

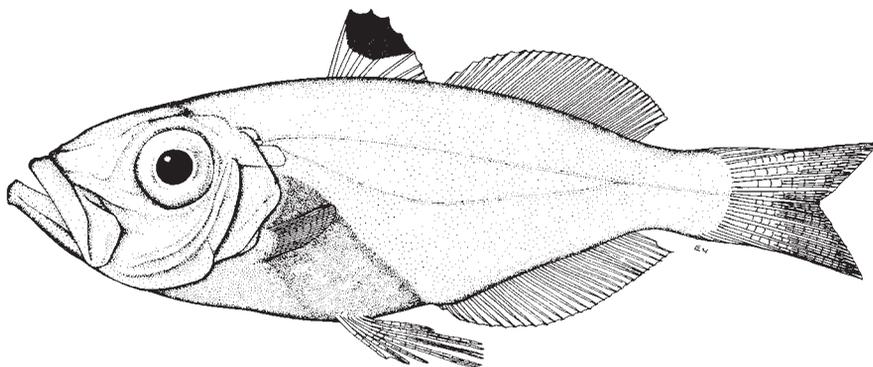
## Order ZEIFORMES

## PARAZENIDAE

## Parazen

by P.C. Heemstra

**D** diagnostic characters: **Body oblong and compressed (size to 30 cm total length), its depth about equal to head length, contained 0.9 to 2.1 times in standard length.** Eye large, its diameter greater than snout length and contained 2.8 to 5.2 times in head length. **Mouth large, terminal, the upper jaw highly protrusible;** jaws with 1 or 2 rows of short, slender, conical teeth; similar teeth on vomer; maxilla exposed posteriorly; no supramaxilla. Gill rakers short and flattened, 1 on upper limb and 4 to 6 on lower limb of first arch (not counting rudiments). Gills 3 ½ (no slit behind last hemibranch). Branchiostegal membranes separate from isthmus; branchiostegal rays 7. **Two dorsal fins, the first with VI to VIII slender spines, the second dorsal fin with 26 to 30 soft rays; anal fin with I small spine and 28 to 34 soft rays;** caudal fin forked, with 11 segmented rays and 9 branched rays; **pectoral fins much shorter than head, with 12 to 16 rays; pelvic fins with 1 unbranched soft ray and 6 branched soft rays (no spine).** Two lateral lines anteriorly, merging to a single line on the caudal peduncle. Head naked; body scales moderate in size, deciduous and weakly ctenoid. Vertebrae 34. **Colour:** reddish silver.



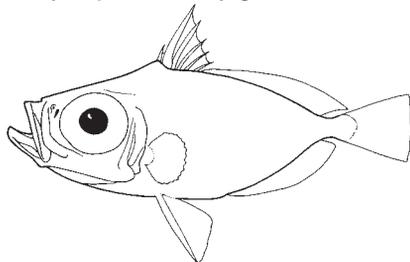
**Habitat, biology, and fisheries:** Caught with trawls in depths of 150 to 600 m.

**Remarks:** This family comprises a single genus and species. Not reported yet from the WCP area but very likely to occur there. Common off Japan in the western Pacific and also known from specimens collected off Tanzania in the western Indian Ocean and Cuba in the western Atlantic.

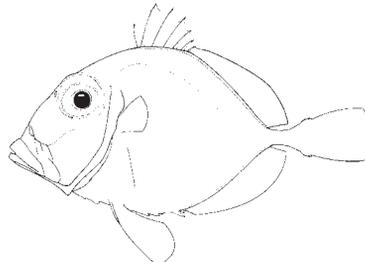
#### Similar families occurring in the area

Macrurocyttidae: eye diameter distinctly longer than snout; pelvic-fin spine well developed.

Zeidae: body depth distinctly greater than head length, contained 0.9 to 2.1 times in standard length.



Macrurocyttidae



Zeidae

#### List of species occurring in the area

? *Parazen pacificus* Kamohara, 1935

#### Reference

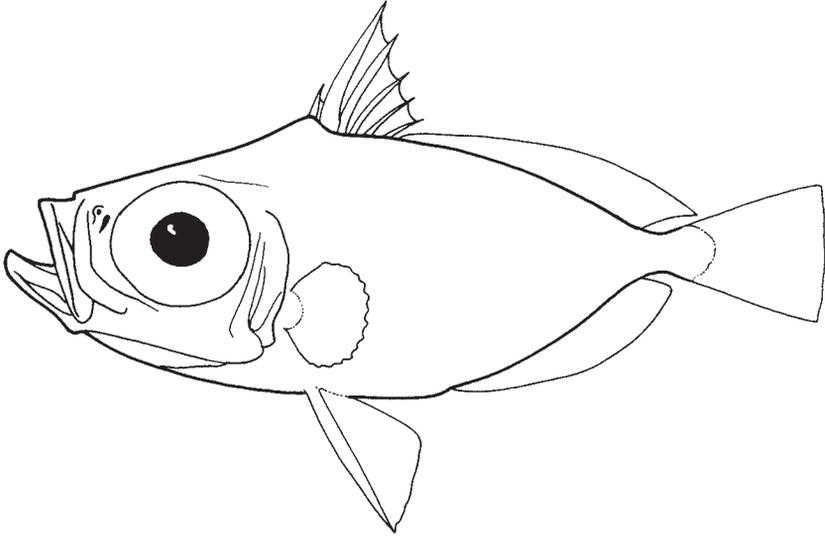
Masuda, H., K. Amaoka, C. Araga, T. Uyeno, and T. Yoshino (eds). 1988. *The fishes of the Japanese Archipelago*. Second edition. Tokyo, Tokai University Press, 456 p.

## MACRUROCYTTIDAE

### Dwarf dories

by P.C. Heemstra

**Diagnostic characters:** Body oval or oblong and compressed, its depth contained 2.2 to 2.8 times in standard length; head length 2 to 2.8 times in standard length. Eye huge, its diameter about twice snout length, and 30 to 52% head length. Mouth slightly or greatly protrusible; jaws with a row of minute conical teeth; no teeth on vomer; maxilla exposed posteriorly; no supramaxilla. Gills 3½ (no slit behind last hemibranch); gill rakers rudimentary low knobs. **One dorsal fin, with IV to VII spines and 25 to 30 soft rays, the second spine longest and serrate along its front margin; anal-fin spine rudimentary or absent, anal-fin rays 25 to 32;** caudal fin rounded or almost truncate, with 12 to 16 rays; pectoral fins much shorter than head, with 12 to 17 rays; **pelvic fins with I strong spine and 2, 3 or 6 soft rays.** Lateral line complete or replaced by fleshy tubercles. Body scales small, rudimentary, or absent; head naked. Vertebrae 25 to 34. **Colour:** *Macrurocyttus acanthopodus* has the head and front part of body blackish brown, the rear part of body and fins pale dusky or brownish. *Zenion hololepis* is dusky silver, with a reddish sheen; black spot distally on first dorsal fin; caudal fin reddish distally.

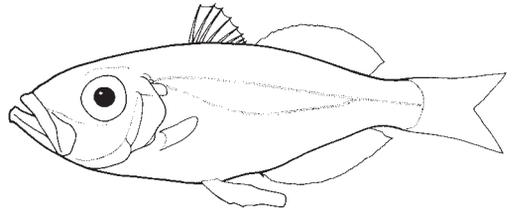


**Habitat, biology, and fisheries:** Taken with trawls over sand or mud bottoms in depths of 330 to 1 140 m. Biology unknown. These small, rare fishes are of no importance to fisheries.

**Remarks:** This poorly defined family comprises 2 or 3 genera and 4 or 5 species. The relationship of *Macrurocyttus* to *Zenion* may be more superficial than real.

#### Similar families occurring in the area

Parazenidae: eye shorter than snout; pelvic fin with 1 unbranched soft ray, 6 branched soft rays, and no spine.



**Parazenidae**

#### List of species occurring in the area

*Macrurocyttus acanthopodus* Fowler, 1934

*Zenion hololepis* Goode and Bean, 1896  
 (= *Zenion japonicum* Kamohara, 1934)  
 (= *Cyttula macropus* Weber, 1913)

#### Reference

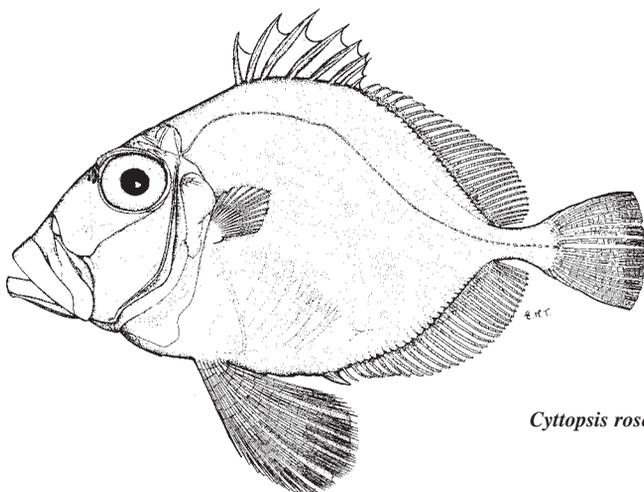
Nyako, C.O. and K. Amaoka. 1996. First records of the zeiform fish, *Macrurocyttus acanthopodus* Fowler, 1933, from the Coral Sea. *Ichthyol. Res.*, 43:93-96.

## ZEIDAE

## Dories

by P.C. Heemstra

**Diagnostic characters:** Body oval and strongly compressed; head also strongly compressed; body depth greater than head length, contained 0.9 to 2.1 times in standard length. Mouth highly protrusible, forming a downward-pointing tube when protruded; jaws with bands of villiform granular teeth or minute conical teeth, or rows of small canines; similar teeth on vomer; maxilla exposed posteriorly, no supramaxilla. Gills 3 ½ (no slit behind the last hemibranch); gill rakers rudimentary low knobs. Branchiostegal membranes separate from isthmus; branchiostegal rays 7. **A single dorsal fin, with VII to X spines and 20 to 37 soft rays; anal fin with I to IV spines and 20 to 39 soft rays;** caudal fin rounded or almost truncate, the upper lobe with 6 segmented rays and 5 branched rays, the lower lobe with 7 segmented rays and 6 branched rays; **pectoral fins much shorter than head, with 11 to 18 rays; pelvic fins with I spine and 6 or 7 rays, or lacking the spine and with 6 or 7, or 9 or 10 soft rays.** Lateral line complete, strongly curved over pectoral fin. Body scales small, rudimentary or absent; head naked (cheek and operculum scaly in *Cyttomimus*). Swimbladder present. Vertebrae 29 to 42. **Colour:** *Zenopsis*: silvery with faint dusky blotches; *Zeus*: bronzy copper, with prominent black ocellus at midside; *Cyttopsis*: reddish silvery, *Cyttomimus*: dusky silver.

*Cyttopsis rosea*

**Habitat, biology, and fisheries:** Most zeids are caught with trawls over sand or mud bottom in depths of 35 to 600 m. They usually occur near the bottom and feed on fishes and benthic invertebrates (mainly crustaceans and worms).

**Remarks:** This poorly defined family comprises 5 or 6 genera and 11 or 12 species. Zeids are rare in tropical and subtropical waters, but 5 species have been reported from the Western Central Pacific.

**Similar families occurring in the area**

Drepanidae: pectoral fins falciform, longer than head, reaching caudal peduncle; pelvic fins with I spine and 5 soft rays.

**List of species occurring in the area**

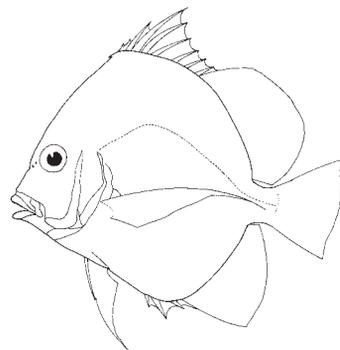
*Cyttomimus affinis* Weber, 1913

*Cyttopsis cypho* (Fowler, 1934)

*Cyttopsis rosea* (Lowe, 1843)

*Zenopsis nebulosa* (Temminck and Schlegel, 1847)

*Zeus faber* Linnaeus, 1758



Drepanidae

**Reference**

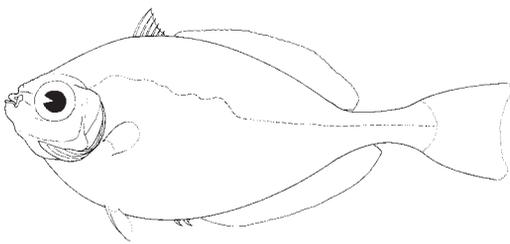
Heemstra, P.C. 1986. Zeidae. In *Smith's sea fishes*, edited by M.M. Smith and P.C. Heemstra. Johannesburg, Macmillan South Africa, pp. 435-438.

## GRAMMICOLEPIDIDAE

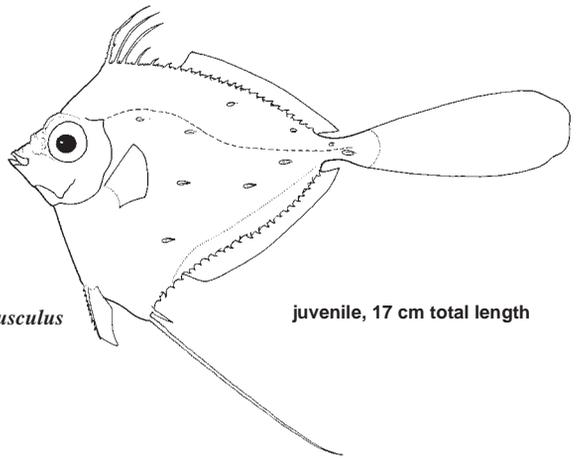
## Tinselifishes

by P.C. Heemstra

**Diagnostic characters:** Body oval, oblong, or diamond-shaped, and strongly compressed, its depth much greater than head length, contained 0.8 to 2.3 times in standard length; head length 2.9 to 4.4 times in standard length; body, cheeks, and operculum covered with vertically elongated scales; a row of small spines along each side of dorsal- and anal-fin bases. Mouth small; maxilla ridged, bound to ascending processes of premaxillae, loosely connected to palatines; jaws with 1 or 2 rows of small, slender teeth; vomer with or without teeth. Gills  $3\frac{1}{2}$ , no slit behind last hemibranch; gill rakers rudimentary flat tooth plates attached to skin covering the first gill arch. Branchiostegal rays 7, with membranes joined to front of isthmus. **Two dorsal fins, the first with V to VII slender spines, the second dorsal fin with 17 to 34 unbranched soft rays; anal fin with II spines and 27 to 39 unbranched soft rays; juveniles with first anal-fin spine and second dorsal-fin spines greatly elongated; caudal fin with 13 branched rays; pelvic fins with I spine and 6 branched soft rays.** Vertebrae 37 to 46. **Colour:** adults silvery (with black spots in *Xenolepidichthys*).



adult, 60 cm total length

*Grammicolepis brachiusculus*

juvenile, 17 cm total length

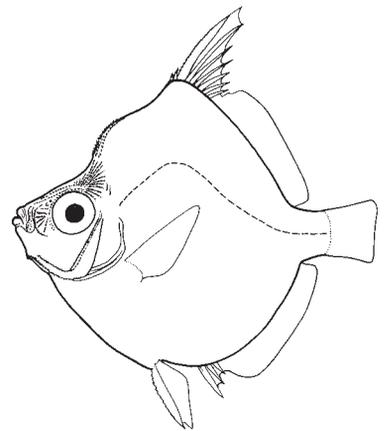
**Habitat, biology, and fisheries:** Apparently rare, no information available on biology. Caught with trawls, but of no importance for fisheries.

**Remarks:** This family comprises 2 genera, each with a single species. Tinselifishes occur worldwide (but not in polar seas) at depths of 100 to 800 m.

**Similar families occurring in the area**

Caproidae: have small, oval ctenoid scales; branched dorsal- and anal-fin rays; pelvic fins with I spine and 5 soft rays; caudal fin with 10 branched rays; branchiostegal rays 6; vertebrae 9+12.

The transparent, compressed, deep-bodied acronurus postlarva of surgeonfishes (family Acanthuridae) superficially resembles a small tinselifish, but acanthurids have a restricted gill opening, and the postlarva lacks elongate fin spines.



Caproidae

**List of species occurring in the area**

*Grammicolepis brachiusculus* Poey, 1873

*Xenolepidichthys dalgleishi* Gilchrist, 1922

**Reference**

Karrer, C. and P.C. Heemstra. 1986. Grammicolepididae. In *Smith's Sea Fishes*, edited by M.M. Smith and P.C. Heemstra. Johannesburg, Macmillan South Africa, pp. 440-441.

## CAPROIDAE

## Boarfishes

by P.C. Heemstra

**Diagnostic characters:** Body disc-shaped, strongly compressed; dorsal profile angular, ventral profile semicircular; body depth more than twice head length and contained 0.8 to 1.4 times in standard length; head length 2.4 to 3 times in standard length. Mouth small, oblique; upper jaw protrusible; bands of small teeth on jaws, none on vomer or palatines. Gills 4, a small slit behind last gill; gill rakers on first gill arch 15 to 23. Branchiostegal rays 6, the membranes joined far forward. **Single dorsal fin with VII to IX spines and 26 to 38 soft rays; anal fin with III spines and 24 to 34 soft rays; dorsal- and anal-fin rays branched; caudal fin truncate, with 10 branched rays; pectoral-fin rays 12 to 14; pelvic fins with I strong spine and 5 branched soft rays.** Scales small, round or slightly oval, with enlarged ctenii. Vertebrae 9+12. **Colour:** reddish orange.

**Habitat, biology, and fisheries:** Tropical and temperate waters of all oceans; adults usually found near the bottom in depths of 50 to 600 m; the larvae are pelagic.

**Remarks:** Two genera are presently recognized. The monotypic *Capros aper* (Linnaeus, 1758) is common in the North Atlantic and Mediterranean. *Antigonia* comprises 10 species, of which 4 are known from the Western Central Pacific. The placement of this family in the order Zeiformes is controversial and it is often considered more closely aligned with the Perciformes.

**Similar families occurring in the area**

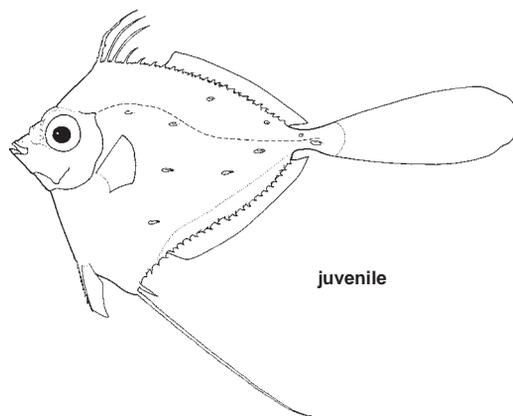
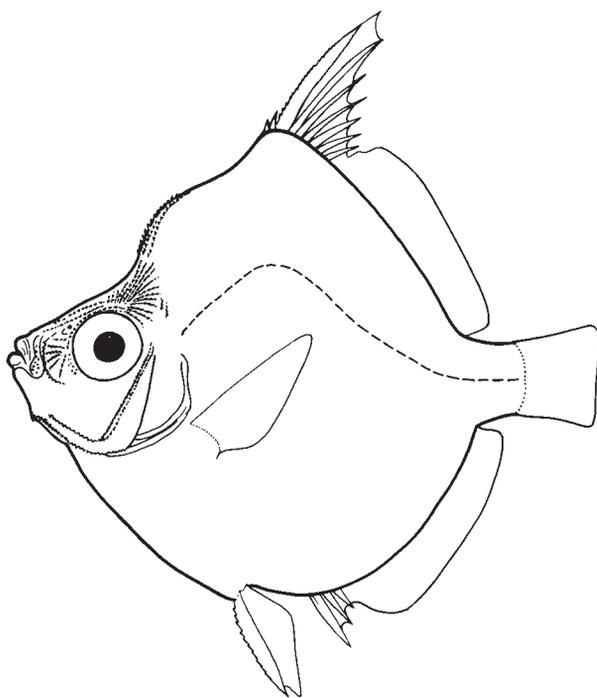
Grammicolepididae: scales greatly elongated vertically; dorsal- and anal-fin rays unbranched; pelvic fins with I spine and 6 branched soft rays; caudal fin with 13 branched rays; branchiostegal rays 7; vertebrae 37 to 46.

**List of species occurring in the area**

- Antigonia capros* Lowe, 1843
- Antigonia malayana* Weber, 1913
- Antigonia rubescens* Günther, 1860
- Antigonia rubicunda* Ogilby, 1910

**References**

- Parin, N.V. and O.C. Borodulina. 1986. Preliminary review of the benthopelagic fish genus *Antigonia* Lowe (Zeiformes, Caproidae). *Trans. P.P. Shirshov Inst. Oceanol.*, 121:141-172.
- Zehren, S.J. 1987. Osteology and evolutionary relationships of the boarfish genus *Antigonia* (Teleostei: Caproidae). *Copeia*, 1987(3):564-592.



juvenile

Grammicolepididae