

GIANT GUITARFISHES

Family Glaucostegidae

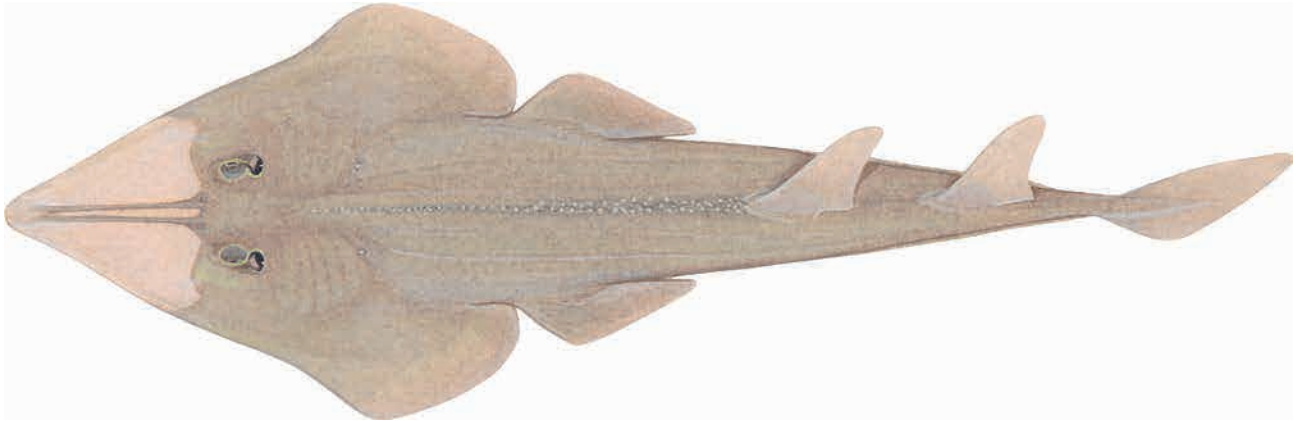
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Giant guitarfishes are large to very large rays (most species exceed 2 m TL and some reach 3 m TL or more) with a flattened, spade-like to wedge-shaped disc and a robust, depressed shark-like trunk. Their snout is typically long and its tip varies from being acute or bluntly rounded, to protruding forward as a large bulbous lobe. Eyes typically small and widely separated, spiracles also small with 1–2 variably developed folds. Nostrils are long and almost transverse to oblique with many lamellae (up to 94). They lack a nasal curtain and the anterior nasal flaps are relatively narrow and joined posteriorly to the inner edge of the nostril. Mouth profile is straight. The skin is covered with fine denticles, with small thorns variably confined to a row along mid-line of body, and small patches near eyes, on shoulder and sometimes on snout (often better developed in young than adults). Long-based pelvic fins are positioned laterally, posterior to the disc. Two similarly shaped, upright dorsal fins are well separated, and the first is positioned well behind the tips of the pelvic fins. A small, posteriorly directed caudal fin lacks an obvious ventral lobe typical of wedgefishes (Rhinidae). Colour is plain brownish or greyish dorsally with anterior cranium and rostral cartilage sharply demarcated from a much paler translucent snout. None of the species has spots, stripes or blotches. The undersurface is usually white but the ventral snout appears weakly translucent and its tip can have a black blotch. Giant guitarfishes were only recently recognised as a separate family, with a single genus and 6 valid species. The group was once classified with guitarfishes (Rhinobatidae) but molecular analyses have shown that they are more closely related to sawfishes (Pristidae). Giant guitarfishes are primarily inhabitants of subtropical and tropical inshore continental and insular seas of the Indo–Pacific and Eastern Atlantic, including the Mediterranean Sea. They occur in intertidal habitats and some species have been recorded from fresh and brackish waters. Bottom-dwellers, often resting on soft mud or sandy bottoms, they are also strong swimmers. All species are ovoviviparous. They feed mainly on benthic invertebrates, but their diet includes small benthic fishes. Members of the group are caught in Asia, West Africa and northern Africa (Mediterranean Sea) for their meat, usually as bycatch of artisanal and trawl fisheries. Large fins of adult rays are valuable in international shark-fin markets. Consequently, conservation concerns exist for guitarfishes in some regions due to overfishing.

BLACKCHIN GUITARFISH

11.1

Glaucostegus cemiculus (Geoffroy St Hilaire, 1817)



EN

IDENTIFICATION. Large to very large guitarfish with a plain beige to brownish wedge-shaped disc, long and rather broad triangular snout with a broadly rounded rostral cartilage at its tip, and wide oblique nostrils with a narrow anterior opening. Disc thickened centrally, length 1.2–1.3 times width; anterior margins slightly undulate, often weakly concave before broadly rounded outer corner. Snout moderately acute, angle 59–63°; tip narrowly rounded and not extended forward as a distinct lobe; orbit large, length 5–6 times in preorbital length, 1.5–2 in interorbital space. Rostral ridges narrowly separated posteriorly and almost joined anteriorly. Two prominent fleshy spiracular folds, innermost fold smaller. Tooth rows in upper jaw 62–72. Nostrils large and oblique, length 1.4 in internasal width; ~81 nasal lamellae; anterior nasal flaps confined to anterior margin of nostril. Skin rough, entirely covered with small denticles. Thorns well developed, usually along edge of rostral cartilage and small patches around orbits and above spiracles; 1–3 thorns on each shoulder, persisting in adults; a median row of enlarged thorns extending from nape to first dorsal fin and a few thorns between dorsal fins. Tail long, ~1.5 times disc length; dorsal fins large and rather widely spaced, ~2.1 times base length of first dorsal fin, apices narrowly rounded. Pectoral-fin radials 68–73. Total vertebrae 204–212.

COLOUR. Dorsal side uniform beige to light brown, except for semi-transparent area on snout. Ventral side white; usually with a blackish blotch on tip of snout in young, often fading in adults.



SIZE. Probably reaches 265 cm TL, commonly ~200 cm TL. Males mature at 138–154 cm TL, females at 153–164 cm TL; mature at smaller size (males ~100–110 cm TL, females ~110 cm TL) in Mediterranean Sea. Birth size ~34 cm TL.

HABITAT AND BIOLOGY. Eastern Central Atlantic; Portugal to Angola, including Mediterranean Sea (possibly now more restricted). Coastal and benthic on sandy and muddy bottoms, from intertidal zone to at least 80 m depth. Feeds mainly on benthic crustaceans and small fishes. Produces litters up to 20 pups, more commonly 6–7 pups.

SIMILAR SPECIES. Distinguished from smaller guitarfishes (Rhinobatidae) of the Eastern Atlantic by its larger size, forwardly positioned first dorsal fin, and a black blotch on its ventral snout tip.

SHARPNOSE GUITARFISH

Glaucostegus granulatus (Cuvier, 1829)

VU

IDENTIFICATION. Very large, yellowish, brownish or greyish guitarfish with a narrowly wedge-shaped disc, very long and narrow triangular snout with pointed tip, and broad oblique nostrils with narrow anterior opening. Disc thickened centrally, length 1.3–1.4 times width; anterior margin almost straight anteriorly, often weakly concave before broadly rounded outer corner. Snout acute, angle 46–52°; tip bluntly pointed and never protruding forward as distinct lobe; orbit very small in adults, length 9–16 times in preorbital length, 2–3.8 in interorbital space. Rostral ridges almost joined along their entire length; margin of cranium sharply demarcated before eyes. Spiracular folds very short and widely separated. Nostrils about half of mouth width, subequal to internasal width; ~55–59 nasal lamellae; anterior nasal flaps barely penetrating into internasal space, their interspace equal to 2.2–3.2 times length of posterior nasal aperture. Skin rough, densely covered with small denticles; more coarsely granular on dorsal surface than ventrally, enlarged between orbits and in distinct band between nape and first dorsal fin. Pair of large thorns on each shoulder and similar thorns in irregular, median row(s) along mid-line; thorns variable in shape in adults; large thorns in single, well-defined median row, and enlarged along rostrum and around orbits in young. Tail length 1–1.4 times longer than disc; dorsal fins narrowly spaced, interspace 1.3–1.6 times base length of first dorsal fin, apices rounded to bluntly pointed.

COLOUR. Dorsal surface uniformly yellowish brown to greyish, fin margins usually paler; snout sides translucent,



sharply demarcated. Ventral surface whitish, snout translucent with white rostral cartilage.

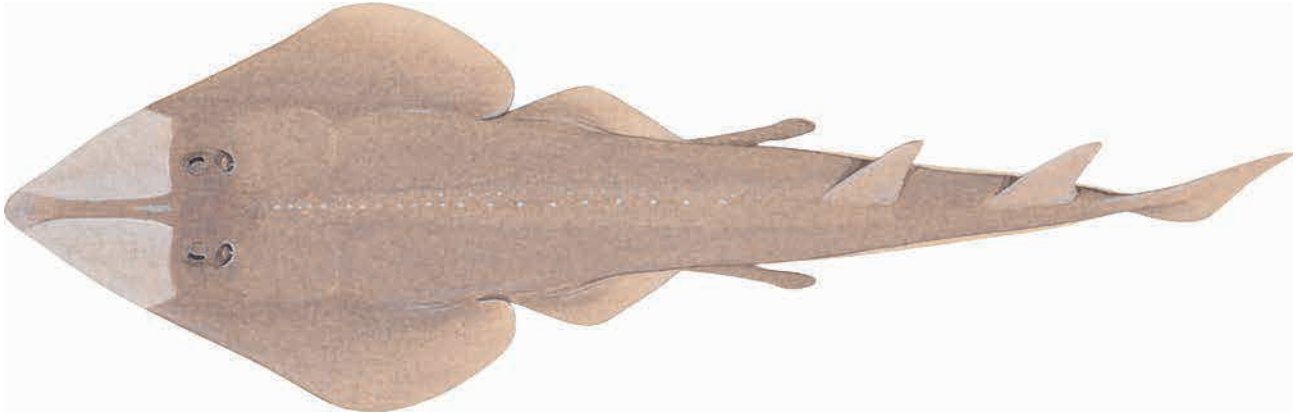
SIZE. To at least 229 cm TL. Mature males (~98 cm TL) may be of a second similar species.

HABITAT AND BIOLOGY. Northern Indian Ocean; Persian Gulf to Myanmar. Primarily benthic, coastal to mid-continental shelf, to at least 120 m depth. Produces 6–10 pups a litter.

SIMILAR SPECIES. Amongst the largest guitarfishes, most common off Sri Lanka and eastern India. A smaller relative, also with a similarly elongate body and long-pointed snout, may exist in the Arabian Sea.

HALAVI GUITARFISH

11.3

Glaucostegus halavi (Forsskål, 1775)

DD

IDENTIFICATION. Large, plain yellowish, brownish or greyish guitarfish with a wedge-shaped disc, wide triangular snout with a broadly rounded cartilage at its tip, and rather broad oblique nostrils with a narrow anterior opening. Disc thickened centrally, length 1.2–1.3 times width; anterior margin almost straight, outer corner broadly rounded. Snout moderately acute, angle $\sim 65^\circ$; tip broadly rounded and never extended forward as a distinct lobe; orbit small, length 2.1–2.7 times in interorbital space, 6.3–7.8 in preorbital length in adults (~ 4.5 in young). Rostral ridges almost joined along their entire length; margin of cranium very sharply demarcated before eyes. Spiracular folds very short and widely separated, outer fold usually largest. Nostrils about $2/3$ mouth width, 1.2–1.3 times internasal width; ~ 61 nasal lamellae; anterior nasal flaps barely penetrating into internasal space, their interspace equal to 2.2–2.4 times length of posterior nasal aperture. Skin rough, covered with small denticles on dorsal surface; denticles best developed between orbits, on rostrum and along central body in young, less obvious in adults. Thorns in median row along body patchy and often forming ridge in adults; in young, enlarged, forming a single, well-defined median row, single large thorn on each shoulder, and those along rostrum and around orbits less well developed. Tail slightly longer than disc; dorsal fins well separated, interspace 1.5–1.9 times base length of first dorsal fin, apices bluntly pointed.

COLOUR. Dorsal side uniformly yellowish to greyish brown, dorsal fins and caudal fins yellowish; sides of snout



translucent, sharply demarcated from yellowish rostral shaft and anterior part of cranium. Ventral surface almost entirely white; snout translucent with whitish rostral cartilage.

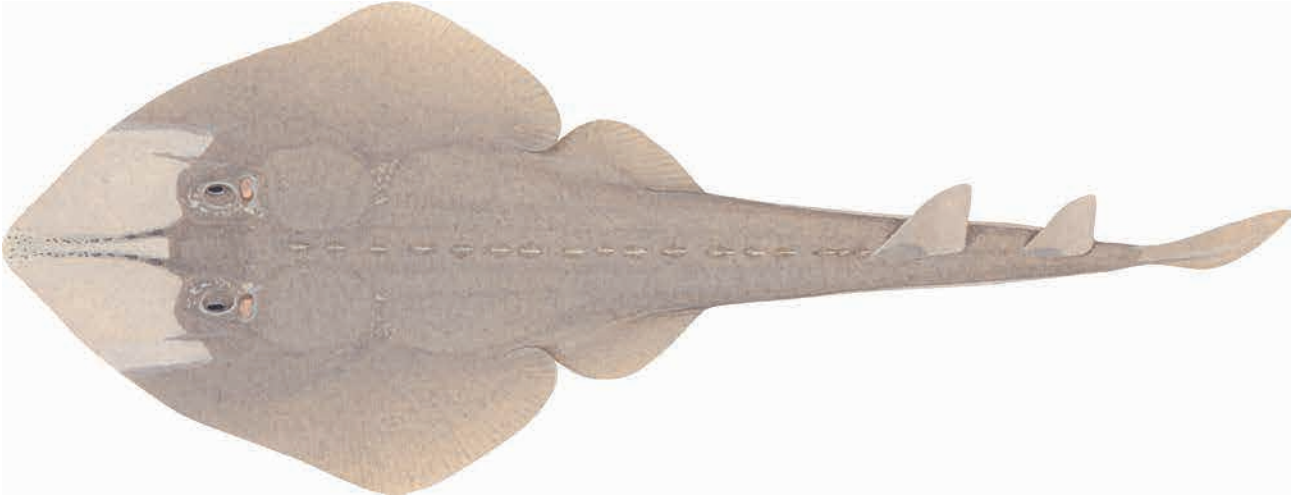
SIZE. To at least 171 cm TL. Matures at ~ 83 cm TL; born at ~ 29 cm TL.

HABITAT AND BIOLOGY. Northern Indian Ocean; Persian Gulf, and Arabian and Red Seas. Benthic, often in very shallow water near the coast and offshore on the continental shelf to depths of at least 100 m. In the Red Sea, produces up to 10 pups a litter, mainly from May to October. Feeds mainly on benthic invertebrates.

SIMILAR SPECIES. Resembles the Giant Guitarfish (11.6) from further east in the Indo-Pacific but is a smaller species with relatively narrow nostrils, and the snout tip is more broadly rounded and never extended forward to form a lobe.

WIDENOSE GUITARFISH

11.4

Glaucostegus obtusus (Müller & Henle, 1841)

VU

IDENTIFICATION. Smallest giant guitarfish with a uniform greyish to brownish body, characteristic shovel-shaped disc, snout short and broadly triangular, and broad oblique nostrils with an oval anterior opening. Disc flattened centrally, length ~1.2 times its width; anterior margin largely convex, outer corner broadly rounded to abruptly angular. Snout relatively obtuse, angle ~80°; tip broadly rounded and not extended forward as a lobe; orbit very small, length ~6.5 times in preorbital length, 2.5–2.7 in interorbital space. Rostral ridges well separated; margin of cranium sharply demarcated before eyes. One small spiracular fold. Nostrils much shorter than mouth, subequal to internasal width; ~50–52 nasal lamellae; anterior nasal flaps barely penetrating into internasal space, their interspace equal to 2.4–2.5 times length of posterior nasal aperture. Skin rough, covered with small denticles, enlarged slightly and more granular on dorsal surface than ventrally. Thorns in irregular row along mid-line of body in young, irregular in shape, often obscure in adults; no obvious patch on each shoulder or greatly enlarged thorns on snout tip and around orbits. Tail long, 1.4–1.6 times disc length. Dorsal fins short, apices rounded; close together, interspace exceeding twice base length of first dorsal fin; well separated from pelvic fins.

COLOUR. Dorsal side uniformly greyish to greyish brown; dorsal fins, and hind margins of pectoral and pelvic fins, paler yellowish; sides of snout whitish to translucent, sharply



demarcated from rostral ridges and anterior part of cranium; rostral ridges darker than rest of rostrum. Ventral surface white; anterior snout translucent or white.

SIZE. To 93 cm TL. Males mature at ~48 cm TL.

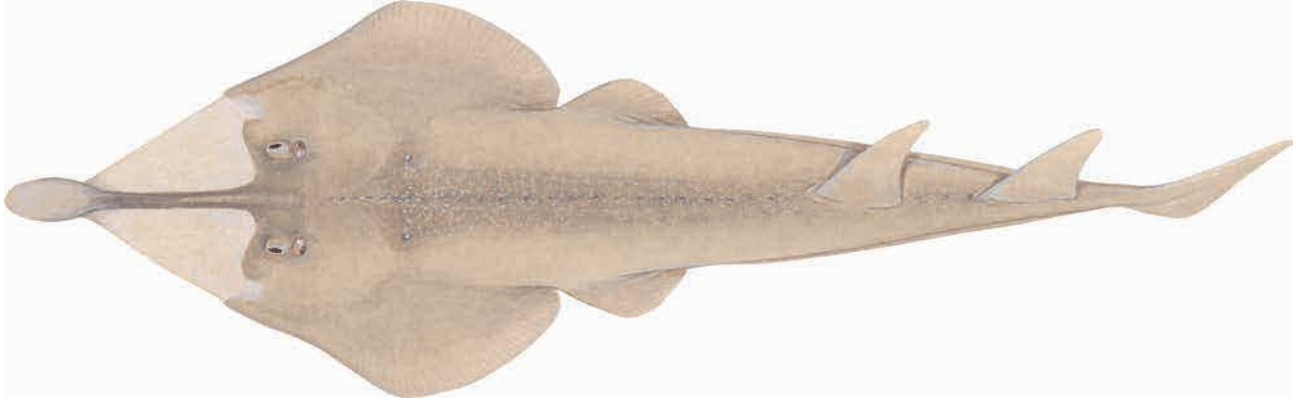
HABITAT AND BIOLOGY. Northern Indian Ocean; Pakistan to Thailand, eastern limits unclear. Benthic inshore and over inner continental and insular shelves to ~60 m depth. Little known of its biology.

SIMILAR SPECIES. Co-occurs with a larger member of the genus, the Sharpnose Guitarfish (11.2). However, the Widenose Guitarfish is the only species of the genus with a very short and obtuse snout.

CLUBNOSE GUITARFISH

11.5

Glaucostegus thouin (Anonymous, 1798)



VU

IDENTIFICATION. Very large, plain yellowish, brownish or greyish guitarfish with a rather large wedge-shaped disc, long snout with a lobe-like bulbous tip, and very broad oblique nostrils with a narrow anterior opening. Disc thickened centrally, length ~1.4–1.5 times its width; anterior margin almost straight to bulbous snout tip, outer corner broadly rounded. Snout acute, angle ~55°, bulbous tip narrowly oval and protruding well forward; orbit small, length 9–12 times in preorbital length, 2.5–2.9 in interorbital space. Rostral ridges almost joined along their entire length; margin of cranium sharply demarcated before eyes. Spiracular folds very short and widely separated. Nostrils almost as wide as mouth, ~1.9 times internasal width in adults; ~84 nasal lamellae; anterior nasal flaps barely penetrating into internasal space, their interspace equal to ~1.5 times length of posterior nasal aperture. Skin rough, covered with small denticles, larger and more granular on dorsal surface than ventrally. Small thorns in row along mid-line of body and band of small thornlets on interorbit, irregular in shape and absent from each shoulder; thorns relatively larger and median row well defined in juveniles, no enlarged thorns on snout tip or around orbits. Tail ~2 times longer than disc; dorsal fins narrowly spaced, interspace 2–2.5 times base length of first dorsal fin, apices pointed.

COLOUR. Dorsal side mainly uniformly yellowish, sometimes brownish or greyish; most of snout translucent, sharply demarcated from rostral shaft and anterior part of



cranium; bulbous snout tip greyish. Ventral surface white, snout apex lacking dark blotch; white rostral shaft strongly demarcated from rest of snout.

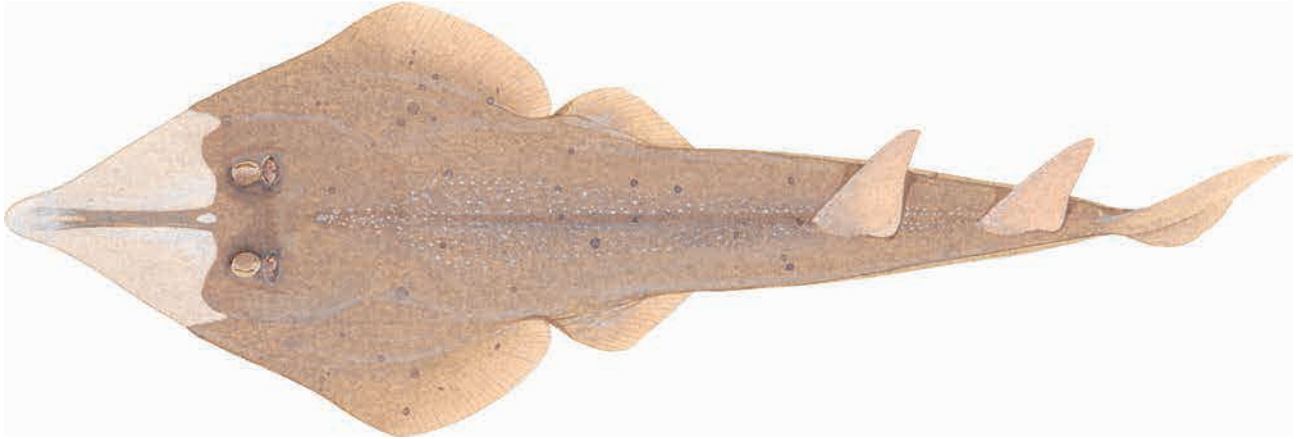
SIZE. Reported to reach 300 cm TL, more typically up to 250 cm TL.

HABITAT AND BIOLOGY. Indo–West Pacific; India to Borneo (Indonesia), also a reliable record from Red Sea. Benthic inshore and across inner continental and insular shelves to ~60 m depth. Little known of its biology.

SIMILAR SPECIES. A characteristic bulbous lobe projecting forward of the snout tip distinguishes it from all other guitarfishes. Limits of its distribution in the Western Indian Ocean need to be established.

GIANT GUITARFISH

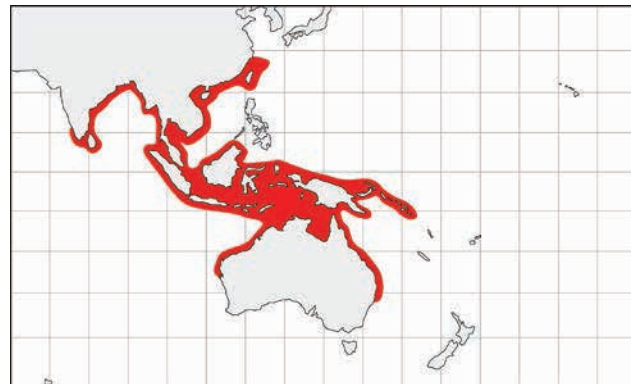
11.6

Glaucostegus typus (Bennett, 1830)

VU

IDENTIFICATION. Very large, plain yellowish, brownish or greyish guitarfish with a rather large wedge-shaped disc, long and triangular snout, and very broad semi-oblique nostrils with a narrow anterior opening. Disc thickened centrally, length 1.2–1.3 times its width; anterior margin almost straight, outer corner broadly rounded. Snout moderately acute, angle $\sim 63^\circ$; tip narrowly rounded and sometimes extended forward as a short lobe; orbit small, length 6.1–7.8 times in preorbital length, 1.8–2.4 in interorbital space. Rostral ridges almost joined along their entire length; margin of cranium sharply demarcated before eyes. Spiracular folds very short and widely separated. Nostrils almost as wide as mouth, 2.2–2.4 times internasal width in adults; ~ 94 nasal lamellae; anterior nasal flaps barely penetrating internasal space, their interspace 1.4–1.6 times length of posterior nasal aperture. Skin rough, covered with small denticles, enlarged slightly and more granular on dorsal surface than ventrally. Thorns in row along mid-line of body, irregular in shape; no obvious patch on each shoulder or greatly enlarged thorns on snout tip and around orbits; thorns relatively larger and median row better defined in juveniles. Tail 1.3–1.5 times longer than disc; dorsal fins rather narrowly spaced, interspace slightly more than twice base length of first dorsal fin, apices pointed. Total vertebrae 198–209.

COLOUR. Dorsal side uniformly yellowish to greyish brown, rarely with irregular dark blotches; dorsal fins, and hind margins of pectoral and pelvic fins, paler yellowish; sides of snout whitish or translucent, sharply demarcated from rostral shaft and anterior part of cranium. Ventral



surface predominantly white; snout apex usually with dark blotch.

SIZE. To at least 270 cm TL. Matures at 150–180 cm TL; born at 38–40 cm TL.

HABITAT AND BIOLOGY. Indo–West Pacific; India to East China Sea and Australia. Mostly benthic near the coast but extends across the inner continental and insular shelves to at least 100 m depth. Adults often move to very shallow water near the shore at night, presumably to avoid predators or search for prey; thought to penetrate into freshwaters. Feeds mainly on prawns and crabs.

SIMILAR SPECIES. Formerly known by several scientific names in the Indo–Pacific but these all appear to be a single species. Occurs together with the Clubnose Guitarfish (11.5) but lacks an unusually large bulbous lobe at the snout tip (present in the latter).

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