

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
(W. Indian Ocean)

MITSUKURINIDAE

Goblin sharks

A single species in the area - see species sheets for:

Mitsukurina owstoni Jordan, 1898 MITSU Mitsu 1

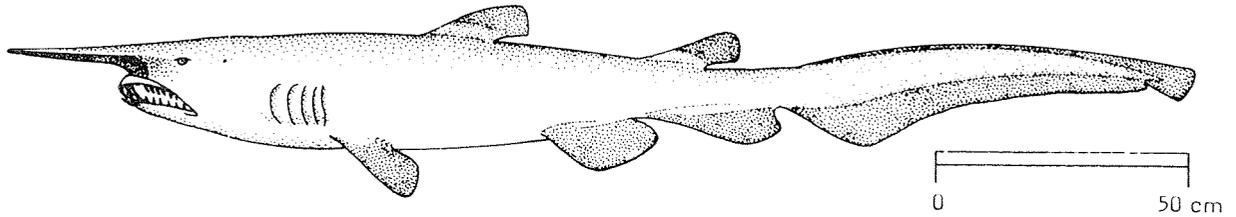
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MITSUKURINIDAE

FISHING AREA 51
(W. Indian Ocean)

Mitsukurina owstoni Jordan, 1898

OTHER SCIENTIFIC NAMES STILL IN USE : *Scapanorhynchus owstoni* (Jordan, 1898)



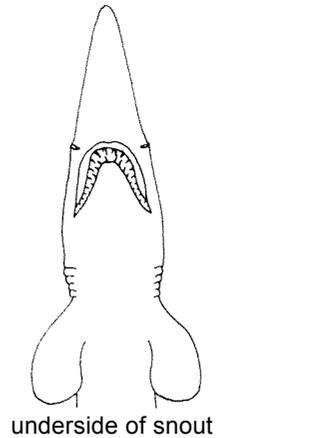
VERNACULAR NAMES:

FAO : En - Goblin shark
Fr - Requin lutin
Sp - Tiburón duende

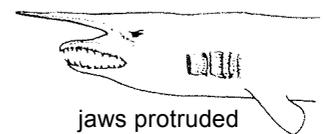
NATIONAL:

DISTINCTIVE CHARACTERS:

A moderately large, very soft-bodied, flabby shark. Head with 5 medium-sized gill slits, all in front of pectoral fin bases, their upper ends not extending onto dorsal sides of head; no gillrakers; spiracles present but very small; no nasal barbels or nasoral grooves; eyes very small on sides of head, without nictitating eyelids; snout very long and flat, formed as a narrow, pointed blade; mouth long and angular, extending well behind eyes when jaws are not protruded), but capable of moving in front of eyes when jaws are thrust forward to level of snout tip; lower labial furrows present; anterior teeth large, with long, extremely narrow, hooked, sharp-edged but unserrated cusps and no cusplets, set in 3 rows on either side of symphysis in both jaws; upper anteriors separated from the smaller laterals by a gap (no small intermediate teeth). Two low, equally large dorsal fins, the first closer to the pectorals than to the pelvics, its base well in front of the latter and much shorter than caudal fin; anal fin low, rounded, and larger than dorsal fins; caudal fin long but much less than half the total length, strongly asymmetrical, without a well-developed lower lobe. Caudal peduncle without keels or precaudal pits. Intestinal valve of ring type, with the turns closely packed like a stack of washers.

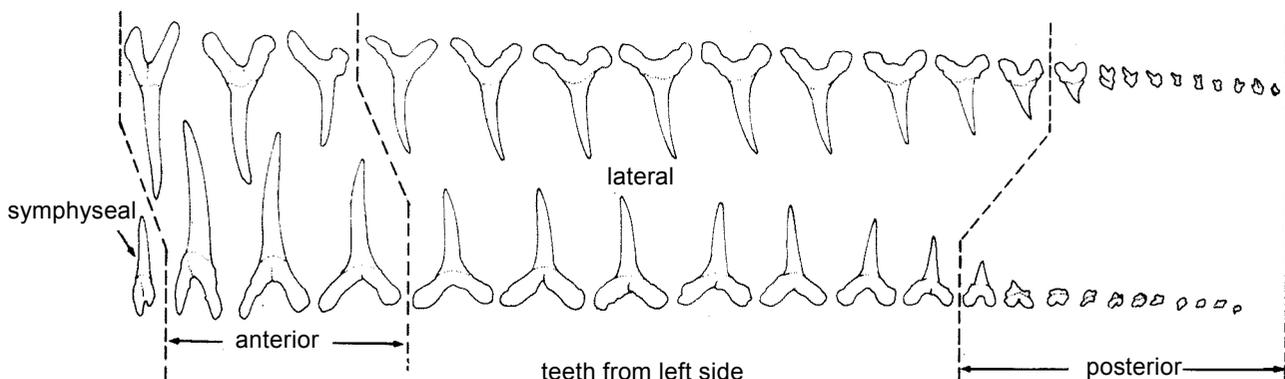


underside of snout



jaws protruded

Colour: pinkish-white to light grey on body, fins and gill region dusky.



DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

The combination of characters described above, readily distinguishes this species from all others occurring in the area

SIZE:

Maximum: about 264 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

An uncommon, deep-water, bottom-dwelling shark with a spotty but wide distribution in continental waters. In the area, it is found in deep water off South Africa but may be more wide-ranging. Elsewhere, off France, Portugal, Senegal, the Gulf of Guinea and the Cape of Good Hope, South Africa in the Eastern Atlantic, in the Western North Atlantic (off French Guiana), and in the Western Pacific (off Japan and Australia).

Apparently inhabiting the outer continental shelves and upper slopes down to at least 550 m, but occasionally taken in shallow waters. Habits poorly known, probably ovoviviparous.

Probably preys on small fishes, squids, and crustaceans.

PRESENT FISHING GROUNDS:

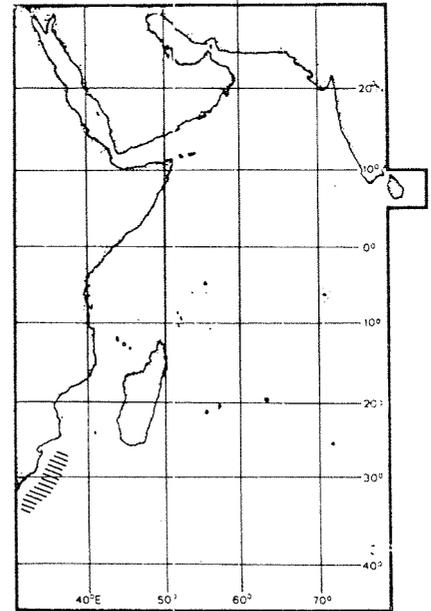
Accidental or rare offshore.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught in bottom trawls.

Utilization unrecorded.



FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
(W. Indian Ocean)

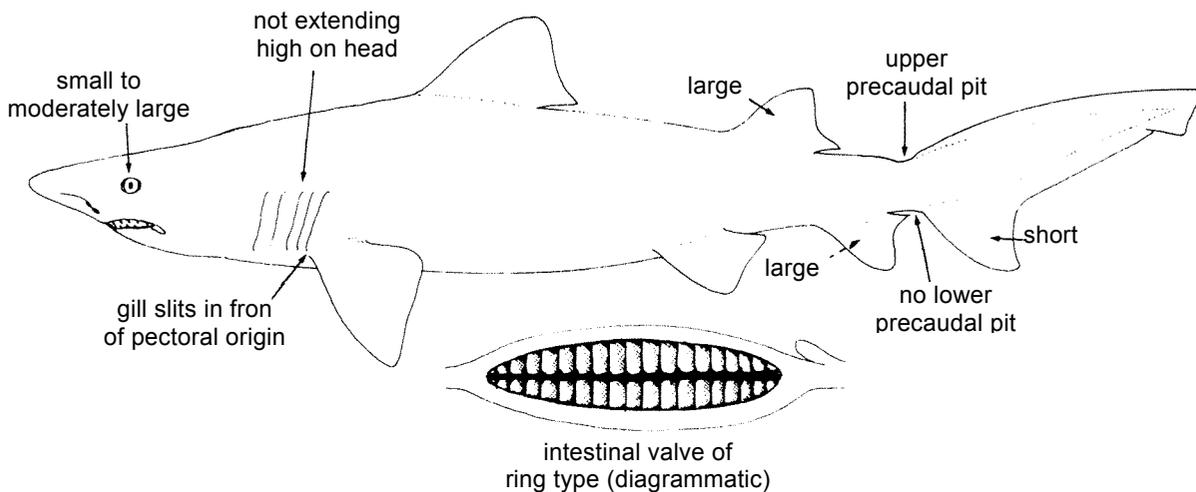
ODONTASPIDIDAE

Sand tiger sharks

Large sharks. Head with 5 medium-sized gill slits, all in front of pectoral fin bases, their upper ends not extending onto dorsal surface of head; gill arches without rakers; spiracles present but very small; no nasal barbels or nasoral grooves; eyes small or moderately large, without nictitating eyelids; snout conical or moderately depressed, not bladelike; mouth very long and angular, extending well behind eyes when jaws are not protruded; lower labial furrows usually present at mouth corners* anterior teeth enlarged, with long, narrow, sharp-edged but unserrated cusps and small basal cusplets absent in young of (at least one species), the upper anteriors separated from the laterals by a gap and tiny intermediate teeth. Two moderately large, high dorsal fins, the first originating well in advance of the pelvics, the second as large as or somewhat smaller than the first; anal fin as large as second dorsal or slightly smaller; caudal fin short, asymmetrical, with a strong subterminal notch and a short but well marked ventral lobe. Caudal peduncle not depressed, without keels; a deep upper precaudal pit present but no lower pit. Intestinal valve of ring type, with turns closely packed like a stack of

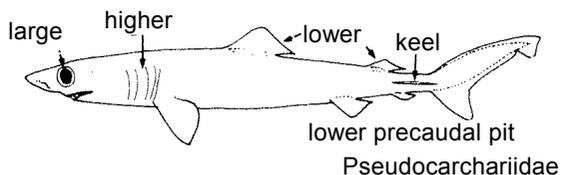
Colour: grey or grey-brown above, white or lighter below, with round or oval spots on at least one species.

These are wide-ranging, tropical to cool-temperate sharks, found inshore and down to moderate depths on the edge of the continental shelves and around some oceanic islands, but not oceanic. They feed on small bony fishes, other sharks, squids and occasionally bottom crustaceans. Normally inoffensive, but potentially dangerous if provoked. In the area, at least one species is regularly caught for food, liver oil, and processed for fishmeal.

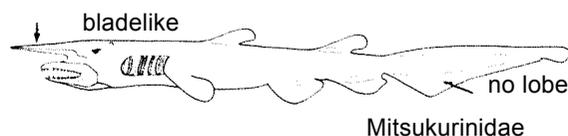


SIMILAR FAMILIES OCCURRING IN THE AREA:

Pseudocarchariidae: body slimmer, gill slits higher and reaching onto dorsal sides of head, eyes larger, no true labial furrows, dorsal and anal fins lower, a weak lateral keel on caudal peduncle and both upper and lower precaudal pits present.



Mitsukurinidae: body very soft and flabby (Odontaspidae with firmer muscles and tougher skin), snout extremely elongated, flattened and bladelike, anal fin broadly rounded (angular in Odontaspidae); no lower lobe on caudal fin, and no precaudal pits.



*Possibly absent in Euclomphodus tricuspidatus

Proscylliidae, Triakidae, Hemigaleidae and Carcharhinidae: nictitating eyelids present, anterior teeth not greatly enlarged, no intermediate teeth between anteriors and laterals, intestinal valve of spiral or scroll type.

KEY TO GENERA AND SPECIES OCCURRING IN THE AREA:

1a. Snout short and somewhat flattened (Fig.1a); eyes very small; 3 rows of anterior teeth on either side of upper symphysis (Fig.2a); dorsal and anal fins about equal in size; first dorsal fin closer to pelvic than to pectoral bases (Fig.3) Eugomphodus

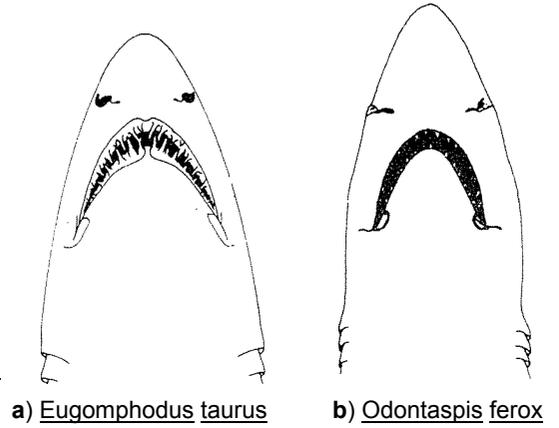
2a. Snout narrowly rounded in dorsoventral view; labial furrows present..... Eugomphodus taurus

2b. Snout broadly rounded in dorsoventral view; labial furrows absent....Eugomphodus tricuspidatus

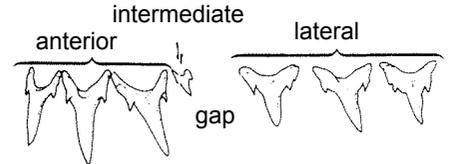
1b. Snout longer, bulbous and conical (Fig.1b); eyes relatively large; 2 rows of large anterior teeth on either side of upper symphysis (Fig. 1b,c); first dorsal fin markedly larger than the second, closer to pectoral than to pelvic bases; second dorsal considerably larger than anal fin (Figs 4,5).....Odontaspis

3a. Teeth mostly with 2 or 3 cusplets on each side; 3 or 4 rows of small intermediate teeth between upper anteriors and laterals (Fig.1b); second dorsal fin origin over or slightly posterior to insertion of pelvic fins, colour medium grey above, light below (Fig.4) Odontaspis ferox

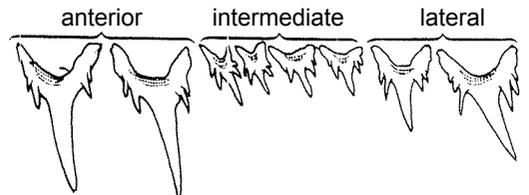
3b. Teeth with only one cusplet on each side; one row of small intermediate teeth between upper anteriors and laterals (Fig.2c); origin of second dorsal fin over midbase of pelvics; colour dark chocolate-brown above and below (Fig.5) .. Odontaspis noronhai



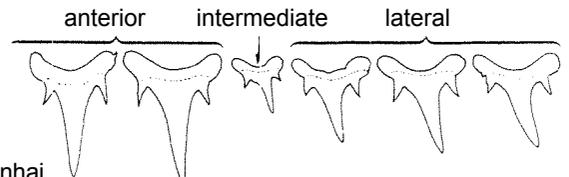
underside of head **Fig. 1**



a) Eugomphodus taurus

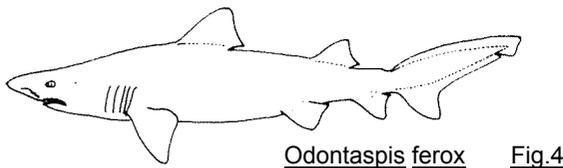


b) Odontaspis ferox

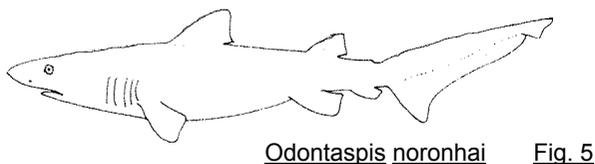


c) Odontaspis noronhai

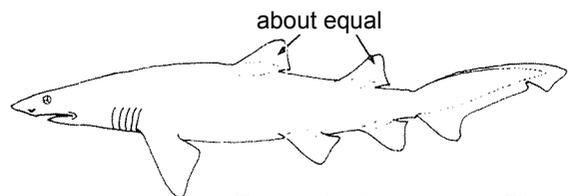
upper front teeth **Fig.2**



Odontaspis ferox **Fig.4**



Odontaspis noronhai **Fig. 5**



Eugomphodus taurus **Fig. 3**

LIST OF SPECIES OCCURRING IN THE AREA:

Code numbers are given for those species for which Identification Sheets are included

* <u>Eugomphodus taurus</u> (Rafinesque, 1810)	ODONT Eug 1
** <u>Eugomphodus tricuspидatus</u> (Day, 1878) ?	
*** <u>Odontaspis ferox</u> (Risso, 1810)	ODONT Odont 1
**** <u>Odontaspis noronhai</u> Maul, 1955 ?	

Prepared by L.J.V. Compagno, Tiburon Center for Environmental Studies, San Francisco State University, Tiburon, California, U.S.A.

* This species is often placed in Odontaspis, but external and anatomical studies show that it is very distinct and rates generic separation

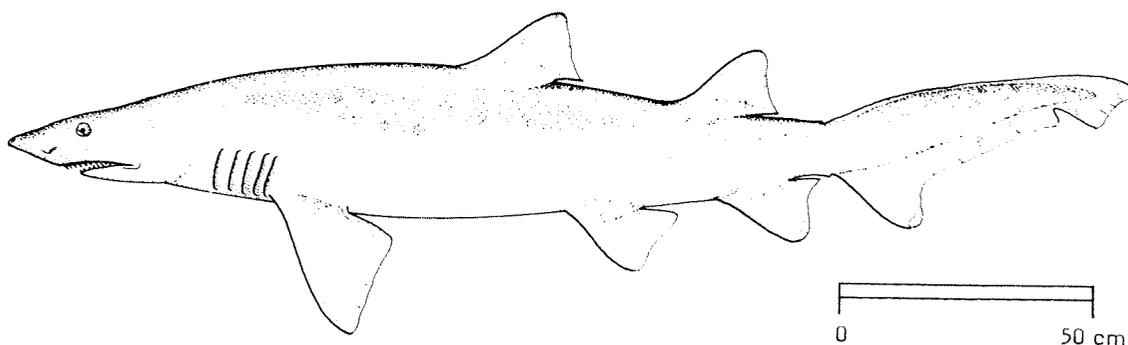
**This species is very poorly known, and may be a synonym of E. taurus. Characters separating it from E. taurus are from its original description and may be incorrect. The holotype of E. tricuspидatus is apparently lost (P.K. Talwar, personal communication)

***Sometimes considered as 2 species, O. herbsti Whitley, 1950, and O. ferox

****Possible record of this species from the area, off the Seychelles (jaws only), but locality of capture uncertain (D. Ward, personal communication)

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: ODONTASPICIDAE

FISHING AREA 51
(W. Indian Ocean)Eugomphodus taurus (Rafinesque, 1810)OTHER SCIENTIFIC NAMES STILL IN USE : Odontaspis taurus (Rafinesque, 1810)

VERNACULAR NAMES:

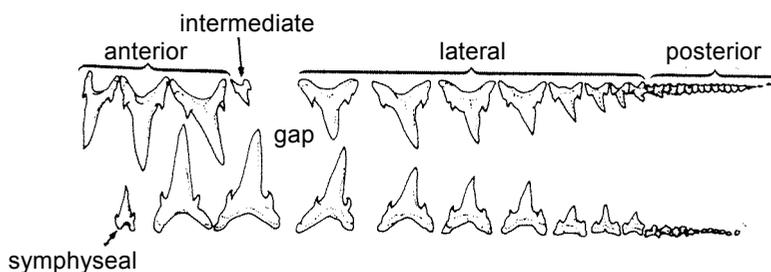
FAO : En - Sand tiger shark
Fr - Requin taureau (= Requin sable tacheté, Area 31)
Sp - Toro bacota (= Pez toro)

NATIONAL:

DISTINCTIVE CHARACTERS:

A large shark. Head with 5 medium to large gill slits, all in front of pectoral fin bases; no gill-rakers; snout very short, moderately flattened; no nasal barbels or nasoral grooves; eyes small, without nictitating eyelids; mouth very long and angular, extending well behind eyes; anterior teeth in 3 rows on either side of symphysis, large, with long, narrow, hooked, sharp-edged but non-serrated cusps and usually one short cusplet on each side; upper anteriors separated from the smaller laterals by a single row of tiny intermediate teeth (lacking in lower jaw); lower anteriors separated at front by 2 rows of small symphyseal teeth (generally lacking in upper jaw). Two dorsal fins, the base of first just in front of pelvic fin bases and well posterior to pectoral fins; second dorsal about as large as first dorsal and as anal fin; caudal fin short, strongly asymmetrical, with a pronounced subterminal notch and a short ventral lobe. No keels on caudal peduncle, but with a strong upper precaudal pit. Intestinal valve of ring type.

Colour: light grey-brown above, white below, often with round or oval, yellow or yellow-brown spots.

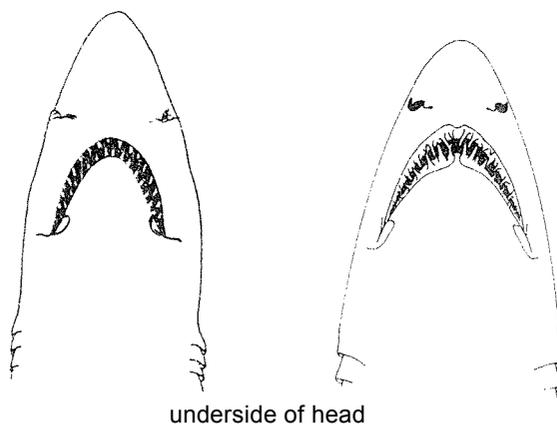
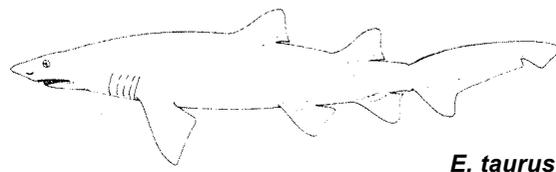
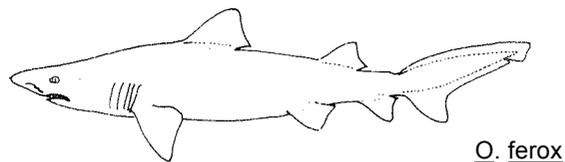
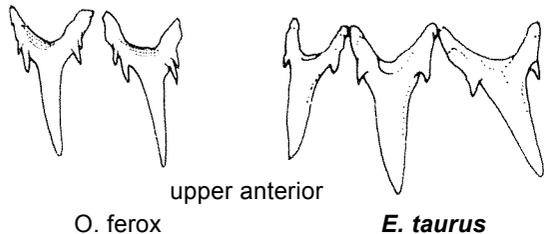


upper and lower teeth of one side

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Eugomphodus tricuspidatus: this poorly known species is said to differ from E. taurus in lacking labial furrows and in having a more rounded snout, but these characters may be in error as the species was described from a skin (now lost); E. tricuspidatus may be a junior synonym of E. taurus.

Odontaspis ferox and O. noronhai: snout more elongated and conical. eyes larger, 2 rows of large anterior teeth in upper jaw on either side of symphysis. small symphyseal teeth present in both upper and lower jaws, first dorsal fin well in front of pelvic fins. closer to pectorals, larger than second dorsal, the latter larger than anal fin.



SIZE :

Maximum: about 318 cm. most adults between 220 to 280 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Range in the area uncertain because of many records of E. tricuspidatus that may be based on E. taurus provided E. tricuspidatus itself is not a synonym of E. taurus; definitely recorded from South Africa and Mozambique, probably Red Sea, Oman, the "Gulf" and Pakistan, and possibly India. Elsewhere, wide-ranging in the Atlantic, Mediterranean Sea and Western Pacific.

A common coastal species in and outside bays, usually near the bottom. Slow but strong-swimming. very active. Females undergo yearly migrations in waters off South Africa and Mozambique. going south to cool-temperate waters to drop their young in the early spring, and returning to tropical waters in the north during the summer. Ovoviviparous. usually with 2 young, one to each uterus, but occasionally only one; size at birth between 95 and 100 cm. reported for the area. but elsewhere up to at least 120 cm.

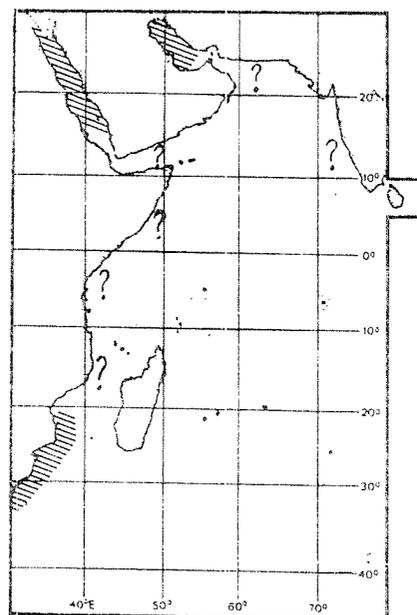
Feeds on a variety of small bony fishes. including sea catfishes, flatheads, flatfish. and jacks. also small sharks and rays, squid and occasionally crabs and lobsters. Normally inoffensive. though potentially dangerous if provoked and aggressive to divers when stimulated by speared fish.

PRESENT FISHING GROUNDS:

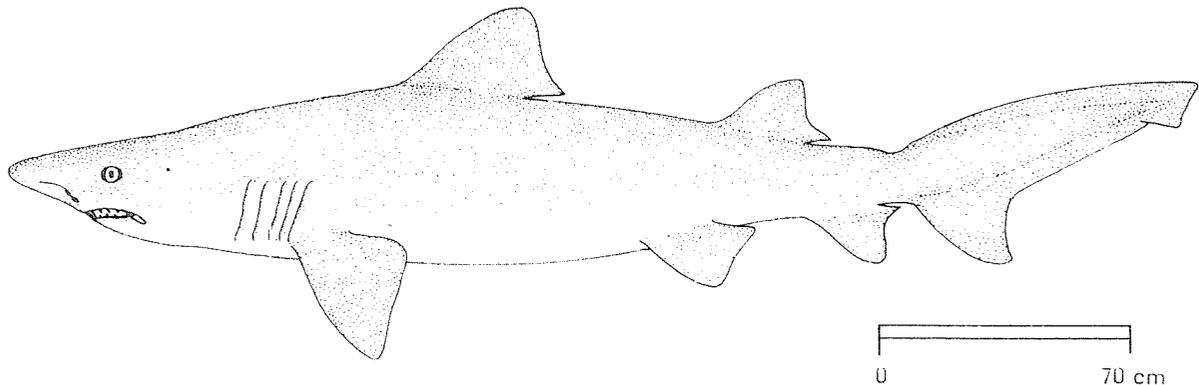
Definitely off Pakistan, and probably the Red Sea. Often taken by sports anglers off South Africa.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

- Separate statistics are not reported for this species.
- Caught with line gear, probably also with gillnets.
- Utilized fresh for human consumption.



FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
(W. Indian Ocean)*Odontaspis ferox* (Risso, 1810)OTHER SCIENTIFIC NAMES STILL IN USE : *Odontaspis herbsti* Whitley, 1950

VERNACULAR NAMES:

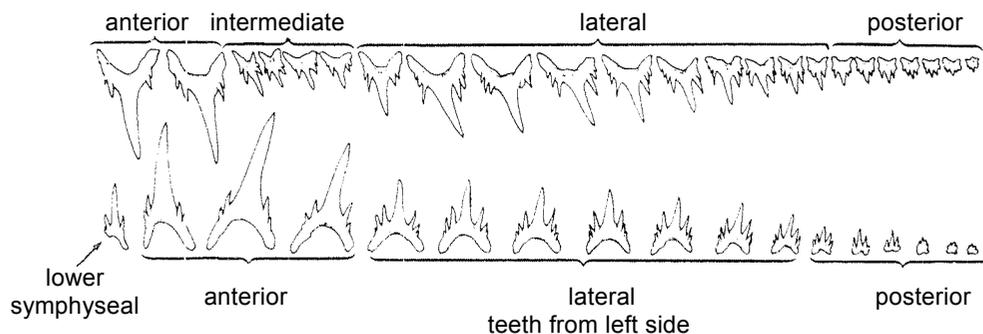
FAO : En - Smalltooth sand tiger
 Fr - Requin féroce
 Sp - Solrayo

NATIONAL :

DISTINCTIVE CHARACTERS :

A large shark. Head with 5 medium to large gill slits, all in front of pectoral fin bases; no gill-rakers; snout moderately elongated, bulbously conical; no nasal barbels or nasoral grooves; eyes moderately large, without nictitating eyelids; mouth very long and angular, extending well behind eyes; anterior teeth moderately large, with long, narrow, hooked, sharp-edged but non-serrated cusps and 2 or 3 moderately long cusplets on each side, separated in front by 2 rows of small symphyseal teeth in both jaws; upper anteriors set in 2 rows on either side of symphysis and separated from the smaller laterals by 3 or 4 rows of tiny intermediate teeth; lower anteriors set in 3 rows on either side of symphysis and not followed by small intermediate teeth. Two dorsal fins, the first large and situated closer to the pectorals than to the pelvics, its free rear tip well ahead of pelvic fin origins, the second dorsal fin smaller than the first and usually slightly larger than anal fin; caudal fin short, strongly asymmetrical, with a pronounced subterminal notch and a short ventral lobe. No keels on caudal peduncle, but a strong upper precaudal pit. Intestinal valve of ring type.

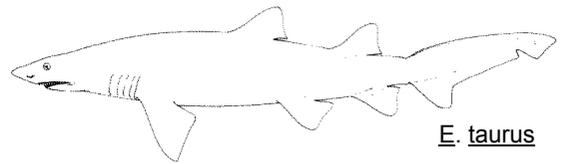
Colour: grey above, paler below, tips of dorsal, anal, pectoral and pelvic fins may be dark-tipped in young; dark spots present on sides in some individuals.



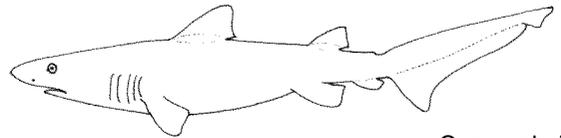
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Odontaspis noronhai: a little-known, deepwater species only recorded from off Madeira and possibly the Seychelles. Teeth with only one cusplet on each side; upper anteriors separated from the laterals by a single row of small intermediate teeth; second dorsal origin over midbase of pelvic fins (over or posterior to the insertions of the pelvic fins in O. ferox); colour chocolate-brown.

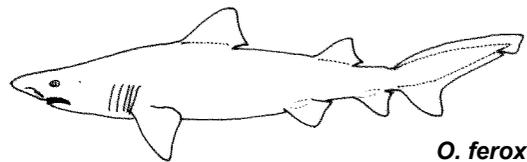
Eugomphodus taurus and E. tricuspidatus (if distinct from E. taurus): snout short and flattened, eyes smaller; teeth relatively larger, with a single, very low cusplet on each side; upper anteriors set in 3 rows on either side of symphysis, not separated in front by small symphyseal teeth, but separated from the laterals by a single row of intermediate teeth; dorsal and anal fins about equal in size; first dorsal much closer to the pelvic than to the pectoral fin bases, with its free rear tip about over the pelvic origins.



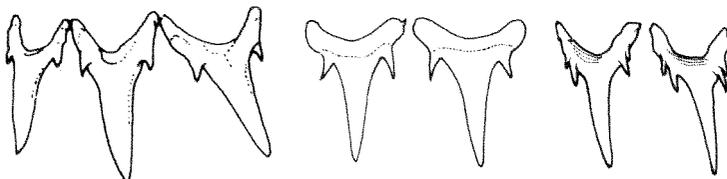
E. taurus



O. noronhai



O. ferox



E. taurus

O. noronhai

O. ferox

upper anterior teeth

SIZE:

Maximum: about 360 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

A wide-ranging bottom-dwelling shark found in the area off South Africa, probably also northeast of Madagascar, and to be expected elsewhere in the area. Also from the Eastern Atlantic, Mediterranean Sea, Western, Central and Eastern Pacific. Unspotted individuals have been distinguished as O. herbsti, but spotting seems to be a matter of individual variation in one species.

A little-known species found at depths between 15 and 420 m from inshore waters to over the edge of the continental shelf. Probably ovoviviparous.

Feeds on small bony fishes, squids and crustaceans.

PRESENT FISHING GROUNDS:

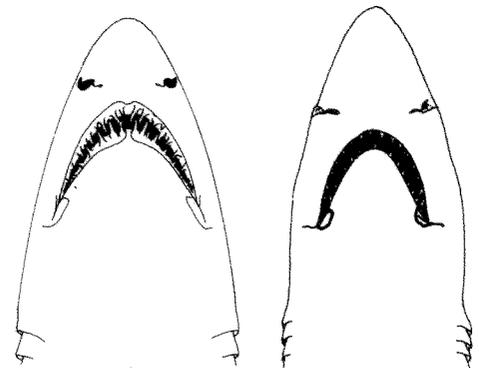
Uncertain.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught incidentally in trawls in the area.

Mode of utilization uncertain.



E. taurus

O. ferox

underside of head

