

## Short Communication

# First record of *Uranoscopus crassiceps* (Alcock, 1890) (Perciformes: Uranoscopidae) from off the Arabian Sea coast, south-western India

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### Abstract

*Uranoscopus crassiceps*, a marine demersal species of stargazer occurring at depths from 187-230 m, is recorded from off the southwest coast of India in the Indian EEZ. The species was expected to occur in the region, but not previously reported. It is also known from northern Somalia, southern Yemen and Oman. 17 specimens of *U. crassiceps* were collected at a depth of 200-230 m during the survey of Fisheries Oceanographic Research Vessel (FORV) Sagar Sampada (Ministry of Earth Sciences, Government of India), from the west coast of India. A morphometric and meristic analysis was performed, and the specimens were compared with the original description and redescription. The species is characterised by a large head and relatively long pelvic fin, colour of the caudal fin slightly greenish yellow in freshly caught specimen.

**Keywords:** FORV, South West coast of India, Redescription, Demersal, HSDT-CV.

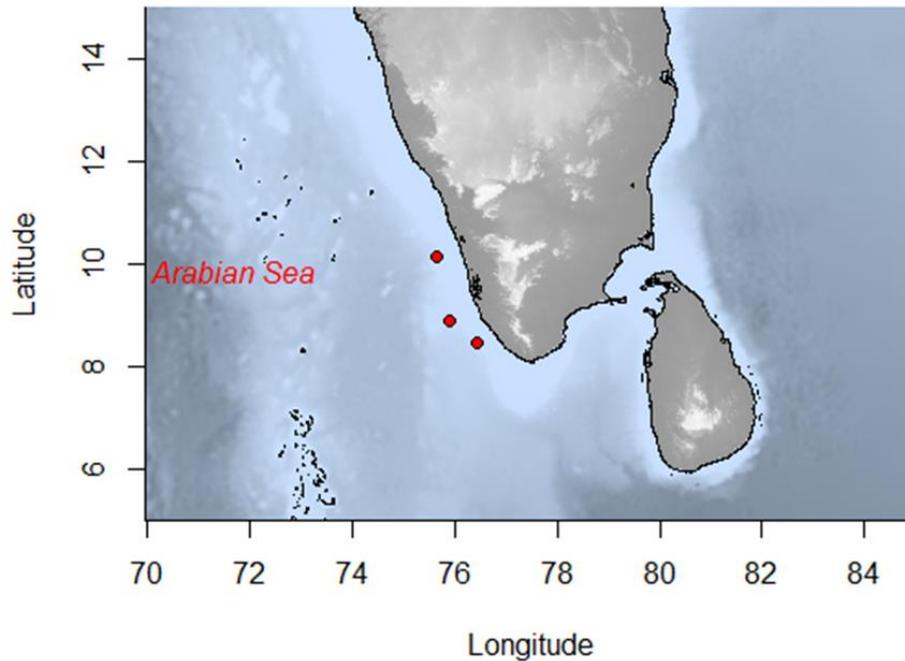
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### Introduction

The Uranoscopidae (stargazers) of the Perciformes are globally distributed both tropical and temperate oceans. The family consists of eight genera and 53 species (Eschmeyer and Fong 2016) and the genus *Uranoscopus*, most specious in the family, consists of 22 valid species (Eschmeyer et al. 2016). Stargazers bury in sand or mud, occasionally some species known to enter brackish or even fresh water habitats (Fricke et al. 2013). The members of the family are characterised by dorso-laterally directed eyes placed on near the top of a large, flattened, cuboid head; an oblique to vertical mouth, with lips usually lined with cutaneous cirri; and an elongate, sub compressed body (Pietsch 1989). The genus is distributed in the Indo-West Pacific, eastern Atlantic, Mediterranean and Black Sea. According to Fricke et al. (2013), the Indian Ocean with the adjacent Red Sea is the area with the highest diversity, inhabited by 68% of the valid species (15 species of *Uranoscopus*). In this paper, specimens collected from off the southwest coast of India are presented as a new record in the region.

### Material and Methods

Seventeen specimens of *Uranoscopus crassiceps* were collected during Cruise 322 and Cruise 332 of the exploratory deep-sea fishery surveys of FORV Sagar Sampada (Ministry of Earth Sciences, Government of India) along the south-west coast of India. The specimens were collected using a High-Speed Demersal Trawl-Crustacean Version (HSDT-CV); the vessel speed during the operations was 3.0-4.5 knots. The specimens were preserved in 5% buffered formaldehyde solution and deposited at the CMFRI Referral Museum, catalogue No: GB 31.155.5.8. Identification was based on the original description (Alcock 1890), and the redescription of the species from Oman (Fricke et al. 2013). References are cited according to Fricke and Eschmeyer (2016a), collection abbreviations according to Fricke and Eschmeyer (2016b). The distribution map was created using R software (R Core Team 2016), marmap package (Pante and Simon-Bouhet 2013) (Fig. 1). General methods for morphometric measurements follow Kishimoto (1984), fin elements counts follow Fricke (1983); percentages



**Figure 1.** Sampling area of the cruises off the south-west coast of India; stations where *Uranoscopus crassiceps* was collected are indicated by red circles.

of standard length (SL) and head length (HL) were calculated for comparison of specimens of different sizes.

## Results and Discussion

**Diagnosis:** The important characters for identifying the species include a large head, a depressed body, 52-54 oblique rows of body scales, scales tubiform, breast and belly naked, 1-4 spines in the first dorsal fin well-developed, absence of post-interorbital knobs, a dorso-laterally flattened head, a pair of widely separated basipterygial processes, and joints of head bone elements marked by deep channels.

**Morphometric and meristic characters:** Dorsal-fin V+iii,11; anal-fin i,13; pectoral-fin i,17; pelvic fin I,5; caudal-fin (iii),i,10,i,(iii). Depressed body tapering and slightly compressed in the posterior part. 52-54 oblique rows of body scales. Breast and belly are naked. Dorsally positioned lateral line and embedded with tubiform scales. First dorsal fin contains 1-4 well-developed spines. Broad pectoral fins, truncated dorso-posterior margin. Long dorsal and anal fin bases, height of soft dorsal-fin 2.6-2.8 in second dorsal-fin base length, height of anal fin 4.6-4.8 in anal-fin base length. Large head flattened dorso-laterally, dorsal and lateral surfaces and encased in bone (Fig. 2C), a pair of basipterygial processes distinctly separated, joints of head bone elements seems to be deep channels in the head. Post-interorbital knobs absent.

**Colour of fresh specimen:** Head and body brown, belly, thorax and pectoral fin base white, eyes blackish brown, sides of body slightly greenish. Caudal fin rays reddish brown. Upper half of the pectoral fins slightly transparent (Fig. 2A).

**Colour in preservative:** Head and body dark brown, ventrally light; fresh colour markings have otherwise disappeared (Fig. 2B).

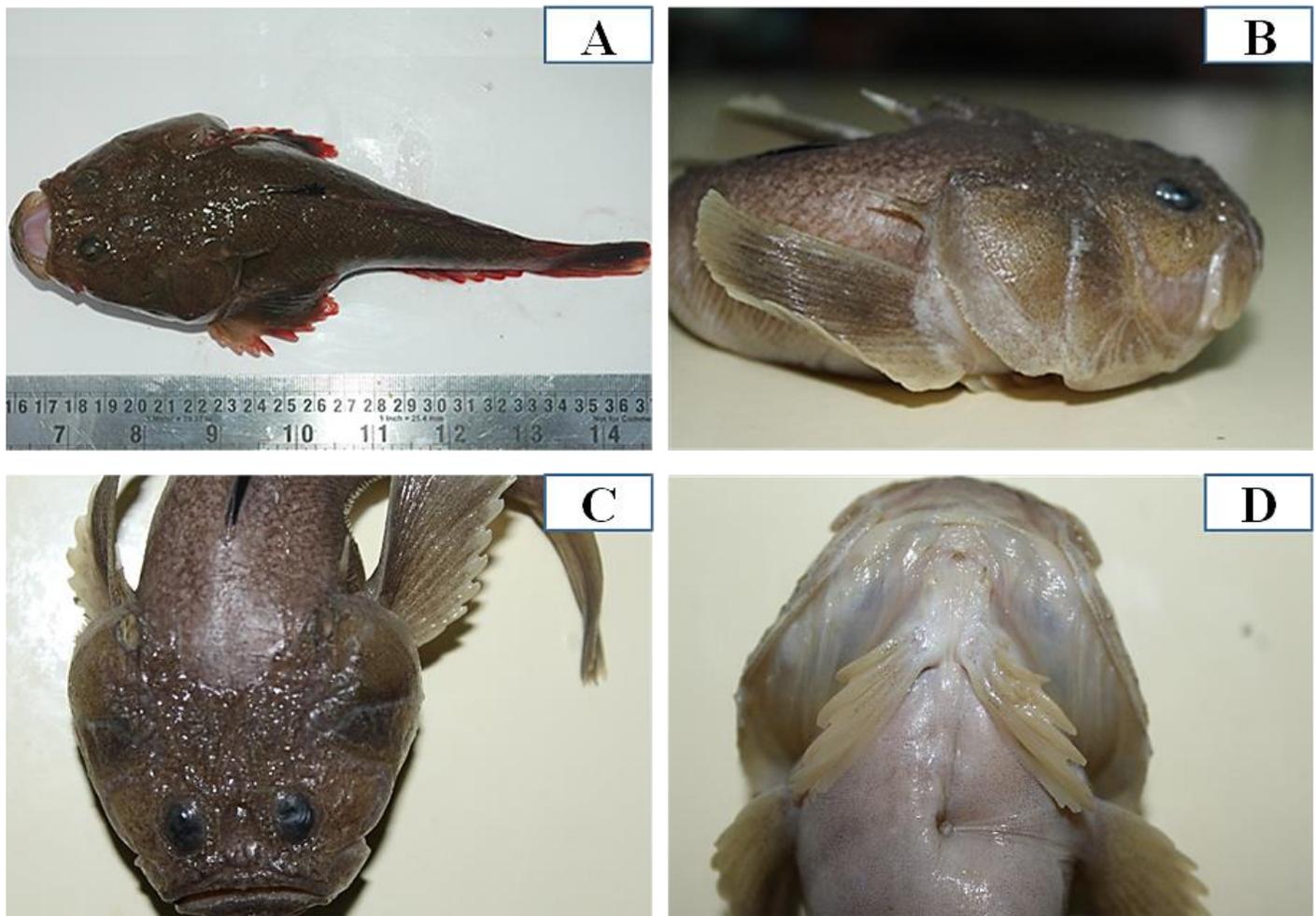
The measurements of the specimens were compared with the redescription of Fricke et al. (2013), and they were identified as *U. crassiceps*. No significant differences were found between the specimens examined and material from other regions. The morphometric and meristic data of examined specimens are presented in Table 1. *Uranoscopus guttatus*, another species that is known from the south-west coast of India, resembles *U. crassiceps* in its general appearance. According to Fricke et al. (2013), *U. crassiceps* and *U. guttatus* (known

**Table 1.** Morphometric and meristic data of *Uranoscopus crassiceps* from the south-west coast of India (17 specimens) compared with morphometric and meristic data of *Uranoscopus crassiceps* from Oman and India (four specimens).

<b>Proportion</b>	<b>Fricke et al. 2013</b>	<b>Present study</b>
<b>% of standard length</b>		
Head length	2.7-2.9	2.20-2.77
Head width	2.9-3.3	2.97-3.34
Length between snout and gill opening	3.4-3.8	2.71-3.27
Length of longest anal fin soft ray	7.2-10.7	8.80-11.26
Pelvic fin length	4.2-4.6	4.21-5.79
<b>% of head length</b>		
Head width	1.1	1.13-1.16
Length of postorbital part of head	1.2-1.4	1.66-1.82
Orbit diameter	5.4-6.8	4.01-5.67
Upper jaw length	2.2-2.4	1.89-2.29
Caudal peduncle depth	3.3-4.6	4.00-5.52
Caudal fin length	1.4-1.7	1.77-2.17
Cleithral spine length	4.3-7.2	4.88-8.37
Distance b/w basipterygial processes	4.5-6.3	4.27-6.62
Opercular width	2.6-3.7	2.76-3.67
<b>% of orbit diameter</b>		
Interorbital width	0.6-0.8	0.74-0.89
Length of interorbital fossa	1.0-1.2	0.83-1.34
Greatest infraorbital depth	0.8-1.0	0.66-1.14
Orbit diameter % of width of interorbital fossa	0.6-0.9	0.70-1.02
Length of basipterygial process % of distance between basipterygial processes	1.0-1.3	1.16-1.34
Longest dorsal soft ray length % of longest anal soft ray length	0.7-0.8	0.63-0.97
Pectoral fin length % of cleithral spine length	0.2-0.4	0.22-0.33

from the southern Red Sea and eastern India) have a similar body colouration, but *U. crassiceps* is distinguished from *U. guttatus* by narrower head width (1.07-1.10 vs. 1.4 %head length), absence of post-interorbital knobs (present in *U. guttatus*), and 41-54 lateral scale rows (55 in *U. guttatus*). In the present specimens, the head width equals 1.12-1.16 in head length (Table 1), agreeing with *U. crassiceps* from other regions. The absence of post interorbital knobs is another clear difference to separate these two species.

Alcock (1890) originally described the species, based on specimens collected from the northeastern Indian Ocean, off Chennai, India. It was recently reported from the Arabian Sea coast of Oman and redescribed, and information on adults was provided for the first time (Fricke et al. 2013). Previously the species had also been reported from off northern Somalia, and southern Yemen (Norman 1939). From the above information, the species was expected to occur off south-western India, but not reported from area. *Uranoscopus crassiceps* is apparently rare off south-western India, as during extensive surveys the species was only found in small numbers at three stations out of 22 survey stations.



**Figure 1.** *Uranoscopus crassiceps*. (A) Dorsal view of a freshly collected fish, 21 cm total length), (B) lateral view of head, (C) dorsal view of head and (D) ventral view of head.

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