

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
(W. Indian Ocean)

ATHERINIDAE

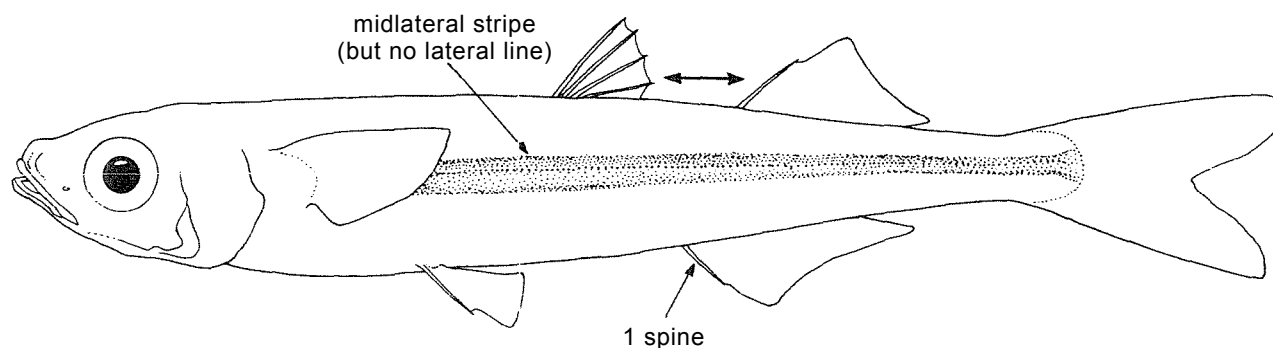
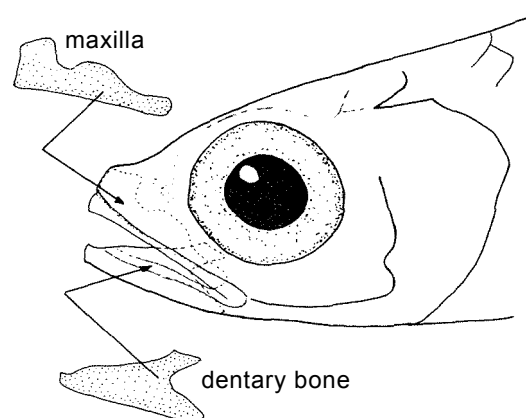
Silversides

Elongate and somewhat compressed silvery fishes, rarely exceeding 12 cm total length in Fishing Area 51. Mouth generally small, oblique and terminally placed; premaxilla with ascending process of variable length, its lateral process present or absent; ramus of dentary bone elevated posteriorly or indistinct from anterior part of lower jaw,* protrusibility of jaws variable; teeth present or absent in jaws, palatines, pterygoids (roof of mouth) or on outside of mouth; gill rakers variable, from short and stubby to long and slender ranging in number, from few to many (10 to 26) on lower limb of first gill arch. Dorsal fins widely separated, the first with a variable number of small, flexible spines, originating in front of, or behind, vertical through tips of pelvic fins; second dorsal and anal fins with 1 weak spine, 1 unbranched ray and a variable number of branched rays, anal fin always originating slightly in advance of second dorsal; pectoral fins set high on body, directly behind posterior rim of gill cover, their spine greatly reduced, their first ray much thicker than those following; pelvic fins with 1 spine and 5 rays; caudal fin moderately forked. Anus in front or behind pelvic fin tips. Lateral line absent. Scales cycloid (smooth to touch), moderately large; midlateral scales usually with a pore or pit; axillary pelvic scales often present.

Colour: in life, blue green, green or olive on back, translucent with scales well delineated by small chromatophores above midlateral band; sides of head and body, as well as abdomen silvery; midlateral band usually distinct and running from upper margin of pectoral fin to caudal fin, but sometimes blending with the silvery abdomen anteriorly. Fins clear or dusky; a blotch on pectorals present in some species.

Earlier workers aligned this family with mullets and barracudas. Present opinion of many authors suggests that they are more closely related to cyprinodontids, poeciliids and hemiramphids.

Only 2 species in Fishing Area 51 are of large enough size to be of value as human food. These are Atherina breviceps and Atherinomorbus lacunosus. The latter is known to aggregate in large schools, possibly in commercial quantities while A. breviceps schools in much smaller numbers. These and other species, however, are very important as forage for commercial fishes and they are also widely used as bait.

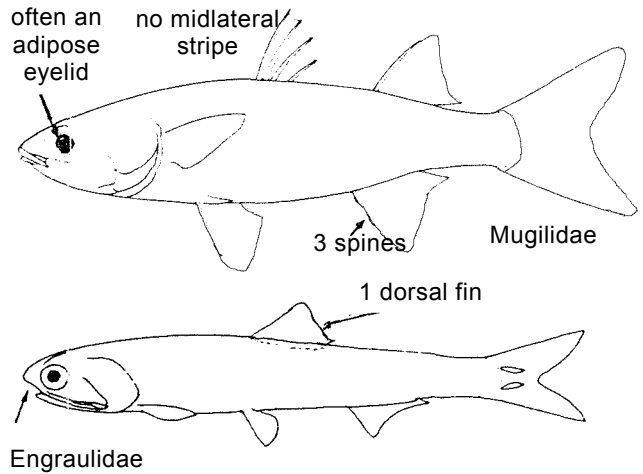


* The shape of the premaxilla (in upper jaw) and of the dentary bone (in lower jaw) is rather characteristic in some species and can be used as a diagnostic character to confirm the identification of some species. To see these bones clearly, it is advisable to scrape off the skin of the upper and lower jaws, and to use a magnifying glass

SIMILAR FAMILIES OCCURRING IN THE AREA:

Mugilidae: head broad and flattened, snout blunt; first dorsal fin with 4 slender spines, anal fin with 3 spines (1 in Atherinidae); eyes often covered with adipose lids; scales frequently ctenoid (rough to touch) on sides of head; never a single midlateral band on body.

Engraulidae: a single dorsal fin; no spines in fins; pectoral fins low on body; mouth very large, snout blunt and projecting.

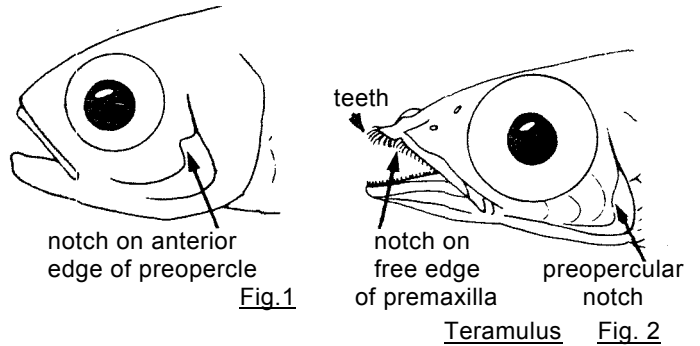


KEY TO MARINE AND BRACKISH-WATER GENERA OCCURRING IN THE AREA:

1a. Preopercular notch present (Figs 1, 2)

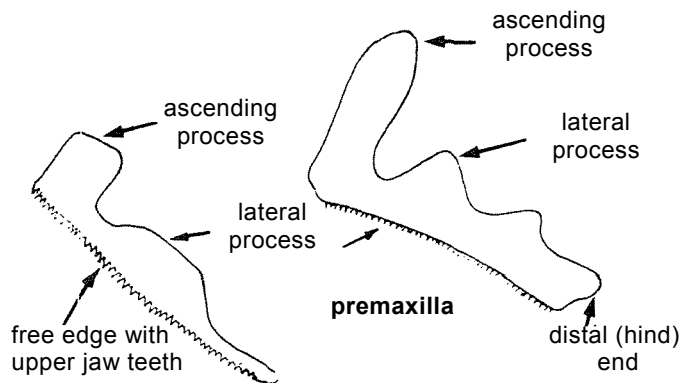
2a. Free edge of premaxilla notched anteriorly; teeth in both jaws small but well developed, curving inward; snout noticeably pointed (Fig. 2) Teramulus

2b. Free edge of premaxilla relatively straight or slightly convex; teeth in jaws insignificant; snout blunt or rounded.



3a. Ascending premaxillary process short and broad, its length about 1/4 of eye diameter; lateral process of premaxilla broad and flat; dentary bone sloping gently upward and backward, with or without a slight tubercle-like elevation at distal end (Fig. 3a) Atherinomorus

3b. Ascending premaxillary process moderately long and narrow, 1/3 to 1/2 of eye diameter; lateral process broad and short; dentary bone sloping strongly upward and backward, with posterior ramus highly elevated (Fig. 3b) Hypoatherina



1b. Preopercular notch absent

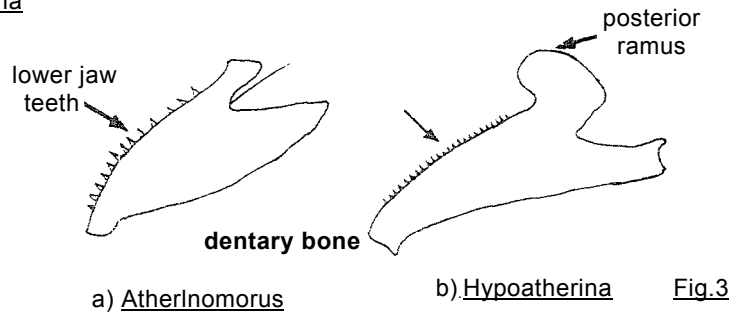


Fig. 3

- 4 a. Shagreen denticles present outside mouth on lower jaw and on sides of face; origin of dorsal fin always behind vertical through tips of pelvics; ascending process of premaxilla short, its width about equal to its length; gill rakers short and few in number, 10 to 11 on first lower gill arch; anus well behind tips of pelvics; about 5 scale rows along sides of body (Fig. 4a) Atherion
- 4 b. No shagreen denticles outside mouth; origin of first dorsal fin in front of vertical through tips of pelvics; ascending process of premaxilla moderately long, at least twice as long as wide; gill rakers long, 17 to 20 on first lower gill arch; anus at or in front of pelvic fin tips; more than 7 transverse scale rows along sides of body (Fig. 4b) Atherina

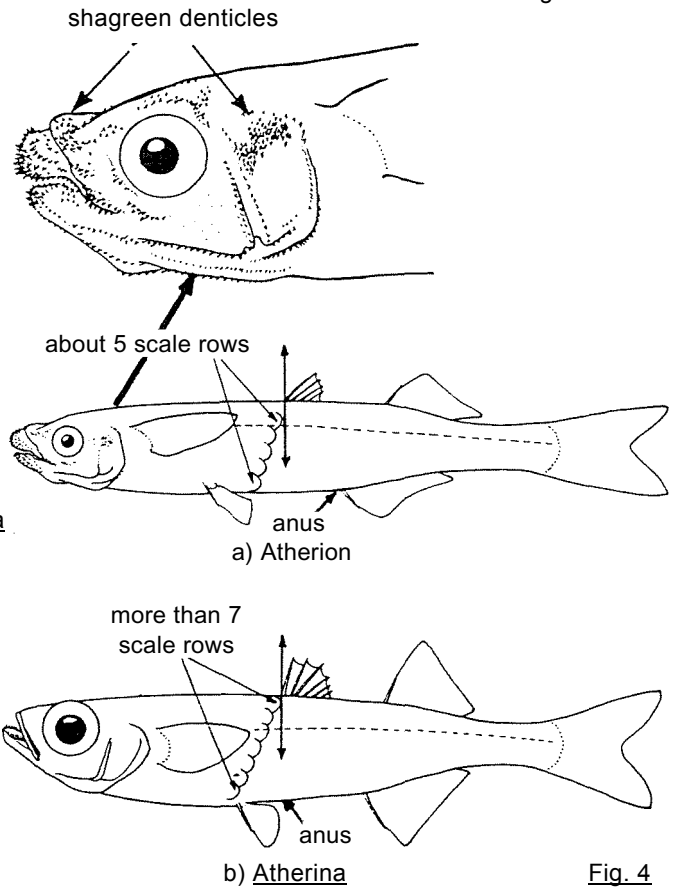


Fig. 4

LIST OF SPECIES OCCURRING IN THE AREA*:

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

<u>Atherina breviceps</u> Valenciennes, 1835	ATHER Ather 1
<u>Atherinomorus duodecimalis</u> (Valenciennes, 1835)	ATHER Atherinom 1
<u>Atherinomorus lacunosus</u> Forster, 1801)	ATHER Atherinom 2
<u>Atherion africanus</u> Smith, 1965	ATHER Atherion 1
<u>Hypoatherina barnesi</u> Schultz, 1953	ATHER Hypo 1
<u>Hypoatherina temminckii</u> (Sleeker, 1853)	ATHER Hypo 2
<u>Teramulus kieneri</u> Smith, 1965	ATHER Ter 1

Prepared by W. Ivantsoff, Macquarie University, North Ryde, NSW, 2113 Australia

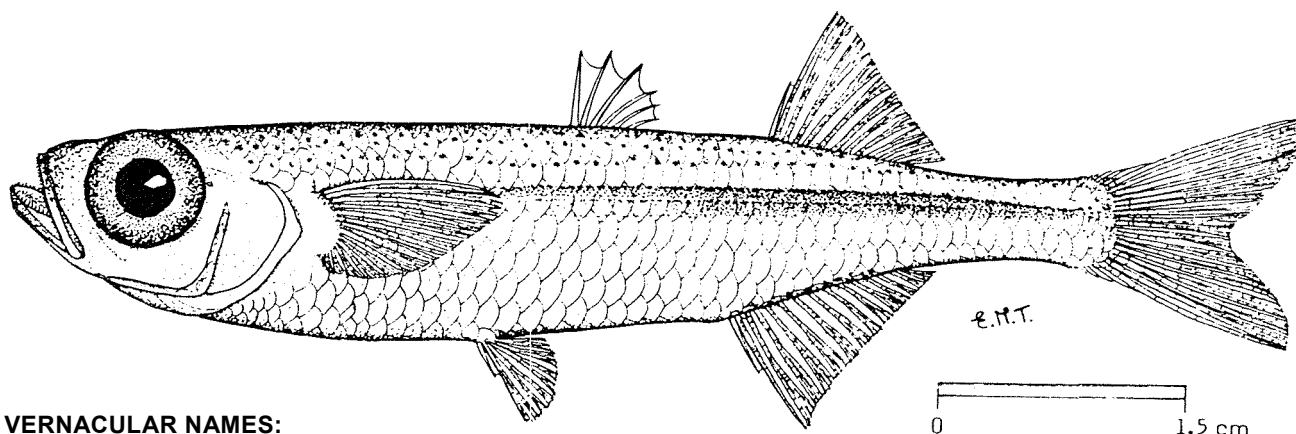
* includes marine and brackish-water species but not those confined to fresh water

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: ATHERINIDAE

FISHING AREA 51
(W. Indian Ocean)*Atherina breviceps* Valenciennes, 1835

OTHER SCIENTIFIC NAMES STILL IN USE: None



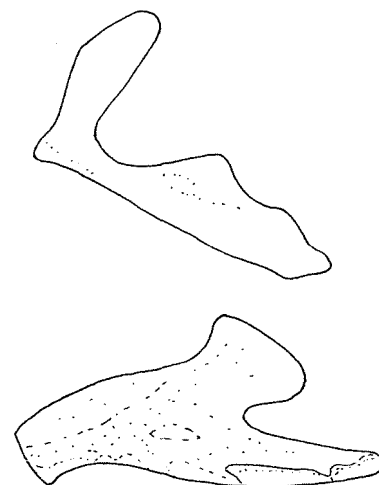
VERNACULAR NAMES:

FAO : En - Cape silverside
 Fr - Athérine du Cap
 Sp - Pejerrey del Cabo

NATIONAL:

DISTINCTIVE CHARACTERS:

A moderately large silverside, relatively deep-bodied and compressed. Head small, without shagreen denticles on external surface; teeth in jaws very small; roof of mouth with vomer and palatines frequently toothed, and a strong ridge of teeth always present on mesopterygoids; some specimens with papillae on tongue; premaxilla extending backward slightly past vertical through anterior margin of orbit, its ascending process moderately long, always more than twice its width, lateral process only a small, broad elevation; dentary bone sloping strongly backward and upward, its posterior part highly elevated; hind edge of preopercle unnotched somewhat oblique, but not extending backward to form a lobe, anterior edge without a concavity; gill rakers moderately long, slender, slightly smaller, equal to or just larger than diameter of pupil, 17 to 20 in lower limb of first gill arch. Anus usually in front of or at pelvic fin tips. First dorsal consisting of 5 to 8 spines, second dorsal of 1 spine, and 11 to 15 soft rays; anal fin with 1 spine and 15 to 1.8 soft rays; pectoral fins with 13 to 16 rays. Vertebral count about 46. Body scales smaller than in all other species of silversides in area. Midlateral scale count 44 to 50; predorsal scales 21 to 28, interdorsal scales 8 to 12, 7 to 11 transverse scale rows along sides of body.



premaxilla and dentary bone

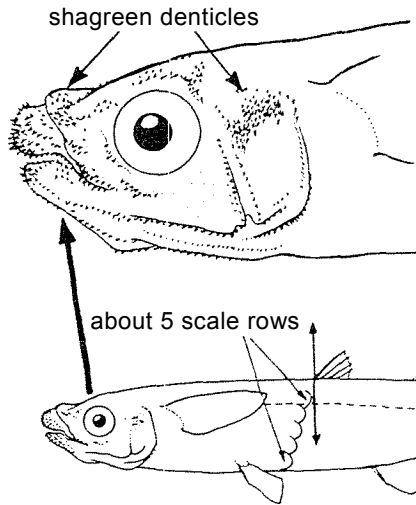
Colour: translucent, silvery with a brilliant lateral stripe and dark spots, top of snout dusky, according to Smith (1965) (preserved specimens brown or yellow brown). Edges of scales outlined by fine chromatophores on back. Midlateral stripe dark or silvery; fine dark spots sometimes present above stripe; body below stripe pale with almost no pigmentation. Fins more or less clear, except for the caudal, which may be dusky. Preopercle and opercle silvery, upper surface of head dark.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

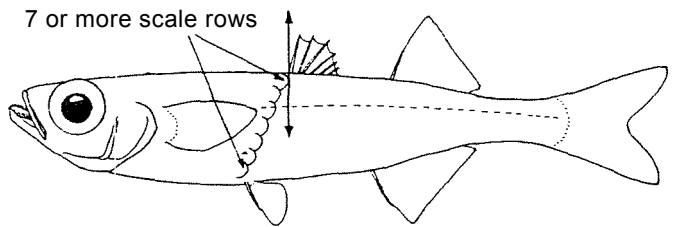
All other silversides in the area: 6 or less transverse scale rows along sides of body (more than 7 in A. breviceps). Further distinguishing characters of these other species are the following:

Atherion africanus: shagreen denticles present on lower jaw and sides of face; origin of first dorsal fin always behind vertical through tips of pelvics (in front of pelvic tips in A. breviceps; about 5 scale rows along sides of body, 7 or more in A. breviceps).

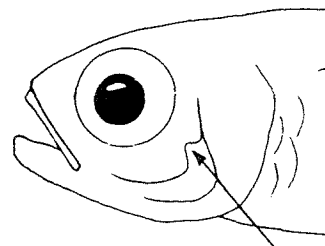
Atherinomorus, Hypoatherina and Teramulus species: a distinct notch present on anterior edge of preopercle.



Atherion africanus



Atherira breviceps



Atherinomorus, Hypoatherina and Teramulus species

SIZE:

Maximum: about 11 cm; common to 7.5 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Appears to have narrow range. Restricted to the Cape and east coast of Africa, probably not much further north than Natal.

Seen in small shoals especially in spring along south coast and estuaries of South Africa.

PRESENT FISHING GROUNDS:

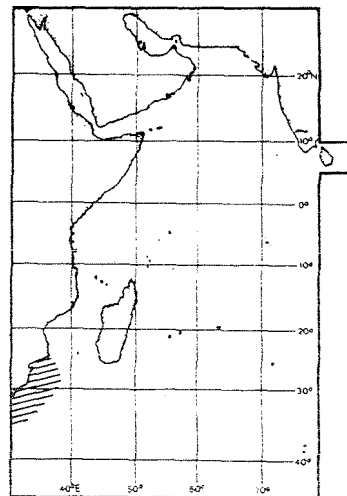
Coastal waters and estuaries within its range. Not known to be abundant.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

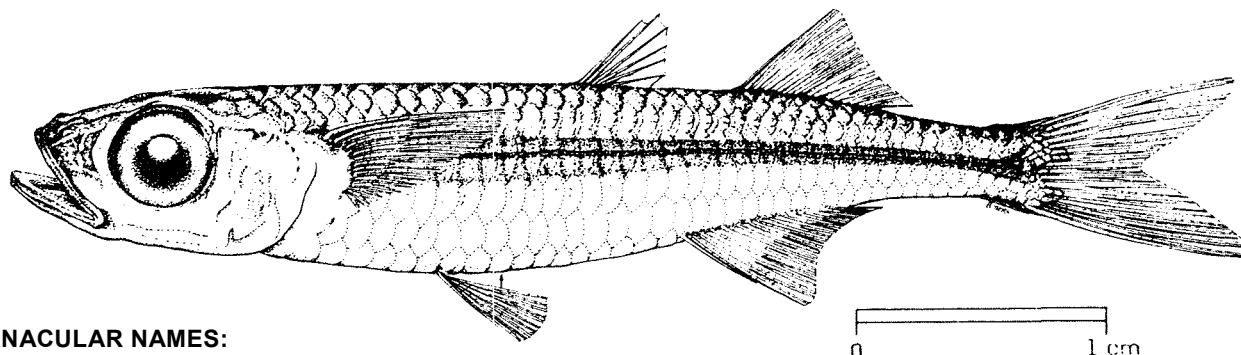
Caught with seines.

Utilized in subsistence type fishery. Preyed upon heavily by sea birds and other fishes.



FAO SPECIES IDENTIFICATION SHEETS

FAMILY: ATHERINIDAE

FISHING AREA 51
(W. Indian Ocean)Atherinomorus duodecimalis (Valenciennes, 1835)OTHER SCIENTIFIC NAMES STILL IN USE : Pranesus duodecimalis
Allanetta duodecimals

VERNACULAR NAMES:

FAO: En - Tropical silverside
Fr - Athérine tropicale
Sp - Pejerrey tropical

NATIONAL:

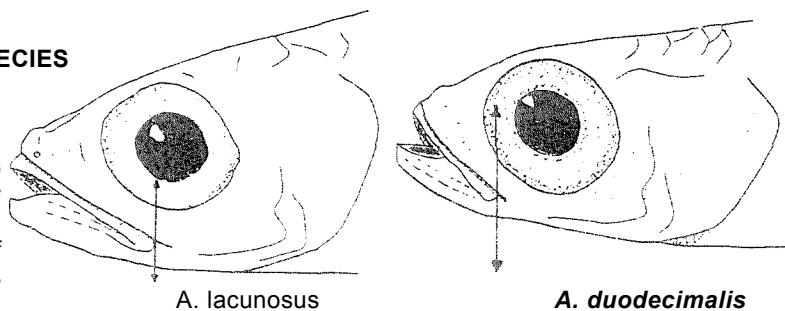
DISTINCTIVE CHARACTERS:

Rather small but robust. Body subcylindrical, compressed. Head and eyes moderately large; outer surface of premaxilla frequently covered with fine denticles scarcely visible to naked eye, but no shagreen denticles elsewhere on head; teeth in several rows in both jaws; on roof of mouth, teeth usually distinctly visible (but may be weak or lacking) on palatines, ectopterygoids and mesopterygoids; teeth also present around edge of tongue; distal end of upper jaw extending backward slightly beyond vertical through anterior border of orbit, its ascending process moderately short and wide; dentary bone sloping backward and upward, with a distinct tubercle-like elevation at its distal end; posterior edge of preopercle more or less straight and not projected into a lobe; anterior edge with a distinct notch above angle; gill rakers moderately long, slightly less than diameter of pupil, 21 to 25 on lower limb of gill arch. Anus in front of pelvic fin tips. First dorsal fin consisting of 4 to 6 spines, second dorsal of 1 spine and 9 or 10 soft rays; anal fin with 1 spine and 12 or 13 soft rays; pectoral fins with 14 to 17 rays. Vertebral count 35 to 37. Body scales large; midlateral scale count: 33 to 38; predorsal scales 17 to 19, interdorsal scales 6 or 7; about 5 transverse rows of scales along sides of body.

Colour: greenish above, whitish below when alive with a silvery midlateral stripe (preserved specimens brown-green with black midlateral stripe). Edges of scales on back with numerous small chromatophores. rows of spots on third and fourth row of scales extending from about tips of pectorals to origin of anal fin or slightly beyond.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES
OCCURRING IN THE AREA:

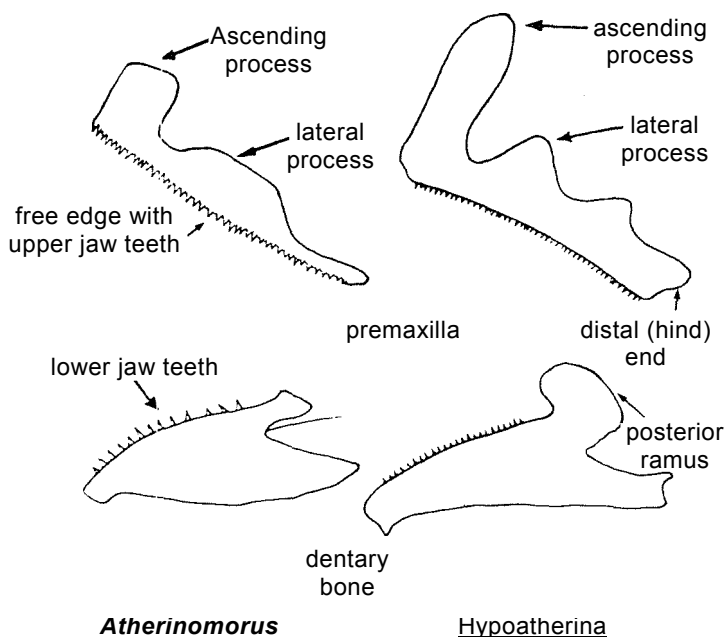
Atherinomorus lacunosus: size larger: distal end of upper jaw extending backward at least to vertical through anterior margin of pupil (only slightly beyond anterior margin of orbit in A. duodecimalis); no elevation on posterior end of dentary bone; midlateral scale count 39 to 44 (33 to 38 in A. dusdicimalis)



Hypoatherina species: ascending premaxillary process moderately long and narrow, its length 1/3 to 1/2 of eye diameter (short and broad, about 1/4 of diameter in Atherinomorus); lateral process broad and short (broad and flat in Atherinomorus); posterior ramus of dentary bone highly elevated.

Teramulus kieneri: snout noticeably pointed; free edge of premaxilla notched anteriorly; teeth in both jaws small but well developed, curving inward.

Atherion africanus and Atherina breviceps: anterior edge of preopercle without a notch. Furthermore, distinct shagreen-like denticles on head of A. africanus, and body much deeper in A. breviceps.



SIZE:

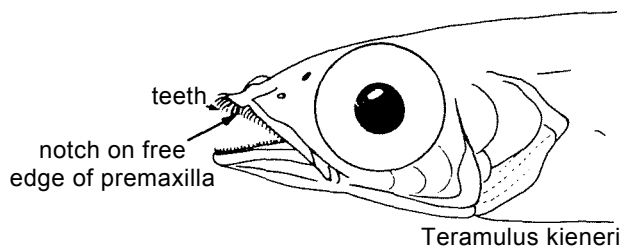
Maximum: 9 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

This species has previously been known only from the Central Pacific to New Guinea, Indonesia and Thailand. Unpublished records indicate its presence in Madagascar and Sri Lanka.

PRESENT FISHING GROUNDS:

Coastal waters within its range.

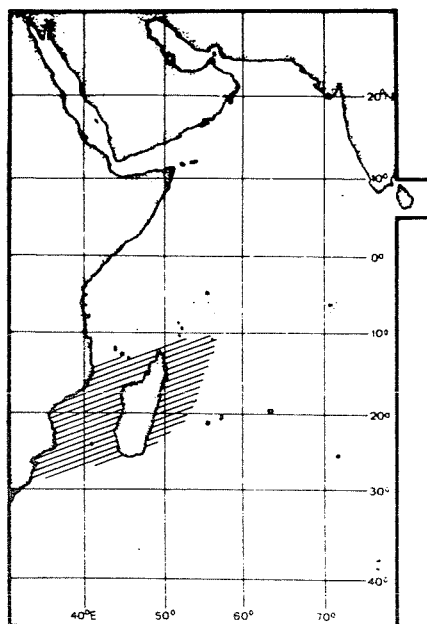


CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with seines.

Unlikely to be of any importance commercially. Important as forage food species to larger commercial fish and as bait fish.

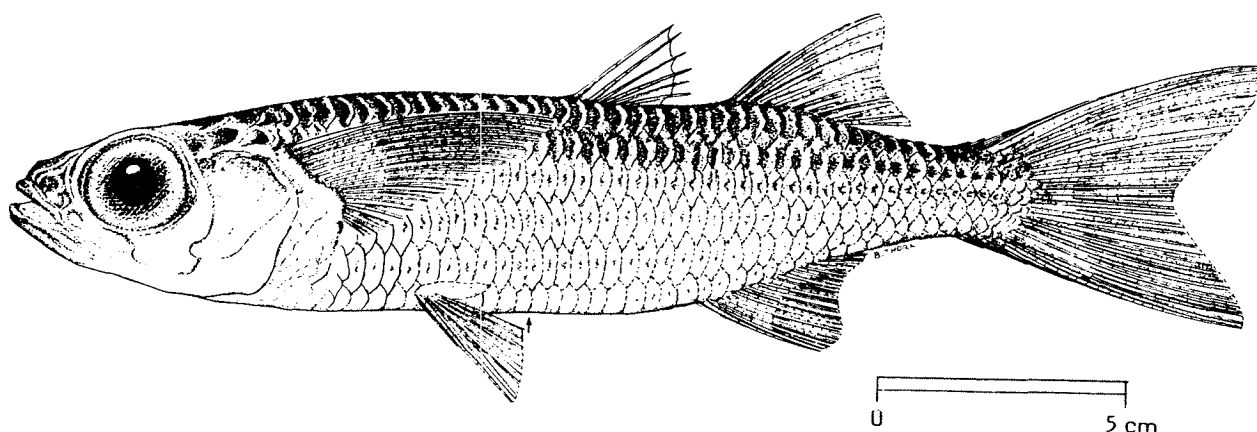


FAO SPECIES IDENTIFICATION SHEETS

FAMILY: ATHERINIDAE

FISHING AREA 51
(W. Indian Ocean)*Atherinomorus lacunosus* (Forster, 1801)

OTHER SCIENTIFIC NAMES STILL IN USE :

Pranesus pinguis (Lacepède, 1803)*Atherina forskalii* Rüppell, 1838*Pranesus pinguis rüppelli* Smith, 1965

VERNACULAR NAMES:

FAO : En - Hardyhead silverside
Fr - Athérine tête
Sp - Pejerrey cabezón

NATIONAL:

DISTINCTIVE CHARACTERS

One of the largest and most robust silversides occurring in the area. Body subcylindrical, compressed. Head and eyes moderately large, outer surface of premaxilla frequently covered with fine denticles, scarcely visible to naked eye, but no shagreen denticles elsewhere on head; teeth in jaws small, villiform, usually in more than one row on premaxilla; teeth also present on roof of mouth (palatines, vomer, sometimes on ectopterygoids); distal end of upper jaw extending backward to vertical through anterior border of pupil, its ascending process short and blunt, lateral process low and broad; dentary bone gently sloping upward and backward, but never elevated posteriorly, posterior edge of preopercle straight, anterior edge with a distinct notch above angle; gill, rakers long, slender equal to, or longer than diameter of pupil, 18 to 25 on lower limb of first gill arch. Anus at or slightly in front of pelvic tips. First dorsal fin consisting of 4 to 7 spines, second dorsal of 1 spine and 8 to 11 rays; anal fin with 1 spine and 12 to 17 soft rays; pectoral fins with 14 to 17 rays. Vertebral count 38 to 43. Body scales large; midlateral scale count 39 to 44, predorsal scales 17 to 22, interdorsal scales 6 to 9; 5 transverse scale rows along sides of body.

Colour: blue-green and translucent in life, with silvery parts of abdomen and head frequently highly iridescent; midlateral stripe wider than one scale row along side, silvery and often merging with silvery abdomen on anterior part of body; opercle and iris silvery; upper surface of head heavily pigmented. Scales on back usually outlined with small chromatophores. Fins clear to dusky, the pectorals frequently with a blackish blotch. Preserved specimens green to brown green, midlateral stripe brown to black, pectoral blotch frequently faded.

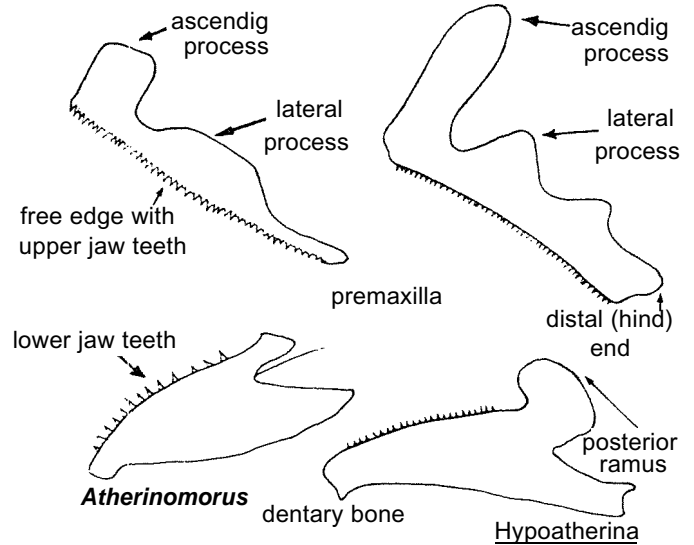
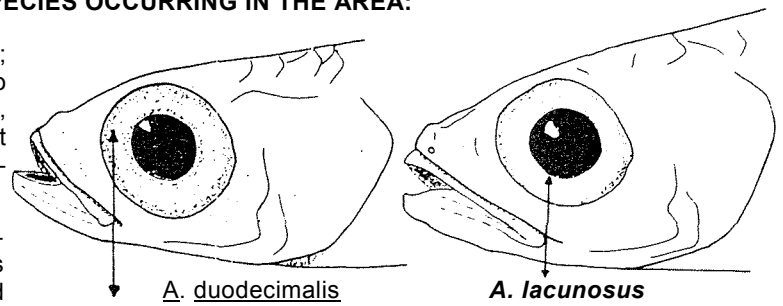
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Atherinomorus duodecimalis: size smaller; distal end of upper jaw not extending backward to anterior margin of pupil; fewer midlateral scales, 33 to 39 (39 to 44 in A. lacunosus); a distinct tubercle-like elevation on posterior end of dentary bone.

Hypoatherina species: ascending premaxillary process moderately long and narrow, its length 1/3 to 1/2 of eye diameter (short and broad, about 1/4 of diameter in Atherinomorus); lateral process broad and short (broad and flat in Atherinomorus); posterior ramus of dentary bone highly elevated.

Teramulus kieneri: snout noticeably pointed; free edge of premaxilla notched anteriorly; teeth in both jaws small but well developed, curving inward.

Atherion africanus and Atherina breviceps: anterior edge of preopercle without a notch. Furthermore, distinct shagreen-like denticles on head of A. africanus, and body much deeper in A. breviceps.



SIZE:

Maximum: 15 cm

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

An ubiquitous species occurring throughout the Indian Ocean and Central Pacific; also extending into the southeastern Mediterranean.

During the day, this species aggregates in large inactive schools which lie close to shore.

Feeding takes place mostly at night. Food items include planktonic eggs, crustaceans and small fish such as Clupea and Sardinella spp., foraminiferans, ostracods and copepods, most plankton being less than 0.5 mm in greatest dimension.

PRESENT FISHING GROUNDS:

Coastal waters within its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with seines.

Could be of importance to subsistence type of fishery but unlikely to be of commercial value. Extremely important as forage fish for larger species. Also of importance as bait.

