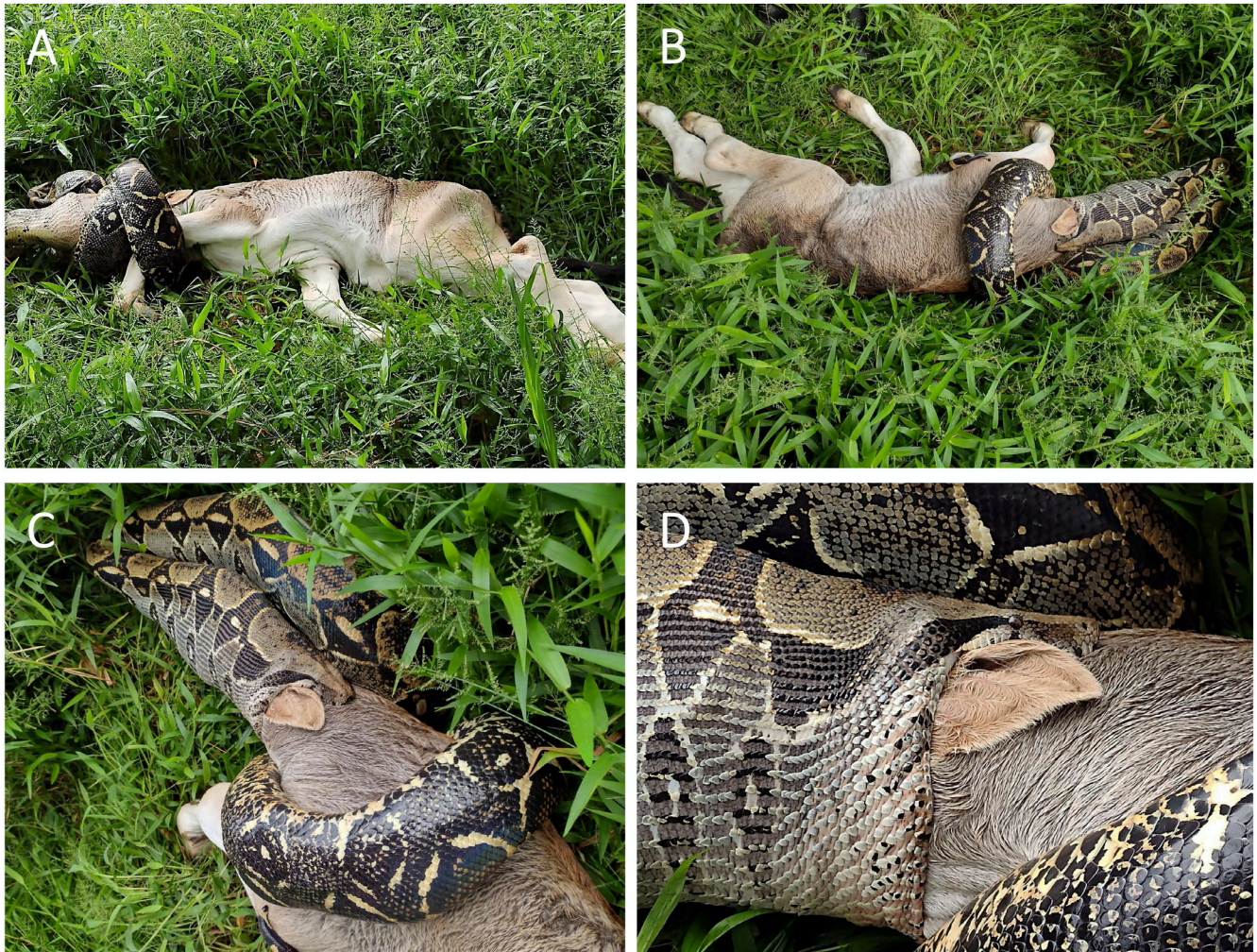


Figura 1. Boa común centroamericana (*Boa imperator*) de 3m de longitud total, intentando tragar un ternero recién nacido capturado en una finca ganadera en Santa Clara de San Carlos, provincia de Alajuela. A.-Se observa la serpiente enrollada sobre el cuello del ternero ejerciendo constricción, B, C) La serpiente empezando a tragar el ternero por la cabeza. D) Detalle del estiramiento de la piel del cuello y apertura de la mandíbula de la cabeza de la serpiente, tratando de pasar la cabeza del ternero, que al final no logró conseguir. Fotos: José Antonio Núñez Alpízar.

Figure 1. Central American Common Boa (*Boa imperator*) from 3 m in total length, trying swallowing a newborn calf that captured on a cattle farm in Santa Clara, San Carlos, Alajuela province. A) The snake is seen coiled around the neck of the calf, making constriction. B, C) The snake beginning to swallow the calf by the head, D) Detail of the stretching of the skin on the neck and opening of the jaw of the snake's head, trying to pass the head of the calf, which in the end it failed to achieve. Photos: José Antonio Núñez Alpízar.

1), before giving up and scaping. Four hours later, the man returned to the site, where the calf's body was found intact. After a brief search, the snake was located about 25 m away in a resting position, with the skin on the front part of the body still stretched and the lower jaw slightly dislodged due to the failed effort made to ingest the calf. No skull dimensions were taken in any of the animals, but as can be seen in Fig. 1 C, the head of the calf is at least three times larger than that of the snake. It is likely that the snake could not swallow the calf past its head and gave

up on the attempt with no apparent harm to the snake beyond the exhaustion caused.

Failed depredations events such as this are not uncommon for gape-limited predators such as snakes. While not always fatal for the snake, there have been cases where the snake cannot free itself of its attempted meal and dies of exhaustion or is found by predators (Kornilev et al., 2023). As an example, in some cases the skin of the snake ends up giving way due to the pressure and

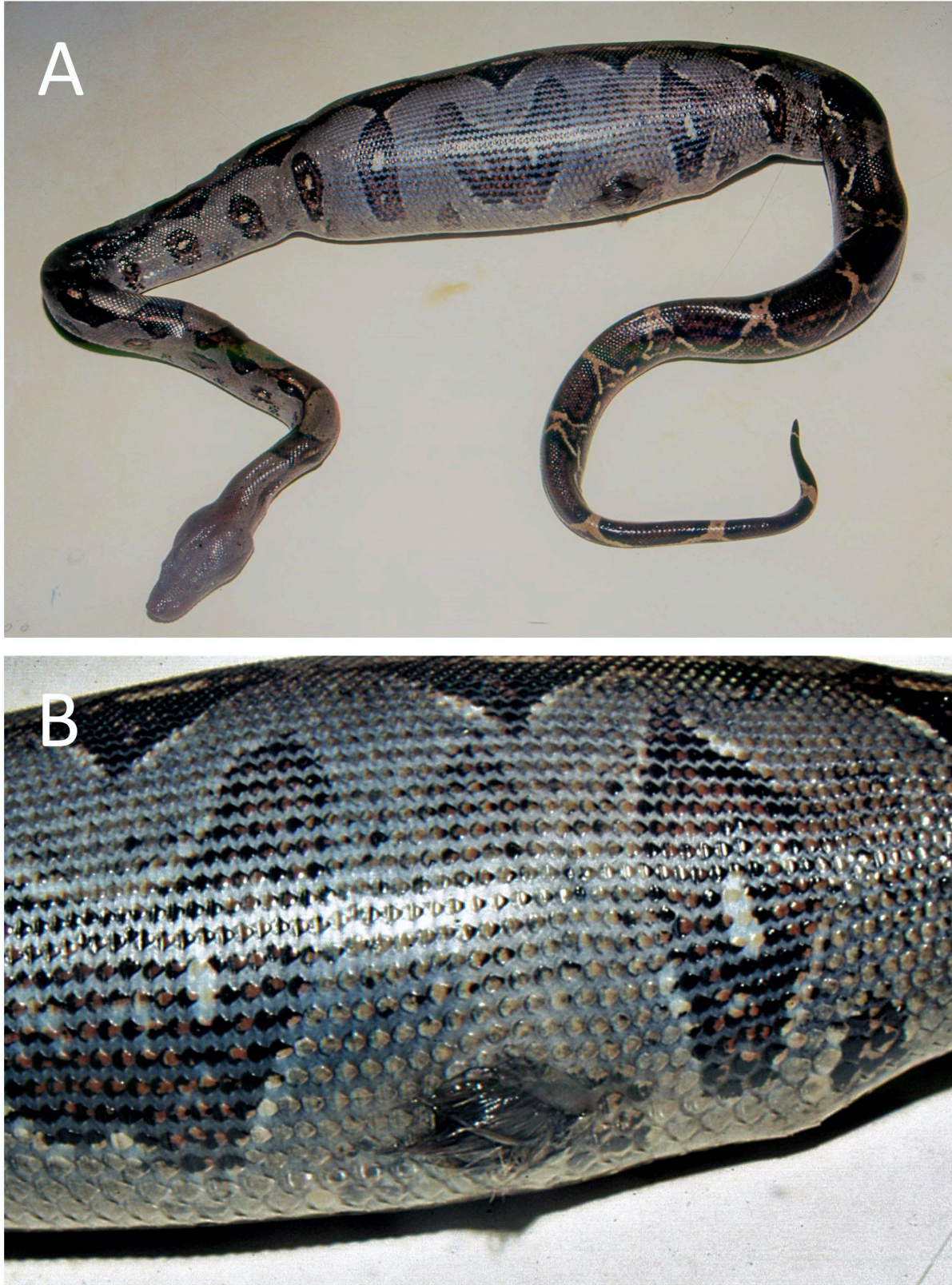


Figura 2.
Un juvenil de boa común centroamericana (*Boa imperator*) ca. 75 cm de longitud total, procedente de Parrita, provincia de Puntarenas, con una rata grande en el estómago. A) Vista general del tamaño de la presa en el cuerpo de la serpiente, B) Detalle donde se observa la piel abierta por la presión y dejando al descubierto parte de la presa. Fotos: Alejandro Solórzano.

Figure 2. A
juvenil Central American Common Boa (*Boa imperator*) ca. 75 cm total length from Parrita, Puntarenas province, with a large rat in the stomach. A) General view of the size of the prey on the snake's body, B) Detail where the skin can be seen opened by the pressure and exposing part of the prey. Photos: Alejandro Solórzano.

opening, exposing part of the body of the prey, as can be seen in this juvenile *Boa imperator* ca. 75 cm in total length found by us in Parrita, Puntarenas province (9.51862° N, 84.33051° W; Datum WGS84, 9 m a.s.l.), after swallowing an adult rat (Fig. 2) and which died two days after being kept in the laboratory (unpubl. data).

A similar case was observed in the 1970s in the Santa Rosa National Park in the province of Guanacaste (10.44102° N, 85.13890° W; Datum WGS84, 6 m a.s.l.), where an adult *Boa imperator* was found dead and stuck with the antlers of an adult deer while trying to swallow it (Daniel. H. Janzen, pers. com.).

In popular culture in Latin America, a large number of myths and beliefs have been generated about the common boa, since, due to its length and body volume, it occasionally tries to consume prey that may be too big for them. It is even claimed that it is capable of eating other animals as large as an adult cow or even people, something clearly impossible (Solórzano, 2003). The jaw flexibility and skin elasticity of boas allow them to swallow prey larger in volume than their head and body (Cundall, 1987; Lillywhite, 2014; Greene & Wiseman, 2023). However, this capacity is clearly not unlimited, and can become risky for the snake (Kornilev et al., 2023) when subduing and attempting to swallow proportionally larger prey and with a weight that can represent between 75 and up to 100 percent of the same weight of the snake.

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