



Hidden in the leaf litter: rediscovery of the Largescale Lizard, *Alopoglossus grandisquamatus* (Rueda, 1985) (Squamata: Alopoglossidae) with comments on novel morphological variation

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Abstract

Alopoglossus grandisquamatus is a species only known from its male holotype, collected almost 40 years ago. We report the rediscovery of the Largescale Lizard *A. grandisquamatus* based on two female individuals from two new localities, extending its known distribution 19 km eastwards and 100 km southwards. Conservation status of Endangered is proposed for *A. grandisquamatus*. Novel morphological variation is described, including sexual dimorphism in femoral pores. Synonymy of *A. grandisquamatus* with *Alopoglossus eurylepis* is discussed, with the dismissal of non-useful diagnostic characters. New characters such as number of femoral pores in males, gular scales arrangement and the number of transversal rows of ventral scales are proposed to diagnose *A. grandisquamatus* from *A. eurylepis*. Other characters used by previous authors to differentiate both species are also validated.

Key words: Conservation status, *eurylepis* group, lost species, microteiid, sexual dimorphism

Resumen

Alopoglossus grandisquamatus es una especie conocida únicamente por su holotipo macho, recolectado hace casi 40 años. En este trabajo, reportamos el redescubrimiento del lagarto de escamas grandes *A. grandisquamatus* a partir de dos hembras colectadas en dos nuevas localidades, ampliando su distribución conocida 19 km hacia el este y 100 km hacia el sur. Se propone la categoría de amenaza En Peligro para *A. grandisquamatus*. Se describe variación morfológica novedosa, incluido el dimorfismo sexual en los poros femorales. Se discute la sinonimia de *A. grandisquamatus* con *Alopoglossus eurylepis*, descartando caracteres diagnósticos no funcionales. Se proponen nuevos caracteres para diagnosticar *A. grandisquamatus* de *A. eurylepis*, tales como el número de poros femorales en machos, la configuración de las escamas gulares y el número de hileras transversales de escamas ventrales. También se validan caracteres tradicionales utilizados por autores anteriores para diferenciar ambas especies.

Palabras clave: Dimorfismo sexual, estado de conservación, especies perdidas, grupo *eurylepis*, microteiido

Introduction

Alopoglossus Boulenger, 1885 (family Alopoglossidae) is a Neotropical genus of ground dwelling lizards with 32 currently recognized species, of which 21 are distributed in Colombia (Harris, 1994; Uetz *et al.* 2023). These

lizards are characterized by their brownish coloration and cryptic behavior, inhabiting mainly the leaf litter of forests and crop areas, and being found active during the day (Anaya-Rojas *et al.* 2010; Hernández-Morales *et al.* 2020). Alopoglossids can be distinguished from all other gymnophthalmoids by the following combination of characters: tongue completely covered in oblique plicae (Boulenger, 1885; Harris, 1994; Hernández-Morales *et al.*, 2020); medial borders of palatine process of pterygoid bone curved divergently, defining a posteromedial process (Hernández-Morales *et al.*, 2019); and hemipenis lacking mineralized structures—differs from Gymnophthalmidae—(Hernández-Morales *et al.*, 2020).

In the last decades, the sampling of this group has been increasing, contributing to the better understanding of its ecology, taxonomy, evolution, distribution and morphology (Harris, 1994; Vitt *et al.* 2007; Anaya-Rojas *et al.* 2010; Peloso & Avila-Pires, 2010; Torres-Carvajal & Lobos, 2014; Sánchez-Pacheco *et al.* 2016; Hernández-Morales *et al.* 2019; Hernández-Morales *et al.* 2020; Ribeiro-Júnior *et al.* 2020; Ribeiro-Júnior *et al.* 2021). However, species like: *Alopoglossus bilineatus* (Boulenger, 1890), *Alopoglossus eurylepis* (Harris & Rueda, 1985), *Alopoglossus embera* Peloso & Morales, 2017, *Alopoglossus danieli* (Harris, 1994), *Alopoglossus grandisquamatus* (Rueda, 1985) and *Alopoglossus lehmanni* Ayala & Harris, 1984, are rare, still poorly sampled, and known only from one or few specimens, some of them collected decades ago (Harris, 1994; Rueda, 1985; Hernández-Morales *et al.* 2020). This rareness can be attributed to their cryptic habits, small body size and restricted areas of distribution, which in some cases are difficult to access (Meiri *et al.* 2017).

In this genus there are several species groups delimited by morphology and genetics (Ribeiro-Junior *et al.* 2020, 2021). One of them is the *eurylepis* species group (*sensu* Rueda, 1985), consisting of the species *A. eurylepis* and *A. grandisquamatus*, which are mainly characterized by the extraordinarily widened and smooth dorsal scales; very enlarged and smooth scales on the dorsum of limbs; enlarged gular scales forming one or two rows; and two longitudinal rows of enlarged nuchal scales (Rueda, 1985). *Alopoglossus eurylepis* was described from a single specimen from the department of Cauca in southwestern Colombia (Rueda, 1985; Fig. 1). Likewise, the Largescale Lizard *A. grandisquamatus* was described based on a single male specimen collected in 1981 at “Campamento INGEOMINAS”, Río Amparradó, municipality of Dabeiba, department of Antioquia, Colombia—6.7, -76.45; 805 m asl; Fig. 1—(Rueda, 1985). More than 35 years have passed since recollection of the holotype, and no more individuals of *A. grandisquamatus* have been reported, resulting in a lack of information related to its natural history, morphology and phylogenetic relationships, being considered as a lost species according to Lidken *et al.* (2023). The IUCN Red List of Threatened Species classified *A. grandisquamatus* as Data Deficient due to its rareness and insufficient additional information (Velasco *et al.* 2019). Therefore, this lack of information makes difficult the development and implementation of conservation strategies for this species.

Here, based on two newly recollected specimens, we provide novel information on the external morphology, distribution and ecology of *A. grandisquamatus*, describing for the first time variation in adult females. We also propose a conservation status for *A. grandisquamatus* based on the IUCN guidelines (2012) and discuss its synonymy with its sister species *A. eurylepis*.

Materials and methods

Study areas and taxon sampling

New individuals were recorded during two herpetofaunal characterizations at different localities. The first one took place in December of 2015 in the vereda El Salado within the Reserva Forestal Protectora Nacional Frontino—Musunga-Carauta—(RFPNF), municipality of Frontino, department of Antioquia, Colombia. The second one was carried out by Mateo García-Mejía and Eliza Patiño-Ocampo in August of 2023 in the “Reserva ProAves Las Tángaras” alto de Guaduas, Vereda Guaduas, municipality of Carmen de Atrato, department of Chocó, Colombia.

Individuals were captured by hand and taken to the campsite, where they were photographed in life, subsequently euthanized with 2% lidocaine, fixed in 10% formalin, and preserved in 70% ethanol following Pisani (1973). Coordinates and elevations were determined in field with the GPS Essentials mobile app. The individuals were deposited at the Herpetology Collection of the CES University Biological Collections (CBUCES-D 108), and in the Reptile Collection, Herpetology Museum, University of Antioquia (MHUA-R 15796). For comparisons, holotypes of *A. grandisquamatus* (ICN 5937) and *A. eurylepis* (ICN 4460) were also examined. Museum acronyms follow Sabaj (2020).

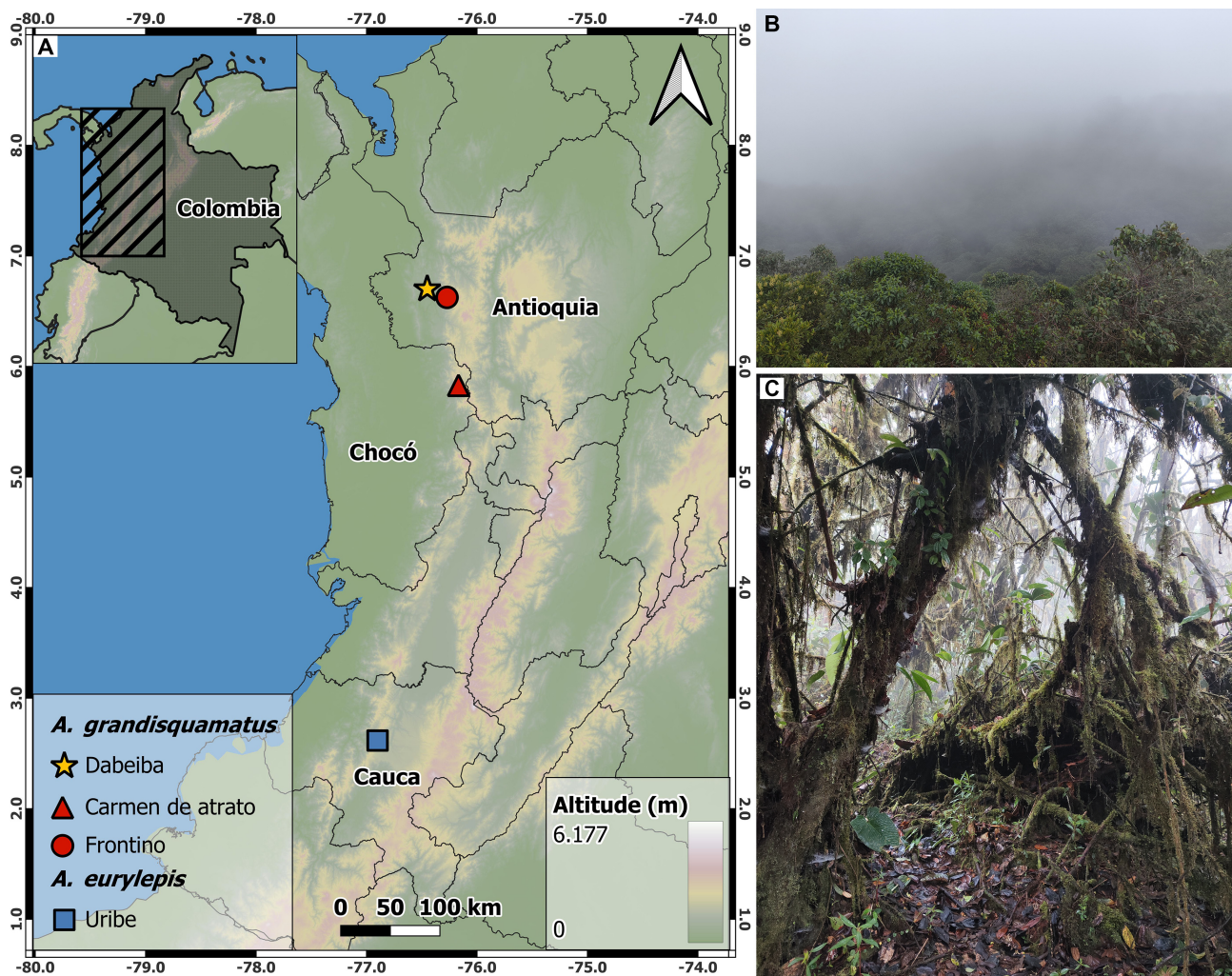


FIGURE 1. (A) Distribution of *A. grandisquamatus* and *A. eurylepis*. Star and square represent type localities, triangle and circle represent new records of *A. grandisquamatus*. (B–C) Habitat of *A. grandisquamatus* in Carmen de Atrato locality. Photos: Mateo García-Mejía.

Conservation status

Conservation status was proposed based on the Extent of Occurrence (EOO) and Area of Occurrence (AOO) resulting in the combination of type and newly reported localities, following the IUCN guidelines (2012).

Morphology

Specimen identification was made following Rueda (1985), Harris (1994), Hernández-Morales *et al.* (2019) and Hernández-Morales *et al.* (2020). Scale counts and measurements were taken following the definitions of Harris (1994) under a stereoscope and with a digital caliper (± 0.1 mm) respectively. Slash was used as a convention to code variation between left and right sides of the same specimen (left/right), and for gular scale counts we use n-dash (–) to note the number of scales that compose each transversal row (Fig. 4). Characters not described here present no variation and are as Rueda (1985) and Harris (1994) describe for the holotypes.

Results

New records of *Alopoglossus grandisquamatus*

The first individual corresponds to an adult female (CBUCES-D 108; Fig. 2) found on December 8th of 2015 at 22:50 h in “Camino Alto de Venados”, vereda El Salado, municipality of Frontino, department of Antioquia, Colombia (6.624816, -76.270877 WGS84; 1544 m asl; Fig. 1). This individual was found while exhaustively removing leaf litter at the edge of a forest trail in a dense montane forest.

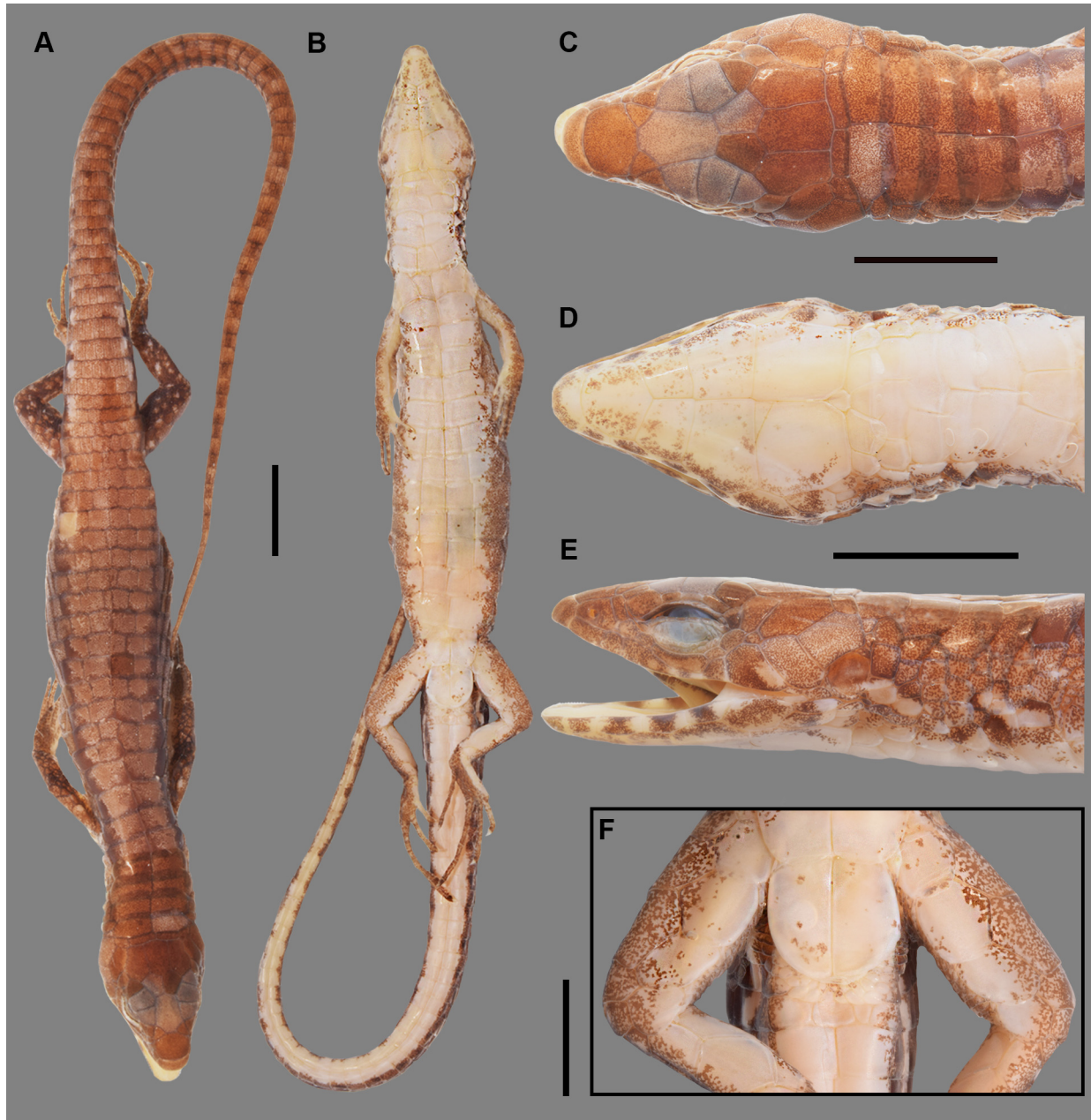


FIGURE 2. Adult female (CBUCES-D 108, SVL = 47 mm) of *A. grandisquamatus* collected in the municipality of Frontino in preservative. (A) dorsal general view; (B) ventral general view; (C) dorsal view of head; (D) ventral view of head; (E) lateral view of head; (F) detail of the pelvic region (showing the lack of femoral pores). Scale bars A–E: 1 cm and F: 0.5 cm.

The second individual corresponds to an adult female (MHUA-R 15796; Fig. 3) found on August 11th of 2023 at 15:00 h in the “Reserva ProAves Las Tángaras”, Alto de Guaduas, municipality of Carmen de Atrato, department of Chocó, Colombia (5.82026, -76.1764 WGS84; 1817 m asl; Fig. 1). This individual was found actively foraging

on the ground on a cliff, less than one meter high, located on the edge of a rural road in a dense montane forest with trees 20 m high.

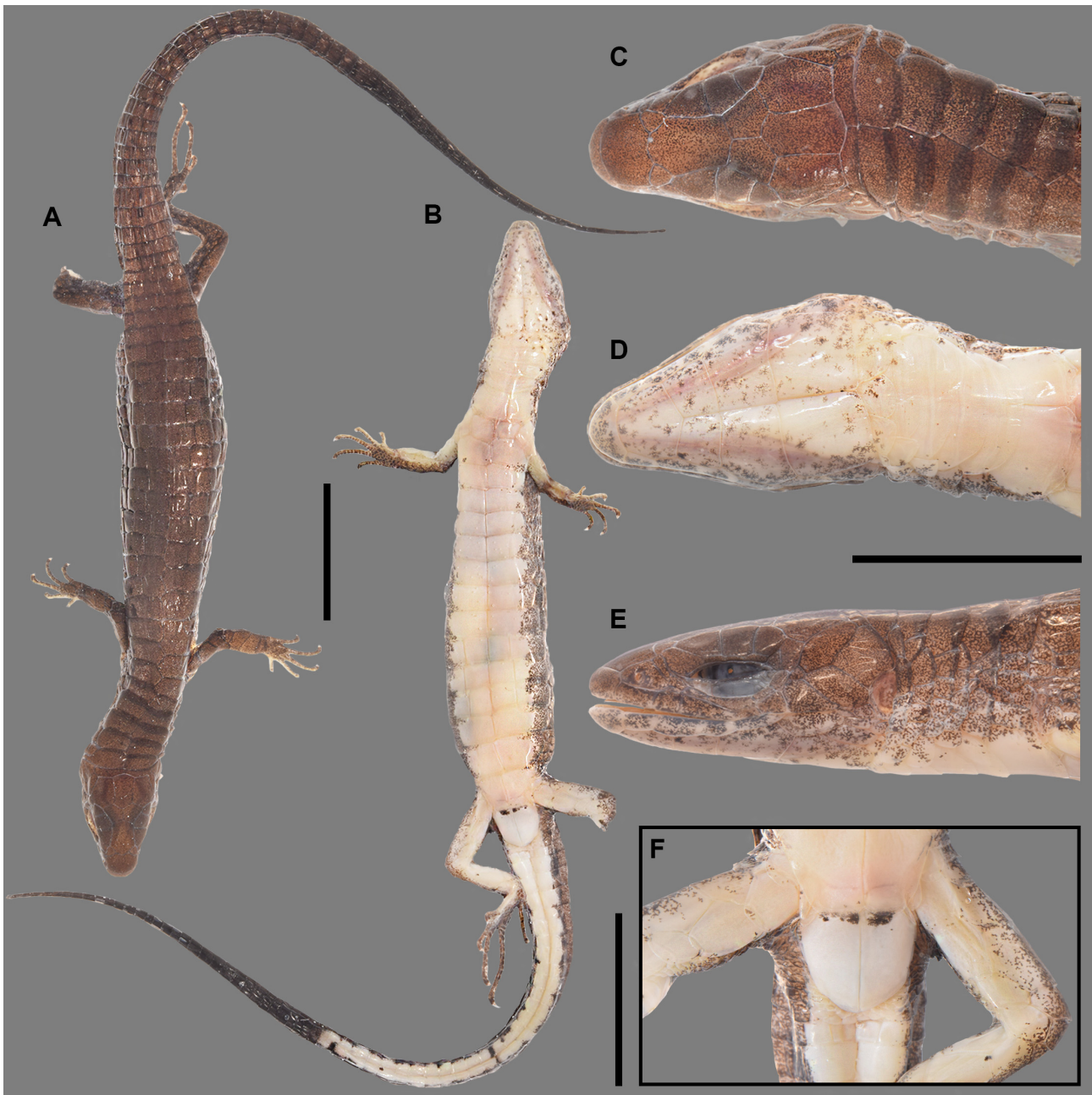


FIGURE 3. Adult female (MHUA-R 15796, SVL = 48.11 mm) of *A. grandisquamatus* collected in the municipality of Carmen de Atrato in preservative. (A) dorsal general view; (B) ventral general view; (C) dorsal view of head; (D) ventral view of head; (E) lateral view of head; (F) detail of the pelvic region (showing the lack of femoral pores). Scale bars A-E: 1 cm and F: 0.5 cm.

Both locations were characterized by high amounts of humid leaf litter with various centimeters deep, bromeliads and bryophytes; below the leaf litter the earth was black with a high amount of organic material and roots.

Conservation status

Based on the type locality and the new localities here provided, the distribution of this species reaches an Extent of Occurrence (EOO) of 823.51 km² and an Area of Occupancy (AOO) of 12 km². Thus, we suggest that this species

should be categorized within the IUCN criteria as Endangered: EN B1ac (i) and B2ac (ii), due to the following criteria: (1) EOO < 5,000 km² (2) Number of localities ≤ 5 (3) fluctuation in the EOO and (1) AOO < 500 km² (2) Number of locations ≤ 5 (3) fluctuation in AOO.

Morphology

Measurements of new individuals and holotypes of *A. grandisquamatus* and *A. eurylepis* are given in table 1. Generic placement was made based on tongue morphology (Boulenger, 1885; Harris, 1994; Hernández-Morales *et al.*, 2020). Specimens were identified as *A. grandisquamatus* based on the presence of prefrontal scales, number of transverse dorsal scale rows, absence of prelegals, and dorsal coloration with narrow dorsolateral black stripes and a faint dark vertebral stripe (Rueda, 1985; Harris, 1994).

TABLE 1. Measurements of the holotype of *A. eurylepis* and the known vouchers of *A. grandisquamatus*. All measurements given in mm.

	<i>A. eurylepis</i>	<i>A. grandisquamatus</i>		
	ICN 4460 ♂	ICN 5937 ♂	CBUCES-D 108 ♀	MHUA-R 15796 ♀
Snout to vent length	40.06	45.6	47.0	48.11
Body length	20.39	22.1	22.4	27.71
Snout to axilla length	16.66	17.96	19.3	17.42
Head length	9.65	10.0	10.4	11.15
Head width	5.05	6.65	4.0	6.34
Humerus length	4.58	4.52	4.7	5.13
Radius-Ulna length	3.24	5.01	4.4	4.62
Femur length	5.28	6.46	6.5	6.33
Tibia length	4.37	6.0	5.4	6.09
Tail length	69.22	-	79.4	61.0

Morphological variation between new specimens of *A. grandisquamatus*

Specimen CBUCES-D 108 differs from MHUA-R 15796 (character states in parenthesis) in: prefrontals in contact only with first supraocular (in contact with first superciliar and first supraocular). Postparietals 2 (4); supraoculars 4/4 (3/3); suboculars 3/3 (4/3); postoculars 2/2 (1/2); genials—mentonian shields—divided in the posterior margin of the last pair by a small triangular scale (in contact medially along its entire extension)—Fig. 4B, C—. Transversal rows of gulars 5-3-2-2-2 (4-1-1-1-1)—Fig. 4B, C—; collar with a single transverse row of three quadrangular enlarged plates (a single transverse row of two)—Fig. 4B, C—. Longitudinal rows at mid body 11 (10); scales around mid-body 15 (12); subcaudals 71 (62). Subdigital lamellae on fingers I: 8, II: 8, III: 12, IV: 12 (I: 5, II: 10, III: 12, IV: 13); supradigital lamellae on fingers I: 3, II: 5, III: 6, IV: 7 (I: 1, II: 5, III: 6, IV: 7). Subdigital lamellae on toes I: 5, II: 8, III: 13, IV: 19 (I: 4, II: 9, III: 13, IV: 17); supradigital lamellae on toes I: 2, II: 5, III: 7, IV: 11 (I: 2, II: 4, III: 10, IV: 10). Limbs or fingers overlap on two dorsal scales when adpressed to the body (limbs or fingers do not contact or overlap when adpressed to the body). Both specimens lack femoral pores.

In preservation, the dorsal coloration is tan brown with a pair of dark dorsolateral stripes that extend from the back of the head to the sacral region—Fig 2A, C—(solid dark brown; Fig. 3A, C). Lateral region of head and neck presenting a series of irregular white spots bordered with dark brown—resembling ocelli—extending to the rear margin of the anterior limbs—Fig. 2E—(uniformly brown with white stippling; Fig. 3E). Ventrally, the last third of tail cream with brown irregular stains—Fig. 1B—(black; Fig. 3B). Sides of tail with a series of paired ocelli on the first third visible from dorsal view—Fig. 1A—(uniformly brown; Fig. 3A).

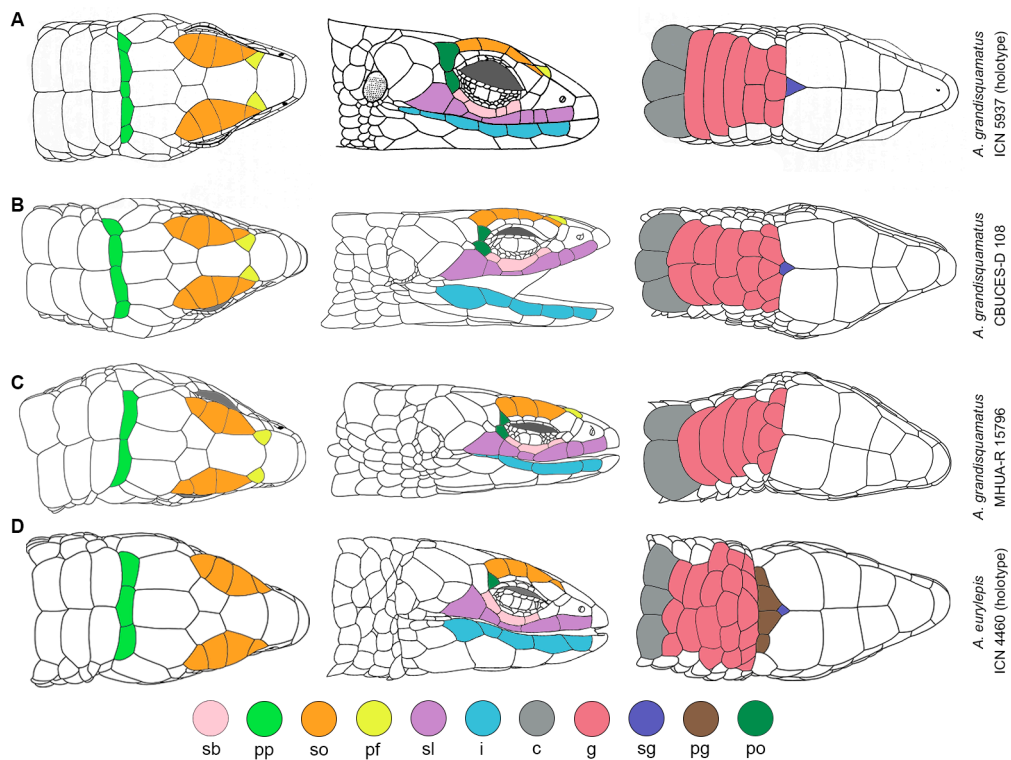


FIGURE 4. Variation in scalation of (A–C) *A. grandisquamatus* and (D) *A. eurylepis*. Left: dorsal views; middle: lateral views; right: ventral views. Illustration of ICN 5937 modified from Rueda (1985). Subocular scale counts of ICN 4460 are corrected from Harris (1994). Abbreviations sb: suboculars; pp: postparietals; so: supraoculars; pf: prefrontals; sl: supralabial; i: infralabials; c: collar; g: gulars; sg: scale separating genials; pg: pregulars; po: postoculars.

In life, overall dorsal coloration is similar as in preservative. However, CBUCES-D 108 presents a yellow-cream ventral coloration with region between chest and vent with an intense orange color, which also covers the ventral surface of hind limbs and extends as stippling towards the first third of the tail (Fig. 5).

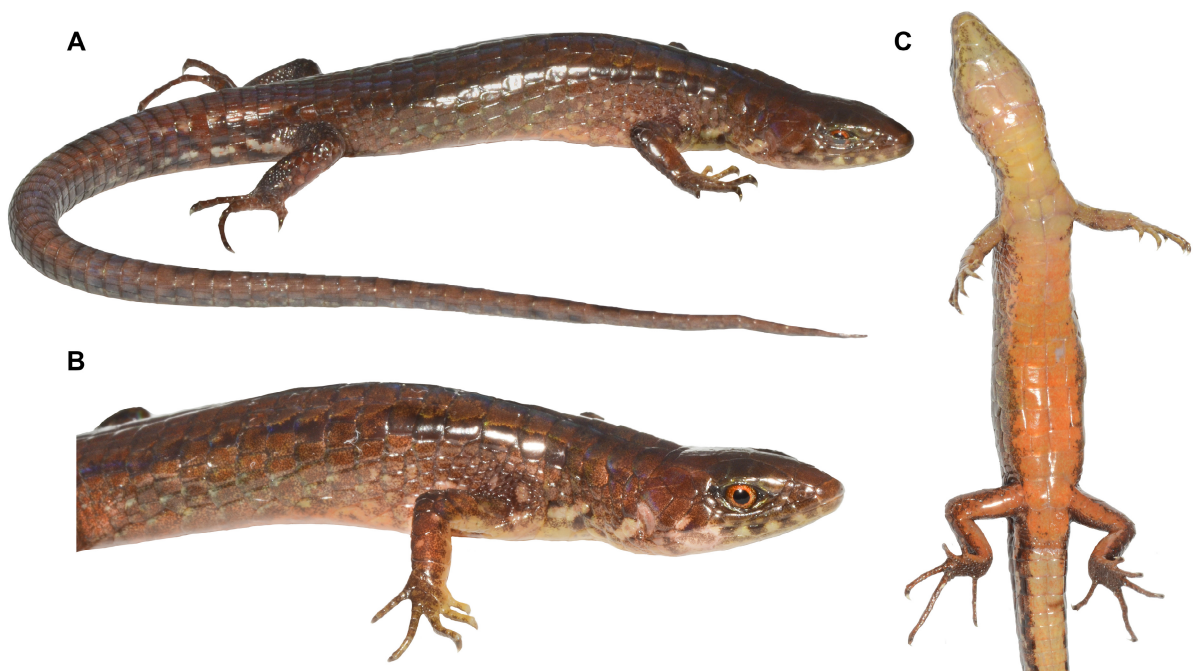


FIGURE 5. Photographs of an adult female of *A. grandisquamatus* in life (CBUCES-D 108, SVL = 47 mm). (A–B) Lateral view and (C) ventral view. Photos: Esteban Alzate.

Morphological variation between new specimens and holotype

Holotype of *A. grandisquamatus* (ICN 5937, adult male) differs from newly recorded specimens (character states in parentheses) in: frontal contacting first three supraoculars (contacting first two); frontoparietals contacting supraoculars 3 and 4 (contacting 2 and 3); parietals heptagonal (hexagonal); postparietals 5 (2–4); first superciliar quadrangular (pentagonal); inferior palpebrals 2 (3/2); suboculars extend from the fourth supralabial (from the third); postoculars 2 (1–2); supralabials 7 (6); infralabials 6 (5); femoral pores 7+7 (absent); second supraocular bigger than frontoparietal (as big as frontoparietal); no nasal suture (nasal suture only below the nostril); gulars arranged in 3-2-1-1-1 (5-3-2-2-2 or 4-1-1-1-1)—Fig. 4A–C—; Table 2.

TABLE 2. Characters used to differentiate species within *eurylepis* species group by Rueda (1985) and Harris (1985), and new characters proposed here. (°) Indicates characters that proved to be variable and (*) the new characters here proposed.

	<i>A. eurylepis</i>	<i>A. grandisquamatus</i>		
	ICN 4460 ♂	ICN 5937 ♂	CBUCES-D 108 ♀	MHUA-R 15796 ♀
Prefrontals	Absent	Present	Present	Present
Postparietals°	3	5	4	2
Supralabials	5	6/7	6/6	6/6
Infralabials°	5/5	6/6	5/5	5/5
Gulars arrangement*	6-5-4-3-3	3-2-1-1-1	5-3-2-2-2	4-1-1-1-1
Pregulars	One complete transversal row	Absent	Absent	Absent
Transversal rows of dorsals	30	25	25	25
Transversal rows of ventrals*	18	15	15	15
Digit or limbs overlap when adpressed to body°	No	Yes	Yes	No
Femoral pores*	0+0	7+7	0+0	0+0
Dorsal coloration	Tan brown with cream dorsolateral stripes bordered by equally broad black stripes	Tan brown with dark dorsolateral stripes, and a dark stripe in the middle of the dorsum extending from the base of the head to the base of the tail	Tan brown with dark dorsolateral stripes	Solid dark brown without stripes

General coloration of specimen CBUCES-D 108 is most like the ICN 5937 (holotype), but it lacks the dark middorsal stripe (Fig. 2A; Fig. 6A). All but MHUA-R 15796 have ocelli-like markings on laterals of head and neck (Fig. 2E; Fig. 3E; Fig. 6E). ICN 5937 and MHUA-R 15796 have a dark brown coloration on the distal part of the tail (Fig. 3B; Fig. 6B), which is absent in CBUCES-D 108 (Fig. 2B), but this may be due to the first two specimens having a regenerated tail, causing it to get darker.

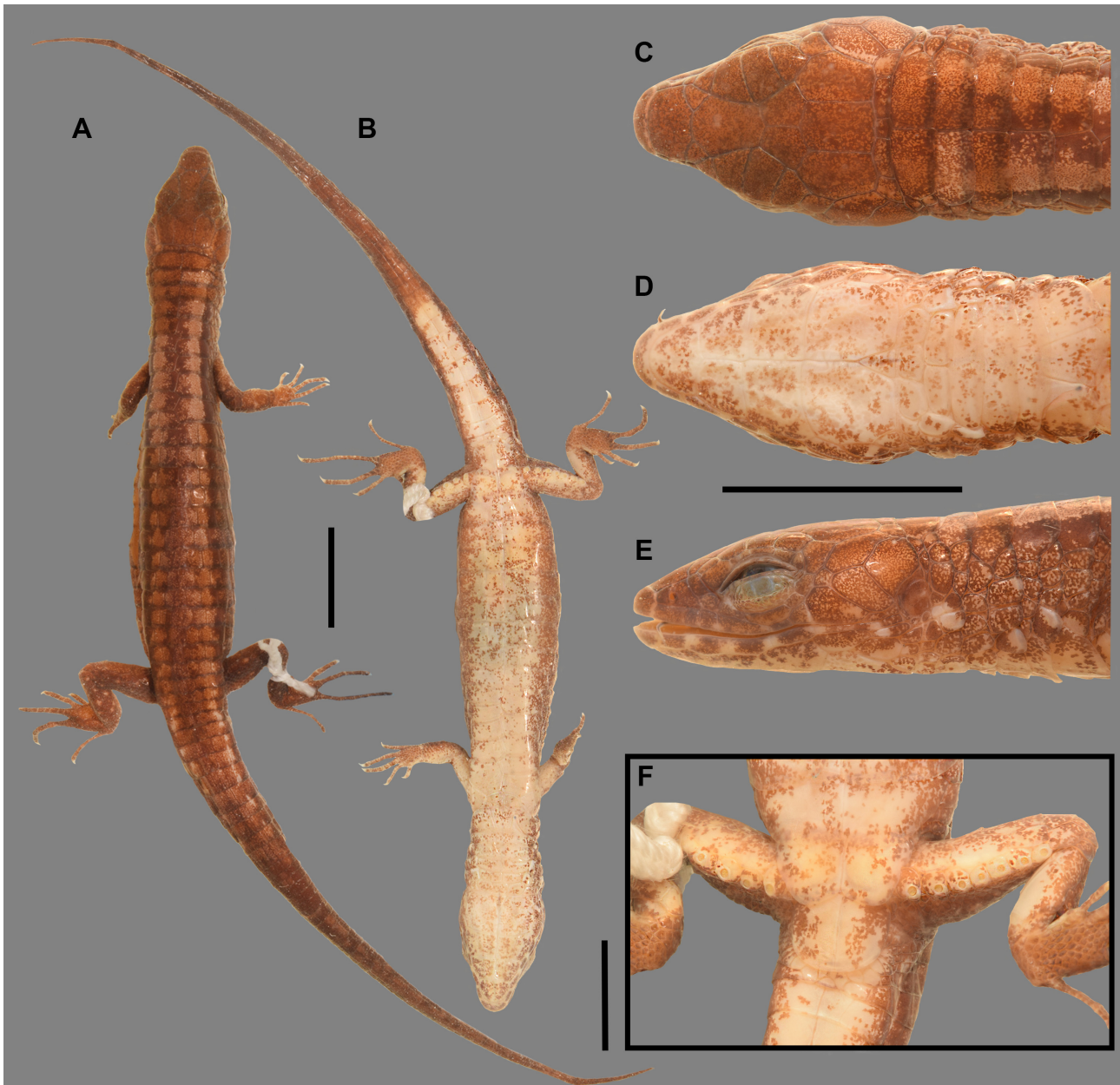


FIGURE 6. Adult male holotype (ICN 5937, SVL = 45.6 mm) of *A. grandisquamatus*. (A) dorsal general view; (B) ventral general view; (C) dorsal view of head; (D) ventral view of head; (E) lateral view of head; (F) detail of the pelvic region (showing the presence of femoral pores). Scale bars A–E: 1 cm and F: 0.5 cm.

Discussion

The rediscovery of “lost” species that have not been recorded for long periods of time is crucial for conservation, as it not only brings back to life species that were presumably extinct, but also provides clues as to how and where to look for them, making it possible to establish their conservation status and generate effective conservation strategies. They even attract significant public interest to generate conservation actions at the regional level (Lindken *et al.* 2023), which is particularly relevant for groups such as reptiles, as they are considered “less charismatic” and tend to receive less conservation efforts (Lindken, *et al.* 2023).

This work represents the rediscovery of a species described almost 40 years ago, whose absence in biological records may be due to its possible small population size and its cryptic habits. The impossibility of accessing certain localities due to their political instability, road connectivity and remoteness are variables that have also influenced

the deficit in the sampling of some regions of the country, which is reflected in a lack of important information on some specific lineages such as microteiids (Meiri *et al.* 2017).

The records presented herein extend the distribution of *A. grandisquamatus* 19 km to the east and 100 km to the south, reconfirming the presence of this species in the northern western Andes of Colombia in the departments of Antioquia and Chocó, between 800 and 1800 m asl (Fig. 2). The size and population dynamics of *A. grandisquamatus* are unknown, but current sampling suggests that its population size may be low, and its distribution reduced. Velasco *et al.* (2019) categorized *A. grandisquamatus* as Data Deficient at the IUCN red list, but based on the data provided here, we suggest that this species should be categorized within the IUCN criteria as Endangered (EN) and treated like it until the sampling is increased to truly understand its population dynamics.

The family Alopoglossidae has undergone many classification changes in recent years, mainly due to the acquisition of molecular, hemipenial and osteological data (Hernández-Morales *et al.*, 2020; Ribeiro-Júnior *et al.*, 2020a, 2020b and 2021). However, most of this evidence is not available for several species in the family, and their representation in biological collections is limited, with some still only known from a sole specimen (e.g., *A. grandisquamatus* and *A. eurylepis*). Species described from a single specimen, also known as singletons, are relatively common in taxonomy, but their problems include the fact that they are unverifiable and, in turn, unfalsifiable, because in the absence of information on variation within each character, no test of the distribution of species-defining attributes can be performed (Bond *et al.* 2021). Therefore, the finding of these two new specimens of *A. grandisquamatus* opens a wide variable of research possibilities, such as the description of internal and external morphological variation, the understanding of the ecology and distribution of the species, and the acquisition of tissue samples to extract molecular information useful to do phylogenetic analysis that allow to infer their true taxonomic identity and its evolutionary relationships, reinforcing the species hypothesis.

This new records of *A. grandisquamatus* represent the first females known for the species, from which variation is evident when compared to the male holotype in some characters such as femoral pores, which serve as sexual dimorphism for this species, being present in high numbers (7+7) in males (Fig. 6F) and absent in females (Fig. 2F; Fig. 3F). Rueda (1985) and Harris (1994) differentiate *A. grandisquamatus* from *A. eurylepis* (characters states in parentheses) based on the presence of prefrontal scales (absent); transverse dorsal scale rows 25 (30); longitudinal gular scale rows 1–3 (4–5); postparietals 5 (3); supralabials 7 (5); infralabials 6 (5); preregulars absent (one complete row of preregulars); limbs or digits overlap when adpressed to the body (do not overlap); and dorsal coloration with narrow dorsolateral black stripes and a faint dark vertebral stripe (wide cream-colored dorsolateral stripes outlined by equally wide black stripes; Fig. 7A).

As mentioned above, *A. grandisquamatus* is the sister species to *A. eurylepis*, forming a monophyletic clade based on morphological evidence (Hernández-Morales *et al.*, 2020). However, Harris (1994) discusses that *A. grandisquamatus* may be a junior synonym of *A. eurylepis*, based on the idea that some morphological characters separating both species such as the presence or absence of prefrontal scales, number of labial scales, number of postparietal scales, and dorsal pattern of coloration are variable in other alopoglossids (e.g. *Alopoglossus bicolor* can present or not prefrontal scales). Additionally, we found that from those characters proposed by Rueda (1985) and Harris (1994), the following are variable among individuals of *A. grandisquamatus*: number of supralabial scales (6–7), number of infralabial scales (5–6), longitudinal rows of gular scales (1–5), number of postparietal scales (2–5; Fig. 4) and overlapping of limbs when adpressed against the body (see table 2). Even so, although some of these scale ranges do not overlap, the patterns of variation are “bizarre” or very close to each other, and with insufficient material of these species in biological collections, most of them cannot be considered reliable characters to differentiate *A. grandisquamatus* from *A. eurylepis*. Also, Rueda (1985) reports three subocular scales on the right side for *A. grandisquamatus*, error replicated in Harris (1994) as he does not review the specimen and replicates Rueda’s scale counts. Here we correct this value to four (see Fig. 4 ICN 5937), since Harris (1994) definition of suboculars is “scales located between orbit and supralabials”. Similarly, Harris (1994) considers *A. eurylepis* to have four suboculars while we consider three following its definition (see Fig. 4 ICN 4460), counting the scale between the loreal and the first subocular as a frenocular.

As Harris (1994) highlights, the variation in the transverse dorsal scale rows appears to be one of the most reliable characters for differentiating the two species. However, we argue that the presence or absence of prefrontal scales is also a useful diagnostic feature, as the evidence gathered so far shows no variation in this trait among species of the *eurylepis* species group (prefrontal present in *A. grandisquamatus* and absent in *A. eurylepis*). Also, patterns of size, dorsal coloration, and number of preregulars show no variation between the holotype of *A. grandisquamatus* and new

vouchers (see tables 1–2), confirming its usefulness as characters to differentiate both species. Additionally, here we found other characters that are useful to differentiate them, as the number of transverse ventral scale rows and number of femoral pores in males (present in males of *A. grandisquamatus* and absent in males of *A. eurylepis*)—see Table 2; Fig. 6F; Fig. 7F—. In addition to this, it is important to incorporate both species in phylogenetic studies to corroborate their true position within the family Alopoglossidae.

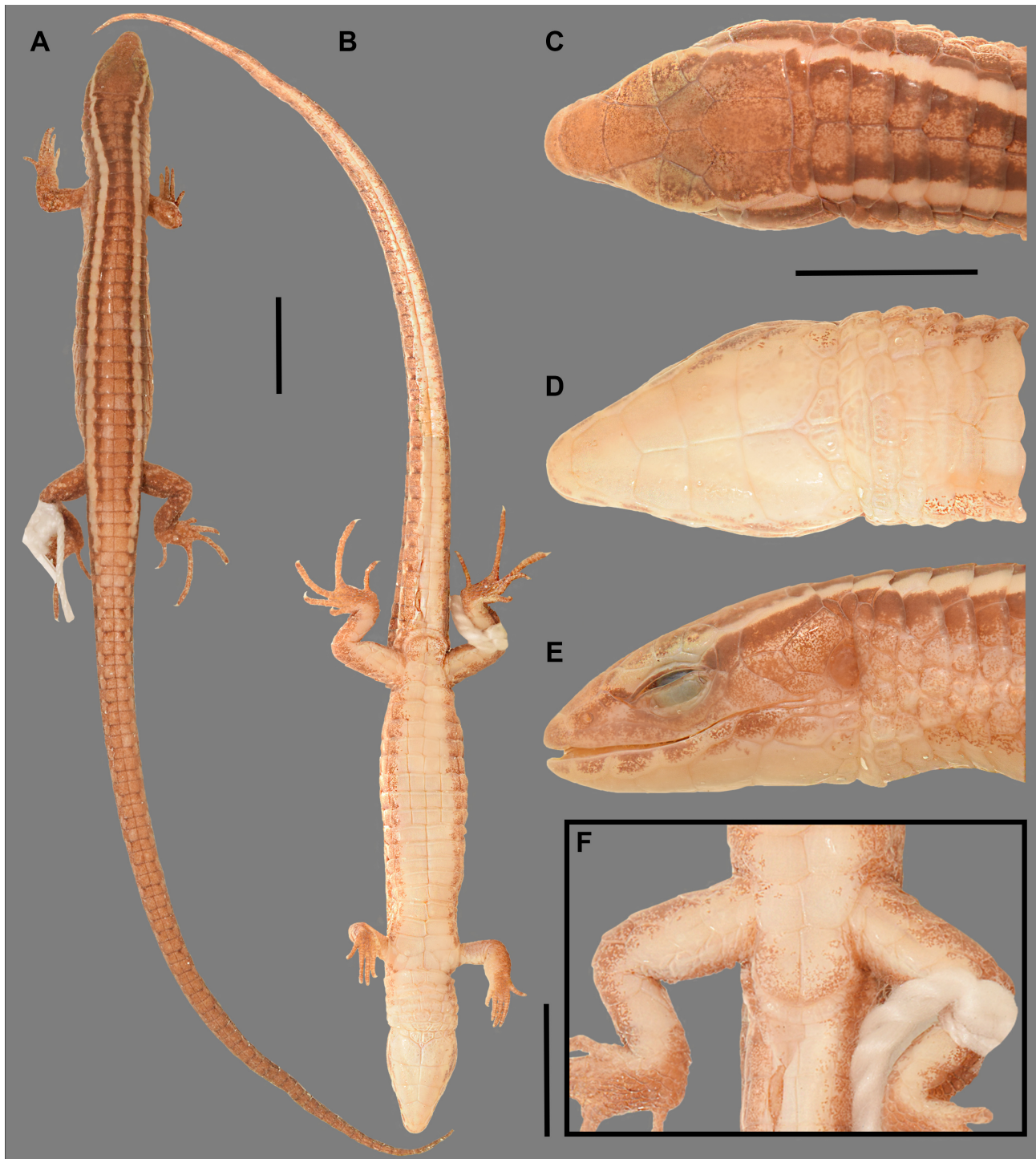


FIGURE 7. Adult male holotype (ICN 4460, SVL = 40.6 mm) of *A. eurylepis*. (A) dorsal general view; (B) ventral general view; (C) dorsal view of head; (D) ventral view of head; (E) lateral view of head; (F) detail of the pelvic region (showing the lack of femoral pores). Scale bars A–E: 1 cm and F: 0.5 cm.

Conclusions

We provide the first records of *A. grandisquamatus* in nearly 40 years, reconfirming its presence in the northern western Andes of Colombia by recording two new individuals at two new localities for this species. Novel morphological variation is revealed for *A. grandisquamatus*, including sexual dimorphism in femoral pores (absent in females) and the increase in some diagnostic scale counts, thus contributing to the knowledge of this rare species. The status of Endangered (EN) is proposed for this species following the IUCN guidelines (2012).

Further sampling is necessary to know in detail the natural history and distribution of this species. As well as to clarify the taxonomic situation within the *eurylepis* species group, since several of the diagnostic characters that differentiate its members from each other were shown to be variable in *A. grandisquamatus* or are commonly variable among conspecific individuals of other species of the genus. Therefore, until we better understand the morphological variation and distribution of *A. eurylepis*, its synonymy cannot be ruled out.

Increased sampling in underexplored regions continues to reveal rare and under-recorded species about which we know very little, an encouraging reason to continue to increase sampling efforts in such regions, as well as to apply non-traditional sampling methodologies that allow us to find species with cryptic habits, such as secretive, fossorial and arboreal species.

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