

Two new and unusual species of the genus *Fauveliopsis* (Annelida: Fauveliopsidae) and first records in coralline environments from the Alacranes Reef National Park, southern Gulf of Mexico

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ABSTRACT

Fauveliopsidae are a family of small polychaetes, found across bathyal or abyssal bottoms in low abundance, with their occurrence in shallow waters very uncommon. However, examining polychaetes from dead coralline fragments collected at Alacranes Reef National Park in very shallow waters (0.5–1 m depth), we came upon two unusual fauveliopsids, whose morphological characteristics did not match any described species, while also differing significantly from one another. We describe them as two new species. Beyond representing the first records of the genus *Fauveliopsis* in coralline environments, they also constitute the shallowest occurrence of this family ever recorded (0.5–1 m). *Fauveliopsis corallicola* **sp. n.** is characterised by: (1) 72 chaetigers per 8.5 mm (the highest number of chaetigers reported so far in this genus); (2) the first 1–4 notopodia bearing one thicker and one thinner acicular chaetae (1A 1a), subsequent anterior notopodia (5–11) bearing thicker acicular chaetae (1A), and median to posterior notopodia with 1–3 thinner acicular chaetae, alongside capillaries (1–3a 1c); and (3) all anterior neuropodia with two thinner acicular chaetae (2a), median neuropodia with 1–2 thicker aciculars (1–2A) and posterior with 2–3 thinner aciculars (2–3a). *Fauveliopsis alacranensis* **sp. n.** can be distinguished from closely related species by: (1) 44 chaetigers per 8.3 mm body length; (2) a prominent mid-dorsal groove; (3) notopodia 1–2 possessing one thinner acicular chaeta (1a), all subsequent notopodia with only one thicker acicular chaeta (1A) each; and (4) all neuropodia with thinner aciculars (a), one in anterior neuropodia and two in median and posterior ones, alongside capillaries. Tables detailing the distinctive morphological characteristics and the distribution of all described species of *Fauveliopsis* are provided.

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Introduction

The family Fauveliopsidae was established by Hartman (1971) to include the genera *Bruunilla*, *Fauveliopsis*, *Flabelligella* and *Flota*, all of which were previously allied with Flabelligeridae. Over time, the family's composition has been significantly revised, with *Flabelligella* transferred to Acrocirridae (Orensanz 1974) and *Bruunilla* to Polynoidae (Pettibone 1979), and *Flota* was even proposed as an independent family (Flotidae) (Buzhinskaja 1996) before being designated a junior synonym of *Buskiella* by Salazar-Vallejo and Zhadan (2007).

Currently, Fauveliopsidae comprises 29 species across three genera: *Fauveliopsis* McIntosh, 1922 (17 species, counting the two new species described herein), *Laubieriopsis* Petersen, 2000 (11 species) and *Riseriopsis* Salazar-Vallejo, Zhadan and Rizzo, 2019 (five species) (Plathong *et al.* 2016; Read and Fauchald 2025). Members of this family may be free living, inhabit tubes of cemented silt grains (Blake and Petersen 2000; Petersen 2000), or dwell within scaphopod and gastropod shells, or tubular foraminiferans such as *Bathysiphon* Sars, 1872 (Salazar-Vallejo *et al.* 2019).

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Fauveliopsids are widespread in deep waters, though they remain relatively rare in the soft bottom habitats they occupy (Zhadan and Salazar-Vallejo 2019). *Fauveliopsis* is, so far, the most diverse genus, with 17 valid species. Its members are characterised by a smooth, finely papillose, or rugose integument and are frequently found within mollusc shells, foraminiferan tests or flexible tubes (Salazar-Vallejo *et al.* 2019; Jimi *et al.* 2020). Species identification has traditionally relied on the number of chaetigers, the type of chaetae and their distribution along the body, and integument characteristics (Katzmann and Laubier 1974). While some authors emphasise the number of chaetigers (Amoureux 1982), others prioritise chaetal patterns (Hartmann-Schröder 1983; Salazar-Vallejo *et al.* 2019; Plathong *et al.* 2026). The capillaries in fauveliopsids are consistently simple and slender, showing little variation between species. In contrast, acicular chaetae exhibit greater variability; while typically straight and rarely sigmoid, they have also been described as ‘thicker spines’, ‘thin spines’ or ‘slightly thinner spines’ (e.g. Hartman and Fauchald (1971) or Fauchald (1972a)). In this study we follow the terminology of Petersen (2000) and Salazar-Vallejo *et al.* (2019), using the term ‘thicker acicular chaetae (A)’ only for robust (wider) chaetae; the term ‘thinner acicular chaetae (a)’ for less robust aciculars; and the term ‘capillaries (c)’ for thin and long chaetae.

Most *Fauveliopsis* species are restricted to the deep sea (see Table 2), with only a few known from shallow waters. These include *F. jameoquensis* Núñez (Canary Islands, 5 m) and *F. antri* Jimi (Japan, 18–26 m) (Jimi *et al.* 2020), both collected from submarine caves. Additionally, *F. adriatica* Katzman and Laubier was described from the Adriatic Sea (54–66 m); *F. pladang* Plathong, Platong, Kanladaklangnurak and Salazar-Vallejo was described from the Gulf of Thailand (60 m); and an unnamed species, *Fauveliopsis* sp. A, was reported by Wolf (1984) off Florida (19–45 m). *Fauveliopsis glabra* (Hartman) ranges from deep waters off Oregon to Western Mexico, but has also been recorded at 135–165 m in the Northwestern Atlantic (Hartman 1965; Bellan 1969; Hartman and Fauchald 1971; López 2011). However, Salazar-Vallejo *et al.* (2019) suggest that the Atlantic shelf records require further confirmation.

To date, *Fauveliopsis* sp. A, which inhabits sandy bottoms, was the only member of the family recorded in the Gulf of Mexico (Wolf 1984). However, our taxonomic analysis of polychaetes recovered from dead coral fragments in the Alacranes Reef National Park (southern Gulf of Mexico) revealed two individuals of the genus *Fauveliopsis*. A careful morphological examination showed that these specimens do not match any known species. Here, we describe them as two new species, marking the first record of *Fauveliopsis* in coralline environments and at such shallow depths. We also provide a comparative table of morphological characteristics for all described species in the genus, and data on their distribution and habitat.

Material and methods

Study area

Alacranes Reef National Park represents the largest coral reef formation in the Southern Gulf of Mexico. Situated approximately 130 km north of the Yucatán Peninsula (22.28°N, 89.41°W), this atoll-like platform reef is semi-elliptical in shape, measuring roughly 25 km in length and 14 km in width (Figure 1). The system is characterised by an extensive reef crest on the eastern windward margin and five cays: Pérez Island, Cornezuelos, Pájaros or Blanca, Muertos and Desterrada (Liddell and Tunnell 2011).

The benthic community is dominated by the scleratinians *Orbicella annularis* (Ellis and Solander) and *Siderastrea radians* (Pallas), with *Manicina areolata* (Linnaeus), *Oculina diffusa* Lamarck and *Porites porites* (Pallas) also constituting significant components of the reef architecture (CONANP 2006). The region is influenced by the northeastern trade winds (15–20 km h⁻¹) and a predominant westward surface current averaging 0.9 km h⁻¹ (Macintyre *et al.* 1977). Despite the high ecological importance and biodiversity typical of the coral reefs systems (Sheppard *et al.* 2009), the polychaete fauna associated with Alacranes Reef remains poorly documented. While taxonomic inventories have been conducted for crustaceans, sponges, echinoderms, opisthobranchs and fishes (Paz-Ríos *et al.* 2013), the only comprehensive assessment of the polychaetes in this system to date is the study of Ramírez-Hernández (2014).

Sampling design and specimen collection

Biological material associated with dead coral fragments – primarily *Orbinella annularis* and *Siderastrea radians* – were collected in December 2009 within Alacranes Reef National Park (22.22°–22.27° N, 89.41°–89.43°W) (Figure 1). Samples were obtained from 16 stations at depths ranging from 0.5 to 12.8 m.

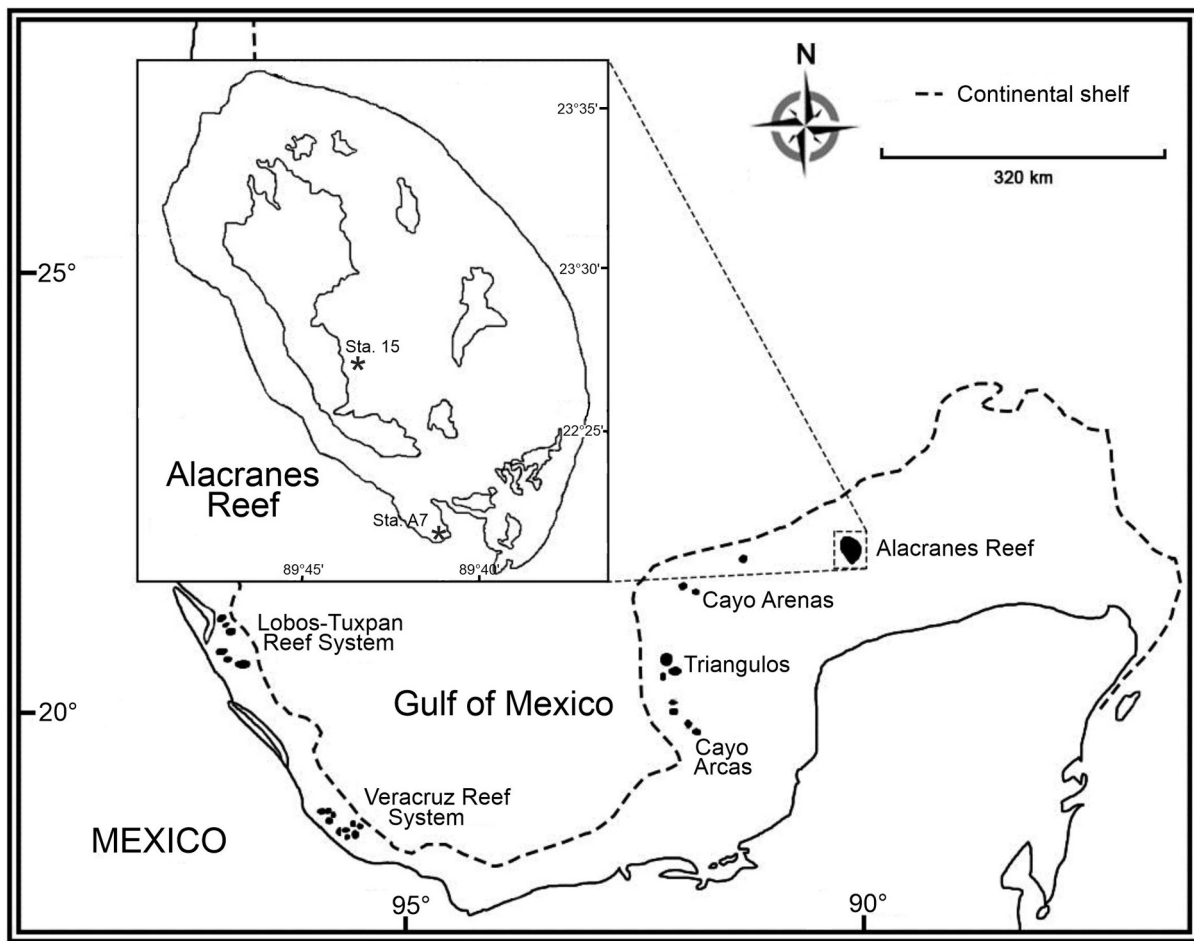


Figure 1. Map showing Alacranes Reef National Park including the sampling stations where the new species of *Fauveliopsis* were collected (Modified from Liddell and Tunnell 2011).

Approximately 5 kg of dead coral fragments per station were collected manually or via scuba diving. Specimens were placed in plastic bags and fixed *in situ* using 10% formalin buffered with seawater. In the laboratory, the fragments were rinsed with fresh water, carefully fragmented into small pieces, and sieved through a 0.5 mm mesh to isolate the macrofauna. Separate specimens were subsequently preserved in 70% ethanol for long-term storage and taxonomic analysis.

Taxonomic analysis

A total of 1165 individuals representing 133 species were examined. Among these, two specimens belonging to the family Fauveliopsidae were identified as representing undescribed species. These individuals were collected at 0.5–1 m depth.

Identifications were made following the comprehensive family revision by Salazar-Vallejo *et al.* (2019), supplemented by Blake and Petersen (2000), Petersen (2000), Zhadan and Salazar-Vallejo (2019), as well as original species descriptions. Morphological examination, measurements and illustrations were conducted using stereomicroscopes and microscopes equipped with camera lucida.

Morphological terminology follows Petersen (2000) and Salazar-Vallejo *et al.* (2019). Chaetal patterns are denoted as follows: A: thicker acicular chaetae; a: thinner acicular chaetae; c: capillaries. Methylene blue staining patterns were observed by immersing specimens for 20–30 seconds in a saturated methylene blue solution in 70% ethanol, following the protocol of Salazar-Vallejo *et al.* (2019).

For scanning electron microscopy (SEM), specimens were dehydrated through a graded ethanol series and dried to the critical point with liquid carbon dioxide in the Instituto de Biología (IB), Universidad Nacional

Autónoma de México (UNAM). Then, they were gold-coated and the micrographs were taken with a JEOL JSM6360L scanning electron microscope in the Instituto de Ciencias del Mar y Limnología (ICML), UNAM. Type material is deposited in the Colección Nacional de Anélidos Poliquetos (CNAP-ICML), at the Instituto de Ciencias del Mar y Limnología, UNAM, Mexico City.

Systematics

Phylum **ANNELIDA** Lamarck
Order **TEREBELLIDA** Rouse and Fauchald
Family **FAUVELIOPSIDAE** Hartman
Genus **Fauveliopsis** McIntosh

Fauveliopsis corallicola Hernández-Alcántara, Mateos-Valdez and Solís-Weiss **sp. n.**
<http://zoobank.org/AA766091-8D22-4438-A958-BEE89443A918>
(Figures 2(a–r), 3(a–j))

Type material

Holotype: POH-65-002, complete; Southern Gulf of Mexico, Alacranes Reef National Park, Sta. 15; 22° 27' N, 89° 43' 49"W; depth 1 m; coll. V. Solís-Weiss, 12 December 2009; from dead coral fragments.

Etymology

The new species is named after the coralline habitat where it was discovered; it inhabits dead coral rubble and represents the first species of this genus reported from such a shallow habitat.

Diagnosis

Fauveliopsis corallicola **sp. n.** possesses a long club-shaped body, swollen posteriorly and finely rugose; integument opaque. Notopodia are dorsolateral and neuropodia lateral; interramal papillae absent. First 1–4 chaetigers with one thicker and one thinner acicular chaeta in notopodia and two thinner acicular chaetae in neuropodia (1A 1a/2a); chaetigers 5–11 with one thicker acicular chaeta in notopodia and two thinner acicular chaetae in neuropodia (1A/2a). Median chaetigers (approx. 12–59) with notopodia bearing 1–3 thinner acicular chaetae accompanied by capillaries, and neuropodia with 1–3 thicker acicular chaetae (1–3a 1c/1–2A). Posterior chaetigers (approx. 60–69) with both rami bearing 2–3 thinner acicular chaetae (2–3a 1c/2–3a). Last three segments achaetous.

Description

Holotype complete with 72 segments to 8.5 mm long; club-shaped body with wide 0.3 mm at anterior region, 0.5 mm in the widest midbody, and 0.25 mm at the end region. Body elongated, club shaped, widening gradually, expanded medially and swollen posteriorly (Figure 2(a)). Colouration white, lacking pigmentation; surface finely rugose. Integument opaque, though very small subepithelial papillae arranged in thin lines along the central-dorsal side of chaetigers, can be distinguished when stained with methyl blue (Figure 2(e)). Anterior end slightly damaged; prostomium invaginated (Figures 2(b), 3(a)). Anterior and median chaetigers similar in size with evident, clearly ringed segmentation (Figure 3(b,d,h,i)); posterior segments shorter and ringed (Figures 2(a), 3(j)).

Body regions indistinct, but approximately the last 10 chaetigers are shorter with distinguishable segmentation (Figure 2(a,b)). First 1–4 notopodia with thicker and thinner acicular chaetae (Figures 2(f), 3(b)); other anterior notopodia (5–11) bearing thicker acicular chaetae (Figure 3(c)); all anterior neuropodia with thinner acicular chaetae (Figures 2(g), 3(c)). Median chaetigers (approx. 12–59) with distinct segmentation; notopodia with thinner acicular chaetae and capillaries (Figures 2(h,j,l,p), 3(d–h)), and neuropodia with thicker acicular chaetae (Figures 2(a,k,m), 3(d–h)). Posterior chaetigers (approx. 60–69) wider and shorter, particularly near the pygidium, with noticeable edges between segments (Figures 2(a,c), 3(i,j)); noto- and neuropodia with thinner acicular chaetae accompanied by capillaries (Figures 2(n,o), 3(i)). Last three segments without chaetae (Figures 2(c), 3(j)). Interramal papillae absent.

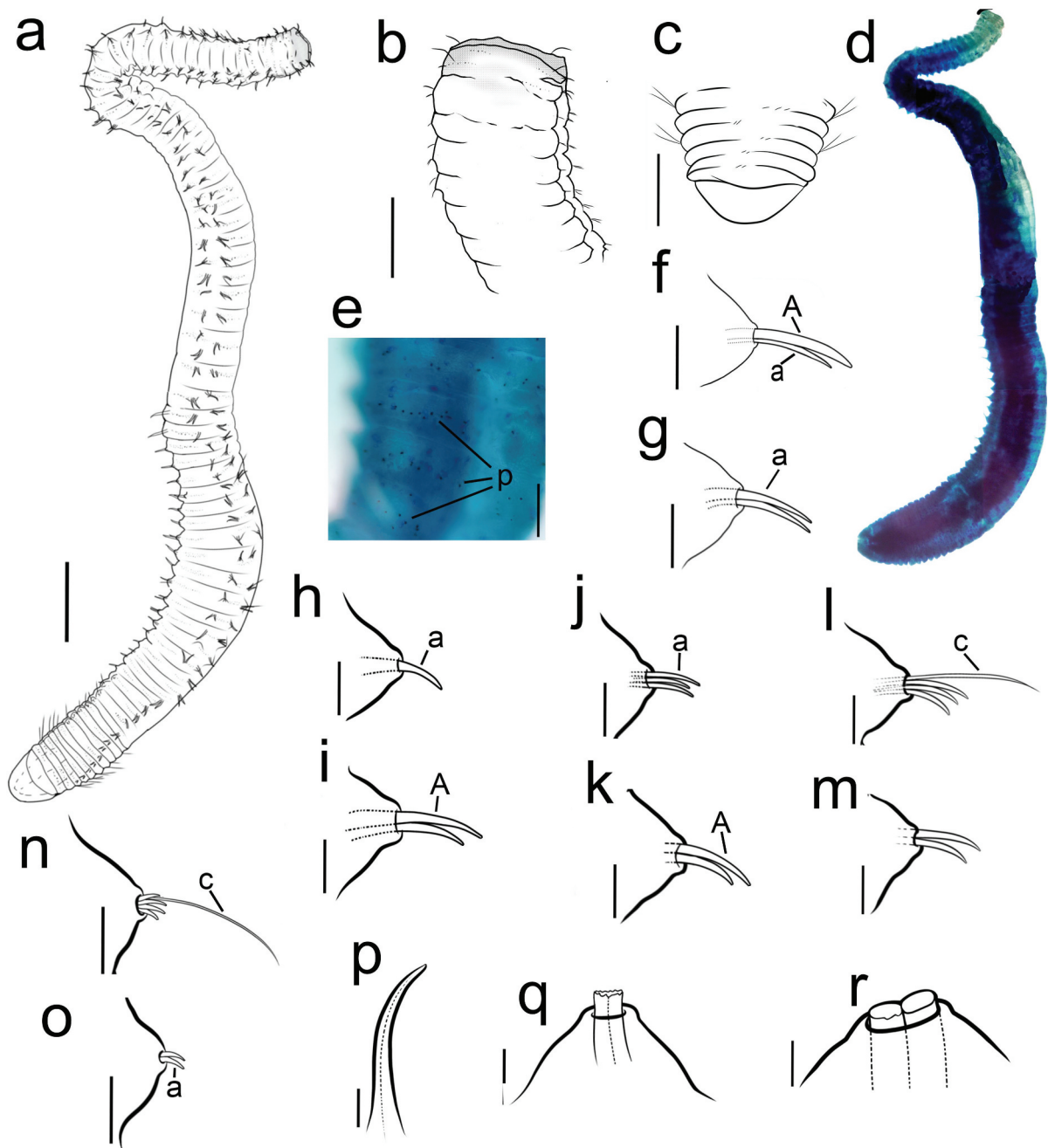


Figure 2. *Fauveliopsis corallicola* sp. n. holotype (POH-65-002). **a** Body, dorsolateral view; **b** anterior region, dorsal view; **c** posterior region, dorsal view; **d** methyl blue stained, dorsolateral view; **e** subepithelial dorsal papillae from middle chaetigers (methyl blue stained); **f** notopodia chaetigers 3; **g** neuropodia chaetigers 3; **h** notopodia chaetiger 14; **i** neuropodia chaetiger 14; **j** notopodia chaetiger 22; **k** neuropodia chaetiger 22; **l** notopodia chaetiger 45; **m** neuropodia chaetiger 45; **n** notopodia chaetiger 66; **o** neuropodia chaetiger 66; **p** thinner acicular chaetae, vertically fragmented; **q** broken thinner acicular chaetae; **r** two broken acicular chaeta. Abbreviation: A = thicker acicular chaetae; a = thinner acicular chaetae; c = capillary; sp = subepithelial small papillae. Scale bars: **a**, **d** = 0.6 mm; **b** = 0.2 mm; **c** = 0.15 mm; **e** = 70 μ m; **f–m** = 25 μ m; **n** = 15 μ m; **o–r** = 25 μ m.

Parapodia biramous throughout and poorly developed; notopodia dorsolaterally displaced and neuropodia lateral. Chaetigers with low parapodial lobes projected around the thinner and thicker acicular chaetae, most developed in median parapodia (Figure 3(d–h)). Chaetae from notopodia 1–4 with one thicker and one thinner acicular chaeta (1A 1a) (Figure 3(b)), and those from chaetigers 5–11 with one thicker acicular chaeta (1A) (Figure 3(c)); all anterior neuropodia with two thinner acicular chaetae (2a) (Figure 2(f,g)).

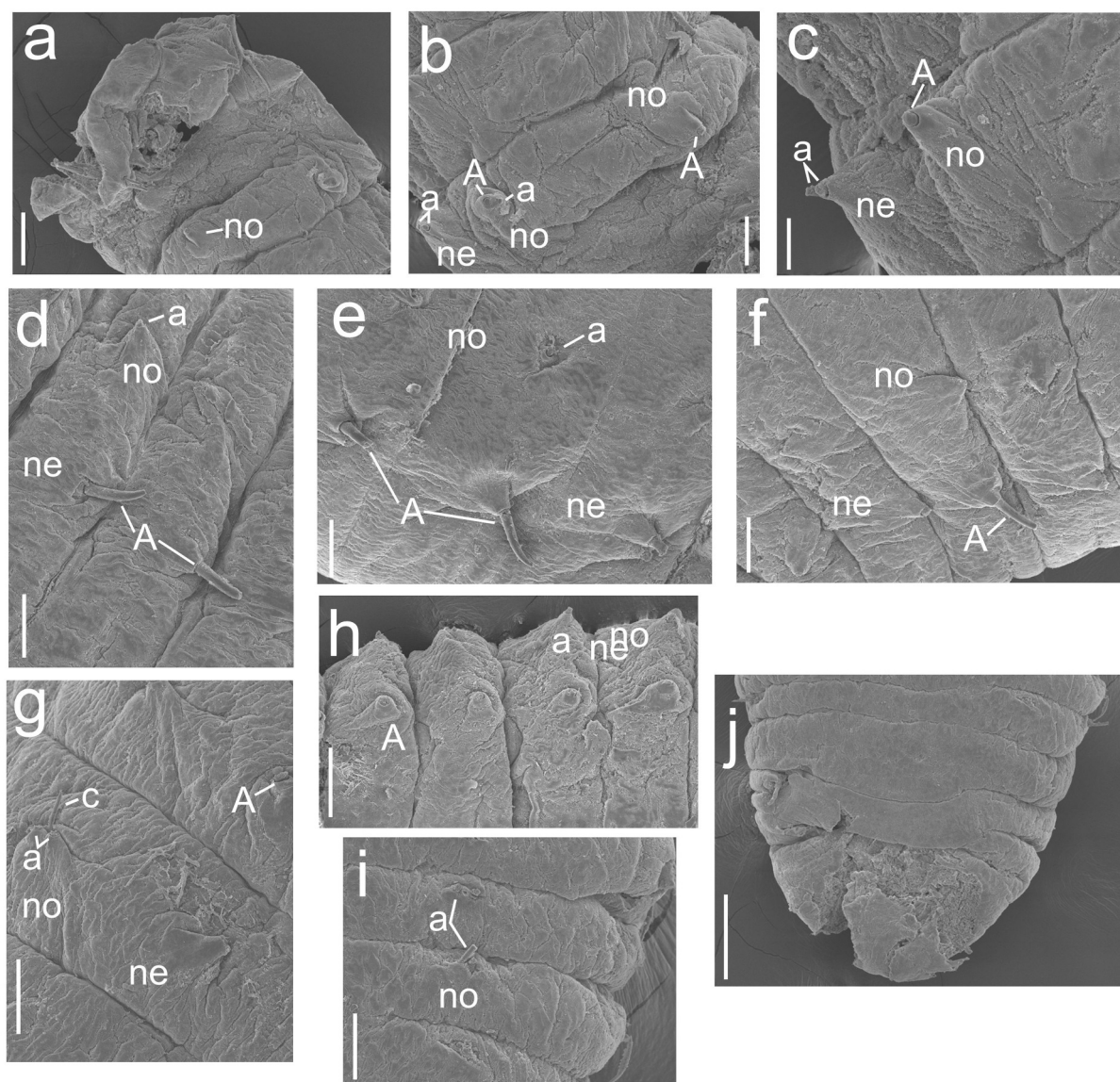


Figure 3. *Fauveliopsis corallicola* sp. n. holotype (POH-65-002). **a** Anterior region, dorsal view; **b** chaetiger 4, dorsal view; **c** chaetiger 5, lateral view; **d–h** parapodia from median chaetigers, lateral view; **i** posterior notopodia; **j** posterior end, dorsal view. Abbreviations: A = thicker acicular chaetae; a = thinner acicular chaetae; c = capillary; ne = neuropodia; no = notopodia. Scale bars: **a** = 50 μ m; **b** = 25 μ m; **c**, **g** = 20 μ m; **d**, **e**, **f**, **h** = 50 μ m; **i** = 40 μ m; **j** = 100 μ m.

Median notopodia bearing 1–3 thinner acicular chaetae accompanied by capillaries, neuropodia with 1–2 thicker acicular chaetae (1–3a 1c/1–2A) (Figures 2(h–m), 3(d–h)). Chaetae from posterior chaetigers: notopodia with 2–3 thinner acicular chaetae and capillaries (Figure 3(i)), neuropodia with 2–3 thinner acicular chaetae (2–3a 1c/2–3a) (Figure 2(n,o)).

Pygidium wide and rounded, lacking anal cirri (Figures 2(c), 3(j)).

Methyl blue staining

Body stains uniformly without a colour pattern (Figure 2(d)). Thin lines of very small subepithelial papillae are pigmented in the dorsal-central side of chaetigers, primarily in the middle body region (Figure 2(e)).

Habitat

In dead coral rubble at 1 m depth; temperature of 26.6°C and salinity of 36.4 psu.

Distribution

Currently known only from the Alacranes Reef National Park, Southern Gulf of Mexico.

Remarks

Except for *Fauveliopsis jameoaquensis* (the only known anchialine fauveiopsid (Núñez *et al.* 1997)), an interrampal papilla between the noto- and neuropodia is usually observed in other members of Fauveliopsidae (Salazar *et al.* 2019). According to Salazar-Vallejo *et al.* (2019), the absence of interrampal papillae in *F. jameoaquensis* was likely associated with its low number of chaetigers (10) and the possibility that the description was based on juvenile specimens. Nevertheless, in *Fauveliopsis corallicola* and *F. alacranensis* (described below), both of which possess long bodies (72 segments/8.5 mm and 44 segments/8.3 mm, respectively), interrampal papillae are also absent. While interrampal papillae can have distinct shapes, they are not always easy to observe on intact specimens (Petersen 2000). In many species, they are very small (less than 10 µm) and require SEM to distinguish their detailed form, as seen in *F. antri* (Jimi *et al.* 2023), *F. levensteinae* (Jimi *et al.* 2023), or *F. magalhaesi* (Salazar-Vallejo *et al.* 2019). However, SEM photographs for *F. corallicola* and *F. alacranensis* confirmed that they indeed lack interrampal papillae as well as any other additional parapodial structure.

Despite this absence, the identification of *F. corallicola* as belonging to *Fauveliopsis* was confirmed by its congruence with the other diagnostic characters of the genus: the club-shaped body swollen posteriorly, the retractable anterior end (rarely visible after preservation), biramous parapodia dorsally displaced with well-marked intersegmental furrows, and the presence of only simple acicular and capillary chaetae in noto- and neuropodia (López 2011; Salazar-Vallejo *et al.* 2019). Furthermore, another distinctive characteristic of *F. corallicola* is its high number of segments (72), which is the highest reported for the genus to date (Table 1). Along with *F. alacranensis* (described below), these represent the first records of *Fauveliopsis* inhabiting the intertidal zone and coralline environments (Table 2).

The delicate bodies of the fauveiopsids are often damaged during sampling and sieving (Salazar-Vallejo *et al.* 2019). Combined with the rigid and brittle nature of the chaetae in *F. corallicola* this resulted in many capillaries being broken at their base during examination. Determining their presence required compound microscopy, which unfortunately increased the risk of further breakage. While detecting broken capillaries was difficult, they show few differences among the fauveiopsids and are currently not considered essential for species identification (Salazar-Vallejo *et al.* 2019). Thus, this did not hinder the designation of *F. corallicola* as new species, as the bases of broken thinner and thicker acicular chaetae – which are critical for species separation – remain distinguishable and could be described (Figure 2(q,r)). It is noteworthy that when some thinner acicular chaetae were broken, vertical fragmentation occurred, which can superficially resemble two joined acicular chaetae (Figure 2(q)).

In addition to its higher chaetiger count, *F. corallicola* can be separated from related species by its acicular chaetae distribution pattern. A group of eight species (53% of those previously described) possess one thicker acicular chaeta (A) in each anterior notopodium; however, in the new species, the first 1–4 notopodia bear a thinner acicular chaetae (a) in addition to the thicker one (A) (Table 1). This combination has only been previously reported in *F. magalhaesi* Salazar-Vallejo *et al.* from Brazil. However, unlike *F. corallicola* which bear only thinner aciculars (a) in the anterior and posterior neuropodia, *F. magalhaesi* bears thicker acicular chaetae in all neuropodia (Table 1).

Furthermore, the anterior neuropodia of *F. corallicola* bear two thinner acicular chaetae (a), in contrast to *F. antri* Jimi (from Japan), *F. levensteinae* Salazar-Vallejo *et al.* (from Northern Pacific), *F. armata* Fauchald and Hancock, *F. magna* Fauchald and Hancock and *F. rugosa* Fauchald (from the Eastern Pacific), *F. brevipodus* Hartman (from Southern Chile) and *F. scabra* Hartman and Fauchald (from off Bermuda) (Table 2), all of which have only one thicker acicular chaeta (A) in the anterior neuropodia. It also contrasts with *F. glabra* (Hartman) (from the Eastern Pacific) which has two thicker acicular chaetae (Table 1). Finally, while other species of this fauveiopsid group having one thicker acicular chaeta (A) in anterior notopodia also have thicker acicular chaetae in their median and posterior noto- and neuropodia, members of the new species possess thicker aciculars in the median neuropodia but have entirely thinner acicular chaetae in the median notopodia and posterior noto- and neuropodia (Table 1).

Table 1. Summary of morphological characters of the known *Fauveliopsis* species. Number of segments and longitude of type material (in parenthesis variability of additional specimens).

Species	Number of segments	Longitude (mm)	Body surface	Anterior chaetae	Middle chaetae	Posterior chaetae	Genital papillae	Interramal papillae	Pygidium
<i>F. adriatica</i> Katzmman and Laubier	21–26 (17–36)	3–4 (1.3–12)	Papillated	2A/2A	1–2A/1–2c	3–4A 3–4c/3–8c 3–8A	Posterior right margin of chaetiger 10, close to edge of chaetiger 11	Pedunculate	An irregular circle of spherical papillae
<i>F. antri</i> Jimi in Jimi <i>et al.</i>	32	1.2	Rugose, papillated	1A 1c/1c 1A	1A 1c/1c 1A	1A 1c/1c 1A	Not seen	Pedunculate, smaller in media and posterior regions	Anal cirri; some blunt globular or digitate papilla surrounding anus
<i>F. armata</i> Fauchald and Hancock	28 (22–27)	3.5 (2.7–6.5)	Papillated	1A 1c/1c 1A	1A 1c/1c 1A	1A 1c/1c 1A	Short, globular, on posterior part chaetiger 11	Pyriform, sessile; smaller by chaetiger 15	Bluntly flattened, terminal lobe, 8 or more minute papillae
<i>F. brattegardii</i> Fauchald	17	2.1	Wrinkled, papillated	2A 2c/2c 2A	2A 2c/2c 2A	2A 2c/2c 2A	Not seen	Fungiform or pyriform	Bluntly rounded
<i>F. brevipodus</i> Hartman	28 (27–29)	(2.7–4.1)	Papillated	1A 1c/1c 1A	1A 1c/1c 1A	1A 1c/1c 1A	Not seen	Papillae globular, sessile, slightly longer than wide	Smooth, a pair of large lateral papillae
<i>F. challengeriae</i> McIntosh	39–40 (26–42)	15.1 (5–16)	Papillated	2–3A 1–2c/ 1–2c 2–3A	1A 1c/1c 1A	1A 1c/1c 1A	On right side of chaetigers 11–12	Pyriform	Two large papillate anal cirri on right side
<i>F. glabra</i> (Hartman)	33 (23–39)	4.5 (1.8–11.8)	Smooth	1A 1c/2c 2A	1A 1–2c/ 1–2c 1A	2–3A 2c/ 2c 2–3A	On right side chaetiger 10 or 11	Globose, sessile in median chaetigers, longer posterior chaetigers	Bluntly rectangular, or circular flattened dorsal lobe; 8 papillae or lobes
<i>F. jameoquensis</i> Núñez in Núñez <i>et al.</i>	10	0.8 (1.1–1.3)	Smooth	2A 2c/2c 2A	2A 2c/2c 2A	2A 2c/2c 2A	On posterior margin of chaetiger 11	Inconspicuous	Rounded, without cirri
<i>F. levensteiniae</i> Salazar-Vallejo, Zhadan and Rizzo	36 (23–40)	14.5 (4–22.5)	Finely annulate	1A 1c/1c 1A	1A 1c/1c 1A	3A 2–3c/ 2–3c 3A	On posterior margin of chaetiger 11 (11–15)	Fungiform, capitate, peduncle as long as distal, globose region	Without anal cirri
<i>F. magalhaesi</i> Salazar-Vallejo, Zhadan and Rizzo	26	8.4	Rugose, papillated anteriorly	1A 1a/1a 1A	1A 1c/1c 1A	1A 1c/1c 1A	Not seen	Pedunculate, tip granulated	Inconspicuous, minute papillae close to anal opening
<i>F. magna</i> Fauchald and Hancock	41 (35–41)	8 (7–14.5)	Minute, narrow papillae	1A 1c/1c 1A	1A 1c/1c 1A	3A 2–3c/ 2–3c 3A	Large, elongate, on posterior margin of chaetiger 12	Stalked with expanded tip; sessile, smaller by chaetiger 20	Rounded, terminal lobe, 8–10 minute papillae
<i>F. olgae</i> Hartmann-Schröder	29 (22)	6 (8)	Finely annulated	2–3A/2–3A	1–2A 1–2c 1–2A	3–4A 3–4c/3–4c 3–4A	Chaetiger 10	Pyriform, pedunculate	Ventrally smooth resembling a shield
<i>F. pladang</i> Plathong, Plathong, Kiangnurak and Salazar-Vallejo	41	3.9	Smooth	2–3A/2A	1A 1c/1c 1A	1A 1c/1c 1A	Not seen	Not indicated	Two short lateral cirri
<i>F. rugosa</i> Fauchald	35 (23–30)	5.5 (2.1–5.2)	Rugose	1A 1–2c/1–2c 1A	1A 1c/1c 1A	1A 1c/1c 1A	On right side of chaetiger 12	Pyriform, pedunculate	No anchoring modification
<i>F. scabra</i> Hartman and Fauchald	29 (16–28)	8.3 (1.1–10.1)	Rugose; 5–8 dorsal papillae anteriorly	1A 1c/1c 1A	1–2A 1c/ 1c 1–2A	1–2A 1–2c 1–2A	On right posterior margin chaetiger 9	Not indicated	Without processes; paratypes, as a blunt cone, long marginal papillae
<i>Fauveliopsis</i> sp. A Wolf	18–30	3	Few minute papillae	1A 1c/1c 1A	1A 1c/1c 1A	1A 1c/1c 1A	Not seen	Prominent papillae	Numerous papillae

(Continued)

Table 1. (Continued).

Species	Number of segments	Longitude (mm)	Body surface	Anterior chaetae	Middle chaetae	Posterior chaetae	Genital papillae	Interramal papillae	Pygidium
<i>F. alacranensis</i> sp. n.	44	8.3	Finely rugose; mid-dorsal groove through body	1A/1a (chaetigers 1–2; 1a/1a)	1A/1c 2a	1A/1c 2a	Not seen	Absent	Without anal cirri, protruded anus
<i>F. corallicola</i> sp. n.	72	8.5	Finely rugose	1A/2a (chaetigers 1–4; 1A 1a/2a)	1–3a 1c/ 1–2A	2–3a 1c/ 2–3a	Not seen	Absent	Without anal cirri, rounded, wide

Table 2. World distribution, depth and settling sites of species belonging to the genus *Fauveliopsis*.

Species	Distribution	Deep (m)	Settling site	Source
<i>Fauveliopsis adriatica</i>	Central Adriatic Sea, Dalmatia (Croatia)	54–66 (520–2864) ^a	In gastropod and scaphopod shells	Katzmann and Laubier 1974; Salazar-Vallejo et al. 2019
<i>Fauveliopsis antri</i>	Daidokutsu cave, off Ie Island, Okinawa, Japan	18–26	Submarine cave	Jimi et al. 2020
<i>Fauveliopsis armata</i>	Off central Oregon to Western Mexico	1400–2860	Sandy silt, mud	Fauchald and Hancock 1981; Salazar-Vallejo et al. 2019
<i>Fauveliopsis brattegardii</i>	South of Raudberg Light, Sognefjorden, Western Norway	1228–1248	Clay	Fauchald 1972a; Salazar-Vallejo et al. 2019
<i>Fauveliopsis brevipodus</i>	Southern Chile to Drake Passage, Antarctic Ocean	384–3537	In unidentified rhabdamminid-like foraminiferans	Hartman 1971; Salazar-Vallejo et al. 2019
<i>Fauveliopsis challengeriae</i>	Southeastern Indian Ocean, midway between Australia and Antarctic; Off central Colombia	384–4963	In cemented sediment foraminiferan tubes (<i>Rhabdammina</i> , <i>Bathysiphon</i>), or scaphopod shells	McIntosh 1922; Salazar-Vallejo et al. 2019
<i>Fauveliopsis glabra</i>	Oregon to Western Mexico	135–4997 ^b	Olive green silty clay, glass sponge; grey green mud, orange-peel grab; inside scaphopod or gastropod shells; in tubular structures, probably foraminiferan tests (<i>Psammosiphonella</i> sp.)	Hartman 1960, 1965; Fauchald 1972b; Blake and Petersen 2000; Salazar-Vallejo et al. 2019
<i>Fauveliopsis jameoaquensis</i>	Cave in the Natural lagoon of Jameos del Agua, Canary Islands, Atlantic Ocean	5	Coarse black sand	Núñez et al. 1997
<i>Fauveliopsis levensteinae</i>	Northern Pacific Ocean: off Japan and Kamchatka Peninsula to the Aleutian Islands	1641–6280	In tubular foraminiferan tests (<i>Bathysiphon</i> sp.), in mollusc shells	Salazar-Vallejo et al. 2019
<i>Fauveliopsis magalhaesi</i>	South Atlantic Ocean: Campos Basin, off Rio de Janeiro, Brazil	1355–2455	Probably living in scaphopod shells	Salazar-Vallejo et al. 2019
<i>Fauveliopsis magna</i>	Cascadia Abyssal Plain, off Oregon to California	2400–2800	Clayey silt	Fauchald and Hancock 1981; Blake and Petersen 2000
<i>Fauveliopsis olgae</i>	Porcupine Seabight, off Southwestern Ireland, Northeastern Atlantic Ocean	4040–5260	Tests of tubular foraminiferan <i>Bathysiphon rusticum</i> or empty shells of gastropods or scaphopods	Hartmann-Schröder 1983
<i>Fauveliopsis pladang</i>	Off Gulf of Thailand	60	Mud mixed with sand and shell fragments	Plathong et al. 2026
<i>Fauveliopsis rugosa</i>	Pacific Ocean, western Mexico	830–2610	Green mud	Fauchald 1972b
<i>Fauveliopsis scabra</i>	Off Bermuda; North Atlantic to equatorial regions off southeast South America	530–5023	In fibrous tubes; in coils of dead scaphopod shells	Hartman and Fauchald 1971
<i>Fauveliopsis</i> sp. A	Off Florida	19–45	Coarse to medium sand, silty fine sand, sandy silt	Wolf 1984
<i>Fauveliopsis alacranensis</i> sp. n.	Alacranes Reef, Southern Gulf of Mexico	0.5	Dead coral fragments	Present study
<i>Fauveliopsis corallicola</i> sp. n.	Alacranes Reef, Southern Gulf of Mexico	1	Dead coral fragments	Present study

^aAffinities between the shallower species and the deeper forms requires the study of type material (Salazar-Vallejo et al. 2019).

^bNorth Atlantic records of *Brada glabra* by Hartman (1965) and Bellan (1969), and of *F. glabra* by Hartman and Fauchald (1971) and López (2011), need to be confirmed (Salazar-Vallejo et al. 2019).

***Fauveliopsis alacranensis* Hernández-Alcántara, Mateos-Valdez and Solís-Weiss sp. n.**

<http://zoobank.org/CA240BA3-1A44-4227-B6A7-5DBC9418521F>

(Figures 4(a–l), 5(a–n))

Type material

Holotype: POH-65-001, complete; Southern Gulf of Mexico, Alacranes Reef National Park, Sta. A7; 22° 22' N, 89° 41' W; 0.5 m depth; coll. V. Solís-Weiss, 7 December 2009; in dead coral fragments.

Etymology

The new species is named after its type locality: Alacranes Reef National Park, Southern Gulf of Mexico.

Diagnosis

Fauveliopsis with long club-shaped body, widest posteriorly, finely rugose and strongly ringed; integument opaque. A well-developed mid-dorsal groove runs along the body. Parapodia biramous and clearly displaced dorsally, with rami widely separated. Chaetigers 1–2 with thinner acicular chaetae in both rami (1a/1a); all other notopodia with one falcate thicker acicular chaeta each (A); neuropodia with two thinner acicular chaetae (a); chaetigers 3–7 with 1A/1a and median and posterior chaetigers: 1A/1c 2a.

Description

Holotype complete with 44 segments to 8.3 mm long. Body elongate and club shaped with evident segmentation, widening gradually towards the expanded mid-posterior region (Figure 4(a,b)): 1 mm wide at anterior region, 1.4 mm wide at the widest region and 0.5 mm wide at the thinnest portion of the posterior end. Colour white, without pigmentation. Prostomium and peristomium are invaginated (Figures 4(e), 5(a–c)), preventing observations of their characteristics. All segments demarcated by transverse sulci (Figures 4(a,d), 5(a,j,m)).

Body regions are morphologically indistinct (Figure 4(a,b)), but a deep, well-developed mid-dorsal groove is present along the entire body length (Figures 4(a,d), 5(a,k,m)). Integument is finely rugose, opaque and highly ringed (Figure 5(c,e)). Anterior chaetigers (1–8) shorter than subsequent ones (Figure 5(a)); median chaetigers (about 9–31) are progressively longer and wider, while posterior chaetigers (32–44) are wider than long; the last four segments are shorter than preceding ones (Figure 5(m)).

Parapodia biramous throughout, poorly developed, becoming more prominent towards body end. Cirri and interramal papillae absent (Figure 5(e,h–j)). Noto- and neuropodia possess low parapodial lobes projected around the thinner and thicker chaetae (Figure 5(f,i)), which are better developed in notopodia and in the median and posterior chaetigers. Notopodia are dorsolaterally displaced, and neuropodia are lateral (Figure 5(h–j)). Anterior parapodia have chaetae directed slightly anteriorly; the following chaetigers have laterally oriented chaetae, while those of the final chaetigers are directed posteriorly. Chaetigers 1–2 bear one thinner acicular chaeta (a) in both rami (1a/1a) (Figure 5(a–c)). From chaetiger 3, all notopodia bear one falcate thicker acicular chaeta (1A) (Figures 4(g,i), 5(d,e,h–j)), though some notopodia occasionally presented two (Figures 4(k), 5(k)). Neuropodia 3–7 with one thinner acicular chaeta each (1A/1a) (Figures 4(h), 5(e)); median and posterior neuropodia bear one capillary and two thinner aciculars (1A/1c 1–2a) (Figures 4(j), 5(h–j)). Posterior chaetigers share a similar chaetal pattern to median chaetigers, though their thicker and thinner aciculars are longer (1A/1c 2a) (Figures 4(l), 5(l–m)). Last two segments without chaetae (Figure 5(n)).

Pygidium wide with a central lobe, lacking anal cirri (Figures 4(f), 5(m,n)).

Methyl blue staining

Dorsal region stains more intensely, particularly along the superior edge of the mid-dorsal groove. In the anterior-most region, the stain is barely incorporated. The wider posterior-ventral region, near the pygidium, does not stain. Pigment concentrates intersegmentally, with pale bands along the intersegmental sulci (Figure 4(c,d)).

Habitat

In dead coral fragments at 0.5 m depth; temperature of 24.2°C and salinity of 36.3 psu.

Distribution

Known only from the Alacranes Reef National Park, Southern Gulf of Mexico.

Remarks

The SEM photographs helped us to see that *Fauveliopsis alacranensis* **sp. n.** has a club-shaped body with its anterior region narrower, but also, like most preserved fauveliospids, that the prostomium was retractable within the anterior segments, and that its pygidium lacks cirri or papillae (Figures 4(f), 5(n)). We could also see that the parapodia are biramous, bearing acicular chaetae in all rami, and the characteristic dorsal displacement of parapodia but, in contrast with other fauveliospids, the parapodia are strongly dorsally displaced, making a broad dorsal groove. In addition, the SEM photographs also allowed us to verify that it distinctly

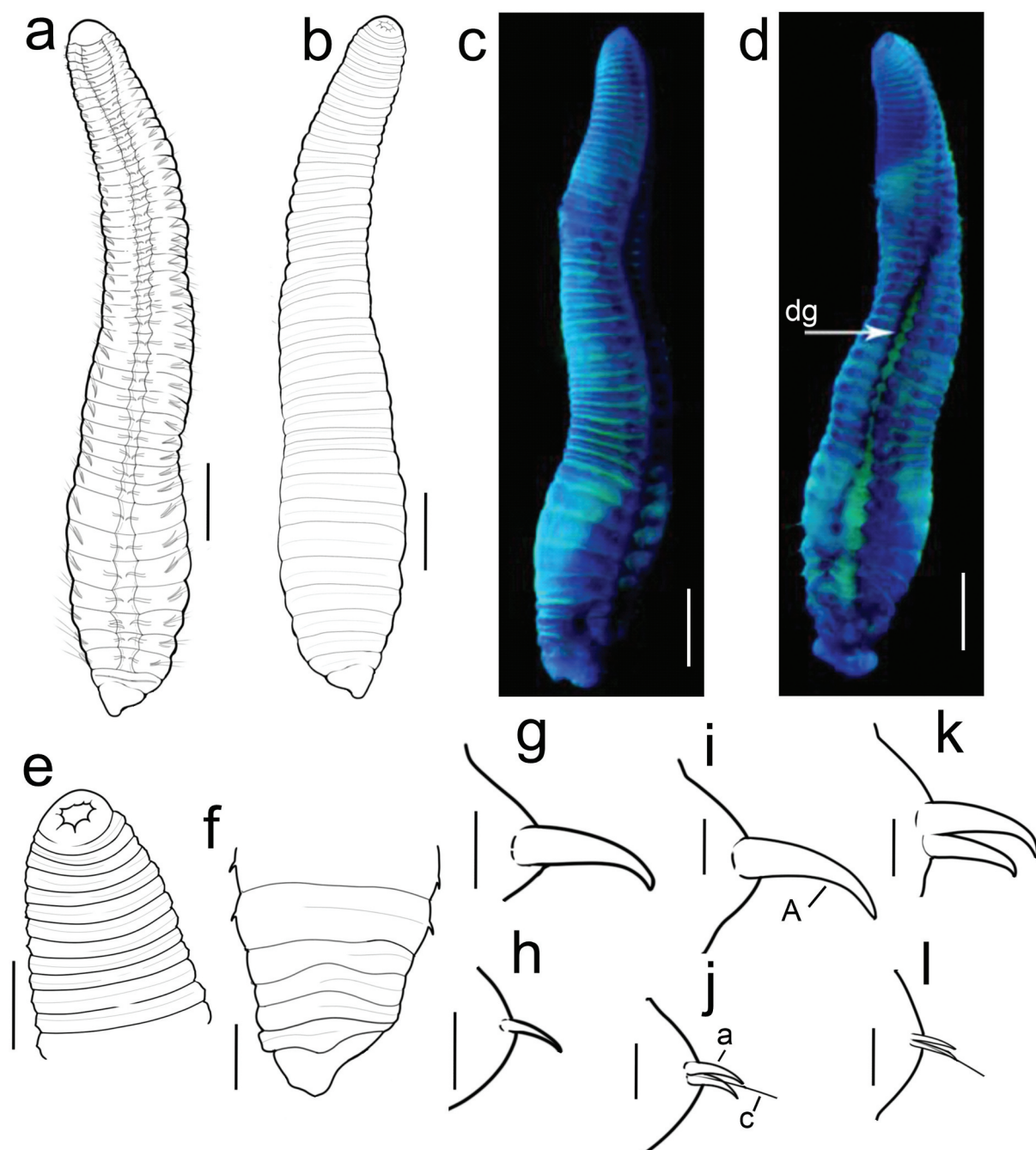


Figure 4. *Fauveliopsis alacranensis* **sp. n.** holotype (POH-65-001). **a** Body, dorsal view; **b** body, ventral view; **c** methyl blue stained, dorsal view; **d** methyl blue stained, ventral view; **e** anterior region, dorsal view; **f** posterior region, dorsal view; **g** notopodia chaetiger 5; **h** neuropodia chaetiger 5; **i** notopodia chaetiger 15; **j** neuropodia chaetiger 15; **k** notopodia chaetiger 41; **l** neuropodia chaetiger 41. Abbreviation: A = thicker acicular chaetae; a = thinner acicular chaetae; c = capillary; dg = dorsal groove. Scale bars: **a–d** = 1 mm; **e, f** = 0.5 mm; **g, h** = 125 μ m; **i, j** = 300 μ m; **k, l** = 450 μ m.

lacks interrampal papillae. As noted for *F. corallicola* **sp. n.**, this absence is shared with *F. jameoaquensis*. Furthermore, *F. alacranensis* **sp. n.** exhibits an unusual characteristic not previously seen in the genus *Fauveliopsis*: a marked mid-dorsal groove with notopodia placed on its superior margins, significantly separated from the lateral neuropodia. While a pronounced median groove exists in other genera, such as *Riseriopsis santosae* Salazar-Vallejo *et al.*, it is always in a ventral position, never dorsal.

Consequently, this peculiar body character, the presence of acicular chaetae in both parapodial rami across body and the absence of interrampal papillae, led us to consider whether the specimen might belong

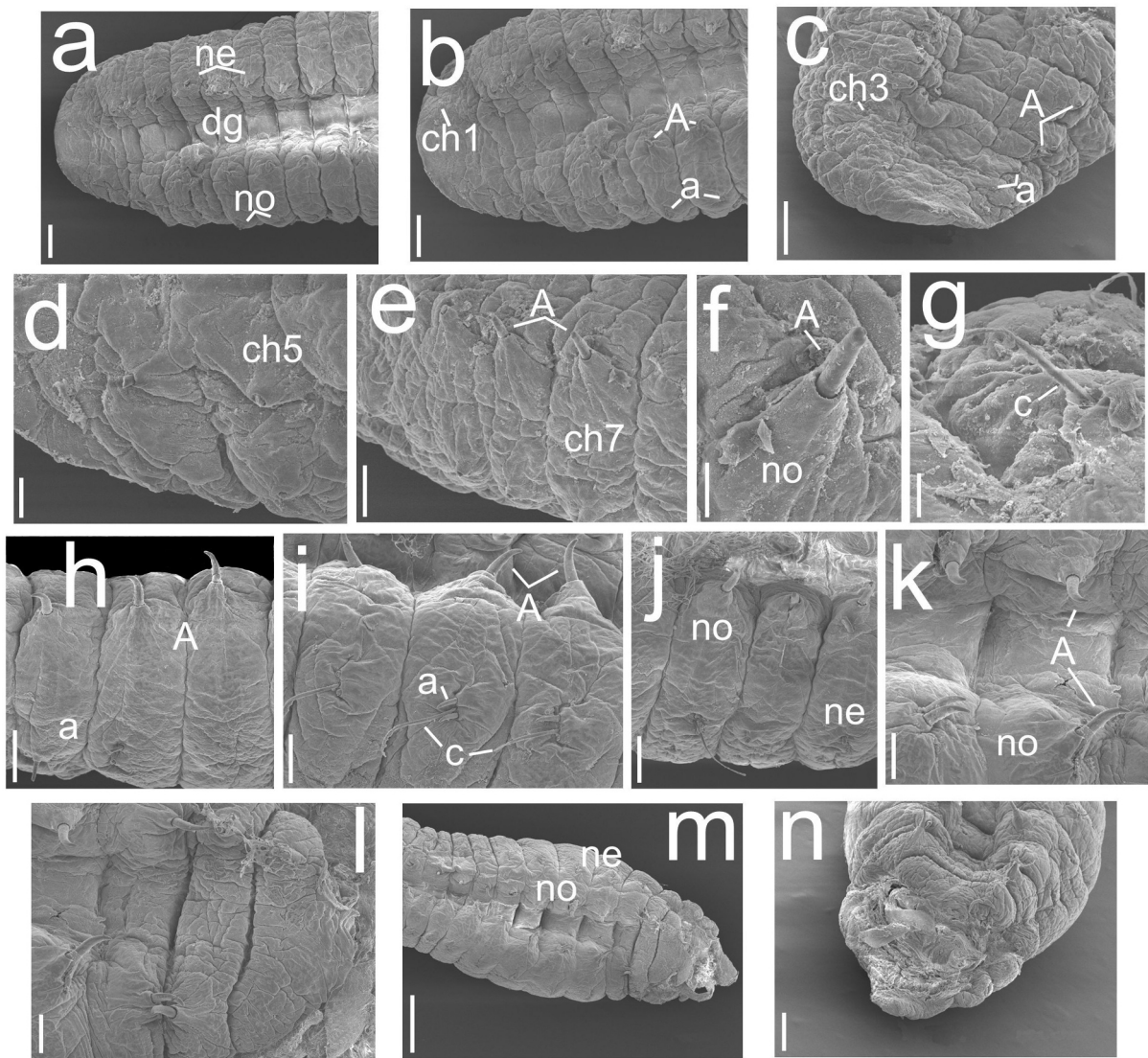


Figure 5. *Fauveliopsis alacranensis* sp. n. holotype (POH-65-001). **a–c** Anterior region, dorsal view; **d** chaetigers 4–5 (left side), lateral view; **e** chaetigers 3–7 (right side), lateral side; **f** median notopodia; **g** median neuropodia; **h–j** median chaetigers, lateral view; **k** posterior chaetigers, dorsal view; **l** last two chaetigers, dorsal view; **m–n** posterior region, lateral view. Abbreviation: A = thicker acicular chaetae; a = thinner acicular chaetae; c = capillary; dg = dorsal groove; ne = neuropodia; no = notopodia. Scale bars: **a–c, h–l** = 100 µm; **d–g** = 20 µm; **m** = 500 µm; **n** = 200 µm.

to another polychaete family. Initially, the body structure and the presence and distribution of acicular chaetae appeared similar to some cirratulids, specifically *Chaetocirratulus* Blake. This genus shares characteristics with *Cirratulus* and *Chaetozone*, having capillaries and thick neuropodial acicular spines in neuropodia and a few in notopodia, not creating cinctures (Blake 2018). The systematic relationships of Fauveliopsidae are unsettled, with suggested affinities to Sternaspidae, Cossuridae and Paraonidae, next to the Cirratuliformia group (Cirratulidae, Acrocirridae, Flabelligeridae) (Rouse and Pleijel 2003; Struck *et al.* 2007; Zrzavý *et al.* 2009, among others). Thus, an affinity with cirratulids seemed plausible. However, detailed morphologic examination and SEM photographs, revealed no evidence of dorsal tentacles or branchiae, confirming it does not belong to the Cirratulidae.

Similarly, we noted that the absence of interramal papillae was reported for *Mucibregma spinosa* Fauchald and Hancock. Although initially identified as a scalibregmatid, it possessed unusual characters for that family, such as spines in all parapodia (like some cirratulids) and lack of furcate chaetae (Fauchald and Hancock 1981). Kudenov (1985) then suggested it showed greater affinity to fauveliopsids (and not Scalibregmatidae), but that it might require a separate family due to the lack of interramal papillae. However, Blake (2025)

recently reviewed the type and only specimen from off Oregon, and concluded that despite the absence of furcate chaetae, a diagnostic character for members of this family, *M. spinosa* is a scalibregmatid, though highly unusual. For *F. alacranensis* **sp. n.**, while the absence of papillae and its unique corporal structure generate doubts, its morphology remains distinct from that of cirratulids, scalibregmatids and other closely related families. Its club-shaped body, acicular chaetae in both rami, and lack of furcate chaetae, tentacles, or branchiae justify its inclusion in Fauveliopsidae.

Among fauveliopsids, *Fauveliopsis alacranensis* **sp. n.** is distinguished by three unique traits: (1) except for the first two chaetigers (which have only one thinner acicular chaeta per ramus), all notopodia exclusively bear one falcate thicker acicular chaeta each, without other chaetal types; (2) neuropodia 3–7 have one thinner acicular chaeta each, while the median/posterior neuropodia have two thinner acicular chaetae plus capillaries; (3) a well-developed, deep mid-dorsal groove, not yet seen in other species of fauveliopsids (Table 1).

While the distinction between thicker (A) and thinner (a) aciculars has been unclear in some species, those with one thicker notopodial acicular chaeta also have one thick neuropodial acicular chaeta in addition to capillaries. However, *F. antri* Jimi, *F. armata* Fauchald and Hancock, *F. brevipodus*, Hartman, *F. rugosa* Fauchald, and *Fauveliopsis* sp. A Wolf, show a distinct pattern from *F. alacranensis* **sp. n.**, which has two thinner acicular chaetae in median and posterior neuropodia (Table 1). Furthermore, among species having one thicker acicular chaeta in both rami of anterior, and even median, chaetigers, the number of thicker acicular chaetae increases on posterior neuropodia: *F. levensteinae*, *F. magalhaesi*, *F. magna* and *F. glabra* bear up to three thicker aciculars in posterior neuropodia, unlike the two thinner ones in *F. alacranensis* **sp. n.** (Table 1).

In *Fauveliopsis*, parapodia are typically dorsally displaced, with notopodia being dorsolateral, while the neuropodia are lateral (Salazar-Vallejo *et al.* 2019), but in *F. alacranensis* **sp. n.** this is more extreme, with notopodia situated on the margins of the unusual deep mid-dorsal groove. This displacement and the groove itself might be related to a lifestyle within tubes or burrows, potentially providing better anchoring by enlarging contact surfaces (Salazar-Vallejo *et al.* 2019).

Discussion

The morphology and anatomy of fauveliopsids are not well characterised. It is necessary to investigate the diagnostic weight of characters like the interrampal papillae – absent in these two new species – and unusual features like the mid-dorsal groove of *F. alacranensis* **sp. n.**, which was not observed in other fauveliopsids (Salazar-Vallejo *et al.* 2019). While interrampal papillae were included in the family definition by Fauchald (1977), Rouse and Fauchald (1997) found no evidence for its monophyly, noting the papilla's similarity to those in flabelligerids. Hartman's (1971) use of this trait to define the family was questioned by Petersen (2000), who suggested it is a family characteristic but that shape differences have genetic value.

Fauveliopsidae are primarily benthic, preferring silty sediments at bathyal and abyssal depths; some *Fauveliopsis* inhabit gastropod/scaphopod shells or foraminiferan tests (Zhadan and Salazar-Vallejo 2019). Thus, current morphological knowledge is biased towards these deep environments. It is likely that species of poorly studied habitats, like the intertidal coralline zone, will depart from accepted definitions. The detected peculiarities in our species – the absence of papillae, the dorsal groove and the acicular distribution – may be associated with their occurrence in these specific environments.

The morphology and anatomy of the fauveliopsids is not well known yet, and their small size, among other things, makes it difficult to distinguish some of their diagnostic characteristics; and, as Salazar-Vallejo *et al.* (2019) commented, the wider posterior region, the parapodial disposition and the presence of some anal papillae complicated the assessment of the body polarity, a morphological pattern surprisingly reversed compared to other typical polychaetes (in which the anterior region is wider than the rest of the body).

The body shape, particularly in *F. alacranensis* **sp. n.**, initially made us think that it could be more closely related to some species of *Levidorum* (Syllidae), which have uniramous parapodia ventro-laterally displaced (Perkins 1987; San Martín 2003), and even caused doubts about where the dorsal vs ventral position was located in the new species. However, the detailed examination of both new species, supported with SEM photographs, which clearly revealed the absence of a proventricle, uniramous parapodia or acicula, made us definitively reject the idea that they could be syllids.

While the absence of papillae and the similarities to cirratulids also generated doubts on their family placement, detailed SEM examination confirmed clear differences from cirratulids, but also from scalibregmatids and other related families. We also rejected the possibility that the examined specimens could represent juveniles of cirratulids. Although studies on the reproductive cycles of cirratulids are scarce and their early juvenile stages are known only for a few species (Petersen 1999), in juveniles with 14–24 segments the palps can be absent (though, between the peristomium and first chaetigers, scars of palp insertions can be seen). Even so, the branchial filaments are already visible in some anterior chaetigers (2 or 3–7) (Cosentino 2013), and juveniles with 16 chaetigers (2 mm long) already bear four branchial filaments, and even a juvenile with 7 chaetigers (1.25 mm long) already presents its first branchial filament on the second achaetous segment (Petersen 1999; Cosentino 2013). Thus, because our specimens have 44–72 chaetigers per 8.3–8.5 mm length and clearly lack palps or branchial filaments, we can assume that they are not juveniles of cirratulids. Furthermore, although the acicular chaetae of both new species could be similar to those observed in *Mucibregma spinosa* (the unusual scalibregmatid lacking furcate chaetae), the latter's well-defined and non-retractable prostomium, with short lateral horns, allowed us to definitively conclude that they are not scalibregmatids either.

Certainly, molecular studies could help to resolve this taxonomic hurdle, but molecular data for species from *Fauveliopsis* are scarce, with GenBank records restricted to the species *F. levensteinae* and *F. scabra*, thus limiting the usefulness of making comparative analyses at this point. Because our specimens were formalin-fixed, sequencing was not possible, but we hope future sequencing will clarify the diagnostic importance of interramal papillae and support phylogenetic studies on Fauveliopsidae.

Although fauveliopsids are rarely abundant, they can reach high numbers in some deep marine regions such as in Iceland (8781 ind. at 256–2709 m depth) (Zamora *et al.* 2019), the Mediterranean Sea (1400 ind. at 2000–3000 m) (Laubier 1972) or Bermuda (more than 500 ind. at 530–5023 m) (Hartman and Fauchald 1971). In contrast, they are rarely reported from shallow waters; only five species (plus *Fauveliopsis* sp. A) have been recorded at depths of less than 200 m (Table 2). Our study reflects this rarity: out of 1165 individuals (133 species) identified at Alacranes Reef National Park, only two individuals belonged to Fauveliopsidae.

Due to their low densities, in this genus, descriptions based on only one or very few individuals are common; 66.7% of the valid species were described from the holotype alone (e.g. *F. brattegardii*, *F. challengeriae*, *F. magna* and *F. pladang*), while for *F. jameoaquensis*, *F. levensteinae*, *F. magalhaensi* and *F. olgae* the descriptions included the holotype and only 1–3 paratypes, and in *F. armata* and *F. brevipodus* they included the holotype and four paratypes.

Despite its low abundance, the genus has been found in diverse habitats including mud, sand, and shells or tubular foraminiferans (Blake and Petersen 2000; Petersen 2000; Zhadan and Salazar-Vallejo 2019), and even in rhodolith beds from off Spain (López 2011), though this last record needs revision since *F. glabra* was originally described from the Eastern Pacific (Hartman 1960). Bathymetrically, they range from the inner continental shelf to abyssal depths. Until now, *F. jameoaquensis* was the shallowest record for fauveliopsids (at 5 m in a submarine cave from the Canary Islands (Núñez *et al.* 1997)); in the Northern Gulf of Mexico, *Fauveliopsis* sp. A was reported at 19–45 m (Wolf 1984). Thus, *F. alacranensis* **sp. n.** and *F. corallicola* **sp. n.** represent the first records from the intertidal zone (0.5–1 m depth) and from coralline environments.

Fauveliopsids are generally small: from 0.8 mm for *F. jameoaquensis* (though it was likely described from juveniles; Salazar-Vallejo *et al.* 2019) to 22.5 mm for *F. levensteinae* (Table 1). However, length can be altered by sampling and fixation since relaxation can elongate segments (Salazar-Vallejo *et al.* 2019). Also, due to the integument features (multiannulate or rugose), the number of chaetigers is difficult to determine in some species, and according to Zhadan and Atroshchenko (2012), the number of chaetigers shows intraspecific variation. Nevertheless, most species in this genus have been described as having fewer than 30 chaetigers, but ranging between 10 (e.g. *F. jameoaquensis*) and 41–42 chaetigers (e.g. *F. pladang* and *F. challengeriae*). Petersen (2000) made an extended diagnosis of the genus *Fauveliopsis*, declaring that adults have from 10 to about 90 segments, which was also mentioned by Blake and Petersen (2000) and Rouse *et al.* (2022). However, the highest number of segments (87 chaetigers) corresponds to *F. arabica* Hartman, 1976, which was transferred to a new genus, *Riseriopsis*, by Salazar-Vallejo *et al.* (2019). As for *F. pladang* (3.9 mm for 41 chaetigers), *F. levensteinae* (22.5 mm for 40 chaetigers), *F. scabra* (10.1 mm for 28 chaetigers), *F. challengeriae* (16 mm for 42 chaetigers), *F. olgae* (6 mm for 28 chaetigers) and *F. adriatica* (12 mm for 36 chaetigers), all have a lower number of chaetigers than *F. alacranensis* **sp. n.** (44 chaetigers in 8.3 mm length) and especially

F. corallicola **sp. n.** (72 chaetigers for a body 8.5 mm long) which possess the highest chaetiger count currently reported for *Fauveliopsis*.

Since 2019, four species (27%) of *Fauveliopsis* have been described (Read and Fauchald 2025; Plathong et al. 2026); among those, *F. antri* and *F. pladang* were recorded from the continental shelf. Our discovery of two new species in coralline environments represents the shallowest reports to date and the first from this habitat. These range extensions suggest other species remain hidden in distinct environments globally, highlighting the need for continued taxonomic efforts in this small family. To assist in their identification, which can be arduous (Petersen 2000), we provide a table of morphological characteristics for all *Fauveliosis* species recorded to date (Table 1).

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Author contributions

CRediT: **Pablo Hernández-Alcántara**: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Supervision, Writing – original draft; **Rosario Mateos-Valdez**: Methodology, Software, Visualization; **Vivianne Solís-Weiss**: Conceptualization, Formal analysis, Funding acquisition, Investigation, Project administration, Supervision, Validation, Visualization, Writing – review & editing.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Data availability

All data generated or analysed during this study are included in the article.

Ethical approval

No animal testing was performed during this study.

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