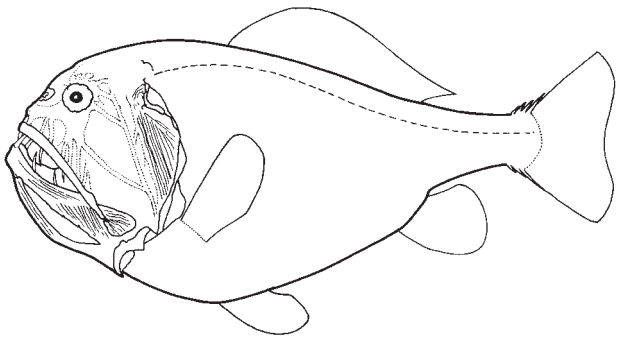
Order BERYCIFORMES

ANOPLOGASTRIDAE

Fangtooths

by J.R. Paxton



Diagnostic characters: Small (to 16 cm) beryciform fishes, body short, deep, and compressed. Head large, steep; deep mucous cavities on top of head separated by serrated crests; very large temporal and preopercular spines and smaller orbital (frontal) spine in juveniles of one species, all disappearing with age. **Eyes smaller than snout length in adults** (but larger than snout length in juveniles). **Mouth very large, jaws extending far behind eye in adults; one supramaxilla. Teeth as large fangs in premaxilla and dentary;** vomer and palatine toothless. **Gill rakers as gill teeth in adults** (elongate, lath-like in juveniles). **No fin spines; dorsal fin long based, roughly in middle of body, with 16 to 20 rays; anal fin short-based, far posterior, with 7 to 9 rays;** pelvic fin abdominal in juveniles, becoming subthoracic with age, with 7 rays; pectoral fin with 13 to 16 rays. **Scales small, non-overlapping, spinose, cup-shaped in adults; lateral line an open groove partly covered by scales.** No light organs. Total vertebrae 25 to 28. **Colour**: brown-black in adults.

Habitat, biology, and fisheries: Meso- and bathypelagic. Distinctive caulolepis juvenile stage, with greatly enlarged head spines in one species. Feeding mode as carnivores on crustaceans as juveniles and on fishes as adults. Rare deepsea fishes of no commercial importance.

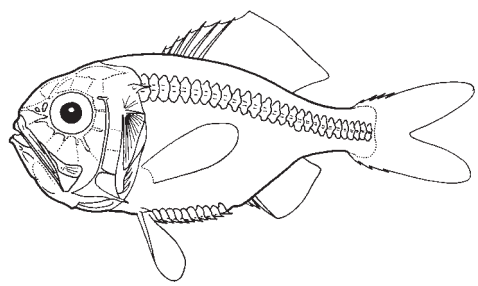
Remarks: One genus with 2 species throughout the world ocean in tropical and temperate latitudes. The family was revised by Kotlyar (1986).

Similar families occurring in the area

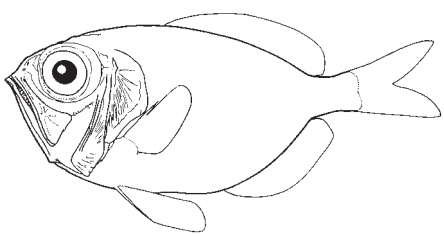
Diretmidae: No fangs, jaw teeth small, in bands; anal fin with 18 to 24 rays.

Trachichthyidae: No fangs, jaw teeth small, in bands; dorsal and anal fins with III to VIII and II or III spines respectively, in addition to soft rays.

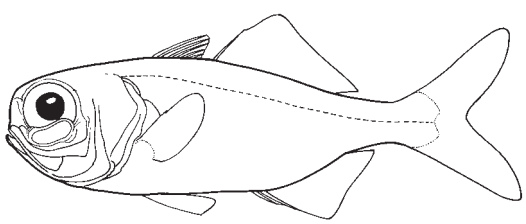
Anomalopidae: No fangs, jaw teeth small, in bands; dorsal and anal fins with II to IV and I or II spines respectively, in addition to soft rays.



Trachichthyidae



Diretmidae



Anomalopidae

List of species occurring in the area

Anoplogaster brachycera Kotlyar, 1986
Anoplogaster cornuta (Valenciennes, 1833)

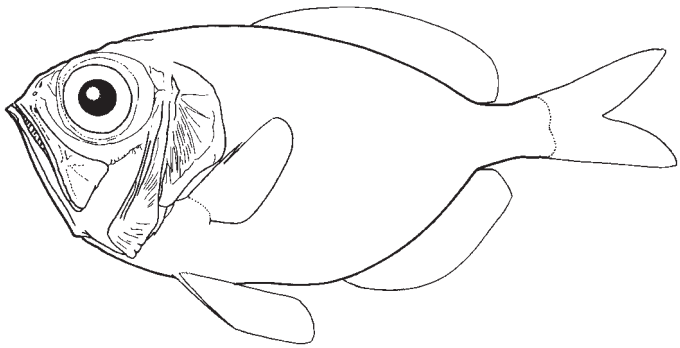
Reference

Kotlyar, A. N., 1986. Classification and distribution of fishes of the family Anoplogasteridae. *Vopr. Ikhtiol.*, 26(4):531-551. [in Russian, English transl. *J. Ichthyol.*, 26(4)]

DIRETMIDAE

Spinyfins

by J.R. Paxton



Diagnostic characters: Moderate-sized (to 37 cm) beryciform fishes; body round to oval, strongly compressed. Head moderate to large, deep; deep mucous cavities on top of head separated by thin, serrated ridges; no spine on preopercle (except in young juveniles of some). **Eyes very large, much longer than snout length.** Mouth large, very oblique, **jaws not extending behind eye; 1 supramaxilla.** Teeth small, in villiform bands, on premaxilla and dentary; vomer and palatine toothless. Gill rakers lath-like. **No true fin spines; dorsal fin very long based, origin just behind pectoral-fin origin, with 24 to 30 soft rays; anal fin posterior, with 18 to 24 soft rays;** pelvic fins subthoracic to thoracic, with I laminar, serrate spine and 6 soft rays; pectoral fins with 16 to 20 soft rays. **Scales** small, spinose; **present on dorsal and anal-fin rays; no lateral line; enlarged midventral scutes present.** No light organs. Total vertebrae 26 to 32. **Colour:** silver and grey back.

Habitat, biology, and fisheries: Meso- and bathypelagic; largest adults of some species benthopelagic. Feeding mode as planktivores. Uncommon deep-sea fishes, sometimes locally more abundant in deep water, of no present commercial importance.

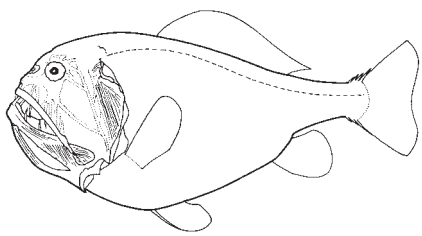
Remarks: Three genera with 4 species throughout the world ocean in tropical and temperate latitudes, except eastern North Pacific and Mediterranean Sea.

Similar families occurring in the area

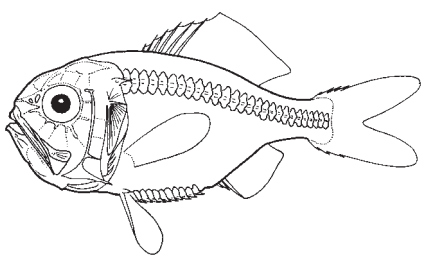
Anoplogastridae: jaws with very large fangs; anal fin with 7 to 9 soft rays; pelvic fins without laminar spine.

Trachichthyidae: mucous cavities of head extensive; spine present on preopercle; dorsal and anal fins with spines; lateral-line scales distinct and usually enlarged.

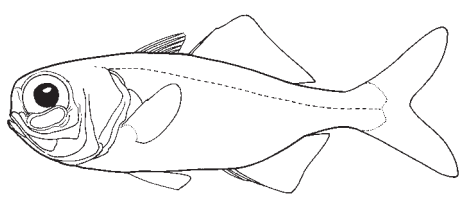
Anomalopidae: large light organ present under eye; dorsal and anal fins with spines; lateral-line scales distinct and often enlarged.



Anoplogastridae



Trachichthyidae



Anomalopidae

List of species occurring in the area

Diretmichthys parini (Post and Quero, 1981)

Diretmoides pauciradiatus (Woods, 1973)
Diretmoides veriginae Kotlyar, 1987

Diretmus argenteus Johnson, 1864

Reference

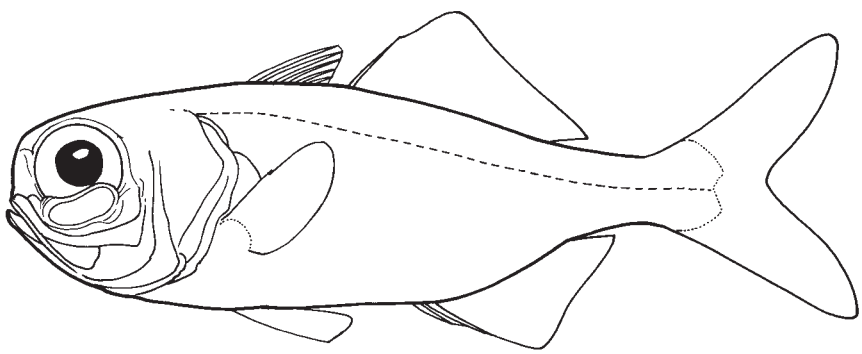
Kotlyar, A.N. 1990. *Diretmichthys*, a new genus of Diretmidae (Beryciformes). *Vopr. Ikhtiol.*, 30(1):144-151. [in Russian, English transl. *J. Ichthyol.*, 30(2)]

ANOMALOPIDAE

Flashlight fishes

by J.R. Paxton and G.D. Johnson

Diagnostic characters: Small to moderate-sized beryciform fishes (to 26 cm), oblong to moderately deep. Head moderate; snout blunt; moderate mucous cavities on top of head separated by broad ridges and covered by skin. **Eyes large, their diameter longer than snout length; large light organ below eyes, sometimes obscured by rotation downward or by curtain of dark skin.** Mouth moderate, oblique, **jaws not extending behind eyes;** 1 (*Anomalops*) or 2 supramaxillae. **Teeth** very small, conical, **on** jaws and **palatines, vomer toothless**. Snout blunt. One dorsal fin or spinous dorsal fin separate from second dorsal; **dorsal fin with II to VI spines and 14 to 19 soft rays;** anal fin with I or II spines and 9 to 14 soft rays; caudal fin deeply forked with 10+9 principal rays; pelvic fins with 0 to I spine and 5 to 7 soft rays; pectoral fins with 16 or 17 soft rays. Branchiostegal rays 8, ventral margins spiny or smooth. Scales small, strongly ctenoid; body scale rows 50 to 150, lateral-line scales 30 to 69; midventral scutes 5 to 19, reduced and discontinuous or moderate and continuous. Total vertebrae 30 (13-15+15-17). **Colour:** head and body brown to black; **external surface of light organ white;** lateral-line scales reflective or not.

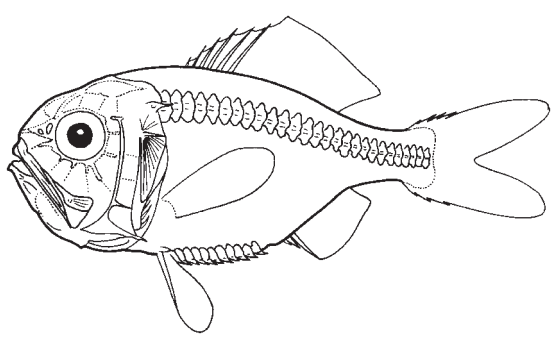


Habitat, biology, and fisheries: Mostly around coral reefs, from shallow water to a depth of 350 m, with some species migrating to the surface on moonless nights. Light organ colonized by luminous bacteria. Feeding mode as zooplankton pickers. At least 1 species schooling in large groups. Popular species in public aquaria, and a target for some local fishers as bait.

Remarks: Seven species in 6 genera are recognised, distributed in the Caribbean, Indian eastern Pacific and western Pacific from Tahiti to Japan, Australia, the Red Sea, and Comoro Islands. *Parmops coruscans* is known from only 3 specimens (Tahiti, Fiji) from 350 m, while *Protoblepharon rosenblatti* is known only from the holotype (Cook Islands) from 275 m.

Similar families occurring in the area

Trachichthyidae: no light organ under eyes in any species; midventral scutes of most species fewer and larger than those of anomalopids.



Trachichthyidae

Key to species of Anomalopidae in the area

1a. One dorsal fin with II spines and 18 or 19 soft rays; light organ not rotatable, obscured by raising black elastic shutter to cover lateral surface; midventral scutes reduced and discontinuous (Fig. 1) . . . . . ***Photoblepharon palpebratus***

1b. Two dorsal fins, the first with V or VI spines and the second with I spine and 14 to 16 soft rays; light organ rotatable downwards; midventral scutes well developed and continuous . . . . . → ***2***

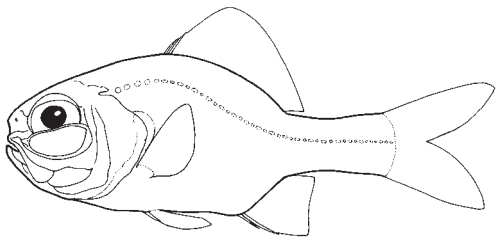


Fig. 1 ***Photoblepharon palpebratus***

2a. Second dorsal fin with 16 soft rays; anal fin with II spines and 12 soft rays; 2 supramaxilla; lateral-line scales 30 (Fig. 2) . . . . . ***Parmops coruscans***

2b. Second dorsal fin with 14 or 15 soft rays; anal fin with II spines and 10 or 11 soft rays; 1 supramaxillae; lateral-line scales 57 to 60 . . . . . → ***3***

3a. First dorsal fin with IV or V spines; gill rakers on first arch 28 to 34; light organ length 35.4% head length (Fig. 3) . . . . . ***Anomalops katoptron***

3b. First dorsal fin with VI spines; gill rakers on first arch 21, including bony plates; light organ length 14.5% head length . . . . . ***Protoblepharon rosenblatti***

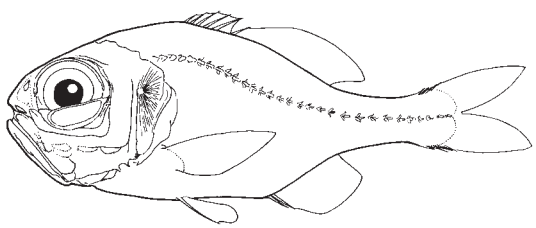


Fig. 2 ***Parmops coruscans***

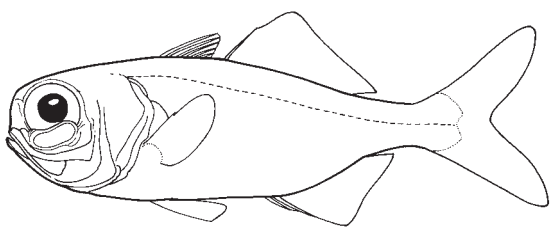


Fig. 3 ***Anomalops katoptron***

List of species occurring in the area

Anomalops katoptron (Bleeker, 1856)

Parmops coruscans Rosenblatt and Johnson, 1991
Parmops sp. nov. (Fiji)

Photoblepharon palpebratus (Boddaert, 1781)
Protoblepharon rosenblatti Baldwin, Johnson, and Paxton, 1997

References

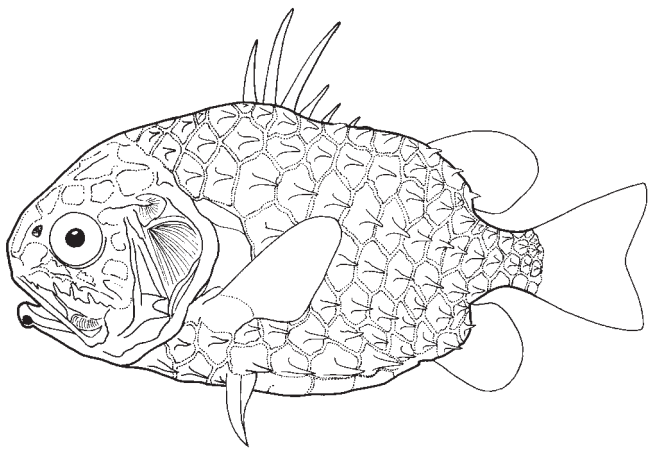
Baldwin, C.C., G.P. Johnson, and J.R. Paxton. 1997. *Protoblepharon rosenblatti*, a new genus and species of flashlight fish (Beryciformes: Anomalopidae) from the tropical South Pacific, with comments on anomalopid phylogeny. *Proc. Biol. Soc. Wash.*, 110(3):373-383.

Rosenblatt, R. H. and G.D. Johnson. 1991. *Parmops coruscans*, a new genus and species of flashlight fish (Beryciformes: Anomalopidae) from the south Pacific. *Proc. Biol. Soc. Wash.*, 104(2):328-334.

MONOCENTRIDIDAE

Pineapple fishes

by J.R. Paxton



Diagnostic characters: Moderate-sized (to 26 cm) beryciform fishes; body short, deep, and compressed. Head large and deep; deep mucous cavities on top of head separated by thin, spinous ridges and covered by skin. Eyes moderate to large, somewhat larger than snout length. Snout protruding slightly beyond mouth. Mouth large, **jaws extending to or somewhat behind eyes; 1 supramaxilla. Teeth** small, in bands **on** jaws and **palatine,** present or absent on vomer. Gill rakers lath-like. **Two dorsal fins, first with IV to VII strong free spines alternating side to side, second with 9 to 12 soft rays; anal fin with no spines and 10 to 12 soft rays; pelvic fins subthoracic with I very large spine and 2 to 4 small soft rays:** pectoral fins with 13 to 15 rays. **Scales large, non-overlapping, plates with central keel and posterior spine; ventral scales forming keel between pelvic and anal fins with lateral groove for pelvic-fin spine. No lateral line. Light organ on lower jaw, either on anterior just below tip or on side under eye.** Total vertebrae 26 to 28. **Colour: yellow with black between scale plates,** lateral light organ (*Cleidopus*) red.

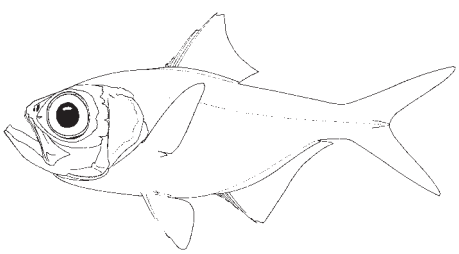
Habitat, biology, and fisheries: Demersal from 3 m to about 300 m. Feeding mode as plankton pickers or carnivores on crustaceans. Uncommon shelf fishes popular in aquaria, but of no other commercial importance.

Remarks: Two genera and 3 species known only in the Indian and Pacific Oceans, except the Northeast Pacific, in tropical and temperate latitudes.

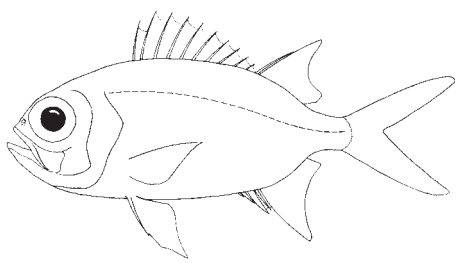
Similar families occurring in the area

Berycidae: no greatly enlarged free spines in dorsal or pelvic fins; scales not greatly enlarged and plate-like; body colour not yellow.

Holocentridae: no greatly enlarged free spines in dorsal or pelvic fins; anal fin with spines; body colour not yellow.



Berycidae



Holocentridae

List of species occurring in the area

Cleidopus gloriamaris DeVis, 1882

Monocentris japonica (Houttuyn, 1782)

Reference

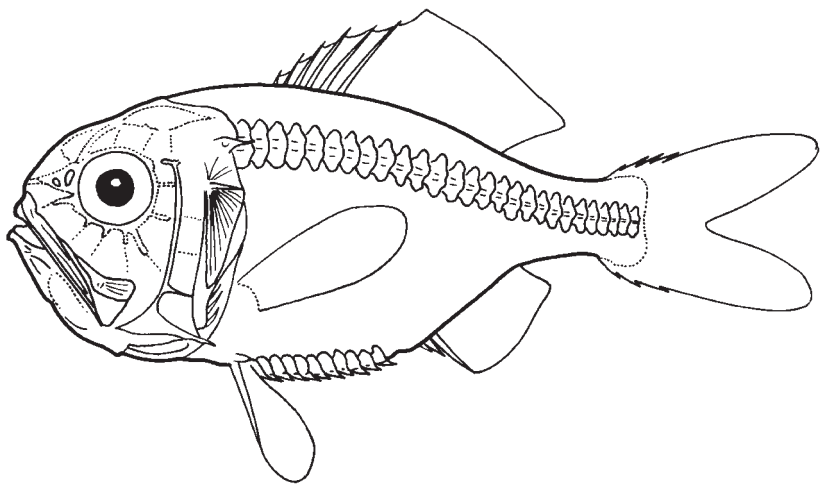
Kotlyar, A.N. 1985. Taxonomy and distribution range of the family Monocentridae (Beryciformes). *Vopr. Ikhtiol.* 25(4):531-545. [in Russian, English transl. *J. Ichthyol.* 25(4)]

TRACHICHTHYIDAE

Slimeheads (roughies)

by J.A. Moore and J.R. Paxton

Diagnostic characters: Medium-sized (to about 60 cm) beryciform fishes; body oval, laterally compressed. Head large, **extensive mucous cavities separated by spinous ridges and covered with membranous skin; flat, triangular spine on preopercle.** Eyes moderate to large in diameter, longer or shorter than snout length**.** Mouth large, obliquely angled when closed; **1 supramaxilla. Teeth small, in villiform bands on jaws, present or absent on vomer, present on palatine. One dorsal fin with III to VIII striated spines and 10 to 19 soft rays**; anal fin with II or III spines and 8 to 12 soft rays; caudal fin forked, with 4 to 6 procurrent spines in upper and lower lobes; pelvic fins with I spine and 6 soft rays; pectoral fins with 11 to 20 rays. Scales thick and ctenoid or thin and cycloid, adherent to very deciduous. Lateral-line scales usually more or less enlarged. **Enlarged scales along midventral part of belly between pelvic and anal fins, forming row of well-developed scutes**. Light organs in a few species. **Colour:** generally reddish orange, pinkish, or dusky silver.

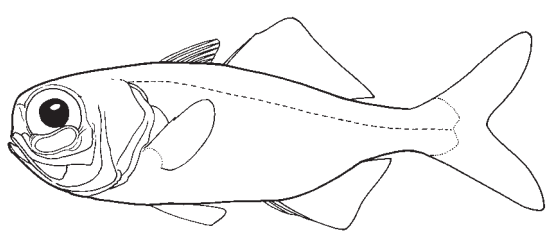


Habitat, biology, and fisheries: Occurring near bottom in depths of 2 to 1 500 m (most commonly between 150 and 650 m, but abundant aggregations of certain species occur between 700 and 1 200 m). Can be very abundant locally. Feed primarily on small crustaceans. Extensive fisheries for orange roughy (*Hoplostethus atlanticus*) in New Zealand, Australia, Namibia, west of Britain, and the mid-Atlantic Ridge, where marketed fresh, exported frozen, or made into fishmeal. Useful oils and waxes are also extracted from this species. Local abundance and recent trends towards development of deep-water fisheries make other species of potential commercial importance.

Remarks: At least 40 species in 8 genera are currently recognized, with a number of undescribed species awaiting description. The family occurs in slope waters of all oceans and shallow waters of Australia and New Zealand. The most comprehensive reviews are that of Kotlyar (1980 and 1996), but some of the Pacific species still require revision, and more species in the area are expected.

Similar families occurring in the area

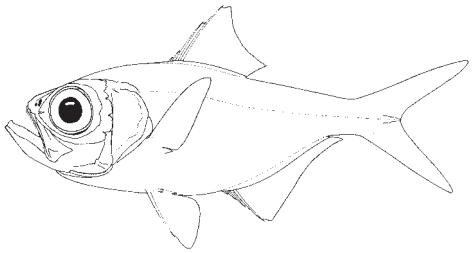
Anomalopidae: large light organ under eye in all species (may be obscured by curtain of dark skin or rotation inward); midventral scutes more numerous and smaller than those of trachichthyids.



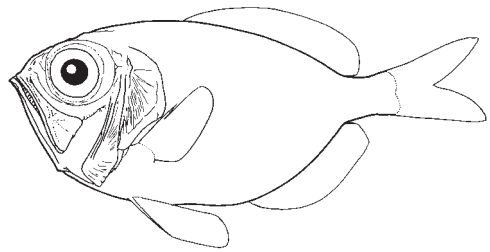
Anomalopidae

Berycidae: no spine on preopercle; 2 supramaxillae (1 in Trachichthyidae); anal-fin spines IV (II or III in Trachichthyidae); pelvic fin with 7 to 12 soft rays (6 in Trachichthyidae).

Diretmidae: no spine on preopercle; no dorsal-or anal-fin spines; no lateral line.



Berycidae



Diretmidae

Key to the genera of Trachichthyidae occurring in the area

1a. Anus with dark ring between pelvic fins, anterior to abdominal scutes; striated area before pectoral-fin base and over abdominal scutes and anal fin (Fig. 1) . . . . . ***Aulotrachichthys***

1b. Anus just anterior to anal fin, posterior to abdominal scutes; no striated areas on body (except for *Hoplostethus metallicus*) . . . . . → ***2***

2a. Body depth less than 40% of standard length (Fig. 2) . . . . . ***Optivus***

2b. Body depth greater than 40% of standard length . . . . . → ***3***

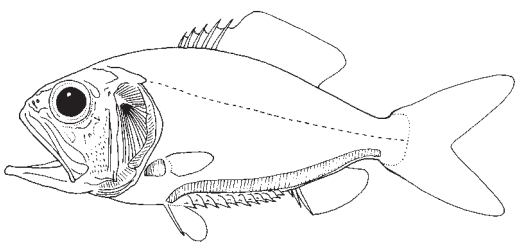


Fig. 1 ***Aulotrachichtys***

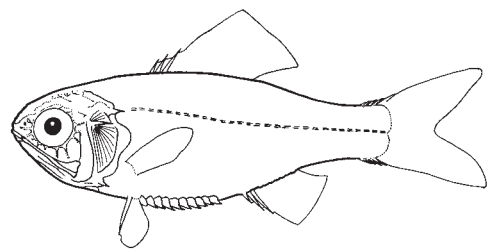


Fig. 2 ***Optivus***

3a. Dorsal fin with III spines; dorsal and anal fins sickle-shaped with elongate anterior soft rays (Fig. 3) . . . . . ***Trachichthys***

3b. Dorsal fin with IV to VIII spines; dorsal and anal fins rounded to emarginate, anterior soft rays not elongated . . . . . → ***4***

4a. Lateral-line scales enlarged and diamond-shaped (Fig. 4) . . . . . ***Hoplostethus***

4b. Lateral-line scales not enlarged . . . . . → ***5***

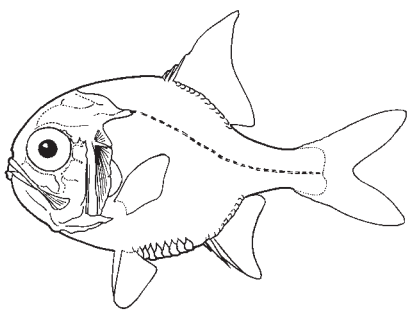


Fig. 3 ***Trachichthys***

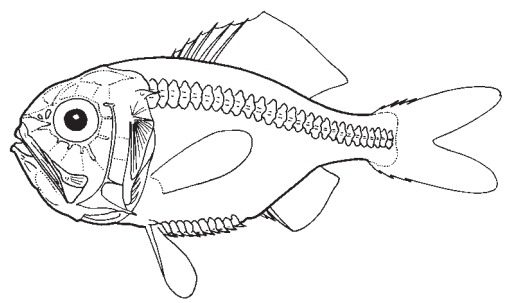


Fig. 4 ***Hoplostethus***

5a. Dorsal fin with VIII (very rarely VII) spines; body scales with flat, triangular, posteriorly projecting spines (Fig. 5) . . . . . ***Gephyroberyx***

5b. Dorsal fin with V spines; body scales with small, round, laterally projecting spines (Fig. 6) . . . . . ***Parinoberyx***

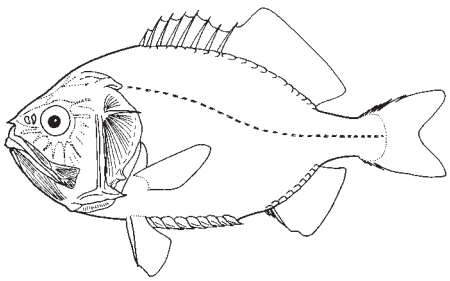


Fig. 5 ***Gephyroberyx***

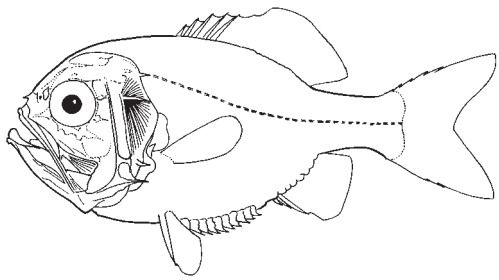


Fig. 6 ***Parinoberyx***

List of species occuring in the area

Aulotrachichthys latus (Fowler, 1938)
Aulotrachichthys sp.

Gephyroberyx darwini (Johnson, 1866)
Gephyroberyx philippinus Fowler, 1938

Hoplostethus crassispinus Kotlyar, 1980
Hoplostethus japonicus Hilgendorf, 1879
Hoplostethus mediterraneus Cuvier, 1829
Hoplostethus melanopterus Fowler, 1938
Hoplostethus melanopus (Weber, 1913)
Hoplostethus metallicus Fowler, 1938
Hoplostethus sp.

Optivus sp.

Parinoberyx horridus Kotlyar, 1984

Trachichthys australis Shaw, 1799

References

Kotlyar, A.N. 1980. Systematics and distribution of trachichthyid fishes (Trachichthyidae, Beryciformes) of the Indian Ocean. Trudy Inst. Okeanol. Akad. Nauk S.S.S.R. 110:177-224. [in Russian]

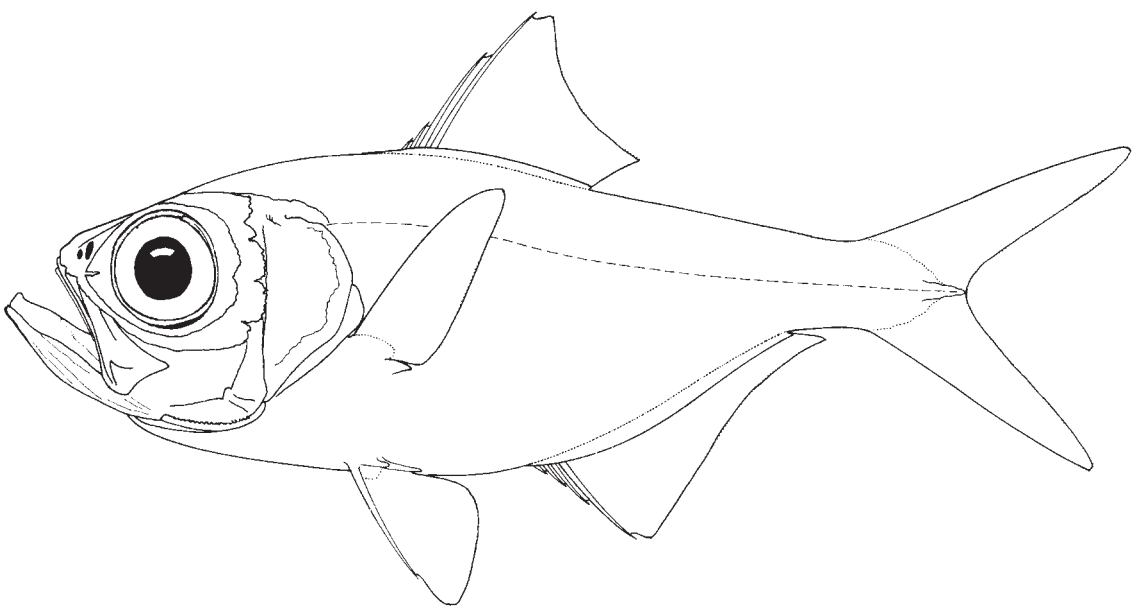
Kotlyar, A.N. 1996. *Beryciform fishes of the world ocean*. Moscow, VNIRO Publishing, 368 p. [in Russian]

BERYCIDAE

Alfonsinos

by J.R. Paxton

Diagnostic characters: Moderate-sized (to 60 cm) beryciform fishes, **body moderately deep to very deep,** compressed. Head moderately large; **large, deep mucous cavities on top of head separated by thin ridges and covered by skin;** small spines present or absent on snout, over eyes and behind end of jaw; anterior edge of nasal bone on snout dentate (*Centroberyx*) or smooth (*Beryx*); **cheeks and opercles with scales;** opercle crenate or smooth, with 1 or 2 flat keels, no opercular spines; **no spine on preopercle**. **Eyes very large, its diameter greater than snout length. Mouth large, oblique, jaws not reaching posterior margin of eyes; maxilla expanded posteriorly; lower jaw protrudes anteriorly beyond upper; 2 supramaxillae.** Teeth small, in villiform bands on jaws, **vomer** and palatine. **One dorsal fin with III to VII spines and 11 to 20 soft rays; anal fin with III or IV spines and 12 to 30 soft rays;** caudal fin distinctly forked, with 17 or 18 principal rays; **pelvic fins with I spine and 7 to 13 soft rays;** pectoral fins with 13 to 19 rays. Branchiostegal rays 7 or 8. Scales spinose, very rough to touch; lateral line with 36 to 82 scales, extending onto caudal fin (*Beryx*) or not (*Centroberyx*); enlarged scales between pelvic and anal fins present (*Centroberyx*) or absent (*Beryx*). Gill rakers lath-like, total of 22 to 34 on first gill arch. No light organs present. Total vertebrae 24 or 25. **Colour:** basic colour pinkish red on head, body and fins, with silvery, golden, yellow, or white in smaller proportions.



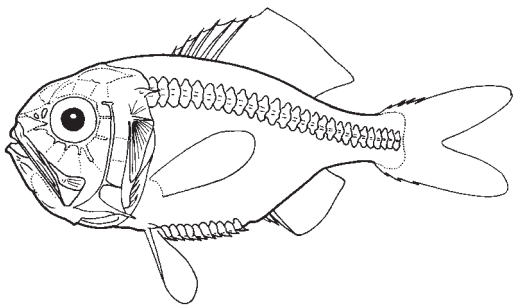
Habitat, biology, and fisheries: Benthic or benthopelagic fishes of shelf and slope to depths of at least 1 300 m; often found over seamounts; vertical migration into shallower water at night for some species. Feeding mode as carnivores on mesopelagic crustaceans, squids, and fishes. The species of *Beryx* are commercially important in many areas of the world, while at least 1 species of *Centroberyx* is commercially important, primarily in eastern Australia. They are usually taken in bottom trawls, or on longlines.

Remarks: Two genera and 9 or 10 species throughout the world ocean in temperate and tropical latitudes, except the Northeast Pacific.

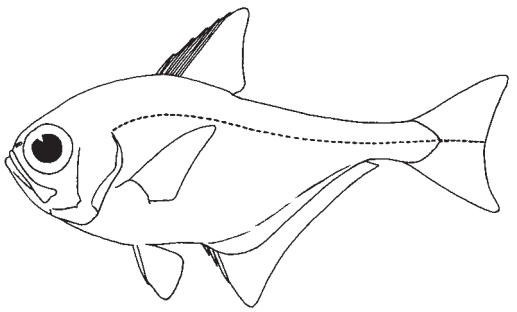
Similar families occurring in the area

Trachichthyidae: pelvic fins with I spine and 6 soft rays; anal fin with II or III spines and 8 to 12 soft rays; 1 supramaxilla.

Pempheridae: pelvic fins with I spine and 5 soft rays; very long anal fin; narrow caudal peduncle; colour bronze, tan, or cream, never pink or red.



Trachichthyidae



Pempheridae

Key to the species of Berycidae occurring in the area

1a. Dorsal fin with III to V spines; soft anal-fin rays 25 to 30; pelvic fins with I spine and 9 to 13 soft rays; lateral-line scales 60 to 82, extending onto caudal fin; 1 or 2 small spines present on either side of snout, most pronounced in juveniles . . . . . → ***2***

1b. Dorsal fin with VI or VII spines; soft anal-fin rays 12 to 16; pelvic fins with I spine and 7 soft rays; lateral-line scales 36 to 62, not extending onto caudal fin; no spine present on snout . . . . . → ***3***

2a. Dorsal fin with 12 to 15 soft rays; head with only 1 spine on snout, most pronounced in juveniles; body moderately deep, its depth about equal to head length and 2.4 to 2.8 times in standard length to base of caudal fin (Fig. 1) . . . . . ***Beryx splendens***

2b. Dorsal fin with 16 to 20 soft rays; head with 4 spines, 2 on snout, 1 over eye, 1 behind end of jaw, most pronounced in juveniles; body very deep, its depth much greater than head length and 1.9 to 2.5 times in standard length to base of caudal (Fig. 2) . . ***Beryx decadactylus***

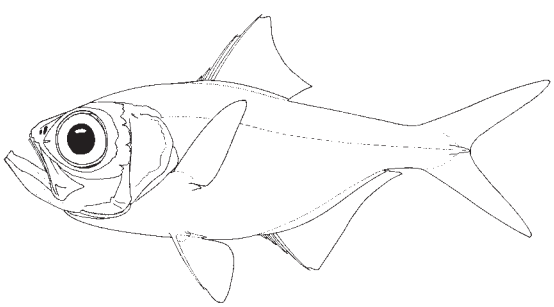


Fig. 1 ***Beryx splendens***

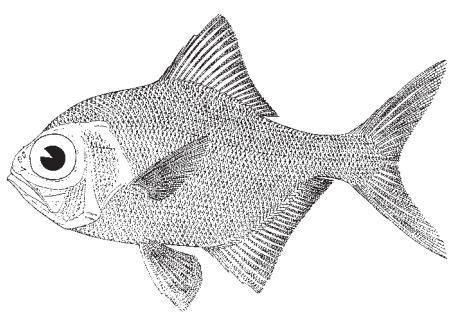


Fig. 2 ***Beryx decadactylus***

3a. Anal fin with 12 soft rays; lateral-line scales 40 to 44; 3 rows of scales on cheek (Fig. 3) . . . . . ***Centroberyx affinis***

3b. Anal fin with 15 to 17 soft rays; lateral-line scales 53 to 62; 5 rows of scales on cheek (Fig. 4) . . . . . ***Centroberyx druzhinini***

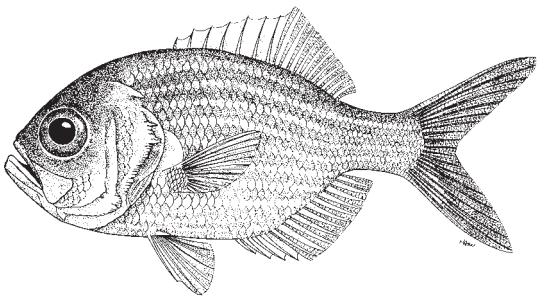


Fig. 3 ***Centroberyx affinis***

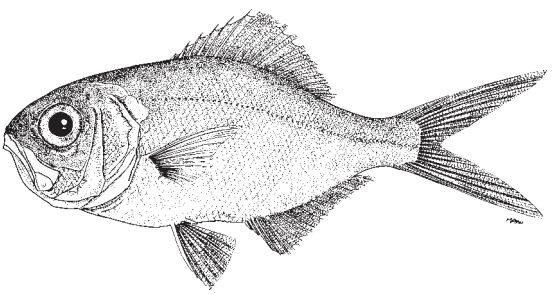


Fig. 4 ***Centroberyx druzhinini***

List of species occurring in the area

The symbol ◄ is given when species accounts are included.

- *Beryx decadactylus* Cuvier, 1829
- *Beryx splendens* Lowe, 1834

- ◄ *Centroberyx affinis* (Günther, 1859)
- ◄ *Centroberyx druzhinini* (Busakhin, 1981)

References

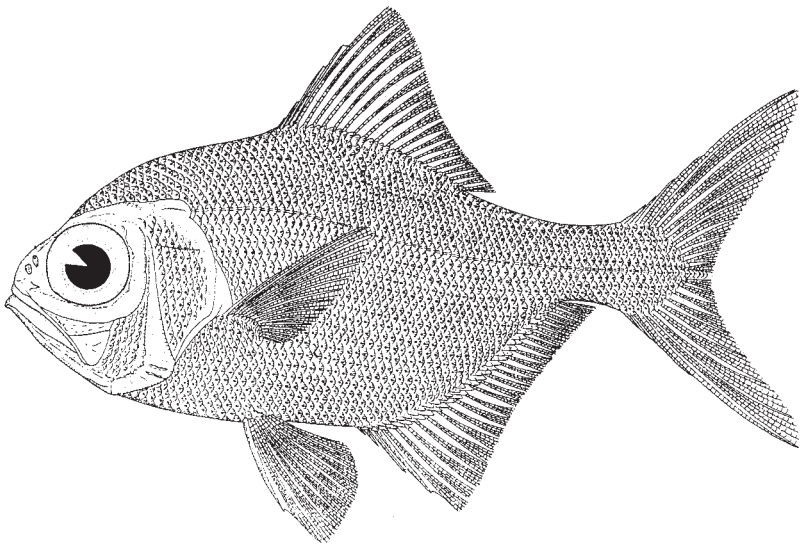
Busakhin, S.V. 1982. Systematics and distribution of the family Berycidae (Osteichthyes) in the World Ocean. *Vopr. Ikhtiol.*, 22(6):904-921. [in Russian, English transl. *J. Ichthyol.*, 22(6)]

Kotlyar, A.N. 1996. *Beryciform fishes of the world ocean*. Moscow, VNIRO Publishing, 368 p. [in Russian]

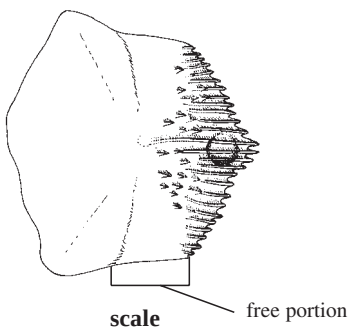
Beryx decadactylus Cuvier, 1829

Frequent synonyms / misidentifications: None / *Beryx splendens* Lowe, 1834.

FAO names: En - Alfonsino; **Fr** - Beryx commun; **Sp** - Alfonsino palometón.



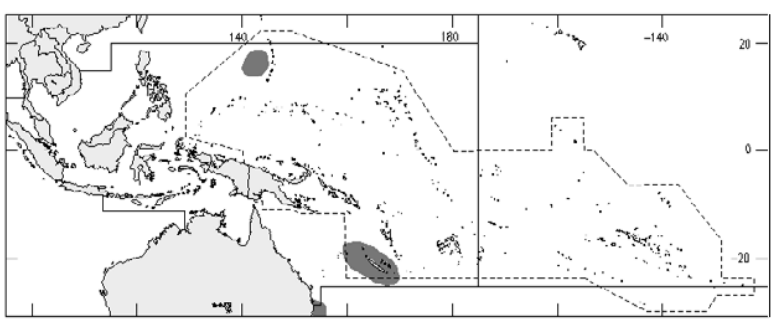
Diagnostic characters: Body very deep, greatest depth 1.9 to 2.5 times in standard length and significantly more than head length. Two small spines on snout, 1 over eye and 1 behind end of jaw, less distinct in larger fish. Dorsal fin with III to V spines and 16 to 20 soft rays, first 3 dorsal-fin rays may be elongate in smaller specimens; anal fin with III or IV spines and 25 to 30 soft rays; pelvic fins with I spine and 9 or 10 soft rays, **first pelvic-fin ray may be very elongate in smaller specimens, all rays very elongate in some specimens;** pectoral fins with 14 to 18 rays. **Lateral line with 59 to 73 scales, extending onto caudal fin. Pyloric caecae 61 to 98. Colour:** upper head and body, all fins and iris of eye bright red, becoming silvery-pink below.



Size: Maximum total length about 60 cm, commonly to about 35 cm; weight to 2.5 kg.

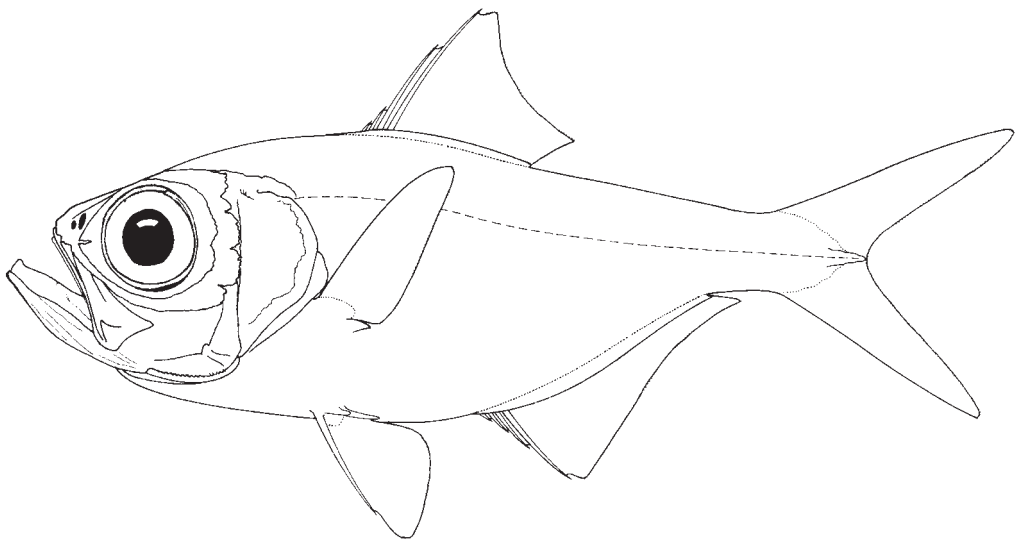
Habitat, biology, and fisheries: Benthopelagic fishes of outer shelf (180 m) and slope to at least 1 000 m, moving further from the bottom at night; often found over seamounts; juveniles pelagic. Commercially important in some areas (Madeira, Indian Ocean), where it is caught by both trawlers and longliners and marketed mostly fresh. In most areas it is both less common and less desirable than *Beryx splendens*.

Distribution: Circumglobal, except Northeast Pacific; the limited number of records in the area is doubtless the result of limited fishing effort below 200 m.



Beryx splendens Lowe, 1834

Frequent synonyms / misidentifications: None / *Beryx decadactylus* Cuvier, 1829; *B. mollis* Abe, 1959.
FAO names: En - Slender alfonsino; **Fr** - Beryx long; **Sp** - Alfonsino besugo.

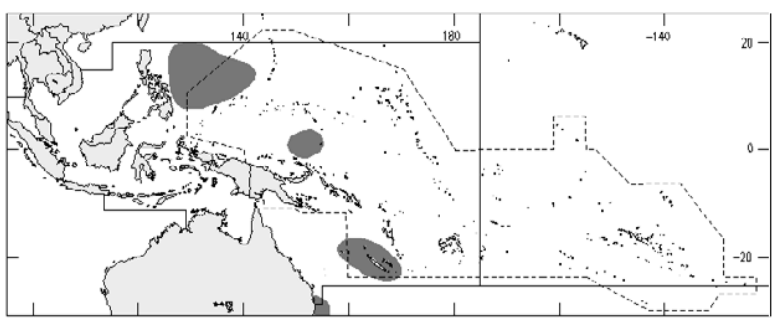


Diagnostic characters: Body depth moderate, greatest depth 2.4 to 2.8 times in standard length and equal to or slightly more than head length. One small spine on snout, less distinct in larger specimens, none elsewhere on head. Dorsal fin with III to V spines and 12 to 15 soft rays, first dorsal-fin rays may be elongate in smaller specimens; anal fin with IV spines and 25 to 30 soft rays; pelvic fins with I spine and 9 to 13 soft rays; pectoral fins with 15 to 19 rays. **Lateral line with 69 to 82 scales, extending onto caudal fin. Pyloric caecae 23 to 34. Colour:** upper head and body, all fins and iris of eye bright red, becoming silvery-pink below.

Size: Maximum total length 60 cm.

Habitat, biology, and fisheries: Benthopelagic fishes of outer shelf (180 m) and slope to at least 1 300 m, probably moving further from the bottom at night; often found over seamounts; juveniles pelagic. Commercially important in many areas (Madeira, Japan, New Caledonia), where it is caught by both trawlers and longliners and marketed mostly fresh. In most areas, this is both the more common and the preferred, of the 3 species of *Beryx*.

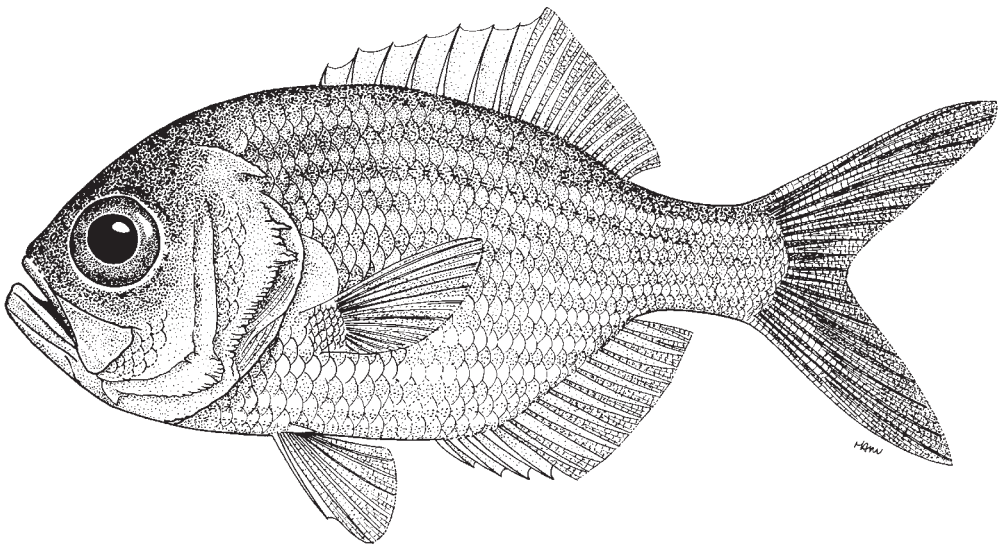
Distribution: Circumglobal, except Northeast Pacific and Mediterranean Sea; the limited number of records in the area is doubtless the result of limited fishing effort below 200 m.



Centroberyx affinis (Günther, 1859)

Frequent synonyms / misidentifications: None / *Centroberyx gerrardi* (Günther, 1887).

FAO names: En - Nannygai.

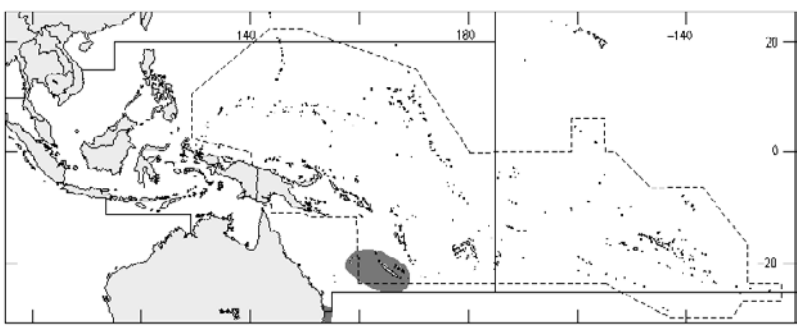


Diagnostic characters: Cheek with 3 rows of scales. Pelvic-fin origin before dorsal-fin origin. Dorsal fin with VI or VII spines and 11 to 13 soft rays; **anal fin with IV spines and 12 soft rays;** pelvic fins with I spine and 7 soft rays; pectoral fins with 13 or 14 rays. **Lateral line with 40 to 44 scales, not extending onto caudal fin. Colour:** upper head and body, caudal fin, and iris of eye orange-red, becoming silvery-pink below, with horizontal golden-silver lines sometimes present; other fins pink.

Size: Maximum total length 50 cm (angling record 2 kg); present catches average less than 20 cm fork length.

Habitat, biology, and fisheries: Juveniles in estuaries, adults on shelf and upper slope, rarely to a depth of 700 m; adults benthic, moving into water column at night; largest trawl catches between 100 and 300 m. Commercially important off southeastern Australia, where it is caught by bottom trawlers and marketed fresh. Previously more than 2 000 t/year were caught, but present catches are less than 1 000 t/year.

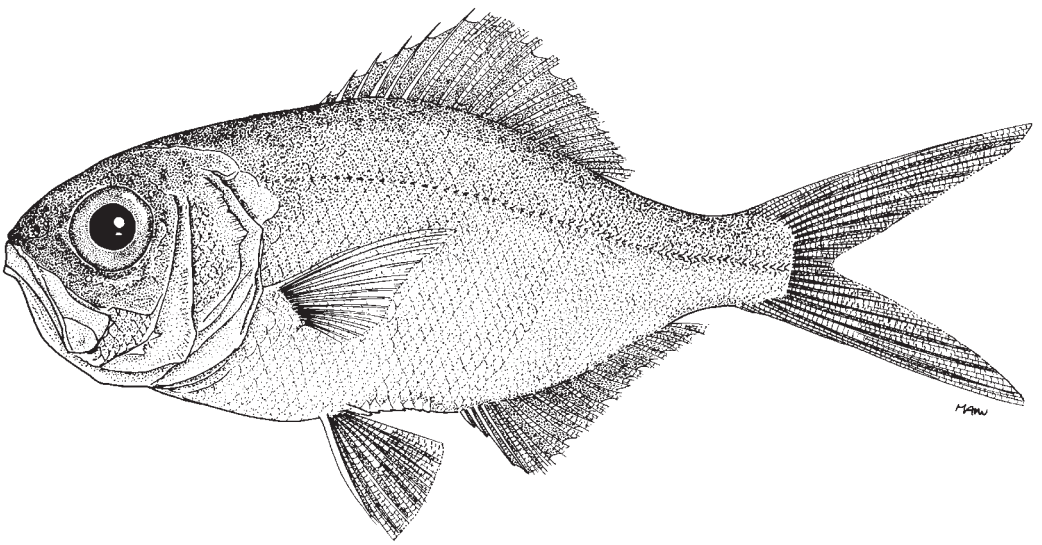
Distribution: Eastern Australia from the western edge of Bass Strait (previous records from southern and south-western Australia based on misidentifications) and mid-way down the east coast of Tasmania north to just north of Brisbane, Queensland; New Zealand around the North Island, rare south of Cook Strait; recently recorded from the Chesterfield Islands and New Caledonia.



Centroberyx druzhinini (Busakhin, 1981)

Frequent synonyms / misidentifications: None / *Centroberyx lineatus* (Cuvier, 1829).

FAO names: En - Druzhinin's alfonsino.

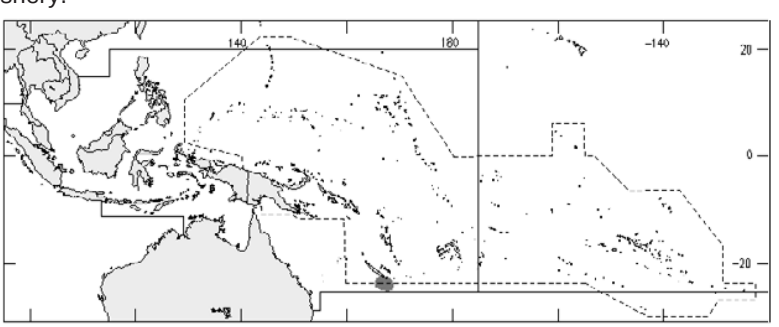


Diagnostic characters: Cheek with 5 rows of scales. Pelvic-fin origin under dorsal-fin origin. Dorsal fin with V to VII spines and 12 to 15 soft rays; **anal fin with IV spines and 15 to 17 soft rays;** pelvic fins with I spine and 7 soft rays; pectoral fins with 13 rays. **Lateral line with 53 to 62 scales, not extending onto caudal fin. Colour:** head and upper body and all fins except pectoral fins bright red, becoming silvery white below; pectoral fins pink; iris of eye yellow.

Size: Maximum total length 23 cm.

Habitat, biology, and fisheries: A benthic or benthopelagic fish trawled in 100 to 300 m. Only a few records have been published, nothing is known of its biology, and the few specimens captured do not indicate a potential commercial fishery.

Distribution: Described from the western Indian Ocean, and recorded from Japan, the Sulu Sea, and more recently New Caledonia.



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