

FAO SPECIES IDENTIFICATION SHEETS

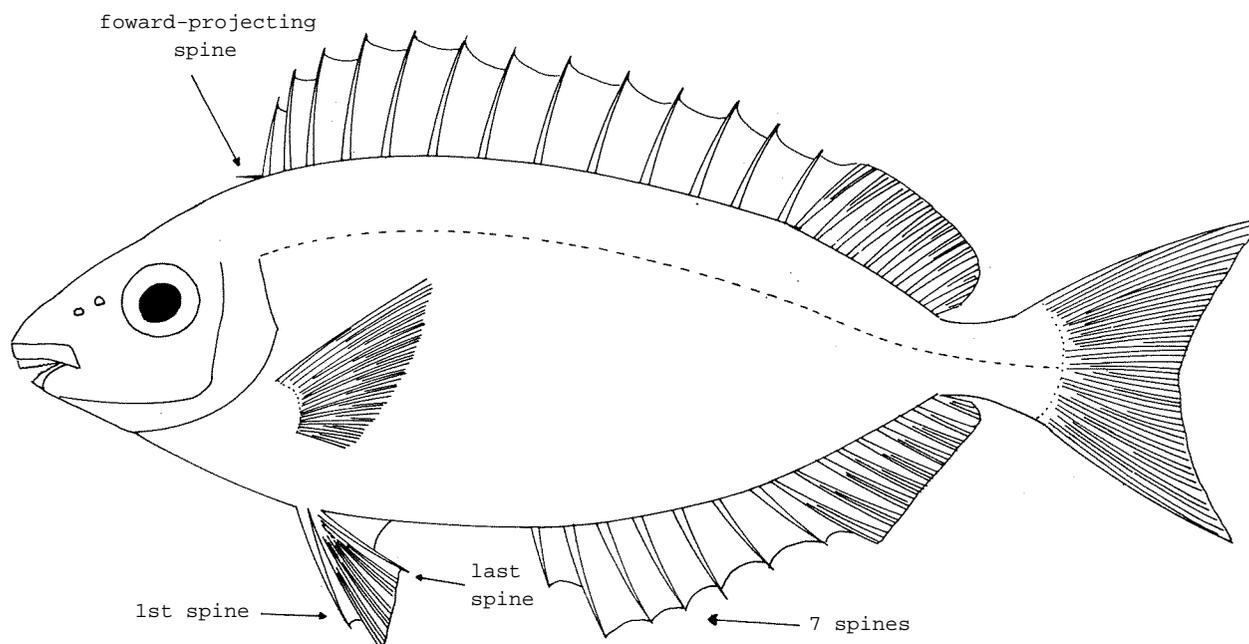
FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)

SIGANIDAE

Spinefeet, rabbitfishes

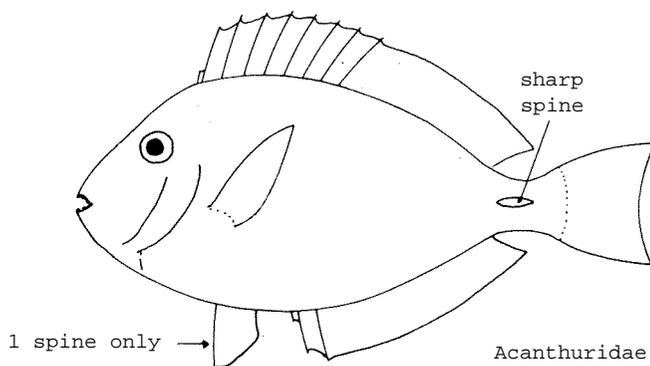
Spiny-rayed fishes with a compressed, oval body covered with minute, thin, cycloid scales (smooth to touch). Mouth small, with a row of close-set teeth in each jaw. Dorsal fin with 13 spines and about 10 soft rays; a sharp spine projecting forward immediately in front of dorsal fin (sometimes covered by skin); pelvic fins with 2 strong spines, separated by 3 soft fin rays; anal fin with 7 spines and about 9 soft rays. All species of *Siganus* have poison glands connected with the fin spines.

Colour: very variable.



SIMILAR FAMILIES OCCURRING IN THE AREA:

All other families: have at most 1 spine in pelvic fins; Acanthuridae also have up to 6 sharp spines or keels on each side of caudal peduncle and only 2 to 3 anal fin spines.



Acanthuridae

Key to Genera

Siganus only

List of Species occurring in the Area

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

<i>Siganus argenteus</i>		<i>Siganus punctatissimus</i>
<i>Siganus canaliculatus</i>	SIGAN Sigan 4	<i>Siganus punctatus</i>
<i>Siganus corallinus</i>		<i>Siganus shortlandensis</i>
<i>Siganus doliatus</i>		<i>Siganus spinus</i>
<i>Siganus fuscescens</i>		<i>Siganus stellatus</i> (presence in area doubtful)
<i>Siganus guttatus</i>		<i>Siganus tetrazonus</i>
<i>Siganus javus</i>	SIGAN Sigan 3	<i>Siganus uspi</i>
<i>Siganus labyrinthodes</i>		<i>Siganus vermiculatus</i>
<i>Siganus lineatus</i>		<i>Siganus virgatus</i>
<i>Siganus margaritiferus</i> (doubtful)		<i>Siganus vulpinus</i>
<i>Siganus puellus</i>		

* The taxonomic status of some species of this family requires further clarification. Dr. Woodland (Department of Zoology, University of New England, Armidale, N.S.W., Australia) is preparing a review of the Siganidae from the Indo-Pacific. Users of the Species Identification Sheets are hereby encouraged to send him samples of such fishes, as this will considerably facilitate his task

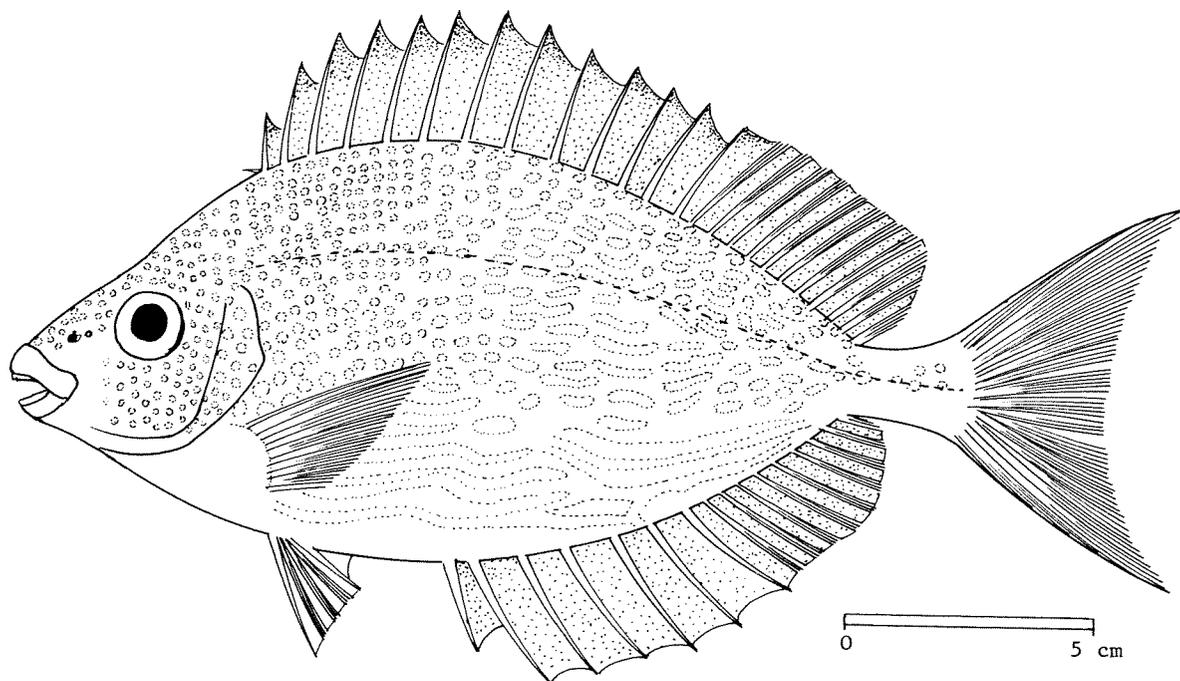
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: SIGANIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)

Siganus javus (Linnaeus, 1766)

SYNONYMS STILL IN USE: *Teuthis javus*: Herre, 1953



VERNACULAR NAMES:

- FAO: En - Streaked spinefoot
- Fr -
- Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body oval and compressed, its depth 1.8 to 2.3 times in standard length; profile of head slightly concave above eye; anterior nostril with a small triangular flap reaching half way to posterior nostril. A sharp, forward-projecting spine present in front of dorsal fin; dorsal fin with 13 spines followed by soft rays, the first spine much shorter than the last; pelvic fins with 2 spines separated by 3 soft rays; anal fin with 7 spines followed by soft rays, the first spine much shorter than the last. Scales minute and thin, 30 to 35 rows between mid-dorsal fin base and lateral line.

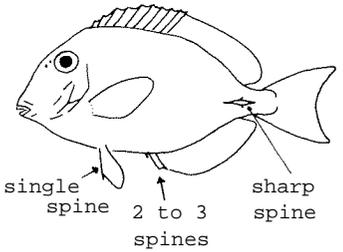
Colour: back brownish, belly silvery; numerous small grey spots on head and upper flanks, coalescing into pale undulating lines on lower sides. No black blotch behind upper part of gill opening. Dorsal and anal fins yellow or orange. Fins unmarked except for vertical bars on caudal in some specimens.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Siganus canaliculatus, *Siganus punctatus*, *Siganus guttatus*: white or golden spots on sides, but no pale longitudinal lines on lower sides; also, caudal fin very deeply forked in *S. punctatus*, last anal spine about equal to first in *S. canaliculatus*, and a large golden spot on sides at base of soft dorsal fin in *S. guttatus*.

Other *Siganus* species: no pale longitudinal lines along lower sides (except some *S. lineatus*, but large gold spot at base of soft dorsal).

Acanthuridae: 2 to 3 anal fin spines, a single pelvic fin spine and one or more spines on each side of caudal peduncle.



Acanthuridae

SIZE:

Maximum: 35 cm; common: about 20 cm

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

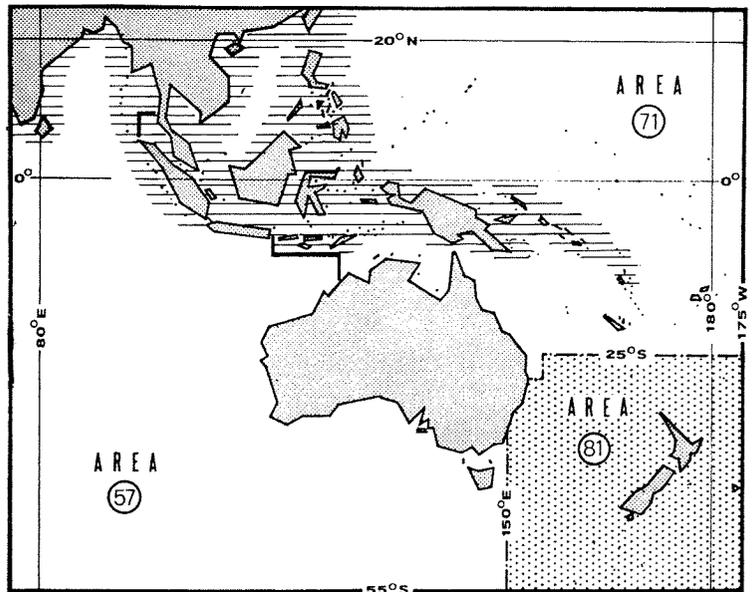
Most of northern part of area and southward to New Hebrides.

Occurs in schools in coastal waters; also in brackish and freshwaters.

Feeds by scraping micro-organisms from rocks.

PRESENT FISHING GROUNDS:

In coastal waters.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

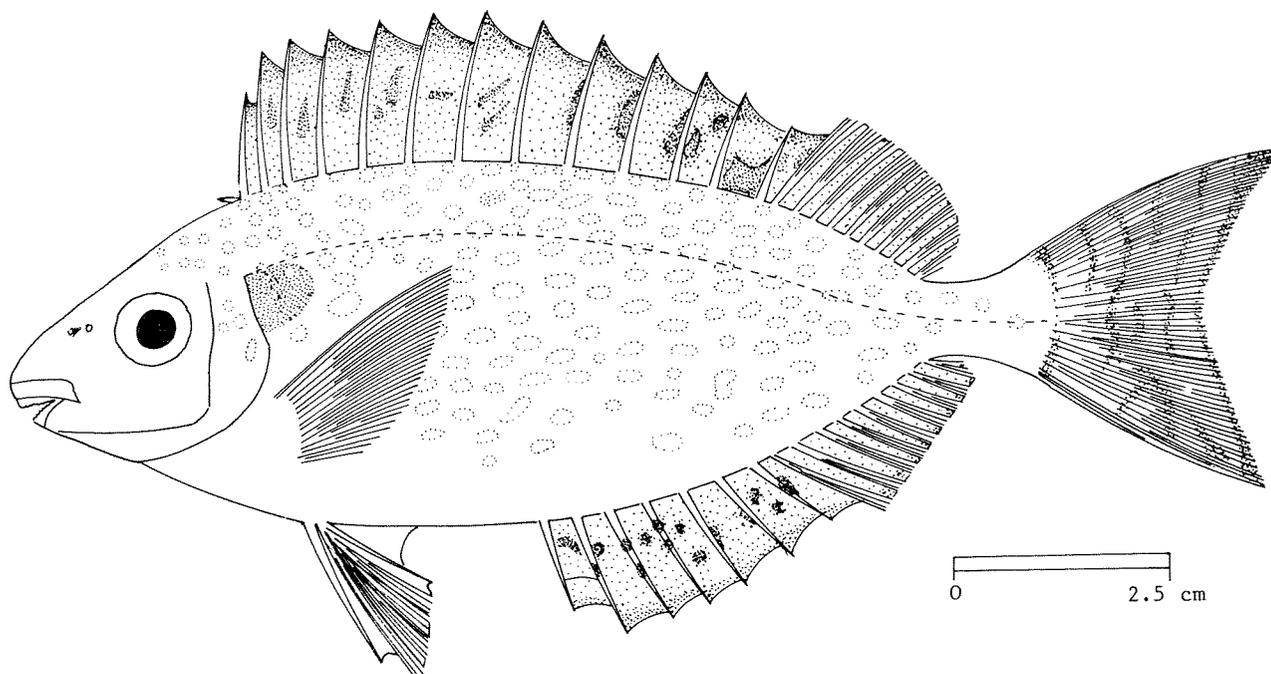
Separate statistics are not reported for this species.

Caught mainly with bottom trawls and traps.

Marketed mostly fresh.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: SIGANIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Siganus canaliculatus* (Park, 1797)SYNONYMS STILL IN USE: *Siganus oramin* (Bloch & Schneider, 1801)
? *Amphacanthus margaritiferus* Valenciennes, 1835

VERNACULAR NAMES:

FAO: En - Whitespotted spinefoot
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body oval and compressed, its depth 2.4 to 2.8 times in standard length; profile of head slightly concave above eye; anterior nostril with a small dark flap. A sharp, forward-projecting spine present in front of dorsal fin; dorsal fin with 13 spines followed by soft rays, the last spine the shortest; pelvic fins with 2 spines, separated by 3 soft rays; anal fin with 7 spines followed by soft rays, the first and last spines nearly equal in length. Scales minute and thin, 20 to 23 rows between mid-dorsal fin base and lateral line.

Colour: back light brown or greenish, belly silvery; a large dark brown blotch behind upper part of gill opening; numerous pale spots on back and sides; dark cloudy markings (spots or lines) on dorsal, anal and caudal fins. In some specimens the spots are much smaller and much more numerous than illustrated above; it has not been established whether these belong to a separate species (*S. margaritiferus*).

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

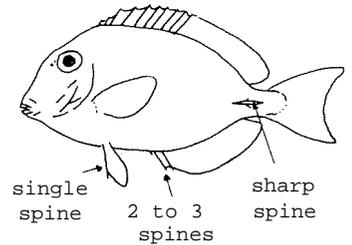
Siganus punctatus: caudal fin very deeply forked and last dorsal spine much longer than first.

Siganus javus: pale spots on lower flanks coalesce to form longitudinal lines, no dark spot behind upper part of gill openings; also, last dorsal spine much longer than first.

Siganus guttatus: large pale orange spots on flanks; body depth 2.0 to 2.1 times in standard length.

Other *Siganus* species: markings on body forming dark spots or lines.

Acanthuridae: 2 to 3 anal spines, a single pelvic spine and one or more spines on each side of caudal peduncle.



Acanthuridae

SIZE:

Maximum: 30 cm; common: about 15 cm

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

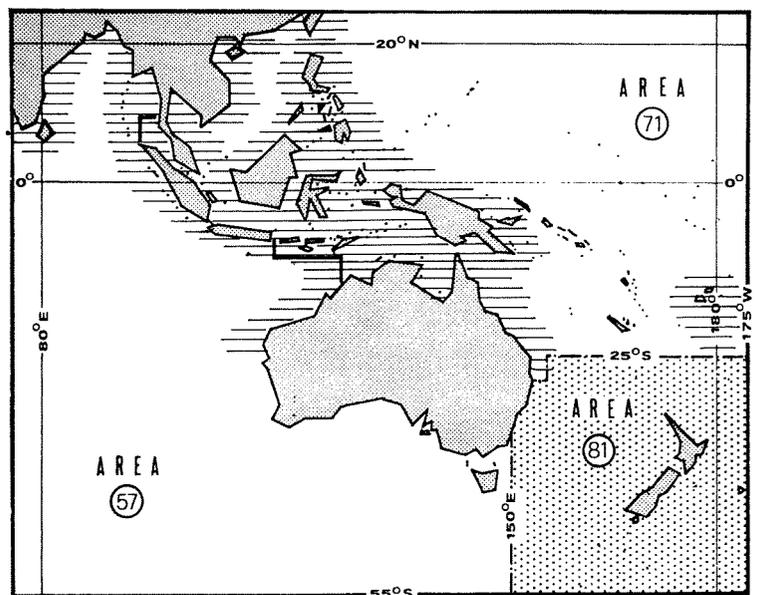
Most of northern part of area and southward to northern coasts of Australia.

Occurs in schools in coastal areas; also in brackish and freshwaters.

Feeds by scraping algae from rocks and corals, and browsing on seaweeds and sea grasses.

PRESENT FISHING GROUNDS:

In coastal waters.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with bottom trawls and traps.

Marketed mostly fresh.

FAO SPECIES IDENTIFICATION SHEETS

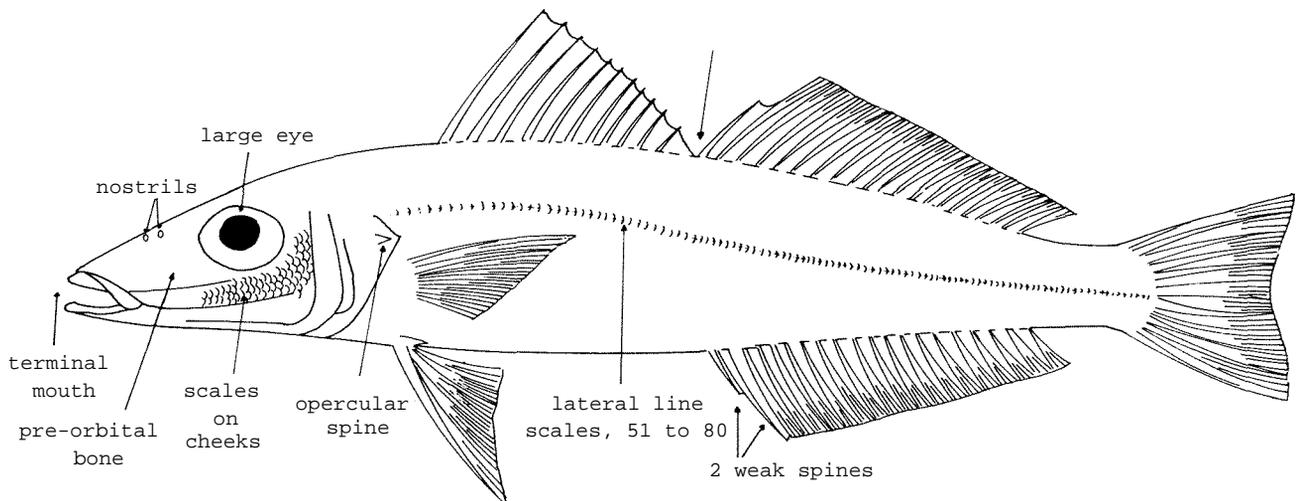
FISHING AREAS 57,71
(E Ind. ocean)
(W Cent. Pacific)

SILLAGINIDAE

Sillagos, whittings

Body elongate, slightly compressed, tapering from middle of spinous dorsal fin to head and tail. Operculum with a small, sharp spine. Mouth small, terminal; end of upper jaw slides below pre-orbital bone; jaw teeth in broad villiform bands; small teeth on roof of mouth restricted to anterior part of vomer, none on palatines. Two separate dorsal fins, the 1st with 9 to 12 slender spines, its origin above middle of pectoral fins; the 2nd with 1 spine and 16 to 26 rays, its base about twice that of 1st dorsal fin; pelvic fin origin slightly behind origin of pectoral fin; anal fin with two weak spines. Scales small, ctenoid (rough to touch); lateral line slightly arched.

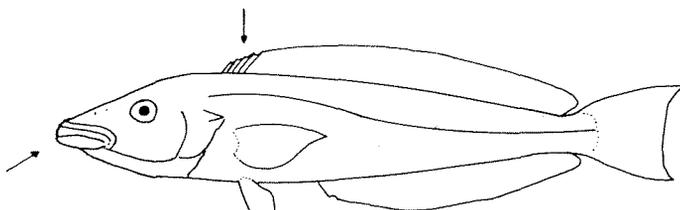
Colour: silvery grey/green, sometimes with black spots.



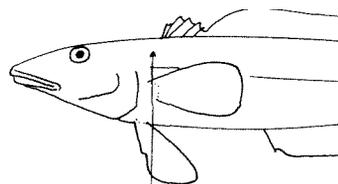
SIMILAR FAMILIES OCCURRING IN THE AREA:

Branchiostegidae: have a single, continuous dorsal fin; mouth large, with fleshy lips.

Mugiloididae (Parapercidae): have dorsal fin spines short; spinous dorsal fin sometimes joined to soft dorsal fin; base of pelvic fins in advance of pectoral fin base.



Branchiostegidae



Mugiloididae

Key to Genera

Genera presently under revision - a key will be issued as soon as possible

List of Species occurring in the Area
(Code numbers are given for those species
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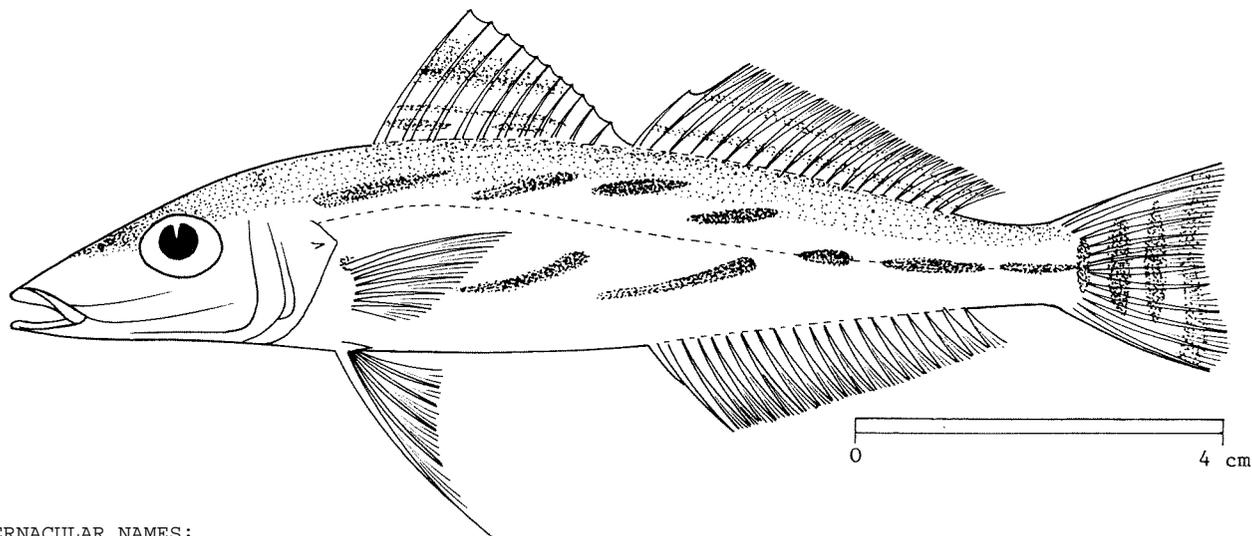
<i>Sillago analis</i>		<i>Sillaginodes punctata</i>
<i>Sillago bassensis</i>		
<i>Sillago boutani</i>		<i>Sillaginopodys chondropus</i>
<i>Sillago ciliata</i>		
<i>Sillago japonica</i>		<i>Sillaginopsis panijus</i>
<i>Sillago macrolepis</i>		
<i>Sillago maculata</i>	SILL Sill 1	
<i>Sillago parvisquamis</i>	(will be placed under new genus)	
<i>Sillago robusta</i>		3 new species to be described
<i>Sillago schomburgkii</i>		(personal communication from R.J. McKay)
<i>Sillago siharna</i>	SILL Sill 2	

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: SILLAGINIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Sillago maculata* Quoy & Gaimard, 1824

SYNONYMS STILL IN USE: None



VERNACULAR NAMES:

FAO: En - Trumpeter sillago
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body elongate, snout pointed; upper head profile slightly convex. Mouth small, terminal; villiform teeth in jaws and on vomer (roof of mouth). Eye 1.5 to 2 times in length of snout; 3 series of scales on cheeks; a small, sharp spine on operculum. Lower gill rakers 10. 1st dorsal fin with 11 spines; 2nd dorsal fin with 1 spine and 19 to 21 soft rays; anal fin with 1 or 2 spines and 18 to 21 soft rays. Lateral line with 70 to 74 scales, 5 to 6 scale rows above lateral line. Two subspecies have been identified recently (personal communication from R.J. McKay): *S. maculata aeolus* (2nd dorsal fin with 18 to 19 soft rays; anal fin with 17 to 18 soft rays), and *S. maculata maculata* (2nd dorsal fin with 19 to 21 soft rays; anal fin with 18 to 20 soft rays).

Colour: back light brown, lower flanks and belly whitish or silvery, with a silvery stripe along middle of flanks; conspicuous dark blotches on back and flanks; a blue/black spot at base of pectoral fin; spinous dorsal fin blotched on membrane; 2nd dorsal fin blotched to form 2 horizontal or slightly converging bars; anal fin yellow with a horizontal stripe very finely speckled with black or dark brown and with a white margin; upper and lower margins of caudal fin brown, hind margin dark.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Sillago ciliata (juveniles): black blotches on body only present in juveniles; soft dorsal fin rays 17 to 18 (19 to 21 in *S. maculata*), soft anal fin rays 15 to 16 (18 to 21 in *S. maculata*).

Other *Sillago* species: flanks without black blotches.

SIZE:

Maximum: 20 cm; common: 12 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

S. maculata aeolus: throughout most of northern part of area but not to Australia; also, westward to coasts of East Africa and northward to China.

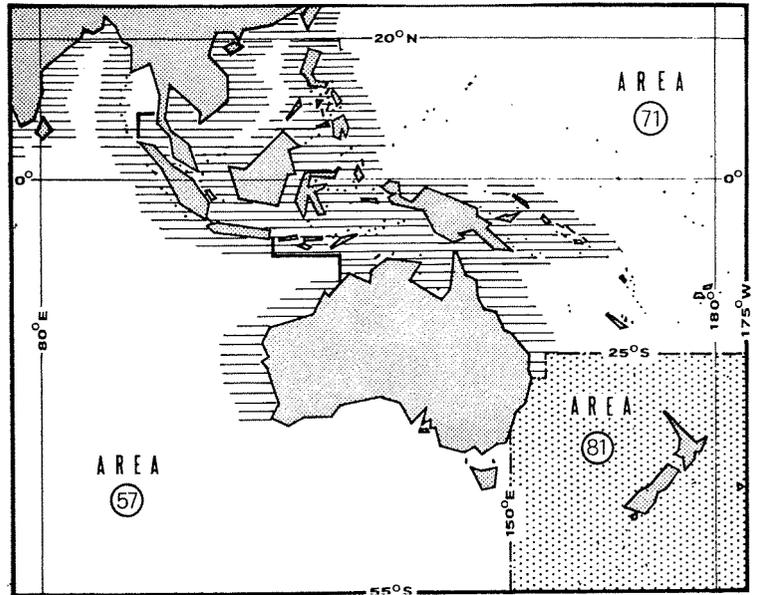
S. maculata maculata: western and eastern coasts of Australia, up to southern coast of New Guinea.

Inhabits shallow sandy bottoms of shores and bays; also estuaries.

Feeds on small invertebrates.

PRESENT FISHING GROUNDS:

Shallow waters, throughout its range.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The total reported catch of unclassified Sillaginidae in 1972 was:

area 57 (Eastern Indian Ocean): 1 400 tons (Australia only)
area 71 (Western Central Pacific): 900 tons (Philippines: 600 tons)

Caught with bottom trawls, beach seines and handlines.

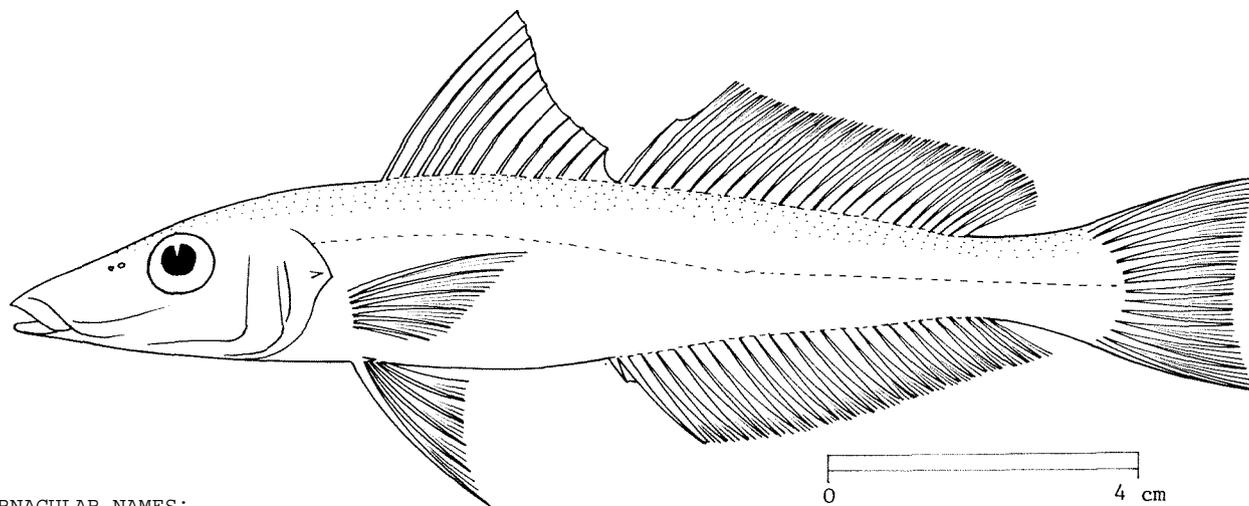
Not a very good food fish, because of its small size; often used as fertilizer, but also marketed fresh, frozen and dried-salted.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: SILLAGINIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Sillago sihama* (Forsskål, 1775)

SYNONYMS STILL IN USE: None



VERNACULAR NAMES:

FAO: En - Silver sillago
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body elongate, snout pointed; upper head profile slightly convex. Mouth small, terminal; villiform teeth present in jaws and on vomer (roof of mouth). Eye at least twice in length of snout; 2 to 3, mostly 2, series of scales on cheeks; a small, sharp spine on operculum. Lower gill rakers 7 to 9. First dorsal fin higher than 2nd and with 11 weak spines; 2nd dorsal fin with 1 spine and 20 to 23 soft rays; anal fin with 2 spines and 22 to 24 soft rays. Lateral line with 69 to 73 scales; 5 to 6 scale rows above lateral line.

Colour: back light brown, lower ventral flanks and belly whitish or silvery, without dark blotches. Both dorsal fins and caudal fin dusky, other fins pale.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

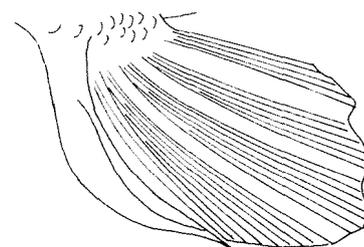
Sillago maculata: conspicuous dark blotches on back and flanks, and darker markings on dorsal and caudal fins.

Sillago macrolepis: 54 to 56 scales in lateral line (69 to 73 in *S. sihama*).

Sillago ciliata: 17 to 18 soft dorsal rays and 15 to 16 soft anal rays (20 to 23 and 22 to 24 in *S. sihama*).

Sillaginopodus chondropus: pelvic spine thickened and fused to 1st branched ray.

Sillago japonicus: 3 to 4 scale rows above lateral line (5 to 6 in *S. sihama*).



pelvic fin

S. chondropus

SIZE:

Maximum: 25 cm; common: 15

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

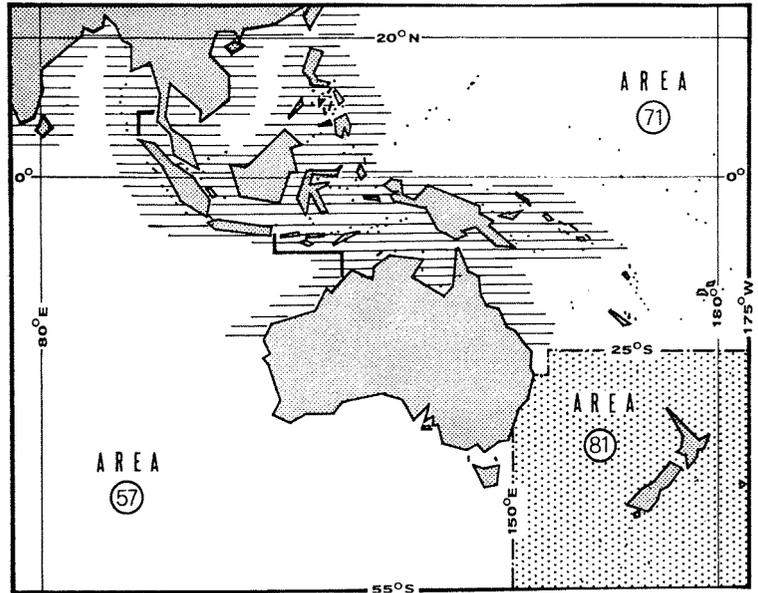
Throughout most of northern part of area and southward to northern coasts of Australia; also, westward to East Africa.

Inhabits shallow sandy bottoms of shores and bays, also estuaries.

Feeds on small invertebrates.

PRESENT FISHING GROUNDS:

Shallow waters, throughout its range.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The total reported catch of unclassified Sillaginidae in 1972 in fishing area 71 (Western Central Pacific) was 900 tons (Philippines: 600 tons); catch data for Sillaginidae in fishing area 57 (Eastern Indian ocean) are reported by Australia only, but do not include *S. sihama*.

Caught with beach seines and handlines.

A very good food fish, marketed fresh, frozen and dried-salted.

FAO SPECIES IDENTIFICATION SHEETS

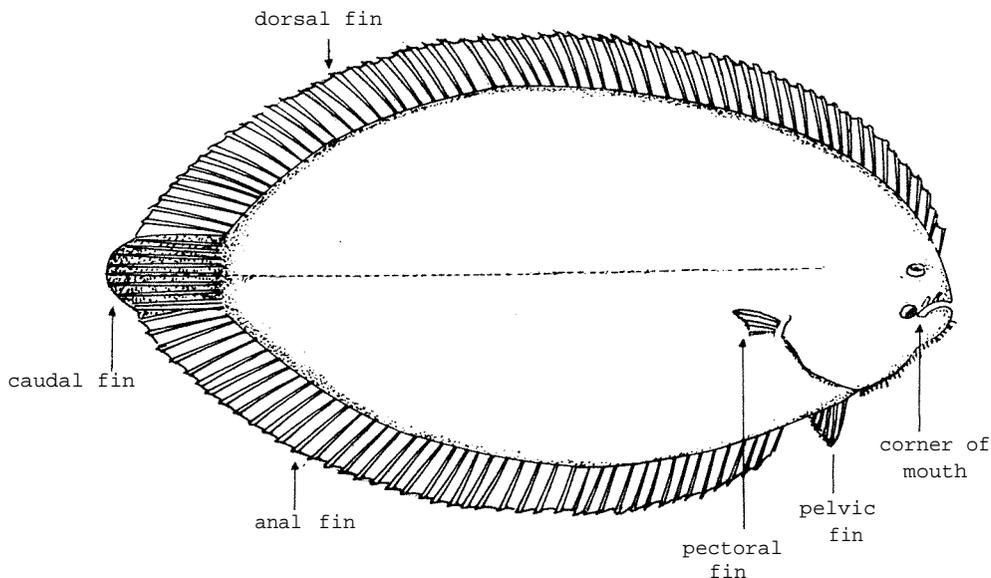
FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)

SOLEIDAE

Soles

Oval or somewhat elongate and strongly compressed flat fishes with eyes on right side of body. Preoperculum without a free margin, embedded in skin. Mouth small and asymmetrical, terminal or slightly inferior; snout sometimes hook-shaped; teeth small, villiform, better developed on blind side. No spines in fins; dorsal fin extending far forward on head; dorsal and anal fins completely separate from, adherent to, or fused with caudal fin; pectoral fins sometimes absent, but when present, the right always longer than the left; pelvic fins sometimes asymmetrical, either free or joined to anal fin. Scales moderately large, cycloid (smooth) or ctenoid (rough), sometimes modified into skin flaps fringed with sensory filaments. Lateral line single and straight on body, but sometimes branched on head.

Colour: usually brown, sometimes with scattered black spots or blotches or dark cross-bands on eyed side of body and vertical fins; blind side yellow/white. Colour highly variable according to substratum.



SIMILAR FAMILIES OCCURRING IN THE AREA:

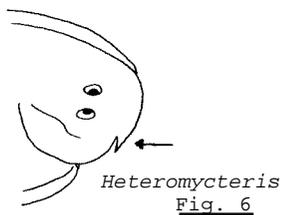
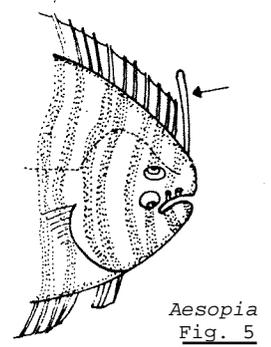
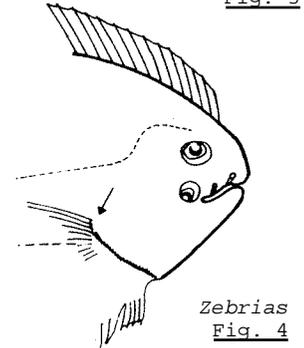
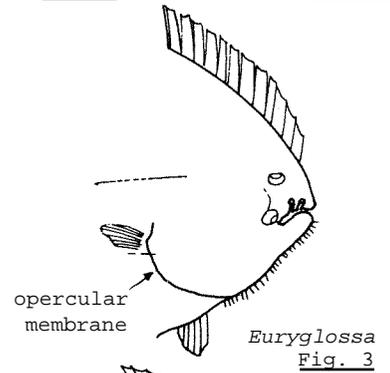
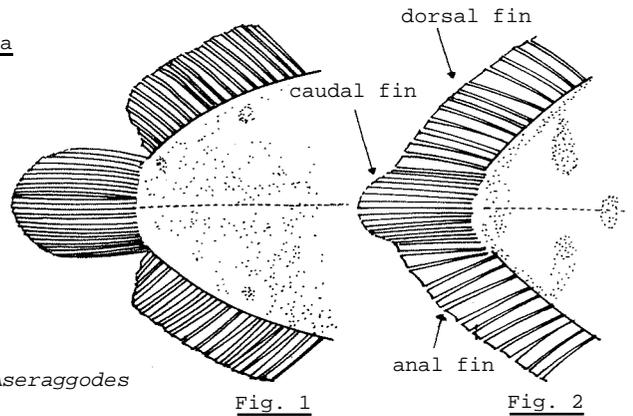
Cynoglossidae: also have dorsal fin origin far forward on head, and dorsal and anal fins always joined to caudal fin, but eyes on left side of body (eyes on right side in Soleidae).

Psettodidae: dorsal and anal fins always separate from caudal fin, dorsal fin not extending forward on to head, and spiny rays present on dorsal and pelvic fins (no spiny rays in Soleidae).

Pleuronectidae, Bothidae: margin of preoperculum free and distinct (no preopercular margin, preoperculum hidden beneath skin in Soleidae).

Key to Genera

- 1 a. Snout not forming a distinct hook
- 2 a. Caudal fin separate from dorsal and anal fins (Fig. 1)
- 3 a. Pectoral fins absent
 - 4 a. Pelvic fin of eyed side short-based, separate from genital papilla and anal fin
 - 5 a. First dorsal fin ray not prolonged *Aseraggodes*
 - 5 b. First dorsal fin ray prolonged *Coryphillus*
 - 4 b. Pelvic fin of eyed side with a long base, joined to genital papilla or anal fin *Pardachirus*
- 3 b. Pectoral fins well developed
 - 6 a. Body and head with numerous transverse wavy lines; anterior nasal tube on eyed side long *Soleichthys*
 - 6 b. Body and head without transverse wavy lines but with more or less distinct black blotches; anterior nasal tube on eyed side short *Solea*
- 2 b. Caudal fin joined to dorsal and anal fins (Fig. 2)
 - 7 a. Pectoral fins absent *Achiroides*
 - 7 b. Pectoral fins present
 - 8 a. Opercular membrane not joined to pectoral fins (Fig. 3)
 - 9 a. Body elongate, a bony process on snout *Synaptura*
 - 9 b. Body oval, no bony process on snout *Euryglossa*
 - 8 b. Opercular membrane on both sides of body joined to upper rays of pectoral fins (Fig. 4)
 - 10 a. Pelvic fin of eyed side not joined to anal fin
 - 11 a. First ray of dorsal fin not modified *Zebrias*
 - 11 b. First ray of dorsal fin enlarged and free (Fig. 5) *Aesopia*
 - 10 b. Pelvic fin of eyed side joined to anal fin *Phyllichthys*
- 1 b. Snout forming a distinct hook (Fig. 6)..... *Heteromycteris*

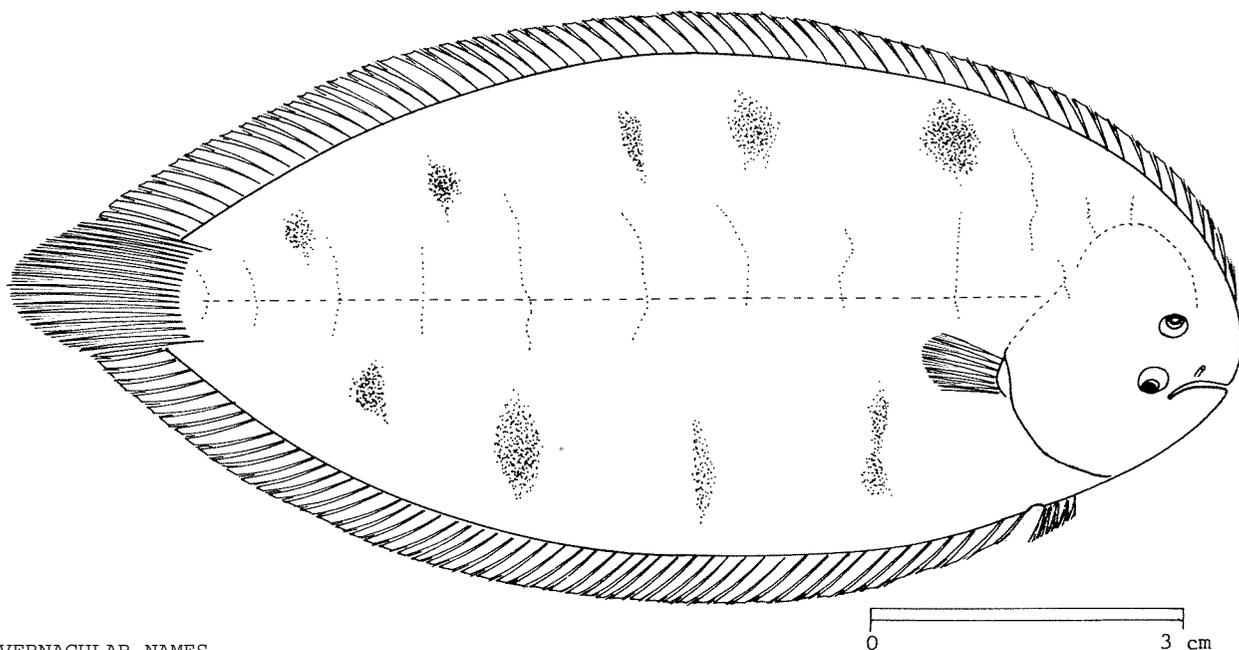


List of Species occurring in the Area
(Code numbers are given for those species
for which Identification Sheets are included)

<i>Achiroides leucorhynchos</i>		<i>Heteromycteris hartzfeldi</i>	
<i>Achiroides melanorhynchos</i>		<i>Heteromycteris oculus</i>	
<i>Aesopia cornuta</i>		<i>Pardachirus jaubertensis</i>	
		<i>Pardachirus pavoninus</i>	SOL Pard 1
<i>Aseraggodes cyaneus</i>		<i>Pardachirus poropterus</i>	
<i>Aseraggodes dubius</i>		<i>Pardaehirus whitleyi</i>	
<i>Aseraggodes kaianus</i>			
<i>Aseraggodes klunzingeri</i>		<i>Phyllichthys selerolepis</i>	
<i>Aseraggodes melanospilus</i>		<i>Phyllichthys sejunctus</i>	
<i>Aseraggodes melanostictus</i>			
<i>Aseraggodes microlepidotus</i>		<i>Solea elongata</i>	
<i>Aseraggodes persimilis</i>		<i>Solea ovata</i>	SOL Sol 2
<i>Aseraggodes routheri</i>			
<i>Aseraggodes texturatus</i>		<i>Soleichthys heterorhinos</i>	
<i>Coryphilus filiger</i>		<i>Synaptura albomaculata</i>	
		<i>Synaptura commersoniana</i>	SOL Syn 1
		<i>Synaptura villosa</i>	
<i>Euryglossa aenea</i>			
<i>Euryglossa aspilos</i>		<i>Zebrias altipinnis</i>	
<i>Euryglossa harmandi</i>		<i>Zebrias annandalei</i>	
<i>Euryglossa krampfi</i>		<i>Zebrias craticula</i>	
<i>Euryglossa macrolepis</i>		<i>Zebrias quagga</i>	
<i>Euryglossa orientalis</i>	SOL Eury 1	<i>Zebrias synapturoides</i>	
<i>Euryglossa pan</i>		<i>Zebrias zebra</i>	SOL Zeb 1
<i>Euryglossa panoides</i>			
<i>Euryglossa setifer</i>			

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: SOLIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Euryglossa orientalis* (Bloch & Schneider, 1801)SYNONYMS STILL IN USE: *Brachirus orientalis* (Bloch & Schneider, 1801)
Synaptura orientalis (Bloch & Schneider, 1801)

VERNACULAR NAMES

FAO: En - Oriental sole
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body oval and flat, both contours equally arched, with ctenoid (rough) scales on both sides; head scales of blind side modified into cutaneous sensory processes. Eyes on right side, separated by a scaly space; mouth small, curved, cleft reaching to below middle of lower eye. Dorsal and anal fins joined to caudal fin; pectoral fins well developed, the left somewhat shorter than the right; pelvic fins moderately symmetrical, united basally.

Colour: grey or brown with cloudy indistinct patches on eyed side, tinged yellow on blind side; right pectoral fin darker.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Euryglossa pan: also has well developed pectoral fins, but scales on head and neck enlarged (not larger than the others in *E. orientalis*).

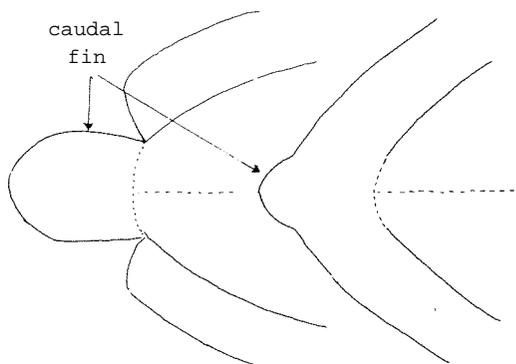
Other *Euryglossa* species: pectoral fin of at least one side rudimentary (pectoral fins of both sides well developed in *E. orientalis*).

Solea and *Soleichthys* species: dorsal and anal fins separate from caudal fin; also, body with numerous transverse wavy lines (*Soleichthys*) or black blotches (*Solea*).

Synaptura and *Achiroides* species: also have dorsal and anal fins joined to caudal fin, but either bony process present on snout (*Synaptura*) or pectorals absent (*Achiroides*).

Zebrias, *Aesopia* and *Phyllichthys* species: also have dorsal and anal fins joined to caudal fin, but opercular membrane joined to upper rays of pectoral fins; also, a number of dark cross-bars on body.

Heteromycteris species: snout forming a long hook.



Solea, soleichthys
Soleichthys

Euryglossa

SIZE:

Maximum: 21 cm; common: 10 to 12 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

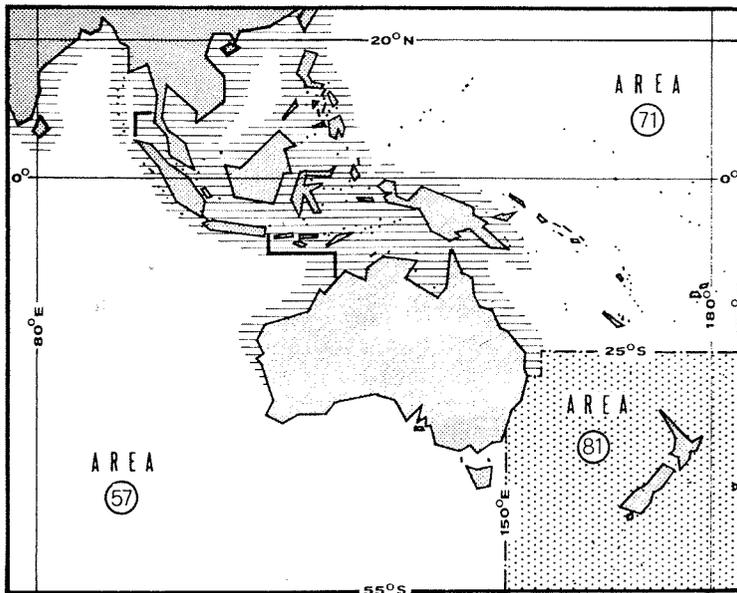
Throughout most warm coastal waters of area.

Inhabits shallow sand/mud bottoms in coastal waters.

Feeds predominantly on bottom-living invertebrates, especially small crustaceans.

PRESENT FISHING GROUNDS:

Shallow sand/mud grounds of the continental shelf.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

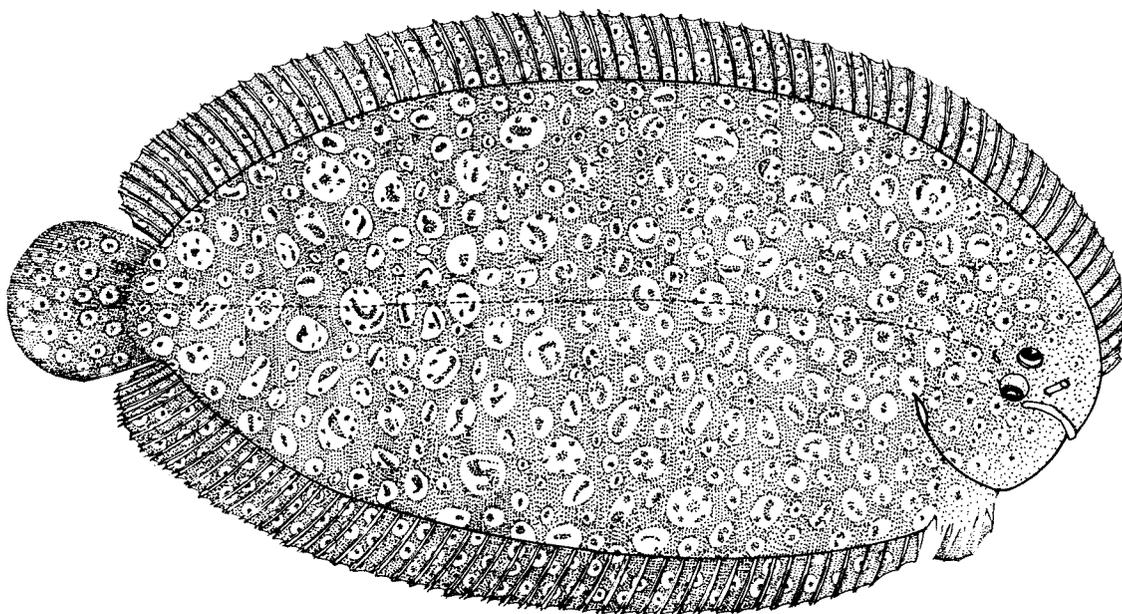
Separate statistics are not reported for this species.

Caught mainly with bottom trawls.

Marketed fresh, frozen and dried-salted.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: SOLEIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Pardachirus pavoninus* (Lacepède, 1802)SYNONYMS STILL IN USE: *Achirus pavoninus* Lacepède, 1802

VERNACULAR NAMES

FAO: En - Peacock sole
Fr -
Sp -

NATIONAL:



DISTINCTIVE CHARACTERS:

Body oblong and flat with feebly ctenoid (rough) scales on both sides. Eyes on right side, separated by a scaly space; mouth strongly curved, cleft reaching to below front border of lower eye. Dorsal and anal fins separate from caudal fin; no pectoral fins; pelvic fins unequal, the right one with an elongated base and attached posteriorly to genital papilla.

Colour: red/brown, densely spotted on head; body and fins of eyed side also with spots of various sizes and shapes, bordered by a dark rim and some with a blackish spot in centre.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

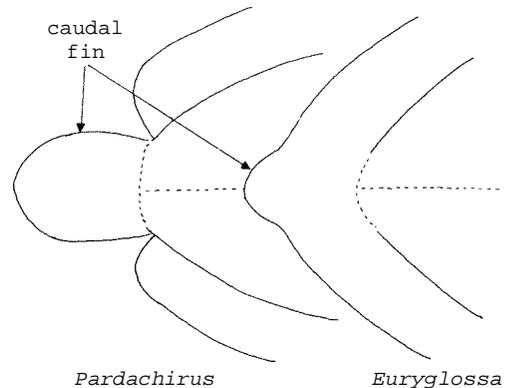
Other *Pardachirus* species: body colouration quite different, e.g., yellow/brown with small brown scattered spots (*P. jaubertensis*), black with indistinct spots and wavy lines (*P. poropterus*) or red/brown with 3 to 4 rows of black blotches (*P. whitleyi*).

Synaptura, Euryglossa, Achiroides, Zebrias, Aesopia and *Phyllichthys* species: dorsal and anal fins joined to caudal fin.

Solea and *Soleichthys* species: also have dorsal and anal fins separate from caudal fin, but pectoral fins well developed.

Aseraggodes and *Coryphillus* species: also have dorsal and anal fins separate from caudal fin and lack pectoral fins, but pelvic fins short-based and separate from genital papilla and anal fin.

Heteromycteris species: snout forming a long hook.



SIZE:

Maximum: 20 cm; common: 10 to 15 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

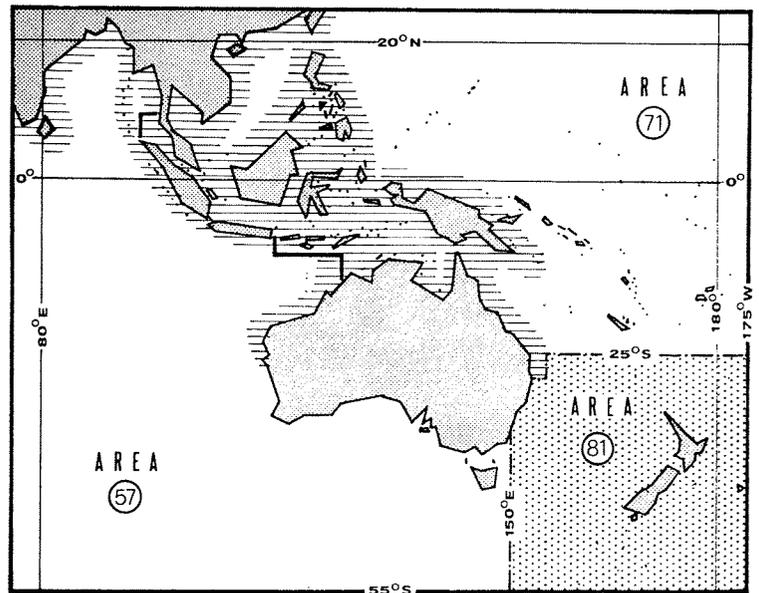
Throughout most warm coastal waters of northern part of area and southward to northern coasts of Australia.

Inhabits shallow sand/mud bottoms in coastal waters.

Feeds mainly on bottom-living invertebrates, especially small crustaceans.

PRESENT FISHING GROUNDS:

Shallow sand/mud grounds of the continental shelf.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with bottom trawls.

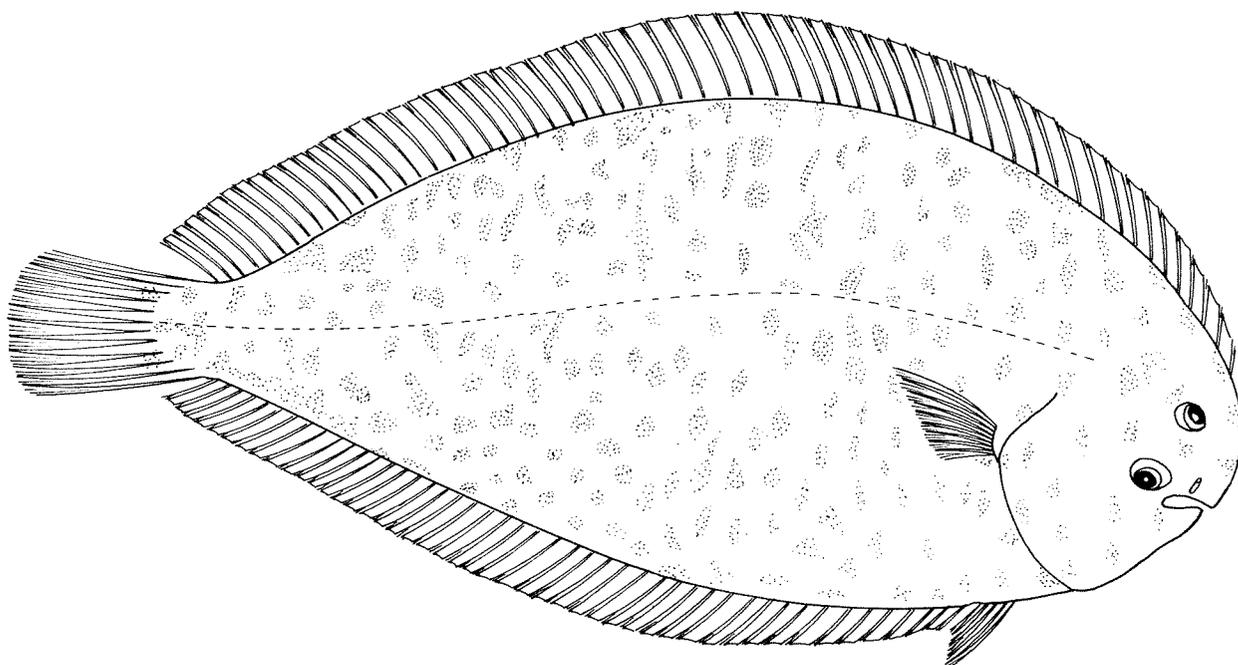
Marketed fresh or frozen.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: SOLEIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)

<i>Solea ovata</i> Richardson, 1846

SYNONYMS STILL IN USE: *Solea humilis* Cantor, 1850

VERNACULAR NAMES:

FAO: En - Ovate sole
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body ovate and flat with small ctenoid (rough) scales on both sides. Eyes on right side, separated by a small concave space. Snout obtusely pointed with series of short cutaneous sensory processes on blind side; mouth small, curved, cleft reaching to below anterior half of lower eye. Dorsal and anal fins separated from caudal fin; pectoral fin on eyed side about twice as long as that on blind side; both pelvic fins present.

Colour: olive/brown with spots and black blotches on eyed side of body and fins; deep black blotches on outer two-thirds of pectoral fins.

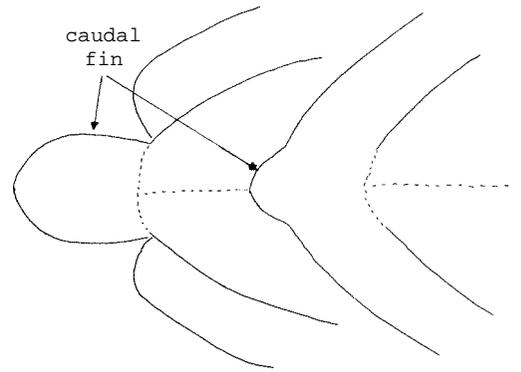
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Solea elongata: body elongate, its depth 3 times in total length (about twice in *S. ovata*).

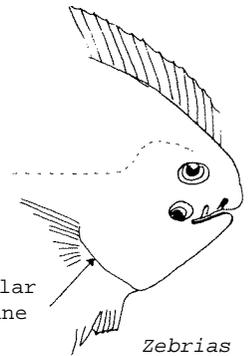
Soleichthys, *Pardachirus*, *Aseraggodes* and *Coryphillus* species: also have dorsal and anal fins separate from caudal fin, but numerous dark transverse lines on body; also, anterior nasal tube of eyed side longer (*Soleichthys*), or pectoral fins absent (*Pardaehirus*, *Aseraggodes*, *Coryphillus*).

Synaptura, *Euryglossa*, *Achiroides*, *Zebrias*, *Aesopia* and *Phyllichthys* species: dorsal and anal fins joined to caudal fin; also, opercular membrane joined to upper rays of pectoral fins in *Zebrias*, *Aesopia* and *Phyllichthys* and pectoral fins absent in *Aehiroides*.

Heteromycteris species: snout forming a long hook.



Solea



Euryglossa

Zebrias

SIZE:

Maximum: 10 cm; common: 8 to 9 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

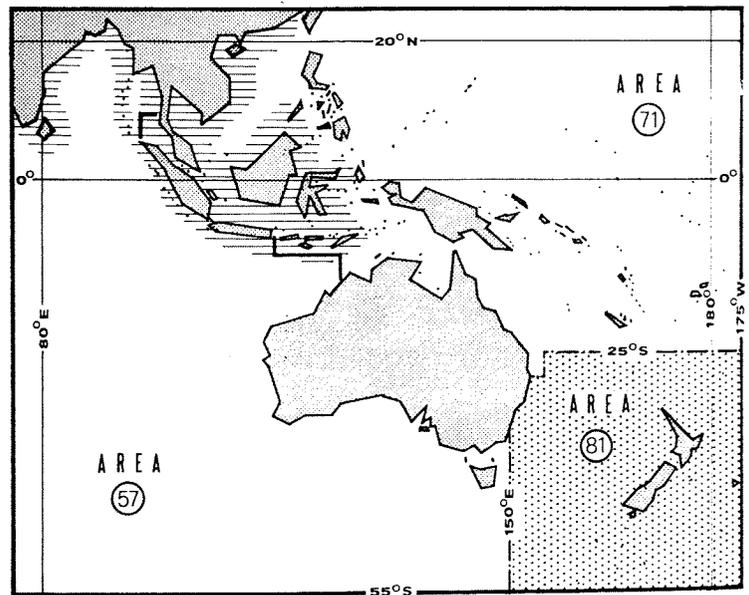
Throughout northwestern part of area but not to the Philippines, New Guinea or Australia.

Inhabits shallow sand/mud bottoms in coastal waters.

Feeds mainly on bottom-living invertebrates, especially crustaceans.

PRESENT FISHING GROUNDS:

Shallow sand/mud grounds of the continental shelf.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with bottom trawls.

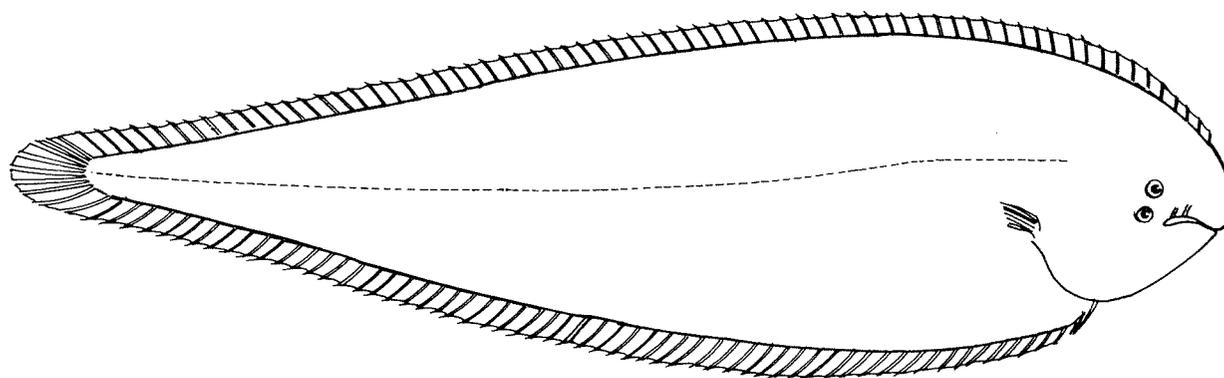
Marketed fresh, frozen and dried-salted.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: SOLEIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Synaptura commersoniana* (Lacepède, 1802)

SYNONYMS STILL IN USE: None



VERNACULAR NAMES:

FAO: En - Commerson's sole
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body elongate and flat, broad anteriorly and tapering posteriorly, with ctenoid (rough) scales on eyed side, cycloid (smooth) on blind side; scales on head and nape of eyed side larger than those on body, and scales on blind side of head modified into cutaneous sensory processes. Eyes on right side, separated by a scaly space. Anterior part, of snout with a bony process; mouth curved, cleft reaching beyond middle of upper eye. Dorsal and anal fins joined to caudal fin; pectoral fins symmetrical; pelvic fins short and asymmetrical.

Colour: grey/brown on eyed side of body, dorsal, anal and caudal fins dusky towards edges of both sides and with a conspicuous white margin; right pectoral fin dusky.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Synaptura albomaculata and *S. villusa*: scales on head and body similar in size (scales on head and nape of eyed side larger than those on body in *S. commersoniana*); also, 2 to 3 rows of white spots on eyed side of body in *S. albomaculata*.

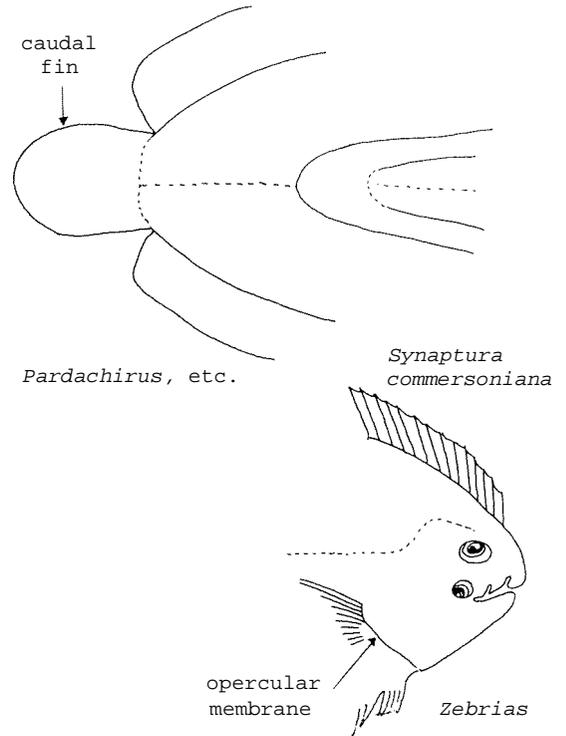
Solea and *Soleichthys* species: dorsal and anal fins separate from caudal fin; body with numerous transverse wavy lines (*Soleichthys*), or with black blotches (*Solea*).

Pardachirus, *Aseraggodes* and *Coryphillus* species: dorsal and anal fins separate from caudal fin and pectoral fins absent.

Euryglossa and *Achiroides* species: also have dorsal and anal fins joined to caudal fin, but no bony process on snout and body oval in shape (elongate in *Synaptura*).

Zebrias, *Aesopia* and *Phyllichthys* species: also have dorsal and anal fins joined to caudal fin, but opercular membrane joined to upper rays of pectoral fins; also, a number of dark cross-bars on body.

Heteromycteris species: snout forming a long hook.



SIZE:

Maximum: 32 cm; common: 20 to 30 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

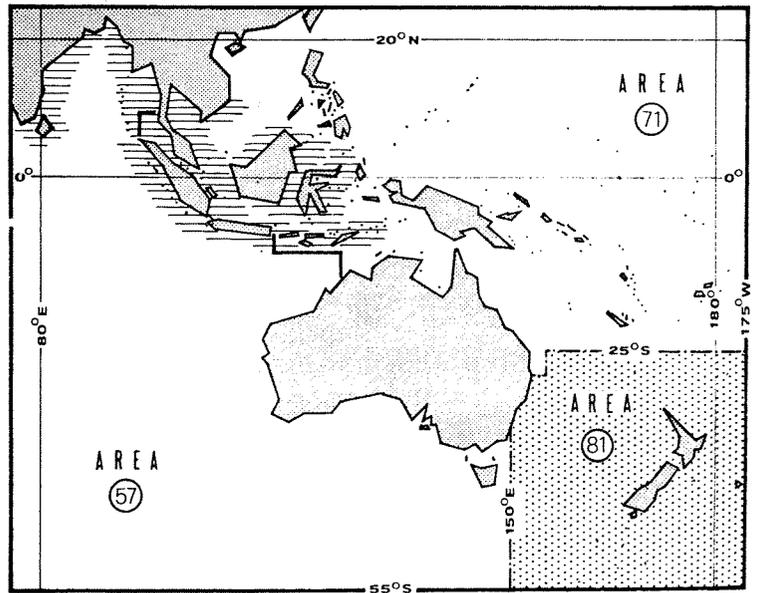
Northwestern part of area, but not to the Philippines, New Guinea or Australia.

Inhabits mainly sand/mud bottoms in coastal waters.

Feeds mainly on bottom-living invertebrates, especially on small crustaceans.

PRESENT FISHING GROUNDS:

Shallow sand/mud grounds of the continental shelf.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

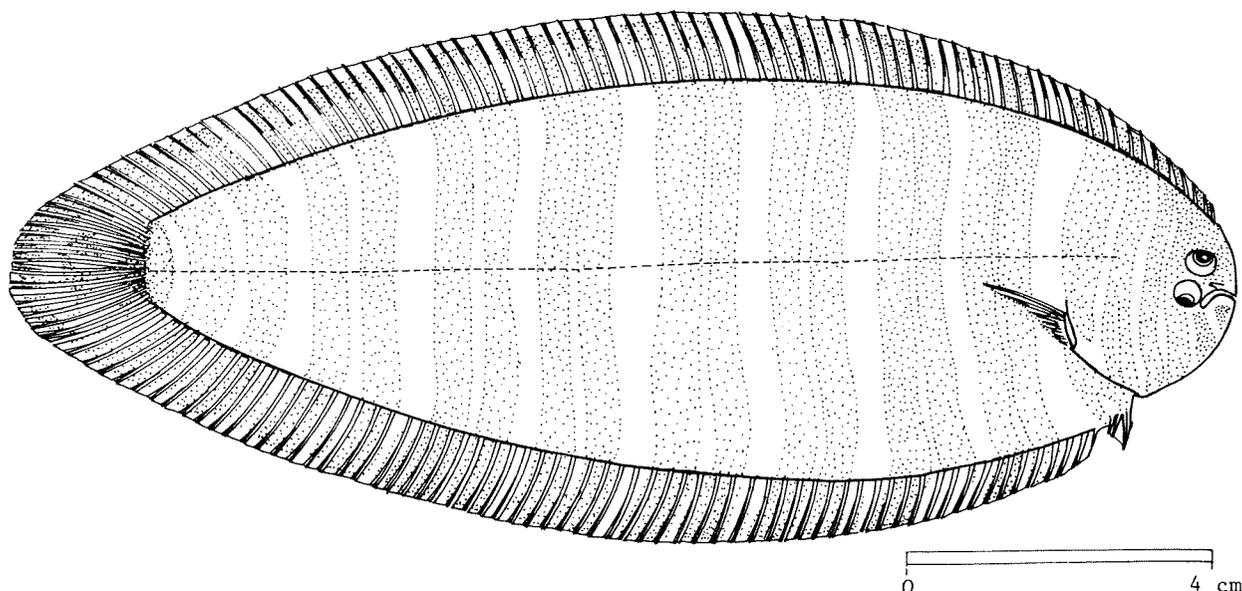
Separate statistics are not reported for this species.

Caught mainly with bottom trawls.

Marketed fresh, frozen and dried-salted.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: SOLEIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Zebrias zebra* (Bloch, 1787)SYNONYMS STILL IN USE: *Synaptura zebra* (Bloch, 1787)

VERNACULAR NAMES:

FAO: En - Zebra sole
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body elongate and flat, with strongly ctenoid (rough) scales on both sides. *Eyes on right side, separated by a scaly space; mouth curved, cleft reaching to below anterior border of lower eye. Dorsal and anal fins completely joined to caudal fin; pectoral fins well developed, attached to opercular membrane, the right much longer than the left, upper 2 rays of right pectoral fin longer than others; pelvic fins shorter than right pectoral fin, right pelvic fin base longer than left.*

Colour: yellow/brown on eyed side, with 12 paired dark brown cross-bands continued onto fins, where they are bent backward; a white-bordered, dark, ocellus on caudal fin.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Zebrias altipinnis: 14 unpaired cross-bands on eyed side of body (12 paired cross-bands in *Z. zebra*).

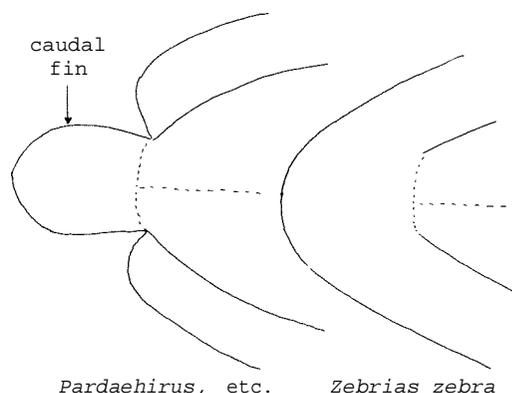
Zebrias annandatei, *Z. quagga* and *Z. synapturoides* species: dorsal and anal fins only partly confluent with caudal fin; also, a tentacle on each eye and 10 to 11 dark cross-bands (*Z. quagga*); or no tentacle on eye but 13 dark cross-bands (*Z. synapturoides*), or 20 to 24 dark cross-bands equal in width to spaces between them (*Z. craticula*).

Euryglossa and *Synaptura* species: also have dorsal and anal fins joined to caudal fin, but opercular membrane not joined to pectoral fins; also, either a bony process on snout and an elongate body (*Synaptura*), or no bony process and an oval body (*Euryglossa*).

Achiroides, *Aesopia* and *Phyllichthys* species: also have dorsal and anal fins joined to caudal fin but pectoral fins absent (*Achiroides*); or the first ray of dorsal fin enlarged and free from remaining dorsal fin rays (*Aesopia*); or pelvic fin of eyed side joined to anal fin (*Phyllichthys*).

Solea, *Soleichthys*, *Pardachirus*, *Aseraggodes* and *Coryphillus* species: dorsal and anal fins separate from caudal fin.

Heteromycteris species: snout forming a long hook.



SIZE:

Maximum: 14 cm; common: 15 to 17 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Northwestern part of area but not to the Philippines, New Guinea or Australia.

Inhabits shallow sand/mud bottoms in coastal waters.

Feeds mainly on bottom-living invertebrates, especially small crustaceans.

PRESENT FISHING GROUNDS:

Shallow sand/mud grounds of the continental shelf.

CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORM OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with bottom trawls.

Marketed fresh, frozen and dried-salted.

