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New and unusual field records of *Chelus* spp. in Venezuela (Testudines: Chelidae)

Registros nuevos e inusuales de *Chelus* spp. en Venezuela (Testudines: Chelidae)

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The genus *Chelus*, matamata turtles, is native to northern South America, being widely distributed throughout the Amazon and Orinoco Basins. It reaches the largest adult body size among the extant Chelidae, and with straight-line carapace length (SCL) ranging from 31.1-40.4 cm (Pritchard & Trebbau 1984). However, larger individuals do exist (*i.e.*, > 50 cm SCL Barrio-Amorós & Manrique 2006). Matamatas are very charismatic and easy to recognize by their unique morphological appearance (*i.e.*, extremely flat and triangular head, long and thick neck, wide mouth, long pointy snout, and a carapace with three dorsal keels). They are classified as "Least Concern" by the IUCN (2021), yet their natural history is largely unknown despite the great interest shown by the herpetological community. Likewise, the distribution range of *Chelus* species remains only partially verified, and the taxonomic revision of the genus suggesting the recognition of two extant species leaves (see below) the geographic coverage of each of them undocumented. This lack of comprehensive distribution data hampers efforts to accurately understand the biogeography and ecological niches of each species, requiring further research to delineate their ranges more precisely.

Recent genomic and morphological analyses have delineated the genus *Chelus* into two distinct lineages: *C. orinocensis* Vargas-Ramírez *et al*. 2020, inhabiting the Orinoco Basin, including the Rio Negro and Essequibo drainages, and *C. fimbriata* Schneider, 1783, found in the Amazon and Mahury Basins (Vargas-Ramírez *et al*. 2020). These findings corroborate earlier hypotheses proposed by Medem (1960), Pritchard & Trebbau (1984), Sánchez-Villagra *et al*. (1995), and Pritchard (2008). These researchers, relying on morphological evidence such as shell shape, plastron pigmentation and neck coloration patterns, suggested geographic variation between the Amazon and Orinoco Basin populations of *C. fimbriata*. Specifically, Amazonian matamatas were described as having a rectangular carapace shape (Fig. 1), a dark pigmented plastron, and bold black bands on the ventral side of the neck. In contrast, Orinoco matamatas were characterized by an oval carapace shape (Fig. 1), a light yellow-unpigmented plastron, and light coloration (often bright red-pink) on the underside of the neck. Given the new taxonomic resolution of *Chelus*, it is currently assumed that historical records from the Orinoco hydrographic system are presumed to be of *C. orinocensis*. Nonetheless, a call has been made to take caution on this hypothesis and instead advises to confirm current records (*e.g.*, museum specimen, survey, citizen science observation) and to map new sites to help distinguish more precisely the geographic distribution of matamata lineages (see Cunha *et al*. 2021). Furthermore, the potential presence of hybrids or intergrades, with anatomical intermediate morphotypes (Sánchez-Villagra *et al*. 1995, Pritchard 2008), also highlights the necessity for a more comprehensive understanding and precise delineation of *Chelus* species boundaries. Although challenging, accurate species delimitation is crucial for precise taxonomy, managing species diversity, and formulating effective conservation strategies (Zachos 2016).

Taking all together, and to aid with *Chelus* sp. scientific knowledge and conservation, I present information, new records of occurrence from matamata turtles, including some from the Lower Caura watershed (Bolivar State,

Figure 1. Shell shapes representing each of the two matamata lineages. Left: Amazonian morphotype (*Chelus fimbriata*) having a rectangular carapace shape (PCHP 39–from the vicinity of Leticia, Colombia). Right: Orinoco morphotype (*Chelus orinocensis*) having an oval carapace shape (MCNUSB 427–from the Llanos, Venezuela) (images taken and modified from Sánchez-Villagra *et al*. 1995).

Venezuela), a tributary of the middle Orinoco drainage (Fig. 2). I also comment on the specimen's habitat and provide original data on size (carapace length, width, and weight), while comparing with other published size records from the Orinoco basin.

I discuss three museum catalogued records of the matamata, two of which are from outside the Orinoco Basin, and one from the Casiquiare River Canal, which connects the Upper Orinoco and Upper Rio Negro Basins. From the former two records, one is new from the Lake Maracaibo Basin (Zulia State), and the other validates previously cited record by Pritchard & Trebbau (1984) from the Santa Rosa-Putucual region (Sucre State). The specimen from the Casiquiare River (Amazonas State) represents a new site record from this hydrographic system.

CAURA RIVER BASIN (BOLÍVAR STATE) RECORDS

New locality of occurrence

Two adult living matamatas, a female and a male, were captured and measured in the remote Nichare River, an affluent of the Lower Caura River Basin (LCR) and part of The Caura National Park (Fig. 2). These individuals were sampled by chance during the dry season of 2000 (February-April) while conducting a three-year research study (1999-2001) on the nesting ecology of another native aquatic turtle (*Podocnemis unifilis* Troschel 1848) (Escalona 2003, Escalona *et al.* 2009a). The female was caught directly by hand from a boat after being spotted moving on the surface across a narrow section of the river. Although it tried to dive, it did so very slowly, allowing it to be approached and captured rapidly. The male, on the other hand, was caught with a fishing net used in a shallow flooded lagoon to catch *P. unifilis* (Fig. 3). Location details are shown in figure 2. On the map, the Nichare River locality is indicated by black circle 6. Within this locality, the specific site for the female was recorded at (06°20'7" N, 64°57'31" W), and the male at (06°19'16" N, 64°57'12" W).

Habitat and Nichare River

It is well recognized that matamatas are highly aquatic bottom-walkers that rarely swim or float and are never seen basking. Habitats of preference are rivers and streams, mainly in areas of slower water flow or still waters such as lagoons, wells, oxbow lakes and temporary overflow pools. It inhabits all types of water: white, clear, and black (Pritchard & Trebbau 1984, Barrio-Amorós & Narbaiza 2008, Morales-Betancourt *et al.* 2020, Cunha *et al*. 2021). The Nichare is a black water meandrous river about 5 to 20 meters wide that sustains habitats of similar characteristics and conditions to those described above. It contains lateral

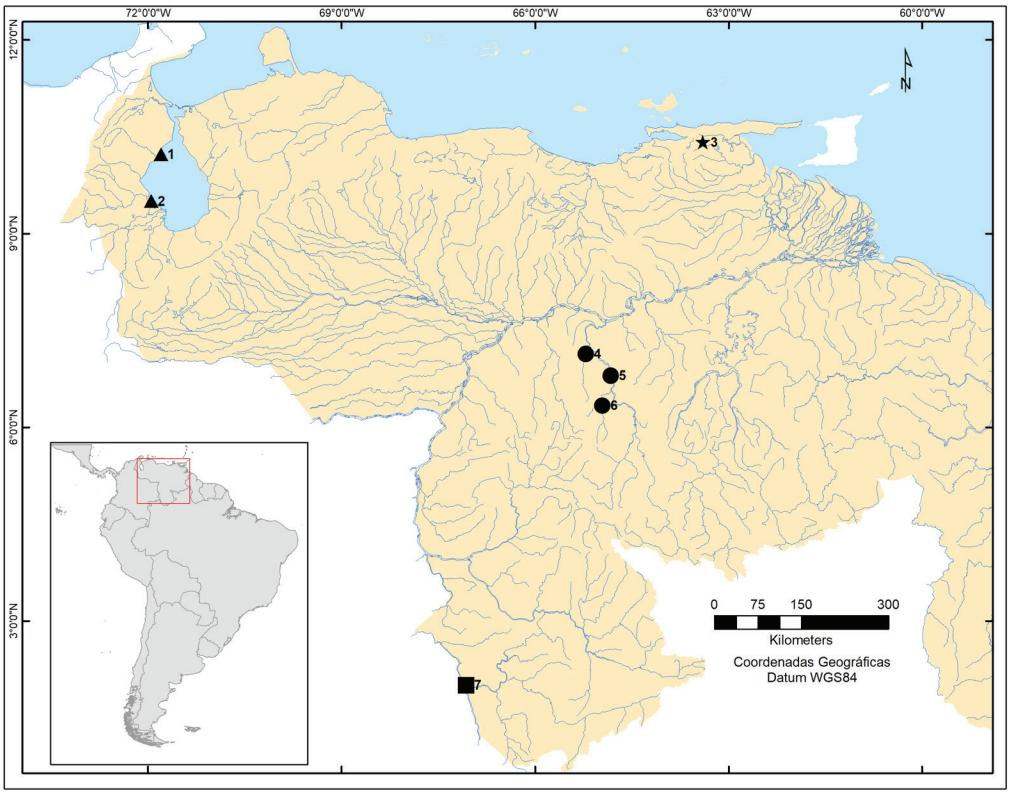

Figure 2. Hydrographic map of Venezuela showing *Chelus* record sites referenced in this study. The map highlights key localities from left to right and south. **Triangles** represent sites within the Lake Maracaibo Basin in Zulia state. Triangle 1 marks the location of a recently discovered museum specimen (MBUCV 7096) at coordinates (10°13'30" N, 71°47'45" W). Triangle 2 indicates the site observed by José L. Lira in 1974 (09°31'17" N, 71°57'25" W). **Star** marks the location of museum specimen KU 117344 from the Santa Rosa-Putucual Lagoon Swamp (10°22'12" N, 63°16'48" W), Gulf of Paria Basin, Sucre state. **Circles** denote localities in the Lower Caura River Basin, Bolívar state. Circle 4 represents the site along the Mato River (07°08'08" N, 65°12'43" W), while circles 5 and 6 indicate record sites along the Caura River (06°48'04" N, 64°49'40" W) and Nichare River (06°21'08" N, 64°58'17" W), respectively. **Black square** shows the locality for museum specimen MBUCV 7278, from the Casiquiare River Canal, Amazonas state. This specimen was found in the community of San Carlos de Rio Negro (01°55'12" N, 67°03'40" W).

and meandric sand bars, shore complexes of pools, flooded lagoons, and oxbow lakes. It is considered a "Seasonally Flooded Riparian Ecosystem" in an "Evergreen Lowland Forest" (Rosales & Huber 1996, Rosales *et al*. 2003).

Morphological characteristics (shell shape, plastron pigmentation, neck coloration, size)

Shell shape (rectangular vs oval), plastron pigmentation (dark vs light) and neck underside coloration (bold black bands vs light or red-pink color) were used as features for species diagnostic. Shell characters were measured linearly using a 50 cm caliper. This included the maximum straight carapace length (SCLmax) and straight-line carapace width (SCW), as shown in figure 4. Body mass was weighed using a 20 kg Pesola spring scale. No abnormalities were detected during measurements. After taking photographs and measurements, the matamatas were released into the same location of capture.

Sex determination

Although sexual dimorphism is not very marked in matamatas, the sex can be easily determined because females can reach larger sizes than males, and males have longer and thicker tails (Figs. 5 and 6) and seem to have a more concave plastron (Fig. 7) compared to females (Figs. 5 and 8). Differences, were also confirmed by the few available studies on matamata size, which have indicated that individuals over 40 cm in SCL tend to be females (see Pritchard & Trebbau 1984, Sánchez-Villagra *et al.* 1995, and see Figs. 3 and 4 of Morales-Betancourt *et al*. 2020).

Female: This individual is characterized by an oval shell outline, such as in the Orinoco morphotype (see Sánchez-

Figure 3. Fishing net technique in curiaras (bote) from the Lower Caura River Basin. Top left and right: Capturing *Podocnemis unifilis* in the Nichare River. Bottom left: Fisherman fishing in the Caura River and who caught two male matamata turtles. Photo: Tibisay Escalona.

Figure 4. Shell of Matamata turtle. Measurements indicated are based on a specimen of unknown provenance deposited in the Paleontological Collection of the Instituto Venezolano de Investigaciones Científicas (IVIC), Venezuela. Maximum straight-line carapace length (SCLmax; left) and width (SCW; right). Photo: Gilson Rivas.

Figure 5. Female matamata from the Nichare River (SCLmax 48.8 cm). Left: Dorsal view: Oval-carapace outline, neck, head; Middle: Ventral view: Stained plastron and thin tail; Right: Head. Based on shell shape, this female may be a representative from the Orinoco morphotype (*Chelus orinocensis*). Photo: Andres Rosenchein.

Figure 6. Male matamata from the Nichare River (SCLmax 37.7 cm). Left: Dorsal view: Oval-carapace shape, neck and head; Middle: Ventral side: Stained plastron and thick tail, and red-pink underside neck color; and Right: Dorsal view: Head and neck (features a narrow, continuous dark line along the midline, flanked by two thin dark lines on either side). Based on shell shape, this male may be a representative from the Orinoco morphotype (*Chelus orinocensis*). Photo (left): Ivonne Monge; photo (middle, right): Tibisay Escalona.

Figure 7. Ventral view (plastron) of an adult male matamata. Compare to females (see Fig. 9, ventral view), males have a thicker tail and a greater degree of concavity in the plastron, which is noticeable towards the abdominal, femoral, and anal scutes, with the concavity being most prominent in the femoral scute area. This pattern requires further investigation. Photo: Tibisay Escalona.

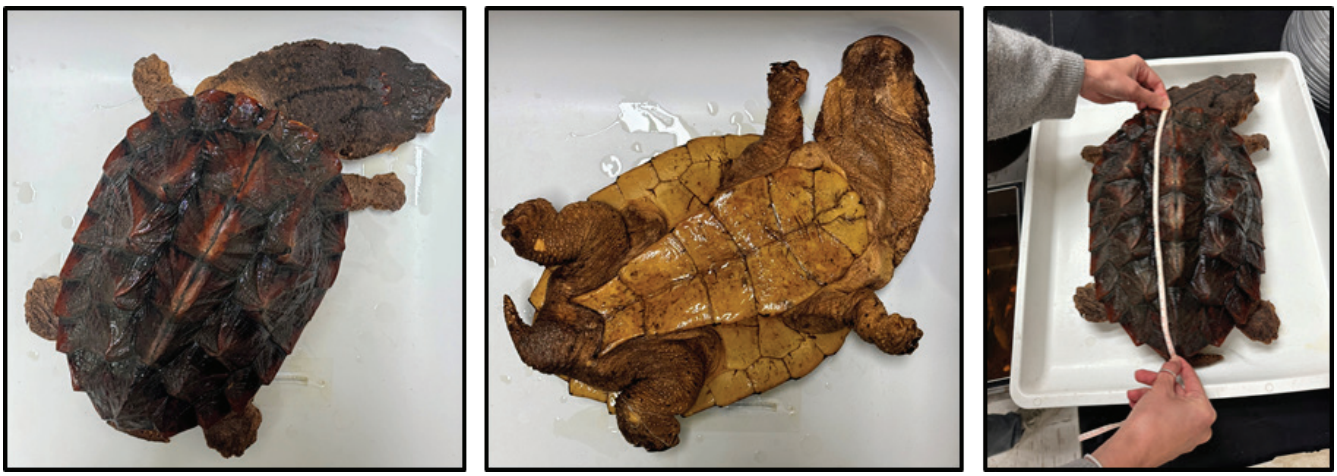

Figure 8. Validated record of occurrence for matamata turtle from Santa Rosa region, likely from Putucual lagoon swamp (Sucre State, Venezuela) deposited at Kansas Univeristy (KU) Biodiversity Institute and Natural History Museum (KU 117344). This adult female (CCL: 35.5 cm) catalogued as *Chelus fimbriata* is characterized by having from left to right: Dorsal view (oval carapace shape), ventral view (unpigmented plastron and light color on the underside of the neck). The specimen should be re-identified as *C. orinocensis* given its morphological similarities to the Orinoco morphotype. Photo: Ana Motta.

Villagra *et al.* 1995, Cadena *et al*. 2023). The plastron seems heavily stained rather than naturally pigmented, most likely due to the tannin-rich black waters typical of the Nichare ecosystem. However, further investigation is needed to confirm this observation. The underside neck coloration pattern was not possible to describe, due to lack of images (Fig. 5). This large female matamata turtle, measuring 48.8 cm in SCLmax (37.4 cm in SCW) and weighing 12.7 kg, is, to the best of my knowledge, the second-largest live matamata ever recorded in the Venezuelan Orinoquia. The largest so far was caught in Apure River and measured 52.6 cm in SCLmax with a weight of 17.7 kg (Barrio-Amorós & Manrique 2006). For Colombian Orinoquia (Bojonawi Natural Reserve - BNR), the maximum size reported is 47 cm SCLmax (37 cm in SCW) and a weight of 13.42 kg (Morales-Betancourt *et al*. 2020). Additional records of large female specimens are available in museum collections. For instance, a female with an oval shell shape from Raudales de Atures, Puerto Ayacucho (Amazonas State, Venezuela) was originally documented by Barrio-Amorós & Narbaiza (1999). This specimen, recently re-measured by T. Escalona, has an

SCLmax of 48.7 cm and an SCW of 39 cm. It is deposited at the Estación Biológica Rancho Grande in Maracay, Venezuela, under the catalog number EBRG 3596. Other museum records indicating CL larger than 40 cm are described in Pritchard & Trebbau (1984) (Deposited in Peter CH Pritchard, personal collection, Oviedo, Florida, USA as PCHP 1209) and Sánchez-Villagra *et al*. (1995) (Deposited at Colección Estación Biológica Hato Piñero, Cojedes, Venezuela as CEBHP unnumbered).

Male: This individual has an oval-shaped carapace similar to the Orinoco morphotype and a heavily stained plastron akin to that of the female described above. The ventral side of the neck is reddish-pink, while the dorsal side features a narrow, continuous dark line running along the midline, flanked by two thin dark lines on either side (Fig. 6). The size of this male, ranks among the largest ever reported. The SCLmax, SCW and weight are: 37.7 cm, 28.6 cm, and 5.7 kg. A similar maximum size but much heavier was registered by Morales-Betancourt *et al.* (2020) for Colombian Orinoquia (*i.e.*, 37.7 cm in SCLmax, 30.3 cm in SCW, and 7.6 kg). During a seven-year mark and recapture matamata population study, the latter authors found that most males examined (about 86%) had a SCLmax less than 33.1 cm, and the few larger ones (interval 36.1-39 cm) represented only 3%. The largest males ever reported in the literature include one individual living in captivity in Venezuela, measuring 39.7 cm in SCLmax (Pritchard & Trebbau 1984), and another specimen from Guyana reaching an SCLmax of 41.9 cm (Pritchard 2008).

OTHER OCCURRENCES WITHIN THE LOWER CAURA BASIN

Chelus was confirmed to inhabit the Mato (black circle 4) and Caura Rivers (black circle 5) (Fig. 2). It is important to point out that matamatas have previously been observed in both rivers, though they were referred to as *C. fimbriata* (Pritchard & Trebbau 1984, Rojas-Runjac *et al*. 2011).

Mato River

The observation was made at the locality known as Morrocoy (07°08'08" N, 65°12'43" W), where a male was captured for consumption by local hunters using an arrow and a long spear. Hunters were observed on top of trees near the river shoreline, waiting for any turtle to surface (Fig. 9). This live male, measured 36.6 cm in SCLmax, 28.6 cm in SCW, and weighted about 5 kg. Based on its oval shell shape, reddish-pink ventral neck coloration and probably stained plastron, this male appears to exhibit morphological characteristics typical of the Orinoco morphotype rather than Amazonian.

Caura River

Two males were caught with fishing nets by local fisherman near La Fortuna (06°48'04"N, 64°49'40"W) and were freed back into the river (Fig. 3). Sizes were as follows: 1) SCLmax: 32.1 cm, SCW: 23.9 cm, weight: 3.5 kg, and 2) SCLmax: 33.6 cm, SCW: 23.4 cm, weight: 3.5 kg (see Fig. 3 for fishing technique). Although no

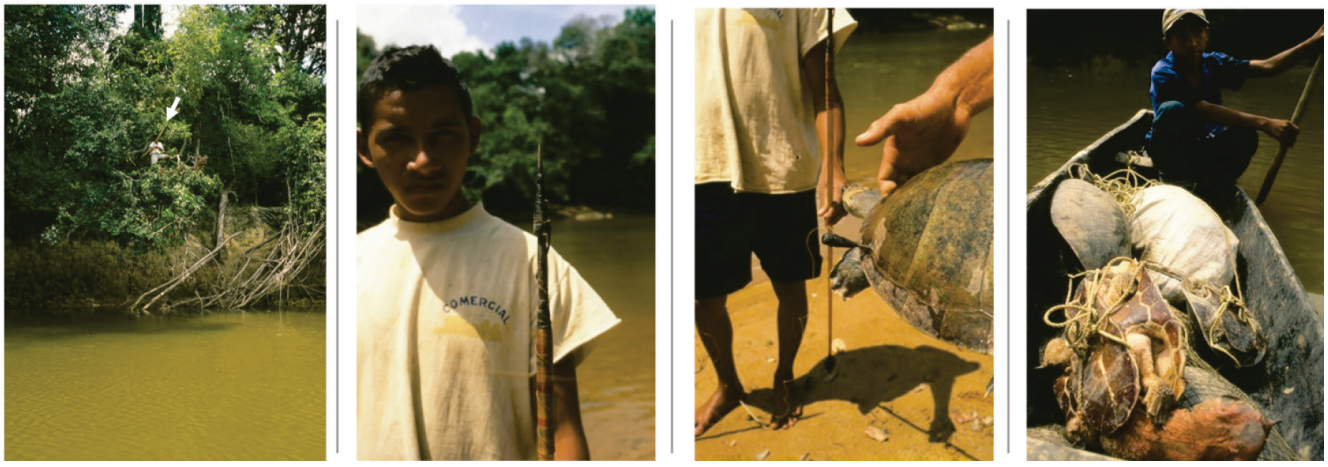

Figure 9. Turtles collected by local hunters on the Mato River. From left to right: Hunter on top of tree (see white arrow); Hunter with spear; Turtle (*Podocnemis unifilis*) captured with spear; Collected turtles are kept inside a boat (curiara) either tied or in a bag. Male matamata can be observed in front and various *P. unifilis* behind. This individual was characterized by having an oval shell shape, stained plastron, and red-pink color pattern on the ventral side of the neck, and measuring SCLmax of 36.6 cm. Photo: Tibisay Escalona.

images were taken from these individuals, they both are described as having an oval-shell outline.

Collectively, the data confirm the presence of *Chelus* in at least three river localities (Nichare, Mato, and Caura) within the Lower Caura River Basin. Additionally, the morphological characteristics of the observed individuals suggest that they are representatives of the Orinoco morphotype (*C. orinocensis*). Nonetheless, further genetic and morphological research is needed to substantiate these findings throughout the Caura drainage, especially since previous work on the *Podocnemis unifilis* turtle documented a complex geographical pattern of genetic variation heavily influenced by landscape features (Escalona *et al.* 2009b).

The data also reinforces the notion by Pritchard & Trebbau (1984), Pritchard (2008), and studies by Morales-Betancourt *et al.* (2020) that matamata females can grow very large and attain larger sizes than males. Although there are exceptions to this pattern (see Pritchard 2008), most males are smaller than 40cm in SCLmax, indicating sexual size dimorphism. In matamatas, tail size differs between mature males and females of equal length, it remains to be explored whether there is variation in shell shape or other morphological traits (*e.g.*, skull size)between individuals shorter than 40 cm. Plastron concavity as a reliable trait for sex determination requires further research, as some females show concavity and some males have a rather flat plastron (see Sánchez-Villagra *et al.* 1995, T. Escalona pers. obs.).

Since shell shape is a key trait distinguishing the two *Chelus* lineages –*C. orinocensis* with its oval shape and *C. fimbriata* with its rectangular outline (Fig. 1)– future research utilizing geometric morphometrics is essential to enhance the identification of shape differences across various river systems. This work should also be complemented by genetic studies that prioritize comprehensive geographic sampling, especially in under-sampled regions such as Venezuela. Such sampling will facilitate the testing of genetic distinctiveness within specific watersheds and the assessment of gene flow between peripheral and central localities within the species' distributional range.

It is important to note that field records should not be forgotten, as they can still yield valuable insights despite the time since the observation. They can provide useful new knowledge, validate, and improve previous and recent records. This is particularly significant for elusive species with limited observations and remain poorly known, such as the matamata turtles.

LAKE MARACAIBO BASIN (ZULIA STATE) RECORDS

The occurrence of *Chelus* in the Lake Maracaibo Basin has remained uncertain. Previously, in this region, matamata turtle occurrences were only known from two observations dated more than 40 years ago (see Pritchard & Trebbau 1984). One of these observations has recently been validated by Gilson Rivas (Museo de Biología, Universidad del Zulia) after interviewing Professor Jose L. Lira from University of Zulia on April 18, 2024. Professor Lira recalls seeing on 1974, a live matamata (*Chelus* sp.) caught by a local fisherman in the Santa Ana River (Fig. 2; black triangle 2), a tributary on the west side of the lake (G. Rivas, pers. comm.). Furthermore, until recently (9 April 2024), museum specimens of matamata turtles from this region were not known. However, a matamata, preserved in alcohol, was discovered in the herpetological collection of Museo de Biología of Universidad Central de Venezuela (MBUCV), Caracas (deposited as MBUCV 7096, T. Escalona, pers. obs.) (Fig. 10). It is important to acknowledge, that although the hand-written catalogue provides the exact location of the specimen (*i.e.*, northwestern side of the lake; Fig. 2; black triangle 1), there is no mention of who brought it to the museum or even the date it was collected. It is only noted that it was found by local fisherman and identified by Oswaldo Fuentes in the mid-late 1990s as *Chelus fimbriata*. However, determining whether the specimen is truly a *C. fimbriata* or possibly a *C. orinocensis* or even a different species or subspecies remains uncertain, as it is a small juvenile (SCLmax: 6 cm) with an incompletely ossified shell that lacks a well-defined shape (Fig. 10). The true identity of this juvenile will require further morphological and genetic analysis.

Recent museum records and the validated observation by Professor Lira, it suggests that *Chelus* sp. may inhabit Lake Maracaibo, warranting further investigation. If confirmed, matamata turtles in this area could represent an isolated breeding population that deserves attention. This is particularly significant because the Lake Maracaibo Basin is situated in a secluded geomorphological region, surrounded by substantial physical barriers (*i.e.*, to the east, is separated from the Orinoco-Amazon system by the Andean mountain range, and to the west, from the Magdalena system by the Sierra de Perijá, and to the south by the union of these). Biogeographic evidence from freshwater fishes indicates that this relative isolation of the Lake acted as a Refugia, allowing the differentiation of fish populations into distinct biotas. This differentiation

Figure 10. Newly discovered catalogued museum record of matamata turtle from the northwestern side of Lake Maracaibo, Venezuela. This new record is deposited in the Herpetological Collection of the Museum of Biology of the Universidad Central de Venezuela (MBUCV 7096). Left: Tag validating the locality and catalogue record. Middle: Dorsal view (carapace). Right: Ventral view (plastron). This very small juvenile specimen measured 6 cm in SCLmax. Photo: Tibisay Escalona.

is notable when compared to neighboring hydrological systems like the Orinoco, Amazon, and Magdalena. The lake, today harbors ancient relictual lineages, new species that arrived via coastal dispersal, and species that evolved in seclusion, leading to high levels of endemism (Rodrigues-Olarte *et al.* 2011).

SANTA ROSA RIVER–PUTUCUAL LAGOON SWAMP, GULF OF PARIA BASIN (SUCRE STATE) RECORD

To date, there is only one known record of the matamata turtle from Sucre State. This specimen is catalogued at the KU Biodiversity Institute and Natural History Museum (Lawrence, KS) under the accession number KU 117344 (see Pritchard & Trebbau 1984). To validate this record, Ana Motta, the Herpetology Collection Manager at KU, confirmed the physical existence of the specimen. She also provided information from the hand-written catalogue, and took the carapace measurement (Curved Carapace Length - CCL: 35.5 cm), and photographs from both the dorsal and ventral views (Fig. 8). According to the catalogue, this specimen, identified as *Chelus fimbriata*, was collected by James D. Smith on February 26, 1967, in the vicinity of Santa Rosa River (10°24'55" N, 63°23'29" W), located by road 20 km southeast of Casanay Village (10°30'13" N, 63°25'03" W), likely from the Putucual Lagoon Swamp (Fig. 2; black star 3). However, after analyzing the photographs, it is apparent that this individual has an oval-shaped carapace with an unpigmented yellow plastron, and having two dark fine bands running along the light color of the underside of the neck, features diagnostic of the Orinoco morphotype. Consequently, based on these characteristics the specimen appears to be instead a *C. orinocensis*, pending further investigation (T. Escalona, pers. obs.). Interestingly, the Santa Rosa River is in the lowlands and flows southeast where it merges into Putucual. This swamp drains its water eastward into the San Juan River, which eventually flows into the Gulf of Paria (Melfran Herrera, pers. comm.). This hydrographic system is part of the Gulf of Paria Basin, where some tributaries can connect with those of the Orinoco Delta during flooding. These connections may facilitate the exchange of water and aquatic species between the Orinoco and the Gulf of Paria, influencing the biodiversity and ecological dynamics of the entire region. Given this context, the presence of matamata turtles in Sucre State is plausible. Nevertheless, our current understanding of the chelonian fauna in this region remains largely unknown, highlighting the necessity for further research to explore turtle diversity in this area.

CASIQUIARE RIVER CANAL (AMAZONAS STATE) RECORD

Morphological shell shape data from museum records indicate the occurrence of both matamata lineages in the Upper Orinoco and Upper Rio Negro Basins within the Amazonas State in southern Venezuela. However, it remains unclear where along this hydrographic gradient the two lineages coexist (Pritchard & Trebbau 1984, Sánchez-Villagra *et al.* 1995, Barrio-Amorós & Narbaiza 1999, Pritchard 2008). Here, I report about one record from the Casiquiare drainage, the only contact zone between the Orinoco and Rio Negro Basins. A large-sized specimen, with burned carapace and missing plastron is documented, measuring 48.4 cm in SCLmax and 36.9 cm in SCW (Fig. 11). This incomplete shell was discovered in

Figure 11. Dorsal view of the carapace shape from two different Amazonian *Chelus* morphotypes depicting a rectangular shell shape with parallel-sides. Left: Burned carapace of an adult female matamata turtle from the Casiquiare River (Amazonas state), southern Venezuela (catalogued originally as *C. orinocensis*, and modify tentatively to *C. fimbriata*, pending investigation, MBUCV 7278) (Photo: Tibisay Escalona). Right: from the vicinity of Leticia, Colombia (catalogued as *C. fimbriata* PCHP 39) (modified from Sánchez-Villagra *et al.* 1995).

the community of San Carlos de Rio Negro (Fig. 2; black square 7) after being consumed by locals. The locals reported capturing the turtle along the Casiquiare River, though no specific collection site was provided (C. Alvarado. pers. comm.). This matamata is housed at MBUCV with catalogue number 7278 and identified as *C. orinocensis*. A closer examination and using shell shape outline as a diagnostic character for taxon identification, indicates that the specimen has a more rectangular shape rather than oval (Fig. 10). Based on this feature, the specimen is identified tentatively as an Amazonian morphotype (*C. fimbriata*) (A. Rhodin and T. Escalona, pers. obs.) until further morphological investigation (Fig. 10). This finding is particularly intriguing, as current genetic studies restrict *C. fimbriata* to the Amazon River Basin and eastern Guianas (Vargas-Ramirez *et al*. 2020). However, before making any conclusion, caution is warranted as this specimen may also represent an interspecific hybrid or intergrade, considering it originates from a locality where both matamata lineages are suggested to co-occur. Indeed, previous investigations have mentioned that some specimens from this region exhibit a blend of traits from the two *Chelus* morphotypes, making them difficult to identify, and implying a subspecific relationship or intermediate morphotype between *C. orinocensis* and *C. fimbriata* (Sánchez-Villagra *et al*. 1995, Pritchard 2008).

Considering all these factors, it is reasonable to suggest that the Casiquiare River Canal may serve as a dispersal corridor for matamata turtles between the Orinoco and Rio Negro Basins and vice versa, facilitating habitat sharing and coexistence among *Chelus* lineages along this contact zone. The Casiquiare River's role as an important biogeographic corridor in shaping species distribution, genetic flow, and speciation processes is well-documented for diverse aquatic fauna, such as in Amazon river dolphins, Podocnemididae turtles (Emmons & Feer 1999, Pearse *et al.* 2006, Escalona *et al*. 2009b), particularly for fish species of the genus *Cichla* (Winemiller & Willis 2011). Additionally, evidence of interspecific hybridization, as seen in various fish studies (Crampton *et al.* 2003, Willis *et al*. 2010, 2012, Thomaz *et al*. 2017), underscore the river's function in facilitating genetic mixing between the Amazon and Orinoco Basins. However, the extent to which this hybridization or intergrade has occurred in other aquatic organisms, such as matamata turtles, remains understudied. It is important to emphasize, that hybridization among chelonian species have been previously reported in other hydrographic regions (*e.g.*,

Lovich *et al*. 1990, Arantes *et al.* 2020). If this is the case of *Chelus* sp., it demands rigorous investigation in order to help mitigate taxonomic ambiguity, as evidenced by similar issues documented in Australian chelids (Cann & Legler 1994, Spinks *et al*. 2015).

Lastly, expanding the discovery of new matamata specimens is crucial for comprehensively understanding the distribution, genetic diversity, and morphological variation of *Chelus* lineages within and among these river basins.

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