

13

FAN RAYS

Family Platyrhinidae

P.R. Last & B. Séret

Fanrays are small to medium-sized rays (adults from 30–90 cm TL) with a firm body, large, flattened subcircular to shovel-shaped disc and an elongate tapering tail. Pectoral-fin rays, which form the disc, extend forward to snout tip and beyond pelvic-fin origins. Nostrils are positioned close to the mouth, and eyes are narrowly separated and well removed from disc margin. Anterior nasal flaps short and not joined together to form a broad, flap-like nasal curtain. No dermal folds on spiracles. Upper surface with sharp thorns or enlarged denticles on head, shoulders and in row along mid-line of body. Two similar dorsal fins located close together on tail and positioned well behind pelvic fins. Caudal fin elongate and without a distinct lower lobe. Tail slender, abruptly narrower than trunk, lateral folds well developed, and lacking a stinging spine. Colour plain or with transverse stripes, but lacking pectoral ocelli. Ventral surface usually uniformly white. This small ray family includes 2 genera and 4 valid species. Panrays (Zanobatidae) and some banjo rays (Trygonorrhinidae) have a similar body shape but their dorsal fins are positioned relatively further forward on the tail. Fanrays occur in cool-temperate to tropical continental parts of the North-West and Eastern Central Pacific. Demersal in shallow water, living on a variety of soft substrates from nearshore to at least a depth of 137 m. None of the species ventures into freshwater. All species are ovoviviparous. Life histories mostly little known, they feed primarily on small marine invertebrates, including crustaceans, molluscs and worms. Taken mainly as bycatch of net fisheries, and eaten when fresh or salt dried.

KEY TO PLATYRHINID GENERA

Thorns in 1-2 narrowly separated median rows on tail (fig. 1); orbits relatively narrowly separated, snout length 2 or more times interorbital space (fig. 1); Indo-West Pacific
 *Platyrhina* (4 species; fig. 1, pp. 129-132)

Thorns in 3 widely separated rows on tail (fig. 2); orbits relatively widely separated, snout length less than 1.5 times interorbital space (fig. 2); Eastern Pacific
 *Platyrhinoidis* (1 species; fig. 2, p. 133)

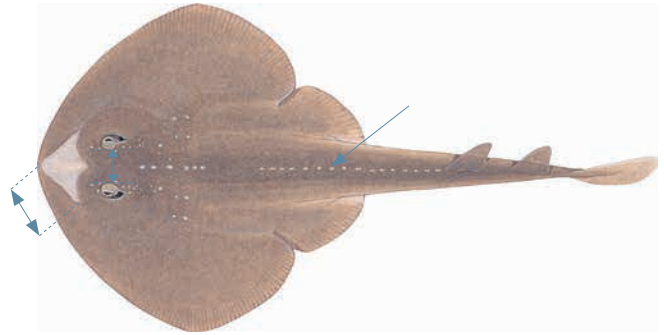


fig. 1

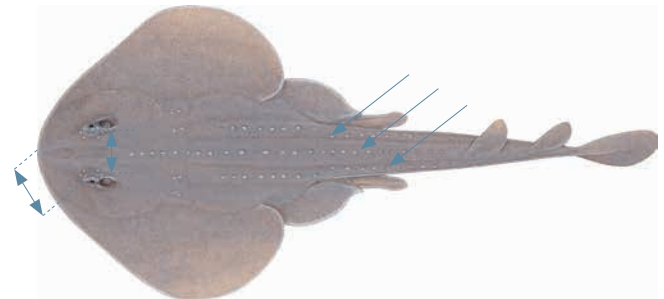
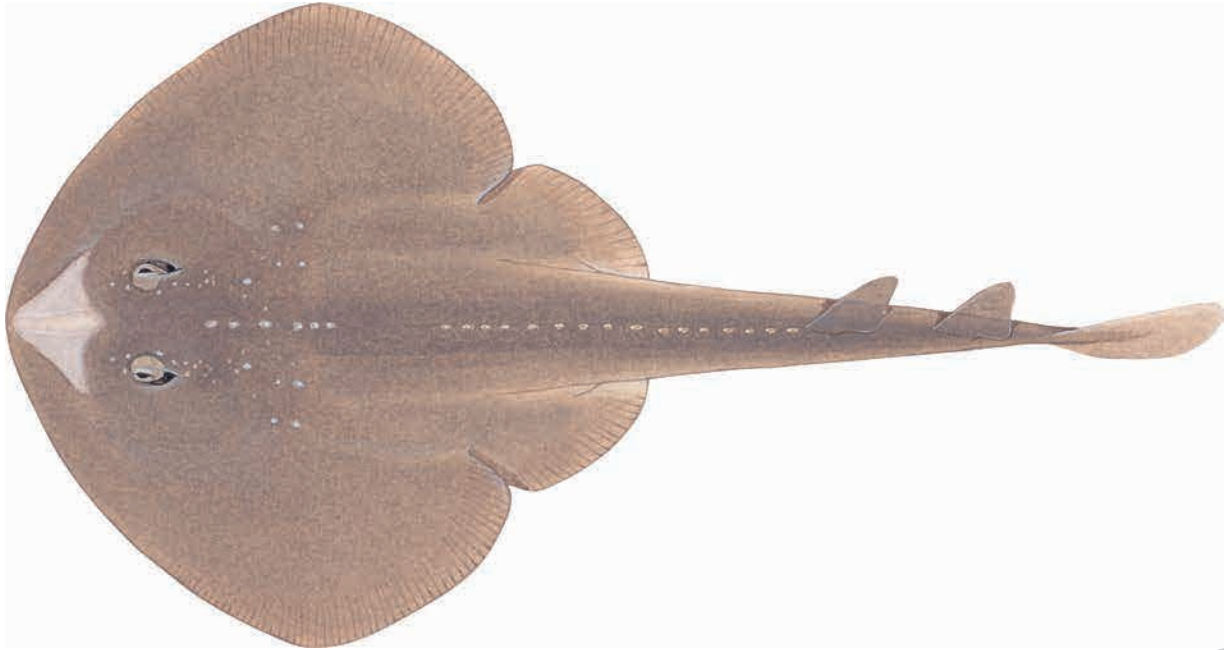


fig. 2

HYUGA FANRAY

13.1

Platyrrhina hyugaensis Iwatsuki, Miyamoto & Nakaya, 2011

NE

IDENTIFICATION. Medium-sized fanray with a shovel-shaped disc, long and slender tail with a single row of hooked thorns, large median and scapular thorns, pair of small thorns preceding main scapular patch, and thorns on orbit, nape and scapular region not broadly encircled by pale pigment. Disc length much shorter than tail. Snout broadly wedge-shaped, rostral ridges probably diverging. Orbits rather narrowly separated, preorbital length ~4 times orbit length, ~2.5 times interorbital space. Nostrils narrow, slightly oblique and well separated; connected to mouth by a wide groove; anterior nasal flaps extending slightly into inter-nasal space. Skin velvety, covered with minute dermal denticles of uniform size and shape, no obvious larger dermal denticles; no cluster of thornlets at snout tip or dense band of smaller thornlets around anterior margin of disc. Thorns well developed, sharp, hooked, not on prominent ridges; regular median row extending from nape to first dorsal fin; 3–6 orbital thorns, 2 symmetrical shoulder patches on each side of disc each with 2 thorns, an additional thorn preceding each innermost patch; no thorns along rostral ridges. Dorsal-fin bases separated by more than 1.4–2 times base length of first. Clasper long, tip well short of first dorsal fin in adult males.

COLOUR. Greyish brown above, darker centrally on disc and tail; fins paler than disc, thorns pale. Ventral side mainly white, outer margins of pectoral and pelvic fins dusky.



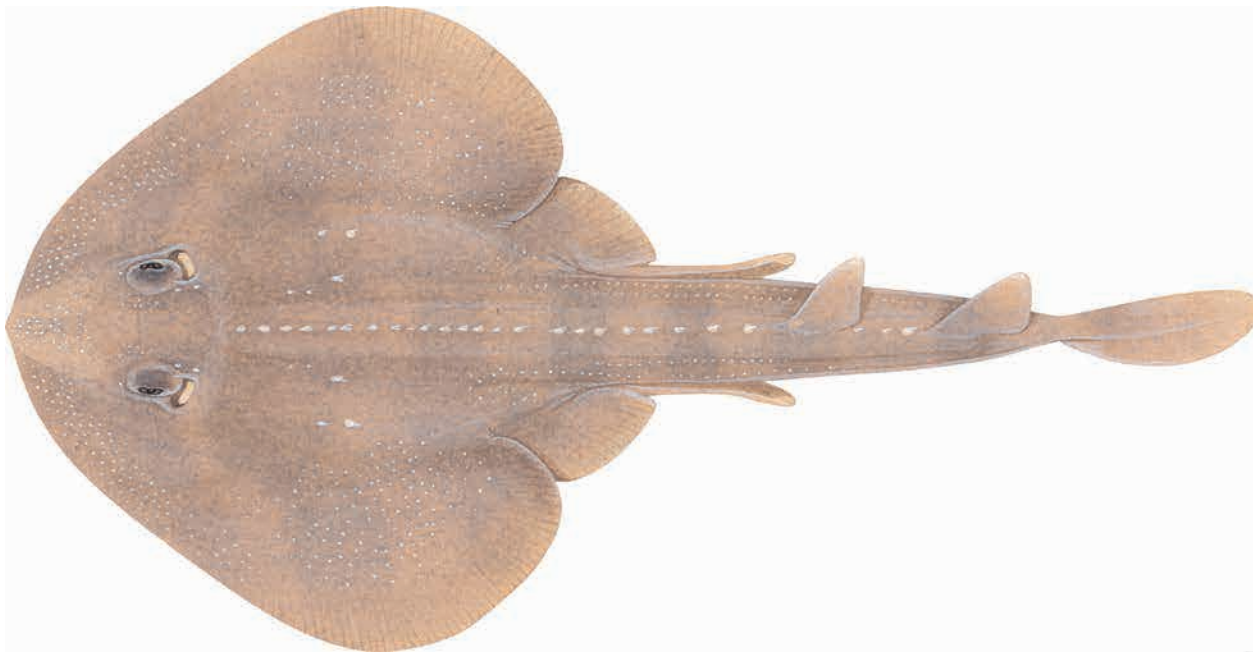
SIZE. Attains at least 43 cm TL, males mature from ~20 cm TL.

HABITAT AND BIOLOGY. North-West Pacific, endemic to southern Japan. Narrow-ranging benthic ray, occurring inshore at depths of 8–50 m, but possibly moving deeper offshore in cool winter months.

SIMILAR SPECIES. Only recently discovered. Most similar to the Yellowspotted Fanray (13.4) in general squamation (having only a single thorn row on tail), but thorns around the orbit and central disc are not demarcated by pale blotches (highlighted in the Yellowspotted Fanray).

INDIAN FANRAY

13.2

Platyrhina psomadakisi White & Last, 2016

NE

IDENTIFICATION. Medium-sized fanray with a rough, broadly rounded to shovel-shaped disc, slender tail with a single row of enlarged hooked thorns (2 pairs of lateral rows of thornlets in adults), large median and scapular thorns, and no obvious pair of thorns preceding main scapular patch but upper disc with patches of prickly denticles. Disc length much shorter than tail. Snout short, broadly wedge-shaped (more rounded in young). Orbits narrowly separated, preorbital length 2.6–3.1 times orbit length, 2–2.2 times interorbital space. Nostrils rather narrow, slightly oblique and well separated; skin grooves around mouth; anterior nasal flaps extending slightly into internasal space. Skin velvety in young, covered with additional prickly dermal denticles of varying sizes in adults; greatly enlarged on anterior snout, central disc and in 2, well-spaced paired rows along either side of tail. Thorns well developed, sharp, hooked, not on prominent ridges; regular median row extending from nape to first dorsal fin; 4–6 main orbital thorns, 2 symmetrical shoulder patches on each side of disc (outermost patch with 2 thorns, innermost patch 1 thorn); thornlets on anterior rostral ridges. Dorsal-fin bases separated by 2.1–2.2 times base length of first. Clasper very long, tip extending well past first dorsal-fin origin in adult males.

COLOUR. Greyish brown above; some indistinct dark crossbars on disc, and 5 broad dark saddles on tail; fins and



thorn similar to disc. Ventral surface mainly white, sometimes with dusky patches.

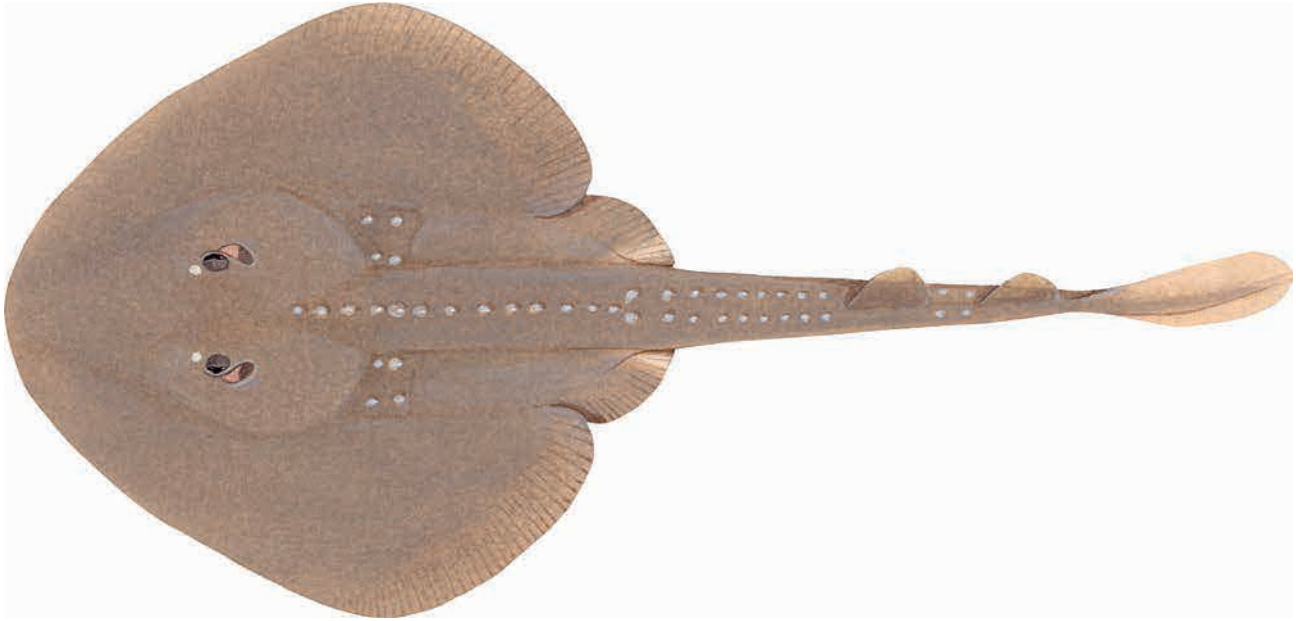
SIZE. Attains at least 38 cm TL, largest specimen a mature male.

HABITAT AND BIOLOGY. Northern Indian Ocean; off Myanmar. Recently discovered and known from 4 specimens. Possibly benthic, narrow-ranging and confined to continental shelf at 60–160 m depths. Nothing known of its biology.

SIMILAR SPECIES. Only member of the group occurring in the Indian Ocean. Similar to the Hyuga Fanray but has 1 less thorn on each shoulder (3 rather than 4), and has a rougher disc surface.

CHINESE FANRAY

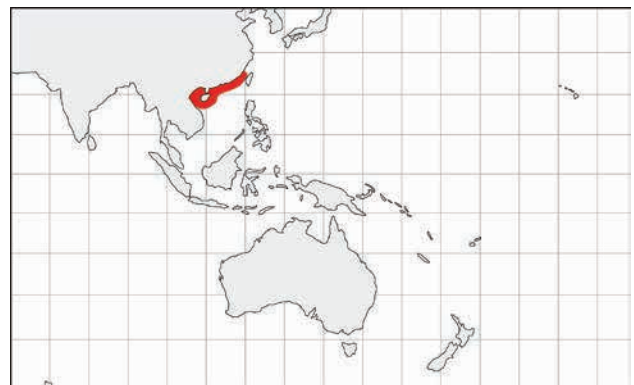
13.3

Platyrrhina sinensis (Bloch & Schneider, 1801)

VU

IDENTIFICATION. Medium-sized fanray with a shovel-shaped disc, long tail with 2–3 prominent rows of hooked thorns, large median and scapular thorns, no pair of thorns preceding main scapular patch, and thorns on head and central disc not broadly encircled by pale pigment. Disc length slightly shorter than tail. Snout long, broadly wedge shaped; rostral ridges diverging. Orbits small, rather narrowly separated, preorbital length ~7 times orbit length, 2.7–3 times interorbital space. Nostrils narrow, slightly oblique and well separated; connected to mouth by a wide groove; anterior nasal flaps extending slightly into internasal space. Skin velvety, covered with mainly minute dermal denticles of uniform size and shape; some larger dermal denticles near sides of anterior disc and tail; no cluster of thornlets at snout tip. Thorns small, sharp, hooked, not on prominent ridges; median row somewhat irregular, forming multiple rows over abdomen and beyond; 4–5 orbital thorns, 2 symmetrical shoulder patches on each side of disc each with 2 thorns, no additional thorns forward of innermost patch; no thorns along rostral ridges. Dorsal-fin bases separated by about base length of first. Clasper short, tip slightly short of first dorsal fin in adult males.

COLOUR. Dark brown to orange brown above, darkest centrally on disc and tail; fins usually paler than disc; thorns



whitish or yellowish and contrasted with skin. Ventral side pale, outer margins of pectoral and pelvic fins greyish brown.

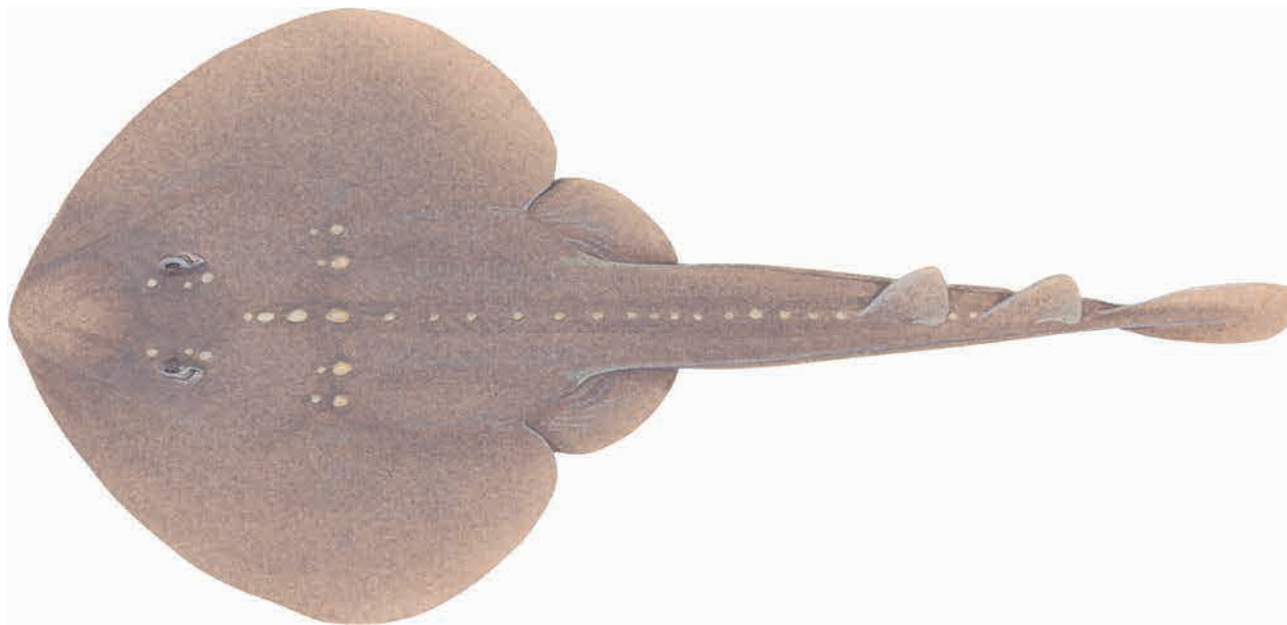
SIZE. Attains at least 55 cm TL.

HABITAT AND BIOLOGY. North-West Pacific; Vietnam to central China. Benthic in shallow seas. Little is known of its biology.

SIMILAR SPECIES. All members of the genus *Platyrrhina* occur in the North-West Pacific, but only the Chinese Fanray has multiple rows of thorns extending along the middle of the tail.

YELLOWSPOTTED FANRAY

13.4

Platyrhina tangi Iwatsuki, Zhang & Nakaya, 2011

NE

IDENTIFICATION. Medium-sized fanray with a shovel-shaped disc, long tail with a single row of hooked thorns, scapular thorns not preceded by pair of small thorns, and large thorns on head and scapular regions broadly encircled by pale pigment. Disc length shorter than tail. Snout broadly wedge-shaped, rostral ridges probably diverging. Orbits rather narrowly separated; in adults preorbital length 4–4.7 times orbit length, 2.1–2.8 times interorbital space. Nostrils narrow, slightly oblique and well separated; connected to mouth by a wide groove; anterior nasal flaps extending slightly into internasal space. Skin covered with minute dermal denticles, some on dorsal surface coarse and enlarged slightly. Thorns short, sharp, not on prominent ridges; 3–5 orbital thorns; 2 symmetrical shoulder patches on each side of disc each with 2 enlarged thorns, up to 11 smaller thornlets adjacent; no thorns along rostral ridges. Dorsal-fin bases separated by more than 0.9–2.1 times base length of first dorsal. Clasper tip falling slightly short of first dorsal fin in adult males.

COLOUR. Dorsal side dark brown to greyish brown, sometimes faintly blotched with a dark median stripe along middle of tail; yellowish borders of anterior thorns strikingly contrasted with rest of disc; fins pale yellowish. Ventral side



white, usually covered with irregular greyish blotches; outer margins of pectoral and pelvic fins greyish.

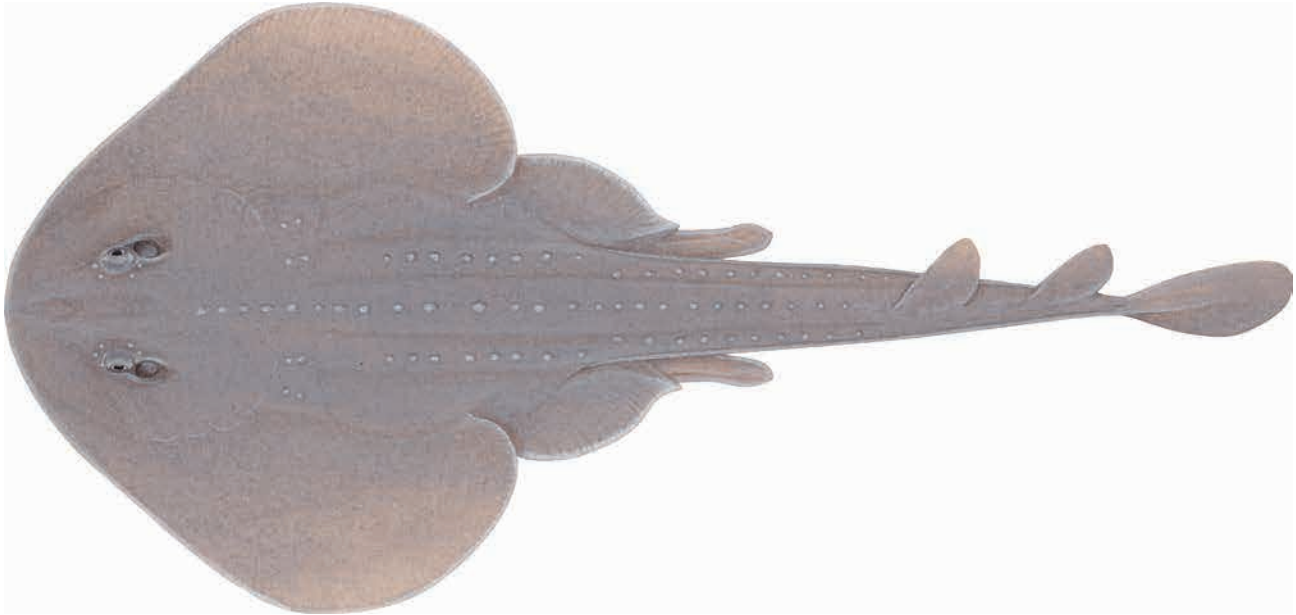
SIZE. Attains at least 64 cm TL, probably to ~70 cm; males typically mature by ~39 cm TL.

HABITAT AND BIOLOGY. North-West Pacific; Vietnam to Japan, including Taiwan. Benthic, life history little known. Reaches parturition from August to November.

SIMILAR SPECIES. Most similar to the Hyuga Fanray (13.1) in thorn pattern. Unique within the genus in having large thorns near the orbit and on central disc encircled with yellowish blotches.

THORNBACK FANRAY

13.5

Platyrhinoideis triseriata (Jordan & Gilbert, 1880)

LC

IDENTIFICATION. Large fanray with a broadly oval to subcircular disc, long and stout tail, large scapular thorns, cluster of small thorns at snout tip, 3 widely separated rows of large thorns on tail, and plain coloured dorsal and ventral surfaces. Disc shorter than 3/4 length of tail, widest part closer to pectoral-fin insertion than snout tip. Snout rounded, obtuse, rostral ridges strongly converging. Orbits rather large, widely separated, preorbital length 2.3–2.8 times orbit length, 1.3–1.4 times interorbital space. Nostrils narrow, almost horizontal and well separated; separated from mouth by a diagonal fleshy ridge; edge of anterior nasal flap barely extending into internasal space. Skin velvety on both surfaces. Thorns large, hooked and sharp, particularly in young; median row of ~30 regular thorns extending from nape to first dorsal fin; 1–2 similar lateral rows extending from posterior disc along each side of tail; 2 prominent shoulder patches each with 2–4 thorns, thorns not located on obvious ridges; dense band of smaller thornlets around anterior margin of disc; patch near eye usually dominated by a large preorbital thorn; no thorns along rostral ridges. Dorsal-fin bases separated by about base length of first. Clasper tip falling well short of first dorsal fin in adults.

COLOUR. Dorsal side uniformly dark brownish to yellowish grey; thorns prominent and usually paler than rest of disc. Ventral side white.



SIZE. Attains 91 cm TL.

HABITAT AND BIOLOGY. Eastern Central Pacific; California (USA) to Baja California (Mexico). Benthic on continental shelf, inshore to 135 m depth, but rarely caught at depths below 6 m. Aggregates in shallow bays, lagoons, and off beaches. Pups mainly in August with large litters (up to 15 pups). Feeds on small benthic invertebrates, such as polychaetes, crustaceans and small teleosts.

SIMILAR SPECIES. Only member of this family represented in the Eastern Pacific. It differs in body shape from all other rays found in this region. Skates also have dorsal fins positioned toward the tail tip but their caudal fins are much smaller than in fanrays.

Last P.R., Séret Bernard.

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