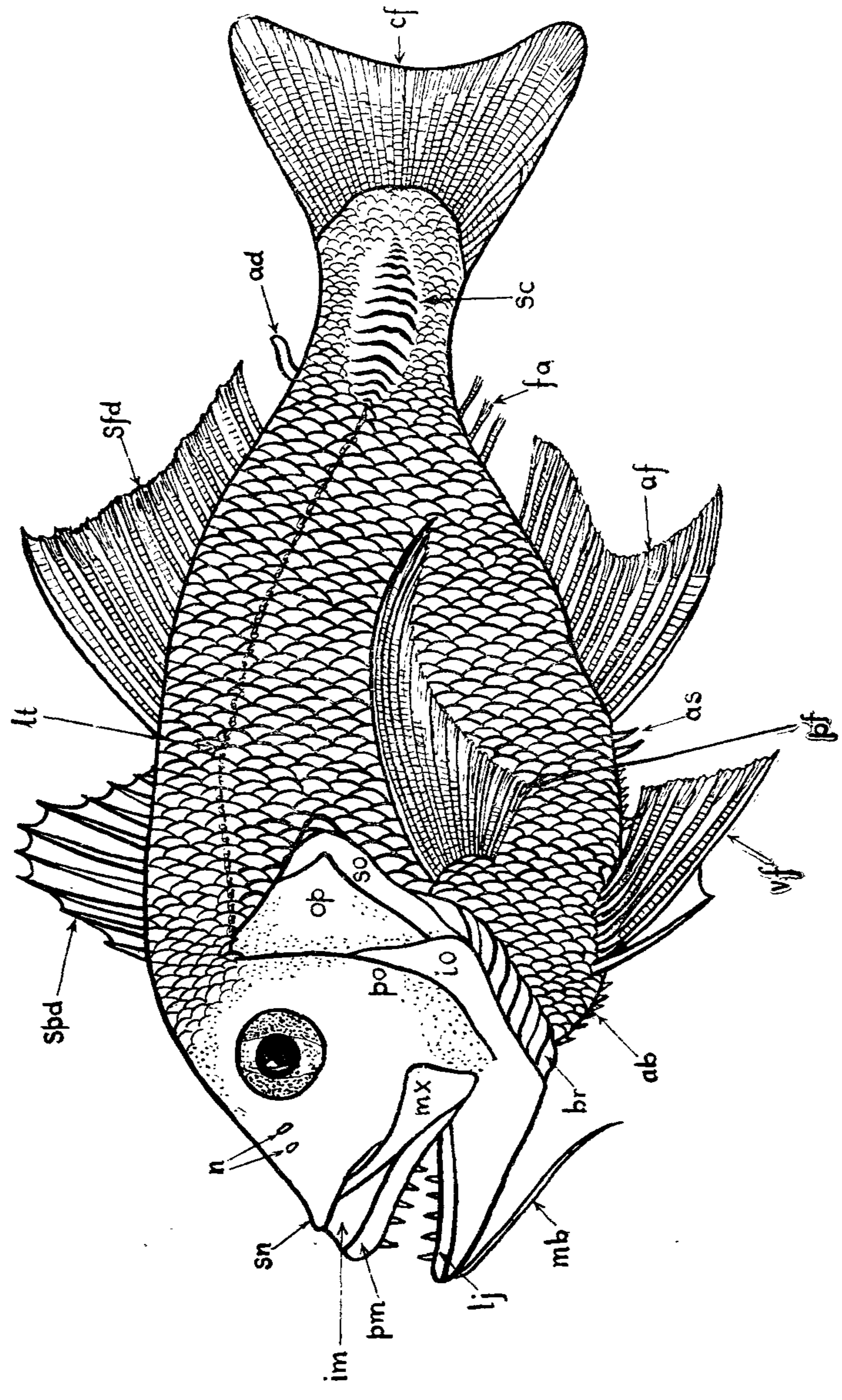


Figure 1



- ab abdominal scutes
- ad adipose fin
- af anal fin
- as anal spines
- br branchiostegals
- cf caudal fin
- fa free anal finlets
- im intermaxillary
- io interopercle
- lj lower jaw
- lt lateral line
- mb mandibular barbel
- mx maxillary
- n nostrils
- op operculum
- pf pectoral fin
- pm premaxillary
- po preopercle
- sc caudal scutes
- sfd soft dorsal
- sn snout
- so subopercle
- spd spinous dorsal
- vf ventral fin

DIAGRAMMATIC BONY FISH WITH THE COMBINATION OF CHARACTERS USED IN THE KEY.

Figure 2

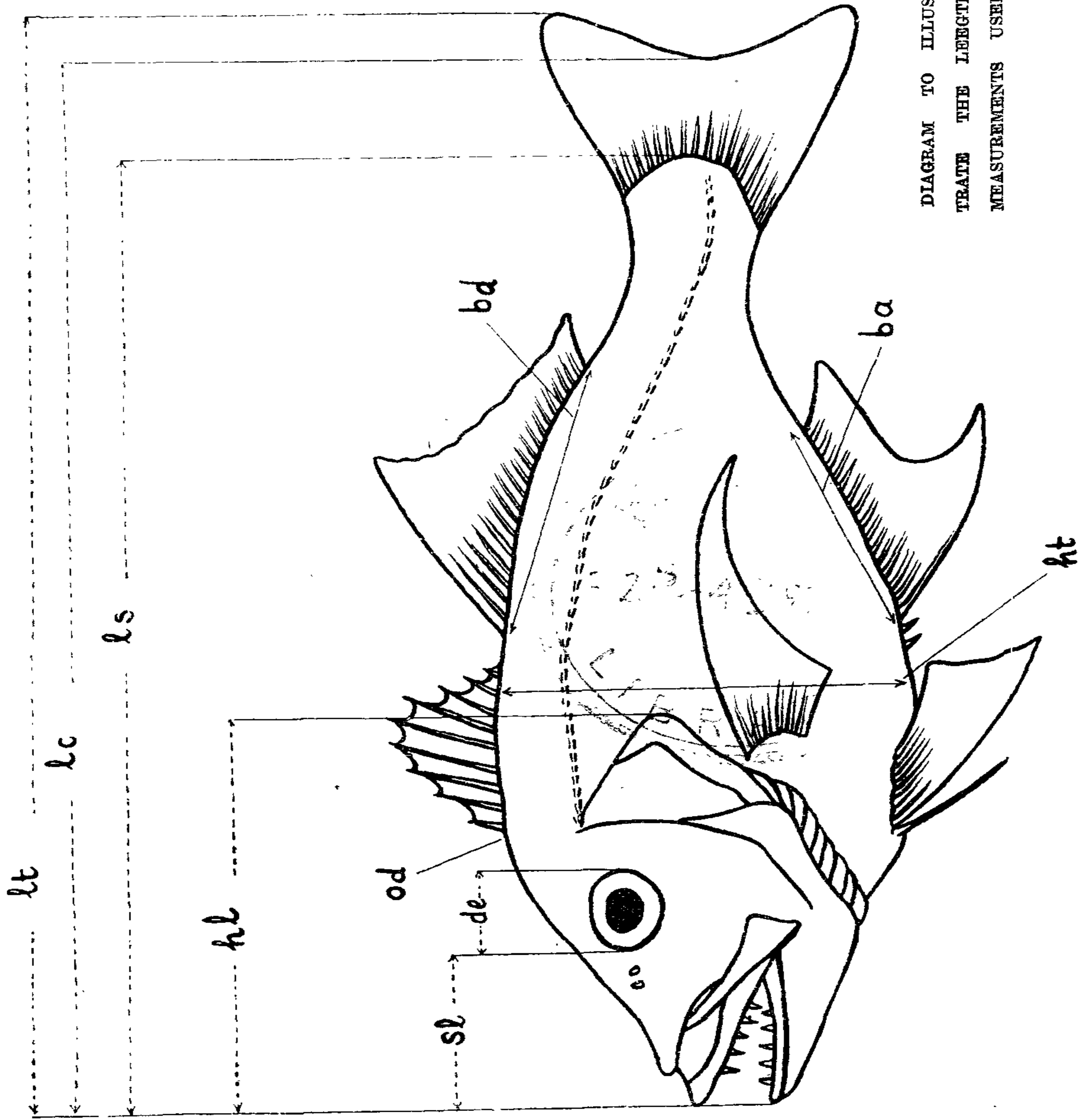


DIAGRAM TO ILLUSTRATE THE LENGTH MEASUREMENTS USED

- ba base of anal
- bd base of dorsal
- de diameter of eye
- hl length of head
- ht height of body
- lc length of body up to caudal fork
- ls standard length of body
- lt total length of body
- od origin of spinous dorsal
- sl length of snout

DORSAL FIN Unpaired fin on midline of back distinct from adipose fin if it is present ; fig. 1

EDENTULOUS Without teeth.

FALCATE, FALCIFORM Bent like a sickle or crescent moon.

FINLETS Small unconnected fins posterior to dorsal and anal fins in some fishes ; unlike the adipose fin in having rays and not being fleshy ; fig. 1

FONTANELLE Depression.

FURCATE Forked.

GAPE Jaw opening.

GILL ARCH Bony structure to which gill rakers and filaments are attached ; fig. 6

GILL COVER Bony cover protecting gills.

GILL FILAMENTS Slender, soft, red structures on posterior or outer side of gill arch ; fig. 6

GILL OPENING External opening leading from the gills.

GILL RAKERS Bony, tooth or comb-like protuberances on side of gill arch opposite from gill filaments. The number of gill rakers when mentioned is that number on lower limb of first gill arch ; fig. 6

GILL SLITS Openings between gill arches ; fig. 3

GULAR PLATE Plate-like structure in throat ; fig. 5

HEAD LENGTH Distance from tip of snout to hind edge of gill cover ; fig. 2

ILLICIUM First ray of spinous dorsal which is converted into a sort of line and bait in the order *Lophiiformes*.

INCISIVI Teeth modified to form cutting edge.

INFERIOR Lower.

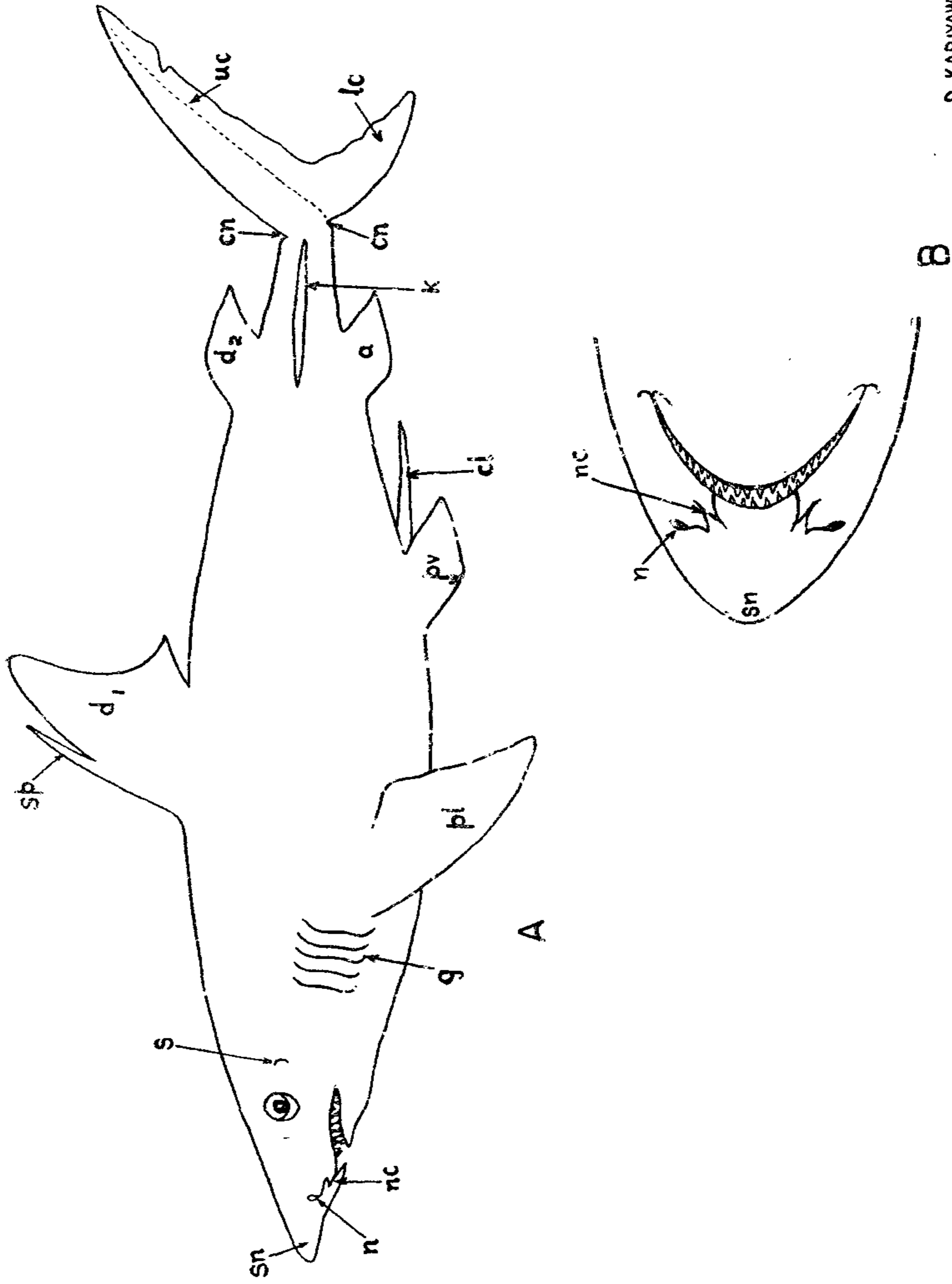
INTERMAXILLARIES Bones in upper jaw ; fig. 1

ISTHMUS Narrow anterior part of lower jaw where the two mandibular bones unite.

KEEL Ridge along side of tail or caudal peduncle in some fishes ; fig. 3

LABIAL Pertaining to or resembling lip.

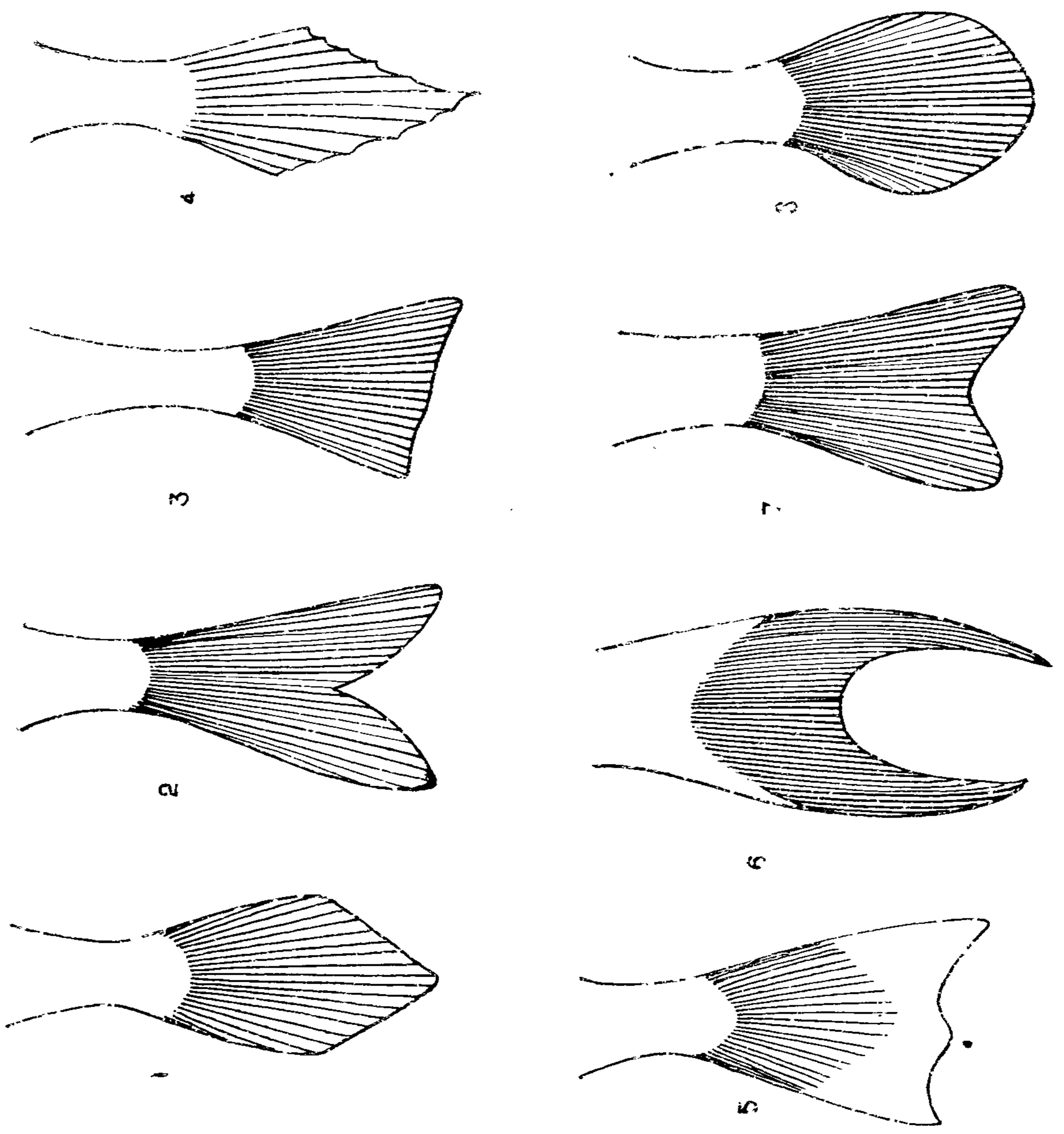
Figure 3



- a anal fin
- cl clasper
- cn caudal pit or notch
- d₁ first dorsal fin
- d₂ second dorsal fin
- g gill openings or slits
- k keel
- lc lower lobe of caudal fin
- n nostril
- nc nasal cirrus or barbel
- pl pectoral fin
- pv pelvic fin
- s spiracle
- sn snout
- sp dorsal spine
- uc upper lobe of caudal fin

D. KARIYAWASAM.

A.—DIAGRAMMATIC CARTILAGINOUS FISH WITH COMBINATION OF CHARACTERS USED IN THE KEY; B.—VENTRAL VIEW OF HEAD OF CARTILAGINOUS FISH.

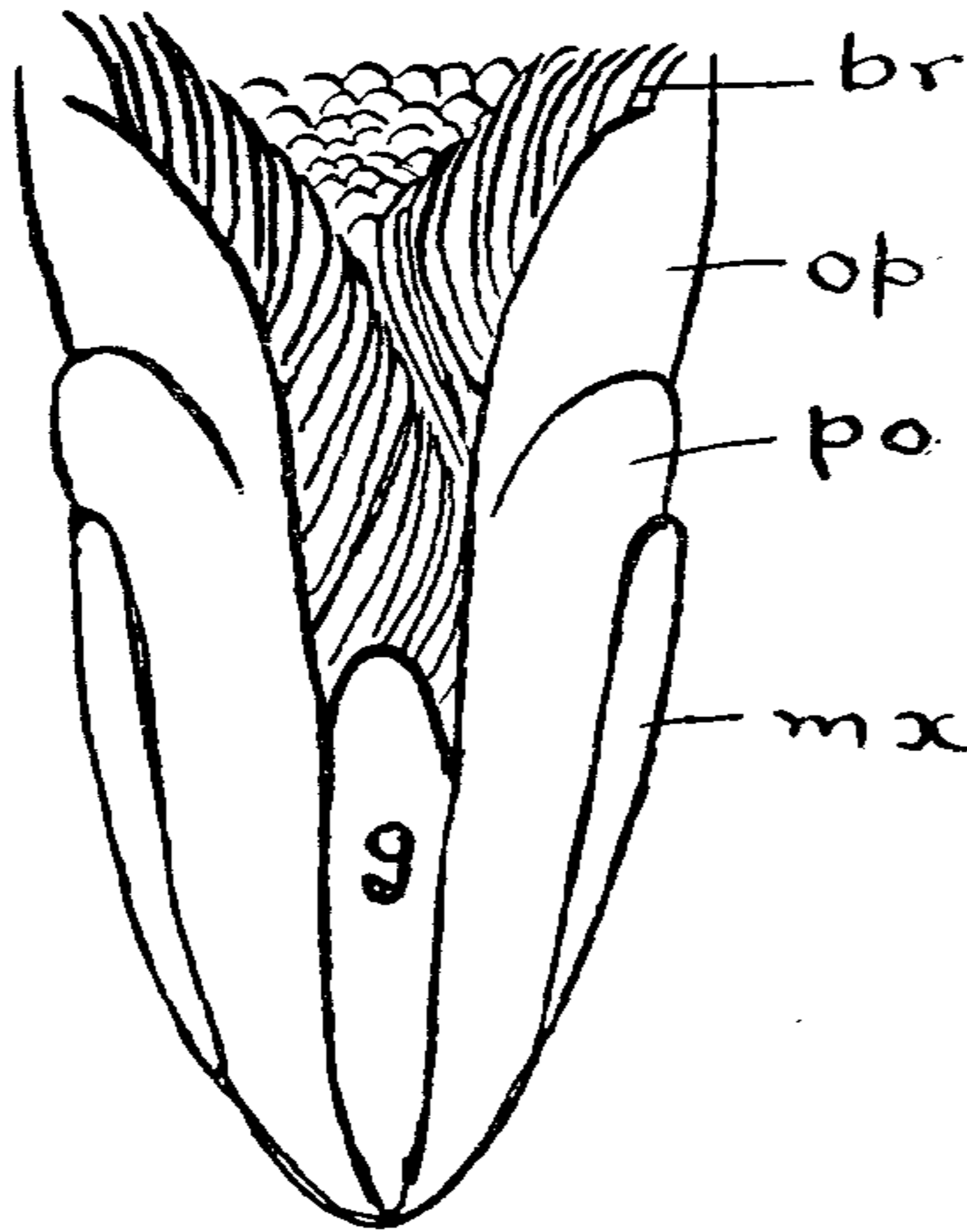


- | | |
|----------------|---------------------|
| 1 Wedge shaped | 5 Double emarginate |
| 2 Forked | 6 Lunate |
| 3 Truncate | 7 Emarginate |
| 4 Pointed | 8 Rounded |

DIAGRAMS TO ILLUSTRATE THE FORMS WHICH A CAUDAL FIN MAY TAKE

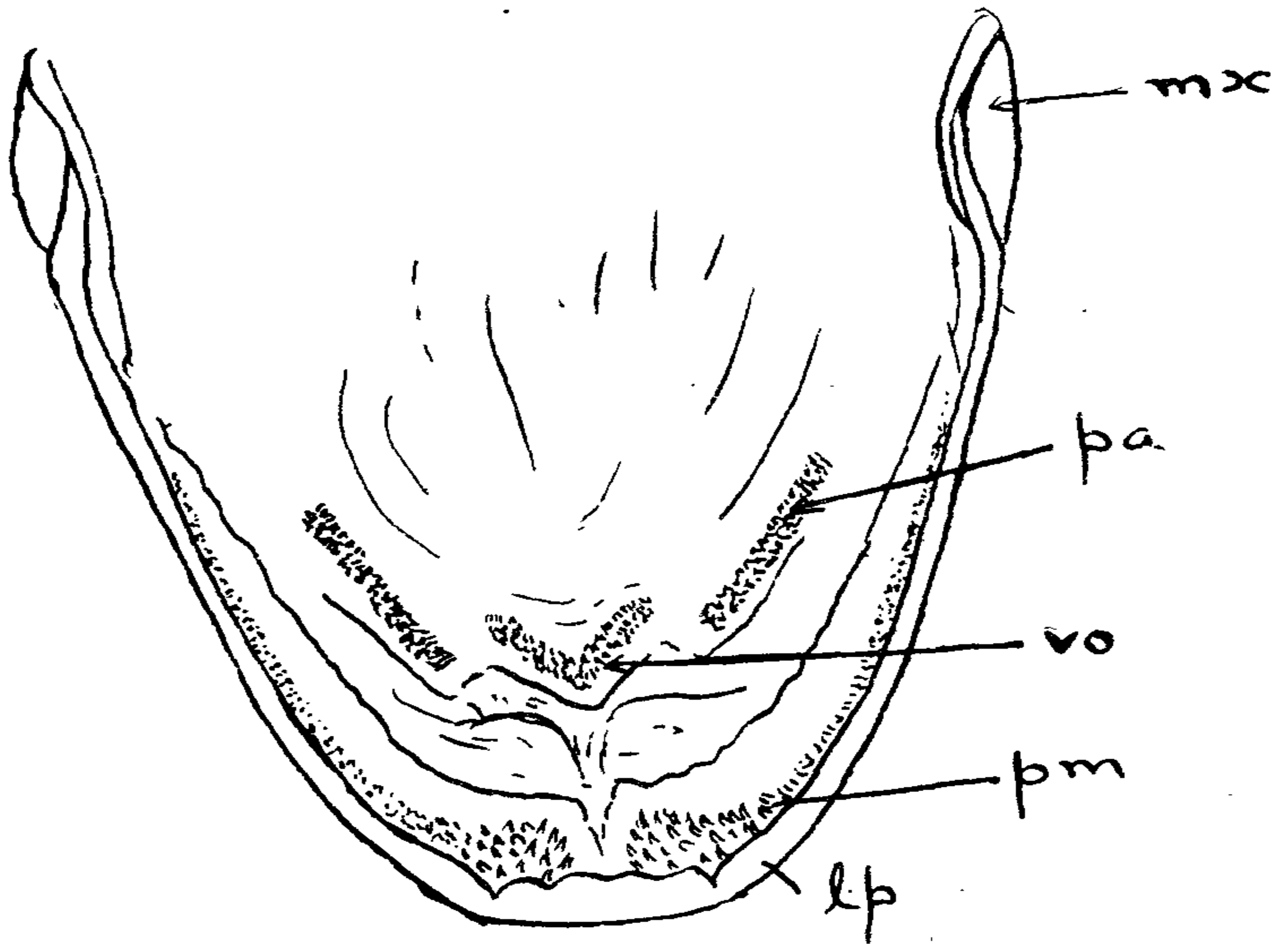
- LATERAL LINE** Series of pores along side of body forming what looks like a dotted line ; absent in some fishes and multiple in others ; fig. 1
- LATERAL SCALES** Scales in longitudinal series paralleling lateral line.
- MANDIBULAR BONES** Main bones of lower jaw ; fig. 1
- MAXILLARIES** Main bones of upper jaw ; fig. 1
- MOLAR TEETH** Rear flattened teeth.
- MUCOUS CAVITIES** Cavities secreting mucous.
- NICTATING MEMBRANE** Transparent fold of skin forming third eyelid.
- NUCAL SPINE** Spine of upper part of neck.
- OCELLI** Eye-like markings.
- OCCIPITAL** Pertaining to rear portion of head.
- OCCIPUT** Posterior dorsal portion of head.
- OPERCLE** Principal and hindmost bone of gill cover.
- OSSEOUS** Composed of bone or bone-like.
- PALATINES** Paired bones in roof of mouth which extend sideways and backwards from vomer ; fig. 5
- PECTORAL FINS** First or uppermost of paired fins ; fig. 1
- PELVIC FINS.** See ventral fins ; fig. 1
- POSTERIOR** Behind ; opposite of anterior.
- PREMAXILLARIES** Paired bones forming front of upper jaw ; fig. 1
- PREOPERCLE** Bone in gill cover in front of opercle ; fig. 1
- PRE-ORBITAL** Anterior bone bordering cavity housing eye.
- PREHENSILE** Adapted for holding.
- PROCUMBENT SPINE** Forwardly directed spine.
- PSEUDOBRANCHIAE** Accessory gills not respiratory in function.
- RAYS** Supporting rods of fins which appear to be composed of many small segments placed end to end ; never stiff or sharp, sometimes branched, often called "soft rays". See spine.
- ROSTRUM** Beak.
- SCALY APPENDAGE** Triangular projection formed from a scale and found just above base of ventral fin in some fishes ; see also axillary scale.

Figure 5



- DIAGRAM TO ILLUSTRATE GULAR PLATE

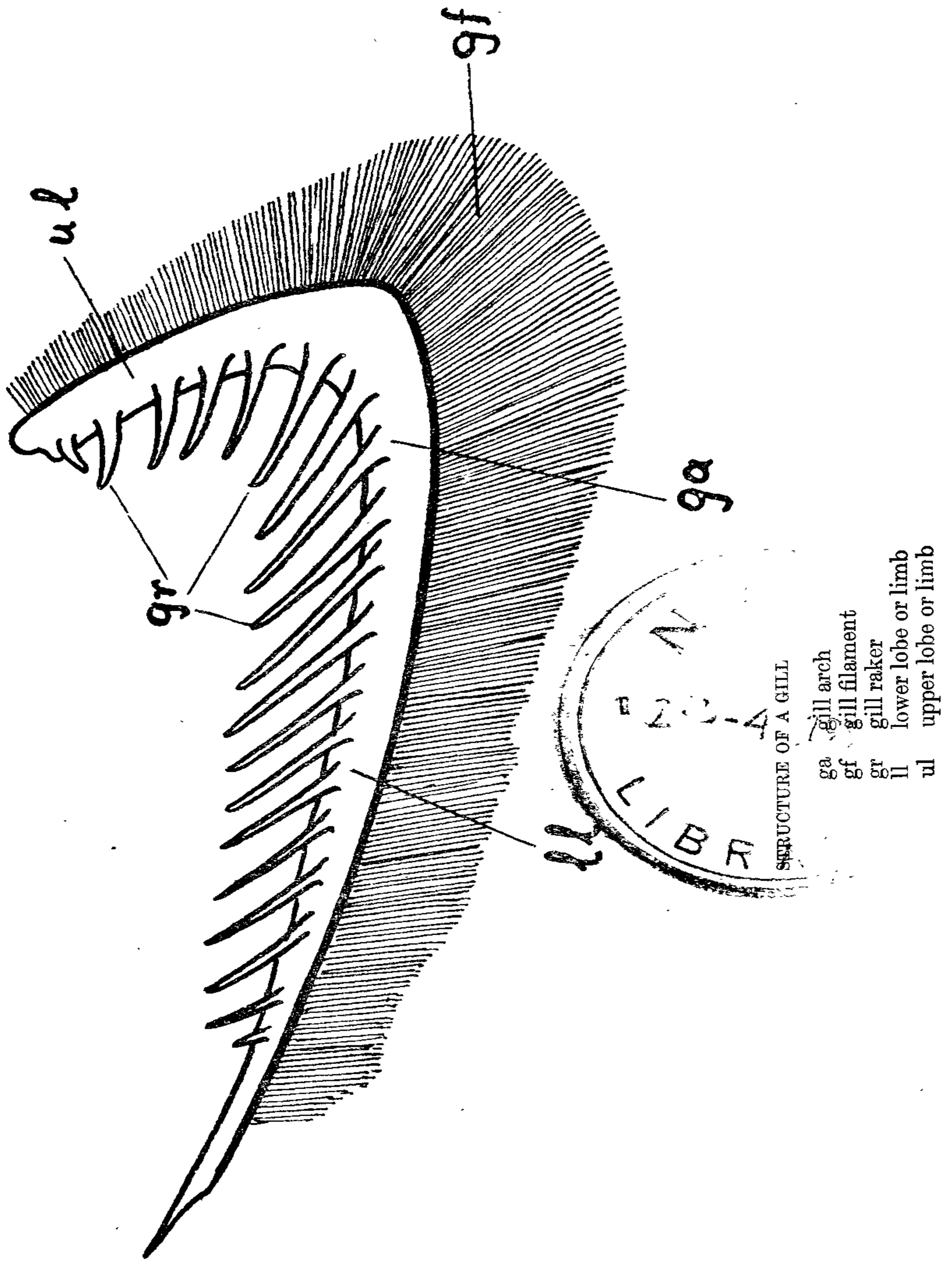
- br branchiostegals
- g gular plate
- mx maxillary
- op operculum
- po preoperculum



THE PALATE OF A BONY FISH

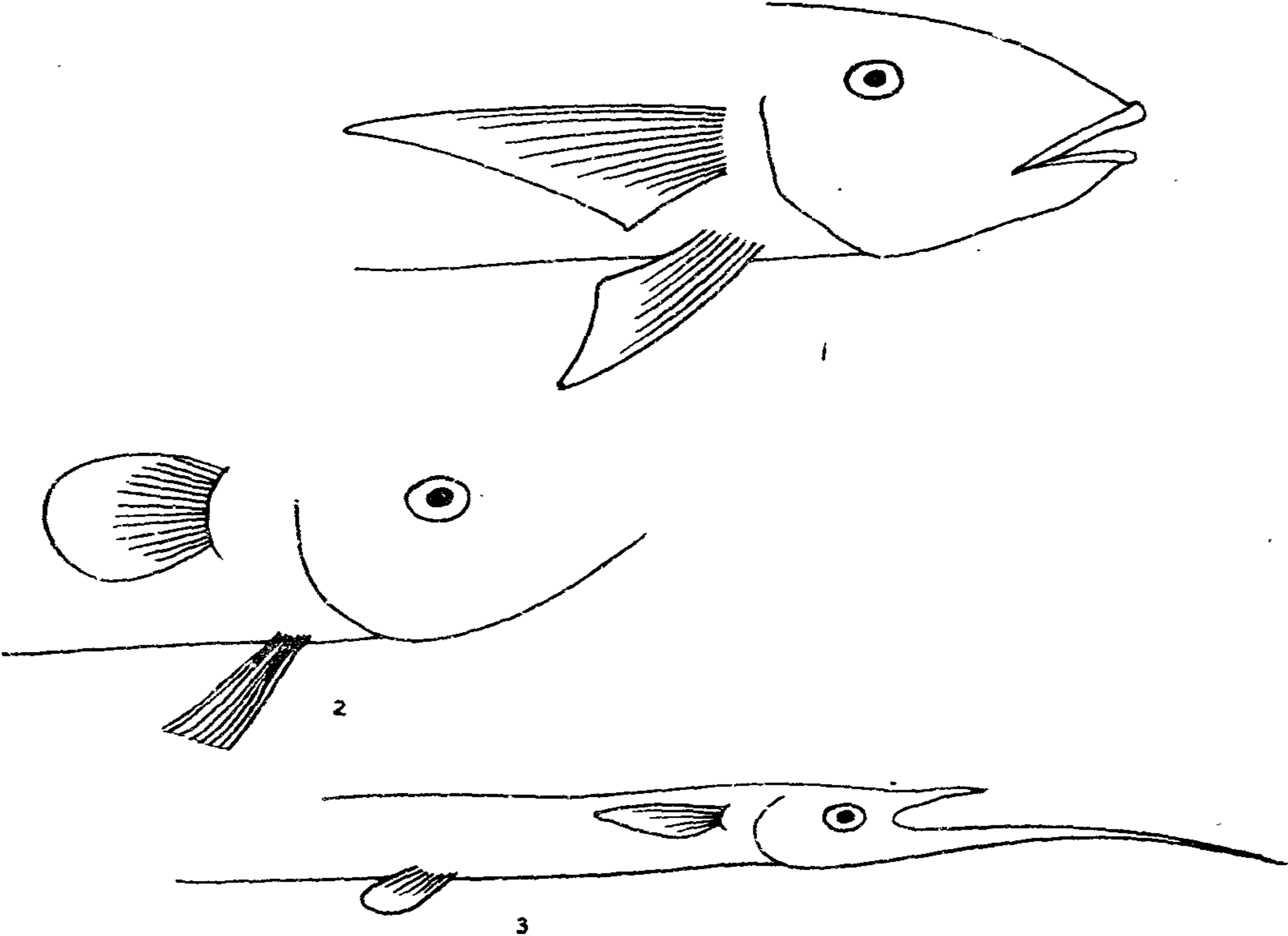
- lp upper lip
- mx maxillary
- pa teeth on palatine
- pm teeth on upper jaw
- vo teeth on vomer

Figure 6



- SYMPHYSIS OF LOWER JAW** Line of junction of two sides of lower jaw.
- SNOUT** Part of head in front of eyes ; length is measured from tip of upper jaw to front of eye ; figs. 1 & 2.
- SOFT DORSAL** Part of dorsal fin supported by rays ; second dorsal fin.
- SPINE** (1) Unsegmented, usually hard and sharp, rods supporting parts of fins.
(2) Any sharp projecting point.
- SPINY DORSAL** Part of dorsal fin supported by spines ; first dorsal fin.
- SPIRACLE** Dorsally situated remnant of most anterior gill slit in some fishes.
- STELLATE** Star shaped.
- STRIAE** Narrow lines, streaks or grooves.
- SUB-FUSIFORM** Almost spindle shaped.
- SUB-ORBITAL** Ventral bone bordering cavity housing eye.
- SUB-TERMINAL** Below extreme end or near it.
- SUPERIOR** Upper.
- SUPPLEMENTAL BONE OR MAXILLARY** Small bone attached to mandible.
- SUPRALATERAL SCALES** Scales above lateral line.
- THORACIC** With reference to chest region.
- TRICUSPID** Three-pointed.
- TRUNCATE** Form which caudal fin may take ; fig. 4.
- UNISERIAL** Arranged in one row.
- VENT** Opening at posterior end of digestive tract.
- VENTRAL** Pertaining to lower part of body ; opposite of dorsal.
- VENTRAL FINS** Paired fins on ventral side of body also called pelvic fins ; fig. 1.
- VERTEX** Top of head.
- VILLIFORM TEETH** Teeth arranged so as to have form of or appearance of velvet.
- VIVIPAROUS** Giving birth to living young.
- VOMER** Bone in roof of mouth just behind middle of upper jaw ; fig. 5.

Figure 7



DIAGRAMS TO ILLUSTRATE THE POSITION OF THE PECTORAL FINS AND NOMENCLATURE

1 Thoracic

2 Jugular

3 Abdominal

THE KEYS AND HOW TO USE THEM

AFTER a fish has been caught it is sometimes important to determine its species. This is not always easy, and in Ceylon it is sometimes quite difficult, because there are more than 675 species recorded from here. The keys presented are intended to simplify this task of identification. Accordingly they deal as far as possible with readily examinable external characteristics that have diagnostic value.

In the interest of brevity and precision it has been necessary to make use of technical terms although they have been avoided wherever possible. To assist those unfamiliar with these terms a glossary is included in front of the Bulletin together with descriptive illustrations. These should make the meaning of every technical term used quite clear.

Most fish included in the catalogue will conform with one of the two or more bracketed descriptions provided at each of the several stages of the 'running down' that is involved in species identification. The idea is to follow through the descriptions that suit the fish by successive references to the parts of the key as indicated. It has not been possible to include in the keys all the fish in the catalogue as sufficient data is unavailable for a few.

The first decision to make is to what class the fish belongs, then order, superfamily, family, subfamily, genus and finally species, which is what is to be determined. In some cases this requires the examination of relatively few characteristics but with others the task is long and involved.

The use of the key is best illustrated by taking a specific example, for instance *Rasbora vaterifloris* Deraniyagala, known as the *hal mal titheya* or *hal mal dhandiya* in Sinhalese and as the *golden rasbora* in English (it has no Tamil name so far as is known), and trying to "run it down" in the regular fashion as if it were an unknown species that had to be identified.

This fish has a true bony skeleton, ctenoid scales, a single opening to the exterior from each gill chamber, ventral fins that are abdominal in position, a single spineless dorsal fin, gill membranes that are broadly united with the isthmus, jaws toothless, body with scales, 3 branchiostegals, pseudobranchiae present, teeth in roof of mouth, no barbels, rounded abdomen, an interrupted lateral line which is closer to the ventral edge than to the dorsal edge of the body, and 11-12 predorsal scales.

The first task is to determine which class the fish belongs to. Reference to page 16 and the above description shows that the fish belongs in class **Teleostomi** (page 17) and reference must be continued there.