

Shining at Sea: Field Identification of Silver pomfrets in Indian waters

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Three species of *Pampus* (*P. chinensis*, *P. candidus*, and *P. griseus*) are sympatric in Indian waters, although they differ in their distribution range and relative abundance. *P. chinensis* is widely distributed along the entire Indian coastline, whereas *P. candidus* is restricted to the west coast and Tamil Nadu, and *P. griseus* occurs exclusively along the east coast. Among the three, *P. griseus* most closely resembles *P. candidus* in overall body form. Both *P. griseus* and *P. candidus* have an elongated anal fin that extends beyond the caudal peduncle. Their caudal fin is also long and deeply forked, with the lower lobe almost twice the length of the upper, a feature consistent across all size classes of these two species. Earlier studies have reported shortening of the lower caudal fin lobe with age, may be misleading, possibly due to breakage at the tip of the anal fin, a detail that may have been overlooked. Therefore, this characteristic should not be heavily relied upon to distinguish these cryptic species. Because pomfrets generally have long, thin, fragile and delicate fins that are highly prone to damage during fishing operations, post-harvest handling, or predator attacks, extreme caution must be exercised when conducting taxonomic investigations of such species. Such damage can easily lead to misidentification if not properly accounted for. This field identification guide will serve as a practical tool for fishery officers, fishers, students, researchers, and local scientists, helping them accurately identify *Pampus* species during routine sampling and fishery data collection. It will also enhance the precision of species-specific records and strengthen the reliability of fishery statistics, thereby supporting future research, monitoring, and sustainable management of *Pampus* resources along the Indian coastline.

Silver pomfrets and butterfishes

Family: Stromateidae Rafinesque, 1810

Diagnostic characters: The body is oval, laterally compressed, and notably deep, measuring about 31–55% of standard length. Eyes are relatively small to moderate in size, with the snout typically longer than the eye diameter; adipose tissue extends over the snout. The mouth is small, bearing minute, blade-like, uniserial laterally compressed teeth, sometimes with three cusps restricted to the jaws, with none on the vomer or palatines. The dorsal fin is either continuous or partially divided, consisting of 5–7 slender, flexible spines embedded in flesh and a total of 42–57 fin elements. The anal fin carries 2–3 spines and 33–48 total elements. Dorsal and anal fins are often falcate. Pectoral fins are fan-shaped or wedge-like, comprising 18–27 rays. Pelvic fins are absent in adult (pelvic bones present in some young). The caudal skeleton includes 4 hypurals and 2–3 epurals. Scales are tiny, cycloid, and easily shed; the top of the head and nape are typically scaleless, though small pores may be present. Branchiostegal rays number 5 or 6; gill rakers are slender, closely spaced, and range from 12 to 24. The vertebral count varies between 30 and 48.

Colour: Distinctly silvery in appearance, with a bluish sheen along the back; gill membranes and the interior of the mouth are darkly pigmented.

Habitat, biology, and fisheries: Adults are found both in demersal and pelagic zone on the continental shelf, generally down to depths of about 100 m, often forming small schools. Juveniles are epipelagic and commonly associate with jellyfish. The species holds commercial significance in certain regions and is

regarded as a high-quality food fish. Individuals of some species may reach a maximum total length of 40–60 cm. The group comprises three valid genera and 21 valid species, of which three species under the genus *Pampus* are recognized in the Indian coastline (Fricke *et al.* 2025).

Distribution: Distributed along coastal marine areas of the Americas (north and south), western African shores, and southern parts of Asia in the Indo-Pacific.

Habitat, biology, fisheries and distribution: Silver pomfrets are medium-sized, pelagic fishes that commonly form schools and are typically found in shallow coastal waters, occasionally extending into estuarine environments. Their diet mainly consists of soft-bodied coelenterates and free-swimming crustaceans. These fishes are primarily harvested through trawl fisheries and are highly valued as table fish. Within this group, three species *Pampus chinensis*, *P. candidus*, and *P. griseus* hold notable commercial significance in the Indian coast line.

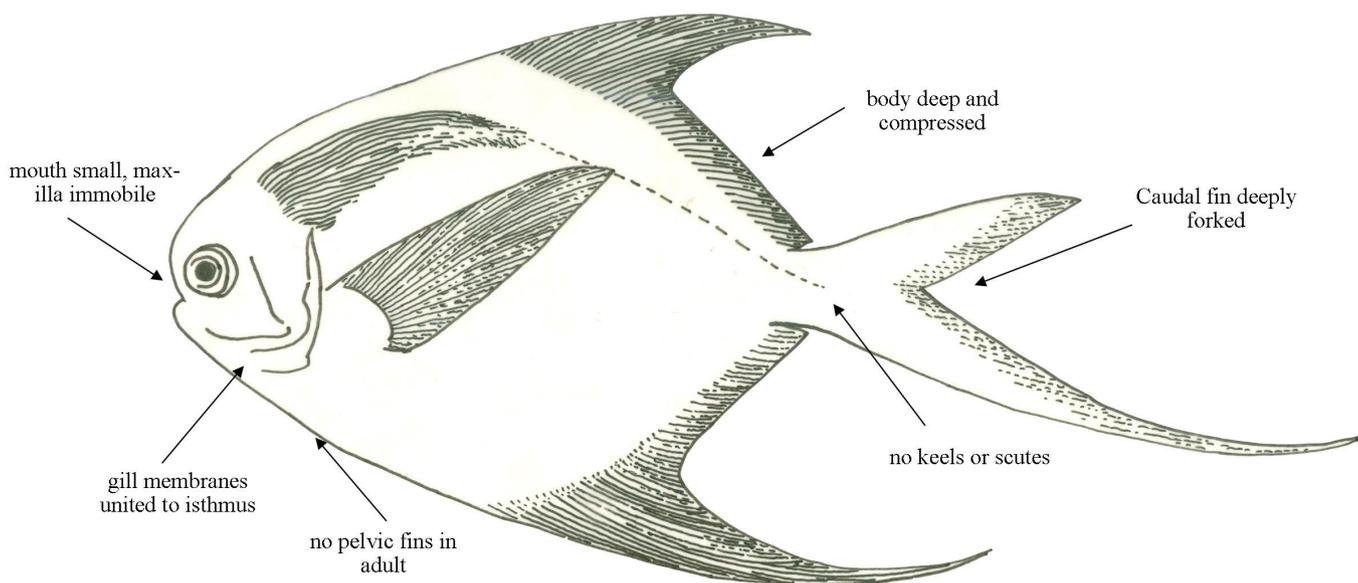


Fig. 1. General features of a typical stromateid fish species

Silver pomfrets

Genus *Pampus* Bonaparte, 1837

Diagnostic characters: The body is subcircular, very deep, and laterally compressed. The dorsal fin begins opposite the origin of the anal fin. Pelvic fins are absent, though the pelvic bone is elongated. Eyes are relatively small, and the gill opening is short, extending to the lower edge of the pectoral-fin base or slightly below. In most species, more than five sharp, blade-like spines are present before the sickle-shaped dorsal and anal fins, though these spines are lacking in *Pampus chinensis*. The lateral line is positioned high, running along the dorsal profile before curving onto the caudal peduncle.

Key to the species of *Pampus* occurring along the Indian coast

1a. Body has a diamond shape, very deep equal to standard length minus head length, forehead almost straight, short caudal peduncle, some jaw teeth having three cusps, both upper and lower lobes of caudal fin equal in length, anal fin and caudal fin not extended and no spines preceding the median fins; gill rakers slender and needle-like; transverse occipital canals of the ventral branches of lateral line slender, eyebrow-like, longer than dorsal branches, reaching base of dorsal fin and 2/3 of pectoral fin; total vertebrae, 32-33 (usually 33) (all along the Indian coast line)..... **Chinese silver pomfret *P.***

chinensis (Euphrasen, 1788) (see Fig. 2, Table 1).

1b. Body has an oval shape, depth smaller than standard length minus head length, forehead not straight, long caudal peduncle, jaw teeth without branched cusps, lower lobe of caudal fin larger than the upper, anal fin and caudal fin lower lobe greatly extended, and spines preceding the median fins; gill rakers short and tubercular-like spinules; transverse occipital canals of the ventral branches of lateral line longer than dorsal reaching base of dorsal fin and 2/3 of pectoral fin 2.

2a. Total vertebrae, 36–38 (usually 37–38) (entire west coast and Tamil Nadu coast of India) **Indian silver pomfret *P. candidus* (Cuvier, 1829)** (see Fig. 3, Table 1).

2b. Total vertebrae, 35–36 (usually 35) (entire east coast of India) **Bengal silver pomfret *P. griseus* (Cuvier and Valenciennes, 1833)** (see Fig. 4, Table 1).

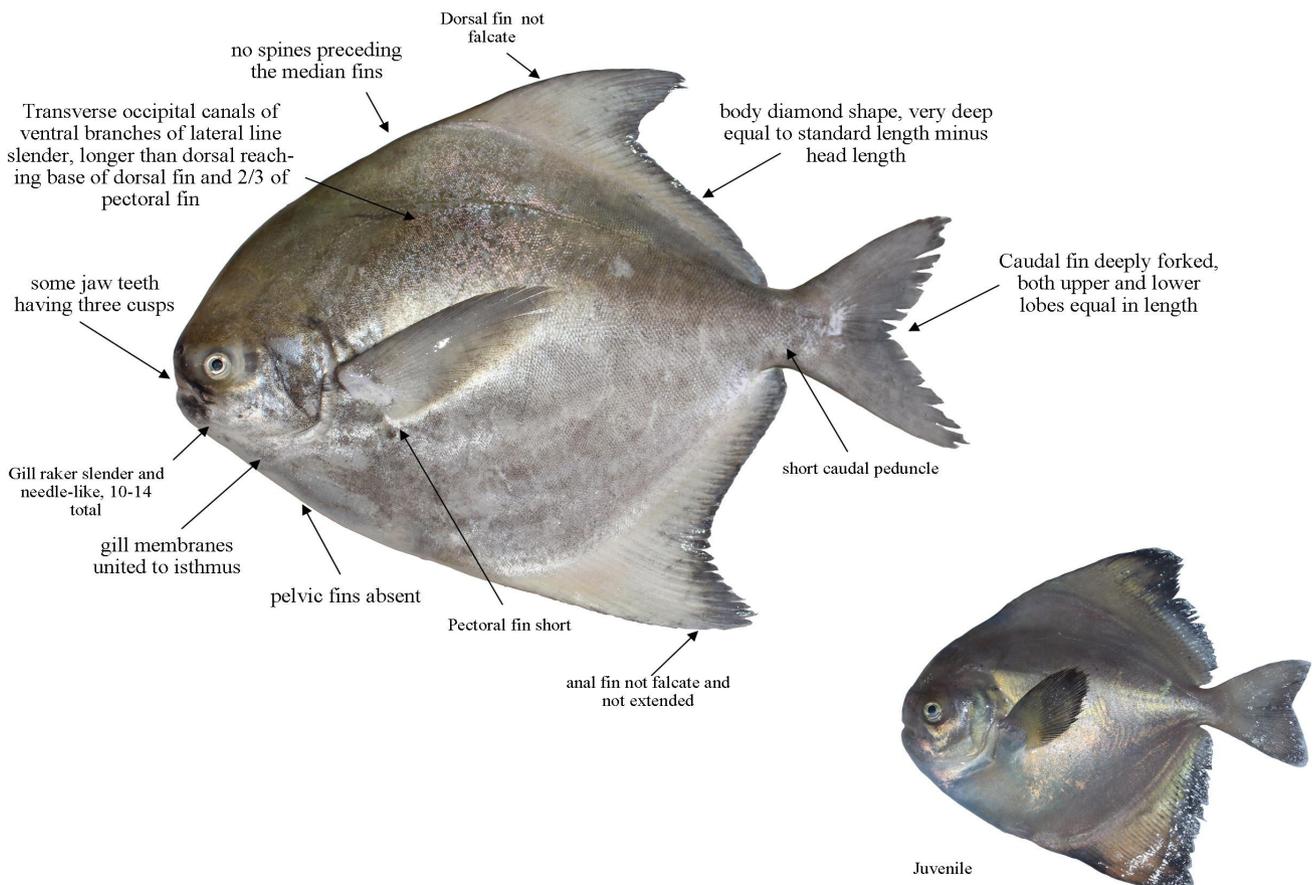


Fig. 2. Chinese Silver pomfret *Pampus chinensis* (Euphrasen, 1788)

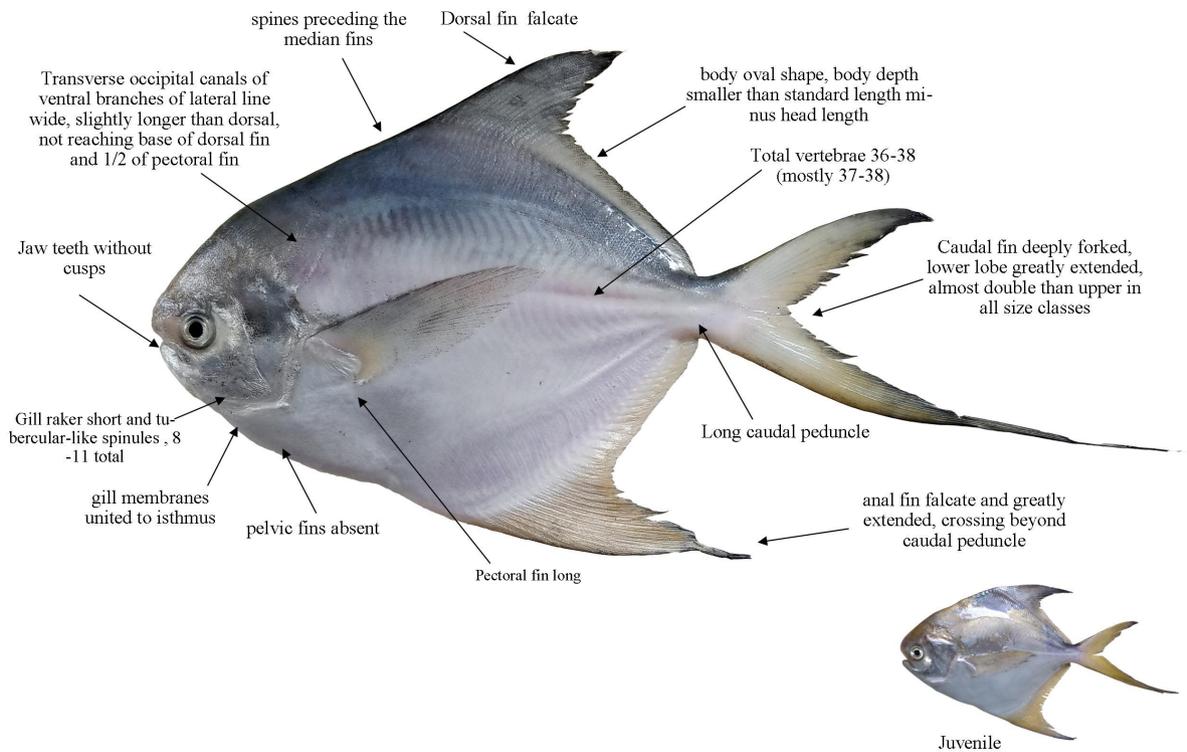


Fig. 3. Indian silver pomfret *Pampus candidus* (Cuvier, 1829)

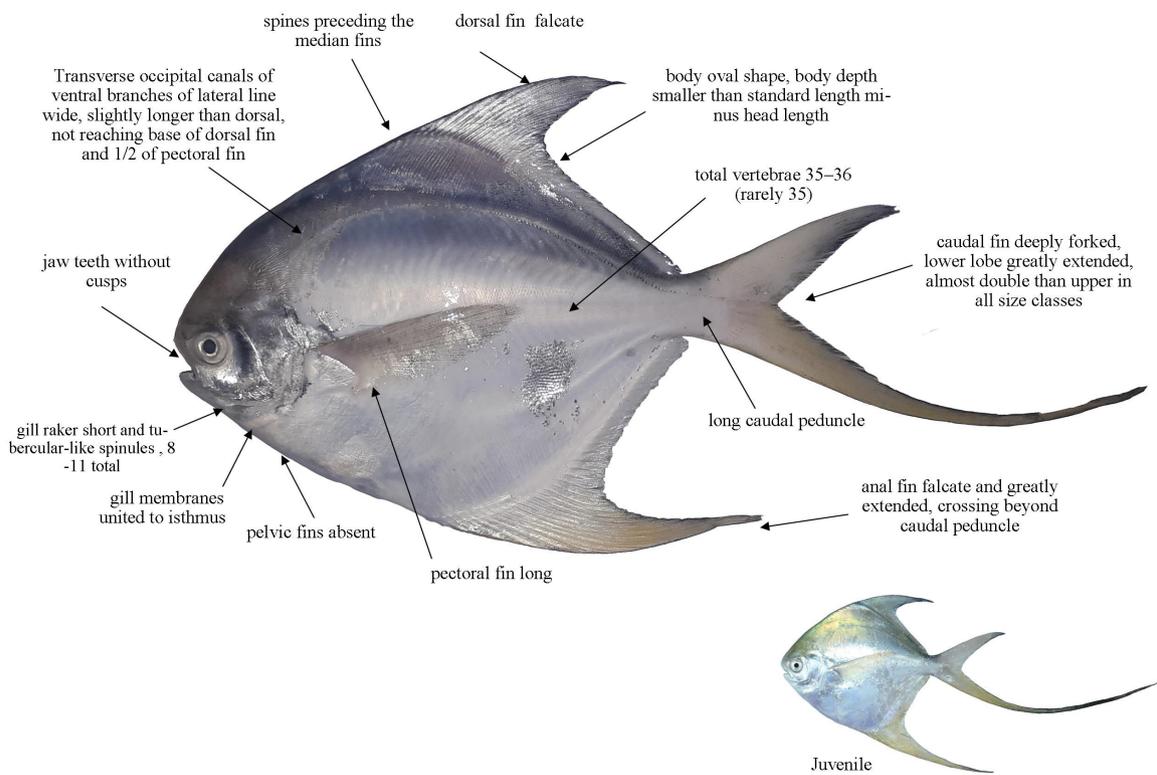


Fig. 4. Bengal silver pomfret *Pampus griseus* (Cuvier and Valenciennes, 1833)

Table 1. Comparison of the morphological characteristics of three species of *Pampus* from the Indian waters

Species/Features	<i>P. griseus</i>	<i>P. candidus</i>	<i>P. chinensis</i>
Overall body shape	Oval	Oval	Diamond
Body depth	Shorter than standard length minus head	Shorter than standard length minus head	Equal to standard length minus head length
Forehead	Not straight	Not straight	Straight
Caudal peduncle	Long	Long	Short
Spines preceding median fins	Yes	Yes	No
Jaw teeth	No branched cusps	No branched cusps	Some jaw teeth with three cusps
Gill raker shape	Short and rounded	Short and rounded	Slender and needle-like
Total gill rakers	8-11	8-12	10-14
Groove on lower ridge of gill cover	Absent	Absent	Absent
Transverse occipital canals of ventral branches of lateral line	Wide, eyebrow-like, slightly longer than dorsal branches, not reaching base of dorsal fin and 1/2 of pectoral fin	Wide, eyebrow-like, slightly longer than dorsal branches, and not reaching base of dorsal fin, 1/2 of pectoral fin	Slender, eyebrow-like, longer than dorsal branches, reaching base of dorsal fin and 2/3 of pectoral fin
Total Vertebrae	35-36 (mostly 36)	36-38 (mostly 37-38)	32-33 (mostly 33)
Eye	Small, diameter less than 1/2 of head length	Small, diameter less than 1/2 of head length	Small, diameter less than 1/2 of head length
Pectoral fin	Long	Long	Short
Anal fin	Greatly extended, crossing beyond caudal peduncle	Greatly extended, crossing beyond caudal peduncle	Not extended, never crossing beyond caudal peduncle
Lower-lobe caudal fin	Greatly extended, almost double than upper in all size classes	Greatly extended, almost double than upper in all size classes	Never extended

References

- Roul *et al.*, 2021. *Front. Mar. Sci.*, 8, 778422
 Fricke *et al.*, 2025. Eschmeyer's Catalog of Fishes: Genera, Species, References.