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**Rhinopias eschmeyeri** Condé, 1977 collected from the coral reef areas (Fig. 2) during the present study is reddish in colour, has 12 dorsal spines, 9 dorsal rays, 3 anal spines and 5 anal rays.

The systematic position of this species is:

- **Order**: Scorpaeniformes
- **Family**: Scorpaenidae
- **Subfamily**: Scorpaeninae
- **Genus**: *Rhinopias* Gill, 1905
- **Species**: *Rhinopias eschmeyeri* Condé, 1977

Two specimens were collected from Gulf of Mannar, the standard lengths of which were 122.5 mm and 128 mm. The species is distinguished by the presence of one small black spot, slightly greater than pupil diameter, in the middle of the membrane between the seventh and eighth dorsal-fin soft rays; dorsal profile of snout curved, initially convex, then deeply concave; interorbital space deep, occipital pit moderately deep; 16 pectoral-fin rays, with the distal margins of the spinous portion of the dorsal fin and soft-rayed portions of the dorsal, pelvic, anal and caudal fins very weakly notched, membrane of the spinous portion of the dorsal fin notably fleshy, tips of each caudal-fin ray divided into four branches and dorsal-fin spines relatively soft with tips bending easily under slight pressure. This species is reported earlier from Australia, Indonesia, Japan, Mauritius, Philippines, Reunion, Seychelles and Vietnam. The synonyms of this species are *Rhinopias eschmeyeri* and *R. frondosa*.

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**Marine litter in the coastal environment of Mangalore**

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The continuous flow of large quantities of plastics and waste from land and sea based sources result in a gradual build up of litter in the marine and coastal environment. Plastics and other man-made objects cause serious impacts on environment, economics, safety and health. Worldwide, millions of marine mammals, birds, turtle and fish perish as a result of entanglement or ingestion of discarded debris. Marine litter spoils beaches, floats on the sea surface, drifts in the water column due to the current and is also found on the deep sea bed.

Monitoring of the three beaches in Mangalore viz., Chitrapur, Panambur and Thaneerbhavi has shown that Chitrapur has the highest rate of marine litter of 901.5 g/m² (Fig. 1) followed by Thaneerbhavi 689.85 g/m² and Panambur 83.33 g/m². The items in the marine litter varied (Fig. 2) consisting of ice cream spoons, caps, toothbrush, plastic straw, small bottle caps, plastic sachets, nylon ropes, plastic mats, slipper, shoes, thermocole, sponges etc. The size of the plastic debris ranged from 0.01 cm to 110 cm. The changing profile of the beach with seasonal shifts and highly eroding coastline takes the marine debris directly to the sea. The sandy beaches looses its binding ability during the dry weather phase and buries part of the marine litter. This can then leach into the soil and cause further health hazard by contaminating the water column.
Fig. 2. Variety of plastics found in the beach

In Mangalore, an examination of the guts of oilsardine and mackerel (Fig. 3 and 4) revealed nylon ropes of length 1 mm to 4 mm. Sardines and mackerel being plankton feeders, it could have accidentally ingested along with the plankton. UNEP has estimated that in the Central Pacific there are 3 kg of marine litter for every kilogram of plankton. Off Mangalore, it was estimated that at present there are 0.00168 kg of plastic for every kg of plankton. Plastic covers are often mistaken for the feed of turtles as it resembles jellyfish, a food item of turtles. Experimental trawling in grounds off Mangalore also indicated the presence of marine litter (Table 1). Benthos collected from the coast off Chitrapur beach using Petersen grab indicated the presence of plastic strands (Fig. 5) entangled along with polychaete larvae.

Fig. 3. Plastic strands of less than 0.05 mm observed in the gut of oilsardine along with digested food

Table 1 Quantity of plastic obtained in trawling ground off Mangalore for two months in the year 2010

<table>
<thead>
<tr>
<th>Station</th>
<th>Starting station</th>
<th>Ending station</th>
<th>Time duration of trawling</th>
<th>Depth in m</th>
<th>Plastic in g/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>N 12° 48' 995&quot; E 74° 42' 796&quot;</td>
<td>N 12° 50' 349&quot; E 74° 42' 099&quot;</td>
<td>45 min</td>
<td>18-28</td>
<td>0.48486</td>
</tr>
<tr>
<td>2</td>
<td>N 12° 50' 934&quot; E 74° 42' 410&quot;</td>
<td>N 12° 50' 495&quot; E 74° 43' 709&quot;</td>
<td>45 min</td>
<td>12-13</td>
<td>1.21215</td>
</tr>
<tr>
<td>3</td>
<td>N 12° 50' 708&quot; E 74° 45' 043&quot;</td>
<td>N 12° 49' 705&quot; E 74° 46' 240&quot;</td>
<td>45 min</td>
<td>9-10</td>
<td>0.40405</td>
</tr>
</tbody>
</table>

Marine litter is entirely due to human activity and therefore can and has to be controlled by human management. The best way is to reduce plastic usage at source and also prevent the waste from reaching the coastal environment. Public awareness combined with better solid waste management can help protect our environment. A lesser consumerist attitude can go a long way in preventing marine litter build-up.