Lake 2016

Wetlands for our Future: Sustainable Livelihoods

INDIAN INSTITUTE OF SCIENCE

Energy and Wetlands Research Group

CES

Indian Institute of Science
Bangalore-560012

FISH IDENTIFICATION

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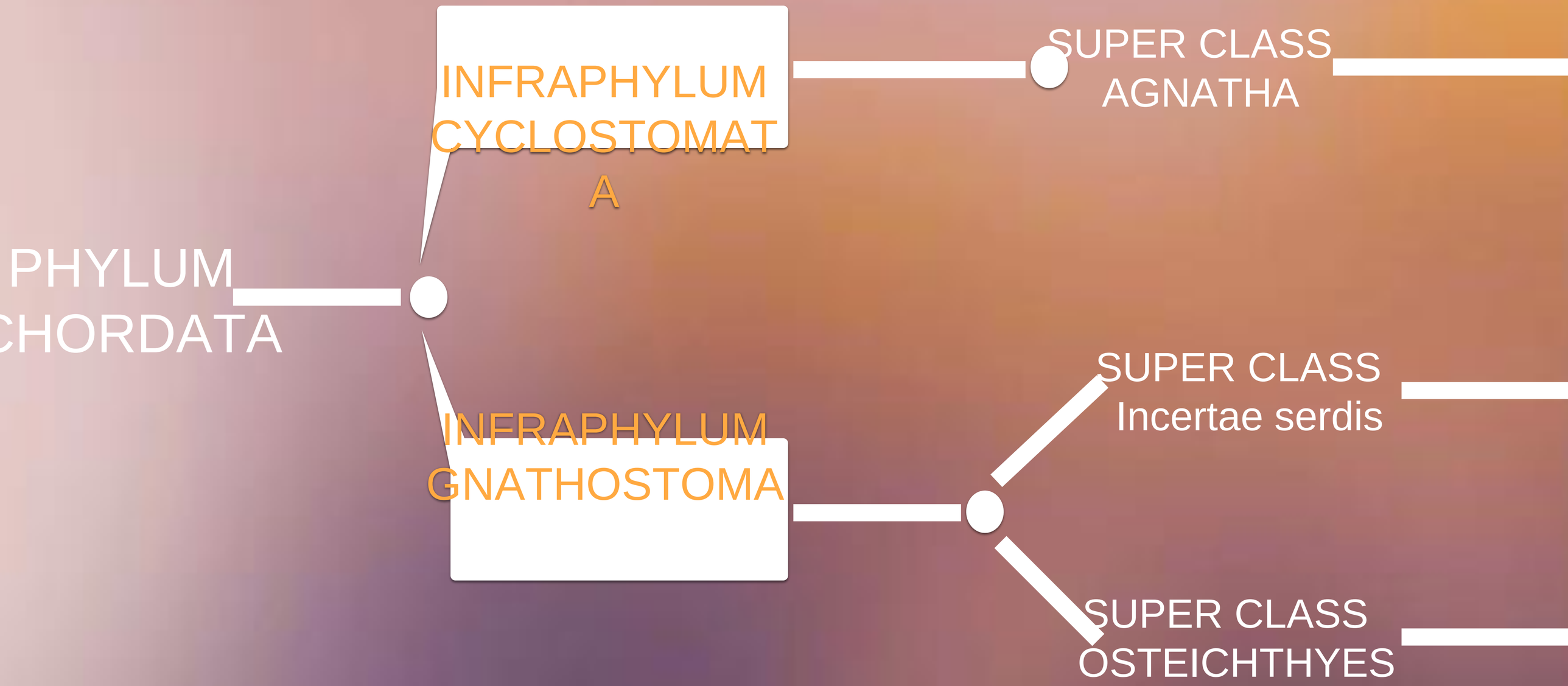

PHYLUM
CHORDATA
INFRAPHYLUM
CYCLOSTOMATA
SUPER CLASS
AGNATHA
INFRAPHYLUM
GNATHOSTOMA
SUPER CLASS
Incertae serdis
SUPER CLASS
OSTEICHTHYES

CLASS MYXINI

CLASS PETROMYZONTIDA

CLASS CONODANTA

CLASS CONDRICHTHYES

CLASS PLACODERMI

CLASS ACANTHODII

CLASS ACTINOPTERYGII

CLASS SARCOPTERYGII

CLASS
PTERASPIDOMORPHI

CLASS
THELODONTI

CLASS
ANASPIDA

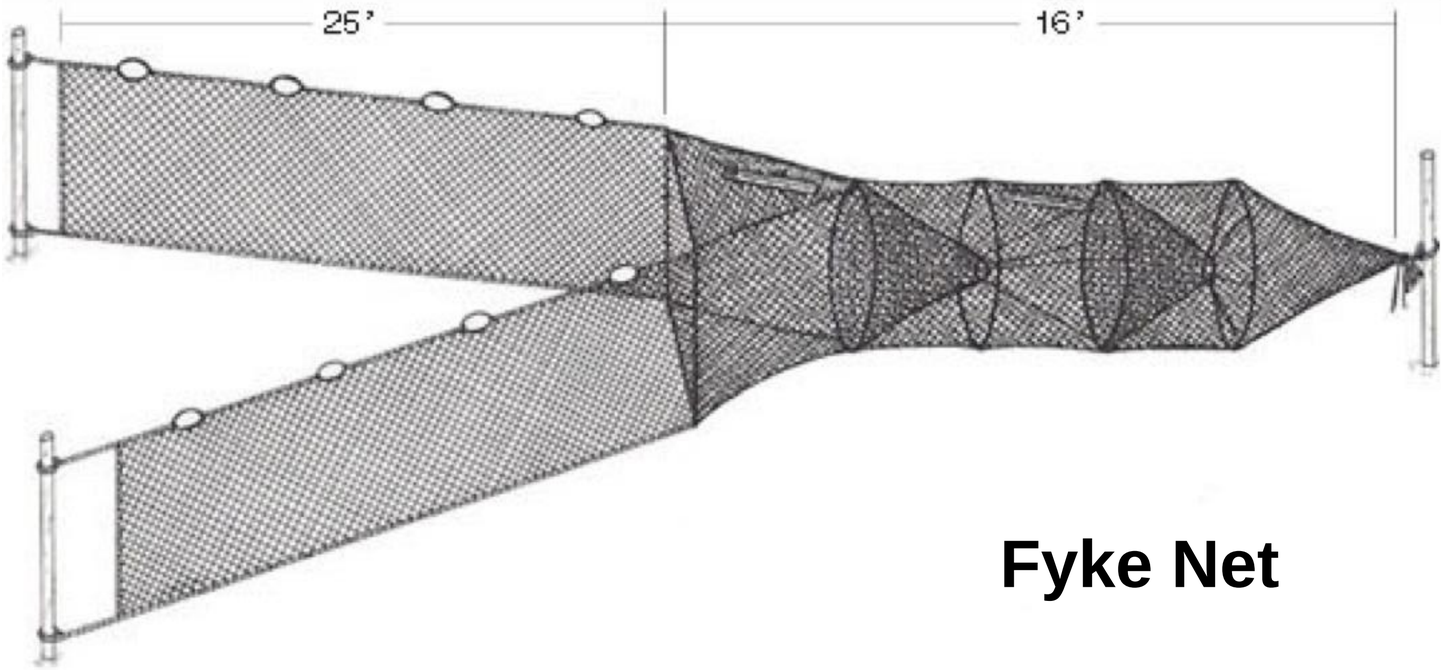
CLASS
CEPHALASPIDOMORPHI

So , What are the Steps

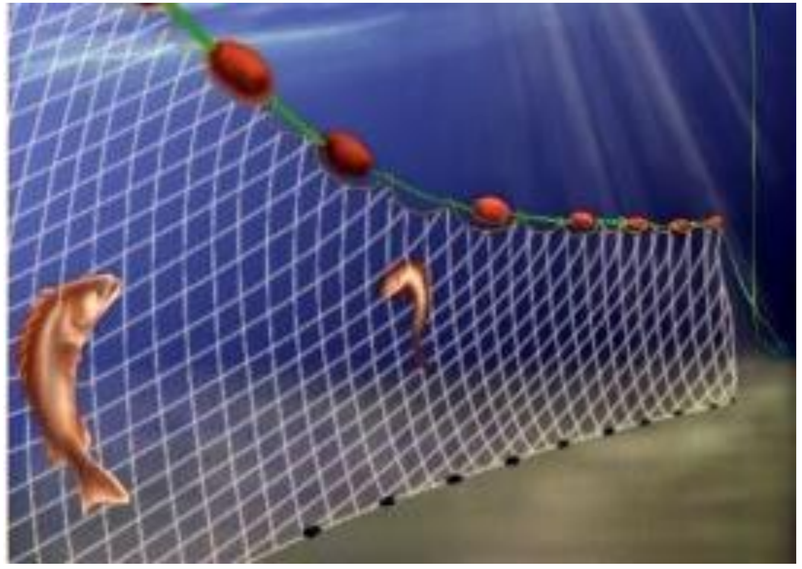
FISH SAMPLING

- What is the purpose of our Sampling ?
- Use suitable gears Gears based on purpose
  - Active Gear/ Sampling
  - Passive Gear/ Sampling

Cast Net



Fyke Net

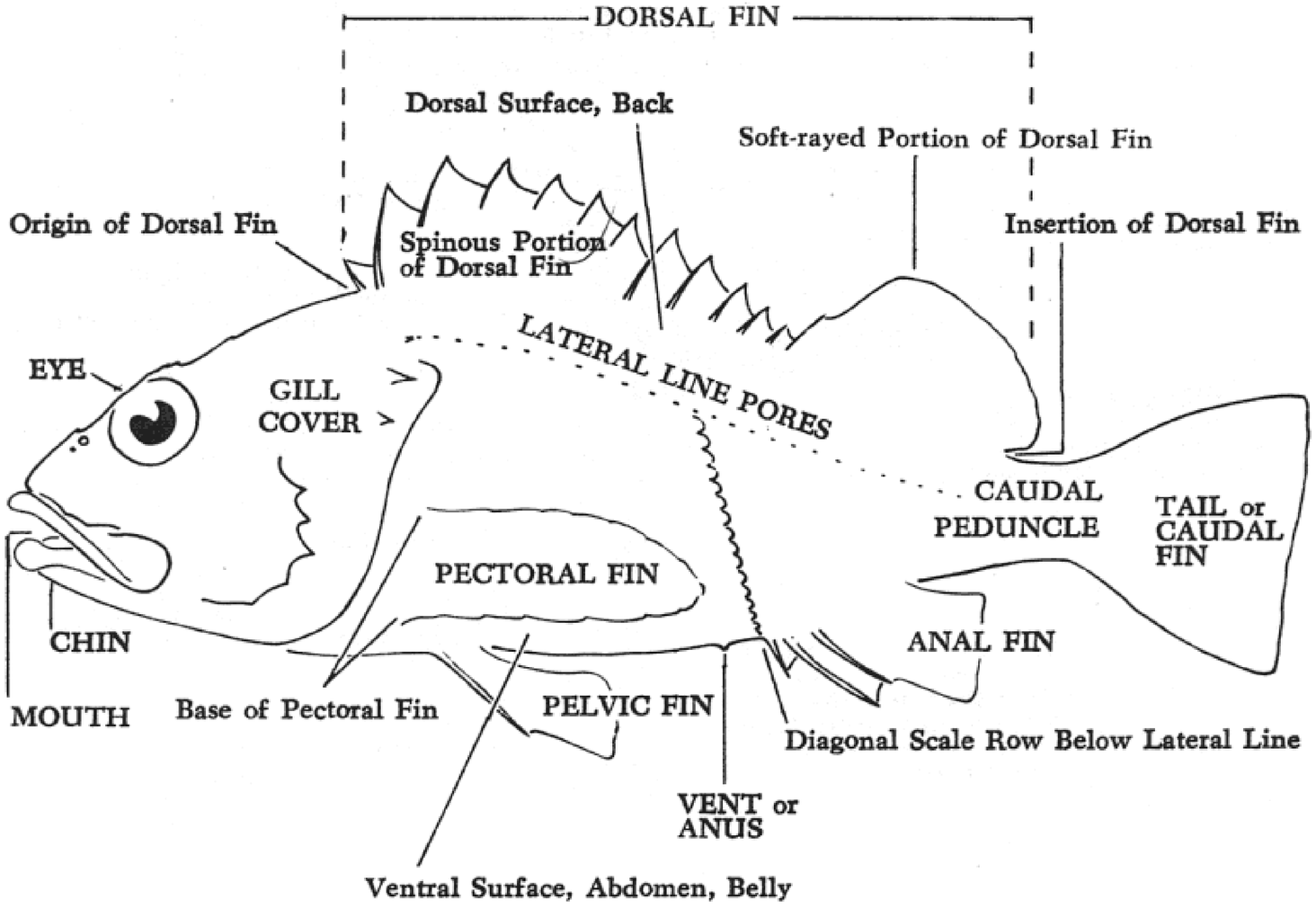


Gill Net

Scoop Net

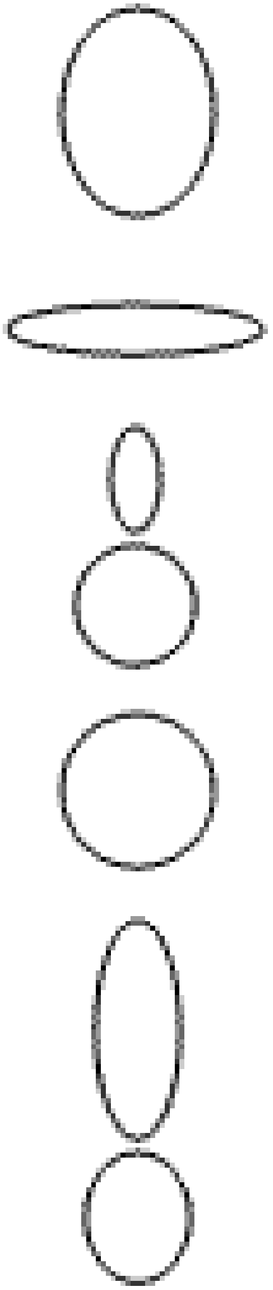
Angling

FISH IDENTIFICATION



ANATOMICAL

BODY SHAPE



Torpediform

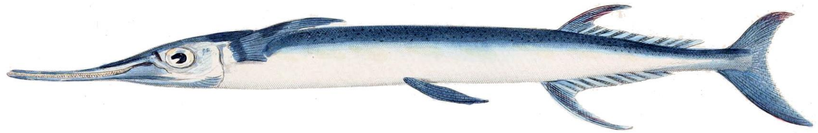
Dorso Ventrally Flattened

Ribbon like

Eel like

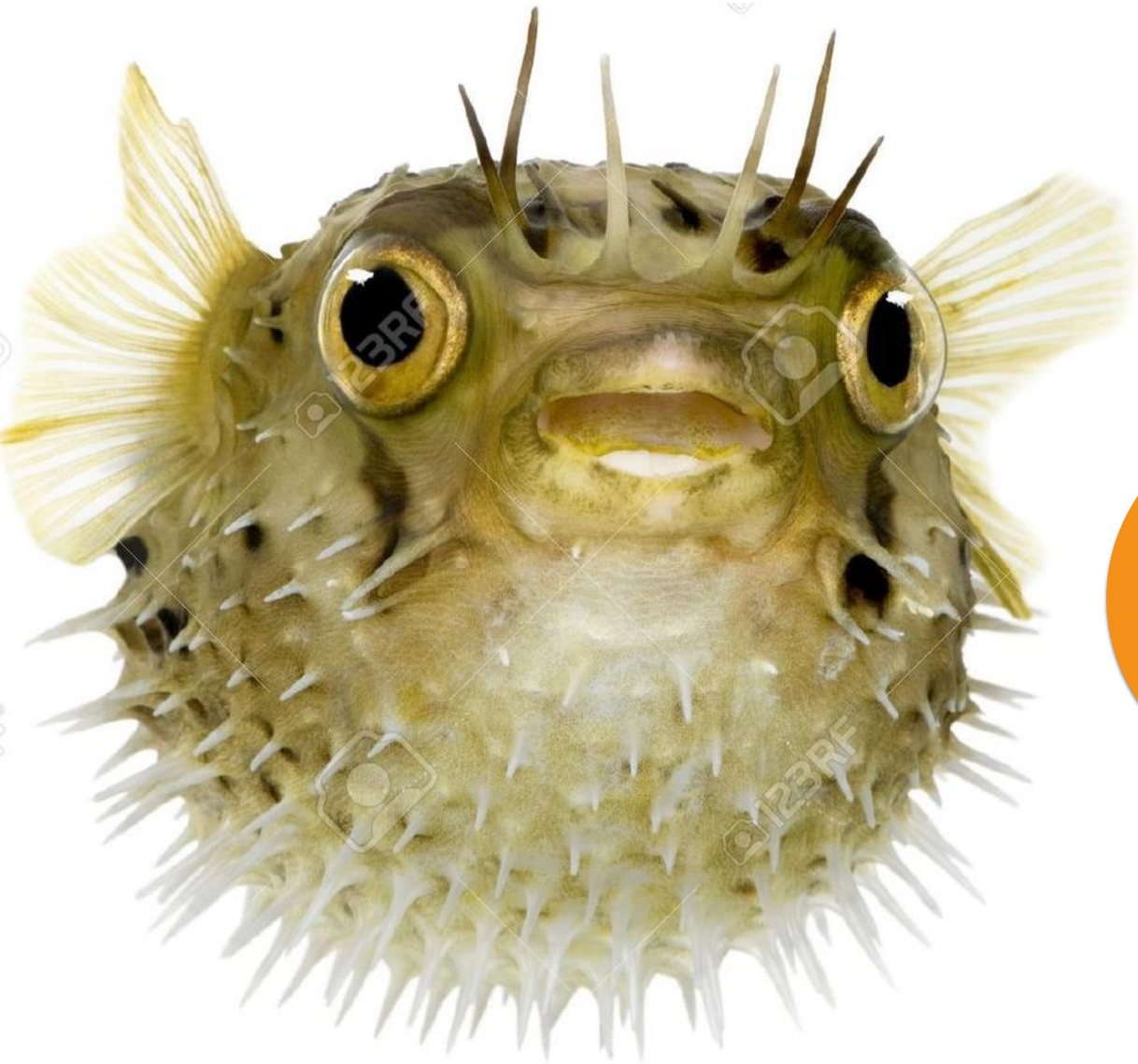
Spheroid

Laterally Flattened

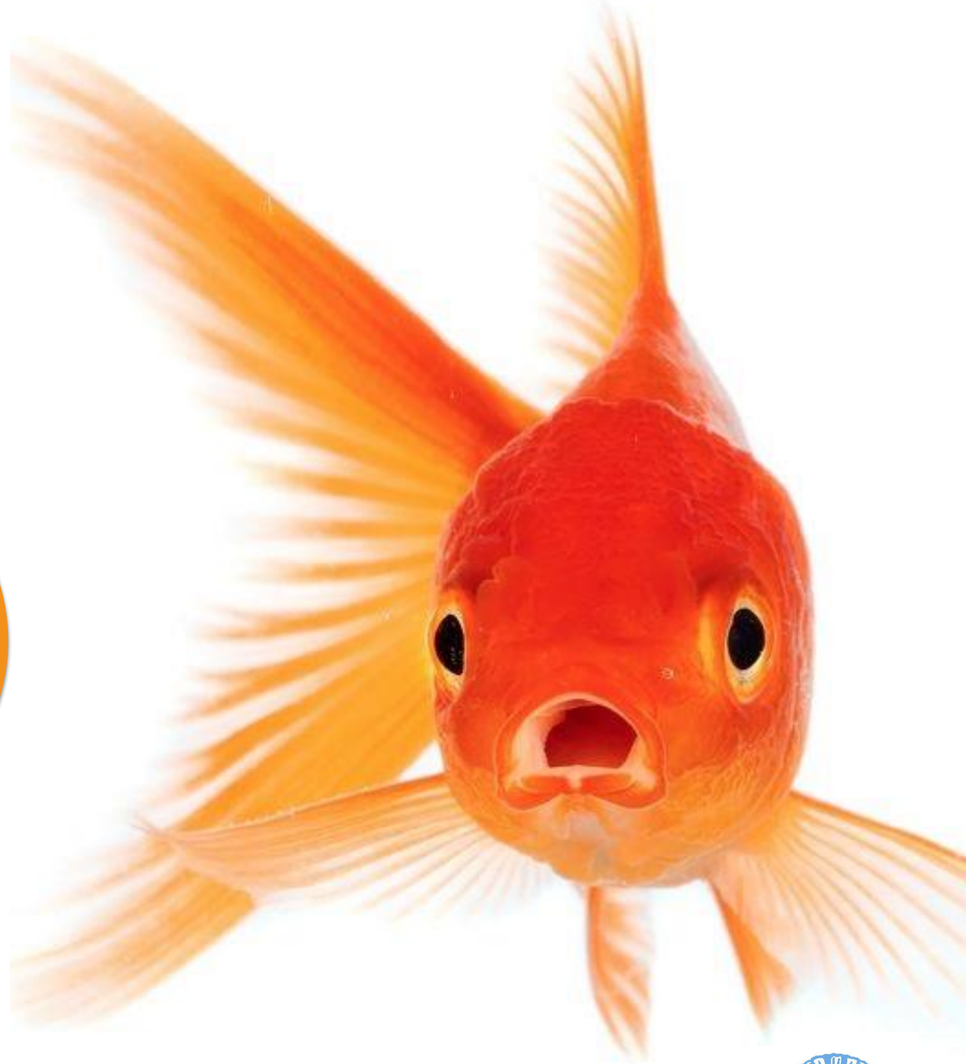


Arrow like

COLOR & PATTERN



?



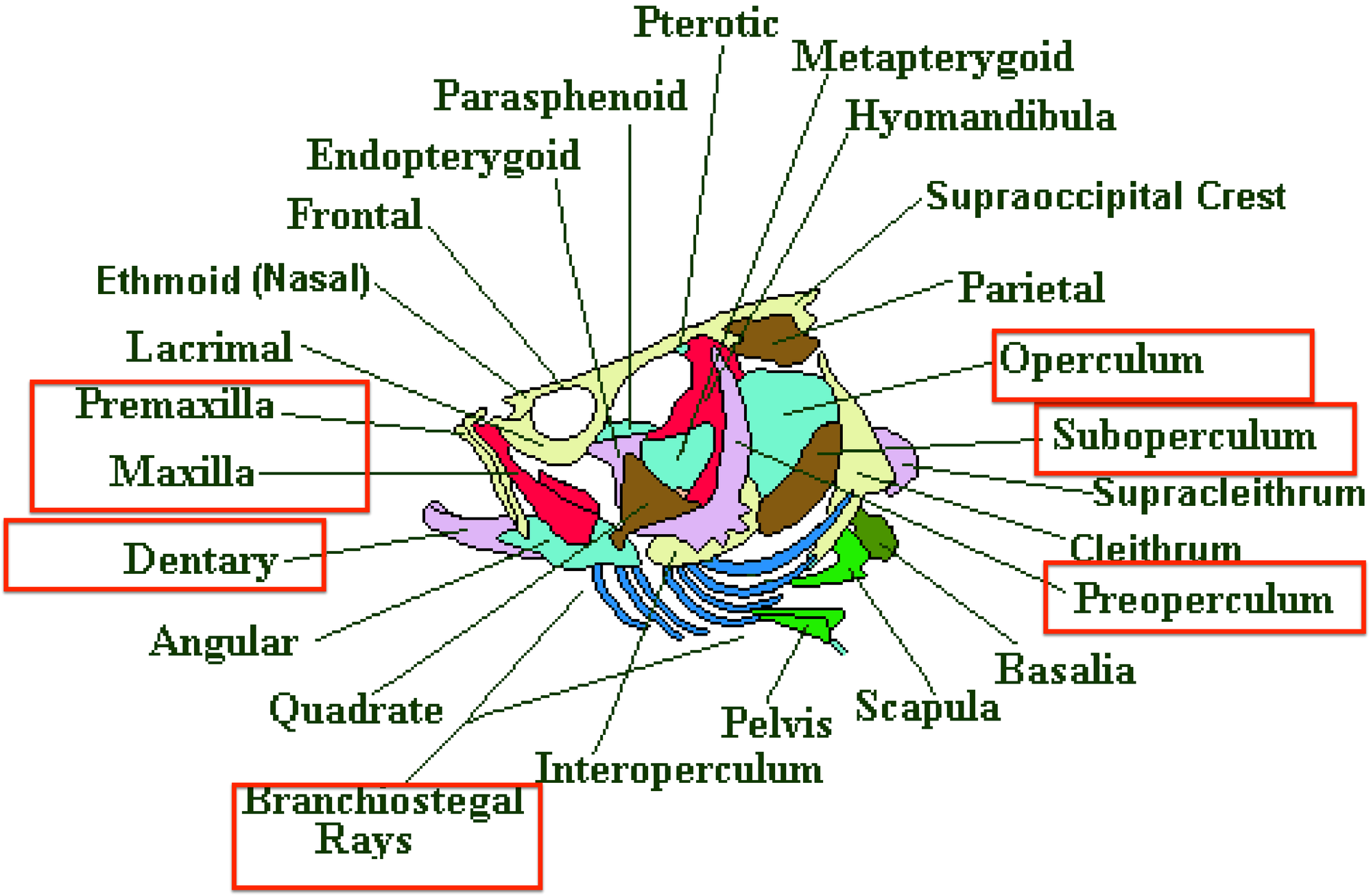
Etroplus maculatus

Scatophagus argus

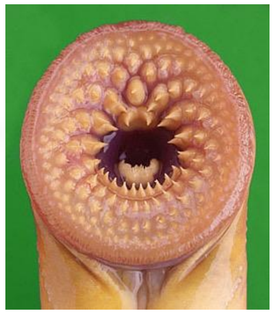
Etroplus suratensis

MERISTIC

FACIAL & CRANIAL BONES

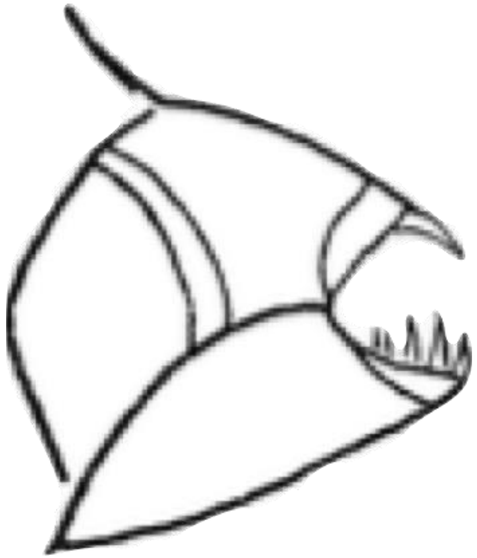


TYPE OF MOUTH

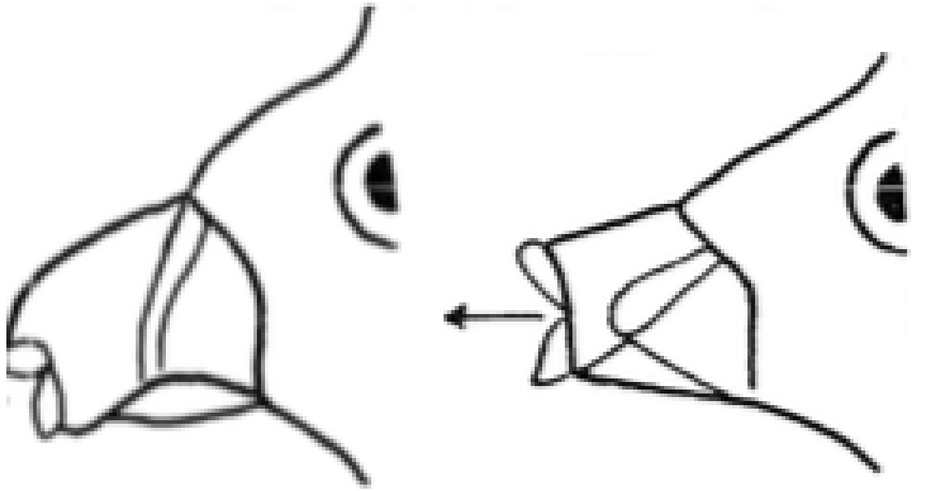


Funneled

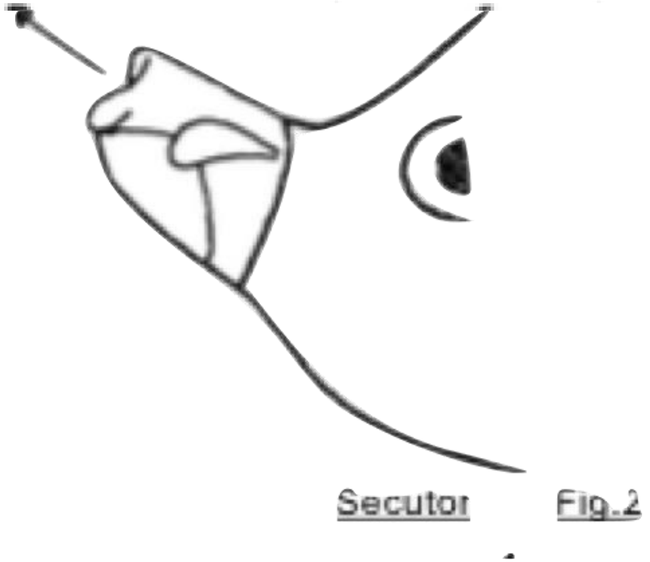
Silver bellies Mouth Classification



Gazza Fig.3

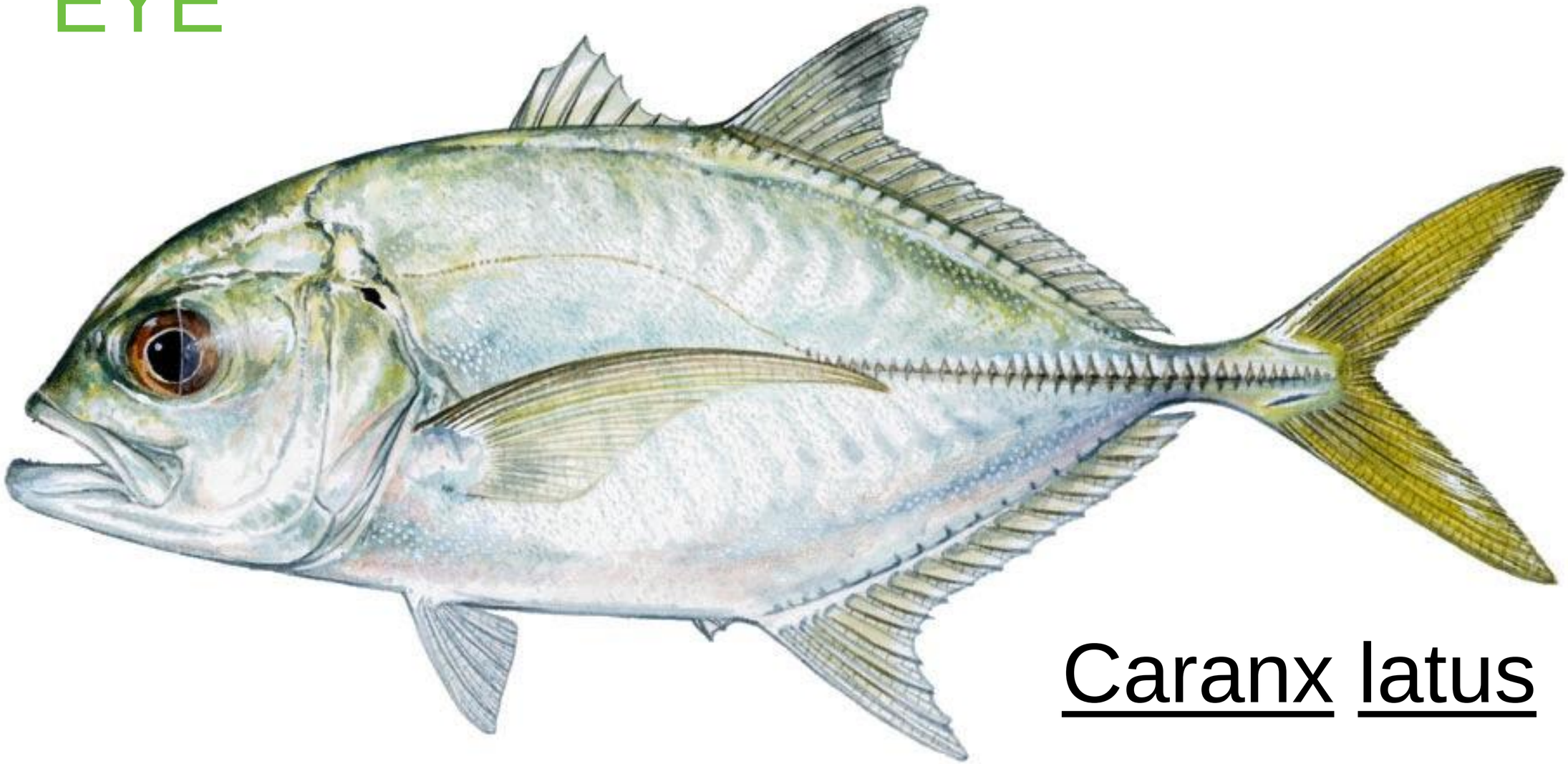


Leiognathus Fig.1



Secutor Fig.2

EYE

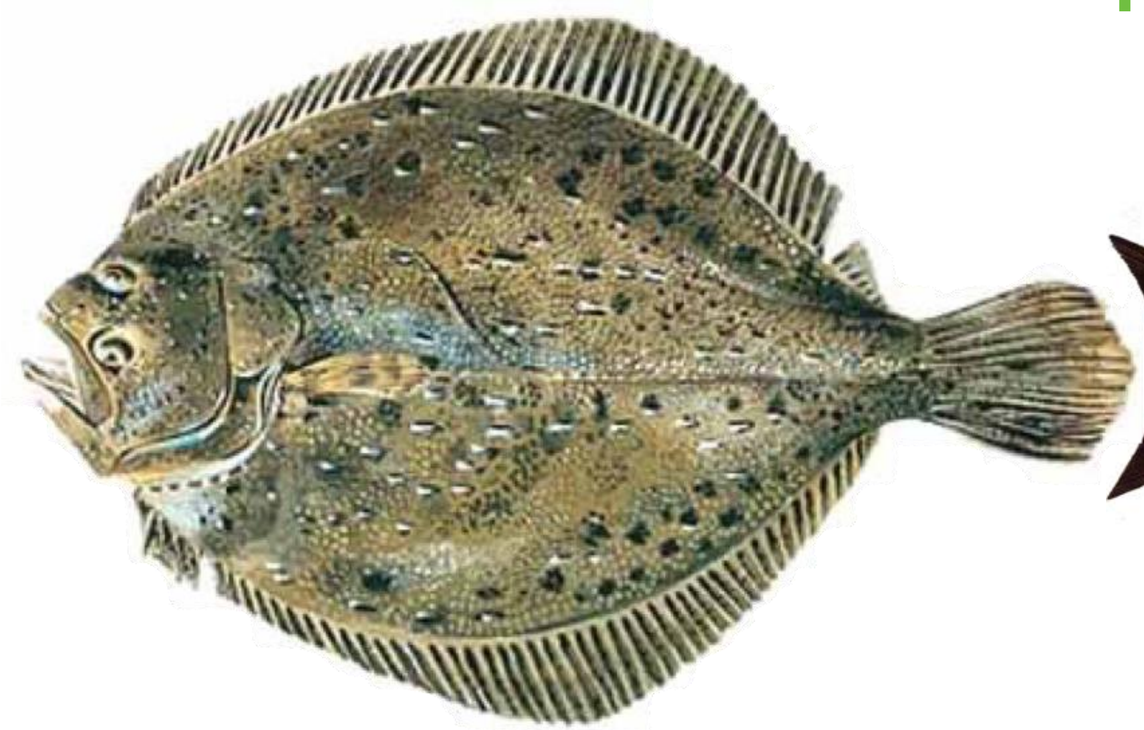


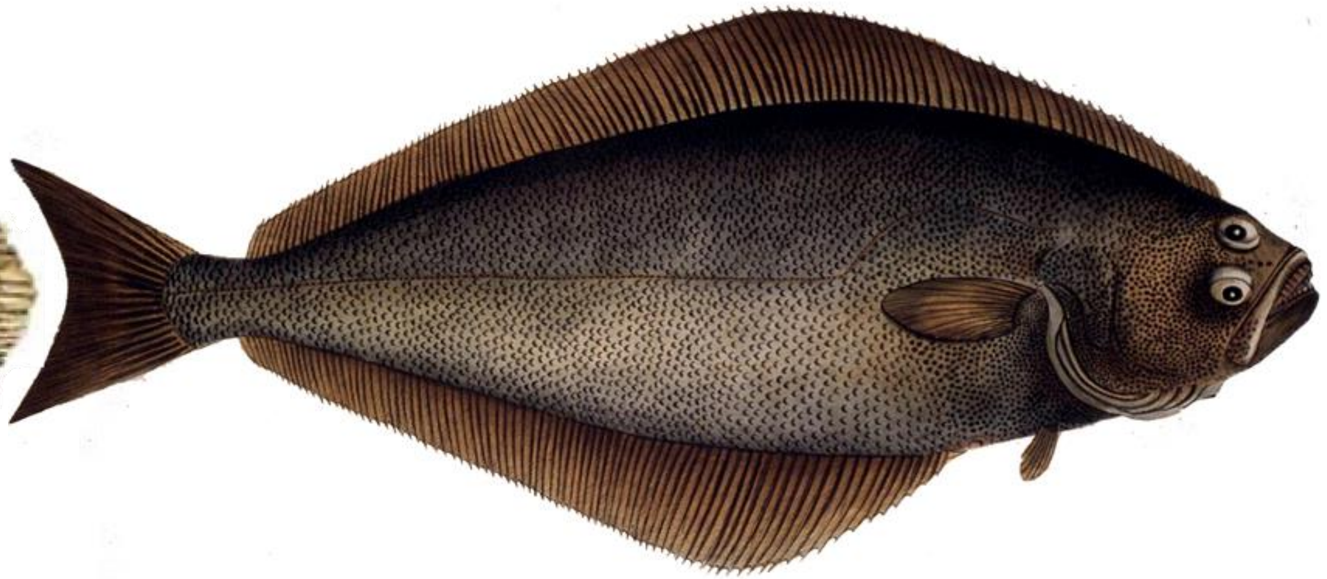
Caranx latus

EYE

Caranx latus

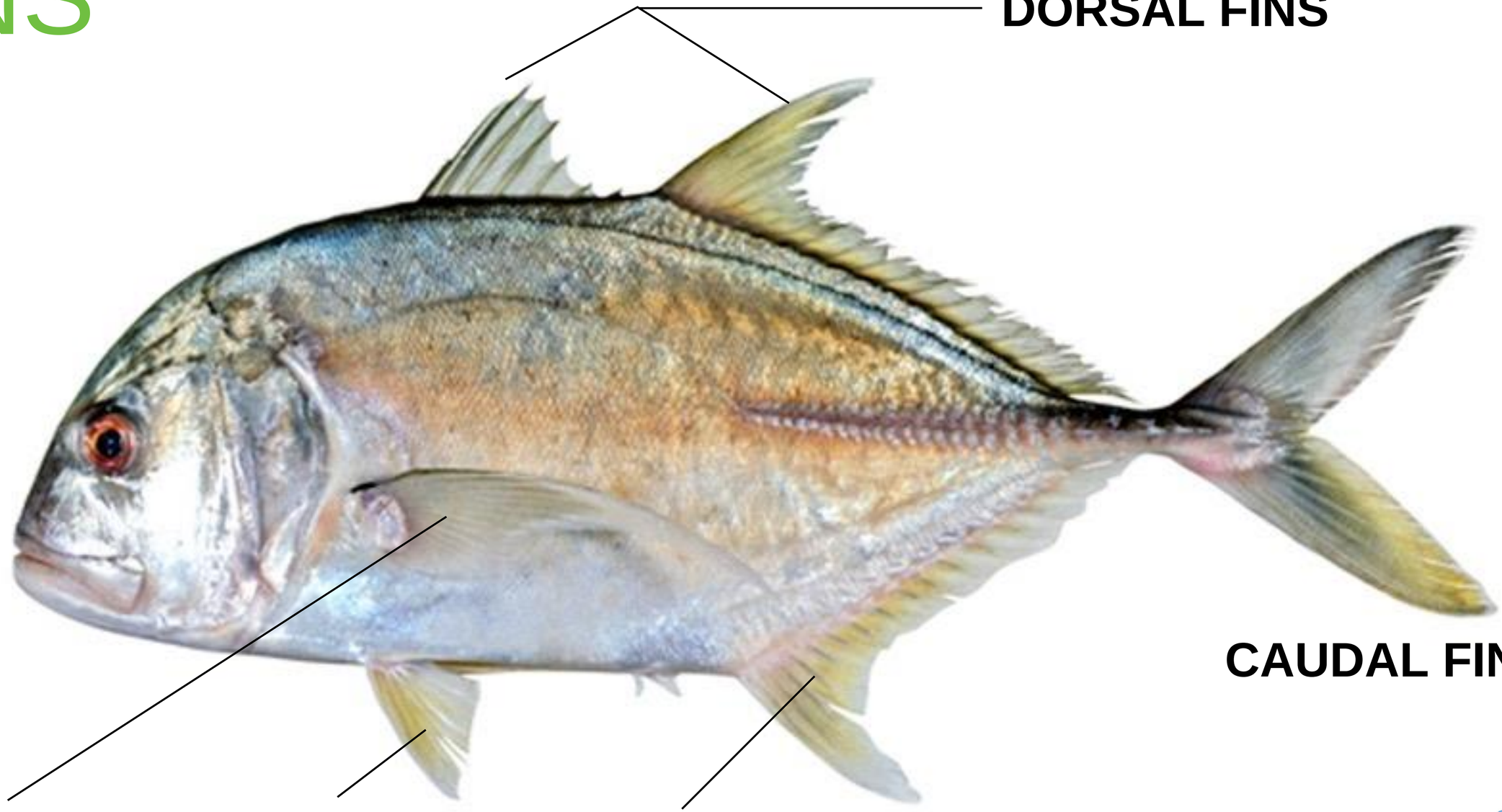
LEFT OR RIGHT





Scophthalmus maximus *Hippoglossus hippoglossus*

FINS



Caranx ignobilis

DORSAL FIN

Spiny Dorsal

Rayed Dorsal

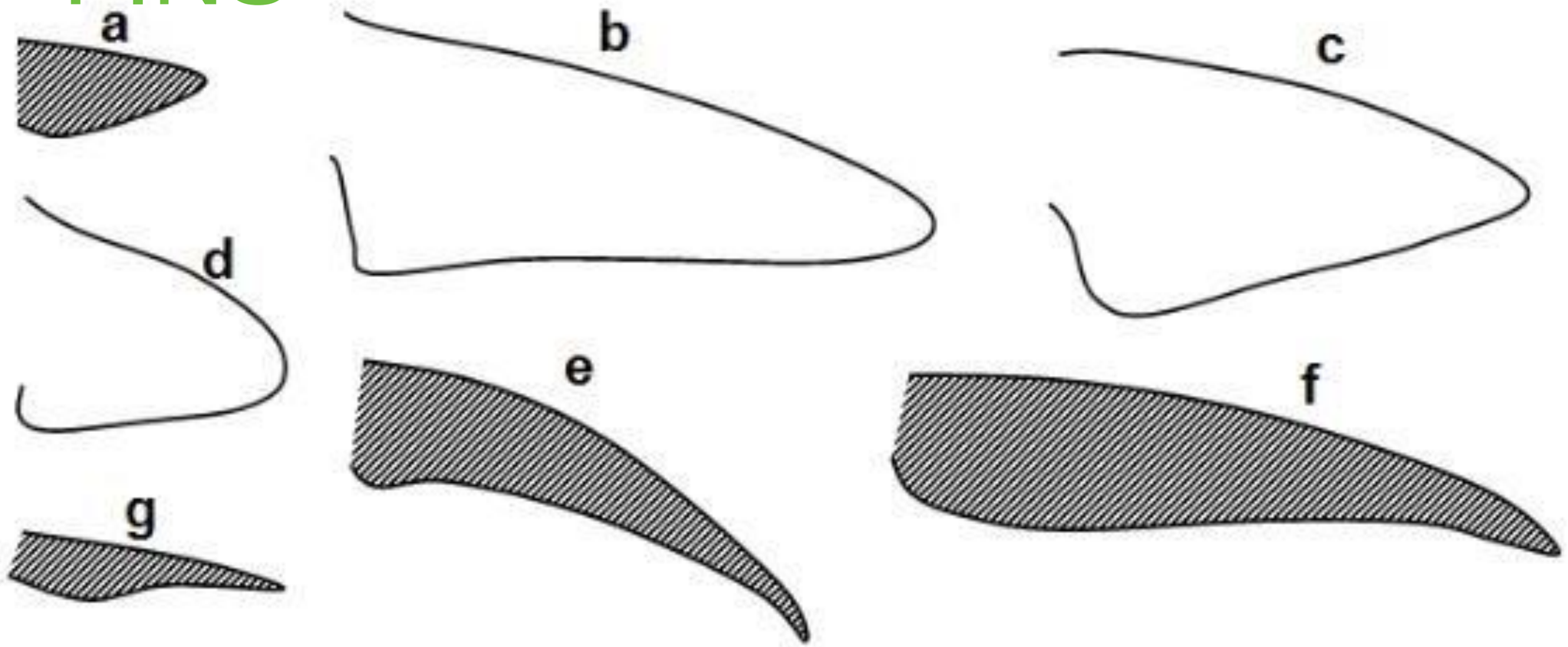
Adipose Dorsal

ANAl FIN

Spiny & Rayed Anal

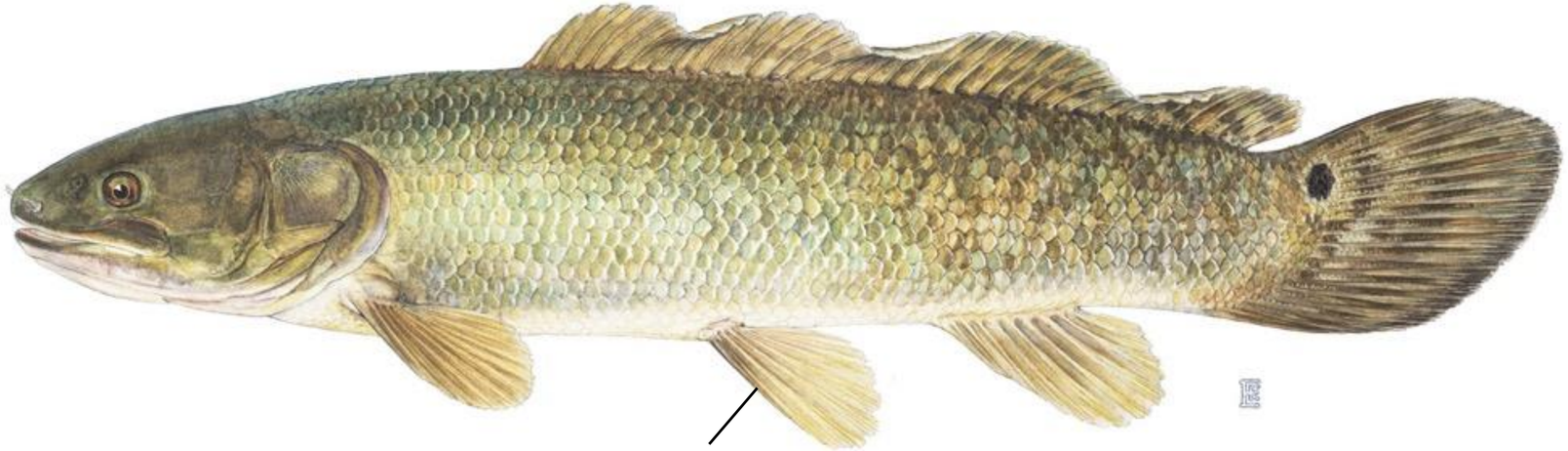
Rayed Anal

PECTORAL FINS



The lifting pectoral foils of different fishes (teleosts striped). (a) Mackerel (*Scomber*); (b) *Carcharhinus longimanus*; (c) basking shark (*Cetorhinus*); (d) dogfish (*Scyliorhinus*); (e) carangid (*Trachurus*); (f) longfin tuna (*Thunnus alalunga*); (g) swordfish (*Xiphias*).

PELVIC FINS



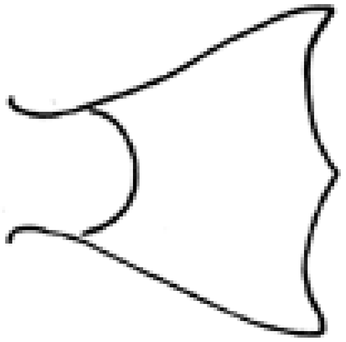
Abdominal

Thoracic

CAUDAL FINS

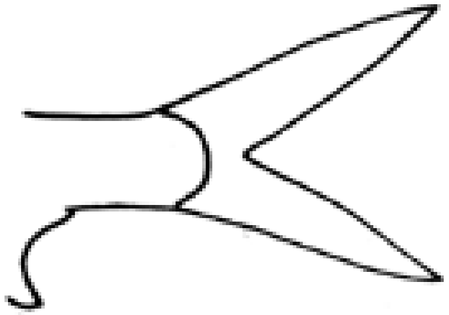
a) Indented

b) Rounded

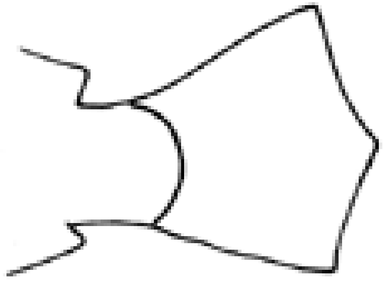


c) Double Truncate

d) Square, Truncate, Straigh



e) Forked

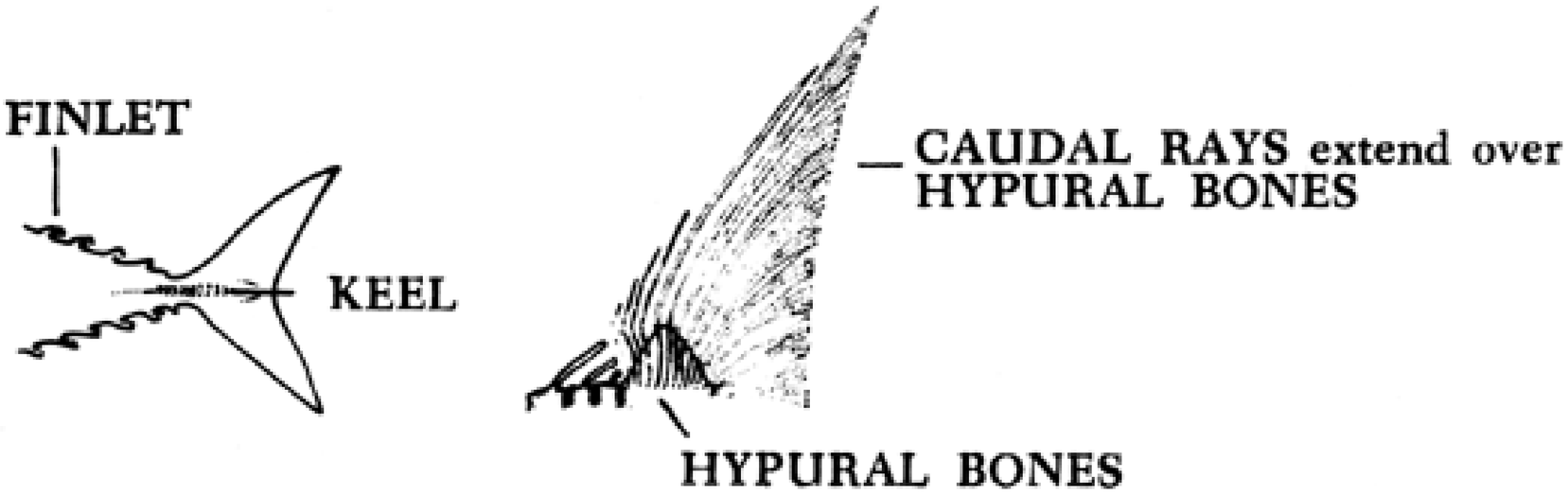


f) Pointed (fin present)

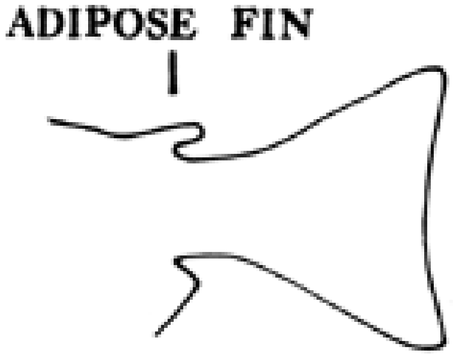
g) Pointed (fin not differentiated)

h) Naked (without rays on tip)

CAUDAL FINS

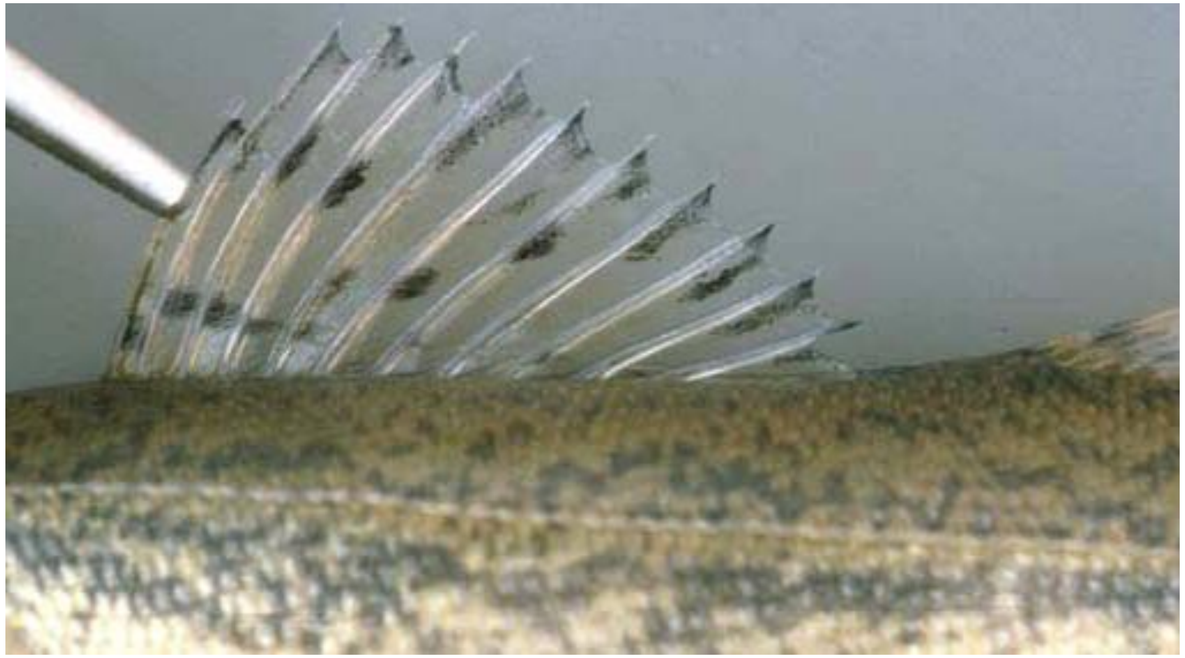


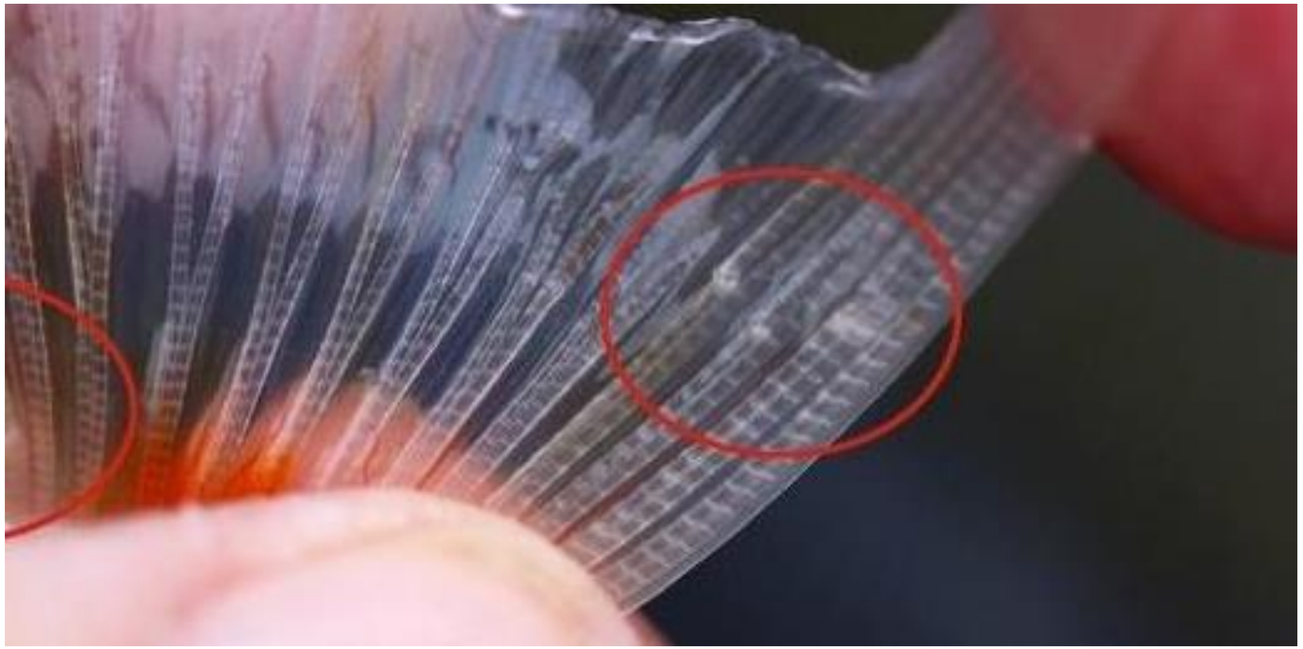
k) Tail of Tuna



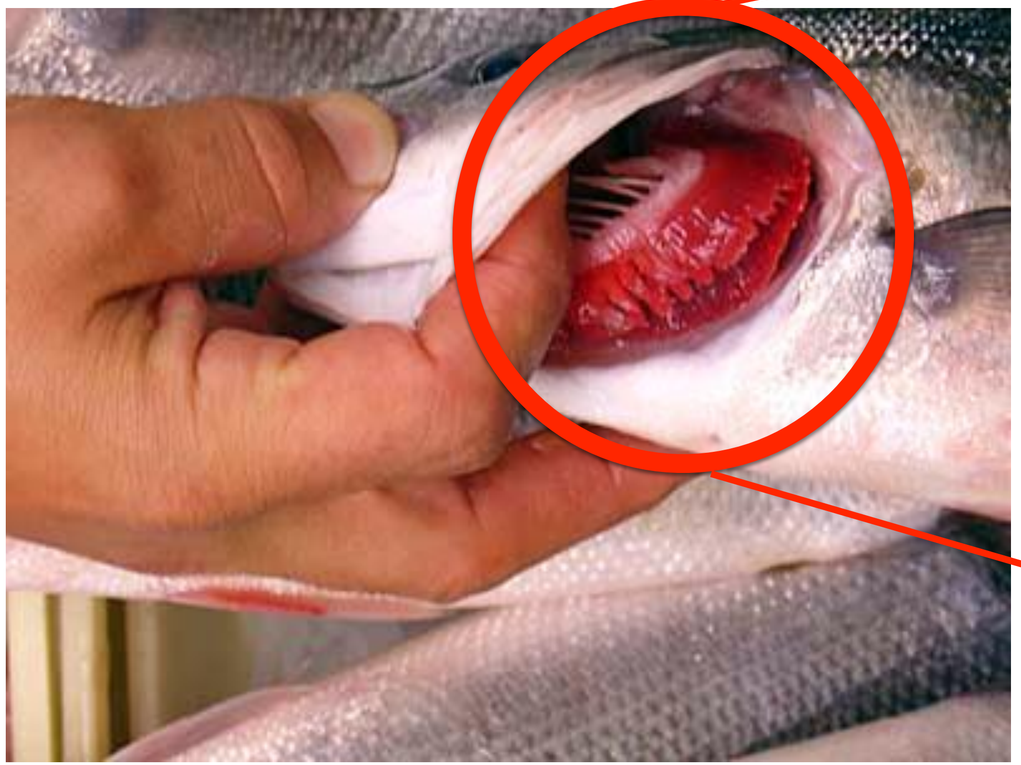
l) Tail of a Salmon

What makes Spine & Ray Different ?

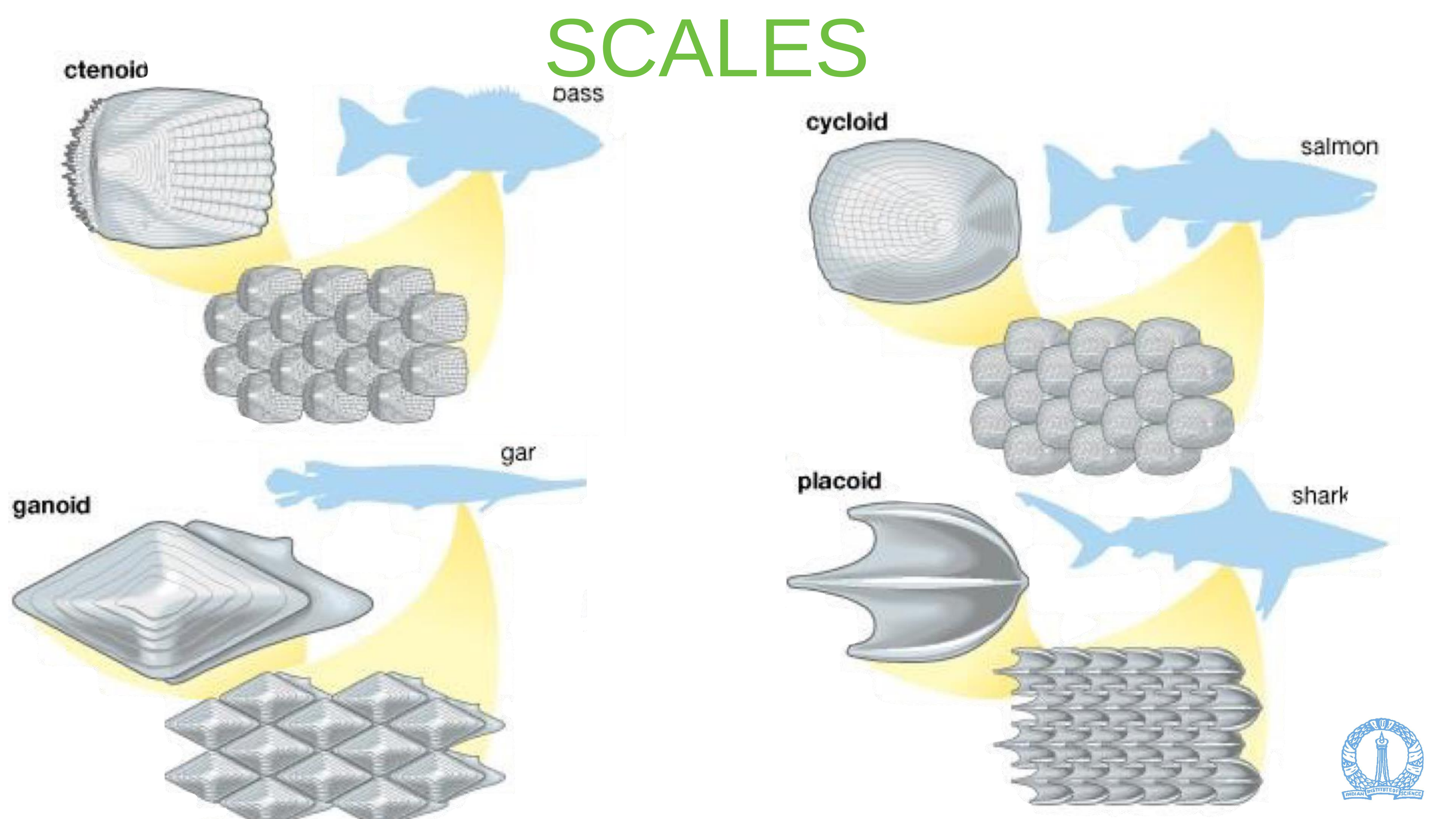




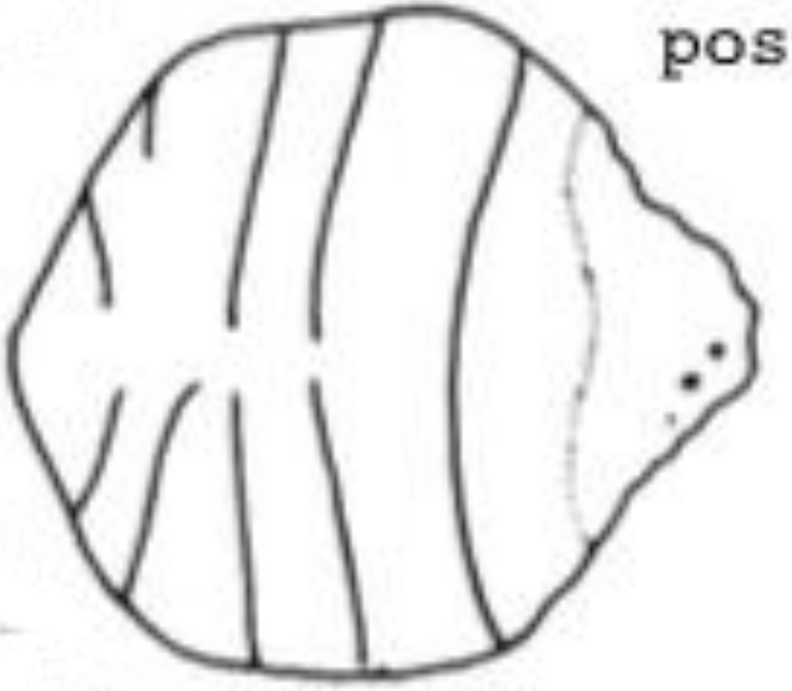
GILL RAKERS



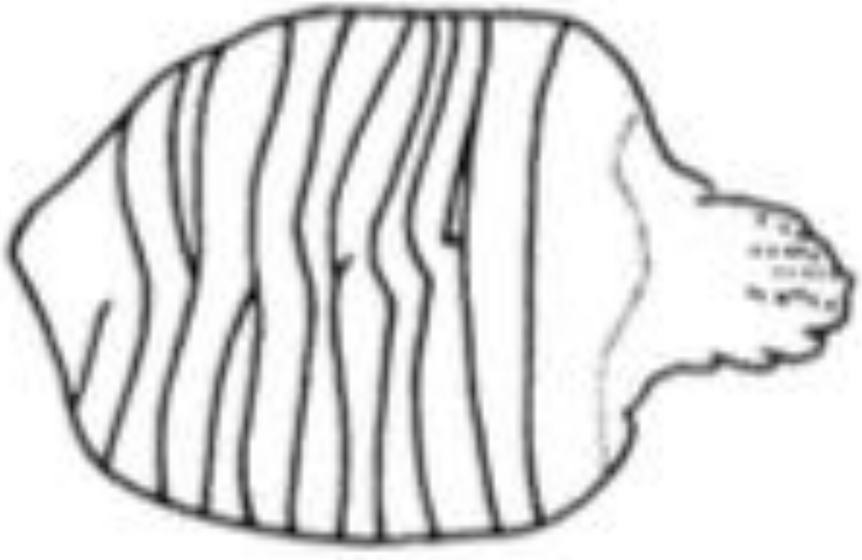
SCALES



posterior scales



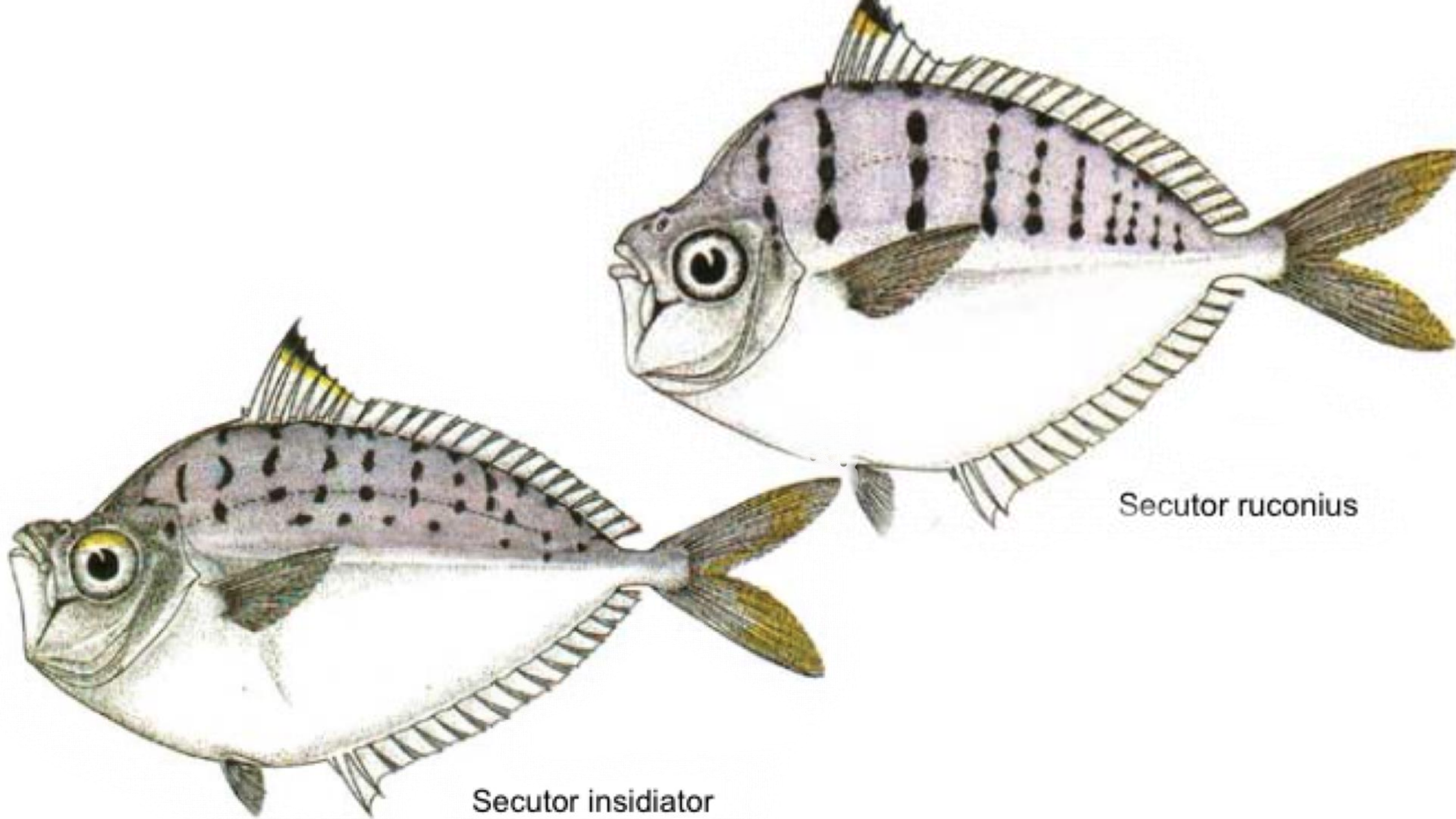
S. albella



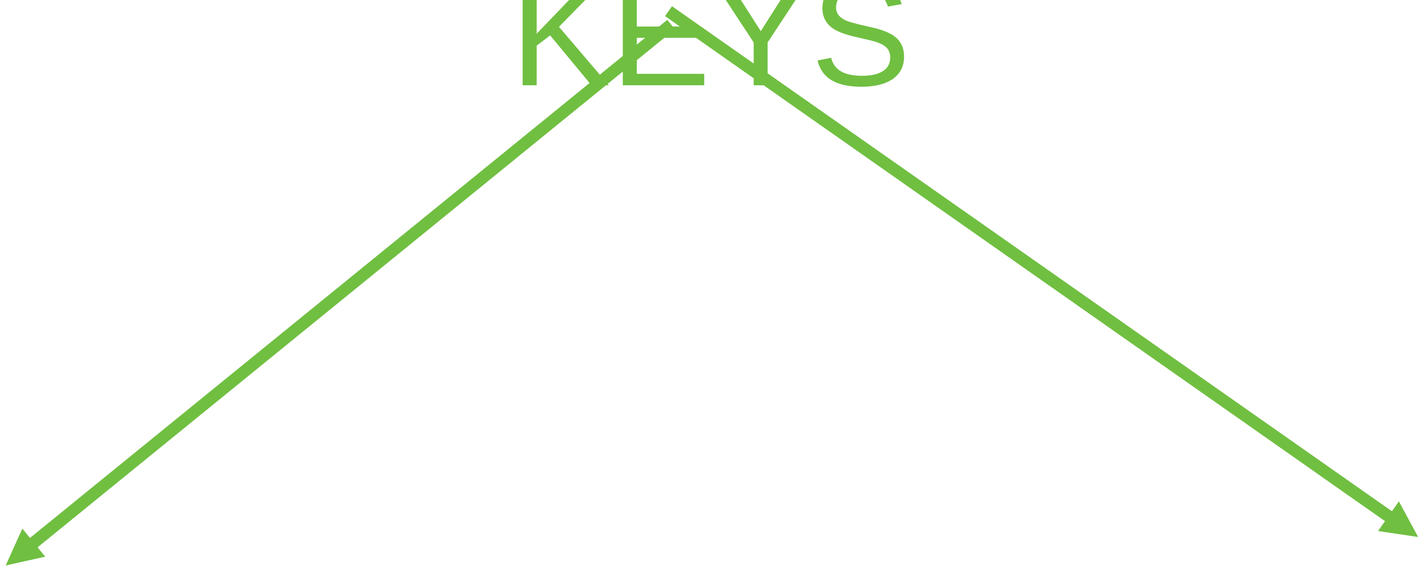
S. brachysoma

LATERAL LINE

- CONTINUITY
- POSITION
- CURVE
- SCUTES


Secutor ruconius
Secutor insidiator

IDENTIFICATION KEYS



DICHOTOMOUS

POLYTOMOUS

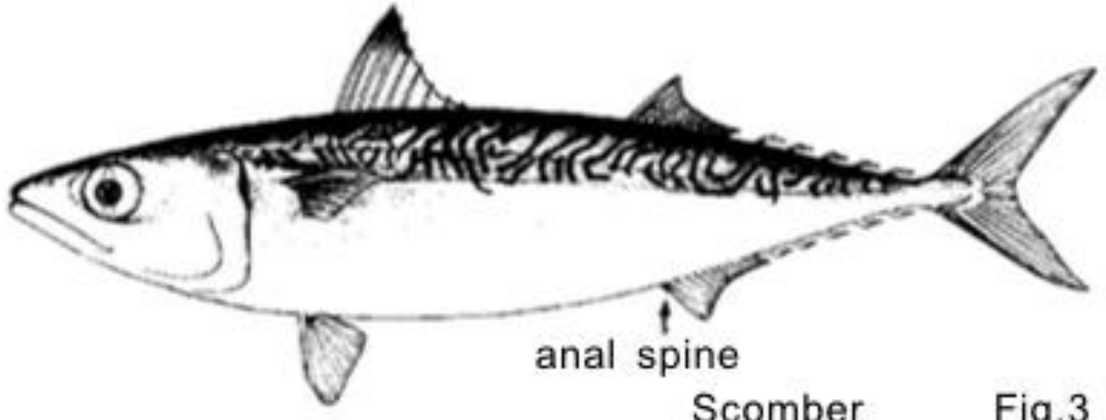
KEY TO GENERA OCCURRING IN THE AREA:

1a. Two small keels on either side of caudal peduncle (Fig.1); 5 dorsal and 5 anal finlets

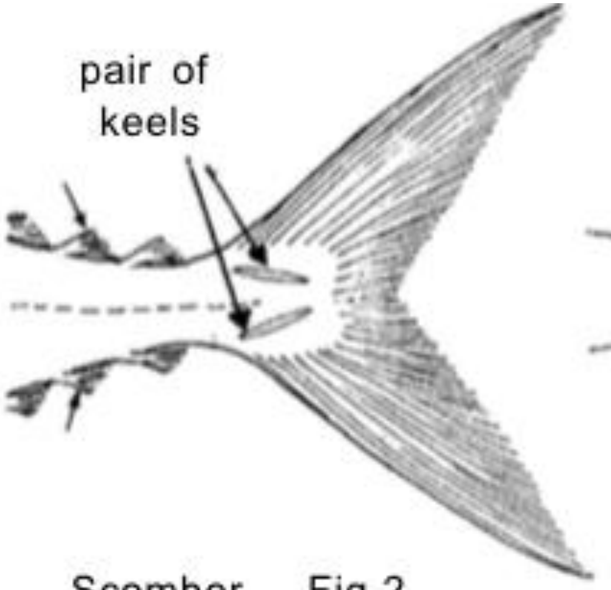
2a. Vertically zig-zag or wavy lines on back; anal fin spine fairly stiff and strong (Fig.3); teeth present on roof of mouth ..... Scomber

2b. Two horizontal rows of spots on each side of back; anal fin spine thin, rudimentary (Fig.4); no teeth on roof of mouth ..... Rastrelliger

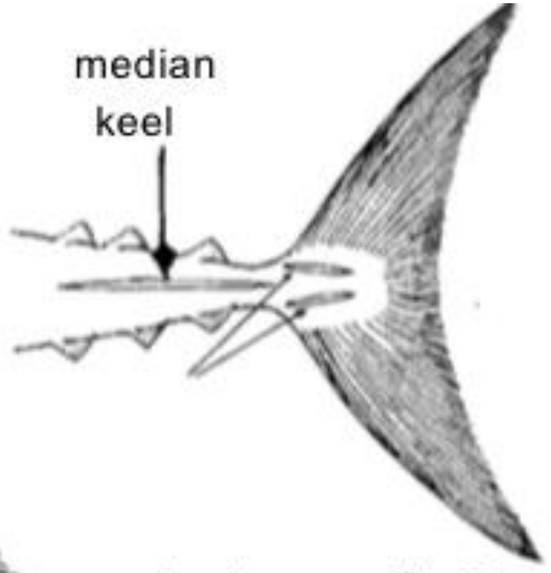
1b. Two small keels and a large median keel between them on either side of caudal peduncle (Fig.2); 7 to 10 dorsal and 7 to 10 anal finlets



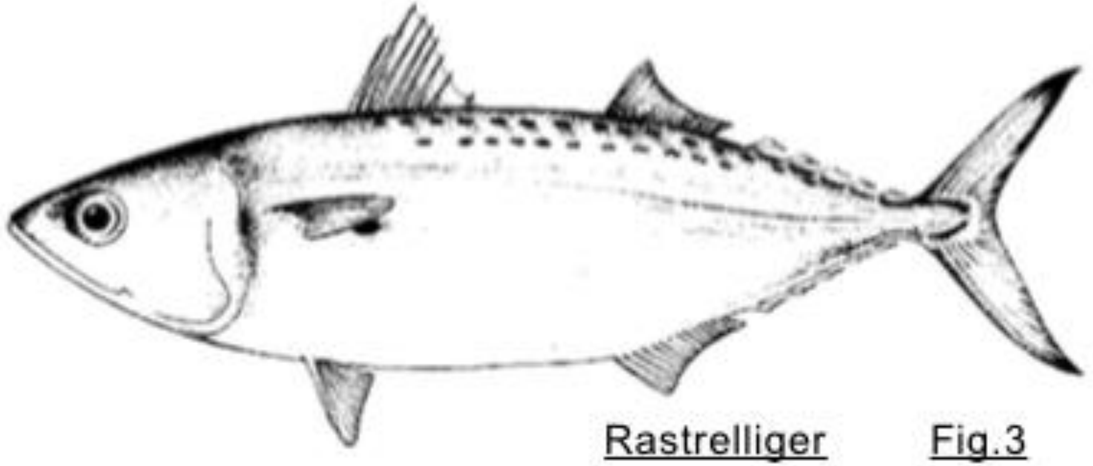
Scomber Fig.3



Scomber Fig.2



Auxis Fig.2



Rastrelliger Fig.3

FIN FORMULA

(*Neogobius melanostomus* (Pallas, 1811).)

D1 VI (V-VII); D2 I + 14-16 (13-16); A I + 11-13 (11-14); P 18-19 (17-20).

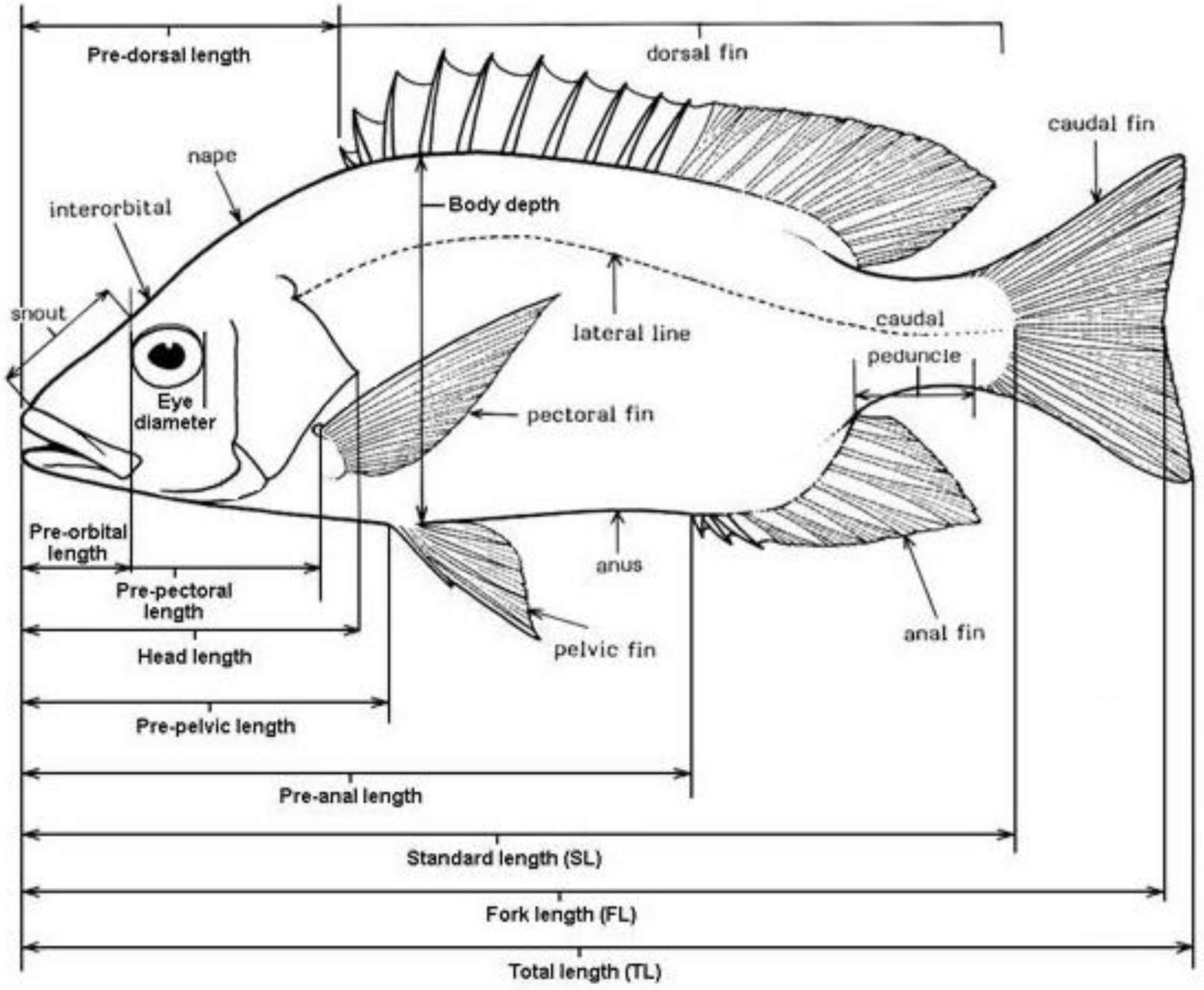
The anterior dorsal fin has 6 spines, ranging from 5-7

The posterior dorsal fin has one spine and 14-16 soft rays, ranging from 13-16

The anal fin has one spine, 11-13 soft rays, ranging from 11-14

The pectoral fins have 18-19 soft rays, ranging from 17-20

MORPHOMETRIC


Pre-dorsal length
dorsal fin
caudal fin
nape
interorbital
Body depth
snout
lateral line
caudal
peduncle
Eye
diameter
pectoral fin
Pre-orbital
length
anus
Pre-pectoral
length
anal fin
Head length
pelvic fin
Pre-pelvic length
Pre-anal length
Standard length (SL)
Fork length (FL)
Total length (TL)

LET’S try Identifying A FISH !!

FIN FORMULA

(*Neogobius melanostomus* (Pallas, 1811).)

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The pectoral fins have 18-19 soft rays, ranging from 17-20

SAMPLE PRESERVATION

- Kill the fish using anaesthetics (e.g.. Clove oil)
- Remove Scales & other subsamples from right side of fish.
- Scientific photograph Showing scale of the collected specimen.
- Preservatives
  Formaldehyde - 1:10
  Peformaldehyde
  Alcohol -70 %
- Proper labeling.


thank you