Occurrence of Obtuse barracuda *Sphyraena obtusata* Cuvier, 1829  
(Actinopterygii: Perciformes: Sphyraenidae) from Chilika lagoon,  
Odisha coast of India

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The finding of obtuse barracuda, *Sphyraena obtusata* from a Ramsar site of India, Chilika lagoon of Odisha coast is  
presented. This is the first record of this species from the lagoon as well as from a brackishwater ecosystem. The details of  
morphology, morphometric and meristic characters are also discussed.

**[Key words: Sphyraena obtusata, Obtuse barracuda, New record, Chilika, India]**

**Introduction**

Chilika lagoon is a recognized Ramsar site of  
International importance and the largest brackish  
water lagoon of Asian continent located along the  
Odisha coast, well known for its high bio-diversity. A total of 317 species belonging to 207 genera in  
88 families and 23 orders constitutes the updated  
finfish diversity of the lagoon till the year 20141.

Fishes, commonly called Barracuda (Perciformes:  
Sphyraenidae) and also known as sea-pikes, are  
pelagic in habitat, distributed mainly in the Indo-  
Pacific region. The family Sphyraenidae comprises  
of single genus (*Sphyraena*) with 27valid species  
globally2,3. From Indian waters, 9 species already  
have been confirmed3. From Chilika lagoon, only  
two species of Sphyraenidae have been recorded so  
far1, those are *Sphyraena jello* Cuvier, 1829 and  
*Sphyraena putnami* Jordan & Seale, 1905. So, the  
present report of *Sphyraena obtusata* Cuvier, 1829 is  
a new record of Sphyraenidae fish species from the  
coastal lagoon, and an addition to the ichthyo-faunal  
diversity of the Chilika lagoon.

**Materials and Methods**

On 31 March 2016, a single fresh fish specimen  
(TL 116 mm; 7.78 g) was collected from a fisherman  
boat, capturing fishes through screen barrier nets  
(*khonda jal*) near Satapada area (85°44’ E and  
19°67’ N) of Chilika lagoon. Immediately after  
collection, the specimen was washed with freshwater,  
photographed and its length and weight were recorded  
on board and then preserved in 10% formaldehyde  
with proper labeling. Species was identified as  
*Sphyraena obtusata* following standard taxonomic  
literatures4,5,6. Morphometric and meristic characters  
were determined in the laboratory.

**Results and Discussion**

**Systematics account:**

- Order: Perciformes Bleeker, 1859;  
- Family: Sphyraenidae Rafinesque, 1815;  
- Genus: *Sphyraena* Artedi, 1793;  
- Species: *Sphyraena obtusata* Cuvier, 1829.

The specimen (Fig. 1) was characterized by  
elongate and slightly compressed body. Head  
large with long and pointed snout. The maxilla  
(upper jaw) reaching to anterior margin of eye,  
lower jaw is projecting. Teeth present on both  
jaws are strong, pointed and flattened; anterior teeth  
are large and posterior ones smaller. A few  
triangular, flattened teeth on roof of mouth

**Fig. 1 — Sphyraena obtusata** collected from Chilika
(palatines). In the gill, the first arch with two prominent gill rakers (Fig. 2b); upper and lower gill arches with rough platelets but without distinct spines. Pevic fins originated well before first dorsal-fin origin. Pectoral fin tip reaches to the level of first dorsal fin origin (Fig. 2a).

Body colour is silvery white; sides without dark bars or chevrons. However, a longitudinal yellow or dark stripe above lateral line is clearly visible in fresh condition. Sides of mouth are bright yellow. Second dorsal and caudal fin is yellow. Terminal end of caudal fin is with black margins.

The specimen had a total length of 116 mm, fork length 106 mm and standard length 92 mm. Head length of the specimen 33.7 mm, body depth 15.4 mm, eye diameter 6.8 mm (Table 1). Counts of spines and soft fin rays of the specimen were very similar as characterized by all Sphyraena species. The number of spines in the II dorsal fin (1); fin rays in dorsal fin I (5), dorsal fin II (9), pectoral fin (14), ventral fin (5), anal fin (2+9) and caudal fin (17). A total of 86 scales along lateral line while transverse scales above lateral line were 6.5. In additions, there was 2 gill rakers present on the first gill arch.

Sphyraena obtusata has little confusion with S. flavicauda as both the species are more or less similar morphologically. The only difference is that the pectoral fin tip of S. flavicauda is not reaching to level of first dorsal fins origin and height of first dorsal fins less than postorbital distance.

Sphyraena pinguis Günther 1874 also characterized with 2 gill rakers on first gill arch and the pectoral fin tip reaches the level of dorsal fin origin as similar as S. obtusata but the former have sharply pointed posterior tip of opercle just above the level of pectoral-fin base while later has obtuse posterior tip of opercle.

Sphyraena iburiensis Doiuchi & Nakabo, 2005 resembles S. obtusata in lateral line scale counts in having 2 longitudinal stripes on its lateral line surface and also presence of 2 gill rakers on the first gill arch but the most distinguishable character is having 8.5-9.5 scales above the lateral line (transverse series) in case of S. iburiensis while the same is 5-7.5 in S. obtusata.

The species Sphyraena obtusata is a marine to brackish-water dwelling species, inhabiting coastal areas like bays, estuaries and lagoons. It usually found in schools in sea-grass beds and rocky reefs. Globally, the species is distributed in the Indo-Pacific region i.e., Red Sea and East Africa to Samoa, north to the Ryukyu Islands, south to Lord Howe Island and eastern Mediterranean Sea. The species also commonly occurs in Indian marine waters specifically along southern and south-western regions contributing 1.33 % to the marine fishery of the country. But the present finding was the first ever report from the Odisha coast and also from an estuarine (water salinity of 29.4 ppt) ecosystem like Chilika lagoon.

It is assumed that the species has migrated from its coastal habitat of the Bay of Bengal to the lagoon through outer channel (new mouth) to Satapada area from where the fish was caught. As the collected

Table 1 — Morphometric measurements (mm) of Sphyraena obtusata from Chilika (TL: total length, HL: head length, DFL: dorsal fin length, PFL: pectoral fin length, VFL: ventral fin length, AFL: anal fin length)

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Measures</th>
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<tbody>
<tr>
<td>Total length</td>
<td>116</td>
</tr>
<tr>
<td>Fork length</td>
<td>106 (91.38 % TL)</td>
</tr>
<tr>
<td>Standard length</td>
<td>92 (79.31 % TL)</td>
</tr>
<tr>
<td>Head length</td>
<td>33.7 (29.05 % TL)</td>
</tr>
<tr>
<td>Body depth</td>
<td>15.4 (12.16 % TL)</td>
</tr>
<tr>
<td>I Dorsal fin length</td>
<td>14.2 (12.24 % DFL)</td>
</tr>
<tr>
<td>I Dorsal fin base length</td>
<td>5.8 (40.85 % I DFL)</td>
</tr>
<tr>
<td>II Dorsal fin length</td>
<td>9.5 (67.37 % II DFL)</td>
</tr>
<tr>
<td>II Dorsal fin base length</td>
<td>11.7 (10.09 % TL)</td>
</tr>
<tr>
<td>Pectoral fin length</td>
<td>3.1 (24.5 % PFL)</td>
</tr>
<tr>
<td>Pectoral fin base length</td>
<td>11.5 (09.91 % TL)</td>
</tr>
<tr>
<td>Ventral fin length</td>
<td>2.3 (20 % VFL)</td>
</tr>
<tr>
<td>Ventral fin base length</td>
<td>13.1 (11.29 % TL)</td>
</tr>
<tr>
<td>Anal fin length</td>
<td>9.4 (71.76 % AFL)</td>
</tr>
<tr>
<td>Caudal fin length</td>
<td>18.1 (15.6 % TL)</td>
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<tr>
<td>Pre-dorsal length</td>
<td>45.2 (38.97 % TL)</td>
</tr>
<tr>
<td>Pre-pectoral length</td>
<td>32.7 (28.19 % TL)</td>
</tr>
<tr>
<td>Pre-ventral length</td>
<td>39.9 (34.4 % TL)</td>
</tr>
<tr>
<td>Pre-anal length</td>
<td>69.2 (59.66 % TL)</td>
</tr>
<tr>
<td>Distance between I and II Dorsal fin</td>
<td>17.7 (14.65 % TL)</td>
</tr>
<tr>
<td>Horizontal eye diameter</td>
<td>6.8 (20.18 % HL)</td>
</tr>
</tbody>
</table>

Body weight 7.78 g
A specimen was relatively small in size, the migration might happen in search of food or drifted through wave action to the lagoon water. Furthermore, the population characteristics of the species can be studied to ascertain the abundance, distribution and occurrence of the species in this estuarine ecosystem, because of its single encounter from the collection site. However, the present occurrence of *Sphyraena obtusata* from Chilika lagoon is an addition to its ichthyofaunal diversity, is an outcome of its post restoration effect as many fish species has been recorded from the geographical boundary of the lagoon in recent years.

**Acknowledgement**

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**References**