

1.3 Illustrated Glossary of Technical Terms and Measurements

External Morphology and Measurements

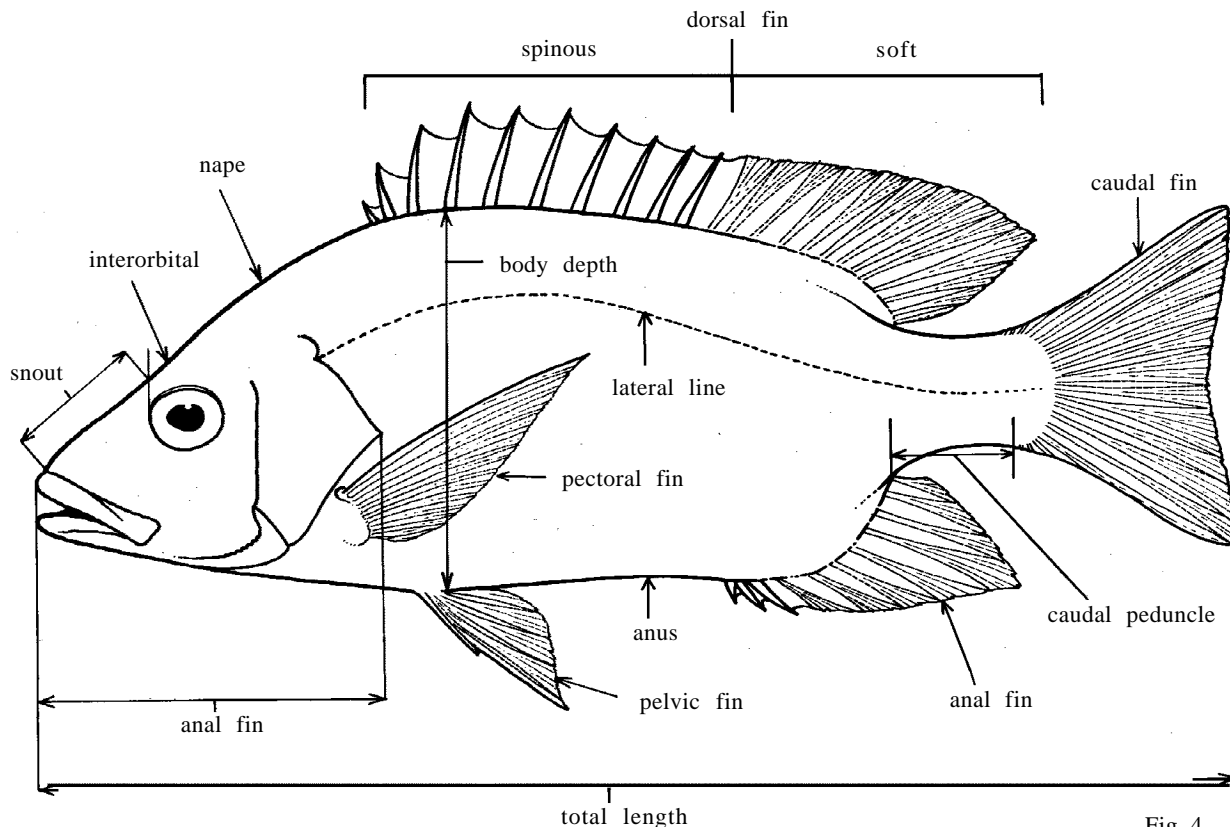


Fig. 4

Technical Glossary of Terms

Anus - The posterior external opening of the digestive tract from which waste products are excreted (Fig. 4).

Bar - An elongate colour marking with vertical orientation, the sides of which are usually more or less straight (Fig. 6)

Axil - The angular region between a fin and the body; usually used in reference to the underside of the pectoral fin toward the base (Fig. 5); homologous to the armpit of man.

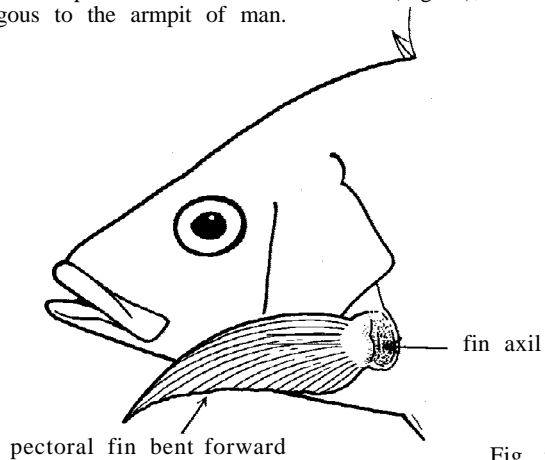


Fig. 5

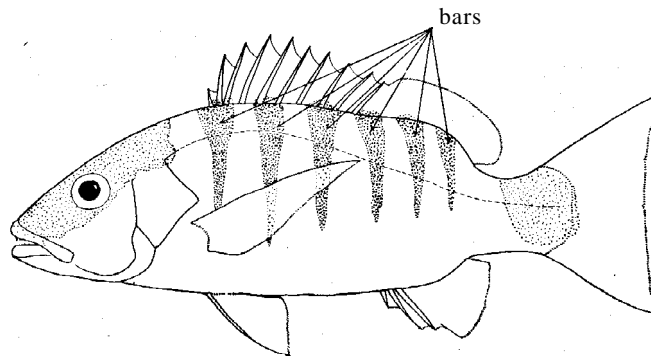
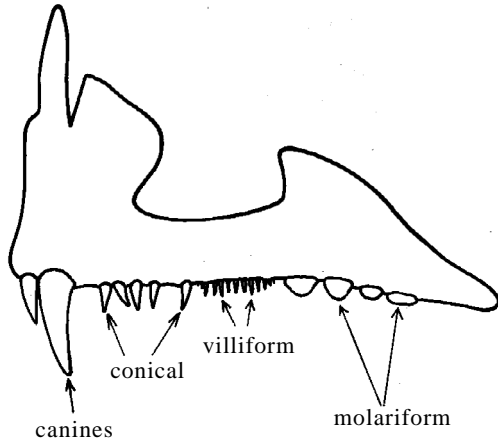


Fig. 6

Canine - A prominent fang-like, pointed tooth (Fig. 7).



Type of teeth Fig. 7

Carnivore - A flesh eating animal. Most lutjanids are classified as carnivores.

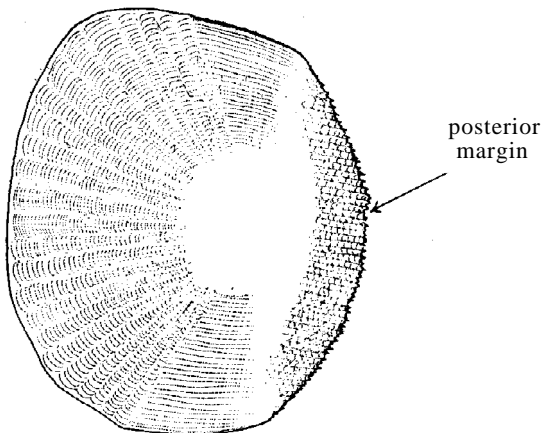
Caudal fin - The tail fin (Fig. 4).

Caudal peduncle - The narrow part of the body immediately preceding the caudal fin (Fig. 4).

Compressed - Laterally flattened; used in reference to body shape (i.e., deeper than wide).

Conical - A descriptive term for teeth that are cone-shaped (Fig. 7).

Ctenoid scales - Scales which have tiny tooth-like projections along their posterior margin (Fig. 8).



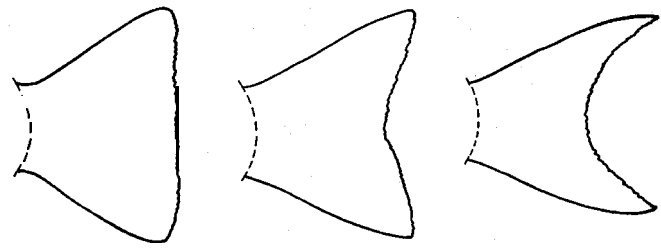
Ctenoid scale Fig. 8

Depth - A vertical measurement of the body of a fish; the greatest depth of the body (Fig. 4) is a diagnostic feature in lutjanids.

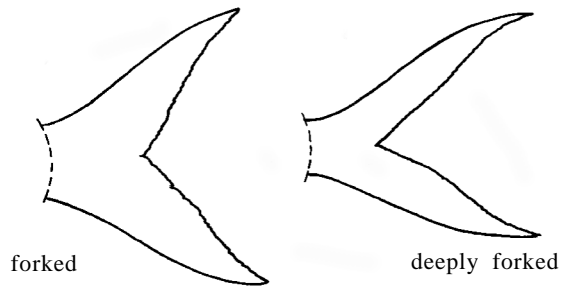
Dorsal - Toward the back or upper part of the body.

Dorsal fin - A median fin along the back; in lutjanids it is composed of spinous rays anteriorly and soft rays posteriorly (Fig. 4).

Emarginate - Concave; used to describe the shape of the posterior margin of the caudal fin (Fig. 9).



truncate emarginate lunate



forked deeply forked

Types of caudal fin Fig. 9

Fin rays - General term for the soft rays and spines that support the fins. The spiny and soft dorsal fin rays in lutjanid fishes are continuous (Fig. 4).

Forked - Used to describe a caudal fin shape with angular, pointed lobes (Fig. 9).

Fusiform - Spindle-shaped; used in reference to the body shape of a fish which is approximately cylindrical and tapers toward both ends (Fig. 10).

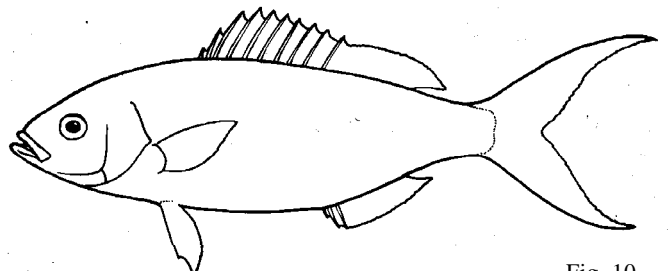
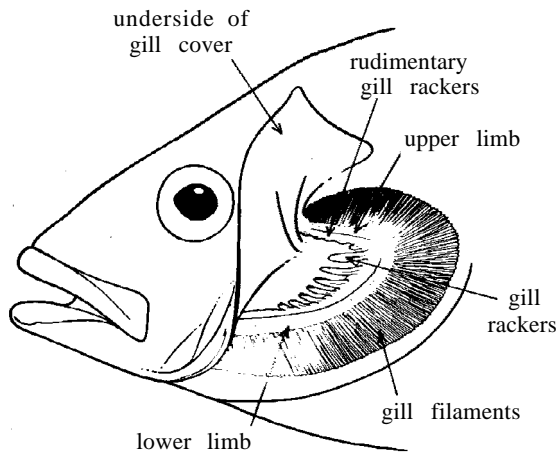


Fig. 10

Gill arch - The J-shaped structure under the gill cover that bears the gill filaments and gill rakers (see below). There are 4 gill arches on each side in lutjanids (Fig. 11).



Exposed gill arch of lutjanid fish Fig. 11

Gill rakers - Short protuberances of the gill arch on the opposite side from the red gill filaments (Fig. 11). In lutjanid fishes the number of gill rakers is often diagnostic. There is usually a series of relatively elongate, well-defined rakers, and several low, ill-defined rudiments. The rakers on the upper arch are often difficult to count without dissection, therefore counts for the lower limb only as well as the total count are given.

Head length - Straight-line measurement taken from the front of the upper lip (snout tip) to the posteriormost extension of the operculum or opercular membrane (Fig. 4).

Interorbital space - The region on the top of the head between the eyes (Figs 4 and 12).

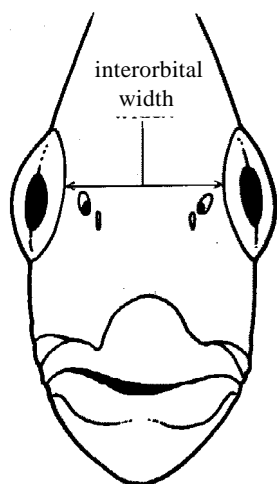


Fig. 12

Lateral - Referring to the side or directed toward the side; the opposite of medial.

Lateral-line scales - The pored or tubed scales forming a sensory canal between the upper end of the gill opening and the base of the caudal fin (Fig. 13).

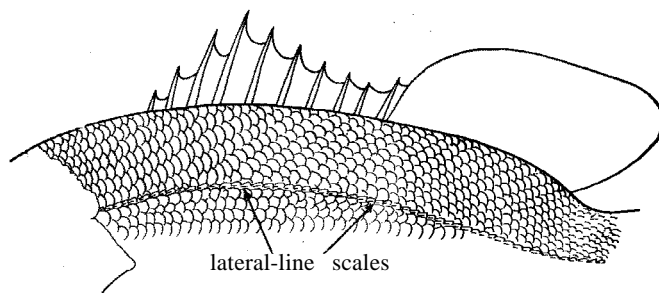
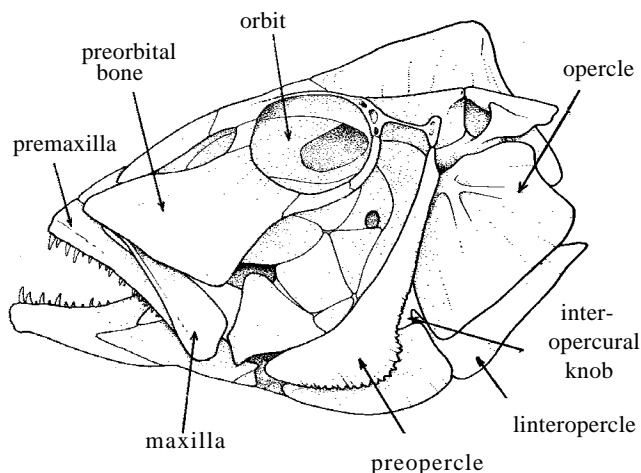


Fig. 13

Lower limb - Refers to the bottom or ventral section of the first gill arch (Fig. 11). The number of gill rakers on the lower limb is diagnostic for lutjanids.

Lunate - Sickle-shaped; used to describe a caudal fin which is deeply emarginate (Fig. 9).

Maxilla - The supporting bone for the premaxilla, the bone in the upper jaw that bears teeth (Fig. 14).



Generalized skull of Lutjanidae Fig. 14

Medial - Toward the middle or median plane of the body; opposite of lateral.

Median fins - The dorsal, anal, and caudal fins (Fig. 4).

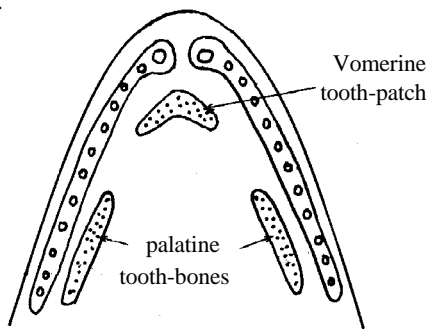
Molariform or molar-like - Tooth which is shaped like a molar (i.e. low, broad and rounded; Fig. 7).

Nape - The forehead region (Fig. 4).

Opercle - The large bone forming the upper posterior part of the gill cover (Fig. 14).

Orbit - The bony eye socket (Fig. 14).

Palatine - A paired lateral bone on the roof of the mouth lying between the vomer and the upper jaw (Fig. 15). In most lutjanids they bear a row of small teeth.

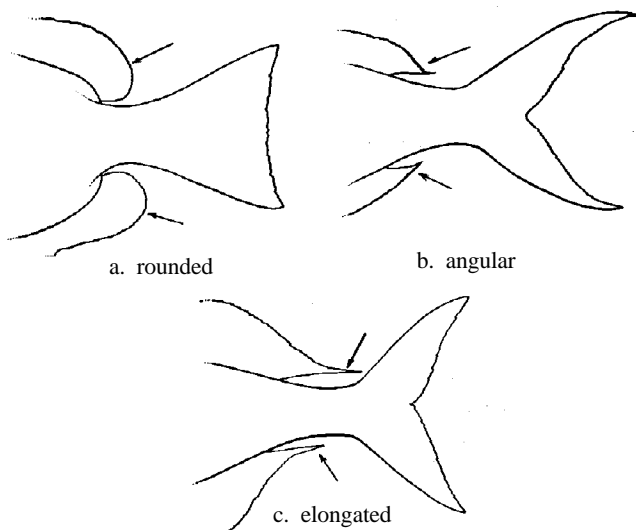


Ventral view of upper jaw Fig. 15

Pectoral fin - The fin on each side of the body immediately behind the gill opening (Fig. 4).

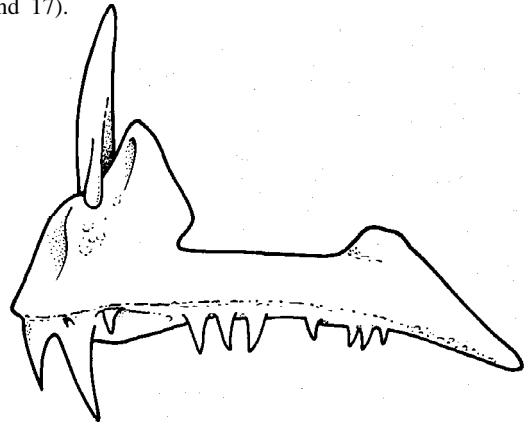
Pelvic fin - One of a pair of juxtaposed fins ventrally on the body below the pectoral fins in lutjanids (Fig. 4).

Posterior profile of dorsal and anal fins - The shape of the rear margin of these fins is a diagnostic feature in lutjanids. Generally it is rounded, angular, or distinctly pointed (Fig. 16).



Posterior profile of dorsal and anal fins Fig. 16

Premaxilla - The anterior bone of the upper jaw which bears the jaw teeth in lutjanids (Figs 14 and 17).



Premaxilla of a lutjanid Fig. 17

Preopercle - A somewhat boomerang-shaped bone, the edges of which form the posterior and lower margins of the cheek region (Fig. 14). The shape of the posterior margin is frequently diagnostic in lutjanids, particularly the presence or absence of serrations or a notch (Fry. 18). Species of *Lutjanus* with a pronounced preopercular notch also have a well-developed bony knob, a protuberance of the interopercle bone, lying directly opposite of and fitting into the notch (Fig. 18a).

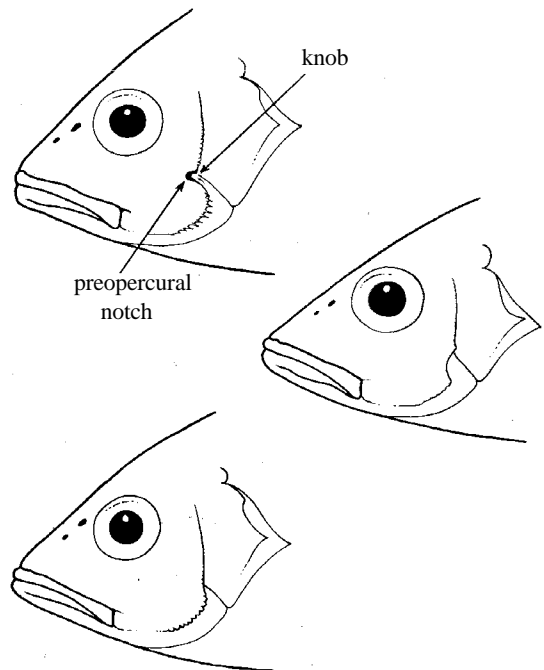


Diagram of lutjanid heads showing variation in development of preopercular notch Fig. 18

Preorbital bone - The largest of the bones forming the lower edge of the eye, located ventral and slightly anterior to the eye (Fig. 14). The width of this bone (preorbital space), measured from the upper jaw to the lower edge of the eye is frequently diagnostic for lutjanids.

Rounded - Refers to the shape of the posterior profile of the dorsal and anal fin (Fig. 16a).

Ray - The supporting bony elements of fins; includes spines and soft rays.

Rudiment - Used in reference to small nodular gill rakers at the ends of the upper and lower limbs of the first gill arch (Fig. 11).

Serrate - Series of small spinules or notches along the free margin of a bone such as the preopercle (Figs 18a,c); like the edge of a saw.

Snout -The part of the head in front of the eye. Snout length is measured from the front of the upper lip to the anterior edge of the eye (Fig. 4).

Soft ray - A segmented fin ray which is composed of two closely joined lateral elements. It is flexible and usually branched in lutjanids (Fig. 4).

Stripe - A horizontal, straight-sided colour marking, which is most often relatively narrow (Fig. 19).

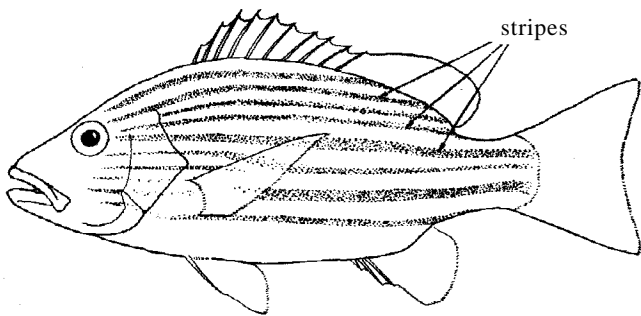


Fig. 19

Synonym - An invalid scientific name of an organism proposed after the accepted name.

Teeth - Lutjanid fishes have a variety of tooth shapes found on the upper and lower jaws, vomer, palatine, and upper surface of the tongue. The most common shapes (shown in Fig. 7) are: (1) caniniform, (2) conical, (3) villiform, and (4) molariform.

Thoracic - Referring to the chest or pectoral region.

Total length - The straight-line distance from the tip of the anteriormost jaw to a vertical line passing through the posterior tip of the longest caudal fin ray (Fig. 4).

Truncate - Square-ended; used to describe a caudal fin shape with a vertically straight posterior border (Fig. 9).

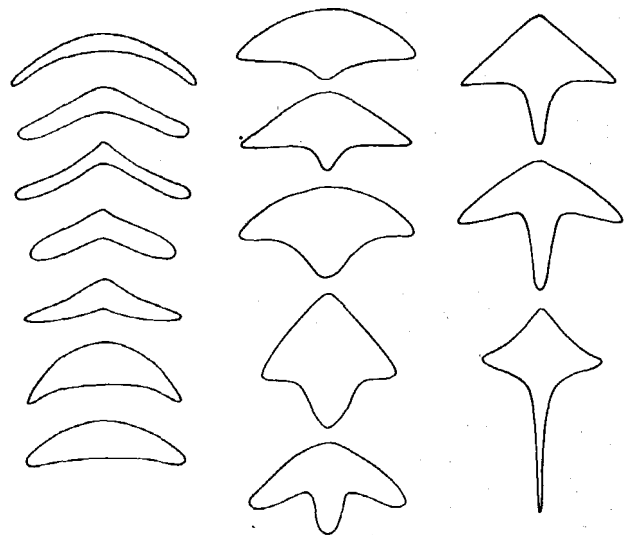
Upper profile of head - Refers to the shape of the head in lateral view from the beginning of the dorsal fin to the tip of the snout. The steepness of the snout profile is often diagnostic for lutjanids (Fig. 4).

Ventral - Toward the lower part of the body; the opposite of dorsal.

Villiform - Numerous, small slender projections; used to describe bands of small, close-set, slender teeth (Fig. 9).

Vomer - A median unpaired bone toward the front of the roof of the mouth (Fig. 15); almost always bearing a patch of villiform teeth in lutjanids.

Vomerine tooth patch - The group of villiform (except molar-like in *Hoplopagrus*) teeth located anteriorly on the roof of the mouth (Fig. 15). The shape of the tooth patch varies greatly in lutjanid fishes and is frequently diagnostic (Fig. 20).



Shapes of the vomerine tooth-patch in lutjanid fishes

Fig. 20