

NEW AUSTRALIAN FISHES. PART 15.  
NEW SPECIES OF *TRYGONOPTERA* AND *UROLOPHUS* (UROLOPHIDAE)

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**Abstract**

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The following Australian species of stingaree are described herein: *Trygonoptera ovalis*, *T. personata*, *Urolophus flavomosaicus*, *U. mitosis*, *U. orarius* and *U. westraliensis*.

**Introduction**

The batoid family, Urolophidae, presently contains 11 described Australian species (McKay, 1966; Dixon, 1969). Six new species of the genera *Trygonoptera* and *Urolophus*, are added to this list. A revisionary study of the family is currently being undertaken.

Type specimens are deposited in the Australian Museum, Sydney (AMS), CSIRO Division of Fisheries, Hobart (CSIRO), Museum of Victoria, Melbourne (NMV), South Australian Museum, Adelaide (SAMA) and Western Australian Museum, Perth (WAM).

**Trygonoptera**

*Trygonoptera* Müller & Henle, 1841: 174.

*Type species.* *Trygonoptera testacea* Müller & Henle, by monotypy.

*Discussion.* Most Australian authors have regarded *Trygonoptera* as a synonym of *Urolophus*. *Trygonoptera* was originally used for those members of the family that have a dorsal fin. While this character is unreliable for separating the genera, there are major differences between the two in oro-nasal and skeletal structures.

***Trygonoptera ovalis* sp. nov.**

**Figure 1**

*Urolophus* species 1. Hutchins & Thompson, 1983: 16, fig. 41.

*Material examined.* Holotype: Western Australia, Great Australian Bight, south of Red Rocks Point (32°24'S, 127°30'E),

30 m, demersal trawl, FRV "Courageous", stn 032/0606, 3 Mar 1978, CSIRO CA521 (female, 210 mm disc width).

Paratypes: Western Australia, Great Australian Bight, east of Low Point (32°01'S, 128°30'E), 36-38 m, demersal trawl, FRV "Courageous", stn 031/0589, 17 Feb 1978, CSIRO CA525 (immature male, 208 mm disc width); south of Scorpion Bight (32°30'S, 126°43'E), 35-36 m, FRV "Soela", stn S05/81/18, 6 Dec 1981, NMV A2817 (female, 302 mm disc width), NMV A2818 (female, 338 mm disc width); south of Scorpion Bight (32°24'S, 126°30'E), 30-40 m, demersal trawl, FRV "Courageous", stn 032/0604, 3 Mar 1978, CSIRO CA510 (immature male, 186 mm disc width); Geographe Bay, Quindalup (33°38'S, 115°09'E), speared, P. Good, 23 Jan 1981, WAM P27037-001 (immature male, 151 mm disc width); south of Mandurah, 42-43 m, FV "Kaiyo Maru 71", D. Heald, 27 Aug 1979, WAM P27285-001 (female, 160 mm disc width); Houtman Abrolhos Group (28°29'S, 113°47'E), 4-6 m, rotenoned, N. Sinclair, 16 Apr 1982, WAM P27585-002 (female, 141 mm disc width).

*Diagnosis.* Disc almost oval, slightly longer than wide; broadest part 1 to 3 eye diameters behind level of spiracles; anterior profile obtuse. Snout fleshy, tip not extended. Eye of moderate size, 17-22% preocular snout length. Posterior margin of spiracle rounded or angular. Mouth small; about 4 minute papillae on floor. Internasal flap skirt-shaped, posterior angle not extended into distinct lobe. Posterolateral border of nostril forming a broad flattened and fleshy lobe. Tail broad, rounded in cross-section; of moderate length, 75-100% disc length; lateral cutaneous folds absent; dorsal fin small; caudal fin relatively large, lanceolate. Reaches a total length of at least 610 mm.

Dorsal surface greyish to greyish brown; dark markings below, in front of and between eyes; often with a dark stripe extending to snout tip (obvious on juveniles); paired dark patches near



centre of disc extending as stripes posteriorly along disc and tail, sometimes darkish areas obscure; pale along midline. Caudal fin greyish or black. Ventral surface white or yellow; tail and margins of disc and ventral fins mostly dark.

*Distribution.* Southern coast of Western Australia in depths to 43 m.

*Etymology.* From the Latin *ovalis* (oval), referring to the distinctive disc shape.

*Remarks.* This species differs from other *Trygonoptera* which have a dorsal fin, *T. testacea* Müller & Henle and *T. personata* sp. nov., in having a more ovate disc and in possessing a pair of longitudinal stripes on the disc and tail.

### ***Trygonoptera personata* sp. nov.**

#### **Figure 2**

*Urolophus* species 2. Hutchins & Thompson, 1983: 16, fig. 42.

*Material examined.* Holotype: Western Australia, north-east of Cape Naturaliste (33°01'S, 115°10'E), 70 m, trawled, FRV "Hai Kung", 23 Apr 1981, CSIRO H46 (male, 231 mm disc width).

Paratypes: Western Australia, off Perth, Cottesloe Banks, (31°59'S, 115°45'E), trawled, FV "Peron", R. J. McKay, 17 Apr 1960, WAM P8194-001 (immature male, 165 mm disc width); north-east of Rottnest Island, 31-36 m, trawled, FV "Bluefin", R. J. McKay, 18 Sep 1965, WAM P14104-001 (female, 193 mm disc width); south-west of Shark Bay (27°02'-26°55'S, 113°02'-01'E), 115-160 m, 63 m otter trawl, FRV "Hai Kung", M. Gomon and N. Sinclair, 2 Mar 1981, NMV A1820 (2 females, 188-208 mm disc width), NMV A1821 (2 males, 190-202 mm disc width); Shark Bay (25°21'S, 113°44'E), R. J. McKay, 1958, WAM P12034-001 (female, 173 mm disc width).

*Diagnosis.* Disc not especially broad, subcircular, mostly wider than long; broadest part slightly more than eye diameter behind level of spiracles; anterior profile obtuse. Snout fleshy, tip not extended. Eye of moderate size (21-28% preocular snout length). Posterior margin of spiracle mostly angular. Mouth small; 3-4 papillae on floor. Internasal flap skirt-shaped, posterior angle not extended into distinct lobe. Posterolateral border of nostril forming a broad flattened, fleshy lobe. Tail slightly depressed to rounded in cross-section; of moderate length (67-86% disc length); lateral cutaneous folds absent; dorsal fin small; caudal

fin lanceolate in young, shorter and broader in adults. Reaches a total length of at least 470 mm.

Dorsal surface yellowish brown to grey with dark markings around eyes and central dark blotch on disc; markings frequently connected medially and laterally by narrow longitudinal stripes. Caudal fin margin and dorsal fin black in young, greyish in adults. Ventral surface white or yellow, with slightly darker lateral margins.

*Distribution.* Known to occur between Bunbury and Shark Bay, Western Australia in depths to 160 m.

*Etymology.* From the Latin *personatus* (masked), referring to the mask-like appearance of the dark pattern adjacent the eyes.

*Remarks.* Readily distinguished from the sympatric congeners, *T. ovalis* sp. nov. and *T. mucosa* (Whitley), by the colour pattern, disc shape and dorsal fin sizes.

### ***Urolophus***

*Urolophus* Müller & Henle, 1837: 17.

*Type species.* *Raja cruciata* Lacepède, by monotypy.

*Discussion.* More study is required before the extent of this genus is fully understood.

### ***Urolophus orarius* sp. nov.**

#### **Figure 3**

*Material examined.* Holotype: South Australia, Investigator Strait (35°20'S, 137°50'E), 20 m, trawled, FV "Ruby H", H. Larson and D. Blake, 14 Mar 1978, AMS I.20194-043 (female, 165 mm disc width).

Paratypes: South Australia, same data as holotype, AMS I.20194-044 (immature male, 138 mm disc width); Great Australian Bight, off Venus Bay, 36 m, 11 Apr 1984, SAMA jar no. 1187 (2 immature males, 120-148 mm disc width); off Venus Bay, 33-46 m, June 1982, SAMA jar no. 1647 (2 specs., 77 mm disc width); south of Fowlers Bay (33°46'S, 133°30'E), 36.4 m, 28 Feb 1981, SAMA jar no. 403 (2 females, 100-110 mm disc width); south of Evans Island, 4 April 1982, SAMA jar no. 1079 (male, 175 mm disc width).

*Diagnosis.* Disc broadly subcircular, slightly wider than long; broadest part more than eye diameter behind spiracles; anterior margin obtuse. Snout tip rarely extended. Eye moderately large (28-34% preocular snout length). Posterior margin of spiracle rounded. Mouth moderately large; 4-5 papillae on floor. Internasal flap skirt-shaped, posterior angle not extended into distinct





Figure 1. *Trygonoptera ovalis*, holotype, CSIRO CA521.



Figure 2. *Trygonoptera personata*, holotype, CSIRO H46.





Figure 3. *Urolophus orarius*, holotype, AMS I.20194-043.

lobe. Posterolateral border of nostril forming weak nob, not forming broad flattened lobe. Tail rounded in cross-section; moderately elongate (72-80% disc length); lateral cutaneous folds and

dorsal fin absent; caudal fin lanceolate. Reaches a total length of at least 310 mm.

Dorsal surface greyish to brown; darker areas around eyes extending onto back; dark blotches



situated centrally on pectoral fins and at bases of pelvic fins; caudal and pelvic fins of juveniles dark; general pattern more evident in small specimens. Ventral surface pale, margins greyish brown to black; lower surface of tail pigmented, mostly dark.

*Distribution.* Known only from the Great Australian Bight off South Australia where it has been trawled in depths of 20-50 m.

*Etymology.* From the Latin *orarius* (of the coast), in allusion to the primary vernacular "coastal stingaree".

*Remarks.* This species is similar in general morphology to the allopatric congeners, *Urolophus cruciatus* (Lacepède) and *U. sufflavus* Whitley, but differs from them in colour pattern and in the relative lengths of the tail and caudal fin lobe. *Urolophus orarius* lacks a dark median stripe, which is always present in *U. cruciatus* and sometimes present in *U. sufflavus* but possesses a large dark blotch near each pelvic fin base that is absent in *U. sufflavus*. *U. orarius* has a relatively longer tail and longer caudal fin, than either of these species.

#### ***Urolophus mitosis* sp. nov.**

##### **Figure 4**

*Urolophus* sp.3. Sainsbury et al., 1985: 54, fig. opposite.

*Material examined.* Holotype: Western Australia, north of Forestier Is. (18°39'S, 117°53'E), 200 m, trawled, FRV "Soela", stn SO2/82/15, 2 Apr 1982, CSIRO CA2874 (male, 145 mm disc width).

Paratypes: same data as holotype, CSIRO CA2875 (female, 165 mm disc width), CSIRO CA2876 (male, 130 mm disc width), CSIRO CA2877 (male, 150 mm disc width), CSIRO H574 (prenatal male from CA2875, 78 mm disc width).

*Diagnosis.* Disc subcircular, slightly wider than long; broadest about eye diameter behind spiracles; anterior margin obtuse. Snout tip slightly extended. Eye large (33-43% preocular snout length). Posterior margin of spiracle rounded or acute. Mouth moderately large; 3-4 papillae on floor. Internasal flap skirt-shaped, posterior angle extended into distinct lobe. Posterolateral border of nostril flat or forming weak nob, not forming broad flattened lobe. Tail moderately depressed, elongate (85-104% disc length); lateral

cutaneous folds weak; dorsal fin absent; caudal fin lanceolate. Reaches a total length of at least 290 mm.

Dorsal surface of disc pale green with several large, widely-spaced granulated blotches and stripes, reddish brown near margin; blotches and stripes pale blue, mostly variable in shape but regular in position, bordered by and mostly covered with dark blue mitotic granulations. In preserved specimens dorsal surface becoming pale yellow, granulations remaining obvious. Ventral surface pale.

*Distribution.* Occurs off Forestier Island, north-western Australia in depths of 200 m.

*Etymology.* From the Greek *mitos* (thread), with reference to the distinctive granular patterns of the blotches and stripes.

*Remarks.* This species is immediately recognisable by its characteristic colour pattern. Other members of this genus, *U. expansus* McCulloch and *U. viridis* McCulloch, which are larger southern and eastern Australian relatives respectively, also have a skirt-shaped internasal flap, cutaneous folds on the tail and lack a dorsal fin. The dorsal coloration of *U. viridis* is uniform green, whereas *U. expansus*, while having a few pale transverse bands, lacks dark markings.

#### ***Urolophus flavomosaicus* sp. nov.**

##### **Figure 5**

*Urolophus* sp. 2. Sainsbury et al., 1985: 52, fig. opposite.

*Material examined.* Holotype: Western Australia, north of Port Hedland (18°20'S, 118°27'E), 202 m, bottom trawl, FRV "Soela", stn SO2/82/13, 2 Apr 1982, CSIRO CA2867 (male, 325 mm disc width).

Paratypes: Western Australia, south-west of Shark Bay (27°07'-01'S, 112°49'-48'E), 238-248 m, 63 m otter trawl, FRV "Hai Kung", M. Gomon and N. Sinclair, 3 Mar 1981, NMV A1810 (immature male, 218 mm disc width); same data as holotype, CSIRO CA2866 (female, 197 mm disc width), CSIRO CA2868 (immature male, 195 mm disc width), CSIRO CA2869 (female, 274 mm disc width).

*Diagnosis.* Disc quadrangular, much wider than long; broadest about 1.5 eye diameters behind spiracles; anterior margin broadly rounded. Snout tip slightly extended. Eye small (21-28% preocular snout length). Posterior margin of spiracle acute. Mouth large; about 8 very short papillae on floor. Internasal flap skirt-shaped,



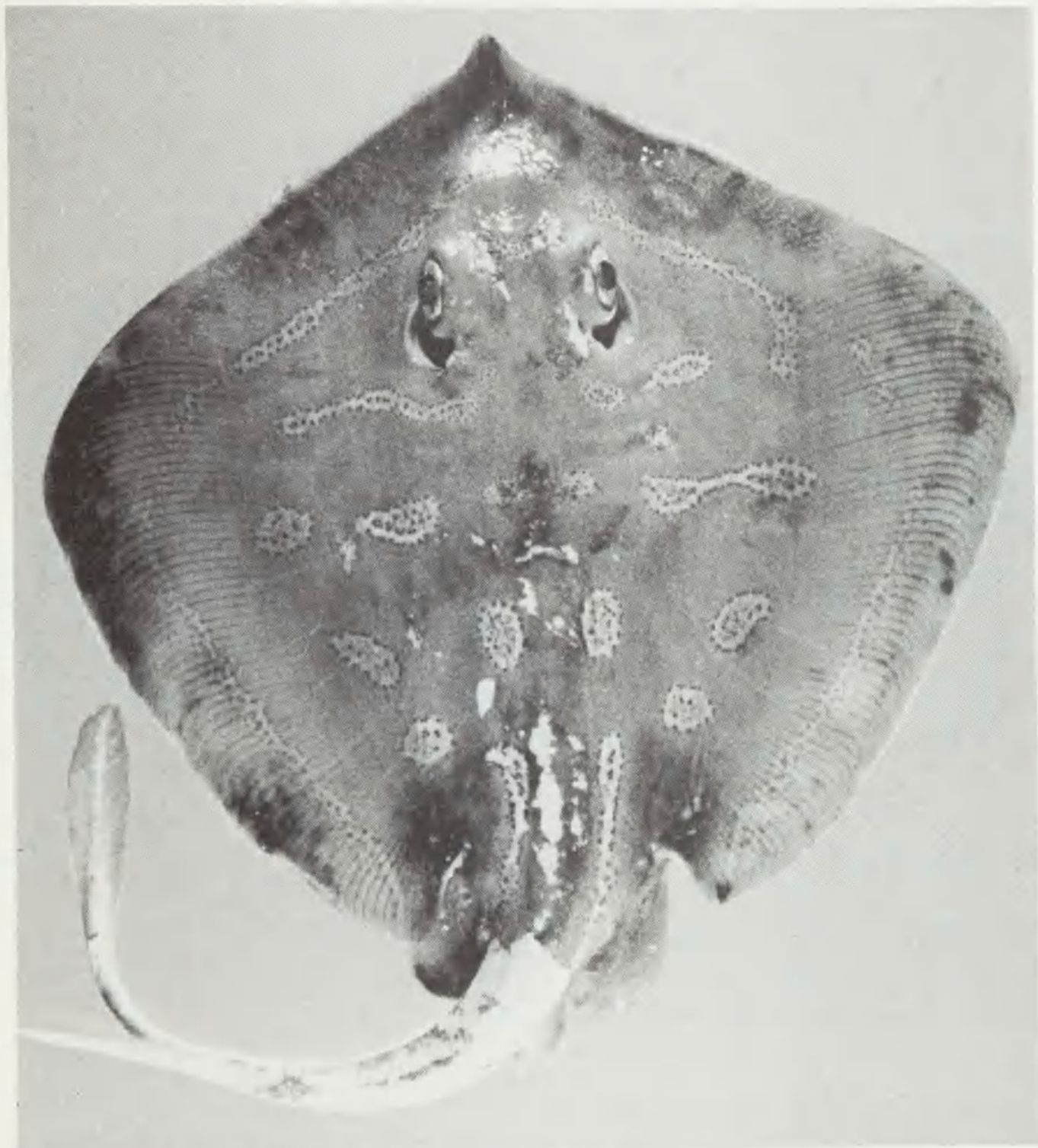


Figure 4. *Urolophus mitosis*, holotype, CSIRO CA2874

posterior angle not lobed. Posterolateral border of nostril flat or forming weak nob, not forming broad flattened lobe. Tail moderately depressed; short (67-79% disc length); lateral cutaneous folds weak, sometimes inobvious; dor-

sal fin present; caudal fin lanceolate. Reaches a total length of at least 325 mm.

Dorsal surface yellowish with numerous paler spots encircled by darker yellowish brown rings; spots almost regularly spaced, sometimes inter-

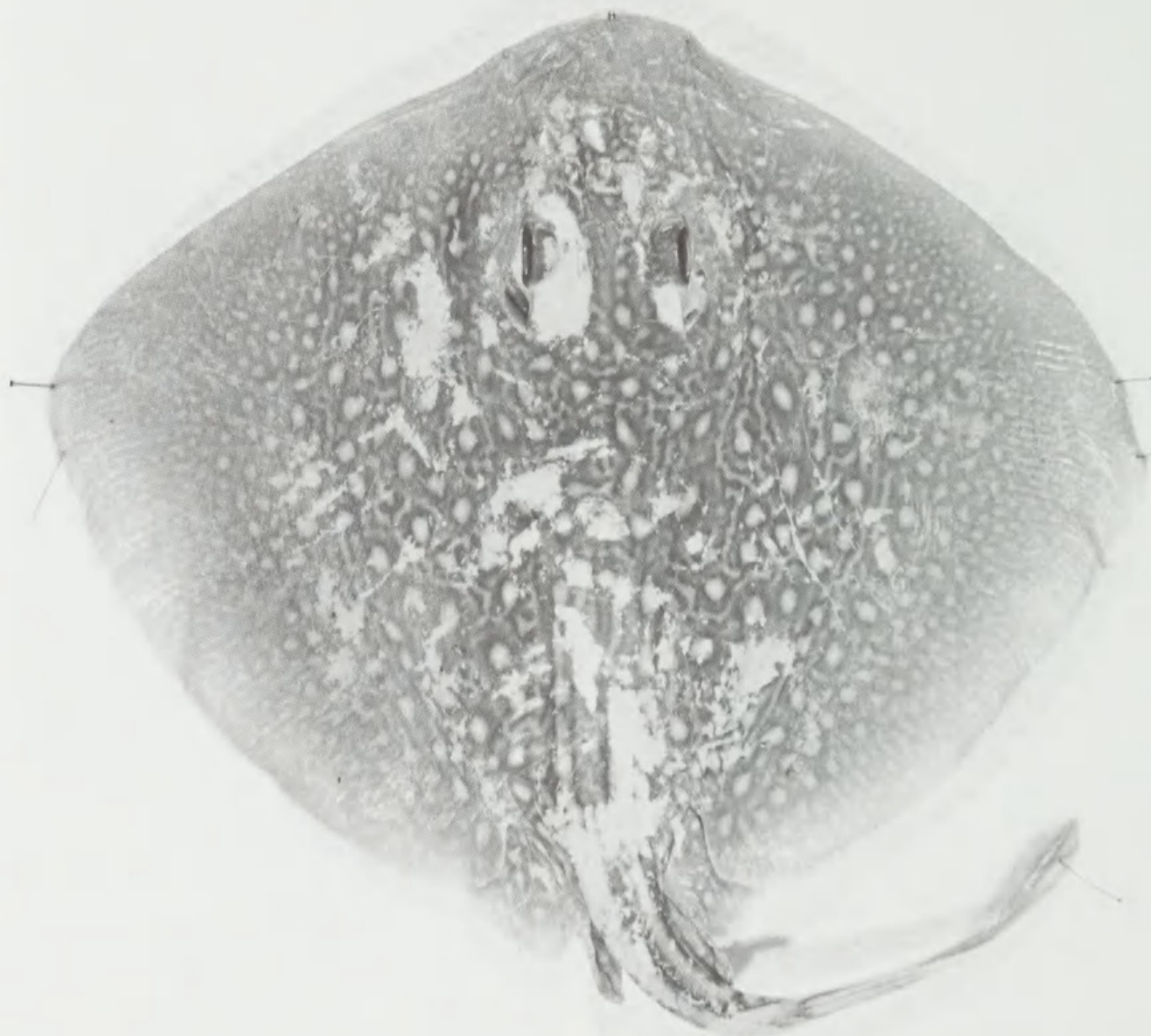


Figure 5. *Urolophus flavomosaicus*, holotype, CSIRO CA2867.

spersed with pale narrow reticulations, largest on central disc.

*Distribution.* Occurs off Port Hedland, Western Australia in depths to 250 m.

*Etymology.* Derived from the Latin *flavus* (yellow) and *mosaicus* (mosaic), with reference to the distinctive colour pattern.

*Remarks.* Among the largest of tropical Australian stingarees, this species closely resembles the temperate *U. bucculentus* Macleay. Apart from morphometric differences, these species have very different colour patterns. *Urolophus bucculentus* is either uniform yellowish or brownish and, although it may be covered in fine reticulations and spots, not forming a broad mosaic pattern.





Figure 6. *Urolophus westraliensis*, holotype, CSIRO CA2870.

***Urolophus westraliensis* sp. nov.****Figure 6**

*Urolophus* sp. 1. Sainsbury et al., 1985: 52, fig. opposite.

**Material examined.** Holotype: Western Australia, north of Port Hedland (18°20'S, 118°27'E), 202 m, bottom trawl, FRV "Soela", stn SO2/82/13, 2 Apr 1982, CSIRO CA2870 (male, 192 mm disc width).

Paratypes: Western Australia, Northwest Shelf, off Dampier (19°17'S, 116°16'E), 170-172 m, trawled, FRV "Courageous", B. Hutchins, 16 May 1978, WAM P26193-006 (female, 225 mm disc width); north of Port Hedland (18°38'S, 118°02'E), 182 m, trawled, FRV "Soela", stn S03/83/26, 6 Jun 1983, CSIRO CA4195 (female, 143 mm disc width); south-west of Imperieuse Reef (18°24'S, 118°31'E), 154 m, bottom trawl, FRV "Soela", stn S02/82/8, 28 Mar 1982, CSIRO CA2802 (male, 166 mm disc width), CSIRO CA2803 (female, 196 mm disc width), CSIRO CA2804 (male, 171 mm disc width); same data as holotype, CSIRO CA2871 (male, 196 mm disc width), CSIRO CA2872 (male, 189 mm disc width); west of Buccaneer Archipelago (15°08'S, 121°40'E), 204-210 m, FRV "Courageous", K. Sainsbury, 26 Jun 1978, WAM P26262-007 (male, 182 mm disc width).

**Diagnosis.** Disc subcircular, slightly wider than long; broadest about eye diameter behind spiracles; anterior margin obtuse. Snout tip slightly extended. Eye small (22-28% preocular snout length). Posterior margin of spiracle mostly rounded. Mouth moderately large; 5-6 small papillae on floor. Internasal flap skirt-shaped, posterior angle extended into distinct lobe. Posterolateral border of nostril flat or forming weak nob, not forming broad flattened lobe. Tail moderately depressed; short (66-80% disc length); lateral cutaneous folds barely noticeable; dorsal fin absent, or reduced to a low fold; caudal fin short, mostly broad. Reaches a total length of at least 355 mm.

Dorsal surface uniformly pale yellow to light brown, lacking spots or other darker markings. Ventral surface pale.

**Distribution.** Occurs on the outer continental shelf of north-western Australia in depths of 150-210 m.

**Etymology.** Named after the Australian state in which this species occurs.

**Remarks.** This species is closely allied to the sympatric *U. mitosis* sp. nov., but has a relatively shorter tail, a smaller eye and a uniform colour pattern.

**Acknowledgements**

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