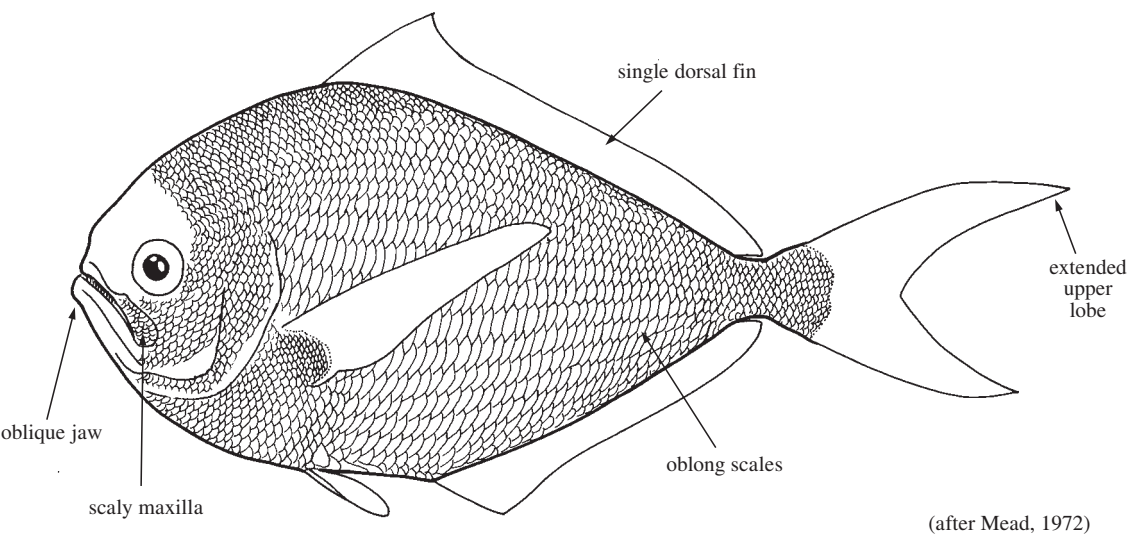


BRAMIDAE

Pomfrets

by P.R. Last and M. Moteki

Diagnostic characters: Small to large (to 70 cm), compressed, ovate to elongate fusiform perciform fishes. Anterior profile of head arched (except in *Taractes*); body form usually changing greatly with growth and varying considerably between genera. Eye moderately large, variable in position from near dorsal surface (in *Taractes* and *Pterycombus*) to more centrally on head. Spines absent from opercular and preopercular margins, usually present in young. Mouth of moderate size, terminal or superior, extending to below eye; **angle of jaw very oblique**, between 45 and 70° to horizontal axis. Dentition variously reduced; teeth small or minute, villiform, conical, or caniniform, usually present on palatines and absent on vomer. Total gill rakers on first gill arch 7 to 24. Branchiostegal rays 6 to 8. **Dorsal fin single**, its origin from head to just behind pectoral-fin base; **dorsal and anal fins of adults moderately stiff, scaly, and not fully depressible (except for *Pteraclis* and *Pterycombus* where fins scaleless, greatly enlarged, and entirely recessible into deep grooves formed by rows of enlarged, sheath-like basal scales)**, anterior rays of dorsal and anal fins often forming distinct lobes; dorsal-fin rays 31 to 57; anal-fin rays 21 to 50. **Caudal fin of adults strongly forked or with biconcave central margin, upper lobe sometimes extended**; principal caudal-fin rays 17. **Pectoral fins falcate in adults**, with 17 to 23 rays. **Pelvic fins thoracic or jugular**, with I spine and 5 soft rays. Scales strongly adhesive, variable in size over body, frequently larger below lateral line than above, sometimes enlarged on caudal peduncle; **maxilla scaly**; **snout, lower jaw, and opercular and preopercular margins naked**; scales of young and some adults bearing spiny keels; horizontal scale rows on body 34 to 95. Vertebrae 36 to 54. **Colour:** body mostly uniformly black, bluish, brownish, or silvery; fins usually similar but sometimes darker or with yellowish spots or bars.



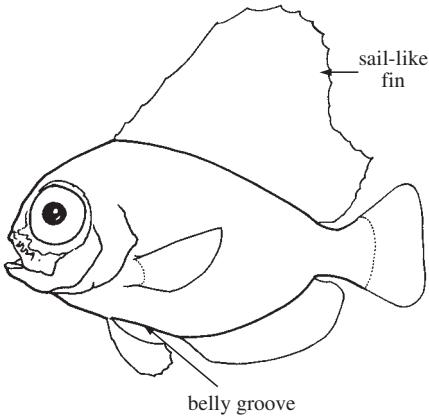
Habitat, biology, and fisheries: Mostly epipelagic in the open ocean. Occurring in schools mostly shallower than 200 m but *Eumegistus* is frequently found deeper (to at least 600 m). Seasonal migrations between high and low latitudes are reported in temperate species (i.e. *Brama japonica* and *B. brama*). Midlevel predators feeding on small midwater fishes, crustaceans, squids, and salps. Important prey for some tunas and billfishes. The basis of longline fishery off Spain and Portugal yielding in excess of 10 000 t annually. Large unexploited resources appear to exist in other areas, particularly in temperate parts of the Pacific Ocean. Excellent food fishes which deserve the title of “chicken of the sea”.

Similar families occurring in the area

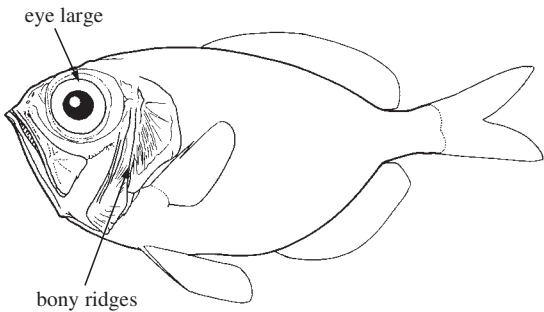
Caristiidae: body soft, covered with thin, deciduous scales (rather than thick, adhesive scales); head bones thin and fragile (rather than firm); pelvic fins folding into shallow groove (no equivalent groove in bramids). Like *Pteraclis* and *Pterycombus*, the dorsal fin is sail-like, but can be recessed between skin flaps rather than into a groove of enlarged scales.

Diretmidae: head with pronounced bony ridges (rather than absent); eye extremely large, diameter exceeding postorbital head length (rather than much less); anterior rays of dorsal and anal fins never forming a lobe; pelvic fins with I spine and 6 soft rays (rather than I spine and 5 soft rays).

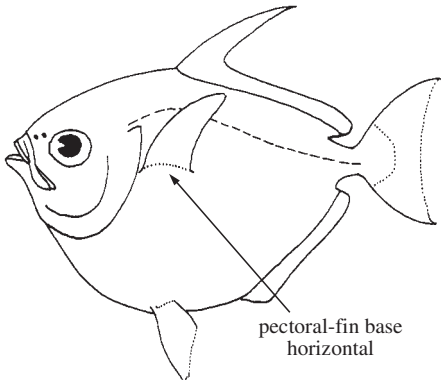
Lamprididae: pectoral-fin base almost horizontal (rather than oblique or vertical); pectoral and pelvic fins similar in size (pectoral fins much larger than pelvic fins in bramids); fins reddish.



Caristiidae



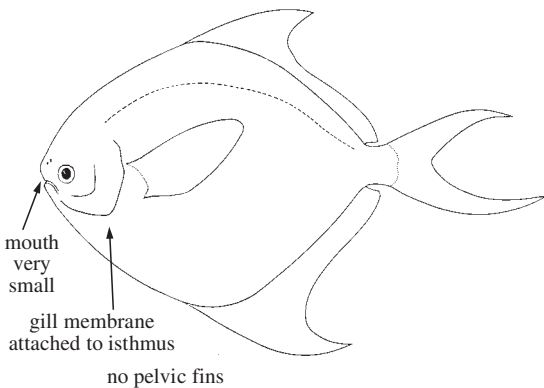
Diretmidae



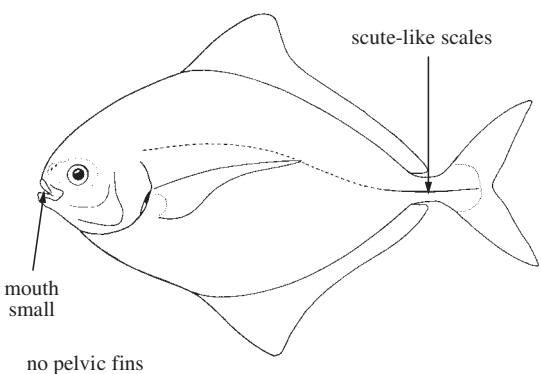
Lamprididae

Stromateidae (*Pampus* only): mouth small (not reaching below eye); gill membranes attached to isthmus (rather than separate); scales small, deciduous; no pelvic fins.

Carangidae (*Parastromateus niger* only): mouth small (not reaching below eye); small scute-like scales on caudal peduncle; no pelvic fins.



Stromateidae (*Pampus* sp.)



Carangidae (*Parastromateus niger*)

Key to the species of Bramidae occurring in the area

Remarks on key characters: until recently, our knowledge of the taxonomy of Indo-Pacific members of the family have been poor. Members of each of the genera are quite distinct from each other but some species are harder to identify. Bramids undergo dramatic changes in morphology as they grow and it is often difficult to find identifying features that will distinguish species at all stages of growth. External meristics can be used but even these overlap. In some cases, vertebrae need to be counted to distinguish species - all vertebrae including the urostyle and small postcranial centrum are counted.

- 1a. Dorsal and anal fins very long, scaleless, and can be recessed into grooves formed from rows of enlarged, sheath-like scales (Fig. 1) (Pteraclis, Pterycombus) → 2
- 1b. Dorsal and anal fins scaly and not recessible in adults . . (Brama, Eumegistus, Taractes, Taractichthys) → 4
- 2a. Dorsal-fin origin over or behind hind margin of eye (Fig. 2a); none of the first 5 dorsal-fin spines obviously thicker than the rest (Figs 2a and 3) Pterycombus petersii
- 2b. Dorsal-fin origin forward of eye (Fig. 2b); one of the first 5 dorsal-fin spines obviously thicker than the rest (Fig. 2b) (Pteraclis) → 3

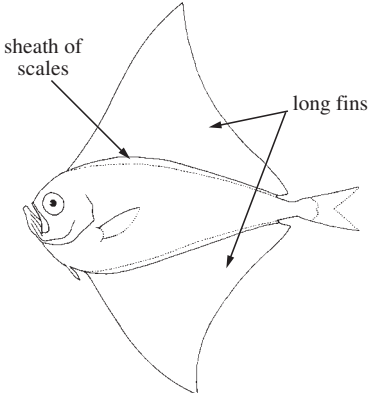


Fig. 1 Pterycombus

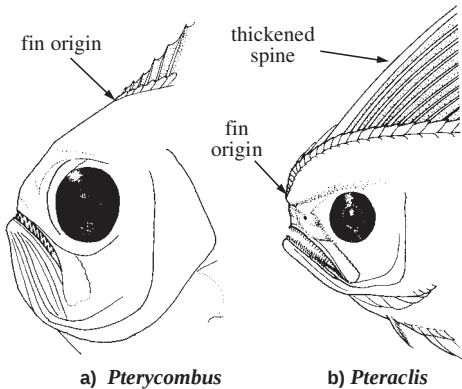


Fig. 2

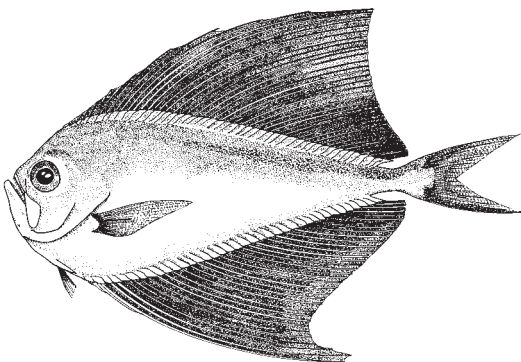


Fig. 3 Pterycombus petersii

- 3a. Dorsal fin with 54 to 57 rays; anal fin with 47 to 50 rays; vertebrae 51 to 54 (Fig. 4) . . . Pteraclis velifera
- 3b. Dorsal fin with 49 to 52 rays; anal fin with 40 to 44 rays; vertebrae 45 to 48 (Fig. 5) . . . Pteraclis aesticola

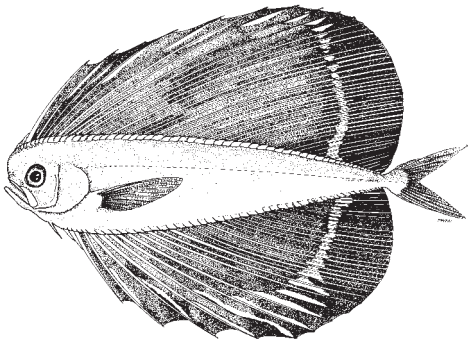


Fig. 4 Pteraclis velifera

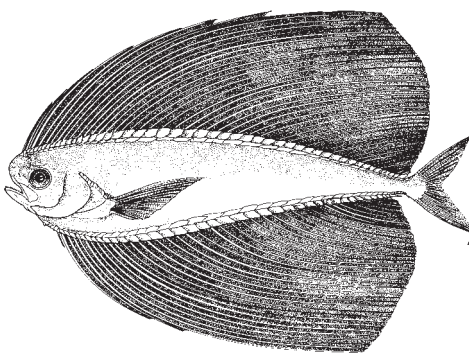


Fig. 5 Pteraclis aesticola

- 4a. Snout pointed, lower jaw greatly projecting (Fig. 7); interorbit broad, almost flat between eyes in frontal view (Fig. 6a) (*Taractes*) → 5
- 4b. Snout not especially pointed, mouth terminal or almost so (Fig. 12); interorbit relatively narrow, convex between eyes in frontal view (Fig. 6b) (*Brama*, *Eumegistus*, *Taractichthys*) → 6

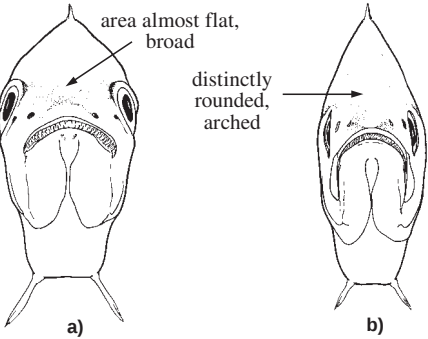


Fig. 6 frontal view

- 5a. Scales on caudal peduncle greatly enlarged, forming a sharp keel in adults; pectoral fins more than 36% standard length in specimens exceeding 5 cm; anal-fin rays mostly fewer than 23 (21 to 23) (Fig. 7) *Taractes rubescens*
- 5b. Scales on caudal peduncle not greatly enlarged, not forming a keel; pectoral fins less than 36% standard length in specimens exceeding 5 cm; anal-fin rays mostly more than 23 (23 to 26) (Fig. 8) *Taractes asper*

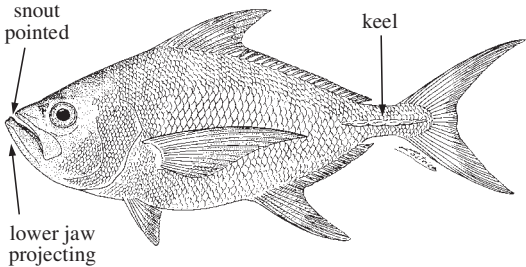


Fig. 7 *Taractes rubescens*

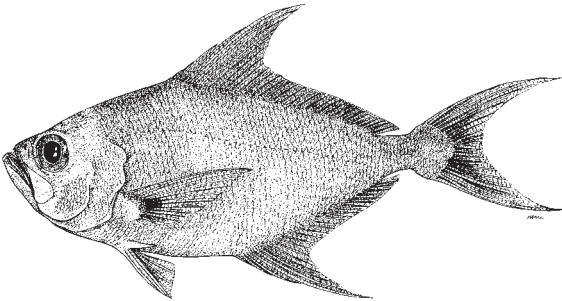


Fig. 8 *Taractes asper*

- 6a. Upper lip free, not connected to snout near anterior nostril (Fig. 9a) (*Eumegistus*, *Taractichthys*) → 7
- 6b. Upper lip not free anteriorly, connected to snout near anterior nostril (Fig. 9b) (*Brama*) → 9

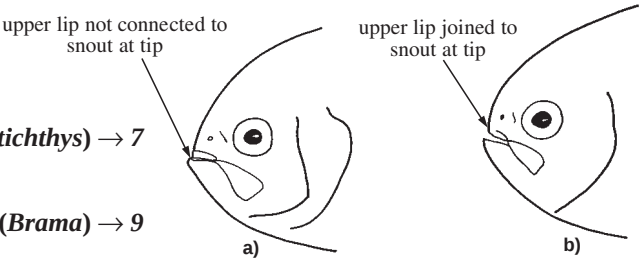


Fig. 9

- 7a. Ridge on belly originating just behind pelvic-fin bases, interpelvic space almost flat (Fig. 10a); no deep transverse grooves at origins of caudal-fin lobes; anal fin with 23 to 25 rays (Fig. 12) *Eumegistus illustris*
- 7b. Ridge on belly originating forward of pelvic-fin origins, interpelvic space distinctly convex (Fig. 10b); deep transverse grooves at origins of caudal-fin lobes (Fig. 11); anal fin with 26 or more rays (*Taractichthys*) → 8

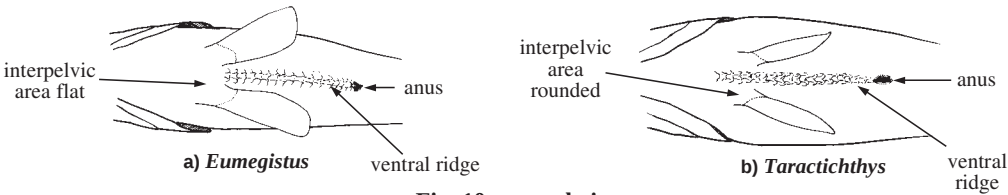


Fig. 10 ventral view

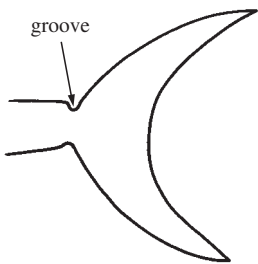


Fig. 11 caudal fin

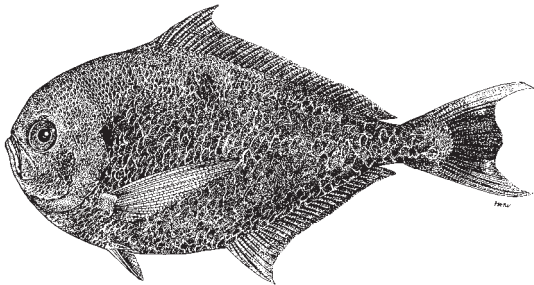


Fig. 12 *Eumegistus illustris*

- 8a. Scales in horizontal series 40 or fewer (34 to 40); predorsal scales fewer than 31 (21 to 29) (Fig. 13) *Taractichthys steindachneri*
- 8b. Scales in horizontal series more than 40 (usually 42 or more); predorsal scales more than 31 (33 to 37) (Fig. 14) *Taractichthys longipinnis*

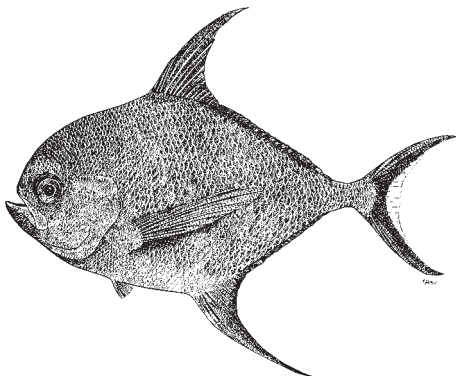


Fig. 13 *Taractichthys steindachneri*

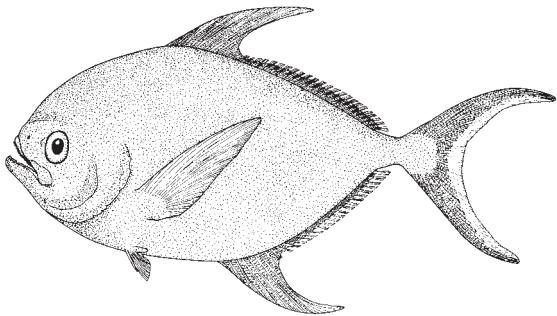


Fig. 14 *Taractichthys longipinnis*

- 9a. First few rays of anal fin not forming a distinct lobe (Fig. 15a); scales in longitudinal series 49 to 68; scales below lateral line 12 to 16 → 10
- 9b. First few rays of anal fin forming a well-developed lobe (except in small juveniles) (Fig. 15b); scales in longitudinal series 71 to 90; scales below lateral line 18 to 24 → 13
- 10a. Predorsal scales 23 to 28; anal fin with 23 to 25 rays (rarely 25); sharply demarcated, pale saddle on undersurface of caudal peduncle (Fig. 16) *Brama pauciradiata*
- 10b. Predorsal scales 32 to 43; anal fin with more than 25 rays (rarely 25 in *B. dussumieri*); no distinct saddle on undersurface of caudal peduncle → 11

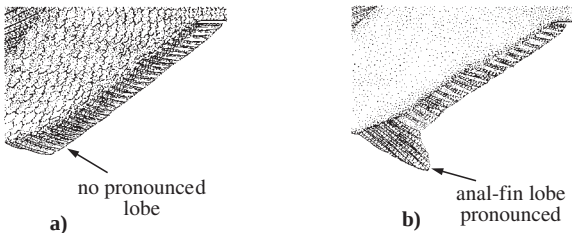


Fig. 15 anal fin

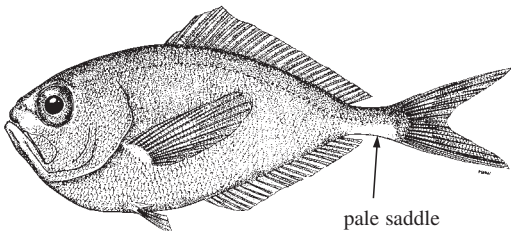


Fig. 16 *Brama pauciradiata*

- 11a. Pectoral fins situated relatively close to ventral surface, distance from pectoral-fin base to pelvic-fin base less than 12.5% standard length (Fig. 17); scales in longitudinal series usually more than 59 (60 to 68); anal-fin rays usually 28 or fewer (25 to 29) (Fig. 17)
..... *Brama dussumieri*
- 11b. Pectoral fins situated well away from ventral surface, distance from pectoral-fin base to pelvic-fin base exceeding 12.5% standard length (Fig. 18); scales in longitudinal series fewer than 59 (48 to 57); anal-fin rays mainly 29 or more (28 to 31) → 12

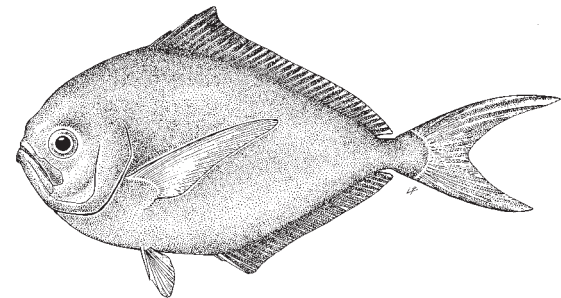


Fig. 17 *Brama dussumieri*

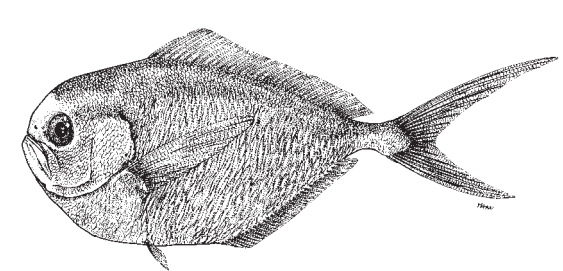


Fig. 18 *Brama orcini*

- 12a. Distance from snout to pectoral-fin origin usually exceeding 30% standard length in specimens smaller than 20 cm standard length; length of upper caudal-fin lobe less than 40% standard length in specimens less than 8 cm standard length; total vertebrae 37 to 40 (mostly 38 or 39) (Fig. 18) *Brama orcini*

- 12b. Specimens exceeding 10 cm unknown; distance from snout to pectoral-fin origin usually less than 30% standard length; length of upper caudal-fin lobe more than 50% standard length; total vertebrae 40 or more (40 to 42) (Fig. 19) . . . *Brama myersi*

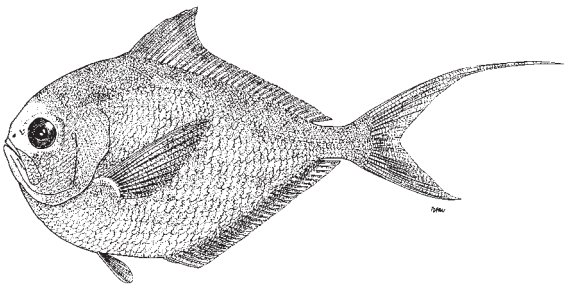


Fig. 19 *Brama myersi*

- 13a. Head very prominently arched; anal-fin rays mostly 30 or more (rarely 29); total vertebrae 41 to 45 (rarely 41) (Fig. 20) *Brama brama*
- 13b. Head moderately arched; anal-fin rays mostly 29 or fewer (rarely 30); total vertebrae 39 to 42 (rarely 42) (Fig. 21) *Brama australis*

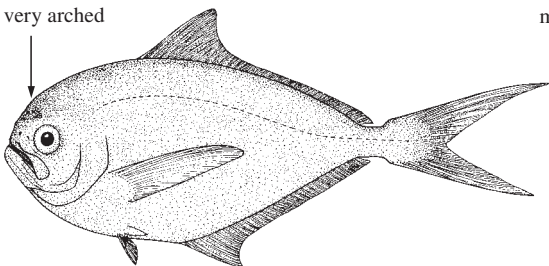


Fig. 20 *Brama brama*

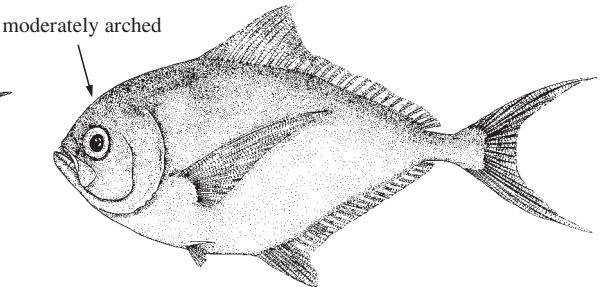


Fig. 21 *Brama australis*

List of species occurring in the area

The symbol  is given when species accounts are included.

-  *Brama australis* Valenciennes, 1840
-  *Brama brama* (Bonnaterre, 1788)
-  *Brama dussumieri* Cuvier, 1831
-  *Brama myersi* Mead, 1972
-  *Brama orcini* Cuvier, 1831
-  *Brama pauciradiata* Moteki, Fujita, and Last, 1995
-  *Eumegistus illustris* Jordan and Jordan, 1922
-  *Pteraclis aesticola* (Jordan and Snyder, 1901)
-  *Pteraclis velifera* (Pallas, 1769)
-  *Pterycombus petersii* (Hilgendorf, 1878)
-  *Taractes asper* Lowe, 1843
-  *Taractes rubescens* (Jordan and Jordan, 1887)
-  *Taractichthys longipinnis* (Lowe, 1843)
-  *Taractichthys steindachneri* (Döderlein, 1883)

Reference

Mead, G.W. 1972. Bramidae. *Dana Rept*, 81:1-166.