

PYGMY SKATES

Family Gurgesiellidae

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Pygmy skates are very small to small rays (adults from 23 cm to 59 cm TL) with a flattened body, rhombic to heart-shaped disc, pectoral-fin apices angular to rounded, snout short or moderately elongate and pointed (sometimes with a small triangular process), and the tail is firm, slender and long to very long. The family is represented by 3 genera, *Cruriraja*, *Fenestraja* and *Gurgesiella*, and includes 19 species. Pygmy skates have been classified in separate families, or with hardnose skates (Rajidae), and the snout varies from rigid to semi-rigid, with the rostral cartilage incomplete distally and the anteriormost pectoral-fin radials approaching the snout tip in 2 genera. New information from DNA analysis has shown that the gurgesiellid genera are distinct from other skate genera and warrant placement together in a separate family. Their pelvic fins are deeply notched with long, finger-like anterior lobes (lobes fused in *Gurgesiella*). Like in other skates, the anterior nasal flaps are expanded to form an incomplete nasal curtain. These flaps usually reach the mouth but their posterior margins are not joined like in some other ray groups. The tail usually has 2 small dorsal fins, but species of *Gurgesiella* have either 1 or none. A very small caudal fin is present near the tail tip. Skin on the dorsal surface is variably covered with small denticles, and the distribution pattern of thorns varies between genera and species. Rostral thorns are mostly present in *Cruriraja* but absent in *Fenestraja*. Thorns are usually present on the orbital rims, nuchal region, and in a median row on the trunk and tail in *Cruriraja* and *Fenestraja*, but mostly absent (or as thornlets) in *Gurgesiella* species. Malar and alar thorns are present in adult males in all 3 genera. Pygmy skates live mostly in deep water on continental and insular slopes to 1095 m depth, but have been caught inshore at 40 m depth. Species have limited distributions in warm temperate and tropical seas of the Pacific, Atlantic and Indian Oceans. Primarily benthic, they most likely use their finger-like, anterior pelvic-fin lobes to walk on the seafloor. Pygmy skates feed on a variety of small bottom-dwelling invertebrates and fishes. All species are oviparous.

KEY TO GURGESIELLID GENERA

1. Disc rhombic (fig. 1) with short flat triangular projection at snout tip; pelvic fins with 1 laterally directed lobe (fig. 4); 1 or no dorsal fins; thorns mostly absent (or rather thornlets); amphi-American
 *Gurgesiella* (3 species; fig. 1, pp. 491–493)

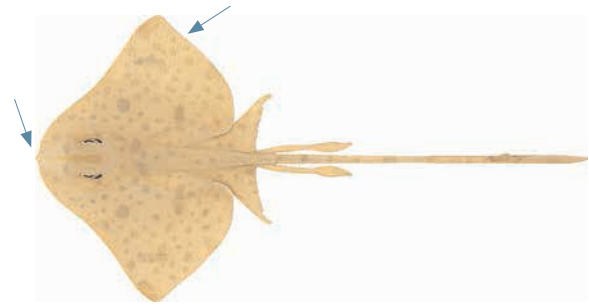


fig. 1

Disc rhombic (fig. 2) or heart-shaped (fig 3); pelvic fin with distinct anterior and posterior lobes (figs 5, 6); 2 dorsal fins; thorns usually present on orbital rims, nuchal area and in a median row on trunk and tail 2

2. Disc typically rhombic in shape, without projection at snout tip; rostral thorns usually present; anterior and posterior lobes of pelvic fin distinctly separate, anterior lobe finger-like (fig. 5); Atlantic and Indian Oceans
 *Cruriraja* (8 species; fig. 2, pp. 475–482)



fig. 2

Disc typically heart-shaped, with small triangular rostral process at snout tip; no rostral thorns; anterior and posterior lobes of pelvic fin continuous, connected by series of radials and fin membranes (fig. 6); Western Atlantic and Indian Oceans
 *Fenestraja* (8 species; fig. 3, pp. 483–490)

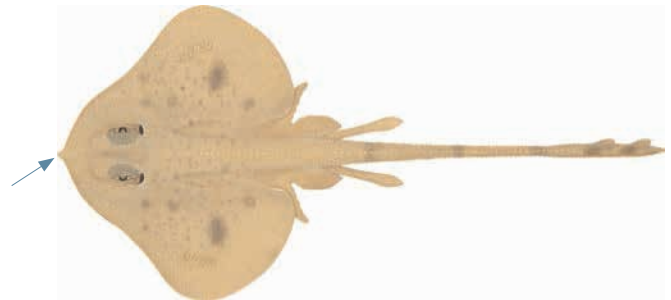


fig. 3



fig. 4

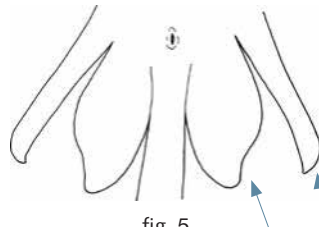


fig. 5

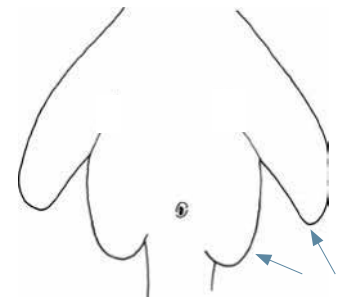


fig. 6

pelvic fins (ventral view)

ANDAMAN PYGMY SKATE

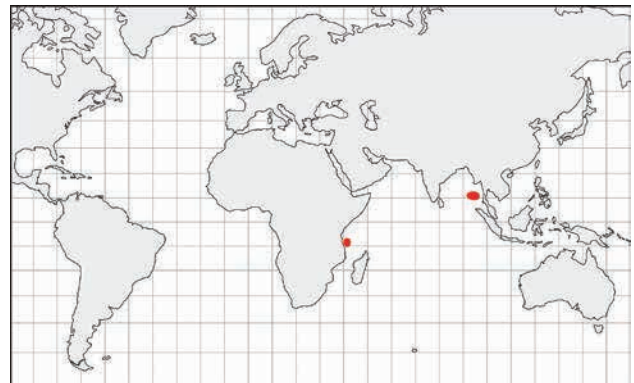
21.1

Cruriraja andamanica (Lloyd, 1909)

DD

IDENTIFICATION. Small skate with a broad rhombic disc, short and broadly pointed snout without a filament, large eyes, separate anterior and posterior pelvic-fin lobes, 2 dorsal fins, and numerous rostral thorns. Disc ~1.2–1.3 times broader than long; anterior margins undulate, apex rounded. Preorbital snout length ~2.8–3.2 times interorbital width, ~5.3 times in disc width; rostral cartilage firm and slender; no obvious lobe at tip. Eyes close to spiracles and large, orbit ~2.1–2.5 times in snout length. Ventral head length ~25% of TL; preoral length ~13–14% of TL. Mouth moderately large, width 5.7–5.8% of TL and 2.2–2.4 times in preoral snout length, with 40–54 tooth rows per jaw. Skin firm and thick, dorsal surface largely covered with small dermal denticles, ~15 large rostral thorns, a continuous rosette of 8 large thorns on each orbital rim but no other thorns between eyes; a median row of large thorns on trunk. Tail long, slender and firm, length ~1.6 times precloacal length, gradually tapering to tip; with median row of thorns and parallel rows of thorns and thornlets; 2 small, barely separated dorsal fins near tail tip; caudal fin reduced to a narrow skin fold on ventral surface; pectoral fin with ~58 radials.

COLOUR. Dorsal surface uniform slate grey, ventral surface uniform slate grey or greyish pink.



SIZE. Attains at least 50 cm TL. Males mature at ~46 cm TL.

HABITAT AND BIOLOGY. Northern Indian Ocean; Andaman Sea and possibly off Indonesia, a record from South-West Indian Ocean requires validation. Demersal on soft bottoms of insular slopes at 275–525 m depth. Probably feeds on benthic invertebrates and small fishes.

SIMILAR SPECIES. Differs from the other *Cruriraja* species of the Indian Ocean, the Hulley's (21.5) and Roughnose (21.6) Pygmy Skates, in having many more rostral thorns, but fewer thorns on the nape-shoulder region and tail.

ATLANTIC PYGMY SKATE

21.2

Cruriraja atlantis Bigelow & Schroeder, 1948

DD

IDENTIFICATION. Small skate with a broad rhombic disc, prickly skin, short and broadly pointed snout without a filament, large eyes, separate anterior and posterior pelvic-fin lobes, 2 widely spaced dorsal fins, 2–3 rows of small rostral thorns, and multiple rows of small thorns on posterior disc and along dorsal surface of tail. Disc ~1.3 times broader than long; anterior margins weakly undulate, apex rounded. Preorbital snout length ~3.7 times interorbital width, ~5.5 times in disc width; rostral cartilage firm and slender; no obvious lobe at tip. Eyes close to spiracles and large, orbit 1.9–2.1 times in snout length. Preoral length ~12% of TL. Mouth moderately large, width 5.6–6.2% of TL and 2–2.2 times in preoral snout length, with ~40–42 tooth rows per jaw. Skin firm and thick, dorsal surface densely set with dermal denticles, rostral thorn patch distinct; rosette of ~11–12 thorns on each orbital rim but no other thorns between eyes; 1–3 median rows of thorns on trunk, 2–4 stout thorns on shoulders. Tail long, slender and firm, length ~1.6–1.7 times precloacal length, gradually tapering to tip (lateral skin folds broad at rear of tail); in adults, 3–7 dense rows of median thorns along anteriormost part of tail but only 2 or 3 rows approaching first dorsal fin, more widely dispersed over tail in females; numerous small thorns between dorsal fins, interdorsal space 9–11.1% of TL and ~2.5 times first dorsal-fin base length; caudal fin weakly developed. Claspers moderately long (reaching ~2/5 distance from pelvic axils to first dorsal-fin origin) and rather slender in adult male.



COLOUR. Dorsal surface plain pale brown with dusky dorsal and caudal fins. Ventral surface whitish or yellowish, usually with brownish blotches on abdomen, pectorals and pelvic fins (including claspers); tail tip dusky.

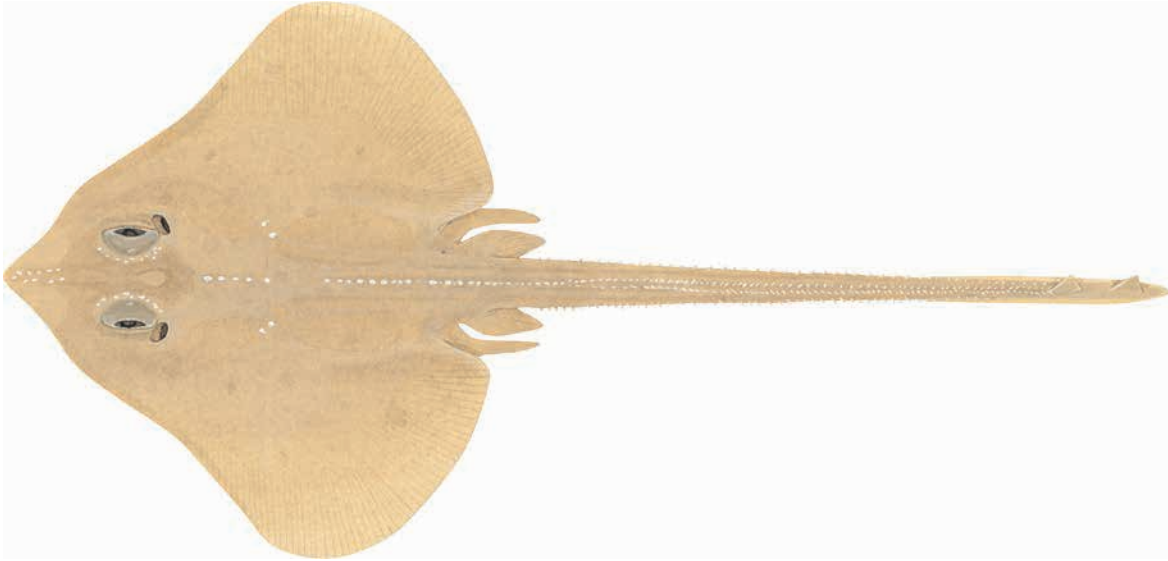
SIZE. Attains ~34 cm TL. Males mature at ~28 cm TL. Smallest known juvenile 10 cm TL.

HABITAT AND BIOLOGY. Western Central Atlantic; off the Bahamas, Cuba and Florida (USA). Demersal on soft bottoms of continental and insular slopes at 510–860 m depths. Probably feeds on benthic invertebrates and small fishes.

SIMILAR SPECIES. Differs from all other *Cruriraja* species in having a particularly wide interdorsal space.

BROADFOOT PYGMY SKATE

21.3

Cruriraja cadenati Bigelow & Schroeder, 1962

DD

IDENTIFICATION. Small skate with a broad rhombic disc, prickly skin, short and broadly pointed snout without a terminal filament, large eyes, separate anterior and posterior pelvic-fin lobes, 2 closely spaced dorsal fins, shoulder thorns, and numerous rostral thorns. Disc ~1.3 times broader than long; anterior margins weakly undulate, apex narrowly rounded. Preorbital snout length ~3.1 times interorbital width, ~5.6 times in disc width; rostral cartilage firm and slender; no obvious lobe at tip. Eyes close to spiracles and large, orbit ~2.1 times in snout length. Preoral length ~14% of TL. Mouth moderately large, width 6.1% of TL and ~2.3 times in preoral snout length, with ~40–46 tooth rows in each jaw. Skin firm and thick, dorsal surface densely set with dermal denticles. Irregular row of ~10 rostral thorns and rosette of ~11 thorns on each orbital rim (no other thorns between eyes); 5 prominent thorns on mid-line from nuchal to scapular region, thorns absent on mid-back, row of 27–30 closely spaced thorns from level of greatest disc width to slightly posterior to pelvic tips, double row of 32–35 thorns on tail to first dorsal fin plus 1–2 parallel rows of small tail thorns. Tail long, slender and firm, length 1.4–1.6 times precloacal length, gradually tapering to tip; 2 slightly separated dorsal fins (less than half first dorsal-fin base length apart); caudal fin weakly developed. Claspers moderately long (reaching about half distance from pectoral axils to first dorsal-fin origin) and rather slender in adult male.



COLOUR. Dorsal surface light brown, often with numerous dark brown irregular spots; dorsal fins pale or dusky. Ventral surface of disc whitish to pale brownish, posterior margins irregularly greyish; tail white.

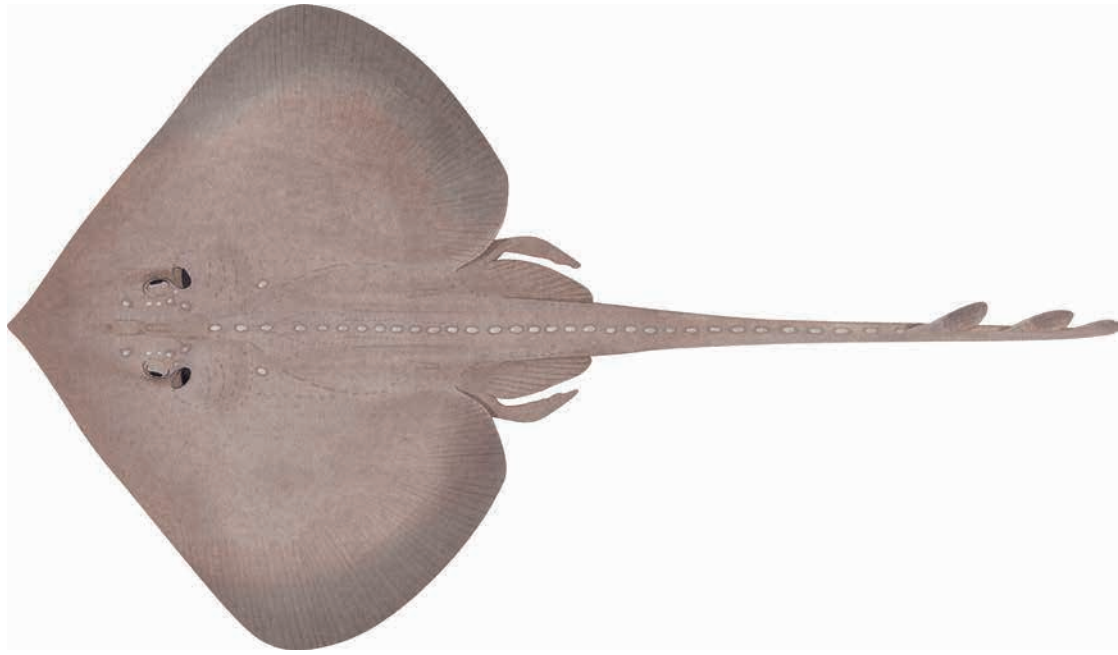
SIZE. Attains ~38 cm TL. Male paratype is mature at 35 cm TL.

HABITAT AND BIOLOGY. Western Central Atlantic; off Puerto Rico and Florida (USA). Demersal on soft bottoms of continental and insular slopes at 455–895 m depths.

SIMILAR SPECIES. Differs from the Rough Pygmy Skate (21.8) in the number and arrangement of thorns on the disc and tail.

SMOOTHNOSE PYGMY SKATE

21.4

Cruriraja durbanensis (von Bonde & Swart, 1923)

DD

IDENTIFICATION. Small skate with a broad weakly rhombic disc, rather short and narrowly pointed snout without a filament, small eyes, separate anterior and posterior pelvic-fin lobes, 2 dorsal fins, shoulder thorns, single median thorn row on disc and tail, and no thorns at snout tip or on rostral ridge. Disc ~1.3 times broader than long; anterior margins weakly undulate, apex broadly rounded. Preorbital snout length ~3.5 times interorbital width; rostral cartilage firm and slender; no obvious lobe at tip. Eyes close to spiracles, orbit ~4 times in snout length. Mouth moderately large, width ~2.3 times in preoral snout length. Skin firm and thick, dorsal surface largely covered with small dermal denticles; an interrupted rosette of 3–8 thorns on each orbital rim but no other thorns between eyes; 1–2 mid-shoulder thorns; continuous median row of thorns extending from nape to mid-length of tail or beyond; no parallel rows of thorns on tail. Tail long, slender and firm, length ~1.4 times precloacal length; gradually tapering to tip; lateral skin folds confined to posterior third of tail. Pelvic-fin anterior lobes very slender. Dorsal fins well separated, without thorns in their interspace; caudal fin weakly developed.

COLOUR. Dorsal and ventral surfaces both reddish brown (in preservative) but this coloration is likely to be artificial; areas around mouth and abdomen whitish in holotype.

SIZE. Attains at least 31 cm TL. Known only from 2 juvenile specimens, both presumed lost.

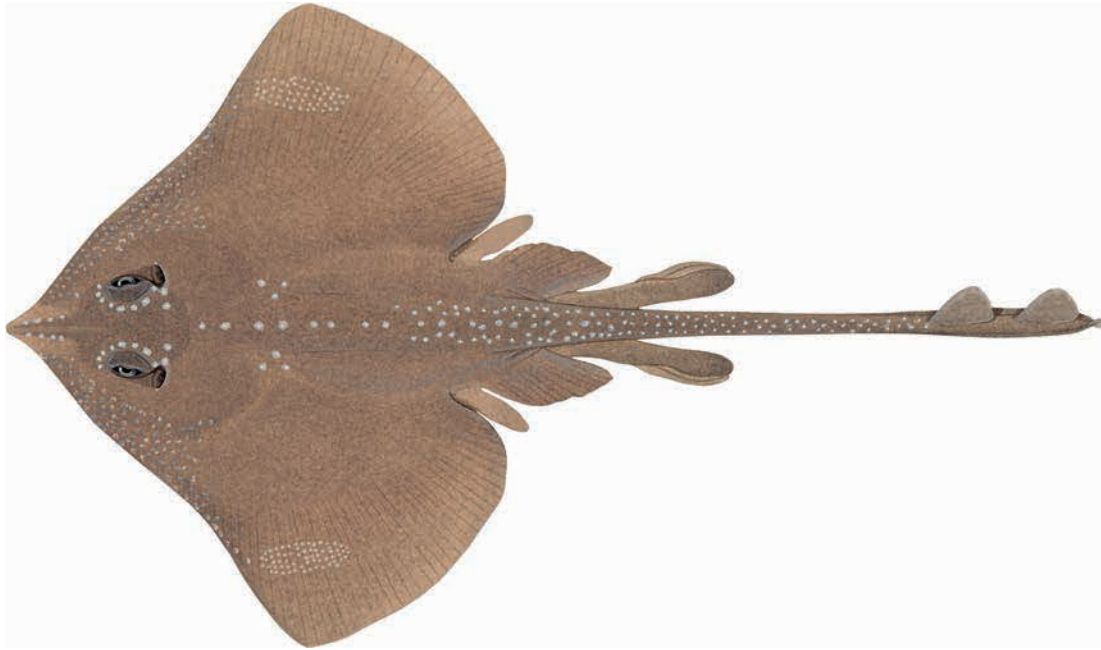


HABITAT AND BIOLOGY. South-East Atlantic; off South Africa. Poorly known, but considered to be benthic on soft bottoms of mid-continental slope at ~860 m depth. Probably benthic, feeding on benthic invertebrates and small fishes.

SIMILAR SPECIES. Contrary to its scientific name, this skate is not known to occur off Durban, in the South-West Indian Ocean. Differs from all other *Cruriraja* species in having unusually small eyes. Other members of the genus from southern Africa, Hulley's (21.5) and the Roughnose (21.6) Pygmy Skates, have prominent thorns on the snout and multiple rows of tail thorns in adults.

HULLEY'S PYGMY SKATE

21.5

Cruriraja hulleyi Aschliman, Ebert & Compagno, 2010

NE

IDENTIFICATION. Small skate with a broad rhombic disc, short and broadly pointed snout without a filament, large eyes, separate anterior and posterior pelvic-fin lobes, 2 dorsal fins, and rostral thorns few and small. Disc ~1.2 times broader than long; anterior margins weakly undulate, apex angular. Preorbital snout length 2.2–2.8 times interorbital width, 6.4–7.1 times in disc width; rostral cartilage firm and slender; no obvious lobe at tip. Eyes close to spiracles and large, orbit ~1.7–2.7 times in snout length. Ventral head length ~22–24% of TL; preoral length ~10–12% of TL. Mouth moderately large, width 5.2–6.4% of TL and ~1.9 times in preoral snout length, with 37–47 tooth rows in upper jaw. Skin firm and thick, dorsal surface largely without dermal denticles, ~4–5 small rostral thorns, a rosette of ~9 regularly spaced, large thorns on each orbital rim but no other thorns between eyes; 1–5 median rows of large thorns on trunk. Tail long, slender and firm, length ~1.4–1.7 times precloacal length, gradually tapering to tip; with a median row of 39–47 thorns plus 3–6 interdorsal thorns and 4 parallel thorn rows; 2 separate dorsal fins (1 aberrant specimen with only 1 dorsal fin known); caudal fin weakly developed; pectoral fin with 64–66 radials. Claspers long (postcloacal length ~23% of TL) and thick in adult male.

COLOUR. Dorsal surface usually yellow-brown, with weakly defined darker brown patches in adults; mottled with circular brown spots and brown tail bands in juveniles. Ventral surface uniform yellowish white.



SIZE. Attains 59 cm TL. Males mature at ~45 cm TL, females at ~46–48 cm TL. Smallest known juvenile ~10 cm TL, egg cases ~5 cm long.

HABITAT AND BIOLOGY. South-East Atlantic and South-West Indian Ocean; southern Africa, Namibia to Eastern Cape (South Africa). Demersal on continental shelf and upper slope at 40–545 m depths. Benthic feeder, mainly on mysids and other crustaceans; larger prey such as cephalopods and small fishes, important to large skates, are rarely consumed.

SIMILAR SPECIES. Differs from another southern African species, the smaller Roughnose Pygmy Skate (21.6), in having a shorter snout, smaller eyes, more spatulate anterior pelvic-fin lobes, and thorns on the central disc (rather than absent).

ROUGHNOSE PYGMY SKATE

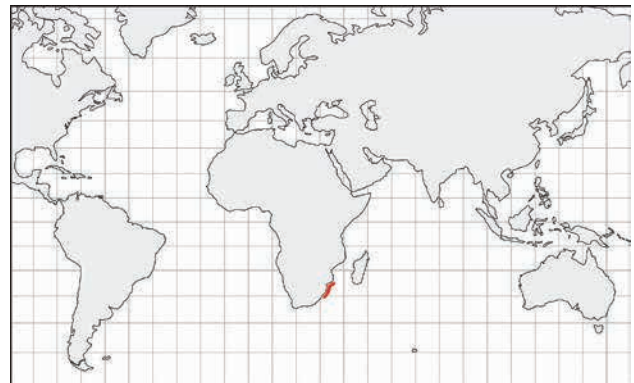
21.6

Cruriraja parcomaculata (von Bonde & Swart, 1923)

NE

IDENTIFICATION. Small skate with a broad rhombic disc, short and broadly pointed snout without a filament, large eyes, separate anterior and posterior pelvic-fin lobes, 2 closely spaced dorsal fins, numerous small rostral thorns, and no thorns on mid-disc and over anterior half of abdomen. Disc ~1.3 times broader than long; anterior margins weakly undulate, apex angular. Preorbital snout length ~1.8–4.3 times interorbital width, ~5.2–6.6 times in disc width; rostral cartilage firm and slender; no obvious lobe at tip. Eyes close to spiracles and large, orbit ~1.8–2.4 times in snout length. Preoral length ~11–14% of TL. Mouth moderately large, width 5.4–5.6% of TL and 2–2.6 times in preoral snout length, with 30–42 tooth rows per jaw. Skin firm and thick, dorsal surface largely without dermal denticles. Rostral thorns ~12 small; 8–9 regularly spaced thorns in rosette on each orbital rim but no other thorns between eyes; thorns on anterior disc not continuous with those of tail. Tail long, slender and firm, length 1.5–1.9 times precloacal length, gradually tapering to tip; median row of 16–39 thorns plus 1–4 interdorsal thorns and 2 parallel rows of small thorns (usually reduced posteriorly). Two slightly separated dorsal fins (less than half first dorsal-fin base length apart); caudal fin poorly developed.

COLOUR. Dorsal surface brownish, disc with a few dusky blotches to numerous dark spots in juveniles. Ventral surface uniform yellowish white or brownish white.



SIZE. Attains 43 cm TL. Males mature at ~36 cm TL, females ~35 cm TL. Smallest known juvenile ~9 cm TL, egg cases <5 cm long.

HABITAT AND BIOLOGY. South-West Indian Ocean; South Africa and Mozambique. Demersal on outer continental shelf and upper slope at 65–680 m depths. Diet unknown but probably feeds mainly on crustaceans.

SIMILAR SPECIES. Differs from Hulley's Pygmy Skate (21.5) in its smaller size, longer snout, larger eyes, more pointed anterior pelvic-fin lobes, and lacking thorns on the central upper disc.

POEY'S PYGMY SKATE

21.7

Cruriraja poeyi Bigelow & Schroeder, 1948

DD

IDENTIFICATION. Small skate with a broad and largely smooth rhombic disc, short and broadly pointed snout without a filament at its tip, large eyes, separate anterior and posterior pelvic-fin lobes, 2 barely separated dorsal fins, several rostral thorns, and no shoulder thorns. Disc 1.2–1.3 times broader than long; anterior margins weakly undulate, apex narrowly rounded. Preorbital snout length ~ 3.7 times interorbital width, ~ 5.2 times in disc width; rostral cartilage firm and slender; no obvious lobe at tip. Eyes close to spiracles and large, orbit ~ 2.3 times in snout length. Preoral length $\sim 14\%$ of TL. Mouth moderately large, width 7% of TL and ~ 2 times in preoral snout length, with 44–50 tooth rows in each jaw. Skin firm and thick, dorsal surface mostly free of denticles; denticles present along dorsal margin of anterior disc and in narrow band from shoulder to tail base. Rostral thorns 5–10; 4–8 thorns in interrupted rosette on each orbital rim (no other thorns between eyes); continuous row of 31–52 thorns from mid-disc to first dorsal fin, adults with up to 6 additional parallel rows of tail thorns; 1–4 interdorsal thorns. Tail long, slender and firm, length 1.3–1.4 times preloacal length, gradually tapering to tip (lateral skin folds broad at rear of tail). Two slightly separated dorsal fins (less than half first dorsal-fin base length apart); caudal fin weakly developed. Claspers short (reaching a distance equal to mouth width beyond pelvic tips) and rather slender in adult male.

COLOUR. Dorsal surface of disc pale brown, covered more or less regularly with dark brown spots (each about half orbit length); tail with 1 or more dark bars and faint spots on



dorsal fins (spots and bars most conspicuous in small juveniles); caudal and dorsal fins sometimes partially or entirely black in adults. Ventral surface pale brown with paler and darker mottling; tail paler than disc.

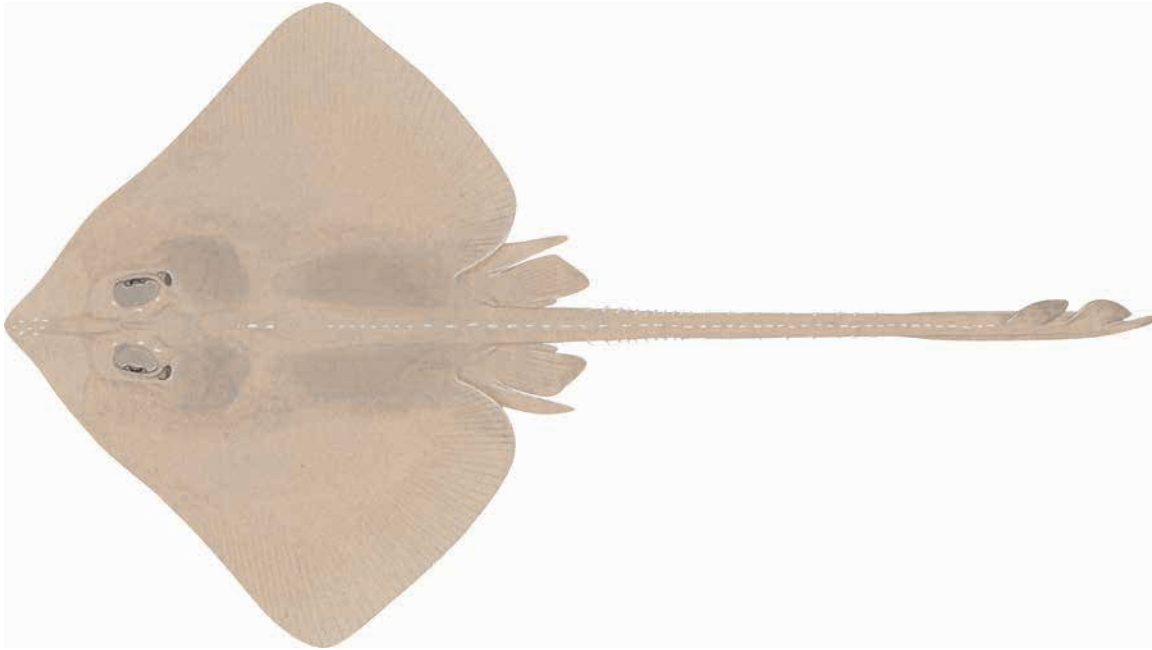
SIZE. Attains ~ 34 cm TL. Maturity size unknown. Smallest known juvenile ~ 8 cm TL.

HABITAT AND BIOLOGY. Western Central Atlantic; Florida (USA), Caribbean and Gulf of Mexico. Demersal on soft bottoms of upper continental and insular slopes at 365–870 m depths.

SIMILAR SPECIES. Differs from the Cuban Pygmy Skate (21.10) in having a largely smooth dorsal disc (rather than granular) and more closely spaced dorsal fins.

ROUGH PYGMY SKATE

21.8

Cruriraja rugosa Bigelow & Schroeder, 1958

DD

IDENTIFICATION. Medium-sized skate with a broad, finely granular rhombic disc, short and broadly pointed snout without a filament, large eyes, separate anterior and posterior pelvic-fin lobes, 2 closely spaced dorsal fins, few to several rostral thorns, and nuchal thorns present and well-separated from median thorn row extending along posterior disc and tail. Disc 1.2–1.4 times broader than long; anterior margins weakly undulate, apex rounded. Preorbital snout length 3.2–4.6 times interorbital width, 4.7–5.8 times in disc width; rostral cartilage firm and slender; no obvious lobe at tip. Eyes close to spiracles and large, orbit 2.1–3.7 times in snout length. Preoral length 10–14% of TL. Mouth moderately large, width 4.6–6.3% of TL and 1.8–2.6 times in preoral snout length, with 34–46 tooth rows in each jaw. Skin firm and thick, dorsal surface largely covered with dermal denticles (denticles also on ventral tail in specimens larger than ~25 cm TL). Rostral thorns 1–9; rosette of 3–8 thorns on orbital rim (no other thorns between eyes); usually 2 nuchal thorns; median row of 47 thorns on posterior trunk and tail. Tail long, slender and firm, length 1.3–1.8 times precloacal length, gradually tapering to tip (lateral skin folds broad at rear of tail); without parallel thorn rows; dorsal fins less than half first dorsal-fin base length apart, with 1–3 thorns in interspace; caudal fin weakly developed; pectoral fin with ~59 radials. Claspers moderately long (reaching a distance equal to preorbital length behind pelvic tips) and rather slender in adult male.

COLOUR. Dorsal surface pale brown, caudal and dorsal fins somewhat darker. Ventral surface whitish, sometimes



mottled brown; 1 specimen reported to be dark brown on both surfaces of disc.

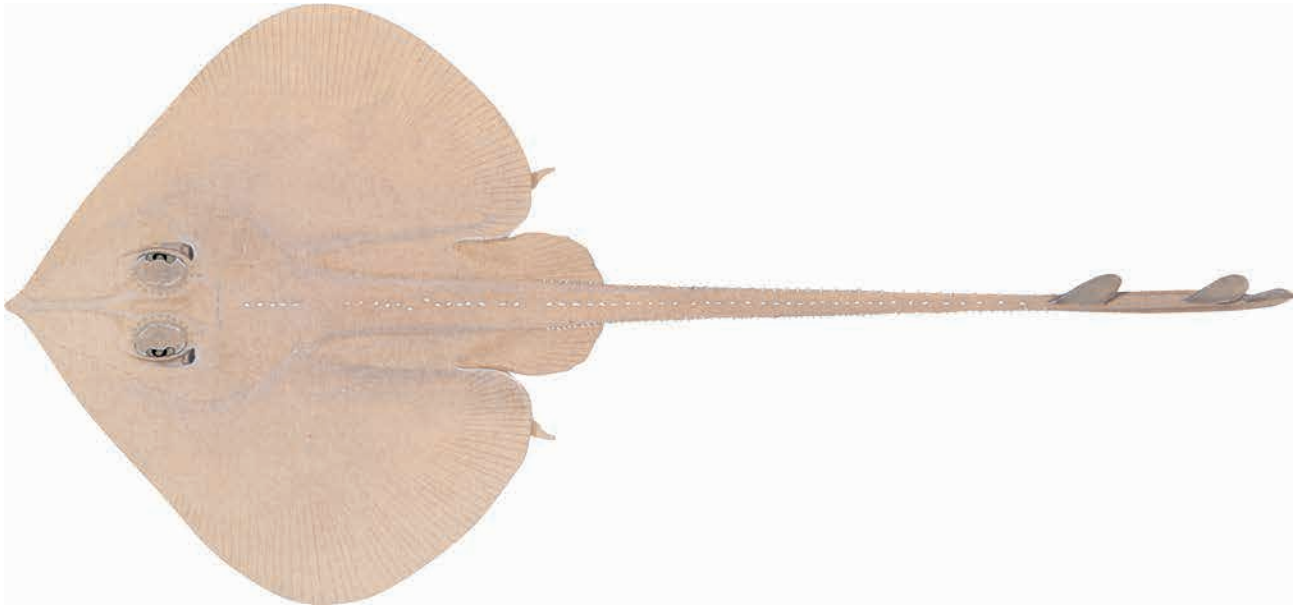
SIZE. Attains ~51 cm TL. Males mature at ~39 cm TL; smallest known juvenile ~9 cm TL.

HABITAT AND BIOLOGY. Western Central and South Atlantic; Florida (USA) to Brazil, including Caribbean and Gulf of Mexico. Demersal on soft bottoms of continental and insular slopes at 250–1010 m depths.

SIMILAR SPECIES. Differs from other members of the genus *Cruriraja* in having only a single row of enlarged thorns on the dorsal mid-line of the tail and lacking thorns in the scapular region and over the abdomen.

BLACKFIN PYGMY SKATE

21.9

Fenestraja atripinna (Bigelow & Schroeder, 1950)

DD

IDENTIFICATION. Very small skate with a rough, heart-shaped disc (~1.2 times as broad as long), snout short with a small triangular process at tip, anterior and posterior pelvic-fin lobes connected but very deeply notched, no rostral thorns, 7–15 small thorns around orbit and 2–3 beside spiracle, and tail long and slender (~64% TL). Disc thin, anterior margin evenly convex, outer and inner pectoral-fin corners broadly rounded. Preorbital snout length about twice interorbital width; eyes large, horizontal orbit length about twice interorbital width. Tooth rows in upper and lower jaws ~40. Skin of dorsal disc almost entirely and densely set with coarse spinules; tip of upper snout, posterior margins of disc, and ventral surfaces smooth. Row of ~6 nuchal thorns and 2–5 thorns on each shoulder; median row of ~60 small thorns, and lateral row of thornlets on trunk and tail, reducing in size before first dorsal fin. Lateral folds narrow and confined to posterior 2/3 of tail. Pelvic fins large with a slender and pointed anterior lobe, ~3/4 as long as posterior lobe. Dorsal fins small, with rounded apices, both dorsal fins near tail tip and widely spaced. Pectoral-fin radials 62–65.

COLOUR. Dorsal surface uniform pale pinkish brown, clouded with chocolate brown in larger individuals; dorsal fins blackish (pale in young). Plain whitish below.



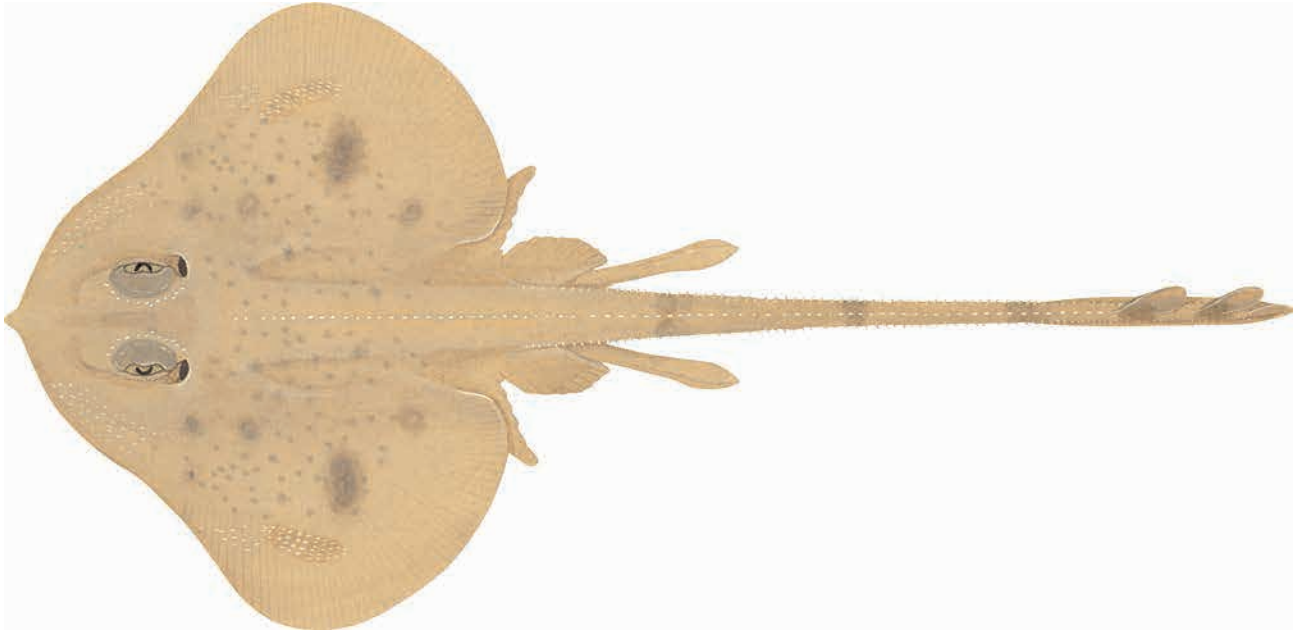
SIZE. Attains ~29 cm TL. Males mature at ~28–29 cm TL.

HABITAT AND BIOLOGY. Western Central Atlantic; North Carolina to southern Florida (USA), off the Bahamas and Cuba. Demersal on upper continental and insular slopes at 365–950 m depths. Biology largely unknown.

SIMILAR SPECIES. Differs from other *Fenestraja* species by its plain pinkish coloration, black dorsal fins and large interdorsal space.

CUBAN PYGMY SKATE

21.10

Fenestraja cubensis (Bigelow & Schroeder, 1950)

DD

IDENTIFICATION. Very small skate with a rough, heart-shaped disc (1.2–1.3 times as broad as long), snout short with small triangular process at tip, anterior and posterior pelvic-fin lobes connected but deeply notched, no rostral thorns, 9–15 small thorns around orbit and 1–2 beside spiracle, and tail long and slender (length 62–65% TL). Disc thin, anterior margin evenly convex, outer and inner pectoral-fin corners broadly rounded; anterior margin more undulate in adult males. Preorbital snout length about twice interorbital width; eyes large, horizontal orbit length ~1.6–1.7 times interorbital width. Tooth rows in upper and lower jaws 38–48. Dorsal disc almost entirely and densely set with coarse spinules, tip of snout and posterior pectoral-fin margins smooth, skin of large specimens smoother than young; ventral surface smooth. Row of ~6–8 nuchal thorns, rosette of 10–15 thorns on each orbital rim, 1–2 thorns on each shoulder; median row of 50–100 small thorns, and a lateral row of thornlets on tail, reducing in size before first dorsal fin. Lateral tail folds narrow and confined to posterior 2/3 of tail. Pelvic fins large with a slender and pointed anterior lobe, length ~3/4 as long as posterior lobe. Dorsal fins small, with rounded apices; dorsal fins positioned near tail tip, bases close together but separated. Pectoral-fin radials 58–59. Predorsal tail vertebrae 64–70.

COLOUR. Dorsal surface pale brown, with cloudy dark brown spots and blotches (variable in size and distribution);



pectoral marking usually present as a dark blotch; tail pale brown with 5–6 crossbars, 2 posterior ones crossing dorsal fins. Ventral surface plain pale yellowish.

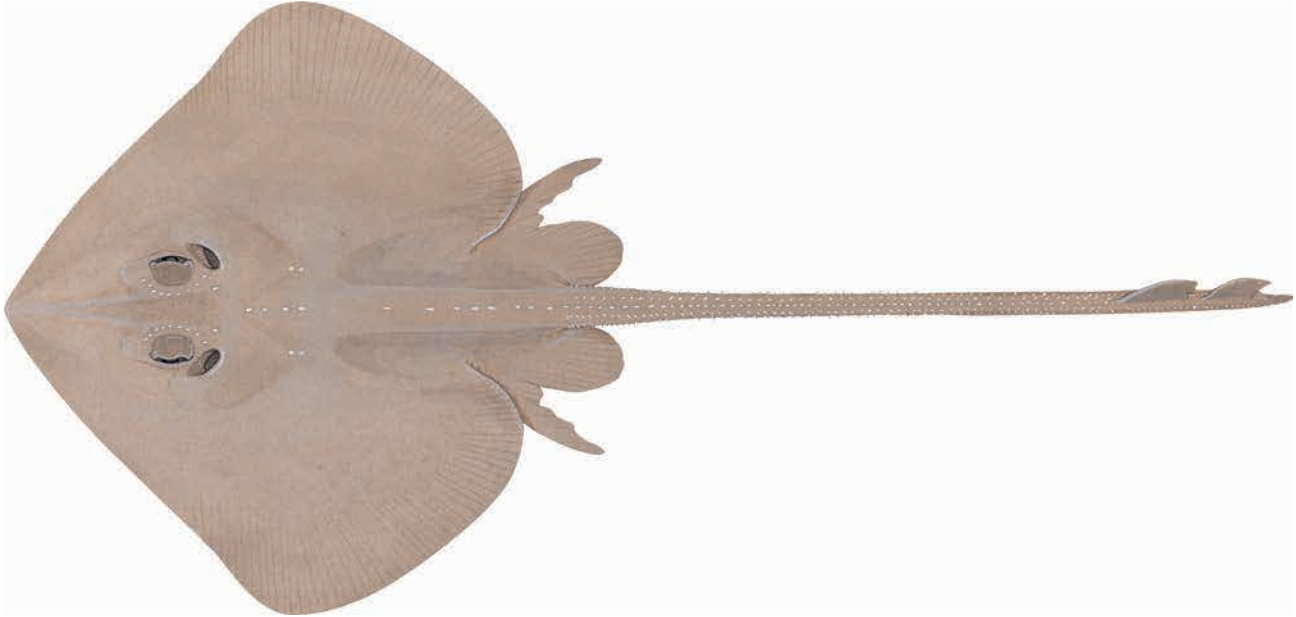
SIZE. Reported to reach ~30 cm TL, but probably smaller to 23 cm TL. Males mature at 18–21 cm TL. Size at hatching ~7 cm TL.

HABITAT AND BIOLOGY. Western Central Atlantic; off Cuba, Bahamas and Florida (USA). Demersal on upper continental slope at 310–870 m depths, usually deeper than 440 m. Biology unknown.

SIMILAR SPECIES. Differs from other *Fenestraja* species by an obvious pattern of cloudy, dark brown spots and blotches, and 5–6 dark crossbars on the tail.

PLAIN PYGMY SKATE

21.11

Fenestraja ishiyamae (Bigelow & Schroeder, 1962)

DD

IDENTIFICATION. Very small skate with a heart-shaped disc (about as broad as long), snout moderately long with small triangular process at tip, anterior and posterior pelvic-fin lobes connected but deeply notched, no rostral thorns, series of 6–8 small thorns around orbit and 1 beside spiracle, and tail long and slender (~62% TL). Disc thin, anterior margin evenly convex, outer and inner pectoral-fin corners broadly rounded. Preorbital snout length ~3.5 times interorbital width; eyes large, horizontal orbit length 1.1 times interorbital width. Tooth rows in upper jaw ~34. Dorsal disc almost entirely and densely set with coarse spinules. Row of ~4–5 nuchal thorns, 1 thorn on each shoulder, an irregular median row of small thorns, and 2 lateral rows of thornlets on tail, reducing in size before first dorsal fin. Lateral tail folds narrow and extending from near rear tip of pelvic fins to near tip of tail. Pelvic fins large with a slender and pointed anterior lobe, about as long as posterior lobe. Dorsal fins small, both dorsal fins located near tail tip, confluent at bases or with very short interspace. Pectoral-fin radials 57–61.

COLOUR. Dorsal surface plain greyish brown, ventral surface plain pinkish white.



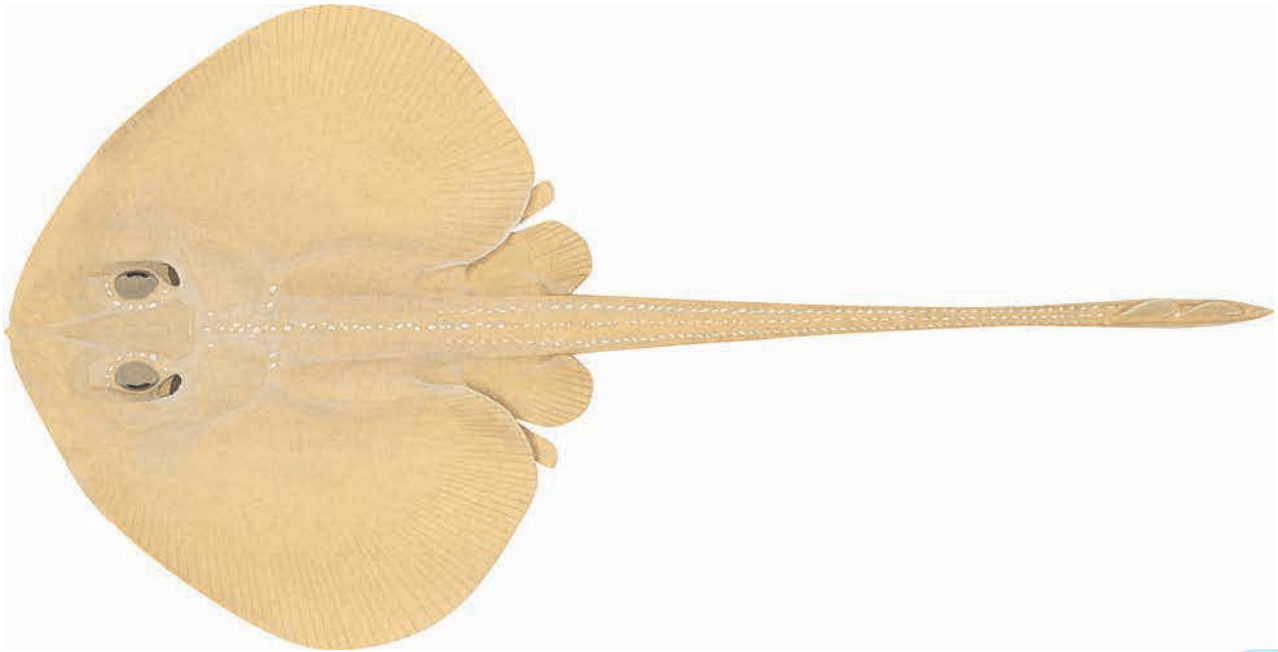
SIZE. Attains ~36 cm TL.

HABITAT AND BIOLOGY. Western Central Atlantic; Cuba, Bahamas, Nicaragua and Florida (USA). Demersal, continental slope at 505–950 m depths. Biology unknown.

SIMILAR SPECIES. Differs from other *Fenestraja* species by the combination of a plain greyish brown dorsal coloration, and having the anterior and posterior pelvic-fin lobes about equal in length (rather than with the anterior lobe shorter).

MADAGASCAR PYGMY SKATE

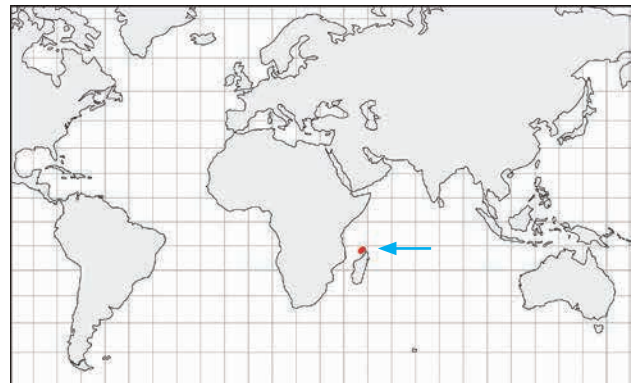
21.12

Fenestraja maceachrani (Séret, 1989)

DD

IDENTIFICATION. Small skate with adult size unknown, a heart-shaped disc (~1.2 times as broad as long), snout short and bluntly angled and small triangular process at its tip, anterior and posterior pelvic-fin lobes connected but deeply notched, a few thorns along rostral ridges, patch of 3–6 preorbital thorns, 5–8 small thorns around orbit and 1 near spiracle, and tail long and slender (62–64% TL). Disc thin, anterior margin evenly convex, outer and inner pectoral-fin corners broadly rounded. Preorbital snout length 2.1–2.3 times interorbital width; orbits large, length almost as long as interorbital width. Tooth rows in upper jaw ~39–40. Dorsal disc entirely and densely set with coarse spinules, smooth ventrally. An irregular median row of 7–9 nuchal thorns and 2 thorns on each shoulder; median row of ~80 irregular thorns on trunk and tail from scapula to first dorsal fin, an additional irregular parallel row extends from trunk to tail; tail with a lateral thorn row and 1 interdorsal thorn. Pelvic fins large with a slender anterior lobe, almost as long as posterior lobe. Lateral skin folds broad at rear of tail. Dorsal fins triangular, second dorsal fin smaller and with rounded apices; dorsal fins located near tail tip, with bases separated. Pectoral-fin radials 78–80. Predorsal tail vertebrae 79–84.

COLOUR. Dorsal surface of disc and tail uniformly brownish, often pale. Ventral surface of disc uniform pale



whitish, lower surface of tail mottled with faint brownish blotches.

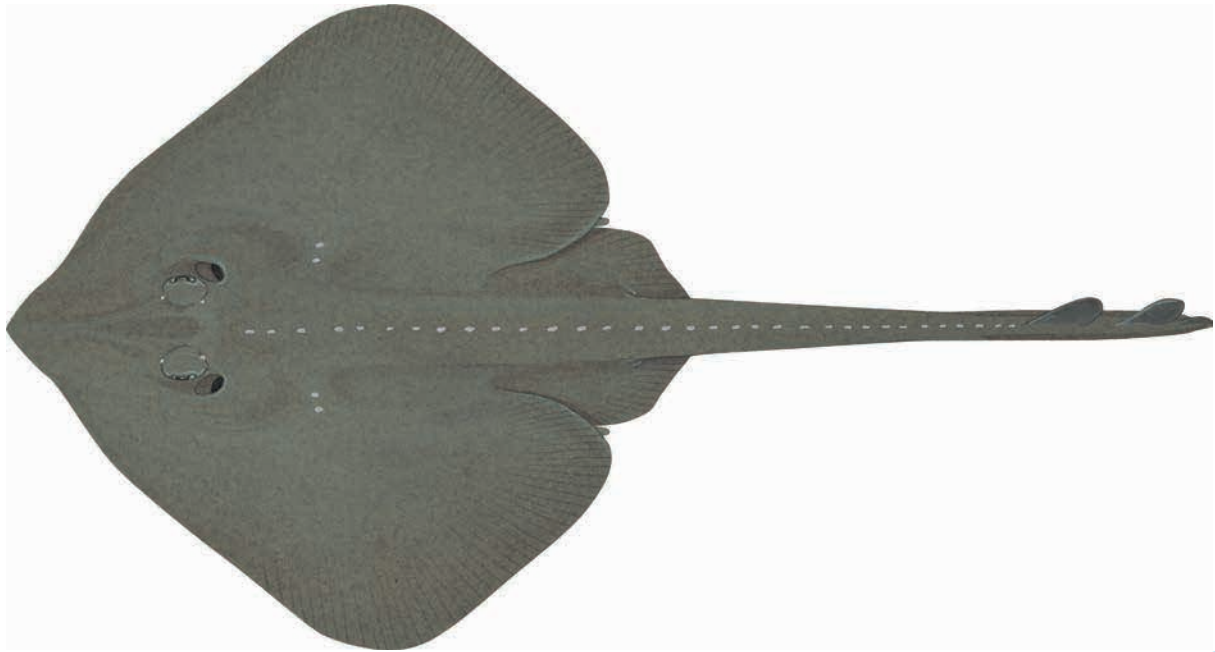
SIZE. Attains at least 42 cm TL; adult males not yet collected.

HABITAT AND BIOLOGY. Western Indian Ocean; off north-western Madagascar. Demersal on upper continental slope at 600–765 m depths. Biology unknown.

SIMILAR SPECIES. In other *Fenestraja* species, the skin of the upper disc is more heavily ornamented with various patterns of blotches and/or is darker in coloration.

PRICKLY PYGMY SKATE

21.13

Fenestraja mamillidens (Alcock, 1889)

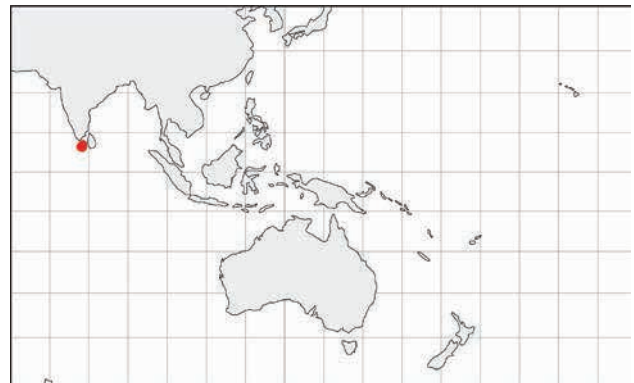
DD

IDENTIFICATION. Very small skate with adult size unknown, a rhombic disc (about as broad as long), snout rather short and bluntly angled, without a projection at its tip, anterior and posterior pelvic-fin lobes connected, single thorns on preorbit, postorbit and spiracle, and tail long and slender (~60% TL). Disc thin, anterior margin weakly undulate, outer pectoral-fin corners rounded, inner pectoral corners acutely rounded. Preorbital snout length 3.4 times interorbital width; eyes large, horizontal orbit length as long as interorbital width. Tooth rows in upper jaw ~24. Dorsal disc and tail, and dorsal fins, densely set with coarse spinules, smooth ventrally. Row of 3 nuchal thorns, 2–3 thorns on each shoulder, median row of ~30 thorns on trunk and tail from scapula to first dorsal fin. Pelvic fins large with a slender anterior lobe, almost as long as posterior lobe. Lateral skin folds broad at rear of tail. Dorsal fins with rounded apices, located near tail tip, adjacent to each other but separated by a small space.

COLOUR. Dorsal surface of disc and tail uniformly black; colour of ventral surface unclear but probably also dark.

SIZE. Attains at least 29 cm TL; adult males not yet collected.

HABITAT AND BIOLOGY. Northern Indian Ocean; Gulf of Mannar, off western Sri Lanka. Demersal on

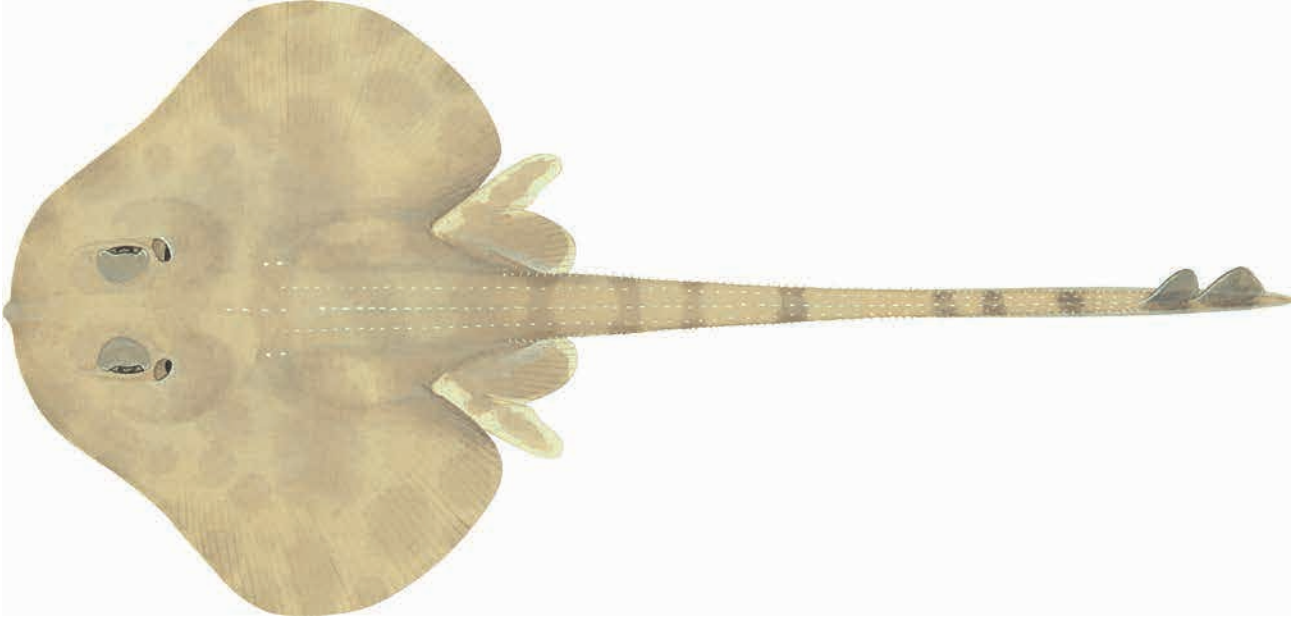


mid-continental slope at ~1090 m depth; possibly deeper, beyond present operating limits of local trawlers. Biology unknown as only known specimen (holotype) has been lost.

SIMILAR SPECIES. Distinguishable from the only other member of the genus *Fenestraja* occurring in the Western and Northern Indian Ocean, the Madagascar Pygmy Skate (21.12), by its rhombic disc (rather than heart-shaped), absence of a projection at the snout tip, narrower interdorsal space, and uniform black coloration. More specimens are needed to get a better description of this species.

PLUTO PYGMY SKATE

21.14

Fenestraja plutonia (Garman, 1881)

DD

IDENTIFICATION. Very small skate with a heart-shaped disc (~1.2 times as broad as long), snout short and bluntly angled with small triangular process at its tip, anterior and posterior pelvic-fin lobes connected but deeply notched, rosette of 2–12 small orbital thorns, 1 thorn beside spiracle, and tail long and slender (64–68% TL). Disc thin, anterior margin undulate, more concave at level of spiracles; outer and inner pectoral-fin corners broadly rounded. Preorbital snout length 2–2.6 times interorbital width; orbits very large, horizontal length ~1.5 times as long as interorbital width. Tooth rows in upper jaw 32–34. Dorsal disc densely covered with coarse spinules, except on snout tip and along pectoral-fin posterior margins; skin smooth ventrally. Row of 3–4 nuchal thorns, 2–3 thorns on each shoulder; median row of 45–70 irregular thorns on trunk and tail from scapula to first dorsal fin, reducing in size to first dorsal fin; an additional irregular parallel row of smaller thorns on trunk and tail, and 1–2 lateral rows of thorns on tail. Pelvic fins large, anterior lobe long and slender, length equal to or exceeding length of posterior lobe. Lateral skin folds broad at rear of tail. Dorsal fins similar in shape and size, with rounded apices; dorsal fins located near tail tip, confluent at bases. Clasper of adult male slender, long (reaching behind pelvic tips a distance exceeding prespiracular length).

COLOUR. Dorsal surface of disc pale yellowish brown to greyish brown, covered with dark spots and dark cloudy



blotches; 5–7 irregular dark crossbars on tail, final 2 crossing dorsal fins; ventral surface yellowish white.

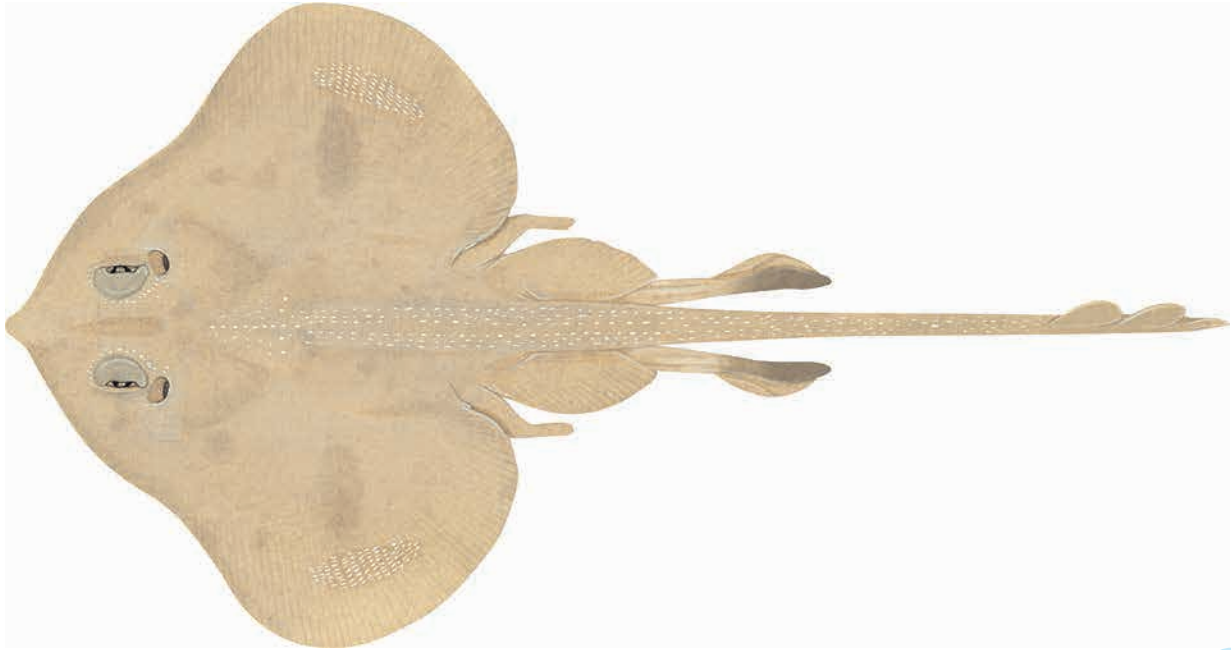
SIZE. Attains ~27 cm TL. Males are mature at 23 cm TL; smallest known juvenile 13 cm TL.

HABITAT AND BIOLOGY. Western Central Atlantic; North Carolina (USA) to Suriname, including Caribbean and parts of Gulf of Mexico. Demersal on upper and mid-continental slope at depths of 295–1025 m. Biology unknown.

SIMILAR SPECIES. Distinguishable from other Western Atlantic *Fenestraja* species by the presence of dark spots and blotches on its disc, dark crossbars on the tail, long pelvic-fin anterior lobes, and confluent dorsal fins.

SIBOGA PYGMY SKATE

21.15

Fenestraja sibogae (Weber, 1913)

DD

IDENTIFICATION. Very small skate with a heart-shaped disc (1.1–1.2 times as broad as long), snout short and bluntly angled with small triangular process at its tip, anterior and posterior pelvic-fin lobes connected but deeply notched, rosette of 16–17 orbital thorns, 3 spiracular thorns, and tail long and slender (60% TL). Disc thin, anterior margin undulate, more concave at level of spiracles; outer and inner pectoral-fin corners broadly rounded. Preorbital snout length 2.4–2.9 times interorbital width; orbits very large, horizontal diameter 1.3–1.5 times interorbital width. Tooth rows in upper jaw ~35–38. Dorsal disc entirely and densely set with coarse spinules, skin entirely smooth ventrally. Patch of ~7 thorns on nape and shoulders, band of median and 2–3 irregular parallel rows of smaller thorns on trunk and tail from scapula to first dorsal fin. Pelvic fins large, anterior lobe slender, ~3/4 length of posterior lobe. Dorsal fins small, located near tail tip, confluent at bases or separated by a very short interspace. Pectoral-fin radials 61–64. Predorsal tail vertebrae 66–71.

COLOUR. Dorsal surface of disc greyish brown with darker blotches and an ocellus-like blotch on centre of pectoral fins; ventral surface plain white.



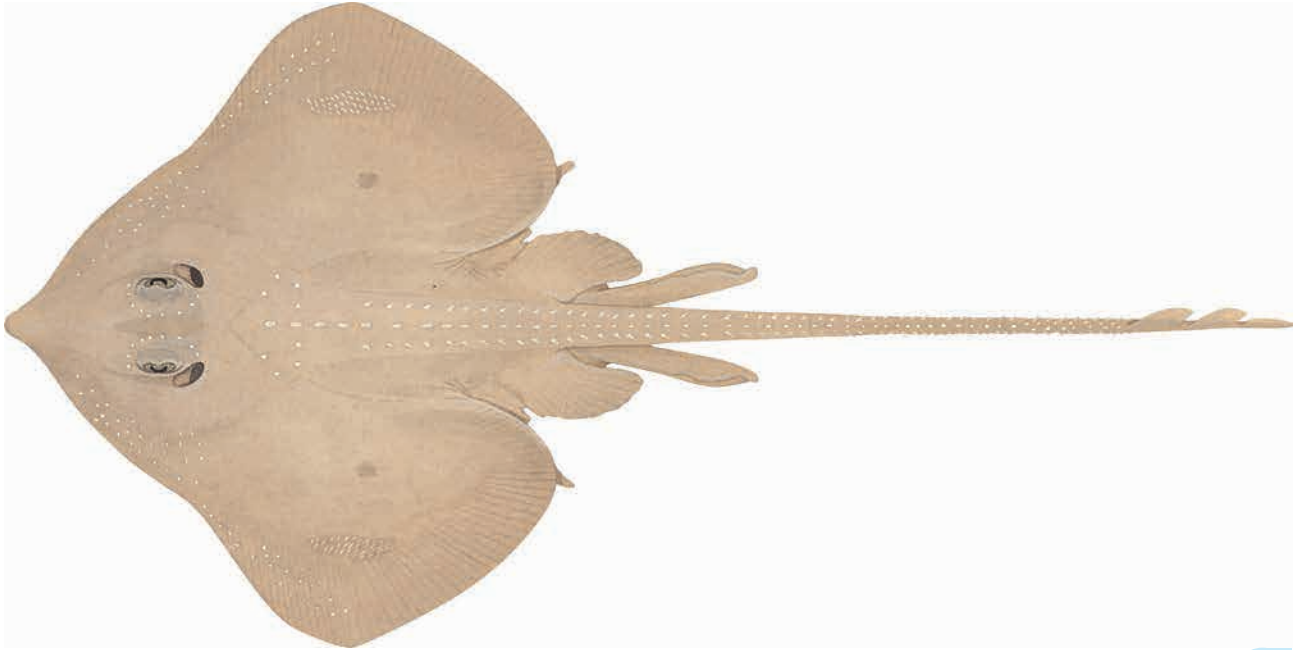
SIZE. Attains at least 31 cm TL; known from 2 specimens.

HABITAT AND BIOLOGY. Eastern Indian Ocean; Bali Sea (off Indonesia). Demersal on upper insular slopes at ~290 m depth. Biology unknown and more specimens needed.

SIMILAR SPECIES. Only member of the genus *Fenestraja* known to occur in the Eastern Indian Ocean. Also unique within the genus in having a pectoral marking consisting of an ocellus-like blotch.

GULF PYGMY SKATE

21.16

Fenestraja sinusmexicanus (Bigelow & Schroeder, 1950)

DD

IDENTIFICATION. Small skate with a heart-shaped disc (1.1–1.2 times as broad as long), snout obtuse and rather long without a projection at its tip, anterior and posterior pelvic-fin lobes connected but deeply notched, 2 small rostral thorns in young, rosette of 7–11 small orbital thorns and 1 thorn beside spiracle, and tail long and slender (65–67% TL). Disc thin, anterior margin evenly convex in young and becoming slightly undulate in adults; outer and inner pectoral-fin corners rounded. Preorbital snout length 3.3–3.6 times interorbital width; eyes large, horizontal orbit length ~1.3 times as long as interorbital width. Tooth rows in upper jaw 40–46. Dorsal disc densely covered with coarse spinules, skin smooth ventrally. Triangular patch of 8–12 thorns on nape and shoulder; median row of 56–64 irregular thorns on trunk and tail from scapula to first dorsal fin, an additional irregular parallel row of smaller thorns on trunk and tail on each side of median row; thorns of these 3 rows reducing in size before first dorsal fin. Pelvic fins large, anterior lobe long and slender, length equal to or longer than posterior lobe. Dorsal fins similar in shape and size with rounded apices, both dorsal fins located near tail tip, confluent at bases, or separated by interspace equal to ~1/3 first dorsal-fin base. Pectoral-fin radials 57–61.

COLOUR. Dorsal surface of disc brownish purple, with or without irregular dark spots and blotches; ventral surface plain yellowish white.



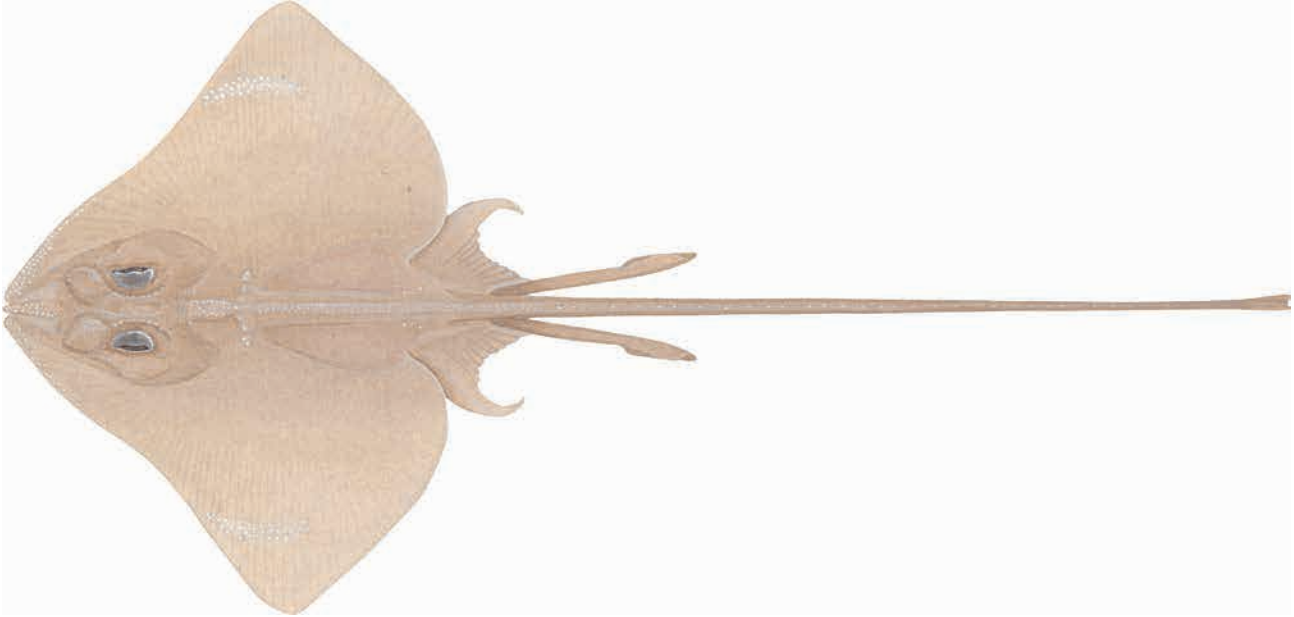
SIZE. Attains ~36 cm TL. Males mature at ~31–34 cm TL; smallest known juvenile 12 cm TL.

HABITAT AND BIOLOGY. Western Central Atlantic; Florida (USA) to western Venezuela, including Gulf of Mexico and Caribbean. Demersal on continental shelf and slope at 60–1095 m depths. Biology unknown.

SIMILAR SPECIES. Distinguishable from other pygmy skates of the genus *Fenestraja* from the Western Atlantic by the absence of dark crossbars on its tail, and having 3 longitudinal rows of thorns on the trunk and tail.

ATLANTIC FINLESS SKATE

21.17

Gurgesiella atlantica (Bigelow & Schroeder, 1962)

DD

IDENTIFICATION. Medium-sized plain-coloured skate with a very broad rhombic to heart-shaped disc (width 1.4–1.7 times length), rather short and obtuse snout with a narrow rostral cartilage, large eyes, single-lobed pelvic fins, very long tail without dorsal fins, and caudal fin long with well-developed upper and lower lobes. Disc mid-anterior margin concave, deepest in adult males; pectoral-fin apices somewhat angular. Snout tip with very small flat protuberance; snout length ~2–2.4 times orbit length; interorbital space slightly shorter than orbit length; nasal curtain long with large lobes. Mouth strongly arched; tooth rows in upper jaw 26–44. Dorsal disc entirely covered with fine denticles with stellate bases, more obvious in large individuals; ventral surface prickly over tail and central disc but smooth toward pectoral-fin margins. Adult males with alar thorns and broad band of sharp malar thorns along anterior disc margin, but thorns otherwise absent; large females with small thorns along mid-line of disc and tail. Tail extremely slender, almost filamentous (length ~1.9–2 times precloacal length), with narrow lateral skin folds. Pelvic fins long, anterior and posterior lobes fused, extended laterally and pointed. Caudal fin well developed, lower lobe almost as large as upper lobe. Pectoral-fin radials 71–75. Precaudal tail vertebrae 92–97. Claspers of adult male long and slender (reaching beyond pelvic-fin tips a distance equal to head length).



COLOUR. Disc uniformly pale brown or irregularly blotched; tail darker brown to banded; caudal fin usually black. Ventral surface of disc brownish and pink, sensory pores not evident.

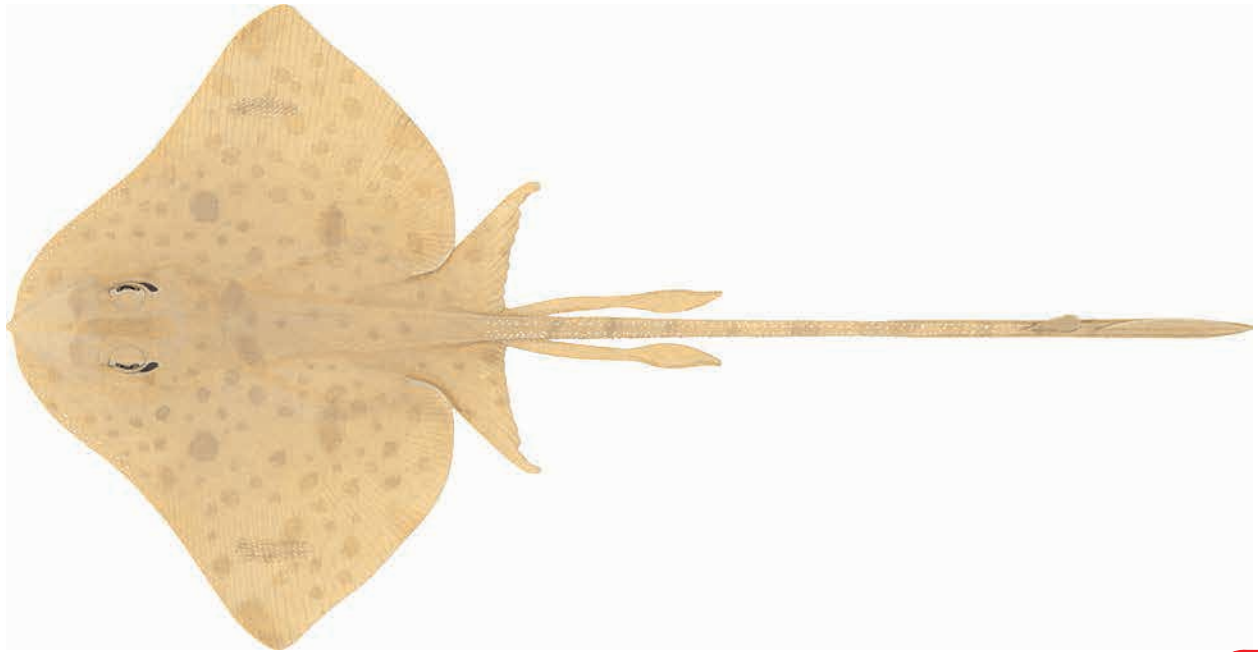
SIZE. Attains ~52 cm TL. Males mature at ~39 cm TL, females 44 cm TL.

HABITAT AND BIOLOGY. Western Central Atlantic; Nicaragua to northern Brazil. Demersal in deep water on continental slope at 245–960 m depths. Life history unknown.

SIMILAR SPECIES. The unusual disc shape with an especially long tail lacking dorsal fins makes this species immediately recognisable from other Atlantic skates.

ONEFIN SKATE

21.18

Gurgesiella dorsalifera McEachran & Compagno, 1980

VU

IDENTIFICATION. Medium-sized blotched skate with a broad rhombic to heart-shaped disc (width 1.4–1.6 times length), rather short and obtuse snout with narrow rostral cartilage, large eyes, single-lobed pelvic fins, very long tail with 1 dorsal fin, and prominent caudal fin. Disc mid-anterior margin concave, not noticeably more concave in adult males; pectoral-fin apices narrowly rounded to angular. Snout tip with small protuberance; snout length ~2–2.8 times orbit length; interorbital space usually shorter than orbit length; nasal curtain long with large lobes. Mouth strongly arched; tooth rows in upper jaw 25–45. Dorsal disc covered with fine denticles with stellate bases, thicker along mid-disc; ventral surface and pelvic fins without denticles. Adult male with alar thorns and broad band of sharp malar thorns along anterior disc margin; 2 irregular rows of thorns on either side of mid-line of tail and additional lateral row. Tail extremely slender, almost filamentous (length ~1.6–2.1 times precloacal length), with lateral skin folds expanded toward tail tip. Pelvic fins long, anterior and posterior lobes fused, extended laterally and bluntly pointed. Caudal fin with obvious upper and lower lobes. Pectoral-fin radials 70–73. Precaudal tail vertebrae 108–114. Claspers of adult male long and very slender (reaching beyond pelvic-fin tips a distance slightly exceeding dorsal head length).

COLOUR. Disc pale brownish, covered with large, indistinct brownish blotches; blotches irregularly shaped



and evenly spaced; 6–8 blotches on tail; dorsal and caudal-fins dark brown. Ventral surface whitish, disc margins brownish; sensory pores not evident.

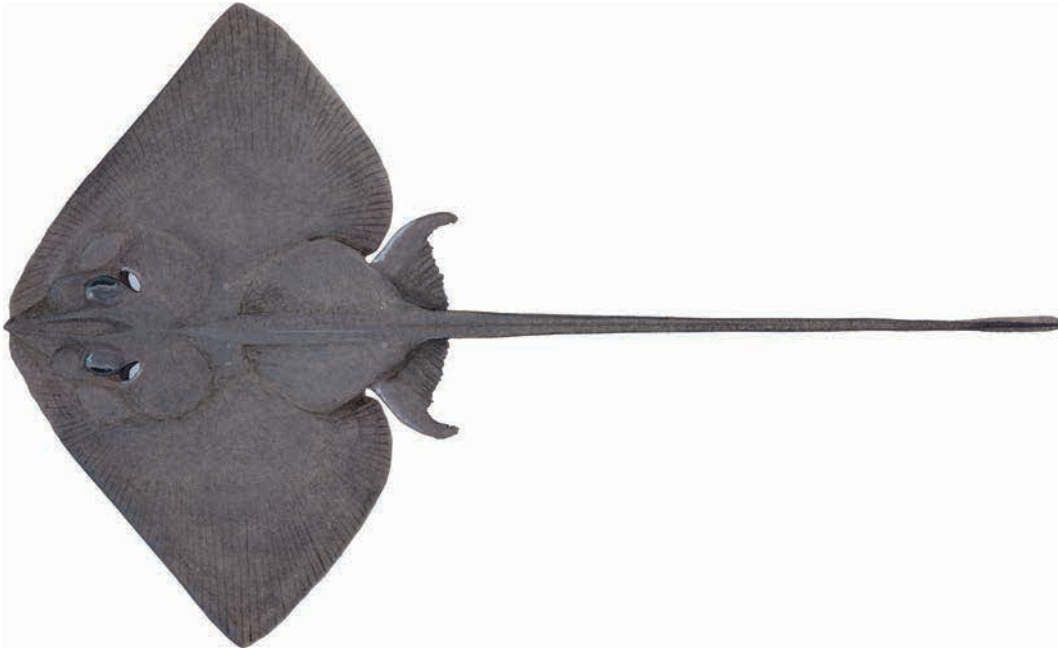
SIZE. Attains ~53 cm TL. Males mature at ~38–42 cm TL, females 37 cm TL.

HABITAT AND BIOLOGY. South-West Atlantic; off northern and southern Brazil. Demersal on continental slope at 400–800 m depths. Life history unknown.

SIMILAR SPECIES. Only member of this small group of unusually long and thin-tailed skates with a single dorsal fin. Other members of the genus lack dorsal fins.

DUSKY FINLESS SKATE

21.19

Gurgesiella furoescens de Buen, 1959

LC

IDENTIFICATION. Medium-sized, plain-coloured skate with a broad rhombic to heart-shaped disc (width 1.5–1.6 times length), very short and extremely obtuse snout with narrow rostral cartilage, large eyes, single-lobed pelvic fins, very long tail without dorsal fins, and well-developed caudal fin with deep upper and lower lobes. Disc mid-anterior margin concave, very deep in adult males; pectoral-fin apices somewhat angular. Snout tip with short flat protuberance; snout length ~1.6–2 times orbit length; interorbital space subequal to orbit length; nasal curtain long with large lobes. Mouth strongly arched; tooth rows in upper jaw 27–43. Dorsal disc surface covered sparsely with fine granular denticles; adult male with alar thorns and narrow band of sharp malar thorns along anterior disc margin; ventral surface smooth. No other thorns on disc or tail. Tail extremely slender (length ~1.6 times precloacal length), narrow based, with well-developed lateral skin folds near its tip. Pelvic fins long, anterior and posterior lobes fused, extended laterally and pointed. Caudal-fin lower lobe well developed, almost as large as upper lobe. Pectoral-fin radials 66–69. Precaudal tail vertebrae 92–97. Claspers of adult male extremely long and slender (reaching beyond pelvic-fin tips a distance well exceeding dorsal head length).

COLOUR. Disc uniformly greyish to dark brownish black above, tips of pelvic fins paler. Ventral surface of disc white



with a narrow black posterior margin, sensory pores not evident; tail dark brown.

SIZE. Attains ~57 cm TL. Males mature at ~51 cm TL, females 55 cm TL.

HABITAT AND BIOLOGY. South-East Pacific; known distribution patchy, off northern Peru and Chile. Demersal in deep water on continental slope at 300–960 m depths. Life history unknown.

SIMILAR SPECIES. A characteristic body shape, long tail lacking dorsal fins, and single-lobed pelvic fins, distinguish this species from all other Pacific skates.

Weigmann S., Séret Bernard, Last P.R., McEachran J.D.

Pygmy skates : family Gurgesiellidae.

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