A reduction in the number of rays in the anal fin of this species has been noticed by Day (1889). He remarks that in many specimens taken in Malabar the anal rays were invariably 26, but amongst several taken in Madras there were in all instances 28. So far as the author is aware this appears to be the first instance where a reduction in the number of anal rays due to complete absence of few rays in the middle of the fin has been noticed.

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ON THE OCCURRENCE OF THE DEEP SEA STING RAY, *UROTRYGON DAVIESI* WALLACE IN INDIAN WATERS

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The deep sea sting-ray, *Urotrygon daviesi* Wallace, caught off Mandapam in the Gulf of Mannar, is recorded for the first time from the Indian waters. A detailed description of the fish, based on a young female, 534 mm in length, is given.

Till recently no representative of the family Urolophidae was known from the Indian Ocean and the rays of this family were restricted in their distribution to the Pacific and Western Atlantic Oceans. The occurrence of the family in the Indian Ocean was reported for the first time by Wallace (1967) when he described *Urotrygon daviesi*, a new species, trawled off Limpopo River mouth, Portuguese East Africa. According to him this species is not common even in the type locality in Portuguese East African waters and

it is interesting to note that the species has not been recorded from the coast of Natal. His study was based on six specimens collected during a three year survey (1964-66) of the east coast of Southern Africa and they were trawled from 235 - 240 fathoms except for one which was trawled from 24 fathoms.

The present account records for the first time the occurrence of *Urotrygon daviesi* and also the family Urolophidae in Indian waters. A female specimen was obtained during the exploratory trawling off Mandapam in the Gulf of Mannar (Lat. 8°58'N, Long. 79°16'E) on 7th February 1972 from a depth of 275 metres.

UROTRYGON DAVIESI *WALLACE*

Urotrygon daviesi Wallace, *S. Afr. Ass. mar. biol. Res., Invest. Rep.* No. 16, 1967, page 7.

Type locality: Limpopo River mouth (± 25°25'S, 33°35'E), Portuguese East Africa.

Material — One young female, 534 mm in total length weighing 625 gm, was caught off Mandapam in the Gulf of Mannar (Lat. 8°58'N, Long. 79°16'E) from a depth of 275 metres on 7th February, 1972. The preserved specimen is deposited in the Museum of the Regional Centre of Central Marine Fisheries Research Institute (Reg. No. C.M.F.R.I. F. 200/645).

Description — Disc about as long, 1-75 in total length; anterior margins nearly straight, posterior margins and outer and posterior corners rounded. Head 2-16 in dic length; anterior angle in front of spiracle about 110°. Snout 1.38 in head, much produced with a pointed tip, about two times the distance between spiracles. Eye moderate, 9.27 in snout, 0.5 time the length of spiracle. Spiracle oblique, very close to the eye. Mouth wide, 3.50 in preoral, feebly arched; central part of the upper jaw with an indistinct downward projection with a corresponding concavity in the middle of lower jaw; a cutaneous fringed flap in the upper and lower jaws; finger-like buccal processes and longitudinal folds absent on the floor of the mouth. Roof of the upper jaw with two horizontal series of very small, short and blunt projections between the cutaneous flap and teeth; teeth in 22/21 oblique rows. Preoral distance greater than snout length. Nasal flap fringed. Gill-slits sinuous, margin of the gill-slits not entire but finely broken up to give a serrated appearance. Pelvic fins extend beyond the posterior corners of the disc.

Tail (from centre of cloaca to the tip of tail) 1.15 in disc length, fourteen times as long as broad at the base, depressed dorso-ventrally at the basal region up to the spine, tapering gently towards the spine; posterior to the spine laterally flattened with a pointed tip; a single serrated tail spine about 76 mm in length with its origin slightly anterior to the mid-point of tail; the uper caudal fin originates opposite the posterior one-third of tail spine while

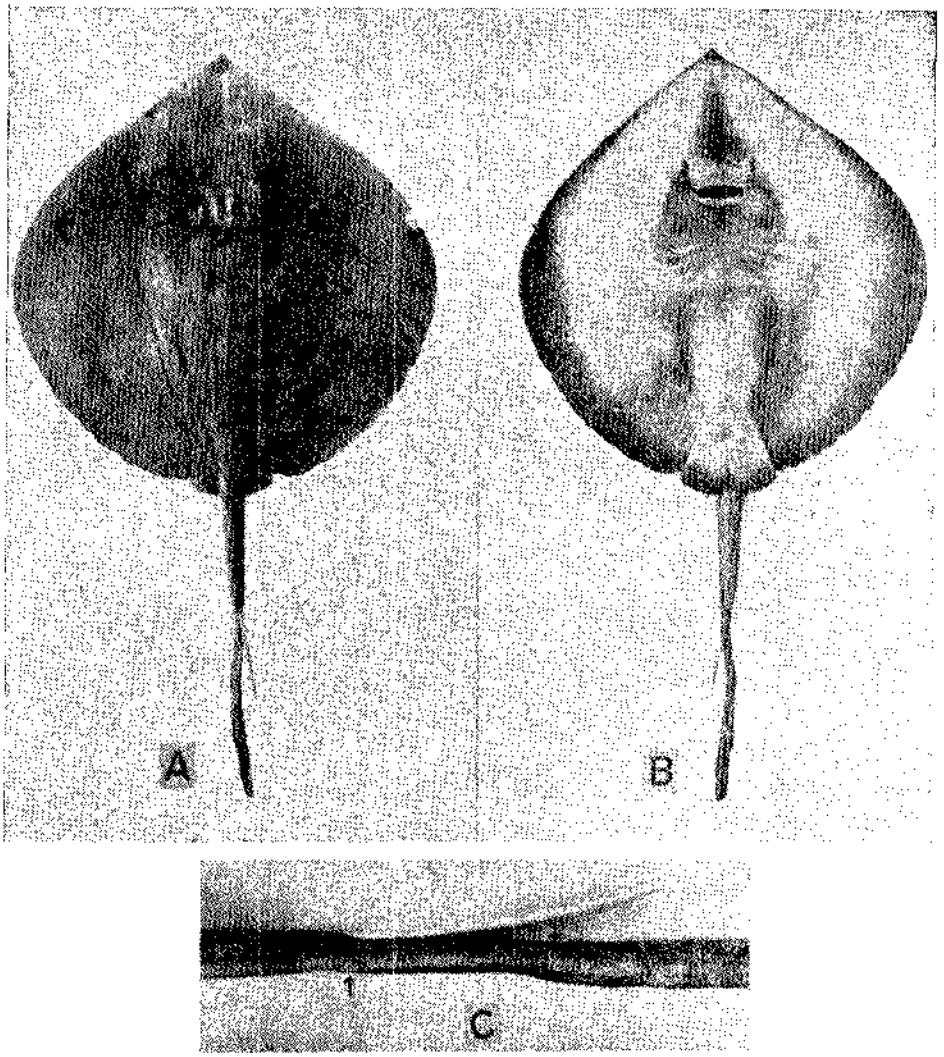

FIG. 1. *Urotrygon daviesi* Wallace.

A. Dorsal view;

B. Ventral view; and

C. A portion of the tail showing the caudal spine and the origin of upper and lower caudal fins (indicated by arrow marks).

the lower caudal fin commences opposite the mid-point of the base of the tail spine, both fins of equal width and confluent with each other at the tip of the tail.

Skin soft, thin and translucent. The entire dorsal surface of the disc covered with small evenly scattered prickles. Tail covered with prickles except on the ventral side of the base of the tail; caudal fins with sparsely scattered prickles. Ventral side of the disc, both sides of the pelvic fins devoid of prickles.

The body measurements of the specimen, also expressed as percentages in total length, are given in Table 1. For comparison the percentage ranges given by Wallace (1967) for the Portuguese East African specimens are also given in the Table.

TABLE 1. *The various body measurements of* Urotrygon daviesi *Wallace*

Character	Present specimen		Wallace's specimens
	mm	%	% range
Total length	534	100	100
Length of disc	305	57.12	54.2 - 58.5
Width of disc	304	56.93	53.7 - 59.0
Snout to greatest width of disc	164	30.71	26.6 - 30.8
Snout to anterior end orbit	102	19.10	17.4 - 19.8
Snout to anterior end tail spine	386	72.28	72.3 - 73.7
Distance between orbits (excluding eye lids)	37	6.93	4.2 - 5.9
Distance between spiracles	51	9.55	8.3 - 9.2
Snout to tip of lower jaw	112	20.97	18.6 - 19.5
Snout to anterior end cloaca	258	48.31	47.7 - 55.1
Mouth width	32	5.99	5.8 - 7.1
Between inner ends of nostrils	44	8.24	7.8 - 9.8
Between inner ends of first pair of gill-slits	68	12.73	12.4 - 14.1
Between inner ends of fifth pair of gill-slits	42	7.86	8.1 - 9.3
Snout to inner end of first gill-slit (Head length)	141	26.40	—
Eye	11	2.06	—
Spiracle	22	4.12	—
Tail (Centre of cloaca to tip of tail)	265	49.62	—
Upper caudal fin	94	—	—
Lower caudal fin	130	—	—

Colour — Dorsal side of the disc and pelvic fins dark violaceous grey. Ventral side dull white. Posterior margins of pectoral and pelvic black. Tail blackish grey becoming darker distally, ventral side of the base of the tail with irregular white patches. Eyes dark with white pupils. Teeth and tail spine dull white.

Distribution — Portuguese East African waters and East Coast of India (Gulf of Mannar).

Remarks — The genus *Urotrygon* was created by Gill (1863) for his type species *U. mundus* from the west coast of Central America. This genus can be distinguished from the other two genera of the family Urolophidae namely, *Trygonoptera* Muller and Henle and *Urolophus* Muller and Henle by the absence of a dorsal fin anterior to the tail spine and the possession of longer tail with a narrow caudal fin respectively. About six species of *Urotrygon* occur in the Pacific Ocean and two species in Western Atlantic Ocean and carribean Sea (Bigelow and Schroeder, 1953). Recently Wallace (1967) reported the occurrence of *U. daviesi*, a new species, in the Indian Ocean. This species differs markedly from all the other known species of the genus and the only close relative is *U. mundus*. Both the species have pricky dorsal surface and neither has enlarged tubercles along the mid-dorsal line. However, *U. daviesi* has a much produced snout, smaller pelvic fin and the tail is more slender at the base as compared to *U. mundus*.

The present specimen of *U. daviesi* recorded from Indian waters closely resembles the Portuguese East African specimens. However, certain variations have been met with in the Indian specimen. In our specimen the inter-orbital space and the preoral distance are greater and the eye is slightly smaller. The lower caudal fin originates almost opposite to the base of the tail spine while in the Portuguese East African specimens it originates anterior to the mid-point of the tail spine. The number of rows of teeth in the Indian specimen is lower; however, this is well within the range mentioned by Wallace for his paratype.

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