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First record of the Veronica's *Anolis Anolis festae* Peracca, 1904 (Squamata, Dactyloidae) in Colombia

Guido F. Medina-Rangel^{1,2,*}, María Alejandra Pinto-E.¹, and Martha L. Calderón-Espinosa¹

The genus *Anolis* Daudin, 1892 is one of the most diverse groups of reptiles, it comprises 424 currently recognized species (Uetz et al., 2018). This group of lizards is distributed from south of United States to north of Paraguay, including minor and mayor Antilles and even some Pacific islands (Losos, 2009). In Colombia, the genus has 76 species distributed from lowlands to high mountains (Moreno-Arias and Calderón-Espinosa, 2015; Poe et al., 2017).

Anolis festae Peracca, 1904 belongs to *punctatus* species group and series (Williams 1976; Castañeda and de Queiroz, 2013), together with other 22 species (Poe et al., 2009; Ayala-Varela et al., 2011; Castañeda and de Queiroz, 2013). It is an uncommon, arboreal and diurnal lizard distributed in the western lowlands throughout the Pacific slope of Ecuador and northwestern Peru (Castañeda and Mayer, 2011; Ayala-Varela and Carvajal-Campos, 2017) (Figure 1). It is frequent in environments intervened in the trunks of the trees (Valencia and Garzón, 2011). This species inhabits the lowland tropical rainforest, western Piedmont Forest, and the dry forest of the pacific region (MECN, 2010; Castañeda and Mayer, 2011), below 800 m above sea level (Valencia and Garzón, 2011). Until now, *A. festae* have not been registered in Colombia.

We found an adult male (Figure 2) and a juvenile female of *A. festae*, during fieldwork at southwestern Colombia, in Tumaco municipality, Nariño department; these specimens were collected in the locality Mar

Agrícola farm, located at kilometre 21, via Tumaco-Pasto municipalities (1.6833°N, 78.7333°W, elevation 7 m above sea level, datum WGS 84) (Figure 1). One specimen (male) was collected sleeping during the night, and the other (female) during the day, on a tree trunk on 9 September 2016. The specimens were photographed, euthanized using 2% Xylocaine, fixed in 10% formalin, preserved in 70% ethanol, according to the protocols of Foster (2012), and housed in the reptile collection of the Instituto de Ciencias Naturales,

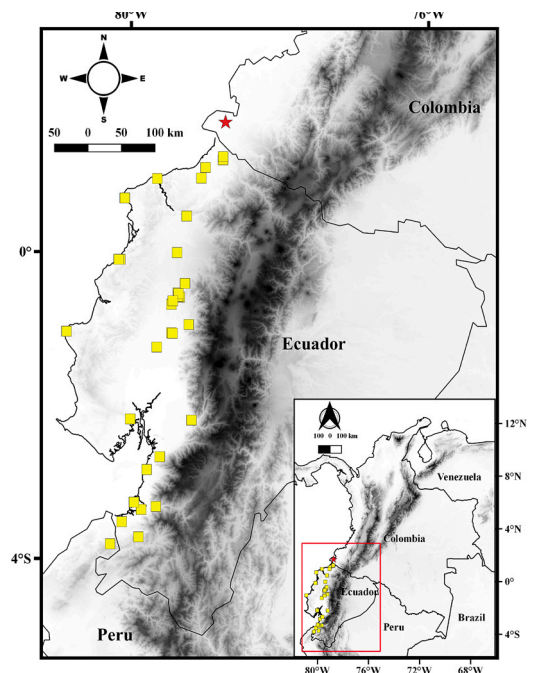


Figure 1. Specimen records of *Anolis festae* in South America, as from Ayala-Varela and Carvajal-Campos (2017) and GBIF occurrence dataset. The new record is highlighted with a red star, other records in yellow squares.

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Table 1. Lepidosis of the Colombian specimens (ICN-R 12644, 12809) and Ecuadorian populations of *Anolis festae*. *Acronyms according to Poe *et al.* (2009).

MERISTIC AND MORPHOLOGICAL CHARACTERS*	ECUADOR (Peracca, 1904; Ayala-Varela and Carvajal-Campos, 2017)	COLOMBIA (This study; ICN-R 12644, 12809)
Number of scales between second canthals (SC)	8-12	9, 10
Number of scales bordering the rostral (postrostrals) (PR)	4-8	7, 7
Number of scales between supraorbital semicircles (SO)	1-2	2, 1
Number of scales between interparietal and supraorbital semicircles (IP)	2-4	3, 3
Number of Loreal scales rows (LR)	4-7	6, 6
Number of Elongate superciliary scales (SS)	1-2	1, 1
Number of Supralabials scales (SPL)	6-10	8, 9
Number of Postmentals scales (PM)	4-6	6, 6
Number of sublabials scales in contact with infralabials scales (SCI)	1-5	3, 3
Number of enlarged middorsal scales rows (EMS)	0-4	4, 4
Lamellar number in the second and third phalanges of the IV digit of the toe (LM)	15-21	16-17, 16-16
Snout-vent length (SLV) (mm)	47-50	44-41.75

Universidad Nacional de Colombia, Bogotá, Colombia (ICN-R 12644, 12809). Sex was determined by the presence or absence of dewlap (Williams *et al.*, 1995), and hemipenis eversion after a formalin injection in the ventral surface of the tail (Raxworthy, 2012).

Meristic and morphometric characters of *A. festae* are presented in Table 1. Scale counts are within the species range. Additionally, specimens collected present the following characteristics: (1) flat and smooth, protruding or keeled dorsal scales; (2) interparietal scale much smaller or larger than the tympanum; (3) dewlap male large, it extends from the belly, blank degrade or brown with black base; (4) dewlap in females absent; (5) scales of the flanks slightly separated or juxtaposed. The colour pattern of the Colombian specimens is similar to that of Ecuadorian specimens.

The dewlap colour in Colombian specimens is similar to that described by Peracca (1904), black or dark brown at the base, and white with mottled light brown through most part of the dewlap area (Figure 2). In fact, the colour of the base of the dewlap and the immaculate belly differentiates *A. festae* from similar species like *A. fraseri*, *A. peracca*, *A. anchicaya* and *A. chloris*.

This species was considered endemic to western Ecuador; however, there is a recent record in northwestern Peru (Ayala-Varela and Carvajal-Campos, 2017). Therefore, this is the first record of *A. festae* for Colombia, extending this species' geographic range by 51 km northwestern from the nearest locality reported in Ecuador.

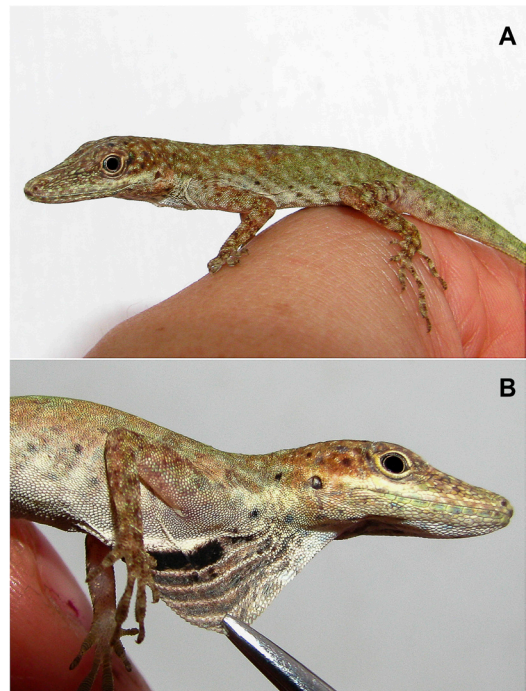


Figure 2. *Anolis festae* from municipality of Tumaco, Department of Nariño, Colombia (ICN-R 12644, adult male). A: Body design. B: Dewlap design. Photos by Martha L. Calderón-Espinosa.

Due to its wide distribution, this species has been categorized as Least Concern by the IUCN (Castañeda and Mayer, 2011) having an Extent of Occurrence (EOO) of 42250 km² (estimate made with GeoCAT; Bachman et al., 2011). With this new record, *A. festae* increases its EOO to 45800 km². This increase implies that it can remain as Least Concern.

However, the new records in Colombia provide the opportunity for monitoring this species in more locations since there is only one report of decline in population density at one Ecuadorian location where a removal of balsa trees was carried out (Miyata, 2013). There must be taken into account that there are major threats reported to the habitat within the species' range, like habitat loss and degradation mainly due to logging and overgrazing activities (Castañeda and Mayer, 2011).

In addition, the area of Tumaco presented other records of a species with an Ecuadorian distribution, *Ptychoglossus bilineatus* (Medina-Rangel and Calderón-Espinosa, 2010), *Anolis gemmosus* (Ayala-Varela et al. 2014), *Corallus blombergi* (Pinto-Eraza and Medina-Rangel, 2018) and *Ninia teresitae* (Angarita-Sierra, 2018). Then, probably a greater number of explorations would reveal greater faunal affinities with the Ecuadorian northwest and expand the number of new records in the area.

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