



First record of *Ninia atrata* (Hallowell, 1845) (Squamata: Colubridae) from Sierra Nevada de Santa Marta, northern Colombia

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Abstract: The current work provides the first confirmed record of *Ninia atrata* in the northern foothills of the Sierra Nevada de Santa Marta, La Guajira department, Colombia. This record extends the Colombian known species' distribution ca. 320 km NW from the northernmost record and represents the first observation of the species in the Caribbean Region of Colombia.

Key words: *Ninia atrata*, Sierra Nevada de Santa Marta, Caribbean region of Colombia

Ninia atrata (Hallowell, 1845) is a small, semi-fossorial colubrid snake that ranges from eastern Panama to the Pacific lowlands of Ecuador, reaching northern Venezuela and Trinidad and Tobago (McCranie and Wilson 1995; Savage 2002). Colombian specimens of *Ninia atrata* have been recognized by exhibit a high grade of intraspecific variation (Angarita-Sierra 2009), which has not been taken into account for most of the descriptions available for the species (e.g., Dunn 1935; Perez-Santos and Moreno 1988; McCranie and Wilson 1995). These variations suggest the existence of two distinguishable phenotypic units, Trans-Andean and Cis-Andean groups, and is principally associated with changes in the color pattern of the body, presence and color pattern of nuchal collar and number of cephalic, ventral, and subcaudals scales (Angarita-Sierra 2009).

In Colombia, the species has been confirmed from several localities in the departments of Santander, Norte de Santander, Boyacá, Cundinamarca, Tolima, Antioquia, Caldas, Valle del Cauca, and Amazonas (Angarita-Sierra 2009). The identity of additional records mentioned by Pérez-Santos and Moreno (1988) were considered questionable by Angarita-Sierra (2009), because the localities were not accurate, lacked information about the voucher specimens or herpetological collections where they were deposited. Recent surveys carried out in the forests of

San Salvador valley in La Guajira department resulted in the first confirmed records of *Ninia atrata* for the Caribbean region of Colombia, which are reported herein.

Two adult males of *Ninia atrata* (Figure 1–2) were collected on March 2012 during a baseline inventory work in the lowland of the San Salvador valley on the northern



Figure 1–2. Specimens of *Ninia atrata* from San Salvador Valley in the northern foothills of the Sierra Nevada de Santa Marta, La Guajira department, Colombia. **1:** Specimen UIS-R – 2702. **2:** Specimen UIS-R – 2703.

slope of the Sierra Nevada de Santa Marta, municipality of Dibulla, La Guajira department, Colombia ($11^{\circ}13'21''$ N, $073^{\circ}31'55''$ W, 58 m above sea level). The specimens collected were found during opportunistic searches, between 14:00 h and 16:00 h, under dry tree trunks and fallen leaves, along a small stream dominated by rocks and dense canopy of native trees. The vegetation characteristic of lowlands of San Salvador valley is riparian tropical evergreen forest (Dechner and Diazgranados 2007). The distributional range of *N. atrata* in Colombia is summarized in Figure 3.

The specimens reported here fitted all key characteristics that defined the Trans-Andean group of *Ninia atrata* proposed by Angarita-Sierra (2009): The specimens showed red nuchal collar, mean tail length/snout vent length 0.258 ($SD \pm 0.044$) mm, mean parietal suture length/head length 0.371 ($SD \pm 0.025$) mm, mean prefrontal suture length/head length 0.305 ($SD \pm 0.017$) mm, mean eye length/head length 0.167 ($SD \pm 0.006$) mm, mean loreal length/head length 0.210 ($SD \pm 0.002$) mm, mean eye length/loreal length 0.797 ($SD \pm 0.024$), and mean eye width/frontal width 0.479 ($SD \pm 0.078$) mm. The specimens' collection was authorized by the regional

environmental authority of La Guajira department (Corporación Autónoma Regional de La Guajira, Acuerdo 0021 of 2011). The vouchers were deposited in the herpetological collection of the Universidad Industrial de Santander, Bucaramanga, Colombia, under numbers UIS-R – 2702 and UIS-R – 2703.

The specimens reported here showed two different shapes of nuchal collar coloration, one previously reported and one new. Two patterns of nuchal collar coloration have been reported to Trans-Andean populations of *Ninia atrata* (Angarita-Sierra 2009). In the first pattern, the nuchal collar coloration is interrupted by scattered dark spots on the midpoint of the parietal scales, producing a W-shaped pattern (Figure 4). In the second pattern, the nuchal collar coloration is continuous, covering the total surface of the parietal scales (Figure 5). One of the specimens collected (UIS-R – 2702) showed the W-shaped pattern (Figure 6). The other specimen (UIS-R – 2703) showed an unusual U-shaped variation not previously documented for the species (Figure 7). This unusual variation of nuchal collar coloration suggests that the form of the nuchal collar of Trans-Andean specimens follows a pattern of continuous change as reported for Cis-Andean populations (Angarita-Sierra 2009).

This new record extends the known species' distribution about 320 km northwest from the northernmost confirmed record in Norte de Santander department (Angarita-Sierra 2009) and represents the first confirmed record from the Caribbean region

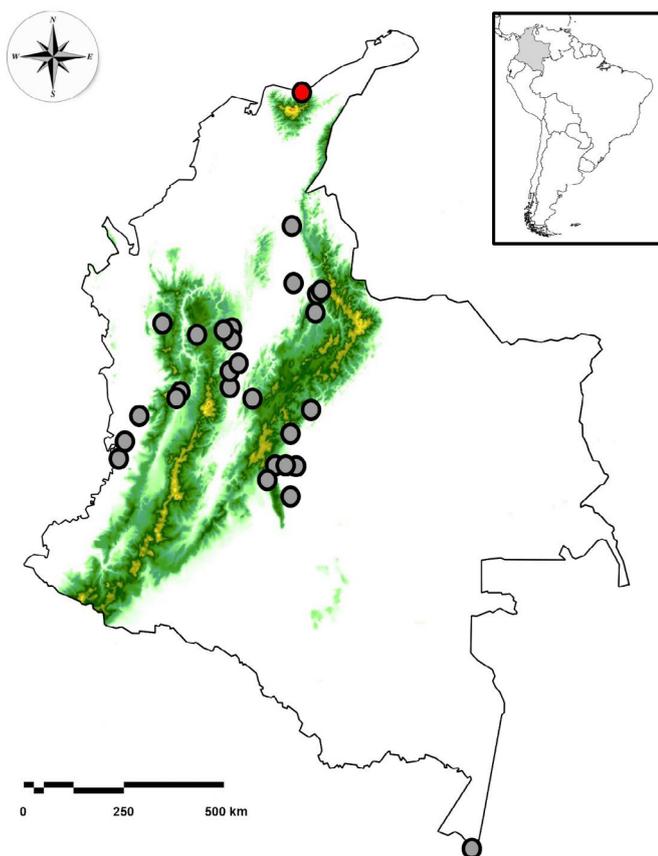


Figure 3. Map of Colombia showing the distribution of *Ninia atrata* based on specimens deposited at Museo de Historia Natural of Universidad de Antioquia, Colección Herpetológica of Universidad Industrial de Santander, Instituto de Ciencias Naturales of Universidad Nacional de Colombia, and the localities extracted from McCranie and Wilson (1995) and Angarita-Sierra (2009). The red point shows the new locality from Sierra Nevada de Santa Marta herein reported.



Figure 4–7. Patterns of nuchal collar form present in Trans-Andean populations of *Ninia atrata*. Schematic representation of (4) W-shaped and (5) continuous pattern of nuchal coloration reported by Angarita-Sierra (2009). (6) W-shaped pattern (UIS-R – 2702) and (7) unusual U-shaped variation (UIS-R – 2703) of nuchal coloration found in specimens from Sierra Nevada de Santa Marta. Photos by F. Leonardo Meza-Joya.

of Colombia (Figure 3). The finding of an unusual variation of nuchal collar coloration confirms the high grade of intraspecific variation that exhibits the species. However, further studies are necessary to establish if this unusual coloration represent a species polymorphism. New expeditions to unexplored areas where the species presumably occurs should result in a better understanding of the biogeographical distribution and intraspecific variation of Colombian specimens.

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