

FAO SPECIES IDENTIFICATION SHEETS

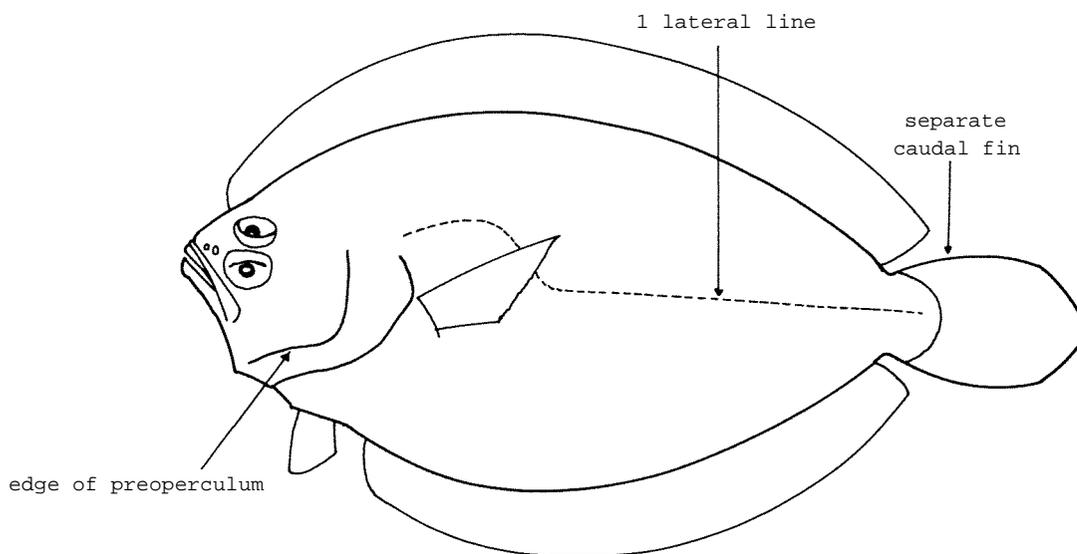
FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)

BOTHIDAE

Lefteye flounders

Flatfishes with *eyes on left side of body*; spines sometimes present before eyes in males. Mouth asymmetrical, teeth present in jaws, sometimes caniniform. *Preoperculum exposed, its hind margin free and visible*. Pectoral fins present; pelvic fins present, that on eyed side the larger in some genera; dorsal fin origin above or in front of lower eye; caudal fin free from dorsal and anal fins. A single lateral line, sometimes forked behind upper eye, sometimes faint or absent on blind side.

Colour: eyed side brown, often with spots, blotches or ring-like markings; blind side pale.



SIMILAR FAMILIES OCCURRING IN THE AREA:

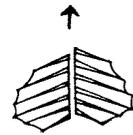
Psettodidae: dorsal fin with spinous rays, its origin behind upper eye; eyes on right side of body.

Pleuronectidae and Soleidae: both eyes on right side of body.

Cynoglossidae: margin of preoperculum not free, hidden beneath skin; caudal fin joined to dorsal and anal fins.

Key to Genera

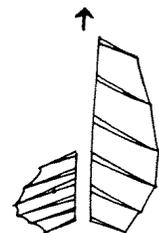
- 1 a. Pelvic fin bases short; that of blind side almost as long as that of eyed side (Fig. 1) (subfamily Paralichthinae)
 - 2 a. Length of head about 2 1/2 times in standard length; diameter of eyes 4 times in length of head *Cephalopsetta*
 - 2 b. Length of head at least 3 times in standard length; diameter of eyes more than 4 times in length of head
 - 3 a. Lateral line absent on blind side; maxilla more than 3 times in length of head *Taeniopsetta*
 - 3 b. Lateral line equally developed on both sides; maxilla less than 3 times in length of head
 - 4 a. Dorsal and anal fin rays not scaled; teeth in bands in both jaws *Tephrineetes*
 - 4 b. Dorsal and anal fin rays more or less scaled; teeth in one row in both jaws
 - 5 a. Lateral line without distinct branch above upper eye *Paratichthys*
 - 5 b. Lateral line with distinct branch above upper eye, reaching dorsal fin at 7th to 12th rays
 - 6 a. Scales small, more than 58 in lateral line *Pseudorhombus*
 - 6 b. Scales large, less than 50 in lateral line *Tarphops*



pelvic fins seen from below (arrows point towards head)

Fig. 1

- 1 b. Pelvic fin base of eyed side normally much longer than that of blind side (Fig. 2) (subfamily Bothinae)
 - 7 a. Mouth small; maxilla 3.4 to 4.6 times in length of head; hardly any teeth on eyed side of jaws *Laeops*
 - 7 b. Mouth larger; teeth on both sides of jaws
 - 8 a. Maxilla less than twice in length of head; lower jaw very prominent *Chascanopsetta*
 - 8 b. Maxilla more than twice in length of head; lower jaw not prominent
 - 9 a. Lateral line equally developed on both sides; 3 prominent blotches forming a triangle on eyed side *Grammatobothus*
 - 9 b. Lateral line absent or feebly developed on blind side



pelvic fins seen from below (arrows point towards head)

Fig. 2

- 10 a. Eyes close together, separated by a bony ridge or narrow, concave space, equally developed in males and females
 - 11 a. Scales of eyed side cycloid (smooth) or feebly ctenoid *Arnoglossus*
 - 11 b. Scales of eyed side strongly ctenoid (rough to touch) *Psettina*
- 10 b. Eyes separated by a more or less concave space, larger in males (Fig. 3)
 - 12 a. Distance between eyes equal to 1/2 to 1 eye diameter; males without distinct spines on snout *Parabothus*
 - 12 b. Distance between eyes equals more than eye diameter; males with distinct spine(s) on snout
 - 13 a. Scales of eyed side strongly ctenoid (rough to touch) *Crossorhombus*
 - 13 b. Scales of eyed side feebly ctenoid
 - 14 a. Lateral line with a forked branch behind upper eye *Bothus*
 - 14 b. Lateral line without a forked branch behind upper eye *Engyprosopon*

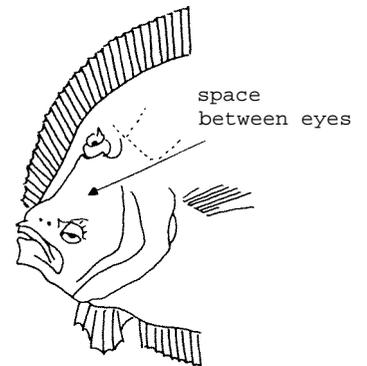


Fig. 3

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

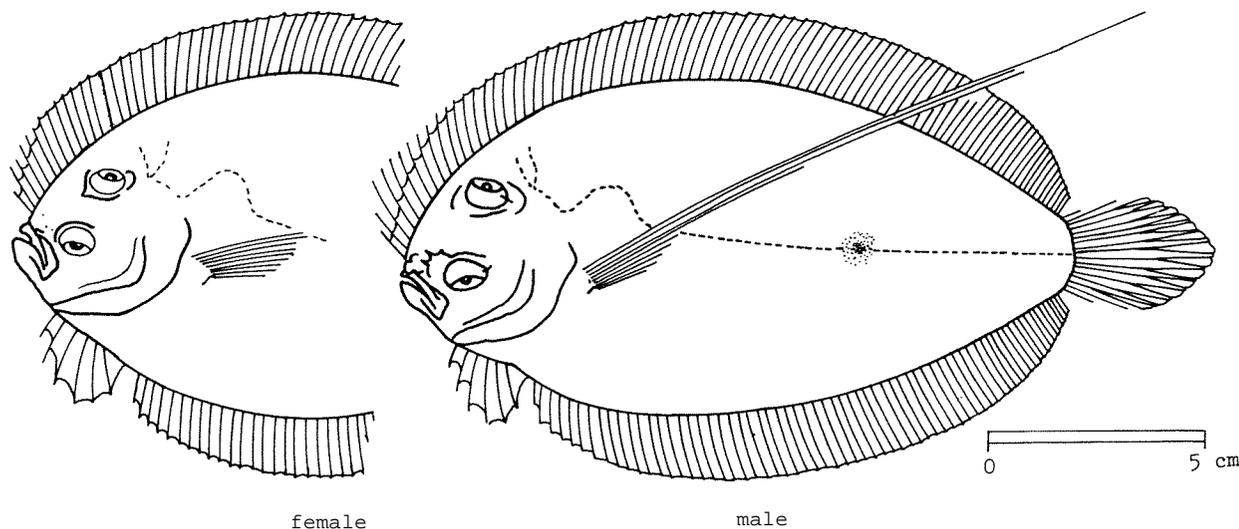
<i>Arnoglossus aspidos aspidos</i>		<i>Grarnnatobothus kremphi</i>	
<i>Arnoglossus aspidos praeteritus</i>		<i>Grammatobothus pennatus</i>	
<i>Arnoglossus elongatus</i>		<i>Grammatobothus polyophthalmus</i>	BOTH Gram 1
<i>Arnoglossus fisoni</i>			
<i>Arnoglossus intermedius</i>		<i>Laeops guentheri</i>	
<i>Arnoglossus maculipinnis</i>		<i>Laeops macrophthalmus</i>	
<i>Arnoglossus polyspilus</i>		<i>Laeops nigrescens</i>	
<i>Arnoglossus tapeinosoma</i>		<i>Laeops parviceps</i>	
<i>Arnoglossus tenuis</i>			
<i>Arnoglossus maitei</i>		<i>Parabothus mathensis</i>	
		<i>Parabothus potylepsis</i>	
<i>Bothus assimilis</i>			
<i>Bothus bleekeri</i>		<i>Paralichthys olivaceus</i>	
<i>Bothus brunneus</i>			
<i>Bothus confertus</i>		<i>Psettina brevirectis</i>	
<i>Bothus mancus</i>		<i>Psettina profunda</i>	
<i>Bothus myriaster</i>			
<i>Bothus obliquiocularis</i>		<i>Pseudorhombus annulatus</i>	
<i>Bothus pantherinus</i>	BOTH Both 1	<i>Pseudorhombus argus</i>	
<i>Bothus tchangii</i>		<i>Pseudorhombus arsius</i>	BOTH Pseud 7
<i>Bothus variegatus</i>		<i>Pseudorhombus cinnamoneus</i>	
		<i>Pseudorhombus ctenosquamis</i>	
<i>Cephalopsetta ventrocellatus</i>		<i>Pseudorhombus diplospilus</i>	BOTH Pseud 2
		<i>Pseudorhombus dupliciocularis</i>	BOTH Pseud 3
<i>Chascanopsetta lugubris</i>		<i>Pseudorhombus elevatus</i>	BOTH Pseud 4
<i>Chascanopsetta prognathus</i>		<i>Pseudorhombus javanicus</i>	BOTH Pseud 5
		<i>Pseudorhombus levisquamis</i>	
<i>Crossorhombus azureus</i>		<i>Pseudorhombus malayanus</i>	BOTH Pseud 6
<i>Crossorhombus valderostratus</i>		<i>Pseudorhombus megalops</i>	BOTH Pseud 7
		<i>Pseudorhombus micrognathus</i>	
<i>Engyprosopon bleekeri</i>		<i>Pseudorhombus neglectus</i>	
<i>Engyprosopon cocosensis</i>		<i>Pseudorhombus oligodon</i>	BOTH Pseud 6
<i>Engyprosopon fijiensis</i>		<i>Pseudorhombus pentophthalmus</i>	
<i>Engyprosopon filimanus</i>		<i>Pseudorhombus quinquocellatus</i>	BOTH Pseud 7
<i>Engyprosopon grandisqucanis</i>	BOTH Engy 1	<i>Pseudorhombus spinosus</i>	
<i>Engyprosopon latifrons</i>		<i>Pseudorhombus triocellatus</i>	
<i>Engyprosopon macrolepis</i>			
<i>Engyprosopon maldivensis</i>		<i>Tarphops oligolepis</i>	
<i>Engyprosopon mogkii</i>			
<i>Engyprosopon xystrias</i>		<i>Taeniopsetta ocellata</i>	
		<i>Tephrinectes sinensis</i>	

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: BOTHIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Bothus pantherinus* (Rüppell, 1828)

SYNONYMS STILL IN USE: None



female

male

VERNACULAR NAMES:

FAO: En - Leopard flounder
Fr -
Sp -

NATIONAL:

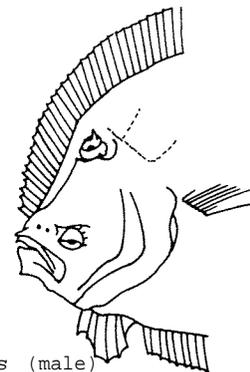
DISTINCTIVE CHARACTERS:

Body oval and flat, upper profile of head convex. Both eyes on left side, separated by a wide space (larger than one eye diameter). Upper jaw about 3 times in length of head, ending below front edge of lower eye. Teeth in 2 or more rows. Gill rakers 6 to 8 on lower part of first arch. Pelvic fin base of blind side much shorter than that of eyed side. All scales on eyed side ctenoid (rough to touch); 80 to 92 scales in lateral line. Males with spines near eyes, a larger space between eyes and much longer pectoral fin rays than females.

Colour: eyed side brown with paler and darker markings; generally a large dark blotch midway along straight part of lateral line.

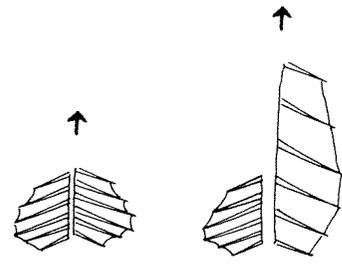
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Bothus mancus: 9 to 11 rakers on lower branch of first gill arch (6 to 8 in *B. pantherinus*) and upper profile of head concave.

*Bothus mancus* (male)

Other *Bothus* species: no dark blotch midway on straight part of lateral line; also, a different number of gill rakers (6 to 8 in *B. pantherinus*), and/or cycloid (smooth) scales on eyed side, and/or upper head profile not convex.

Other genera of flatfishes: pelvic fin base of blind side almost equal in length to that of eyed side, and/or space between eyes smaller than one eye diameter, and/or lateral line not forked behind upper eye.



pelvic fins seen from below
(arrows point towards head)

Pseudornombus,
Paralichthys,
etc.

Bothus,
Engyprosopon
etc.

SIZE:

Maximum: about 25 cm; common: 15 to 20 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

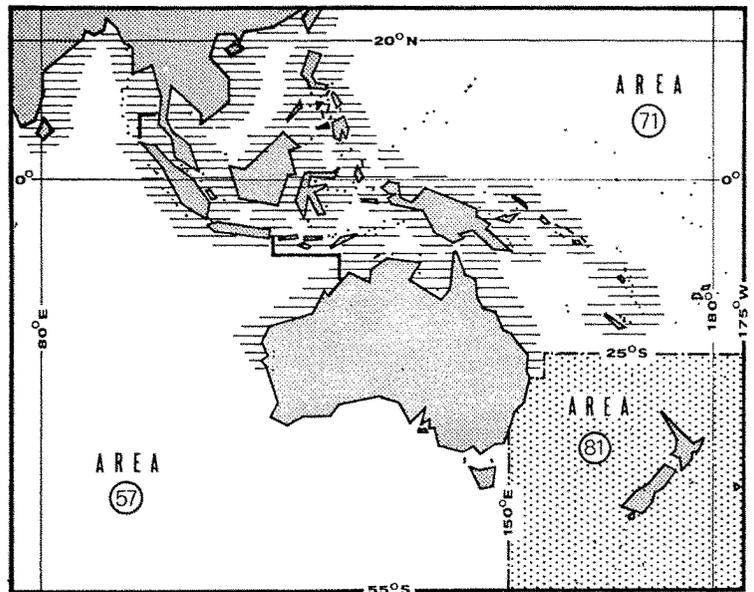
Throughout most of warmer waters of area, including New Guinea and northern half of Australia; also, westwards to East Africa and eastwards to Hawaii.

Inhabits the shallower muddy and sandy bottoms of the continental shelf.

Feeds on bottom-living animals:

PRESENT FISHING GROUNDS:

Muddy and sandy trawling grounds of the continental shelf.



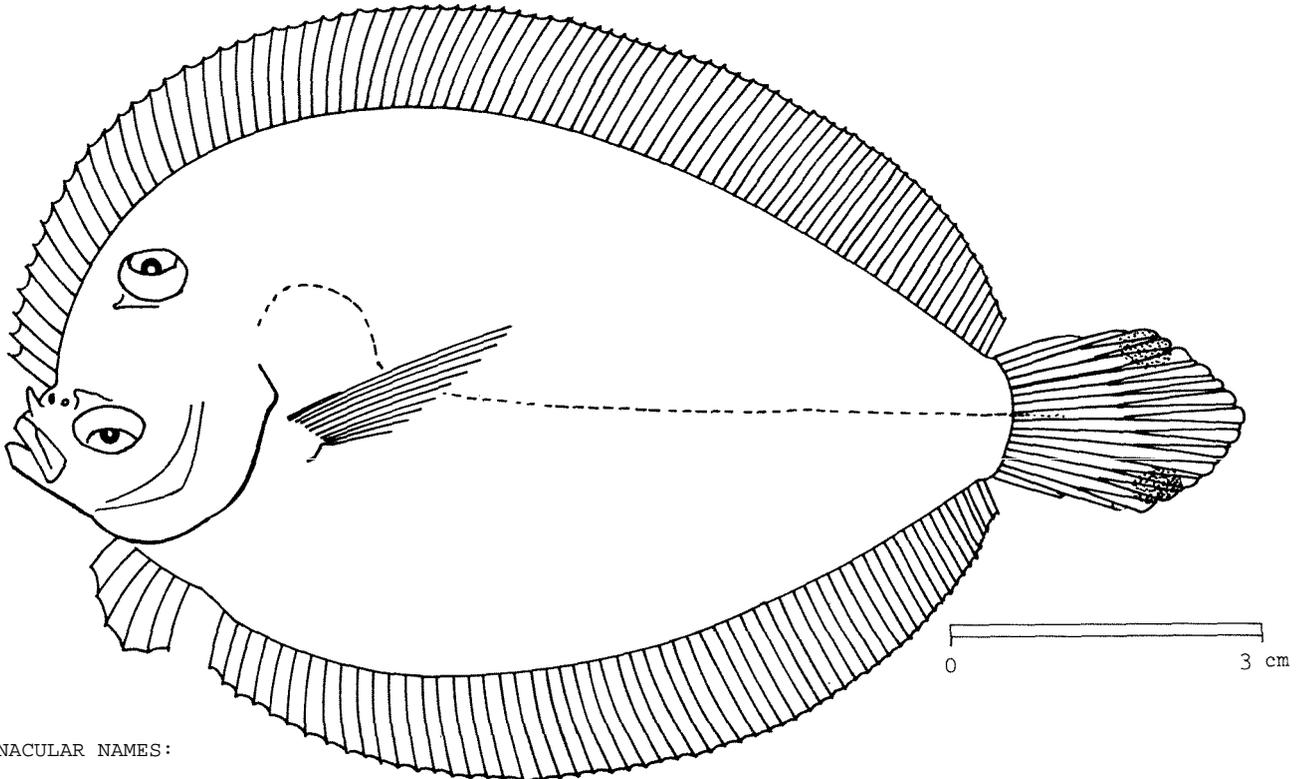
CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with bottom trawls.

Marketed mostly fresh.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: BOTHIDAEFISHING AREAS 57,71
(E Ind. Ocean)
(W Cent, Pacific)*Engyprosopon grandisquamis* (Temminck & Schlegel, 1846)SYNONYMS STILL IN USE: *Bothus poecilurus* (Bleeker, 1852)

VERNACULAR NAMES:

FAO: En - Largescale flounder

Fr -

Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body oval and flat. Both eyes on Left side, in adults separated by a more or less concave space (wider than one eye diameter). Upper jaw more than 2.5 times in length of head, ending just in front of lower eye. Gill rakers 5 to 7 on Lower part of first gill arch. Pelvic fin base of blind side much shorter than that of eyed side. Lateral line curved above pectoral fin and absent from head; scales of eyed side feebly ctenoid (rough to touch); 36 to 48 scales in lateral line. Adult males have spines on snout and near eyes, and a larger space between eyes than females.

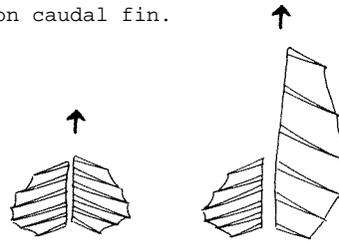
Colour: eyed side brown; caudal fin with two large, dark spots. Dorsal, anal and caudal fins usually with small brown spots.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Engyprosopon xistryans: 14 rakers on lower branch of first gill arch (5 to 7 in *E. grandisquamis*).

Other *Engyprosopon* species: lack the 2 distinct spots on caudal fin.

Other flatfish genera: pelvic fin base of blind side almost equal in size to that of eyed side, and/or space between eyes less than one eye diameter, and/or scales not strongly ctenoid (very rough to touch) and/or lateral line present on head.



pelvic fins seen from below

(arrows point towards head)

Pseudorhombus
Paralichthys

Engyprosopon
Bothus

SIZE:

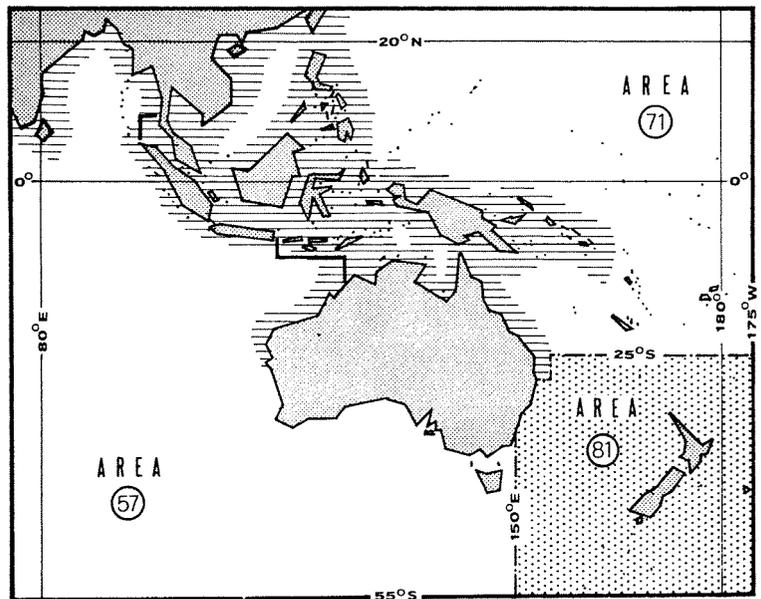
Maximum: about 15 cm; common 10 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout most of warmer waters of area including new Guinea and northern half of Australia; also westwards to East Africa.

Inhabits the shallower muddy and sandy bottoms of the continental shelf.

Feeds on bottom-living animals.



PRESENT FISHING GROUNDS:

Muddy and sandy trawling 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 mostly fresh.

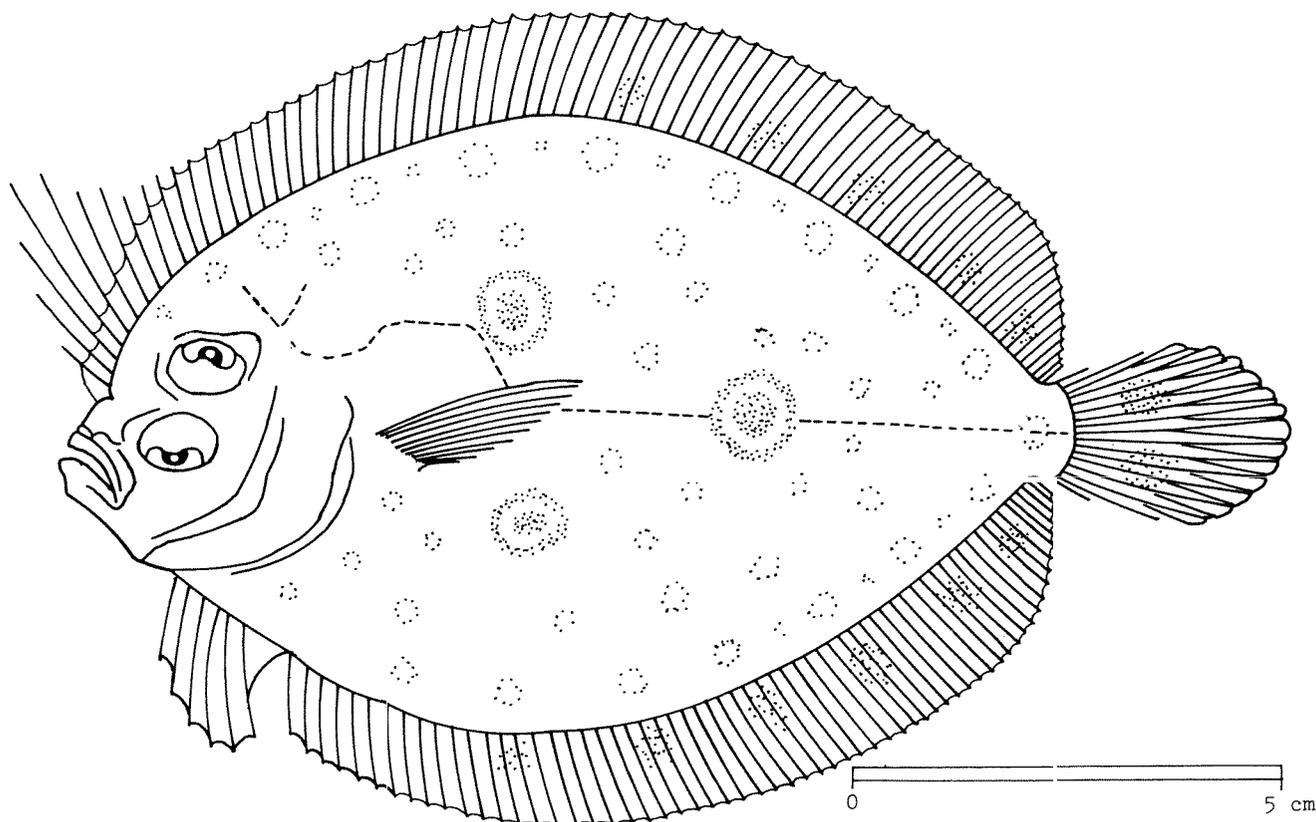
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: BOTHIDAE

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

<i>Grammatobothus polyophthalmus</i> (Sleeker, 1866)
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SYNONYMS STILL IN USE: None



VERNACULAR NAMES:

FAO: En - Threespot flounder
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body oval and flat, its depth 1.5 to 1.7 times in standard length. Upper profile of head more or less deeply notched. Both eyes on left side, with only a narrow space between them. Upper jaw ending in front of lower eye. Dorsal fin with 2nd to 5th or 6th rays somewhat prolonged; anal fin with 61 to 68 rays; pelvic fin base of blind side somewhat shorter than that of eyed side. Lateral line equally developed on both sides, forked above upper eye.

Colour: eyed side brown with 3 prominent black blotches each surrounded by a dark ring. Head, body and fins with numerous small markings.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Grammatobothus pennatus: 72 to 76 rays in anal fin, a more slender body (its depth 1.8 to 2.0 in standard length) and 2nd to 4th dorsal fin rays elongated (2nd to 5th or 6th rays elongated in *G. polyophthalmus*).

Other flatfish genera: pelvic fin base of blind side about equal in length to that of eyed side and/or lateral line not equally developed on both sides.

SIZE:

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

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

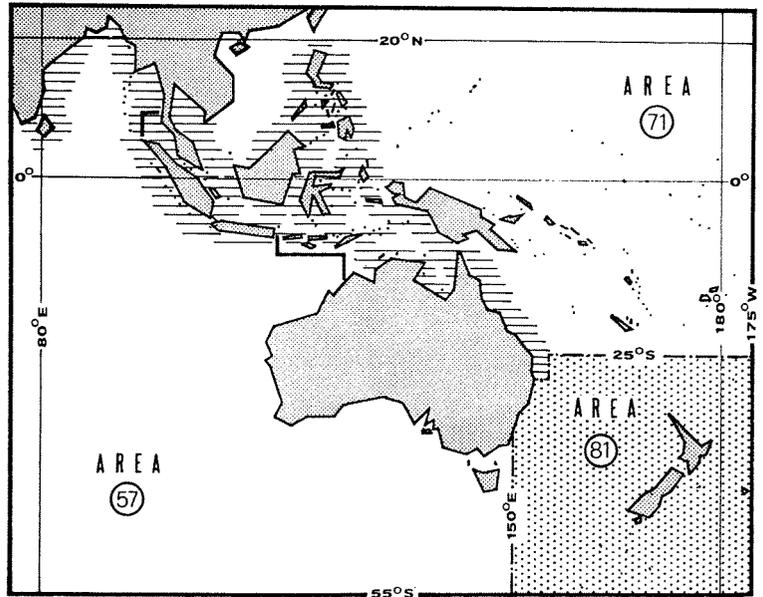
Northwestern part of area (but not off coasts of China or northern coast of New Guinea), southward to northeastern coast of Australia.

Inhabits the shallower muddy and sandy bottoms of the continental shelf.

Feeds on bottom-lying animals

PRESENT FISHING GROUNDS:

Muddy and sandy trawling 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 mostly fresh.

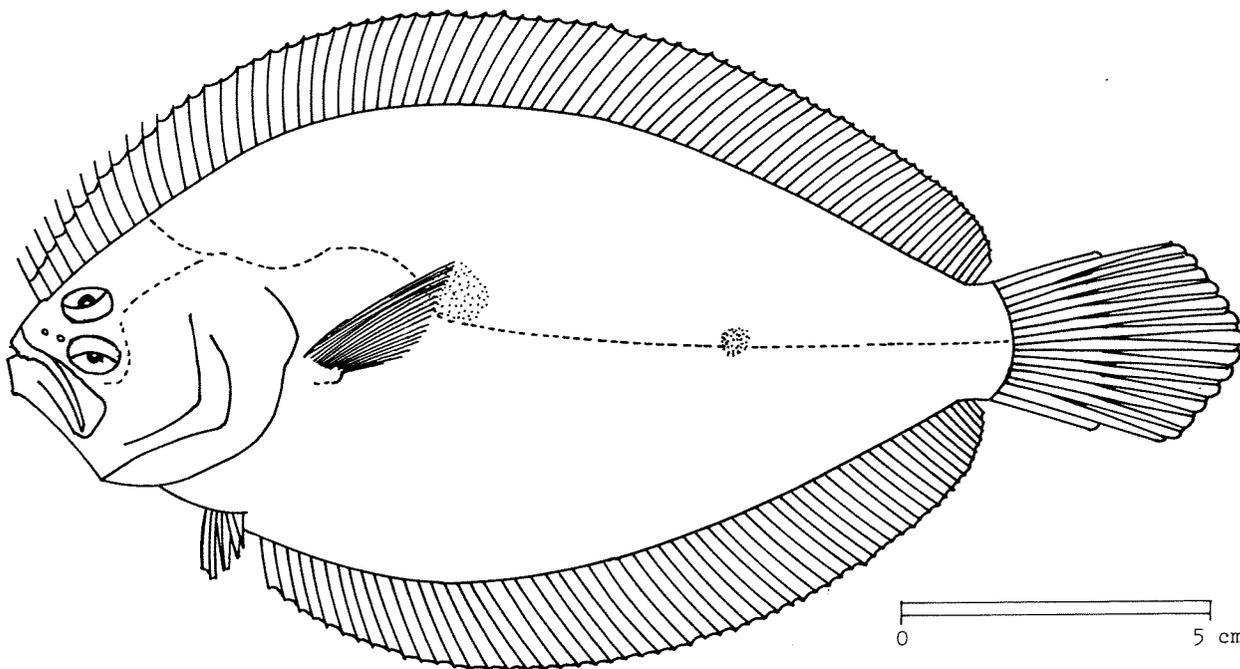
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: BOTHIDAE

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

Pseudorhombus arsius (Ham. Buch., 1822)

SYNONYMS STILL IN USE: *Pseudorhombus polyspilus*



VERNACULAR NAMES

FAO: En - Largetooth flounder
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body oval and flat. Both eyes on left side. Upper jaw ending below posterior edge of lower eye. Gill rakers pointed, longer than broad. Canine teeth present, 6 to 23 in lower jaw of blind side. Dorsal fin origin in front of upper eye; pelvic fin base of blind side almost equal to length to that of eyed side. Lateral line curved above pectoral fin, forming 2 branches on head, the upper ending between 8th to 12th dorsal fin rays. Scales cycloid (smooth) on blind side.

Colour: eyed side with a varying pattern of brown spots and blotches, but always a larger blotch on anterior end of straight part of lateral line and a smaller blotch halfway to caudal fin base.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Pseudorhombus malayanus: scales ctenoid (rough to touch) on blind side.

Pseudorhombus javanicus: teeth smaller and more numerous (15 to 25 in lower jaw of blind side; 5 to 13 in *P. arsius*)

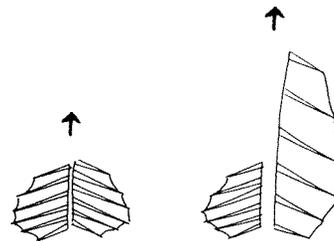
Pseudorhombus neglectus: dorsal fin origin above front edge of upper eye (in front of upper eye in *P. arsius*).

Other *Pseudorhombus* species: lack the 2 distinctive blotches along straight part of lateral line

Other flatfish genera: pelvic fin base of blind side much shorter than that of eyed side and/or no forked lateral line on head reaching to dorsal profile.

SIZE:

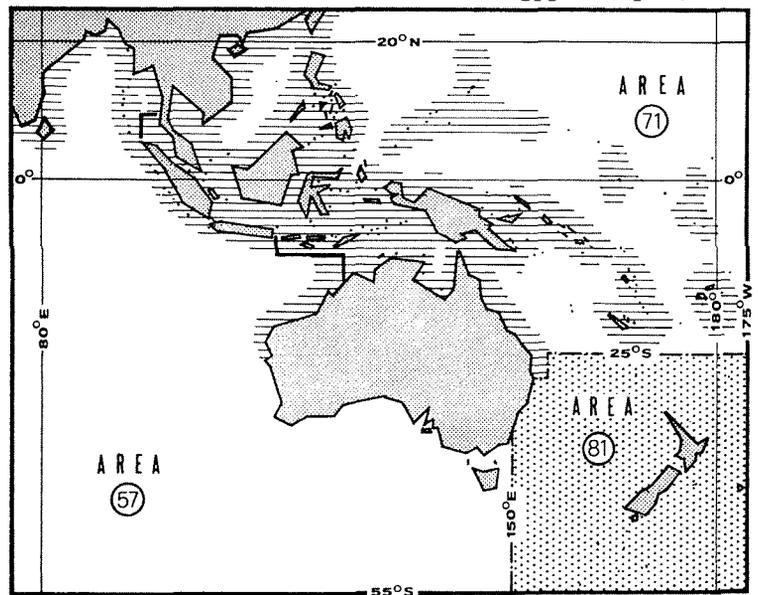
Maximum: about 35 cm; common: 20 to 30 cm.



pelvic fins seen from below
(arrows point toward head)

Pseudorhombus

Bothus,
Engyprosopon, etc.



GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

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

Inhabits the shallower muddy and sandy bottoms of the continental shelf.

Feeds on bottom-living animals.

PRESENT FISHING GROUNDS:

Muddy and sandy trawling 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 mostly fresh.

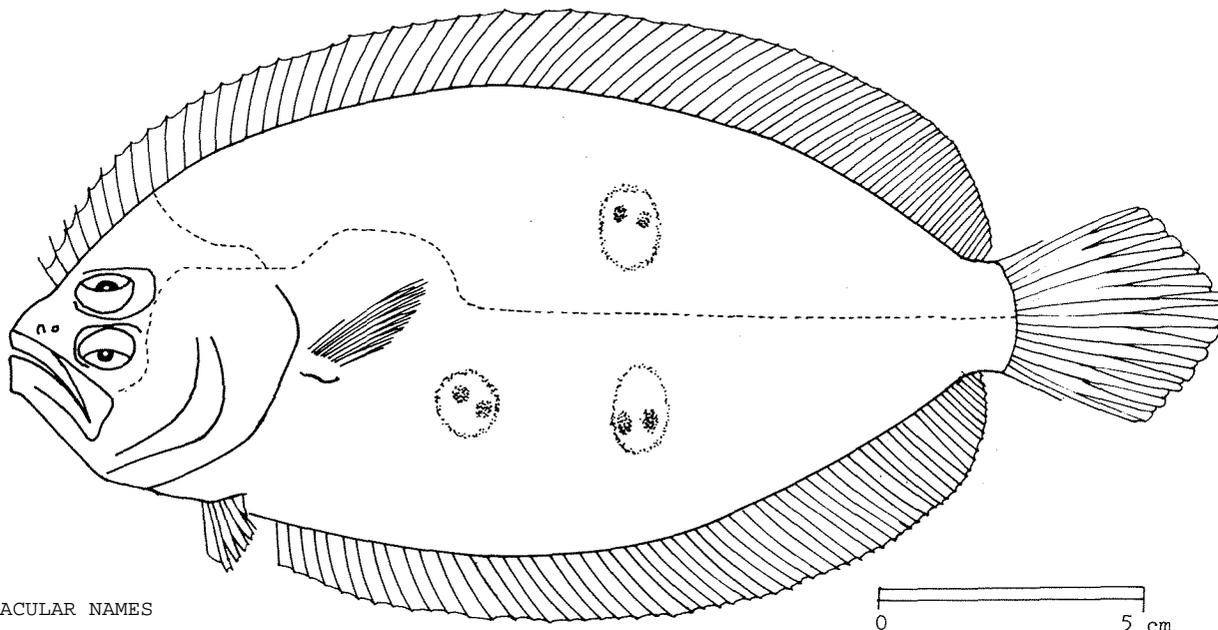
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: BOTHIDAE

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

Pseudorhombus dupliciocellatus Regan, 1905)

SYNONYMS STILL IN USE: None



VERNACULAR NAMES

- FAO: En - Ocellated flounder
- Fr -
- Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body oval and flat with a notch in upper profile of head. Both eyes on left side. Upper jaw ending below middle of lower eye. Gill rakers short, as broad as long. 13 to 22 teeth in lower jaw of blind side. Pelvic fin base of blind side almost equal in length to that of eyed side. Lateral line curved above pectoral fin, forming 2 branches on head, the upper ending between 8th to 9th dorsal fin rays. Scales etenoid (rough to touch) on eyed side.

Colour: eyed side brown, with numerous darker spots and rings. Eyed side with 3, rarely 4, large paired spots, each pair surrounded by a ring of white spots. When 4, these pairs of spots form a square.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

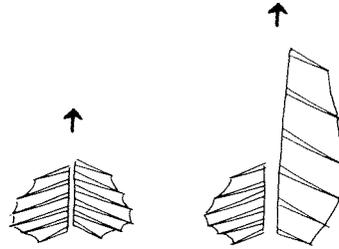
Pseudorhombus diplospilus: 4 to 8 teeth in lower jaw of blind side (13 to 22 in *P. dupliciocellatus*); also, canines stronger.

Pseudorhombus spinosus: scales cycloid (smooth) on both sides.

Pseudorhombus quinquocellatus and *P. triocellatus*: gill rakers longer than broad.

Other *Pseudorhombus* species: either less than 3, or more than 4, conspicuous blotches above and below lateral line .

Other flatfish genera: pelvic fin base of blind side much shorter than that of eyed side and/or no forked lateral line on head reaching to dorsal profile.



pelvic fins seen from below
(arrows point toward head)

Pseudorhombus *Bothus*,
Eugyprosopon etc.

SIZE:

Maximum: about 40 cm; common: 20 to 30 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

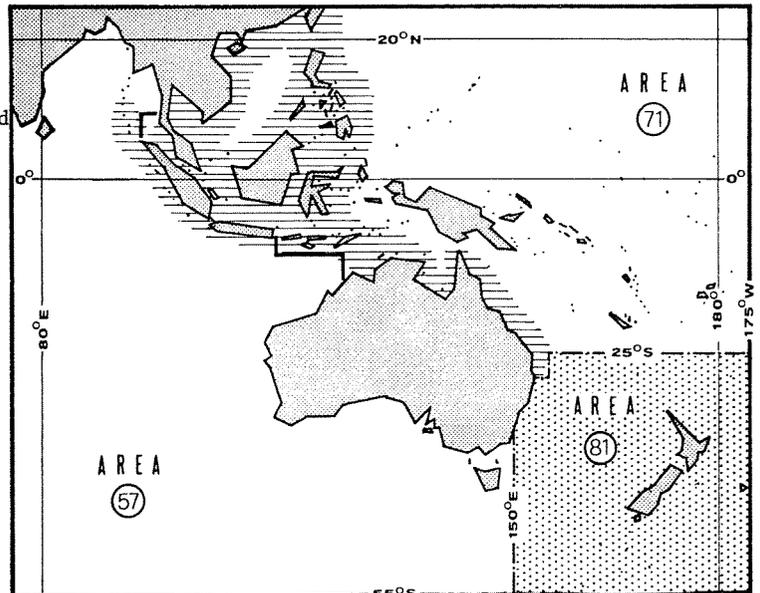
From the Nicobar Islands through most of the Indo-Australian archipelago, northward to Japan and southward to northeastern coast of Australia.

Inhabits the shallower muddy and sandy bottoms of the continental shelf.

Feeds on bottom-living animals.

PRESENT FISHING GROUNDS:

Muddy and sandy trawling 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 mostly fresh.

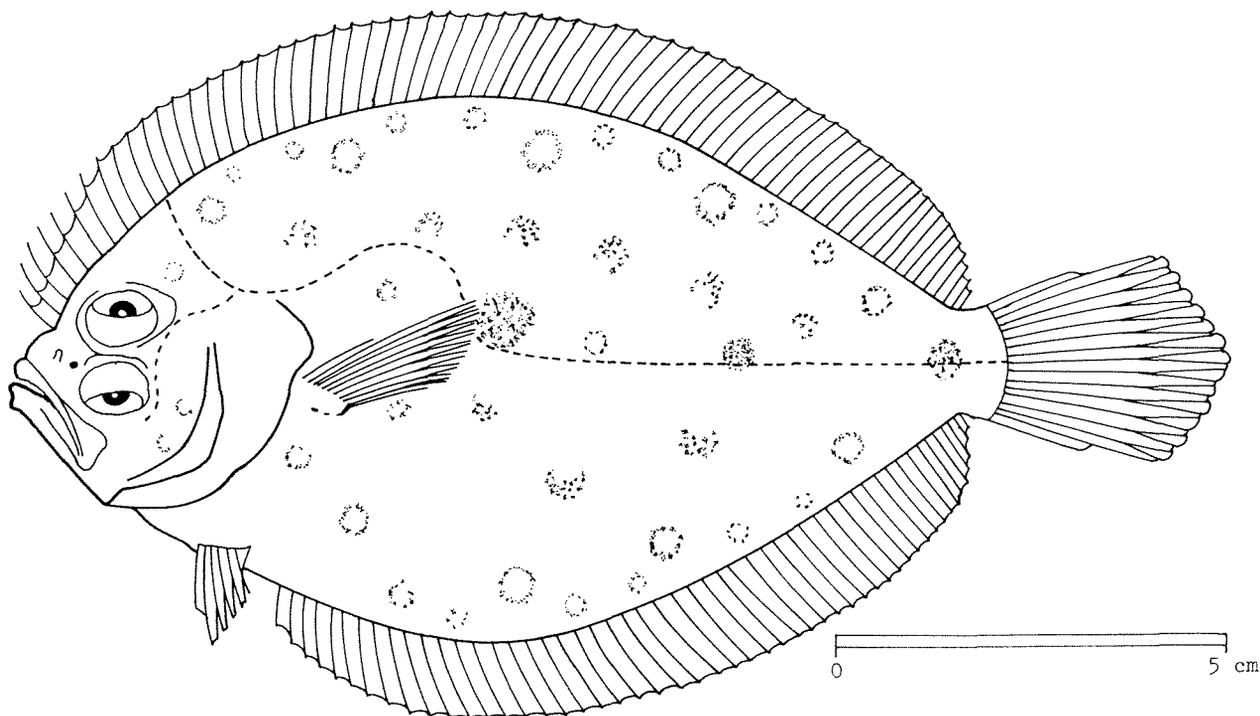
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: BOTHIDAE

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

Pseudorhombus elevatus Ogilby, 1912

SYNONYMS STILL IN USE: *Pseudorhombus affinis* Weber, 1913



VERNACULAR NAMES:

FAO: En - Deep flounder
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body oval and flat, its depth 1.8 to 2.0 times in standard length. Both eyes on left side. Upper jaw ending below middle of lower eye. Gill rakers long and slender, 11 to 15 on lower part of first gill arch. Pelvic fin base of blind side almost equal in length to that of eyed side. Lateral line curved above pectoral fin and forming 2 branches on head, the upper ending between 9th to 11th dorsal fin rays. Scales ctenoid (rough to touch) on eyed side and cycloid (smooth) on blind side.

Colour: eyed side brown with numerous blotches arranged in 5 irregular rows along body, and 3 large distinct blotches along straight part of lateral line; often 2 additional smaller blotches, one above curve of lateral line and the other below tip of pectoral fin.

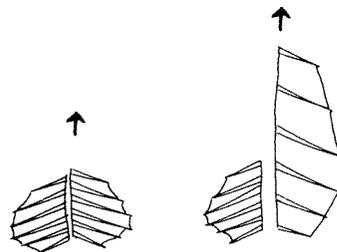
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Other *Pseudorhombus* species: lack the 3 large, distinct blotches along straight part of lateral line.

Other flatfish genera: pelvic fin base of blind side much shorter than that of eyed side and/or no forked lateral line on head reaching to dorsal profile.

SIZE:

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



pelvic fins seen from below
(arrows point towards head)

Pseudorhombus

Bothus,
Engyprosopon, etc.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

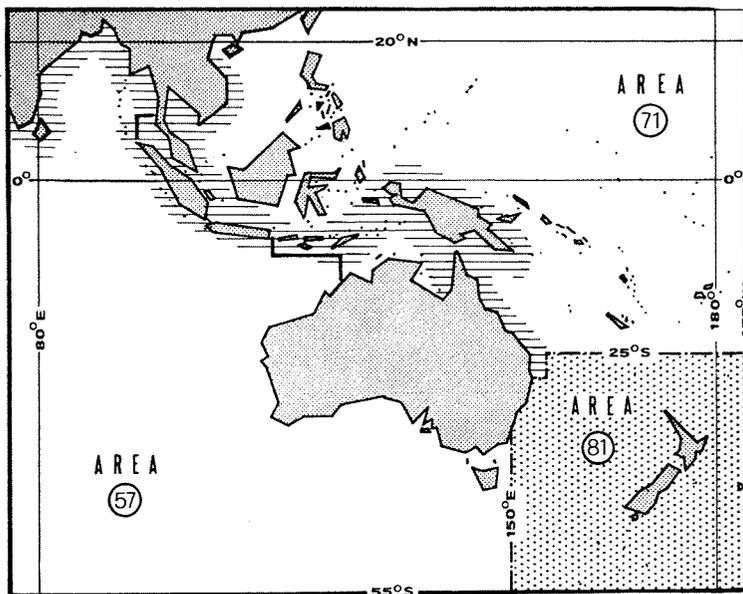
Throughout most of northern part of area (not to Borneo, Celebes, Philippines or coasts of China), southward to northeastern coasts of Australia; also, westward to Red Sea.

Inhabits the shallower muddy and sandy bottoms of the continental shelf.

Feeds on bottom-living animals.

PRESENT FISHING GROUNDS:

Muddy and sandy trawling 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.

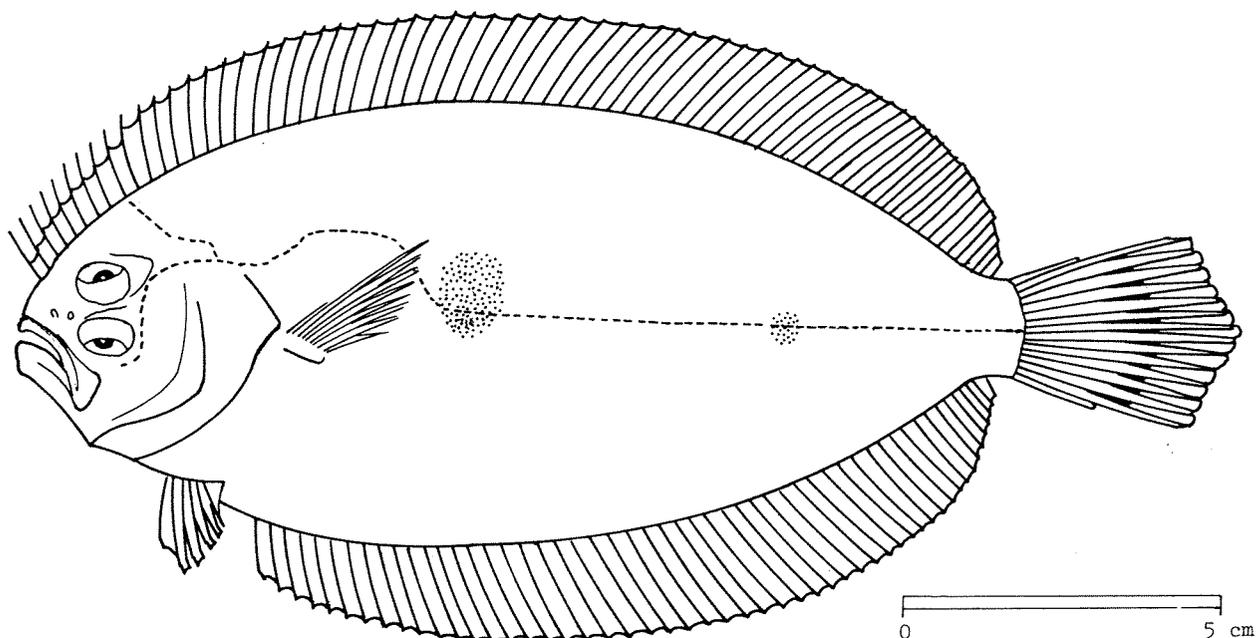
Marketed mostly fresh.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: BOTHIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Pseudorhombus javanicus* (Bleeker, 1853)

SYNONYMS STILL IN USE: None



VERNACULAR NAMES:

FAO: En - Javan flounder
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body oval and flat, its depth more than twice in standard length. Both eyes on left side. Upper jaw ending below middle of lower eye. 15 to 25 teeth in lower jaw of blind side. Dorsal fin origin well in advance of upper eye; pelvic fin base of blind side almost equal in length to that of eyed side. Lateral line curved above pectoral fin and forming 2 branches on head, the upper ending between 9th to 11th dorsal fin rays. Scales of eyed side mostly ctenoid (rough to touch) on anterior half and mostly cycloid (smooth) on posterior half; scales of blind side cycloid.

Colour: eyed side brown, with darker spots and blotches. A large, round blotch at anterior end of straight part of lateral line and a smaller blotch halfway to caudal fin base.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Pseudorhombus arsius: teeth larger, 6 to 13 in lower jaw of blind side (15 to 25 in *P. javanicus*).

Pseudorhombus malayanus: scales ctenoid (rough to touch) on blind side.

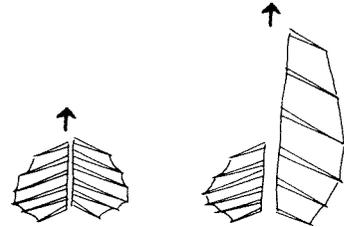
Pseudorhombus neglectus: dorsal fin origin above front edge of upper eye (in front of upper eye in *P. javanicus*).

Other *Pseudorhombus* species: lack the 2 conspicuous blotches along straight part of lateral line.

Other genera of flatfishes: pelvic fin base of blind side much shorter than that of eyed side and/or no forked lateral line on head reaching to dorsal profile.

SIZE:

Maximum: about 25 cm; common: 10 to 20 cm.



pelvic fins seen from below
(arrows point towards head)

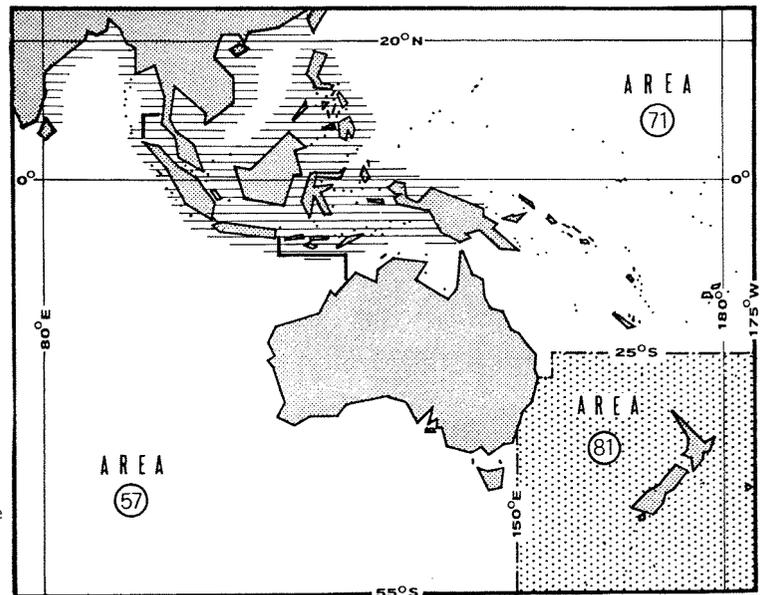
Pseudorhombus *Bothus*,
Engyprosopon, etc.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout northwestern part of area, but not to eastern New-Guinea or Australia.

Inhabits the shallower muddy and sandy bottoms of the continental shelf.

Feeds on bottom-living animals.



PRESENT FISHING GROUNDS:

Muddy and sandy trawling 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.

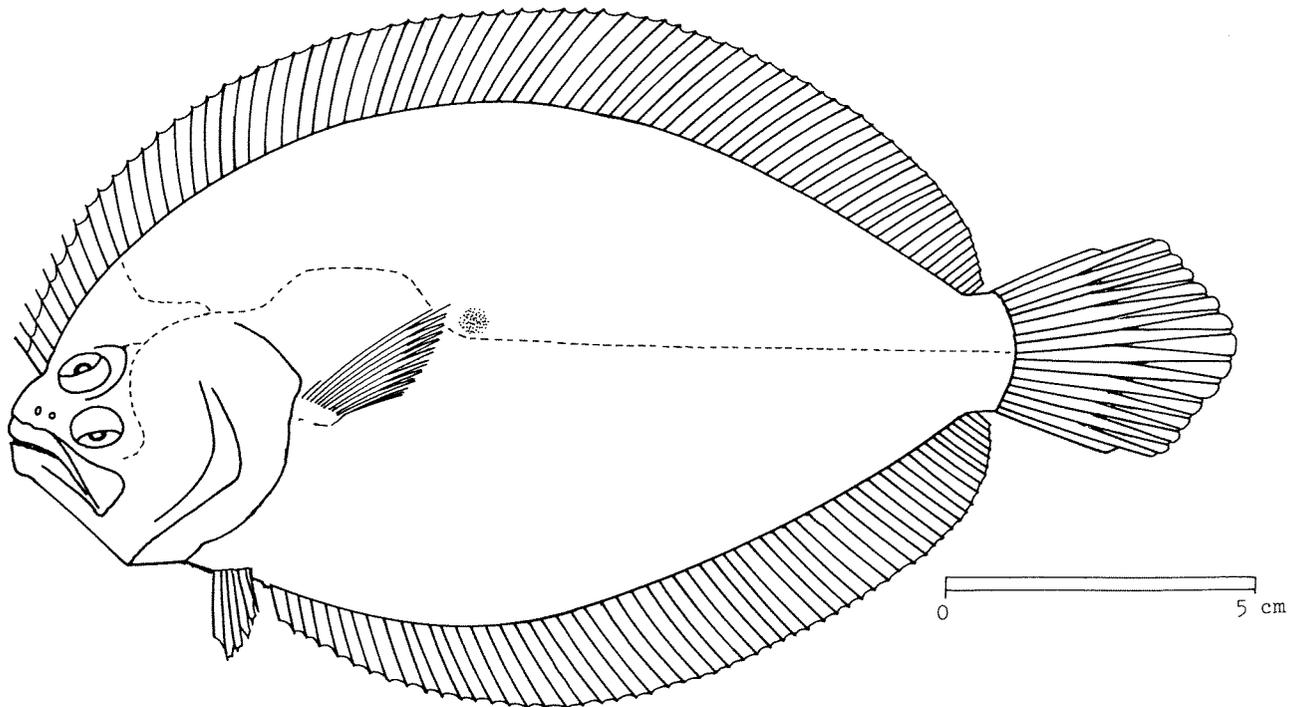
Marketed mostly fresh.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: BOTHIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Pseudorhombus malayanus* Bleeker, 1866

SYNONYMS STILL IN USE: None



VERNACULAR NAMES:

En - Malayan flounder
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body oval and flat. Both eyes on Left side. Upper jaw ending below hind margin of lower eye. Gill rakers pointed, longer than broad; 8 to 10 on lower branch of first gill arch. Dorsal fin with 71 to 77 rays, its origin well in advance of upper eye; pectoral fin of blind side Less than twice in length of head; pelvic fin base of blind side almost equal in length to that of eyed side. Lateral line curved above pectoral fin and forming 2 branches on head, the upper ending between 9th to 11th dorsal fin rays. Scales on both sides etenoid (rough to touch).

Colour: eyed side brown, with or without indistinct groups of small white spots near lateral line. A dark blotch anteriorly on straight part of lateral line; sometimes a smaller blotch halfway to caudal fin base.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Pseudorhombus oligodon: pectoral fin on blind side short (more than twice in length of head); also, 78 to 82 dorsal fin rays (71 to 77 in *P. malayanus*).

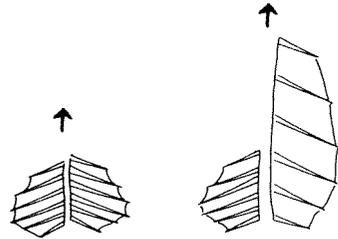
Pseudorhombus arsius, *P. neglectus* and *P. javanicus*: scales cycloid (smooth) on blind side; also, dorsal fin origin above front margin of upper eye (*P. neglectus*) and 12 to 15 gill rakers on lower part of first arch (*P. javanicus*).

Other *Pseudorhombus* species: no blotches on body or more than 2 blotches along lateral line.

Other flatfish genera: pelvic fin base of blind side much shorter than that of eyed side and/or no forked lateral line on head reaching to dorsal profile.

SIZE:

Maximum: about 25 cm; common: 10 to 20 cm.



pelvic fins seen from below
(arrows point towards head)

Pseudorhombus *Bothus*,
 Engyprosopon, etc.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

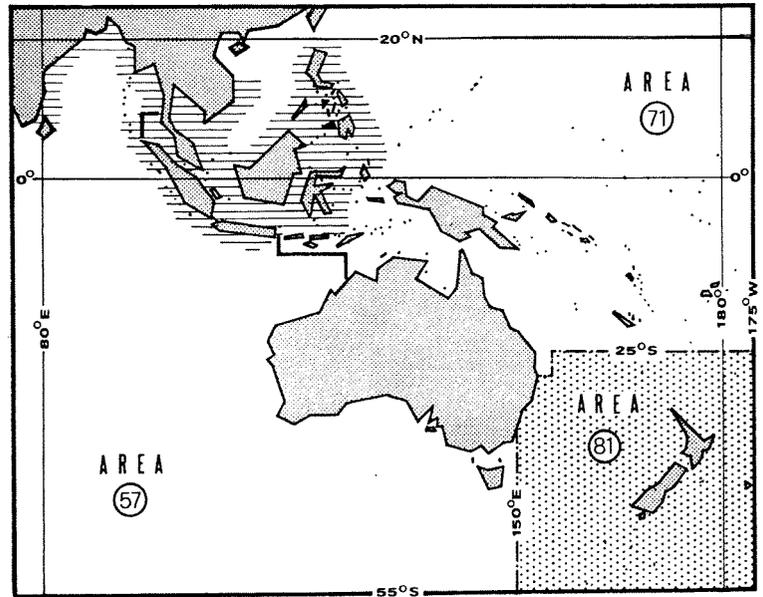
From east coast of India to the Celebes and the Philippines, but not to South China, New Guinea or Australia.

Inhabits the shallower muddy and sandy bottoms of the continental shelf.

Feeds on bottom-living animals.

PRESENT FISHING GROUNDS:

Muddy and sandy trawling 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.

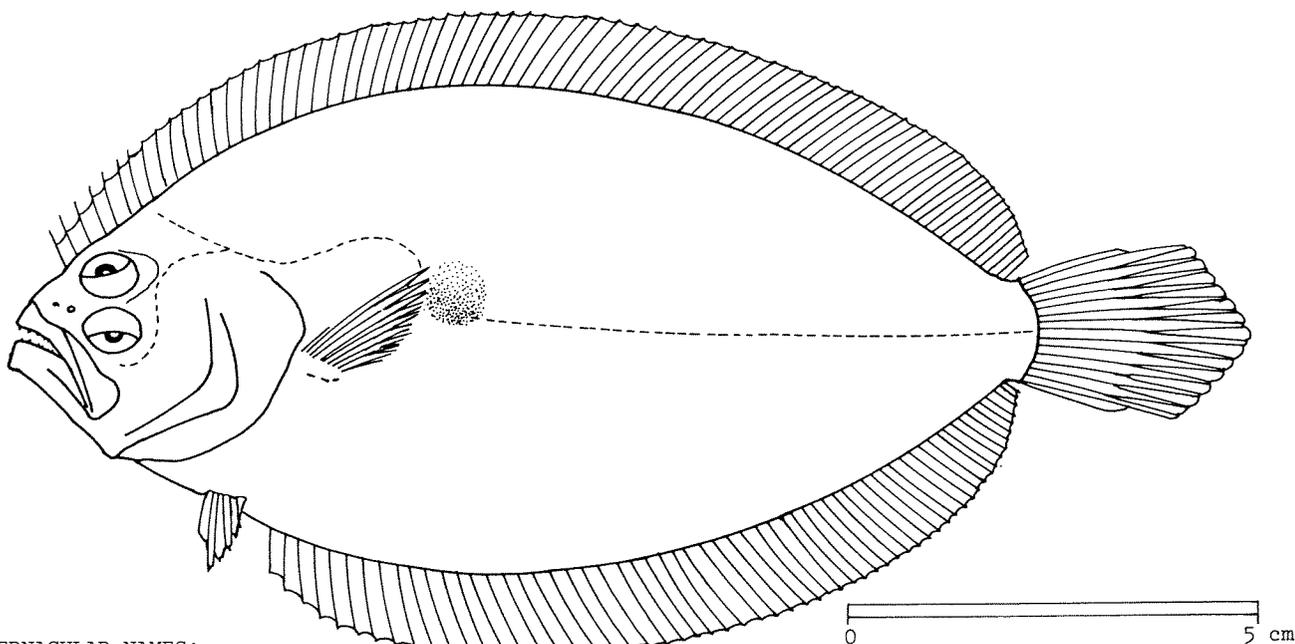
Marketed mostly fresh.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: BOTHIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Pseudorhombus oligodon* (Bleeker, 1854)

SYNONYMS STILL IN USE: None



VERNACULAR NAMES:

FAO: En - Roughscale flounder
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body oval and flat. Both eyes on left side. Upper jaw ending below posterior half of lower eye. Gill rakers pointed, longer than broad. Dorsal fin with 78 to 82 rays; pectoral fin of blind side more than twice in length of head; pelvic fin base of blind side almost equal in length to that of eyed side. Lateral line curved above pectoral fin and forming 2 branches on head, the upper ending between 7th to 9th dorsal fin ray. Scales on both sides ctenoid (rough to touch).

Colour: eyed side brown, with a varying pattern of darker blotches and rings, but always 1 large, dark blotch at anterior end of straight part of lateral line.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

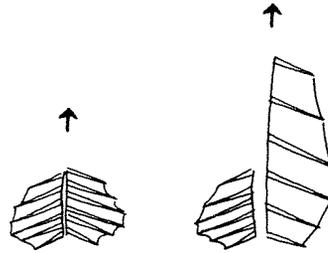
Pseudorhombus malayanus: pectoral fin longer on blind side (less than twice in head length); also, 71 to 77 dorsal fin rays.

Other *Pseudorhombus* species: no blotches or more than 1 blotch on straight part of lateral line and/or cycloid scales (smooth).

Other flatfish genera: pelvic fin base of blind side much shorter than that of eyed side and/or no forked lateral line on head reaching to dorsal profile.

SIZE:

Maximum: about 25 cm; common: 10 to 20 cm.



pelvic fins seen from below
(arrows point towards head)

Pseudorhombus

Bothus,
Engyprosopon, etc.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

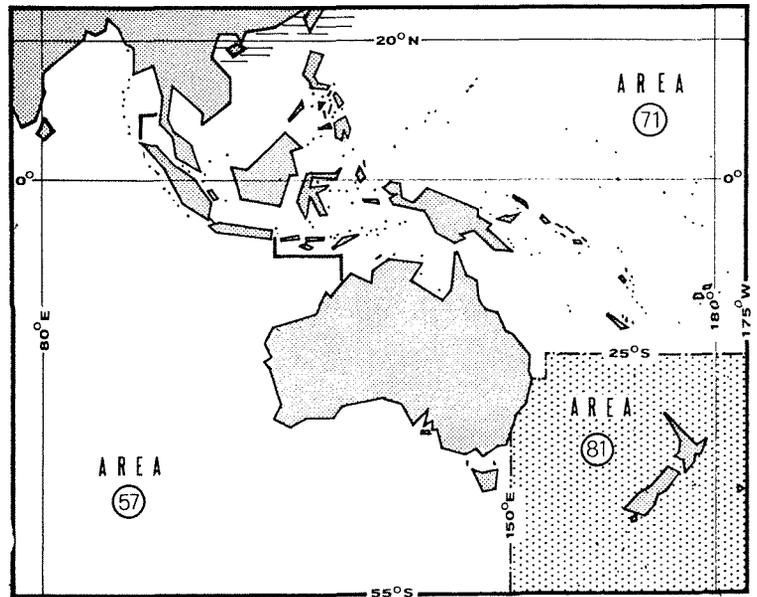
Coasts of China, Japan and Taiwan.

Inhabits the shallower muddy and sandy bottoms of the continental shelf.

Feeds on bottom-living animals.

PRESENT FISHING GROUNDS:

Muddy and sandy trawling 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.

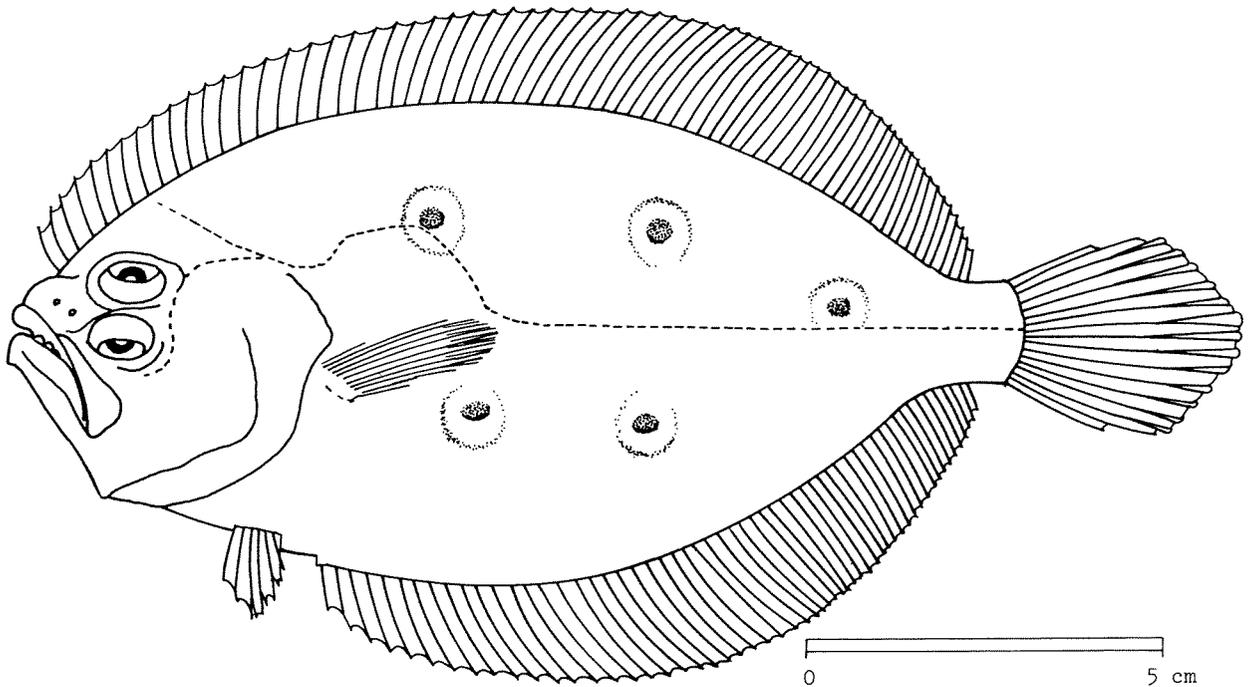
Marketed mostly fresh.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: BOTHIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Pseudorhombus quinquocellatus* Weber & de Beaufort, 1929

SYNONYMS STILL IN USE: None



VERNACULAR NAMES

FAO: En - Fivespot flounder
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body oval and flat. Both eyes on left side. Upper jaw ends below posterior half of lower eye. Gill rakers pointed, Longer than broad; 9 to 70 gill rakers on lower branch of first gill arch. Dorsal fin origin well in advance of upper eye; pelvic fin base of blind side almost equal in length to that of eyed side. Lateral line curved above pectoral fin and forming 2 branches on head, the upper ending at 8th fin ray.

Colour: eyed side brown with 5 blotches, each surrounded by a brown ring; incomplete rings scattered over body.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Pseudorhombus pentophthalmus: 15 to 18 gill rakers on lower branch of first gill arch (9 to 10 in *P. quinquocellatus*).

Pseudorhombus dupliciocellatus: gill rakers as long as broad (longer than broad and pointed in *P. quinquocellatus*).

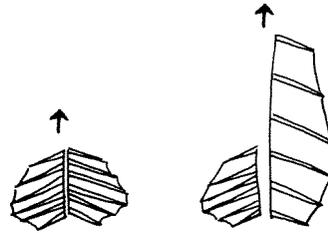
Pseudorhombus argus: dorsal fin origin above front edge of upper eye (well in advance in *P. quinquocellatus*).

Other *Pseudorhombus* species: lack the 5 distinct blotches on body.

Other flatfish genera: pelvic fin base of blind side much shorter than that of eyed side and/or no forked lateral line on head reaching to dorsal profile.

SIZE:

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



pelvic fins seen from below
(arrows point towards head)

Pseudorhombus *Bothus*,
 Engyproson etc.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

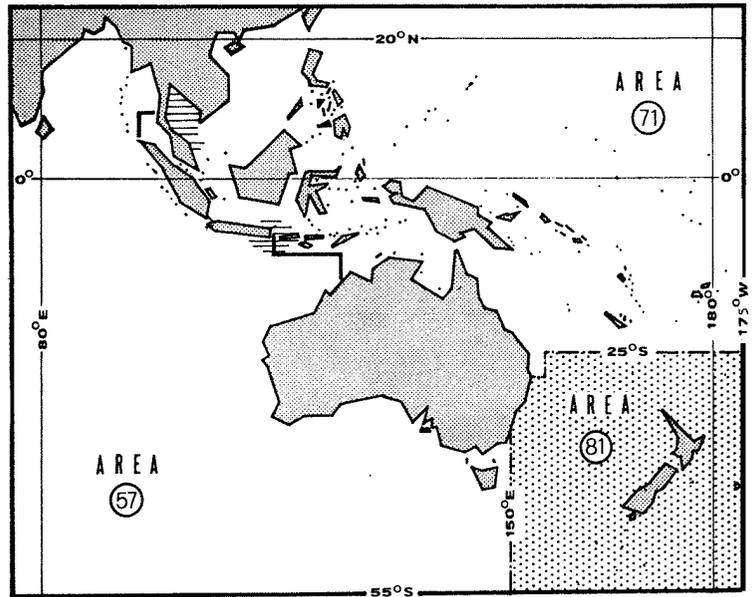
Known from the Strait of Madura and Gulf of Thailand only.

Inhabits the shallower muddy and sandy bottoms of the continental shelf.

Feeds on bottom-living animals.

PRESENT FISHING GROUNDS:

Muddy and sandy trawling 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 mostly fresh.