



## Note

# First record of Spearnose skate, *Rostroraja alba* (Lacepède, 1803) (Rajiformes: Rajidae) from Indian waters

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### Abstract

During a routine field collection at Cochin Fisheries Harbour, Kerala, India, on 27 September 2003, a specimen of *Rostroraja alba* (Lacepède, 1803) was noticed in a drift gill net catch. This is the first record of the species from Indian waters. An attempt is also made here to redefine the field key for skates given by Misra (1969) so as to include the new species.

Five species of skates belonging to genus *Raja* have been recorded from Indian waters by various authors (Day, 1889; Munro, 1951; Misra, 1952, 1969) - *Raja mammillidens*, *R. powelli*, *R. johannis-davisi*, *R. andamanica* and *R. reversa*. Samuel (1963) recorded a twin eye skate, *Raia ocellifera* along the Southwest coast of India. *R. ocellifera* is now considered to be a synonym of *Raja miraletus* (Wallace, 1967). The other rays are now known by the valid names *Fenestraja mamillidens* (Alcock, 1889), *Okamejei powelli* (Alcock, 1898), *Dipturus johannisdavisi* (Alcock, 1899), *Cruriraja andamanica* (Lloyd 1909) and *Amblyraja reversa* (Lloyd, 1906) respectively. (Froese and Pauly, 2000).

During a routine field collection at Cochin Fisheries Harbour, Kerala, India, on 27 September 2003, a new skate hitherto unknown from Indian waters was noticed in drift gill net catch. The skate was caught by vessels operating at depths beyond 200 m off the Southwest coast of India. The skate was later identified as *Rostroraja alba* (Lacepède, 1803). This is the first record of this species from Indian waters. With the increase in the number of skates recorded in Indian waters, an attempt is made here to redefine the field key for skates given by Misra (1969) so as to include the two species *R. miraletus* and *R. alba*.

The species *R. alba* differs from the other skates available in the Indian waters in the following characters - from *F. mamillidens* and *D. johannisdavisi* in having more than 1 row of spines on tail; from *A. reversa* and from *C. andamanica* in the absence of the prominent rostral spine; from *O. powelli* in having the interdorsal distance lesser than the base of first dorsal and a brown dorsal surface with white dots and from *R. miraletus* in the absence of the ocellii.

**Distribution:** This species had earlier been reported

from English Channel, the Mediterranean and the eastern Atlantic (Clark, 1926; Fowler, 1941; Tortonese, 1956), Namibia to Barra Falsa and West Africa to NE Madagascar (Hulley, 1986). *R. alba* is a demersal species, found in the depth range 30 – 600 m in the subtropical belt in the longitudinal range 53°N – 35°S. Females are said to attain a maximum length of 202 cm.

**Distinctive characters:** Disc has an extremely undulate margin; snout is long, sharply pointed and abruptly narrowed with a distinct notch. Tail is short, wide, thick, posteriorly tapering with a well-developed lateral series of "bucklers" (thorns with heavy base) (Gravendeel *et al.*, 2002). No cutaneous folds are present on the tail. A large number of white spots are present arranged in a regular pattern on the dorsal surface; they are seen to radiate from the spiracle towards the snout and to the extremities of the disc width.

***Rostroraja alba*** (Lacepède, 1803) - Spear nose Skate

*Raja alba* Lacepède 1803:661, f 1; pl 20, Rouen, France

*Raja alba* Norman 1935:40, South Atlantic

*Raja alba* Fowler 1941: 365, Phillipine Archipelago

*Raja alba* van Bruggen 1965: 190 (rec)

*Rostroraja alba* McEachran & Dunn 1998:285

*Rostroraja alba* Heemstra & Heemstra 2004:81

**Material:** One single female (total length 119 cm and disc width 94.7 cm) off Southwest coast of India. The specimen has been deposited at the Reference Collection Museum of CMFRI (CMFRI Reg. No. GA. 11.01.22.1)

**Description:** The morphometric measurements are presented in Table 1. Methods for making measurements

and counts follow Wallace (1967) with slight modification. Snout abruptly narrowed and produced into a long sharply pointed snout (Fig. 1). Disc 1.4 times wider than long, with a markedly undulate anterior margin. Central part of the snout is bony and with prickles. Eyes are protruded, placed antero-laterally and the skin covering the eye has a greenish grey colour. Three rows of thorns (antorbital thorns) are present on the anterior side of each eye. Seven thorns are present on the inner sides of each eye in the center; two rows of thorns above the spiracle. The suprascapular region and the interorbital region prickly, but devoid of thorns. Spiracles large, oval shaped openings placed just below the eye on the dorsal side. 10 nuchal thorns present in the center below the spiracles, followed by a naked area, which precedes 24 median abdominal thorns. 1 thorn each present on either side of the 22<sup>nd</sup> median abdominal thorn. Teeth, each with a single large cusp.

Tail broad, shorter than disc length, and tapering posteriorly into a blunt edge. Thirty-two thorns on the median axis of the tail, before the first dorsal fin; the alternate thorns smaller in size. On either side of the median row of thorns is another row of thorns or "bucklers". Scattered thorns pointing outwards arise from the lateral sides. The dorsal fins are on the posterior end of the tail, the first dorsal fin is smaller, the base of which equals in distance the interdorsal space. 5 thorns in the interdorsal space. Caudal fin rudimentary. Ventral base of tail smooth. Ventral surface of the body has prickles on the snout, front margin of the disc, internasal region and tail.

*Colour:* Dorsal surface is greyish on the central part and the tail, and dark black at the outer edges. Ventral surface is grey in colour.

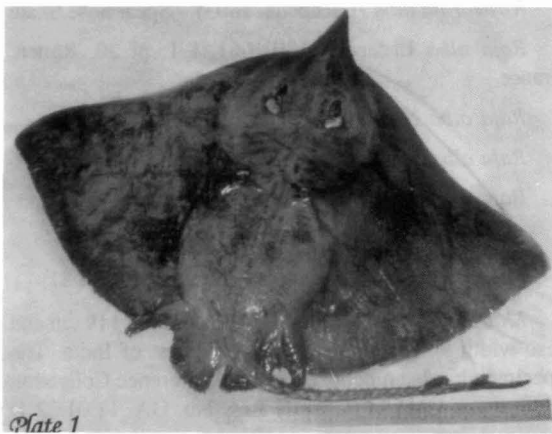


Fig. 1. *Rostroraja alba*

**Discussion**

The morphometric characters of the skate *R. alba* described here are in accordance with that of the female specimen of same species described by Wallace (1967) and Hulley (1986) from South African waters. Stehmann (1976) stated that for topographical and climatic reasons, the northern Indian Ocean was not a center of radiation of skates and that skates that occur there migrated from centers of radiation in the Atlantic and western Pacific Oceans. Moreover, vessels nowadays venture out deeper into the sea (even upto 400 m) bringing in more varieties of demersal fishes in the landings. This could possibly be the reason for the presence of new records of skates in the Indian waters.

Key to species of the family Rajidae recorded from Indian waters (after Misra, 1969)

1. Snout about 3 – 3.5 times the interorbital distance; dorsals very close together ..... 2
  - Snout about 4.5 times the interorbital distance; dorsals widely separated by a distance about the length of the base of first dorsal fin..... 3
2. Single row of prominent spines on tail ..... *F. mammillidens*
  - More than one row of prominent spines on tail ..... *A. reversa*
3. A single row of spines on tail; second dorsal fin situated away from the tip of the caudal fin by a distance equal to base of both the dorsals .... *D. johannis-davisi*
  - More than one row of spines on tail; second dorsal fin situated nearer tip of caudal fin by a distance equal to or less than the base of the first dorsal fin ..... 4
4. Prominent rostral spine; no ocellus on dorsal surface ..... *C. andamanica*
  - No prominent rostral spine; ocellus may be present or absent ..... 5.
5. Interdorsal space equal to or lesser than base of first dorsal; no ocellus; dorsal surface of disc with a series of white spots ..... *R. alba*
  - Interdorsal space longer than base of first dorsal fin; ocellus present; no white spots on disc as above ..... 6
6. Ocellus present on the posterior median base of pectoral fin ..... *O. powelli*
  - Ocellus present on the middle region of pectoral fin ... *R. miraletus*

Table 1. *Morphometric measurements of Rostroraja alba (Lacepède, 1803) (as % of total length)*

Characters	India Present study	South Africa Wallace, (1967)
Total length	100	100
Length of disc	56.9	53.1
Snout to greatest width of disc	36.0	31.8
Snout to origin of first dorsal	84.5	82.6
Snout to origin of second dorsal	91.2	90.1
Snout to anterior end of orbit	20.0	15.7
Disc width	79.5	77.7
First dorsal base interspace between dorsal bases	2.5	6.0
Second dorsal base	2.5	1.7
Interorbital	5.0	5.7
Distance between spiracles	5.3	5.1
Snout to tip of lower jaw	6.7	6.7
Snout to anterior end of cloaca	20.7	17.1
Width of mouth	55.4	49.2
Between inner ends of 1 <sup>st</sup> pair of gill slits	10.0	9.3
Between inner ends of 5 <sup>th</sup> pair of gill slits	20.1	16.7
	11.2	10.0

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