

## Distribution and Ecology of *Pterotrachea coronata* (FORSKÅL)

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The genus *Pterotrachea* comprises 4 species, *Pt. coronata* being the largest. This paper reports an attempt to find out how this species is distributed in the Indian Ocean. Most of the IOBC samples were collected in a uniform manner from 200–0 m with the Indian Ocean Standard Net (IOSN) (CURRIZ, 1963; RAO, 1973). All the large specimens

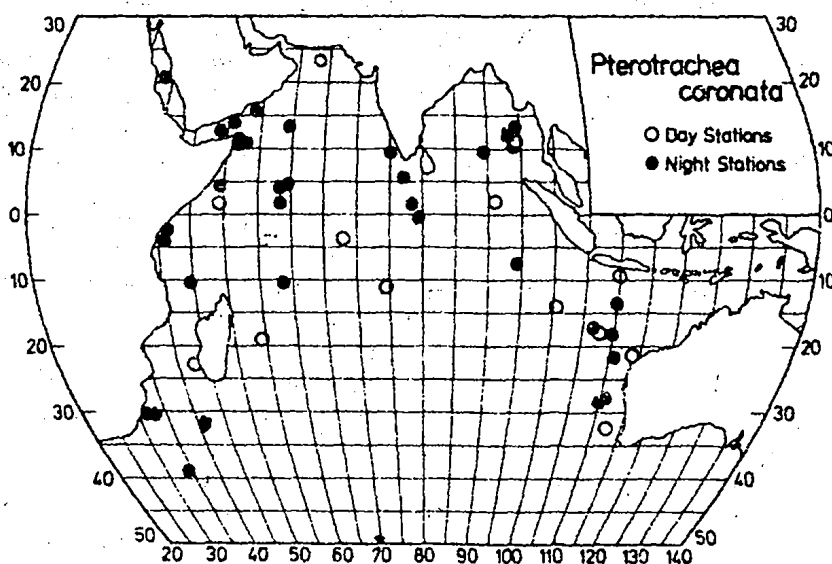


Fig. 1. Stations in which *Pterotrachea coronata* was present

were removed from the plankton samples before splitting and the smaller specimens were sorted from the subsamples.

The present study revealed that the sucker a secondary sexual character, is undoubtedly confined to the male sex only.

A total of 55 specimens was examined. 34 specimens were females and 13 were males. Eight specimens could not be identified as to sex because they were badly damaged. OKUTANI (1957) noted that females were 3.5 times as numerous as males in his collections from Japanese waters. DALES (1952) also reported that the females were more numerous than the males.

The largest specimen measured only 104 mm and the smallest 7 mm in length. The Indian Ocean specimens were smaller than those recorded elsewhere.

## I. Food Habits

Gut contents of 21 specimens from 21 different stations were examined. The principal food includes copepods, chaetognaths and ostracods. Inside the oesophagus of a 73 mm female *Pt. coronata* numerous copepods of fairly large size (4 mm) were observed. In another 13 mm specimen, a 5 mm copepod *Rhincalanus cornutus* was noted. In all cases examined the species was exclusively carnivorous and had a varied diet in accordance with the relative abundance of the food species available.

## II. Distribution

The distribution of *Pt. coronata* in the Arabian Sea, the Andaman Sea and the western Indian Ocean was discussed in a preliminary study (ARAVINDAKSHAN, 1969). The present observation is that the species was present in only 49 samples of the 1927 examined from the epipelagic zone, with a total number of 63 specimens. Fig. 1 shows the total number of stations where *Pt. coronata* occurred. It was absent in the eastern Arabian Sea, in the northern and western parts of the Bay of Bengal and in the central zone of the southern Indian Ocean. It was common around the mouth of the Gulf of Aden, in the eastern African waters, in the eastern part of the Andaman Sea, and off the NW of Australia.

The species were caught at 38 out of 920 night stations and 11 out of 1001 day stations. Therefore, vertical diurnal migration is usual in this species.

*Pt. coronata* was found in almost all the water masses of the upper layer of the Indian Ocean at different seasons of the year. Comparing the stations where the net sampled a single water mass, it is seen that the species must be euryhaline and eurythermal; the range of tolerance appears to be 33–40‰ and 12–30° C respectively. It seems likely that the species requires a relatively high O<sub>2</sub> content since it was not taken in waters with less than 2.0 ml l<sup>-1</sup> dissolved oxygen.

Most specimens come from stations where the net fished through different layers, whether the boundary between the two watermasses was shallow or deep, whether a thermocline was present or not. This suggests that the species lives mostly at the boundary between surface and subsurface water zooplankton aggregates as a deep scattering layer. A similar distribution was found by NAVAS (1969) for a hydromedusa, *Halistaura bruuni*, that is also a zooplankton feeder. Therefore, although *Pt. coronata* has been described as a warm-water epipelagic species, the present data suggest that it is a warm-water, widely tolerant species that performs vertical migrations following the copepods on which it feeds. For this reason it is common in some upwelling areas, although very few specimens were caught in the center of upwelling. The scattered and wide distribution of the species and its comparatively greater abundance in enriched areas may be explained by its eurytopic capacity and its euryphagous habits.