

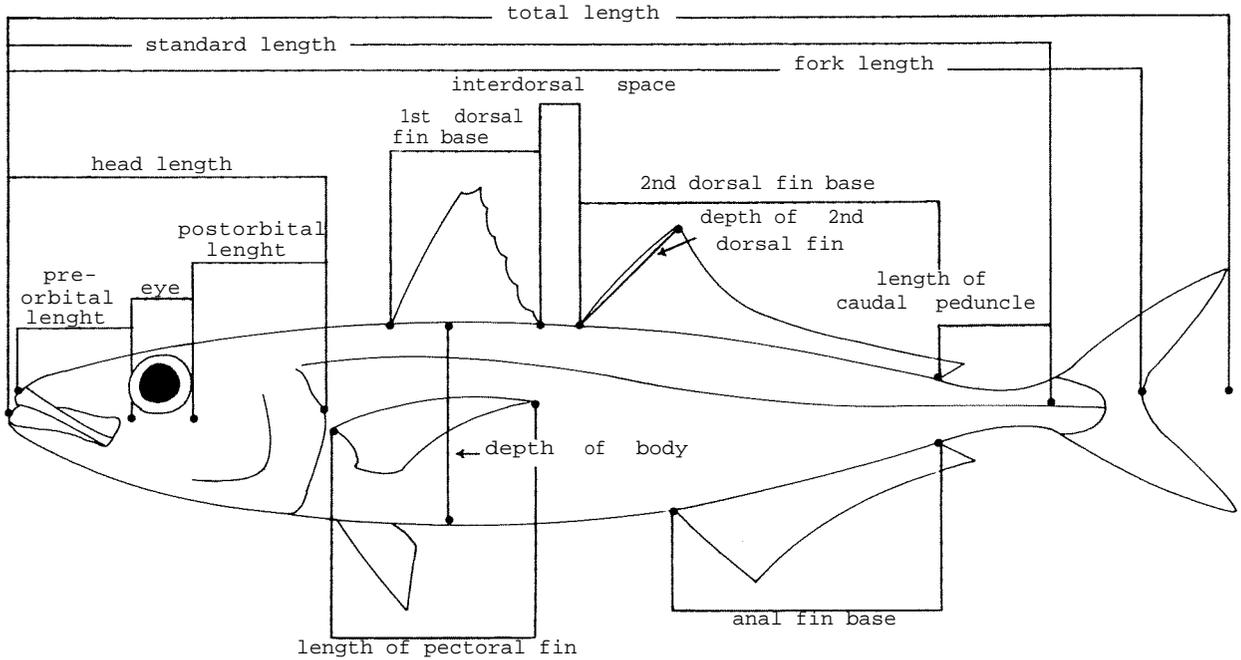
BONY FISHES

[click for previous page](#)

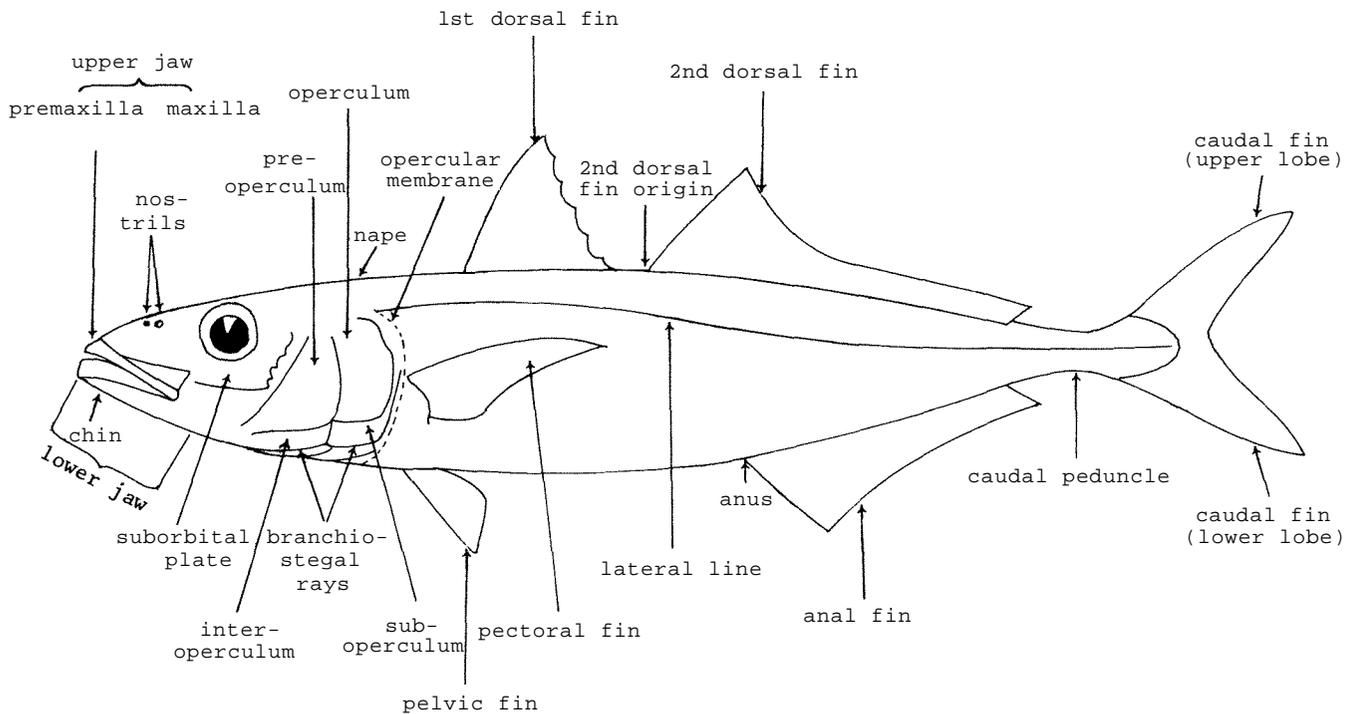
TECHNICAL TERMS

A. Principal Measurements Used

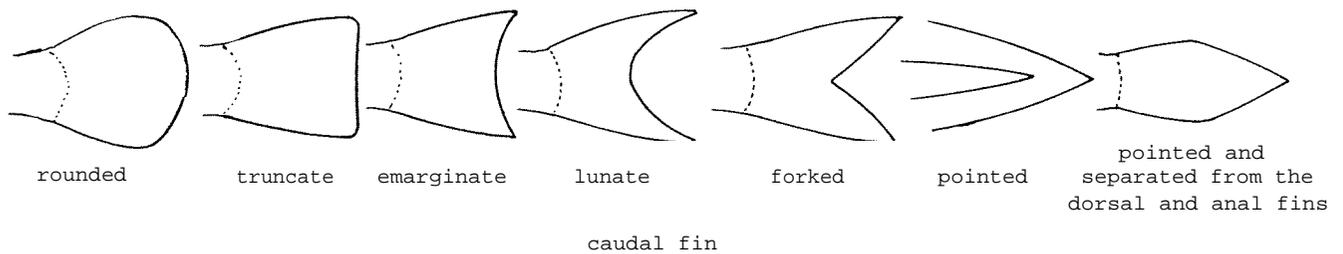
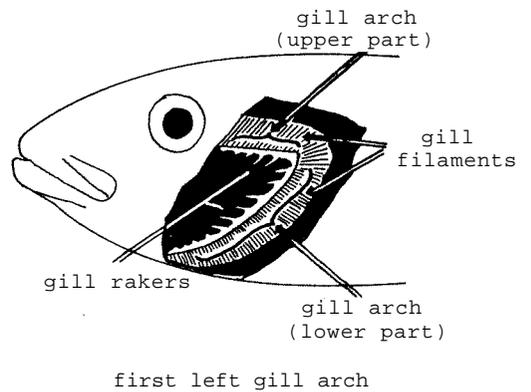
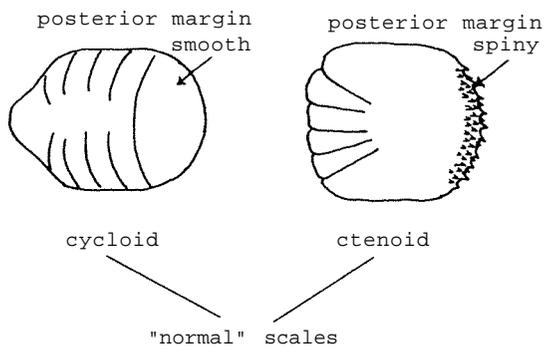
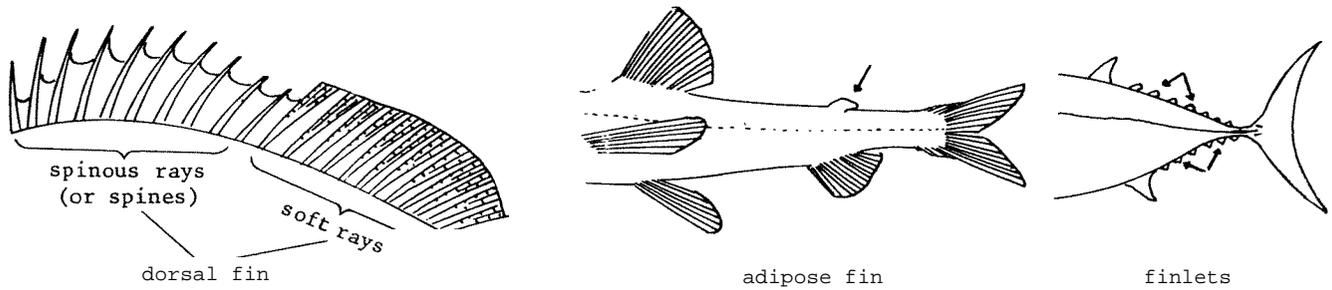
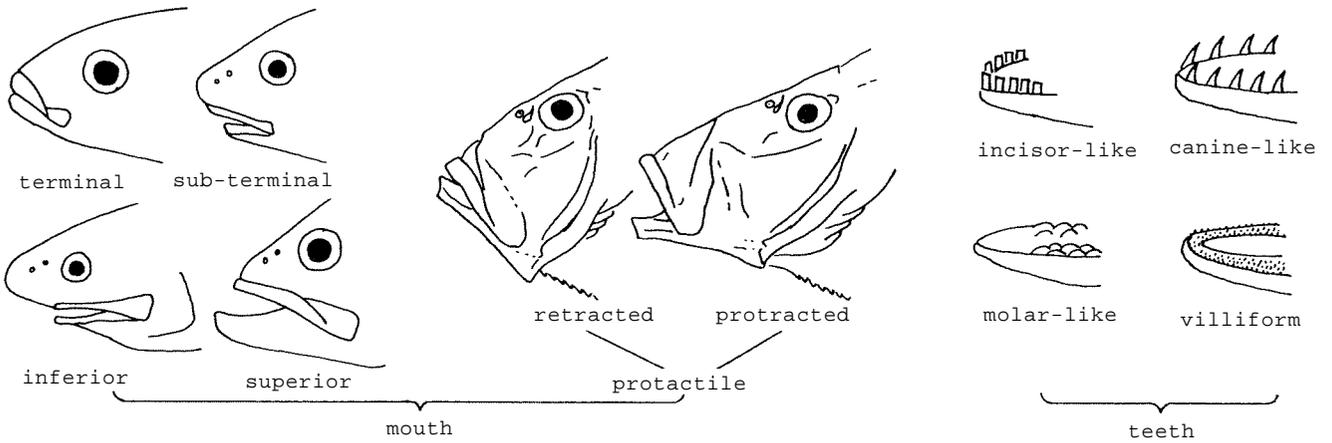
(shortest distance between the points marked: •)



General Nomenclature of the External Morphology



B. Details



BONY FISHES

LIST OF FAMILIES WHICH INCLUDE FISHES OF ECONOMIC INTEREST
(Code numbers are given for those families for which
Identification Sheets are included. Families restricted
to temperate waters are marked with an asterisk)

<u>Code</u>	<u>Family Name</u>	<u>Common Names used here</u>
	Acanthuridae	Surgeonfishes
	Albulidae	Bonefishes
	*Aplodactylidae	
ARIID	Ariidae (Tachysuridae)	Sea catfishes
ARIOM	Ariommidae	Driftfishes
	*Ariommidae	Australian salmons
	Atherinidae	Silversides
BALIST	Balistidae (including Aluteridae, Monacanthidae)	Filefishes (Triggerfishes, Leatherjackets)
	Berycidae	Alfonsinos
	Belonidae	Needlefishes
BOTH	Bothidae	Lefteye flounders
	Branchiostegidae	Tilefishes
CARAN	Carangidae	Jacks (Scads, Trevallies, Crevalles, Runners, Cavallas, Horse mackerels, Pompanos)
CENTRP	Centropomidae (including Ambassidae, Chandidae, Latidae)	Sea perches (Cock-ups)
	Chaetodontidae	Butterflyfishes
CHAN	Chanidae	Milkfishes
	*Cheilodactylidae	Jackassfishes (Morwongs)
CHIROC	Chirocentridae	Wolfherrings
	*Chironemidae	
	Cirrhitidae	Hawkfishes
CLUP	Clupeidae (including Dorosomatidae, Dussumieriidae)	Herrings (Sardines, Shads, Gizzard shads, Ilishas)
	*Congiopodidae	Horsefishes
	Congridae	Conger eels
CORY	Coryphaenidae	Dolphinfishes (Dolphins)
CYNO	Cynoglossidae	Tongue soles
DREP	Drepanidae (here separated from Ephippidae)	Sicklefishes
ELOP	Elopidae	Tenpounders (Ladyfishes)
ENGR	Engraulidae (including Stolephoridae)	Anchovies
	*Enoplosidae	
EPHIP	Ephippidae (excluding Drepanidae, Platacidae)	Spadefishes
	Exocoetidae (excluding Hemirhamphidae)	Flyingfishes

<u>Code</u>	<u>Family Name</u>	<u>Common Names used here</u>
	Fistulariidae	Cornetfishes
FORM	Formionidae (Apolectidae)	Black pomfrets
	Gadidae	Codfishes
	*Galaxiidae	
	Gempylidae	Snake mackerels
GERR	Gerreidae	Mojarras (Silver-biddies)
GLAUC	Glaucosomidae	Bigmouth breams
	Gobiidae	Gobies
	Gonorynchidae	Beaked salmons (Sand eels)
	Grammistidae	
HARP	Harpadontidae	Bombay-ducks
	Hemirhamphidae (here separated from Exocoetidae)	Halfbeaks
	Holocentridae	Squirrelfishes
	Istiophoridae	Billfishes (Sailfishes)
	Kuhliidae	Flagtails
	Kyphosidae	Sea chubs (Rudderfishes, Drummers)
	Labridae	Wrasses
LACT	Lactariidae	False trevallies (Milk trevallies)
	Lampridae	Opahs
	*Labridae	Tasmanian trumpeters
LEIOG	Leiognathidae (Equulidae)	Ponyfishes (Slipmouths)
LETH	Lethrinidae (excluding Monotaxidae)	Emperors (Scavengers)
	Lobotidae	Tripletails
LUT	Lutjanidae	Snappers (Jobfishes, Fusiliers)
	Macrouridae	Grenadiers (Rattails)
MEGAL	Megalopidae	Tarpons
	Menidae	
	Moridae	
MUGIL	Mugilidae	Grey mullets
MULL	Mullidae	Goatfishes
MURSOC	Muraenesocidae	Pike congers
	Muraenidae	Morays (Moray eels)
	Myctophidae	Lanternfishes
NEMIP	Nemipteridae (including Scolopsidae)	Threadfin breams (Monocle breams)
	Nomeidae	Man-of-war fishes
	Ophidiidae	Cusk-eels (Brotulas)
	Oplegnathidae	
	Pempferidae	Sweepers
	*Pentacerotidae	Armourheads
PENTAP	Pentapodidae	Large-eye breams
	Platacidae (here separated from Ephippidae)	Batfishes

<u>Code</u>	<u>Family Name</u>	<u>Common Names used here</u>
	Platycephalidae	Flatheads
	Pleuronectidae	Righteye flounders
	Plotosidae	
POLYN	Polynemidae	Threadfins (Tasselfishes)
	Pomacentridae	
POMAD	Pomadasyidae (including Gaterinidae, Pristipomidae, Plectorhynchidae)	Grunts (Sweetlips)
POMAT	Pomatomidae	Bluefishes
PRIAC	Priacanthidae	Bigeyes (Bulleyes)
PSET	Psettodidae	Indian halibuts
RACH	Rachycentridae	Cobias (Sergeantfishes)
	*Salmonidae	Salmons (Trouts)
	Scaridae	Parrotfishes
	Scatophagidae	Scats
SCIAEN	Sciaenidae (including Otolithidae)	Croakers (Drums)
	Scomberesocidae	Sauries
SCOMBR	Scombridae (including Acanthocybiidae, Cybiidae, Gasterochismidae, Katsuwonidae, Scomberomoridae, Thunnidae)	Mackerels and Tunas
	Scorpaenidae	Scorpionfishes
SER	Serranidae (including Anthiidae, Cephalopholidae, Epinephelidae, Plectropomidae)	Groupers and Sea basses
SIGAN	Siganidae	Spinefeet (Rabbitfishes)
SILL	Sillaginidae	Sillagos (Whitings)
SOL	Soleidae (including Achiridae, Synapturidae)	Soles
SPARID	Sparidae (including Denticidae)	Seabreams (Porgies)
SPRY	Sphyraenidae	Barracudas
STROM	Stromateidae (Pampidae)	Pomfrets
SYNOD	Synodontidae	Lizardfishes
	Tetraodontidae	Puffers
THER	Theraponidae	Therapons (Therapon-perches)
TRICH	Trichiuridae (including Lepidopidae)	Hairtails (Cutlassfishes)
	Triglidae	Searobins (Gurnards)
	Uranoscopidae	Stargazers
	Xiphiidae	Swordfishes
	*Zeidae	Dories

BONY FISHES

AID TO IDENTIFICATION OF FISH FAMILIES OF ECONOMIC INTEREST

A. CONSPICUOUS CHARACTERS

Certain features will help to identify some, although not necessarily all, members of particular families. In parenthesis are given the page numbers of the Picture Guide and some additional features worth checking here first.

- BODY Long, cylindrical, eel-like: Anguillidae (5), Congridae (5), Muraenesocidae (5, teeth), Muraenidae (5, pectoral fins)
- Strongly elongate, not eel-like: Belonidae (5, head), Chirocentridae (4, teeth), Fistulariidae (5, mouth), Gempylidae (5, teeth, finlets), Hemirhamphidae (5, head), Scomberesocidae (5, head), Trichiuridae (5, teeth)
- Flattened, eyes on both sides: Drepanidae (11), Ehippidae (11), Formionidae (12), Leiognathidae (11, mouth), Menidae (11), Platacidae (11), Scatophagidae (11, anal fin), Stromateidae (12, pelvic fins)
- Flattened, eyes on one side: Bothidae (15), Cynoglossidae (15, pectoral fins), Pleuronectidae (16), Psettodidae (16), Soleidae (16, pectoral fins)
- HEAD Lizard-like: Synodontidae (6)
- Strongly flattened: Platycephalidae (13)
- Very spiny: Berycidae (14), Holocentridae (14), Scorpaenidae (13, pectoral fins), Triglidae (13, pectoral fins)
- MOUTH Pointed beak: Belonidae (5), Hemirhamphidae (5), Istiophoridae (13, keels), Scomberesocidae (5, finlets), Xiphiidae (13, keels)
- Tube-like: Fistulariidae (5)
- Strongly protractile: Gerreidae (11), Leiognathidae (11), Zeidae (15, scutes)
- Pores on chin: Pomadasysidae (8), Sciaenidae (8, anal fin)
- TEETH Fang-like: Chirocentridae (4, dorsal fin), Gempylidae (5, finlets), Muraenesocidae (5), Sphyraenidae (7), Trichiuridae (5)
- Fused into plates: Oplegnathidae (10), Scaridae (14), Tetraodontidae (16)
- Molar-like: Lethrinidae (8), Pentapodidae (8), Sparidae (8)
- BARBELS On chin only: Gadidae (7), Mullidae (7)
- Around mouth: Ariidae (6), Gadidae (7), Plotosidae (6)
- FINLETS After dorsal and anal fins: Carangidae (12, anal fin), Gempylidae (5, teeth), Istiophoridae (13, mouth), Scomberesocidae (5), Scombridae (13, keels), Xiphiidae (13, mouth)

- DORSAL FIN Short, far back on body: Belonidae (5, mouth), Chirocentridae (4, teeth),
Fistulariidae (5, mouth), Galaxiidae (6), Gonorynchidae (6),
Hemirhamphidae (5, mouth), Scomberesocidae (5, finlets),
Tetraodontidae (16, teeth)
- Long, far forward on body: eel-like fishes (5), flat-fishes (15,16),
Branchiostegidae (10), Congiopodidae (13, pectoral fins),
Coryphaenidae (12), Gempylidae (5, finlets), Ophidiidae (7),
Trichiuridae (5, teeth)
- Joined to caudal fin: eel-like fishes (5), Cynoglossidae (15)
Macrouridae (7), Plotosidae (6)
- 2 short dorsal fins, well separated from each other: Atherinidae (7),
Mugilidae (7), Mullidae (7, barbels), Polynemidae (7, pectoral fins),
Scombridae (13, finlets), Sphyraenidae (7)
- With filamentous or elongate fin rays: Carangidae (12, anal fin),
Clupeidae (4, scutes), Leiognathidae (11, mouth), Megalopidae (4),
Nemipteridae (8), Pentapodidae (8), Priacanthidae (8), Sparidae (8,
teeth), Zeidae (15, mouth)
- Small adipose fin: Ariidae (6, barbels), Harpadontidae (6, caudal fin),
Myctophidae (6, light organs), Salmonidae (6), Synodontidae (6, head)
- PECTORAL FINS Absent or very small: Cynoglossidae(15), Muraenidae (5), Soleidae (16)
- Free upper ray(s) or filaments: Engraulidae (4, scutes), Nemipteridae (8)
- Tips of lower rays free: Cheilodactylidae (10), Chironemidae (10),
Cirrhitidae (9), Congiopodidae (13), Platycephalidae (13, head),
Scorpaenidae (13, head)
- Lower rays quite free: Polynemidae (7), Triglidae (13, head)
- PELVIC FINS Absent: eel-like fishes (5), Formionidae (12), Stromateidae (12),
Trichiuridae (5, teeth), Xiphiidae (13)
- Before pectoral fin base: Gadidae (7), Macrouridae (7), Moridae (7),
Ophidiidae (7), Priacanthidae (8); Uranoscopidae (13)
- Reduced to filaments: Ophidiidae (7), Istiophoridae (13)
- 2 spines present: Siganidae (14)
- ANAL FIN Long, joined to caudal fin: eel-like fishes (5), Cynoglossidae (15),
Engraulidae (4, scutes), Macrouridae (7), Plotosidae (6, barbels),
Trichiuridae (5, teeth)
- 2 spines in fin: Branchiostegidae (10, dorsal fin), Formionidae (12, body),
Polynemidae (7, pectoral fins), Pomatomidae (10), Rachycentridae (12),
Sciaenidae (8, caudal fin), Sillaginidae (10)
- 2 detached spines before fin: Carangidae (12, scutes)
- 3 spines in fin: many families
- 4 spines in fin: Berycidae (14), Chaetodontidae (11), Holocentridae (14,
head), Scatophagidae (11, body), Zeidae (15, mouth)
- 7 spines in fin: Siganidae (14)

- CAUDAL FIN Tapering to a fine point: Engraulidae (4, scutes), Macrouridae (7),
Trichiuridae (5, teeth)
- Upper ray filamentous: Nemipteridae (8)
- Middle rays extended: Fistulariidae (5, mouth), Harpadontidae (6)
- Lateral line scales reaching hind margin: Harpadontidae (6),
Polynemidae (7), Sciaenidae (8)
- KEELS Sharp spines on caudal peduncle: Acanthuridae (14)
- Low keels on caudal peduncle: Istiophoridae (13, mouth),
Scombridae (13, finlets), Xiphiidae (13, mouth)
- SCUTES Along belly: Clupeidae (4), Engraulidae (4), Zeidae (15, mouth)
- Along lateral line: Carangidae (12, anal fin), Formionidae (12)
- LIGHT ORGANS Along sides of body: Engraulidae (4, scutes), Myctophidae (6,
adipose fin)

NOTE: The fishes with a general perch-like appearance are the most numerous and difficult to deal with. The following 11 characters are of some assistance:

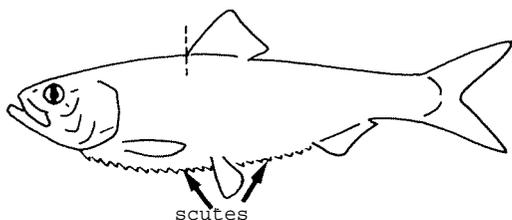
- More spines than soft rays in dorsal fin: Lethrinidae (8),
Theraponidae (9)
- Tips of soft parts of dorsal and anal fins reaching back beyond end of body: Lobotidae (9)
- Soft part of dorsal fin much higher than spinous part: Cirrhitidae (9),
Glaucosomidae (9), Oplegnathidae (10)
- Filaments in fins: Nemipteridae (8)
- Inner margin of pectoral fin attached to body: Priacanthidae (8)
- Anal fin with only 2 spines: Sciaenidae (8)
- Teeth fused in plates: Oplegnathidae (10), Scaridae (14)
- Molar teeth in jaws: Pentapodidae (8), Sparidae (8)
- Pores on chin: Pomadasyidae (8), Sciaenidae (8)
- Scales absent on cheek: Lethrinidae (8)
- Scales reaching to tip of caudal fin: Sciaenidae (8)

B. PICTURE GUIDE TO FAMILIES

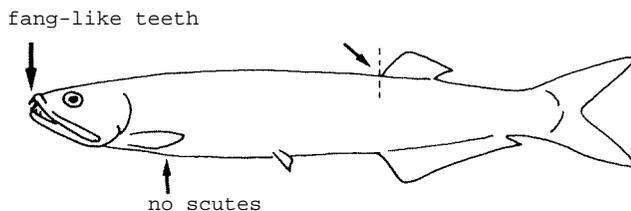
Based mainly on general appearance rather than on natural affinities. Arrows indicate conspicuous characters found in many or all members of a family. Where Identification Sheets are available the Family Code is given. Families restricted to temperate waters are marked with an asterisk. (Redrawn chiefly from Greenwood, Rosen, Weitzman and Myers, 1966).

HERRING-LIKE FISHES

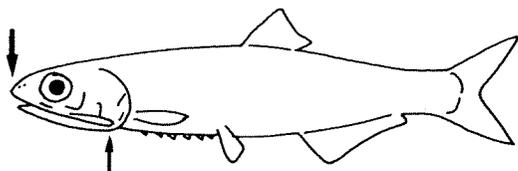
No fin spines; a single, short, dorsal fin;
pelvic fins well behind pectoral fins



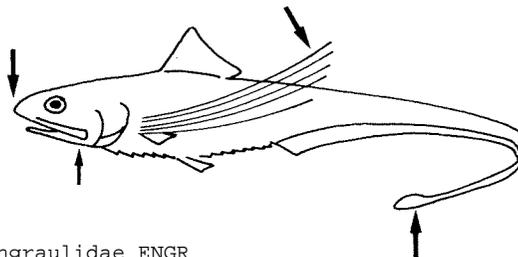
Clupeidae CLUP



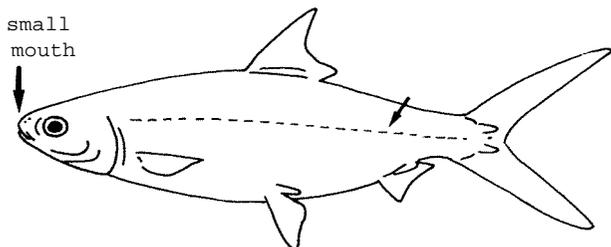
Chirocentridae CHIROC



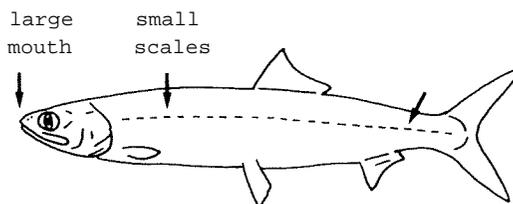
Engraulidae ENGR



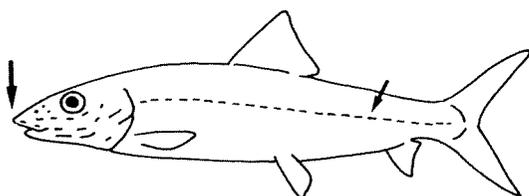
Engraulidae ENGR



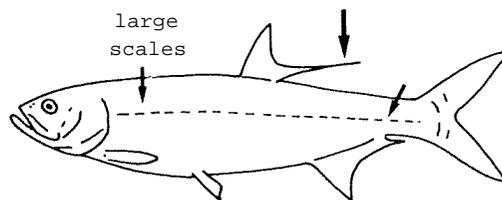
Chanidae CHAN



Elopidae ELOP



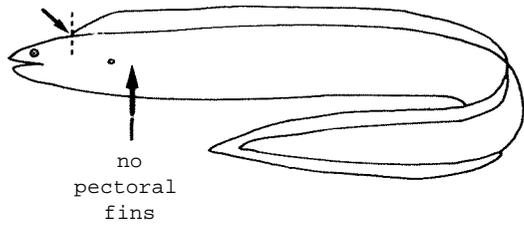
Albulidae



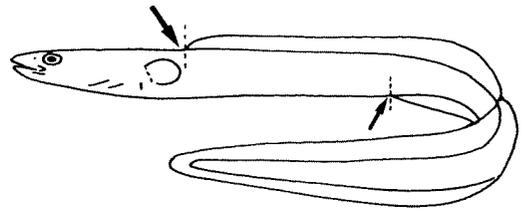
Megalopidae MEGAL

EEL-LIKE FISHES

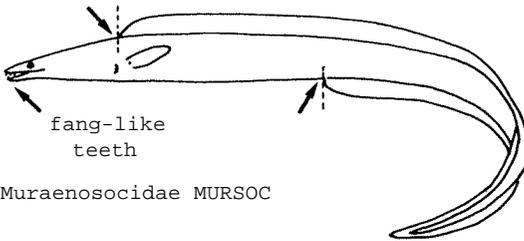
Scales minute or absent; no pelvic fins;
dorsal and anal fins joined posteriorly



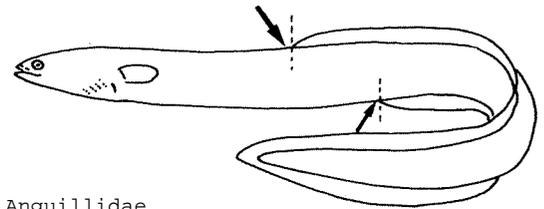
Muraenidae



Congridae



Muraenosocidae MURSOC

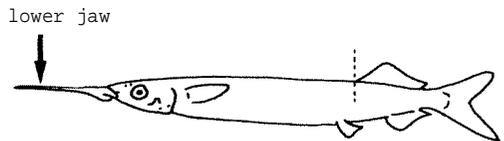


Anguillidae

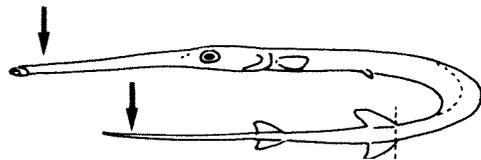
OTHER STRONGLY ELONGATE FISHES



Belonidae



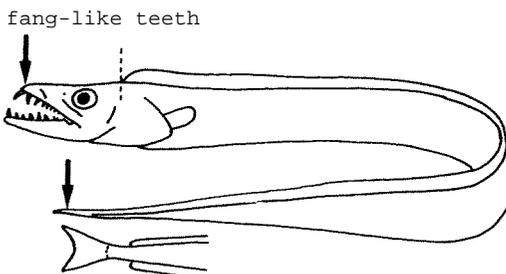
Hemirhamphidae



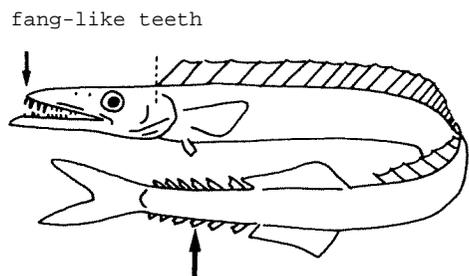
Fistulariidae



Scomberesocidae



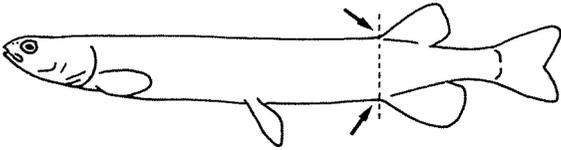
Trichiuridae TRICH



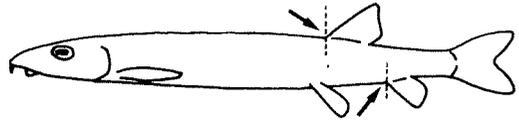
Gempylidae

SALMON-LIKE FISHES

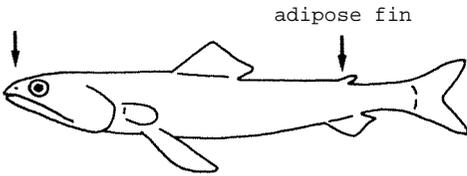
No fin spines; a single short dorsal fin, often plus
adipose fin; pelvic fins well behind pectoral fins



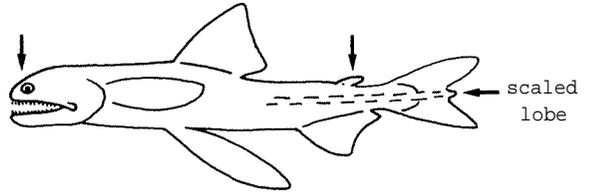
Galaxiidae *



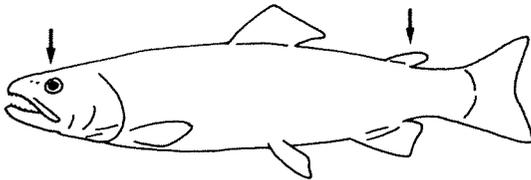
Gonorynchidae



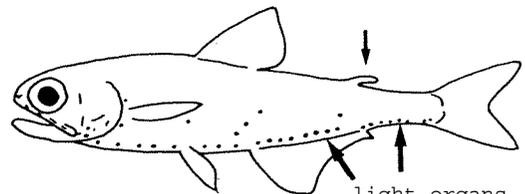
Synodontidae SYNOD



Harpadontidae HARP

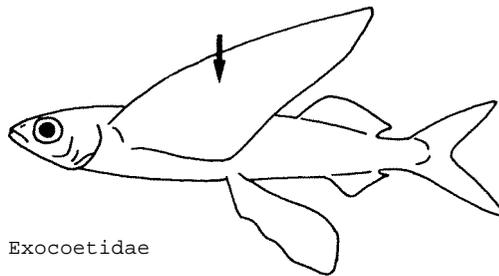


Salmonidae *



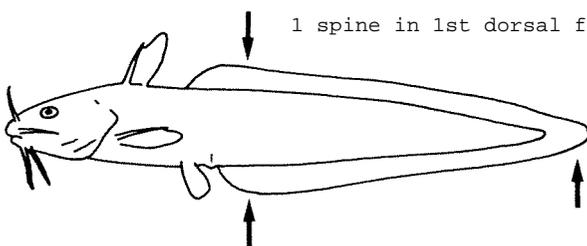
Myctophidae

FLYING FISHES



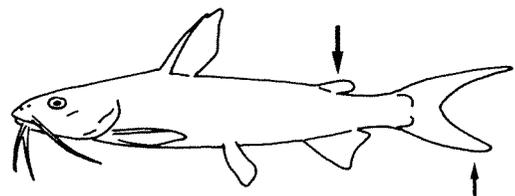
Exocoetidae

CATFISHES



Plotosidae

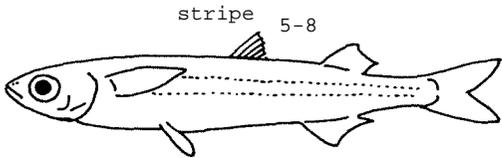
1 spine in 1st dorsal fin; barbels around mouth



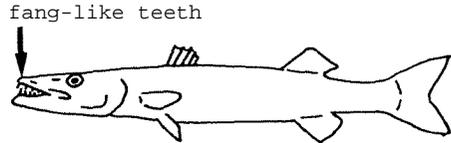
Ariidae ARIID

MULLETS, SILVERSIDES, ETC.~

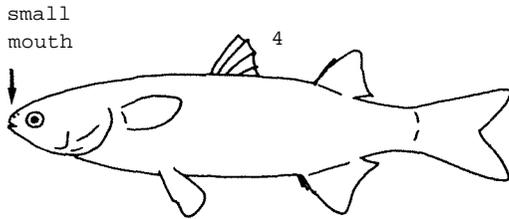
2 short dorsal fins; no strong fin spines



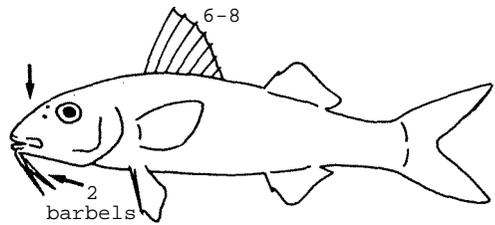
Atherinidae



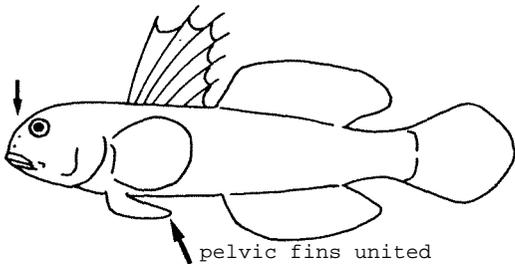
Sphyraenidae SPHY



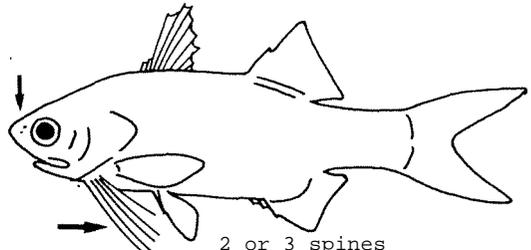
Mugilidae MUGIL



Mullidae MULL



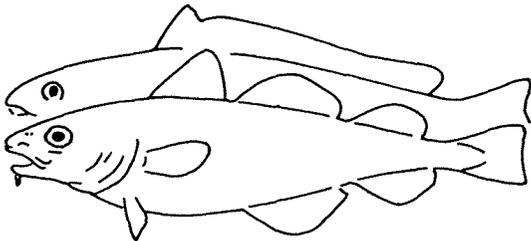
Gobiidae



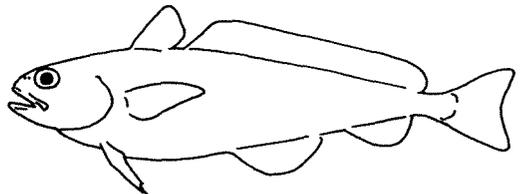
Polynemidae POLYN

COD-LIKE FISHES

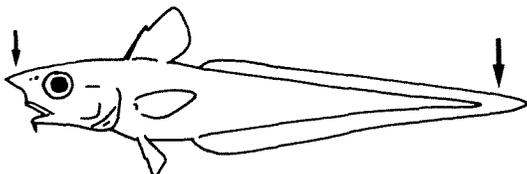
No sharp spines in fins; pelvic fins far forward, sometimes merely a filament', - often barbels on chin, occasionally on snout



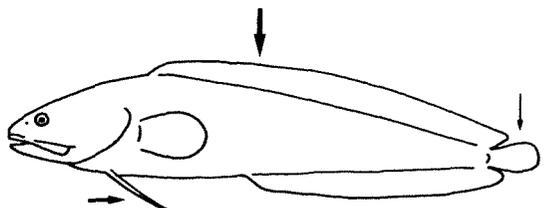
Gadidae



Moridae



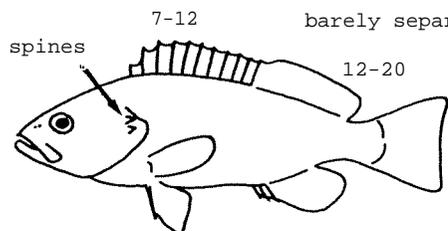
Macrouridae



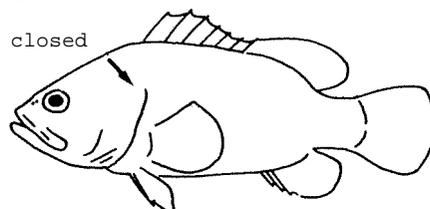
Ophidiidae

TYPICAL PERCH-LIKE FISHES

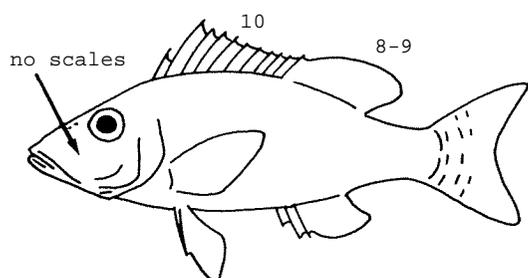
Dorsal fin with spinous and soft parts, the two usually barely separated; fin spines generally pungent



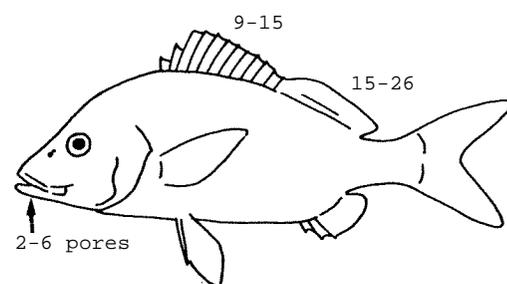
Serranidae SER



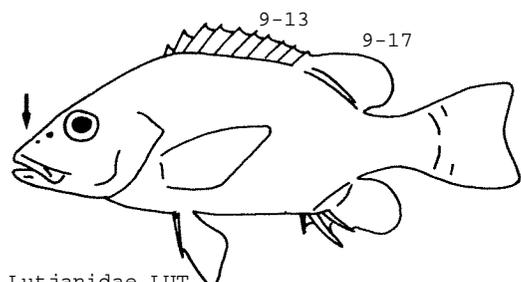
Grammistidae



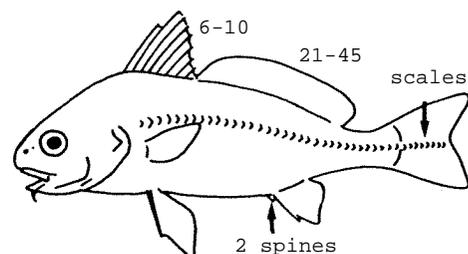
Lethrinidae LETH



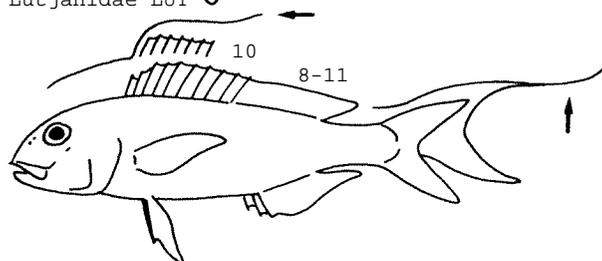
Pomadasyidae POMAD



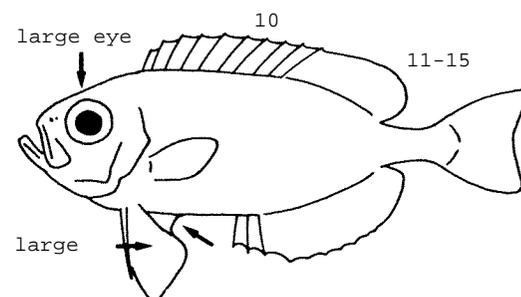
Lutjanidae LUT



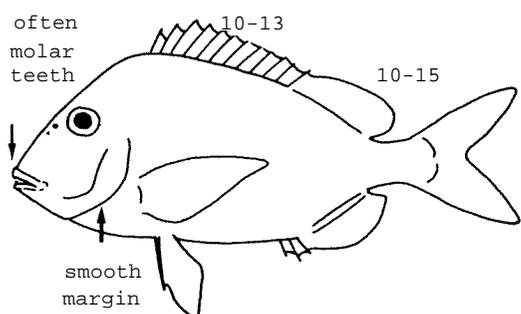
Sciaenidae SCIAEN



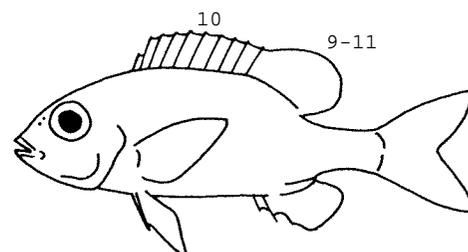
Nemipteridae NEMIP



Priacanthidae PRIAC



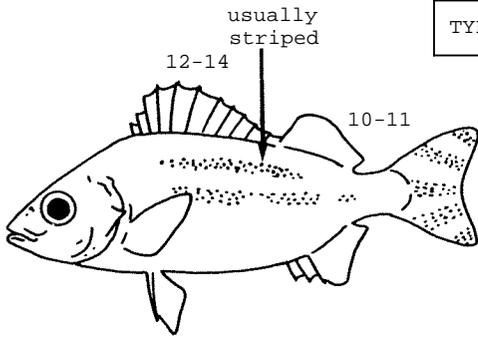
Sparidae SPARID



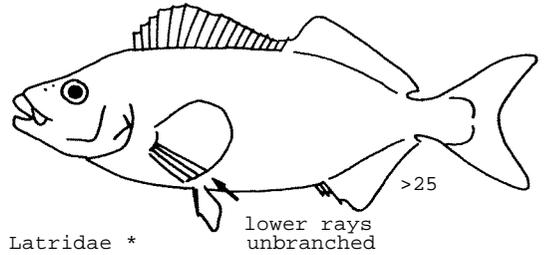
Pentapodidae PENTAD

TYPICAL PERCH-LIKE FISHES

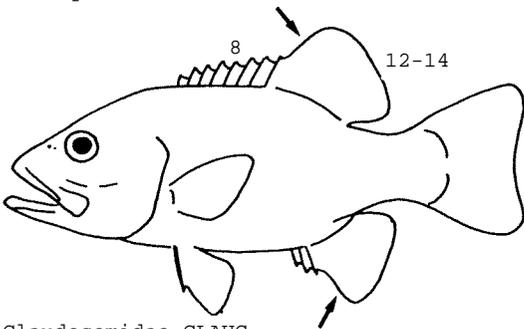
(Continued)



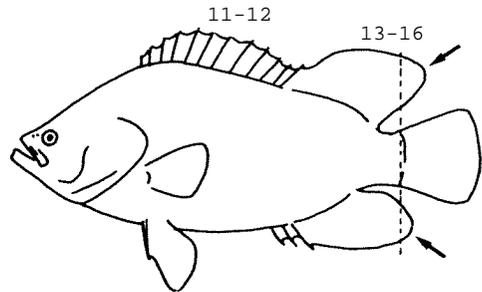
Theraponidae THER



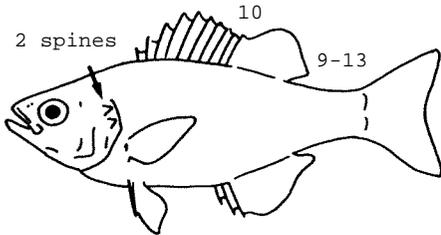
Latridae *



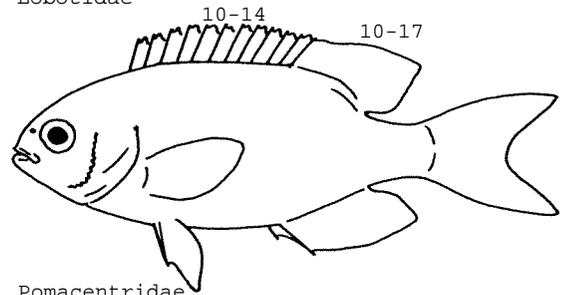
Glaudosomidae GLAUC



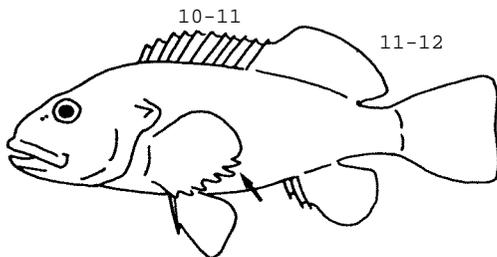
Lobotidae



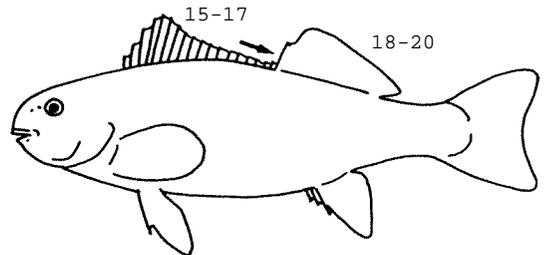
Kuhliidae



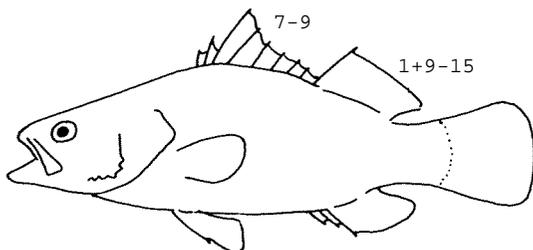
Pomacentridae



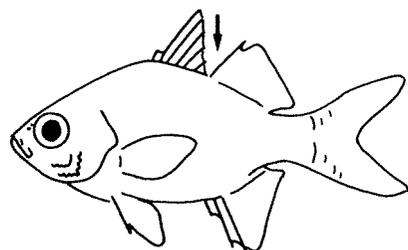
Cirrhitidae



Aplodactylidae *

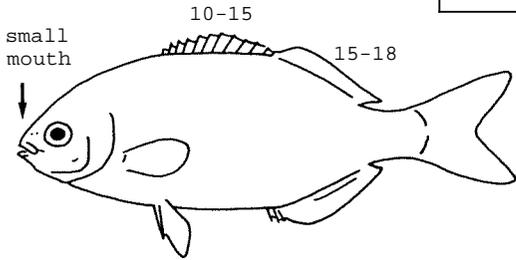


Centropomidae CENTRP

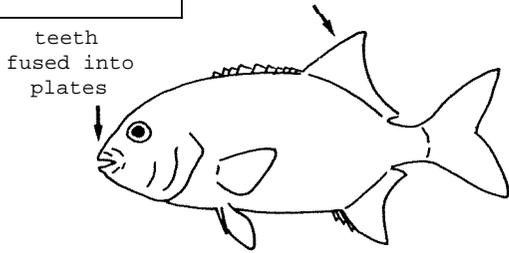


Centropomidae CENTRP

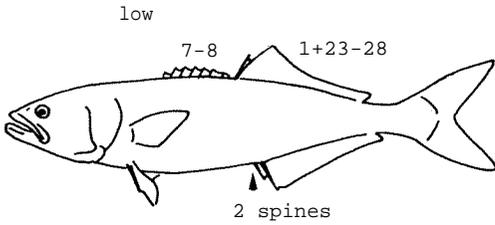
OTHER PERCH-LIKE FISHES



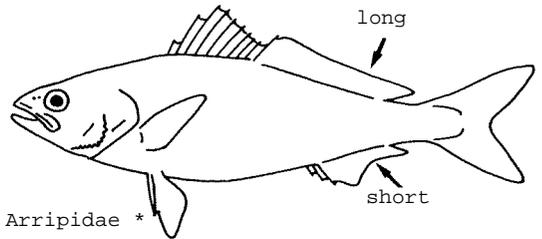
Kyphosidae



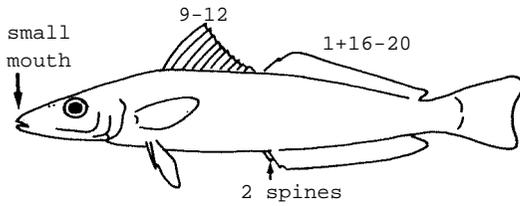
Oplegnathidae



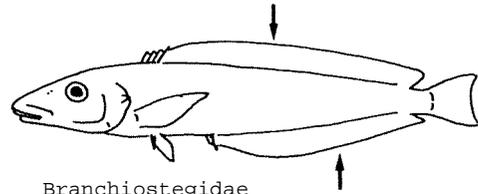
Pomatomidae POMAT



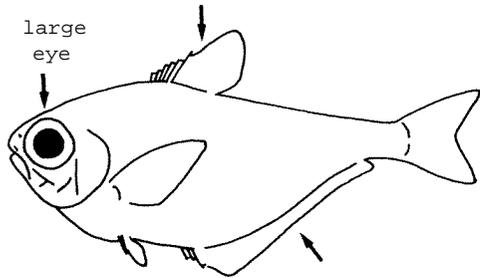
Arripidae *



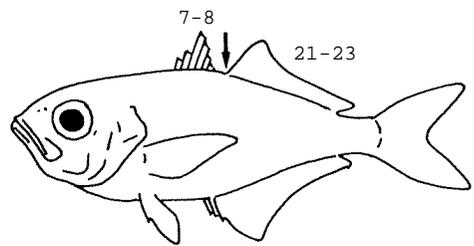
Sillaginidae SILL



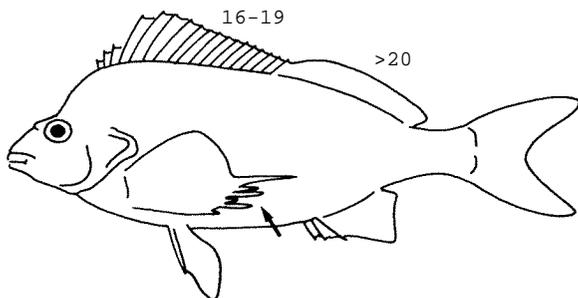
Branchiostegidae



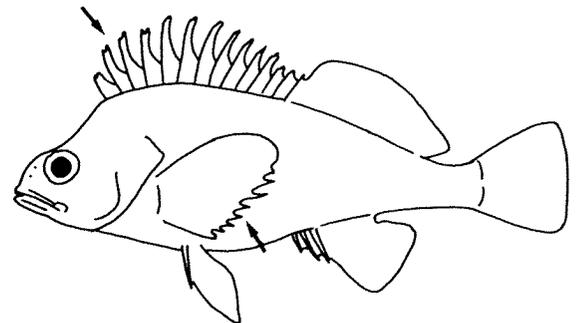
Pempheridae



Lactariidae LACT

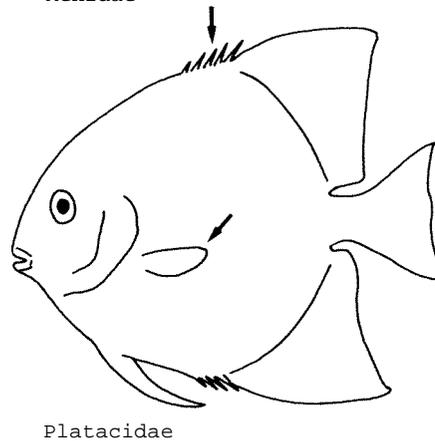
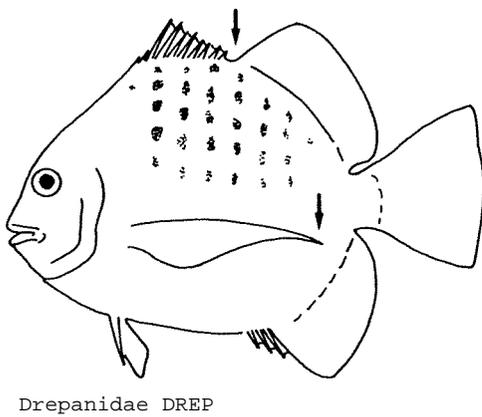
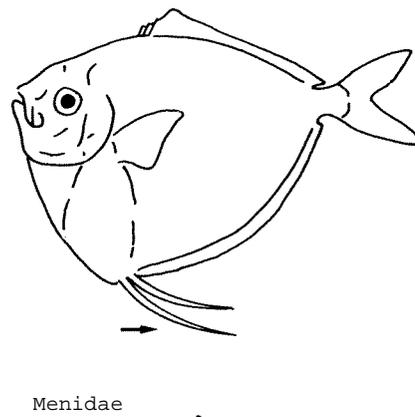
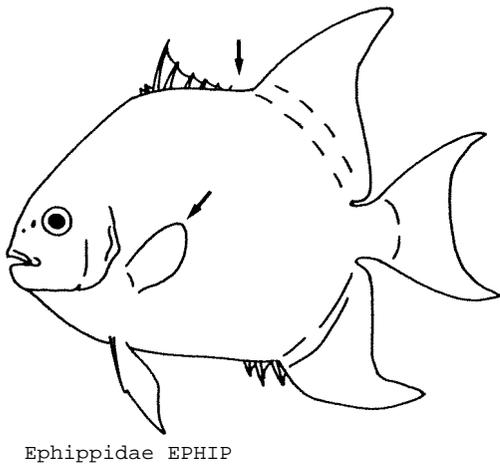
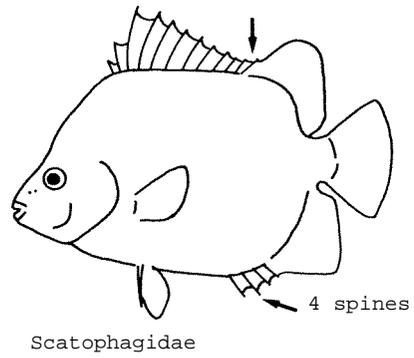
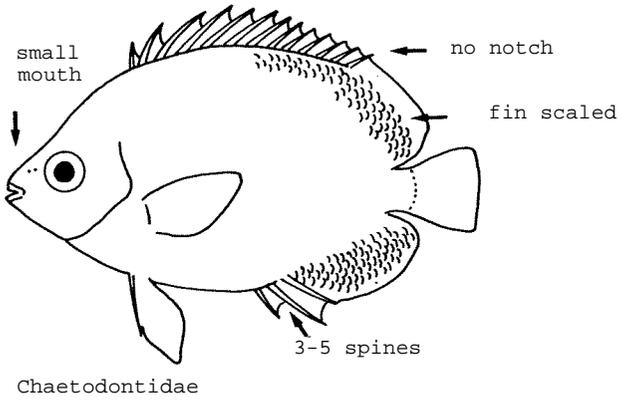
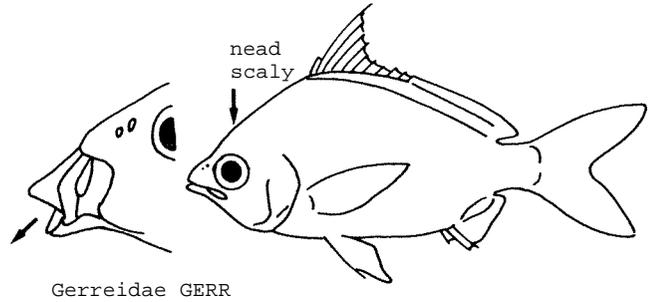
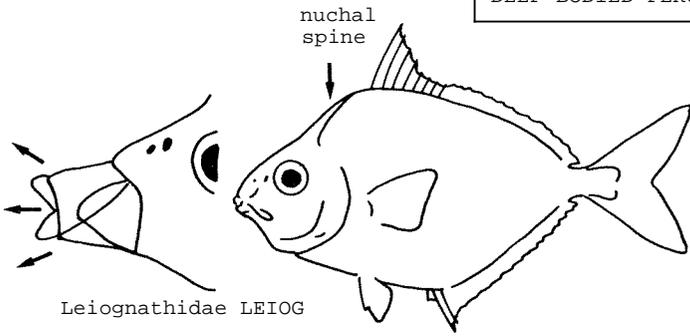


Cheilodactylidae *



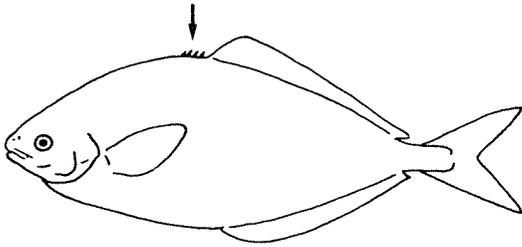
Chironemidae

DEEP-BODIED PERCH-LIKE FISHES

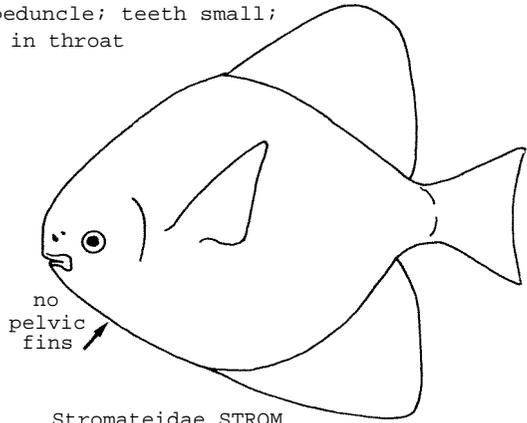


POMFRETS, BUTTERFISHES

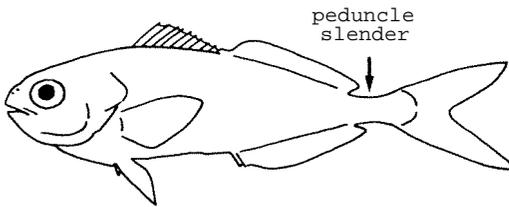
No hard keels on caudal peduncle; teeth small;
toothed sacs in throat



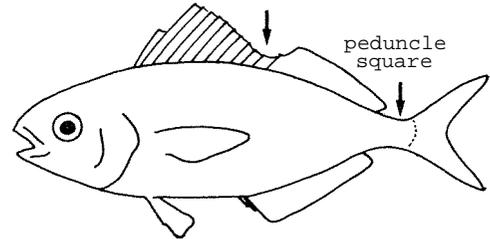
Stromateidae STROM



Stromateidae STROM

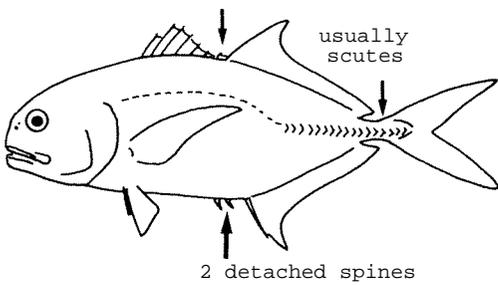


Nomeidae

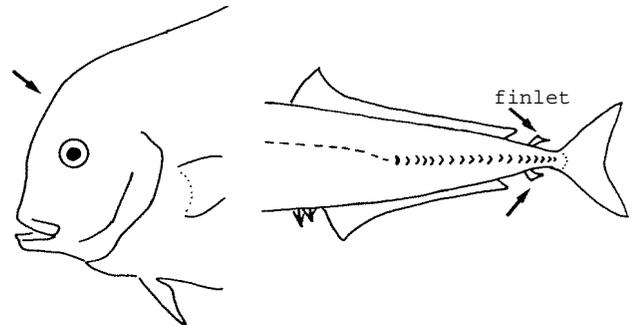


Ariommidae ARIOM

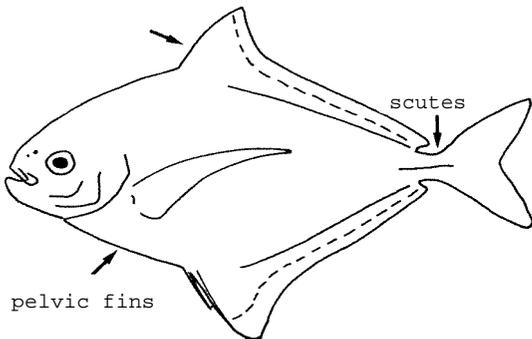
CARANGIDS, KINGFISHES, DOLPHINS, ETC.



Carangidae CARAN

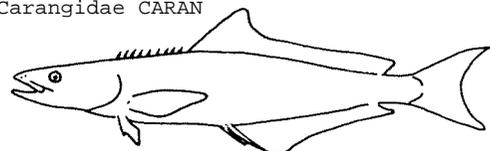


Carangidae CARAN

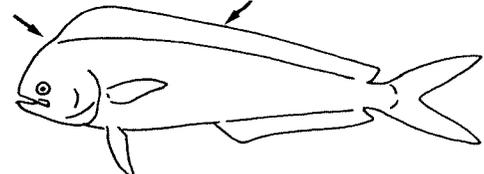


no pelvic fins

Formionidae FORM



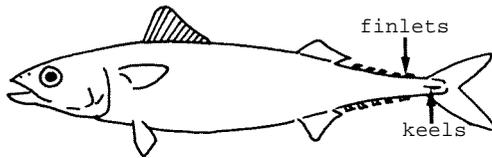
Rachycentridae RACH



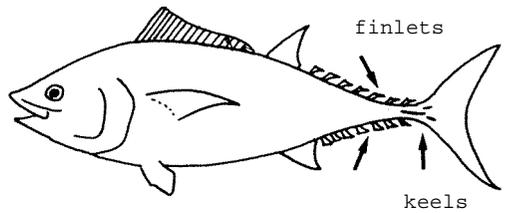
Coryphaenidae CORY

TUNA-LIKE FISHES

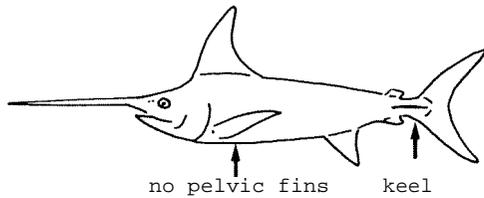
Hard keels on caudal peduncle;
finlets behind dorsal and anal fins



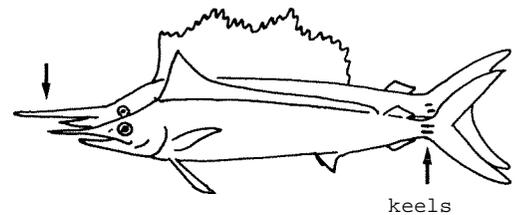
Scombridae SCOMBR



Scombridae SCOMBR



Xiphiidae

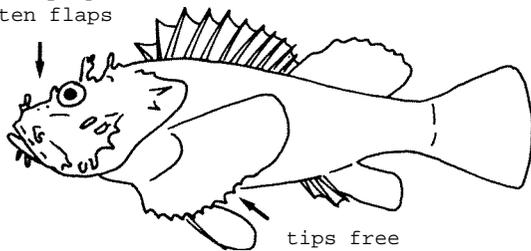


Istiophoridae

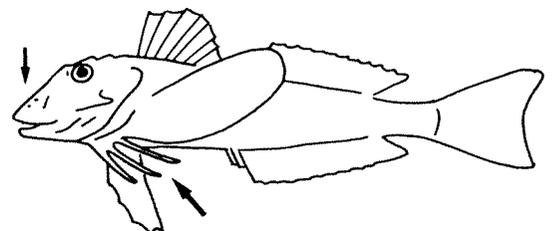
SCORPIONFISHES, FLATHEADS, ETC.

Bony ridge across cheek and/or eyes
on top of head

head spiny;
often flaps

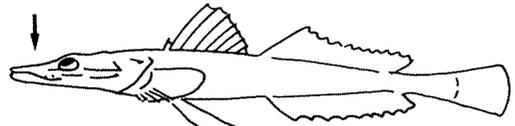


Scorpaenidae



Triglidae

head flat

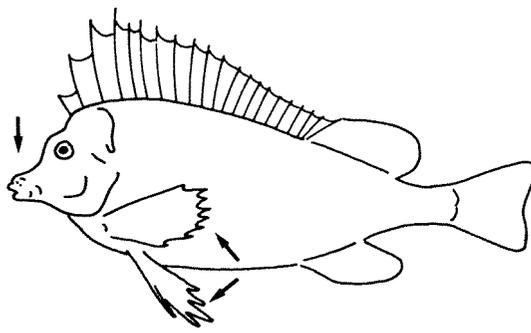


Platycephalidae

eyes on top of head



Uranoscopidae



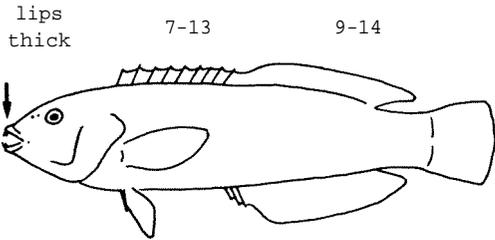
Congiopodidae

BONY FISHES

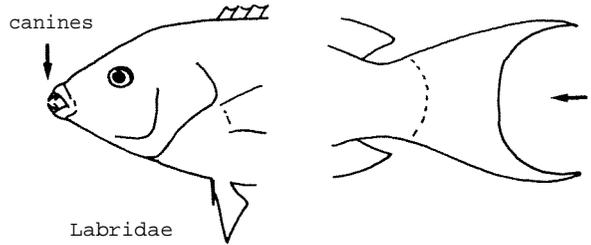
(Aid to Identification)

WRASSES, PARROTFISHES

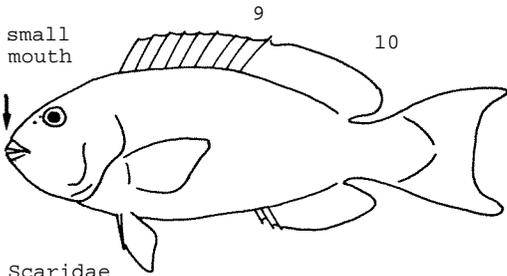
Lips thick or teeth fused into plates;
dorsal fin often single, low



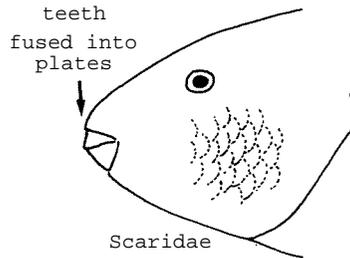
Labridae



Labridae



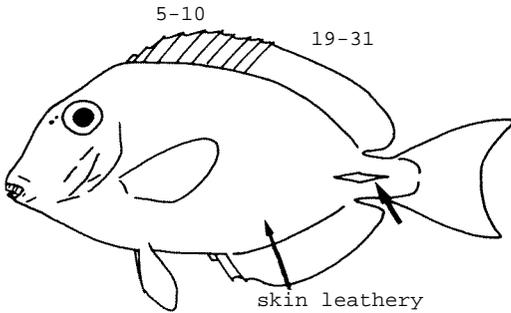
Scaridae



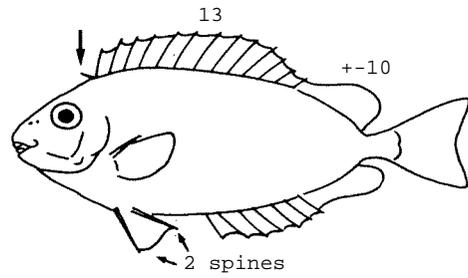
Scaridae

SURGEONFISHES, SPINEFEET

Skin leathery or slimy,
scales small



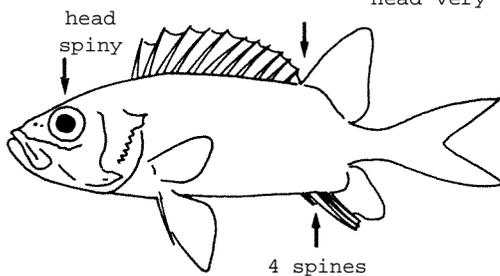
Acanthuridae



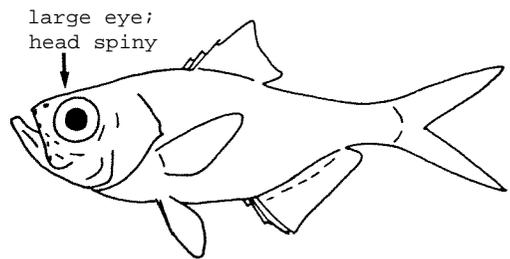
Siganidae SIGAN

SQUIRRELFISHES, ALFONSINOS

Head very spiny and scales rough

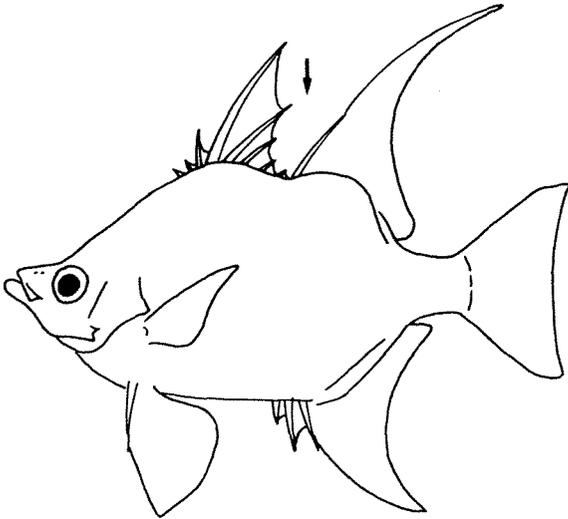


Holocentridae

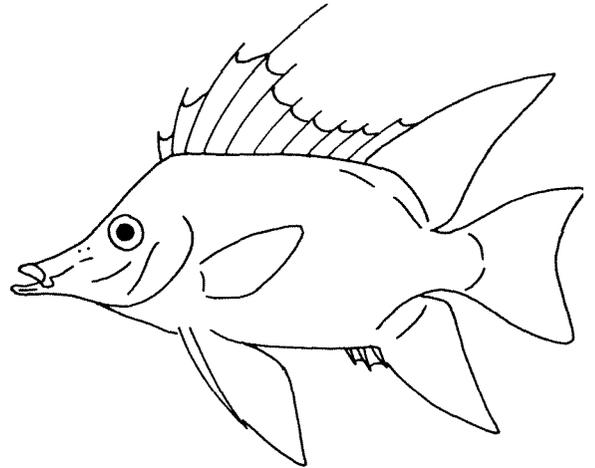


Berycidae

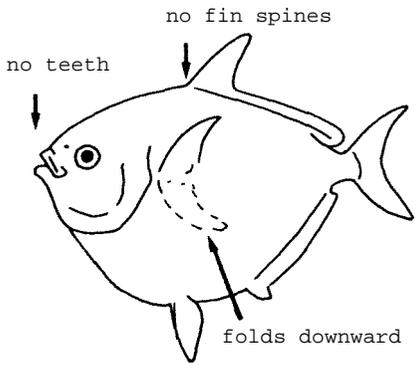
ODD-SHAPED FISHES



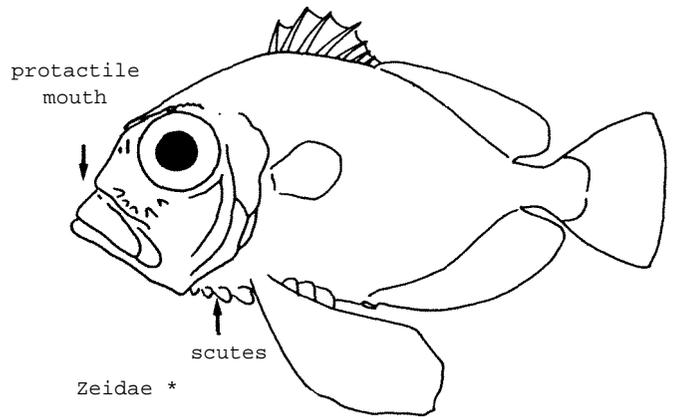
Enoplosidae *



Pentacerotidae



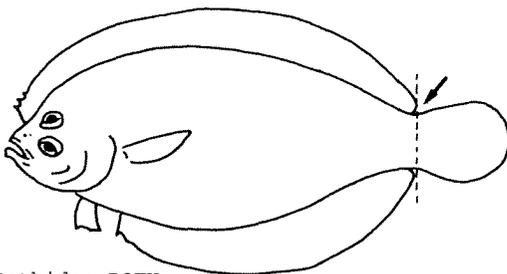
Lampridae



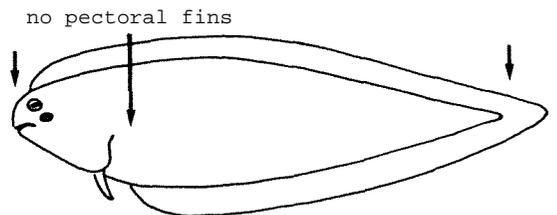
Zeidae *

FLATFISHES

Body flattened, both eyes on same side



Bothidae BOTH



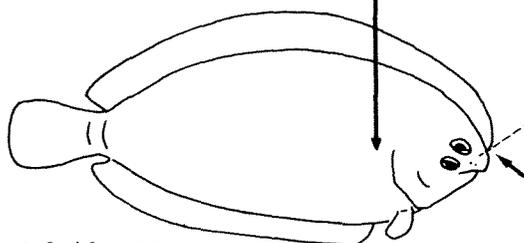
LEFT

Cynoglossidae CYN0

FLATFISHES

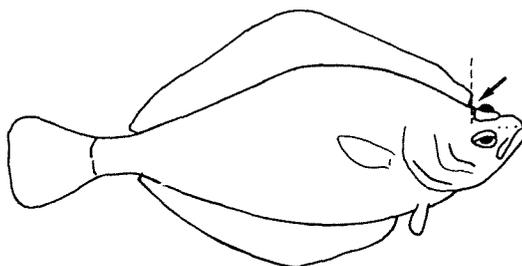
(Continued)

pectoral fins
small or absent



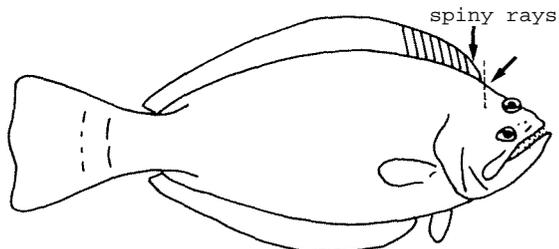
Soleidae SOL

→
RIGHT



Pleuronectidae

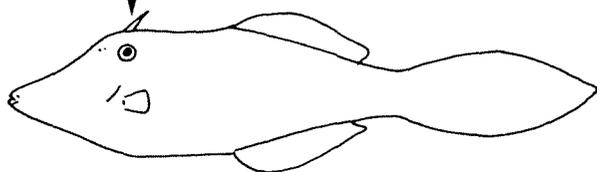
↔
RIGHT or LEFT



Psettodidae PSET

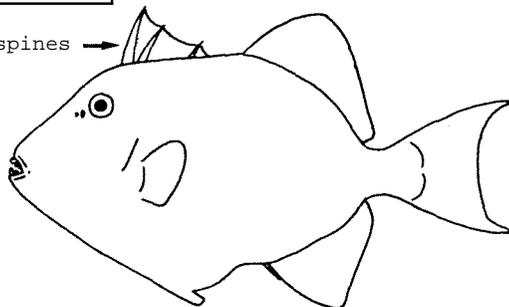
FLATFISHES, TRIGGERFISHES

1 spine



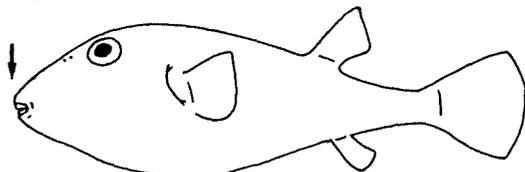
Balistidae BALIST

3 spines



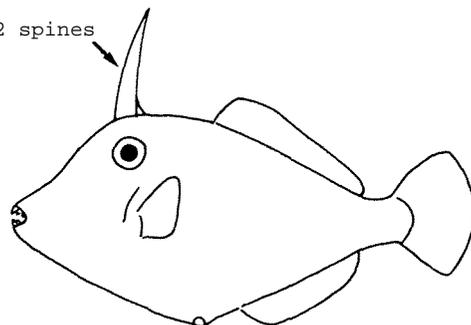
Balistidae BALIST

teeth fused
into plates



Tetraodontidae

2 spines



Balistidae BALIST