

# TECHNICAL TERMS

**Adipose fin:** an unpaired, membranous non-rayed fin, commonly found on the dorsal midline of the caudal peduncle of, *e.g.*, catfishes.

**Anal fin:** an unpaired rayed fin, on the ventral midline of the body just behind the anus.

**Anus:** like that in human beings; in fishes, it usually appears as a minute hole on the ventral midline just before the anal fin (but well separated from the anal fin in some fishes).

**Barbel:** a thread-like cutaneous (rarely bony) structure, which is developed around the mouth. Four categories of barbels are commonly recognized: 1) nasal barbel, a kind of barbel associated with the nostril; 2) maxillary barbel, a kind of barbel associated with the upper jaw or lip; 3) rostral barbel, a kind of barbel on the anteroventral part of snout before jaws; 4) mandibular barbel, a kind of barbel at the ventral surface of lower jaw.

**Belly:** an anteroventral part of the body around the abdominal cavity.

**Branchiostegal ray:** a thread- or blade-like laminar bone, supporting the gill membrane (branchiostegal membrane).

**Caudal fin:** an unpaired rayed fin at the posteriormost region of the body. It is sometimes minute, absent, or continuous with the dorsal and/or anal fins.

**Caudal peduncle:** a posterior part of the body behind the vertical line through the end of the anal-fin base.

**Cheek:** a small area in the lateral part of the head between the operculum and the infraorbital region.

**Chin:** an anteriormost part of the ventral surface of the lower jaw.

**Dorsal fin:** an unpaired rayed fin on the dorsal midline. In many spiny-finned fishes, the dorsal fin is divided into two parts; in such case, the anterior and posterior parts are called "1st (first) dorsal fin" and "2nd (second) dorsal fin", respectively.

**Filamentous ray (or filament):** an elongated, thread-like fin ray (or spine), entirely or largely free from the fin membrane.

**Fin:** a membranous structure developed on the body, which is used in swimming and/or maintaining the body position. In many fishes, 2 kinds of paired fins (*viz.* pectoral and pelvic fins) and 3–4 unpaired fins (dorsal, anal, adipose, and caudal fins) are recognized.

**Finlet:** one or more posterior rays of the dorsal and/or anal fin, separate from the main part of the respective fins.

**Gill opening:** a slit or pore-like opening for water discharge at the posteriormost of head.

**Gill raker:** usually an element of the comb-like structure, developed along anterior margin of each gill arch. When the rakers on the upper and lower limbs of the gill arch are counted separately, a raker straddled the angle of the arch, if present, is included in those of the lower limb.

**Infraorbital region:** a small area in the lateral part of the head just below the eye (not including the jaws).

**Isthmus:** narrow midventral interspace between right and left sides of the gill membranes.

**Keel:** sharp-edged, linearized cutaneous or bony structure, looks like a keel along the bottom of a boat. Clupeids, engraulidids and some cyprinids have a long "keel" along the ventral midline of the body.

**Lateral line:** an external organ of the sensory system (exposed terminal region of nerves) on the head and body; herein indicated in particular is the one found on the body (*i.e.*, not including the cephalic lateral-line system), unless otherwise noted. In many fishes, the lateral line(s) forms as a linearly-arranged canal structure (lateral-line canals), and they appear as longitudinal "line(s)" on the body. There are no lateral-line canals on the body in several fishes (*e.g.*, clupeids, engraulidids, and gobiids).

**Nape:** a dorsoanterior part of the body just behind the occipital region.

**Nostril [or naris (pl. nares)]:** a nasal opening; frequently found at the tip of a short tube. In many fishes, there are two pairs of the nostrils on the snout.

**Nuptial color:** a particular coloration, which appears chiefly in the reproductive season; usually this color is more vivid in male than in female (with a few exceptions).

**Occiput (or occipital region):** a dorsoposterior part of the head just behind the eyes (superior to the skull).

**Operculum:** a posteriormost part of side of the head behind the preopercle, and covering the gill chamber.

**Pectoral fin:** a paired rayed fin, which is developed on the lateral or ventrolateral side of the body just behind the head. Amongst the Mekong fishes, swamp eels usually lack this fin (as well as the pelvic fin).

**Preopercle:** a lunate bone at the boundary between the cheek and the operculum.

**Pelvic fin:** a paired rayed fin, which is developed on the ventral surface of the body before the anal fin. Several fishes lack this fin (*e.g.*, phallostethids); in the gobies, the pelvic fins are usually fused medially, forming a sucking-disc.

**Ray (or segmented ray):** a type of fin rays, having segments (at least in distal part). In many cases, segmented rays are soft and branched distally (called "branched rays"); some simple rays are often hardened and form a spine-like structure (found in *e.g.* some cyprinids and catfishes). Actually each ray represents a laterally-paired structure.

**Spine (or spinous ray):** a type of fin rays, lacking segments. In many cases, spines are bony and pungent, but sometimes flexible (in *e.g.* dragonets and gobies). Actually each spine represents a laterally-unpaired structure. See also "*Ray (or segmented ray)*".

**Scute:** a type of modified scale with a sharp bony keel at its midline. Commonly found on the pre-anal midline in the clupeid and engraulid fishes (see right figure).

**Snout:** an anterior part of the head before the eye (not including jaws).

**Swim bladder (or air bladder):** an internal balloon-like organ, which is developed beneath the vertebral column.

**Tail:** a posterior part of the body behind a level of anus.

**Trunk:** a middle part of the body between the head and the tail.

**Thorax:** an anteroventral part of the body before the belly; usually points toward the area ventral and anteroventral to the pectoral-fin base.

