

A field guide to  
**FISHES OF VEMBANAD**



Anu Radhakrishnan | Maneeja Murali | Bibin Xavier | Priyadarsanan Dharma Rajan

A field guide to  
**FISHES OF VEMBANAD**

Anu Radhakrishnan  
Maneeja Murali  
Bibin Xavier  
Priyadarsanan Dharma Rajan



Community Environmental Resource Centre,  
Ashoka Trust for Research in Ecology and the Environment  
Ammankovil Street,  
Mullackal, Alappuzha, Kerala  
2022



A field guide to  
**FISHES OF VEMBANAD**

**Authors**

Anu Radhakrishnan  
Maneeja Murali  
Bibin Xavier V. F.  
Priyadarsanan Dharma Rajan

**Photo Contributors**

Anen Radhakrishnan  
Anoop V. K.

**Copyeditor**

Chitralkha A. D.

**Editors**

Anwar Ali  
Rajeev Raghavan

**Design, Layout & Illustrations**

Aswanth V. K  
Alok Dinesh  
Padmajan Rajeev  
(Art Unlimited Multitude)

**Map**

Ecoinformatics Lab, ATREE

**First Edition 2022**

ATREE – CERC  
Ammankovil Street,  
Mullackal, Alappuzha,  
Kerala – 688011, India  
Email: cerc@atree.org  
www.vembanad.org  
www.atree.org

All rights reserved under International Copyright Conventions. No parts of this book maybe reproduced, stored in retrieval system, transmitted in any form or by any means, electronic, mechanical, recording or otherwise, without the prior written permission of the copyright owner.

Copyright © 2022 by ATREE

Distributed by ATREE

Printed and bound at

Progressive Press, Ernakulam



This publication has been made possible with funding from ANTRIX corporation. It was supported by Ashoka Trust for Research in Ecology and the Environment (ATREE) and its Kerala chapter, Community Environmental Resource Centre (CERC).

ISBN 978-81-952895-2-3

**Required Citation:**

Radhakrishnan, A., Maneeja, M., Bibin, X. V. F., & Rajan, P. D., (2022). A field guide to Fishes of Vembanad (Anwar, A., Raghavan, R) Alappuzha. ATREE-CERC Ed:1, 245pp

# CONTENTS

Foreward	
Acknowledgement	10
Preface	12
Index to infographics	14
How does classification looks like (Illustration)	19
Parts of a fish	21
Measurements for identification	23
Characters for identification	24
How to use this book	27
Taxon pages	29 - 203
Other fishes of Vembanad	205
Fishes of Vembanad (checklist)	217
Glossary	225
Bibliography	237
About the authors	243
Index to Scientific names	247
Index to Common names	247
Index to Vernacular names	247

# FOREWARD



# ACKNOWLEDGEMENT

*"Is this not our karimeen? Why are you calling it weird names?"*

This seemingly naive yet difficult question posed by fisherfolks during the Vembanad Fish count was the seed for the development of this book. As taxonomists, we obsessively try to make sense of the chaotic lives around us by naming and organizing them into groups – Order, family, genus, etc... The fish wealth of Vembanad backwaters is the life and livelihood of the people living around. For the past 15 years, we have been conducting Vembanad Fish Count (VFC) - A participatory fish monitoring program to assess the diversity and trends of fish and fisheries in the system. Every year, as academicians, students, and volunteers, along with fisherfolks, participate in VFC, the localites enquire about what is being done in this program. Last year, the above epiphanic question was asked as we were marking *Etroplus suratensis* for Karimeen- the state fish of Kerala caught in our fishing gears. "A field guide to fishes of Vembanad" is our attempt to bridge this gap between the science and the commons; the "weird" scientific names and the common names; the scientific attributes and common features. We sincerely hope this field guide is of help to the fish enthusiasts for ready-reference, and we urge you to interact with it in the field notes; scribbles are divine.

We would like to extend our gratitude to the many who accompanied us in completing this book - 'A field guide to fishes of Vembanad.'

To the Lake Protection Forum (LPF) members, who dived into the depths of the Vembanad despite the torrid rains or the horrid sun and waited for hours to bring a variety of fishes to us,

To Shri KM Poove, who imparted his traditional knowledge, which helped us to simplify the technical terms of fish parts and characteristics in this book,

To Mr. Rajesh, enthusiastic fisherfolk, who shared his knowledge regarding the diversity of fishes and the hardships of fishing,

To Jojo T. D, our beloved project manager, for aiding us with suggestions and logistical support,

To the aesthetic camera eyes of Anen Radhakrishnan, Anoop V. K, and Marcus Knight,

To Geetha K Wilson, Dr. Smitha Krishnan, and Dr. Seena N. Karimbumkara for their valuable suggestions,

To Dr. Anwar Ali and Dr. Rajeev Raghavan from KUFOS, Kochi, for taking time out of their hectic schedule to review this book,

To A. D. Chitrlekha for giving this book a readable attire.

We appreciate our designers at Art Unlimited Multitude (AUM), especially Padmajan, Alok, and Ashwanth, for their limitless patience and dedication to making our efforts a reality through their magical skills.

Our friends and colleagues at CERC - Ashish Mathew George, Sunitha K., Sanju Soman, Parvathy L. Sundar, Sunil K. S., Midhila Mallika, Vikhlesh K. S, Reema Anand, and Sreekuttan V. N. for all the silly and serious discussions on this book.

We thank the friends and folks at ATREE, Bangalore, for their support and consideration throughout preparing this field guide.

And finally, our sincere gratitude to Dr. Kamal Bawa, President of ATREE, who was kind enough to write the foreword to this book.

# PREFACE

Vembanad estuarine system is one of the most beautiful and large humid tropical wetland ecosystems in the southwest coast of India. The veritable presence of numerous canals and streams along with the legendary backwaters, and the never-ending panorama of lush green paddy fields, towering coconut trees, mangroves and birdlife make it a delightful destination for tourism. This unique backwater ecosystem is spread across three districts of the south Indian state Kerala— Alappuzha, Kottayam and Ernakulam. Being an important resource area, it supports the livelihoods of more than a million people living on its banks. Fishing and allied industries, tourism, coir retting, duck farming and agriculture are the major livelihood activities on the lake. Kuttanad region, the southern portion of the Vembanad wetlands is known as the 'rice bowl of Kerala' and has been declared as a Globally Important Agricultural Heritage System (GIAHS) for below sea-level farming. The four rivers Meenachil, Achankovil, Manimala and Pampa, originating from the Western Ghats make it an 'inland fish basket'. Considered a lifeline of this area nearly 1.6 million people depend on the lake for their sustenance.

Vembanad is a complex system of estuarine backwaters, marshes, lagoons, mangrove forests, reclaimed land and an intricate network of natural and manmade canals. The lake spreads over ~252 sqkm and stretches ~96 km from Munambam (Ernakulam) in the North to Thottappally (Alappuzha) in the South. The lake is a highly productive environment, providing feeding, spawning and rearing grounds for several important fisheries, including shrimp and clam. This wetland provides habitat for 225 bird species, supporting the third largest wintering waterfowl population of the subcontinent. This is one of the 15 mangrove areas that have been identified by the Ministry of Environment and Forests (MoEF) for intensive conservation and management. This wetland supports almost 1.6 million people and is considered to be the lifeline of the region. Along with the adjoining Kole lands,

this is one of India's most critical wetlands designated as a Ramsar site in 2002 (Site No.1214).

The Thanneermukkam salt water barrage divides the lake into a freshwater dominant southern zone, and saline water dominant northern zone. During the tidal influx, saltwater from the sea intrudes the lake. The Vembanad estuary is fed by six rivers, Pamba, Manimala, Meenachil, Muvattupuzha, Achankovil and Periyar which take their origin from the Western Ghats high lands. These rivers bring fertile alluvial soil along with fresh water making the waters enriched with nutrients. Since the system holds saltwater from the sea and freshwater from the rivers, it provides a unique brackish water environment and makes the lake an ecotone between marine and freshwater. This synergy of the estuary with the sea and rivers provides a luxuriant abode for fishes— some freshwater, some marine and a few seen only in the estuary. Freshwater fishes are spotted closer to the landward side while marine ones to the seaward side. Totally 185 species of fishes are known from this wetland, classified to 49 genera belonging to 64 families.

The environmental conditions of this lake are in a steady decline due to various anthropogenic activities which leads to severe livelihood crisis for the dependant communities. Pollution from local agricultural runoff, rubber and coffee plantations at the headwaters, municipal and industrial wastes have impacted the ecological health of the lake. Land reclamation for developmental needs and agriculture has resulted in the loss of lake area. The Vembanad fish count an annual survey of fishery of the Vembanad wetland conducted since 2007 by ATREE, has recorded a steady decline in the fish diversity and abundance of the lake. Unchecked pollution from the banks of the lake and riverine waters are also contributing to the decline in liveability of this system. The Thanneermukkom salt water barrage, commissioned in 1976 has turned out to be an ecological disaster for the lake. Even though the barrage helped paddy farmers

by preventing saltwater intrusion to the lowlying paddy fields, it has several negative consequences on fishery.

Realising that Vembanad demands urgent conservation attention, Ashoka Trust for Research in Ecology and the Environment (ATREE), has initiated the Vembanad Wetland Conservation Programme in the year 2007.

For the effective implementation of the program, the Community Environmental Resource Centre (CERC) was established at Alappuzha. CERC follows 'Deliberative Democratic Conservation' (DDC) an approach that ensures sustainability of natural resources and livelihood through strengthening community-informed and community-driven practices for the 'conservation'. Over the years CERC could set up long-term, effective and inclusive institutional mechanisms to address local issues through liaised government agencies, local self-governments (LSG), academia, NGOs and local community groups. Issues and solutions are identified and prioritized through Participatory Rural Appraisal.

One of the first initiatives of CERC was the annual Vembanad Fish Count (VFC), started in 2008. Designed as a stakeholder-driven citizens science program, it brought together fisherfolk, researchers, civil society organizations, environmentalists, local self-governments and educational institutions. Fishery resources are assessed using a standardized method every May and the results are disseminated to the public through different media and India Biodiversity Portal (IBP), an open repository for the information on India's biodiversity ([https://indiabiodiversity.org/group/Vembanad\\_Fish\\_Count](https://indiabiodiversity.org/group/Vembanad_Fish_Count)). VFC provides a platform for the fisher folks, fishery experts, environmentalists and policy makers to share their knowledge, identify problems and figure out solutions.

One major challenge we faced during the fish count was the lack of reliable and user-friendly materials for identification of fishes. To bridge this gap we have decided




to come up with this field guide. This book deals with the identification of 50 important fish species reported from the Vembanad estuary. Initially, an illustration describing the classification kickstarts the book.

Furthermore, it describes identifying fishes by comparing their physical characters to that of humans (Pg. 21). Thirdly, species-specific morphological identification is achieved by the type specimens and measurements of characters. The details of the same with respect to fishes are provided in pg. no: 23 - 25. Before commencing with simplified keys giving taxonomic information on family and species, a page has been included in order to understand how information is arranged on each family and species page. Details of family are more generic and the corresponding species are pooled in the following pages. Finally the book concludes with an updated checklist for the fishes of Vembanad.








# INDEX TO INFOGRAPHICS



## Environment

-  Freshwater: Fishes those that spend some or all of their lives, such as rivers and lakes with a salinity of less than 1.05%.
-  Brackish: Fishes that live in water having more salinity than fresh-water, but not as much as sea water.
-  Marine: Fish that live in ocean water.





## Feeding Guild

-  Carnivore: Fishes that prey upon other fish or animals.
-  Herbivore: Fishes that eat plant material.
-  Omnivore: Fishes that eat both plant and animal matter.
-  Detritivore: Fishes that obtain nutrients from consuming detritus ( waste or debris of any kind ).
-  Filterfeeder: Fish that strain particles or tiny animals and plants from the water for food.


## Hazard

-  Harmful: Fishes that might impart physical pain, bruises, trauma or even death if disturbed.
-  Harmless: Fishes that doesnot cause any harmful effects on people.

## Habitat

-  Benthopelagic: Fishes that inhabit the water just above the bottom.
-  Neritic: Fishes that inhabit the sea between the shoreline and edge of continental shelf.
-  Reef Associated: Fishes which live amongst or in close relation to coral reef.
-  Demersal: Fishes that are bottom feeders.

## Behaviour

-  Parental care: Parental care is a behavioural and evolutionary strategy adopted by some animals, involving a parental investment being made to the evolutionary fitness of offspring.

## Uses



Ornamental Fishes: Fishes used in aquarium.



Food: Used in human diet.

## Migration



Amphidromous: Fishes that regularly migrate between freshwater and the sea ( in both direction ), but not for the purpose of breeding, as in anadromous and catadromous species.



Potomadromous: Migrations occur wholly within fresh water.



Oceanodromous: Migrations occur wholly in the sea. Fish from the sea up.



Anadromous: Fish migrate from the sea up into fresh water to spawn.



Catadromous: Fish migrate from fresh water down into the sea to spawn.



Non: Fishes that doesn't migrate and is confined to a single location from their birth to death.

## IUCN Status



A near-threatened species is a species which that may be considered threatened with extinction in the near future, although it doesn't currently qualify for the threatened status.



A vulnerable species is one which is likely to become endangered unless the circumstances that are threatening its survival and reproduction improve.



A least concerned species is a species as evaluated as not being a focus of species conservation.

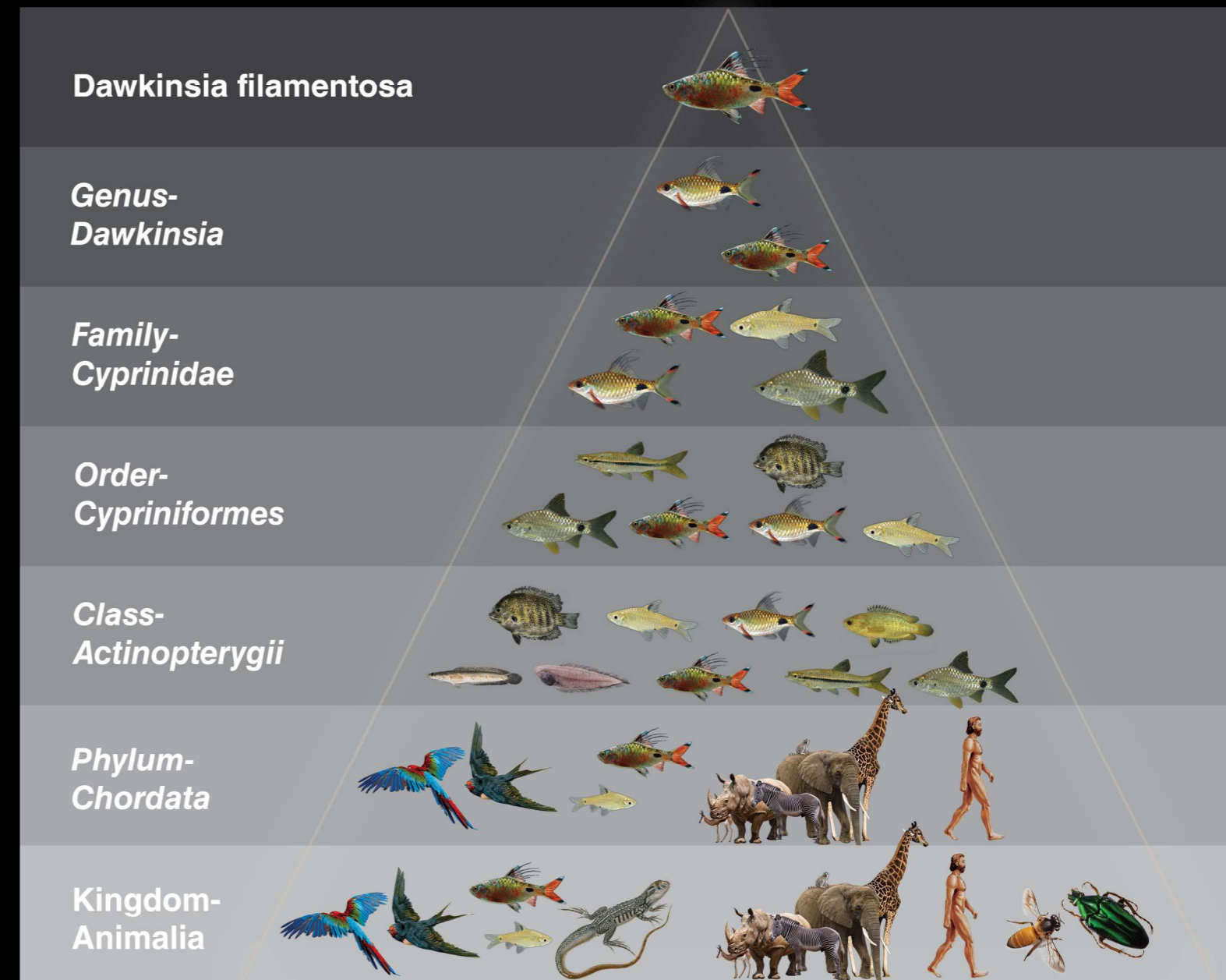


A data deficient species is one which has been categorized as offering insufficient information for a proper assessment of conservation status to be made.



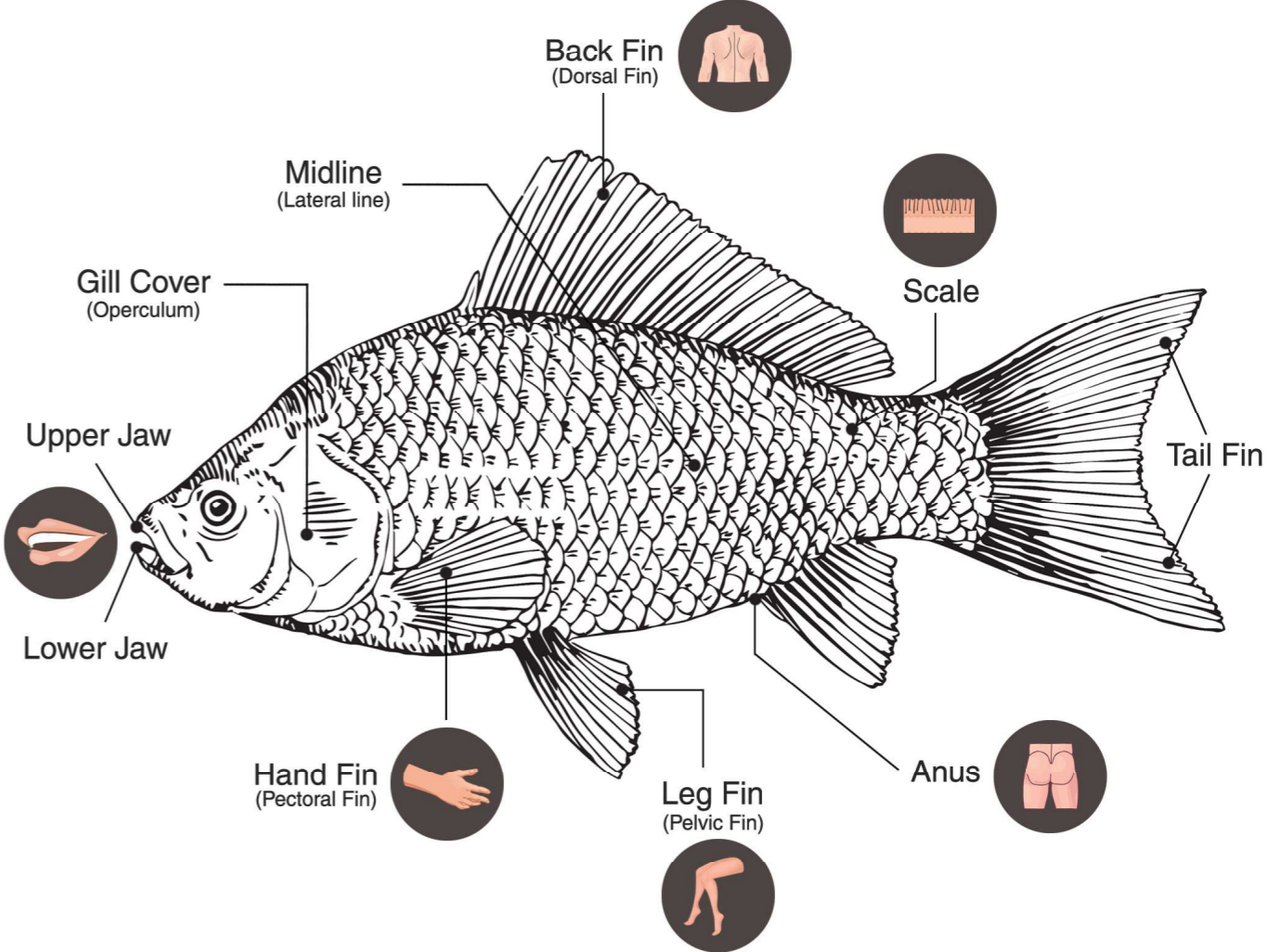
A not evaluated species is one which has been categorized as not yet having been assessed by the IUCN.

# HOW CLASSIFICATION LOOKS LIKE ?

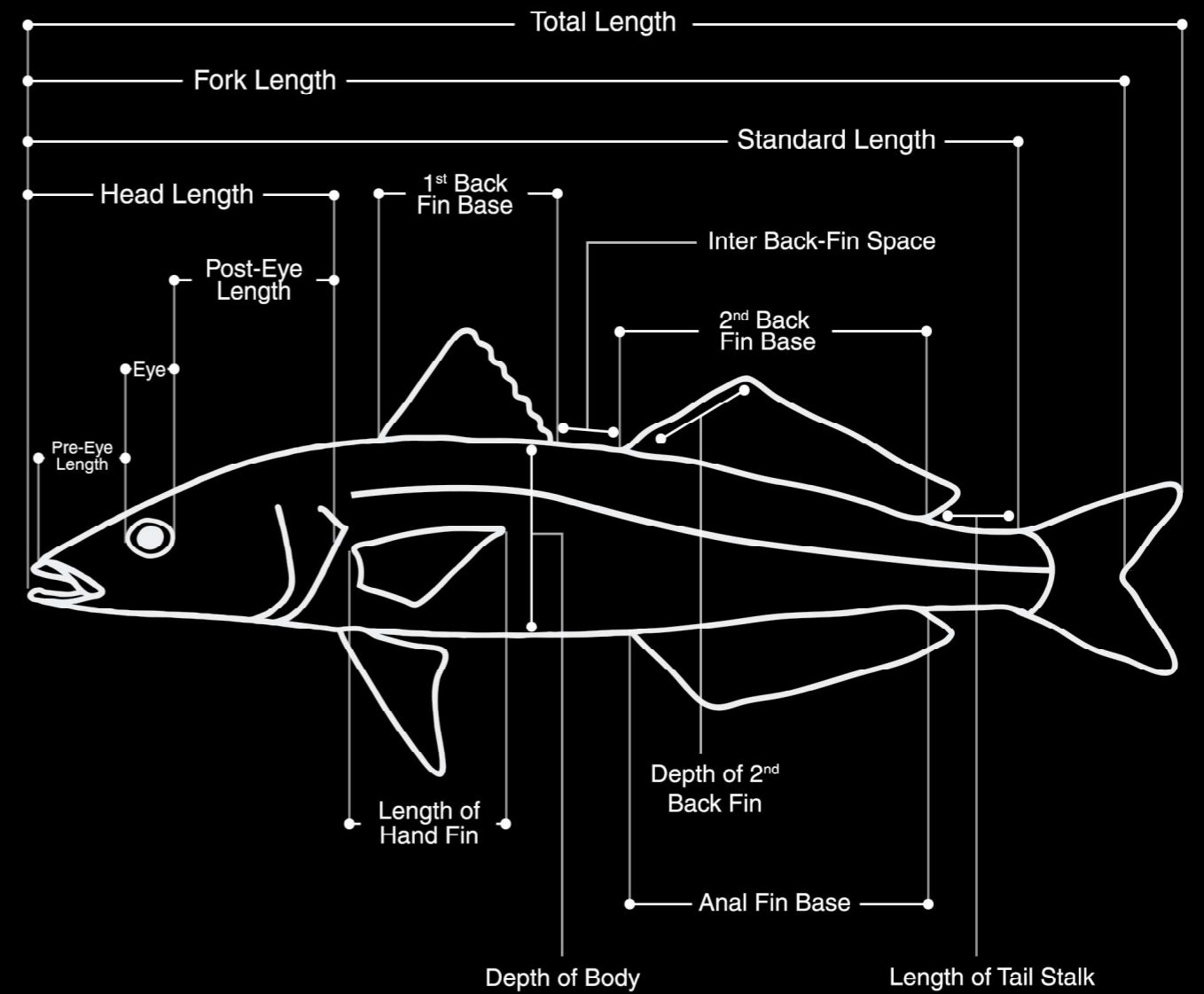




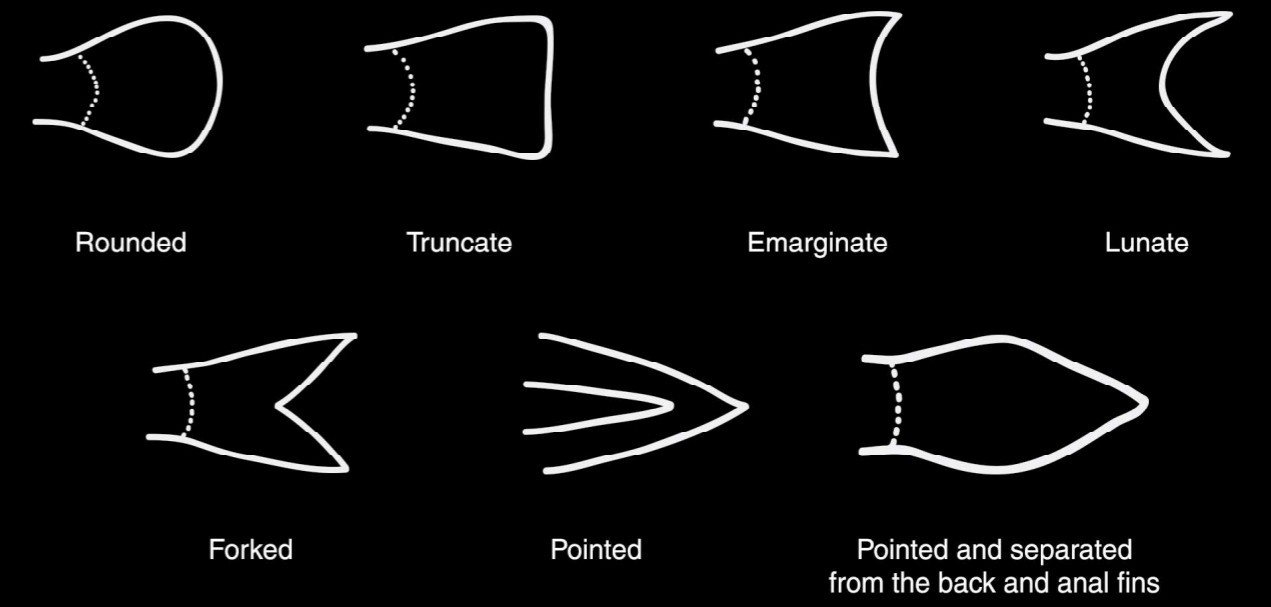
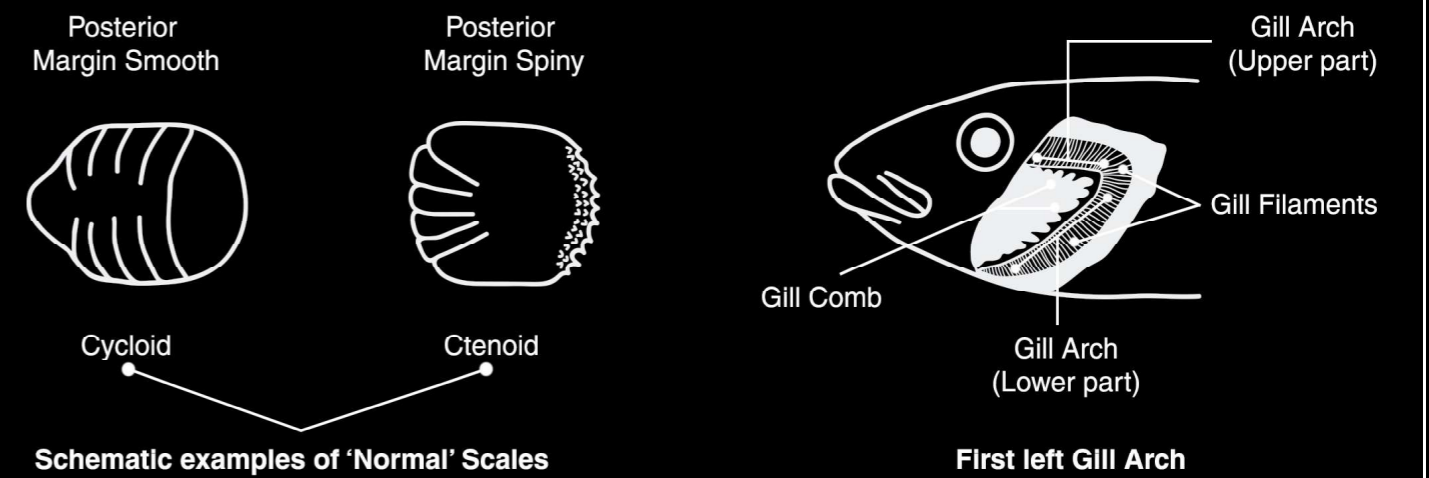
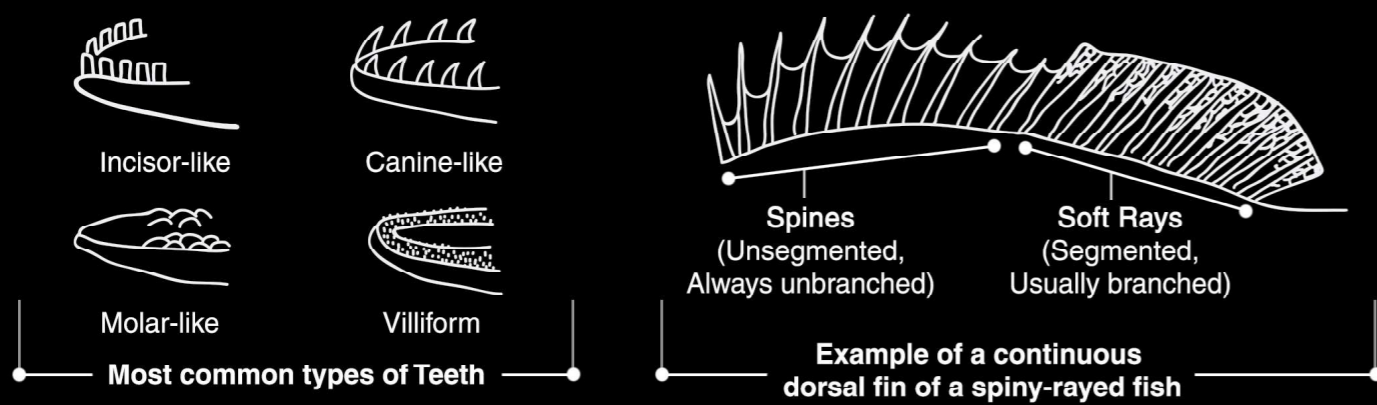
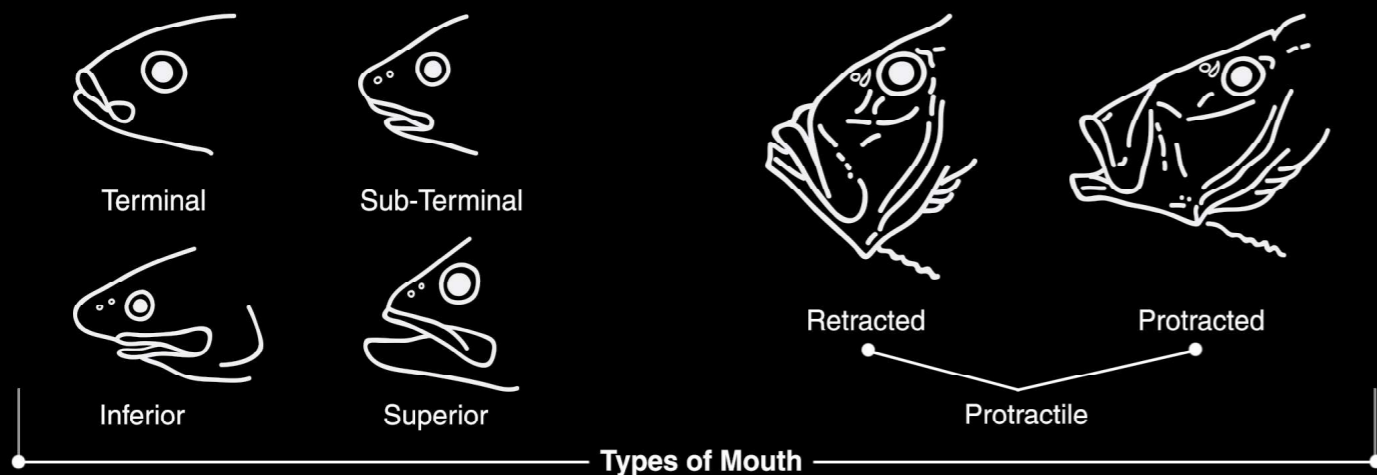
# PARTS OF A FISH



# Measurements for identification



# Characters for identification



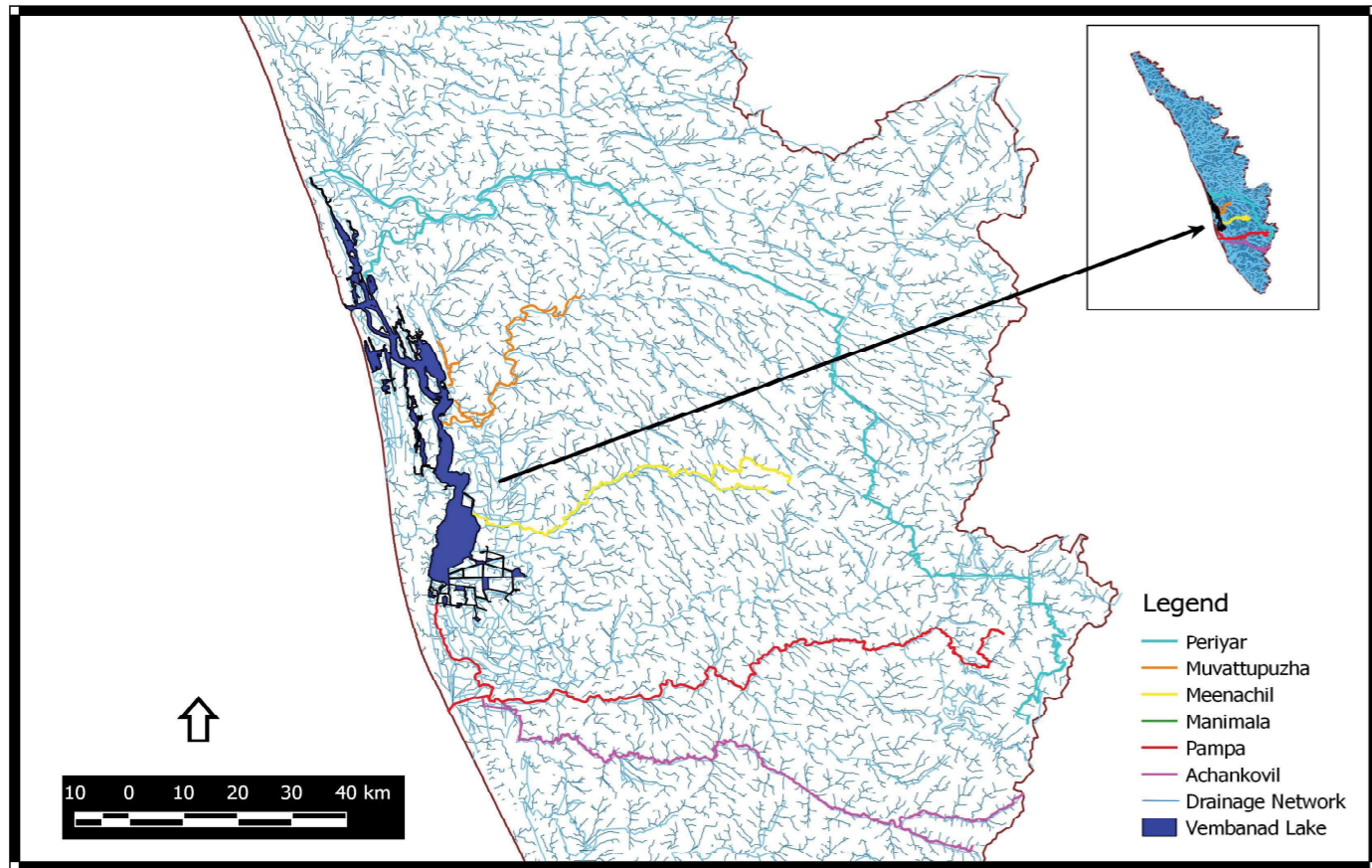


# HOW TO USE THIS BOOK

This book is a simple field guide mainly meant for fish enthusiasts and students, to identify the common fishes of Vembanad. Apart from basic information on fish morphology and ecology, this book dedicates one page for each family and species (Taxon pages). Each taxon page provides fundamental key characters to accurately identify the taxa. Family pages also include a line diagram showing general characteristics, so that users can easily sort the individuals to the larger group before proceeding to species identification.

The pages provide taxonomic and ecological information in the following order.

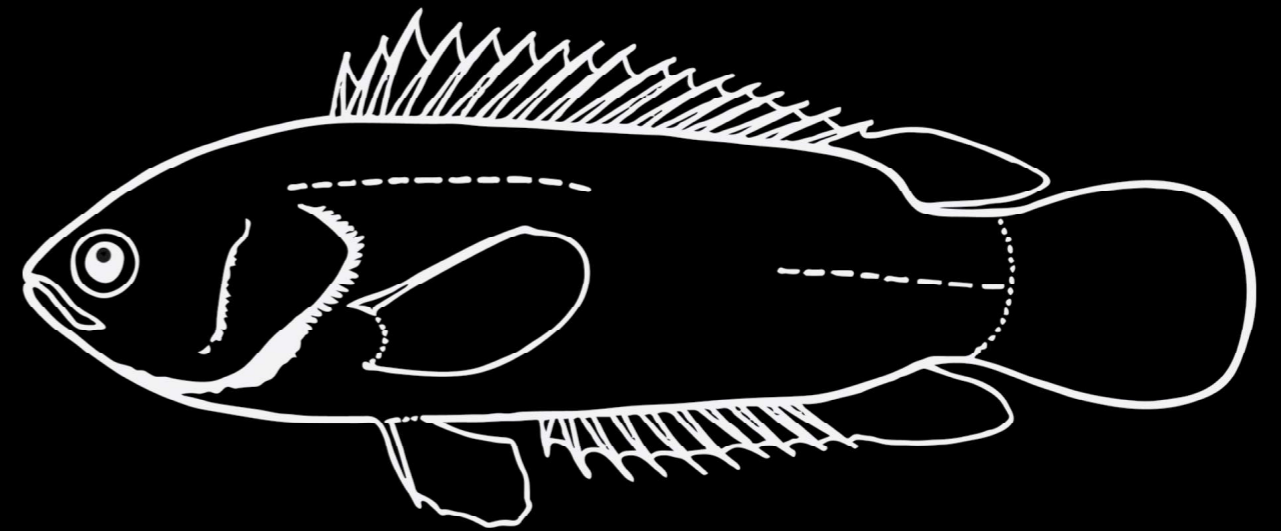
- Name String: the page starts with the scientific name followed by English common name in parentheses and Malayalam vernacular name in square brackets.
- Standard length: the length scaling from the snout until the end of tail stalk; Two length measures are provided
  - i) common – as in most widely observed
  - ii) maximum – as in the maximum length of the species recorded till date.
- Photograph (live condition in most cases)
- Key characters: important characters to easily identify a species in the field.
- Infographics: A pictorial representation of important ecological information about each species: environment, feeding guild, hazard to human, habitat, behaviour, uses, migration, and IUCN conservation status (Index to these infographics is provided in pages 14 to 17.)



# TAXON PAGES

## Field Notes

## *Anabantidae*



### Key Characters

1. Strong body with some scales on the head.
2. Minute teeth with a few larger ones in front and in the middle of the upper palate, but not on either side on the palate..
3. Back-fin, tail-fin, and anal-fin with small scales at its base.

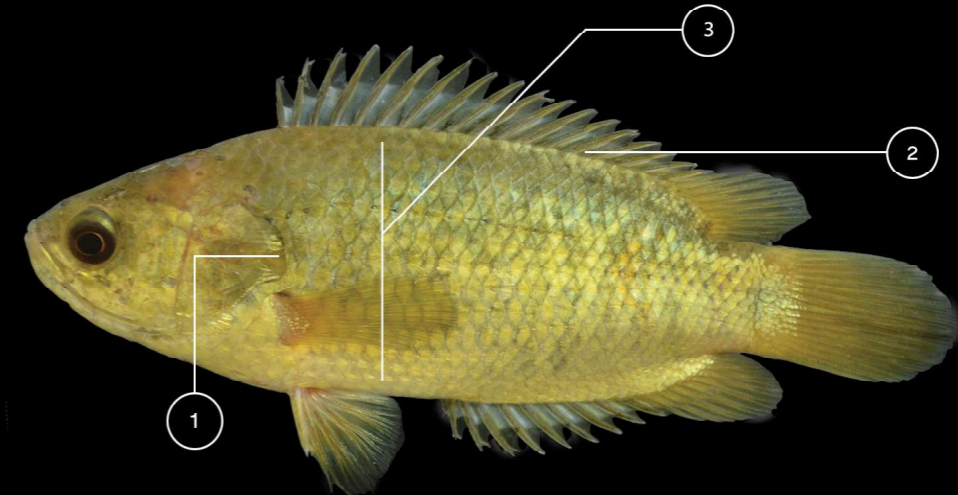
## Field Notes

### *Anabas testudineus* (Bloch 1792) (Climbing Perch) [കറുപ്പ]

**Class** : Actinopterygii  
**Order** : Anabantiformes  
**Family** : Anabantidae

#### Length (cm)

Common : 12.5  
Maximum : 25



#### Key Characters

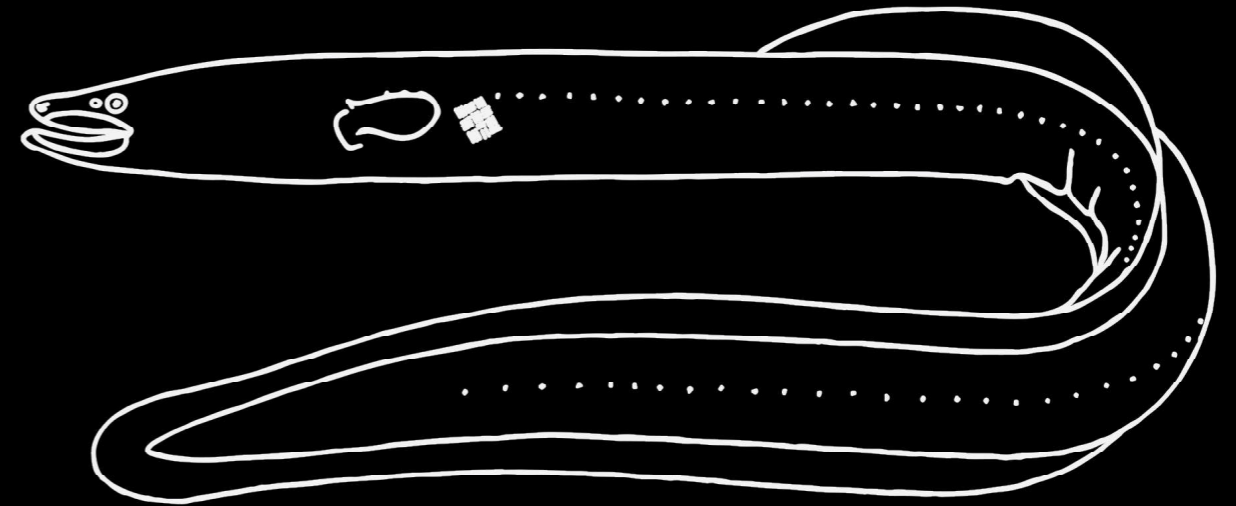
1. Gill cover with heavily serrated edge.
2. Back fin originates in front of anal fin with base longer than anal fin.
3. Body depth 29-33% of length.

#### Important Facts



## Field Notes

# *Anguillidae*



### Key Characters

1. Elongate snake-bodied fish that is cylindrical in the front and slightly compressed towards the tail.
2. Slightly projecting lower jaw than upper jaw with well developed lips.
3. Small, conical teeth as bands on jaws and roof of mouth.
4. Back and anal fin are continuous around tail and back fin originates variably between hand-fin and anus or over anus.
5. Small or tiny oval scales are embedded in skin.



## Field Notes

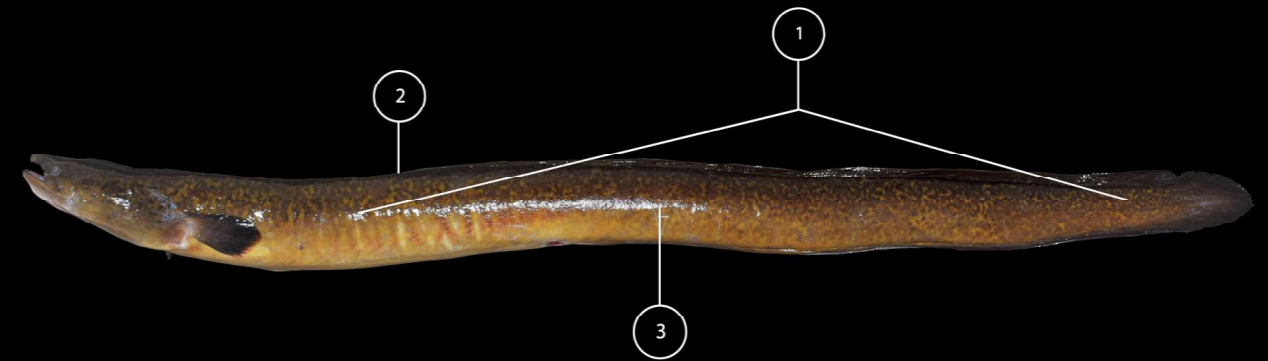
### *Anguilla bengalensis* (Gray 1831) (Indian Mottled Eel) [പുളളിമലഞ്ഞീൻ]

**Class** : Actinopterygii  
**Order** : Anguilliformes  
**Family** : Anguillidae

#### Length (cm)

Common : 80

Maximum: 200



#### Key Characters

1. Body elongate and cylindrical in front turning somewhat compressed along tail.
2. Back fin origin nearer anus than gill opening.
3. Body yellowish to olive or brown, spotted with dark brown in adults.

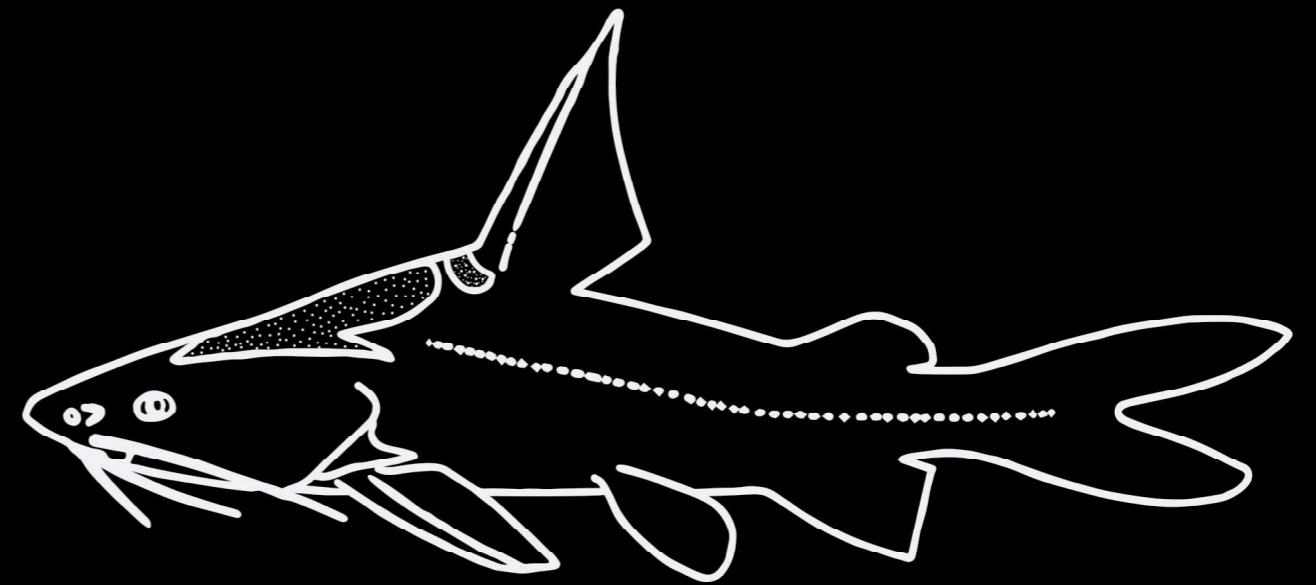
#### Important Facts



NT

## Field Notes

## *Ariidae*



### Key Characters

1. Commonly known as sea catfish due to its whiskers.
2. Possesses fine fingerlike teeth on the jaws and tubercle-like teeth as patches on upper palate.
3. Head covered with a bony shield, which is usually granular.
4. Has 1–3 pairs of whiskers.
5. Has a bony plate in front of the back-fin and the fin has a spine.
6. Second back-fin is fleshy and known as fatty-fin.

## Field Notes

### *Arius subrostratus* (Valenciennes 1840) (Shovelnose Sea-Catfish) [കരണ്ടിമുക്കൻ തേട്]

**Class** : Actinopterygii  
**Order** : Anabantiformes  
**Family** : Anabantidae

#### Length (cm)

Common : 12.5

Maximum: 25



#### Key Characters

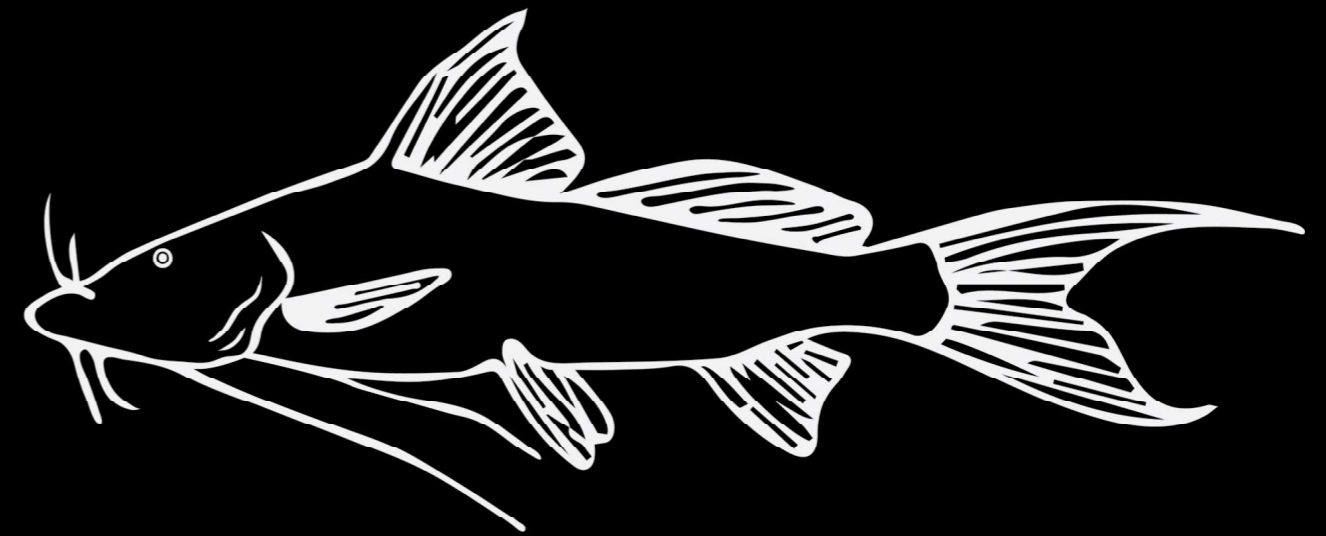
1. Snout long, broad and rounded; three sets of finger-like palate teeth, viz., one patch in front portion of upper jaw and single small oval patch on each of the two sides, as large as the eye.
2. Three pairs of whiskers around mouth; chin pair reaching till eye socket or sometimes extending.

#### Important Facts



## Field Notes

# Bagridae



### Key Characters

1. Small to medium sized fishes.
2. Only a single gill opening on each side.
3. Body is scaleless.
4. Possesses 4-20 neck rays and the jaws have teeth.
5. Cheek whiskers are usually present.
6. Back, hand and leg fins with a strong spine.
7. Fatty fin is present.
8. Tail fin is forked with connection to anal fin and the latter possesses fewer than 25 rays.
9. Front and back nostrils are widely separated.
10. The hand-fin also possesses spine.

## Field Notes

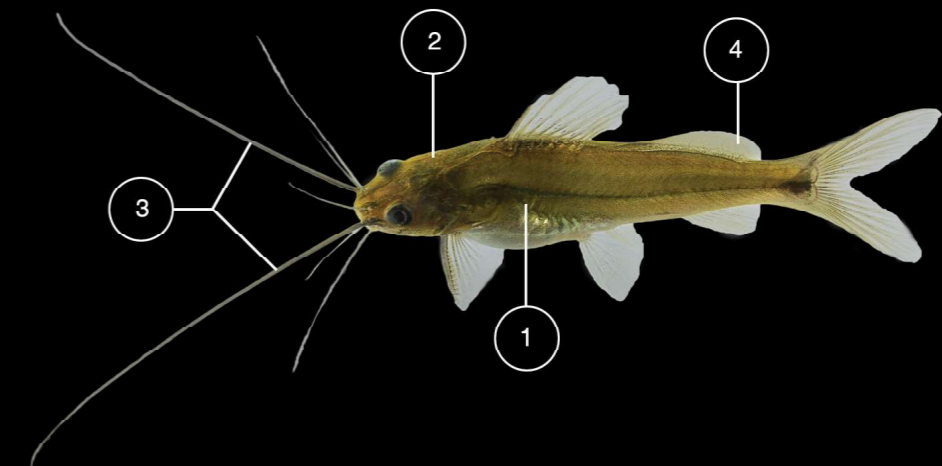
### *Mystus armatus* (Day 1865) (Kerala Mystus) [കുരി]

**Class** : Actinopterygii  
**Order** : Siluriformes  
**Family** : Bagridae

#### Length (cm)

Common : 10

Maximum: 14.5



#### Key Characters

1. Leaden brown back becoming lighter shade on the sides. A dark oval spot on base of tail fin.
2. A median groove on head reaches the occipital process and basal bone of back fin.
3. Chin whiskers reach end of leg fin.
4. Length of fatty fin base exceeding that of rayed fins or interspace between back fins.

#### Important Facts



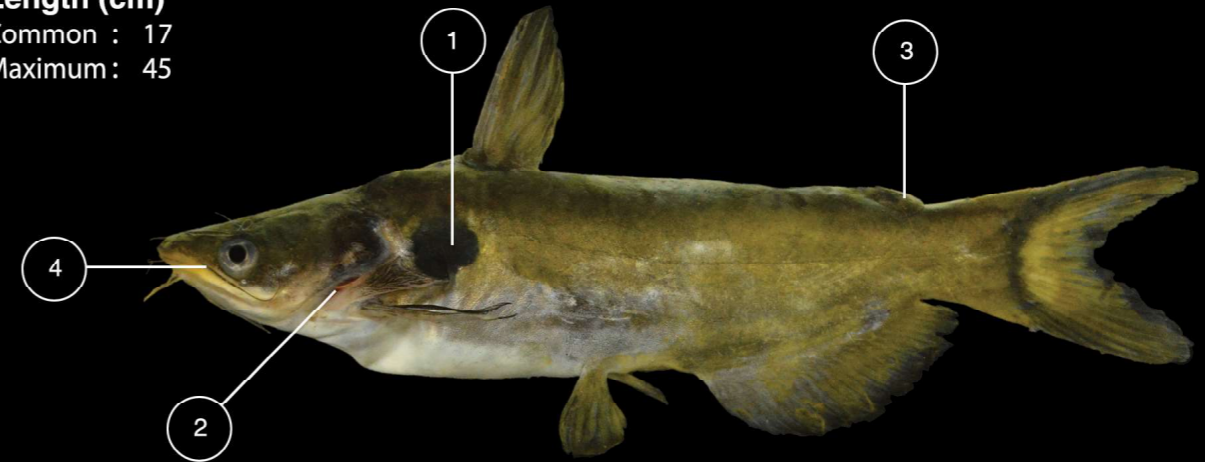


## Field Notes

### *Horabagrus brachysoma* (Günther 1864) (Günther's Catfish) [മഞ്ഞക്കുരി]

**Class** : Actinopterygii  
**Order** : Siluriformes  
**Family** : Horabagridae

**Length (cm)**  
Common : 17  
Maximum: 45



#### Key Characters

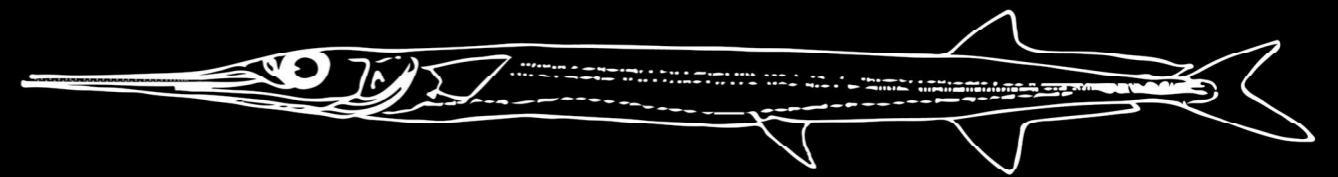
1. Large round black spot with yellow border ring on shoulder.
2. Gill teeth of gill comb, numerous and elongated.
3. Fatty fin present but small.
4. Nasal whisker as long as head.

#### Important Facts



## Field Notes

## *Belonidae*



### Key Characters

1. Elongate fishes, however with both upper and lower jaws prolonged.
2. Nostrils are lodged in a pit in front of the eye.
3. Jaws are armed with strong sharp needle-like teeth.
4. Leg fin is at the abdomen with 6 soft rays.
5. Back and anal fins are at the same position and are placed at the same level.

## Field Notes

### *Xenentodon cancila* (Hamilton 1822) (Freshwater Garfish) [കേരളം]

**Class** : Actinopterygii  
**Order** : Beloniformes  
**Family** : Belonidae

**Length (cm)**  
Common : 30  
Maximum : 40



#### Key Characters

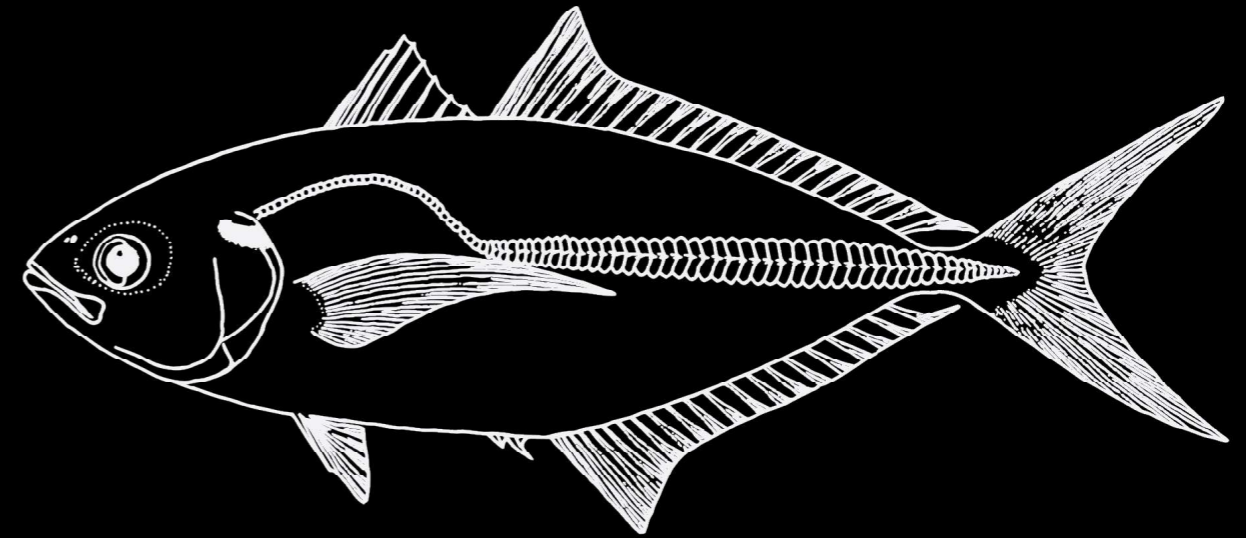
1. Greenish on the top with silver or light colour below.
2. Both jaws are elongated into a beak-like structure.
3. Anal-fin starts opposite to the back-fin.
4. Truncated tail-fin.

#### Important Facts



## Field Notes

# Carangidae



### Key Characters

1. Fish with extremely varied body size ranging between elongate and with both sides tapering as well as deep and side-wise compressed.
2. Juveniles usually have two back fins, of which first one has moderate or very low height with 4-8 spines, while the second has 1 spine and 18 to 44 soft rays.
3. Tail fins are forked and equally lobed.
4. They also possess scutes, either prominent or reduced.

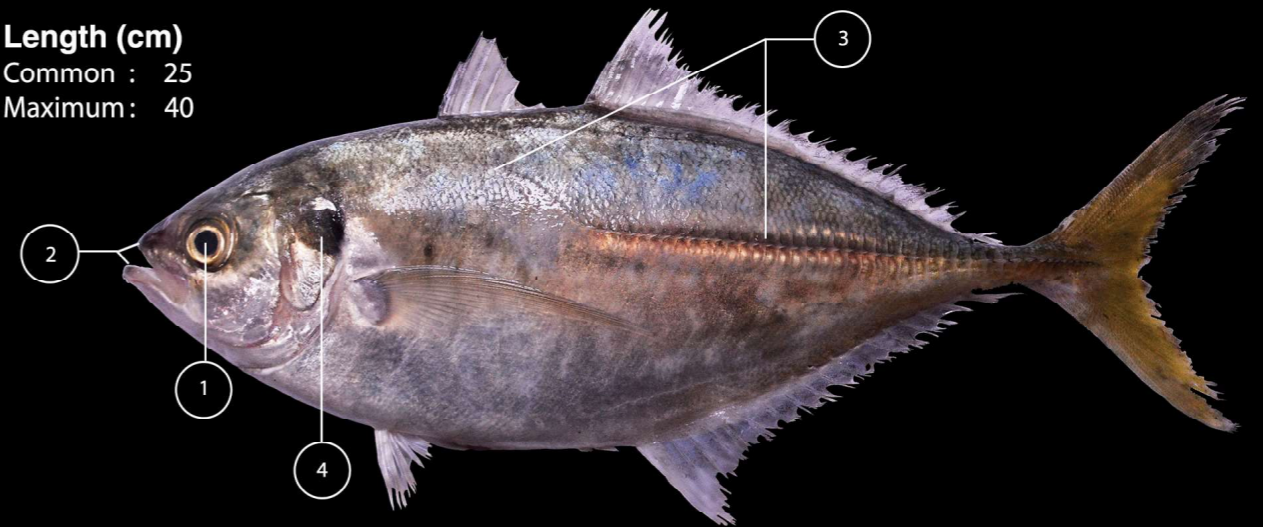
## Field Notes

### *Alepes djedaba* (Forsskål 1775) (Shrimp Scad) [മഞ്ഞവാലൻ മകുട]

Class : Actinopterygii  
Order : Perciformes  
Family : Carangidae

#### Length (cm)

Common : 25  
Maximum: 40



#### Key Characters

1. Fatty eyelid well developed on posterior half of eye.
2. Both jaws with a single row of numerous, comb-like teeth.
3. Midline strongly arched anteriorly and straight part with 39 to 51 scutes.
4. A black spot on margin of gill cover, bordered above by a smaller white spot.

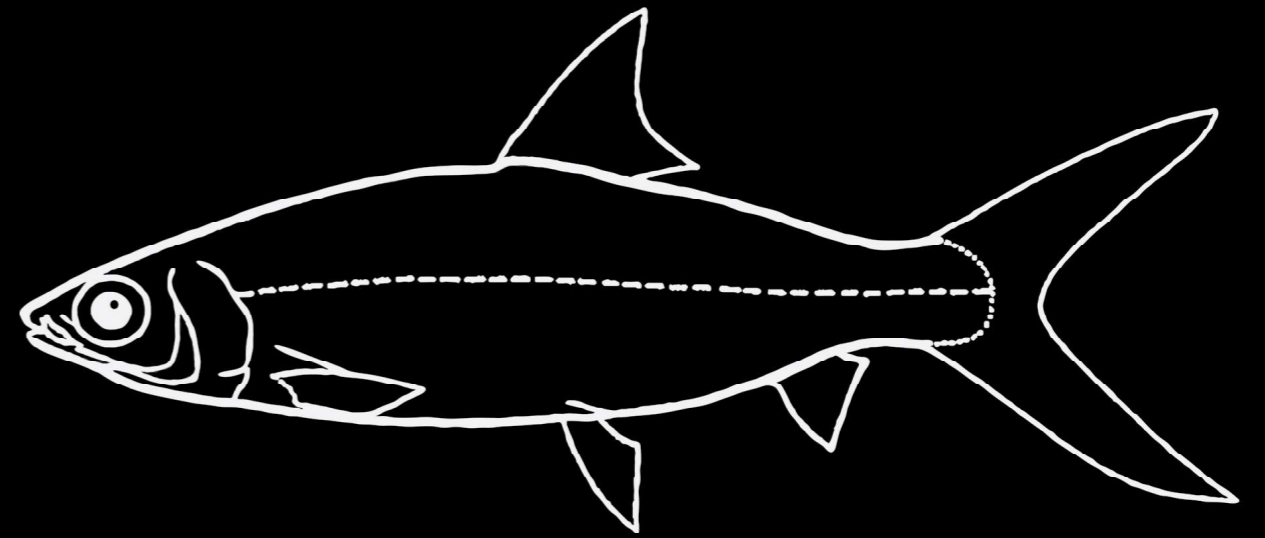
#### Important Facts





## Field Notes

## *Chanidae*



### **Key Characters**

1. Only a single species is known from Vembanad.
2. The body is elongate and moderately compressed.
3. Mouth is toothless and small.
4. Scales are small and a mid-line is present.
5. Only 4 neck rays.

## Field Notes

### *Chanos chanos* (Forsskål 1775) (Milk fish) [പുളിൻ]

**Class** : Actinopterygii  
**Order** : Gonorynchiformes  
**Family** : Chanidae

#### Length (cm)

Common : 100

Maximum: 180



#### Key Characters

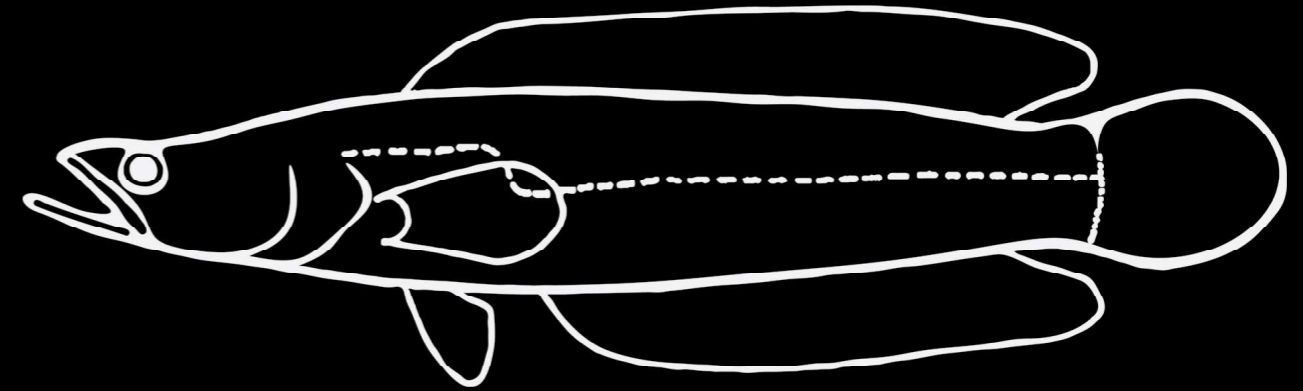
1. Small mouth with prominent upper jaw without any teeth.
2. Subcutaneous eyes.
3. Gill membranes entirely united.
4. Small scales.

#### Important Facts



## Field Notes

## *Channidae*



### Key Characters

1. Snake-like body in appearance.
2. Elongated cylindrical body, laterally compressed at the tail stalk region.
3. Soft-rayed back and anal fin.
4. Large mouth with fleshy lips.
5. Well-developed teeth on upper and lower jaws.

## Field Notes

### *Channa diplogramma* (Day 1865) (Malabar Snakehead) [പുലിവാക്]

**Class** : Actinopterygii  
**Order** : Anabantiformes  
**Family** : Channidae

**Length (cm)**  
Common : 59  
Maximum : 20



#### Key Characters

1. Back, greyish brown. Back fin grey with 3-4 narrow dark bands and white outer edge. Anal fin grey with a white margin. Tail fin grey and spotted with black.
2. Presence of 30-31 throat scales.
3. Mid line scales 103-105.

#### Important Facts



## Field Notes

### *Channa pseudomarulius* (Day 1865) (Bull's Eye Snakehead) [ചേർ-മീൻ/വാക-വരാൽ]

**Class** : Actinopterygii  
**Order** : Anabantiformes  
**Family** : Channidae

**Length (cm)**  
Common : 19  
Maximum : 36



#### Key Characters

1. A shorter body/longer head, especially in specimens over 200 mm SL.
2. Mid line scales- 59-61.
3. Fins: 3.1: Back fin rays- 47-50; 3.2: Anal fin rays- 29-33.

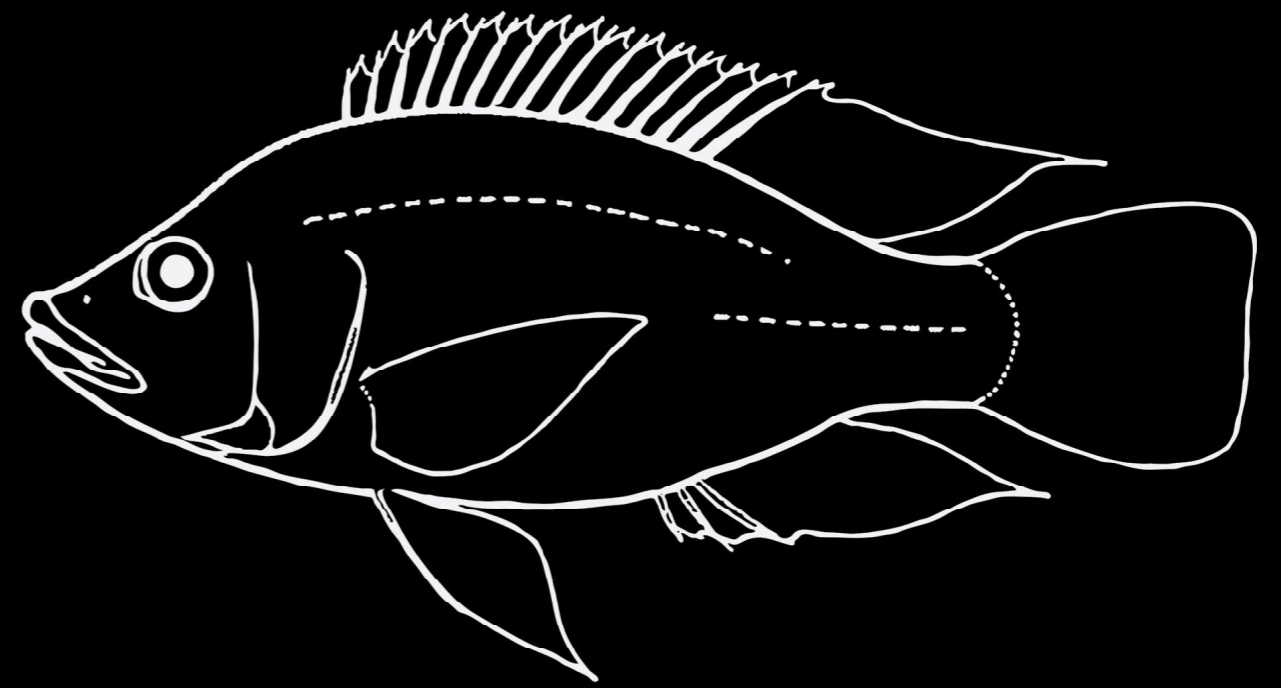
#### Important Facts





## Field Notes

## *Cichlidae*



### Key Characters

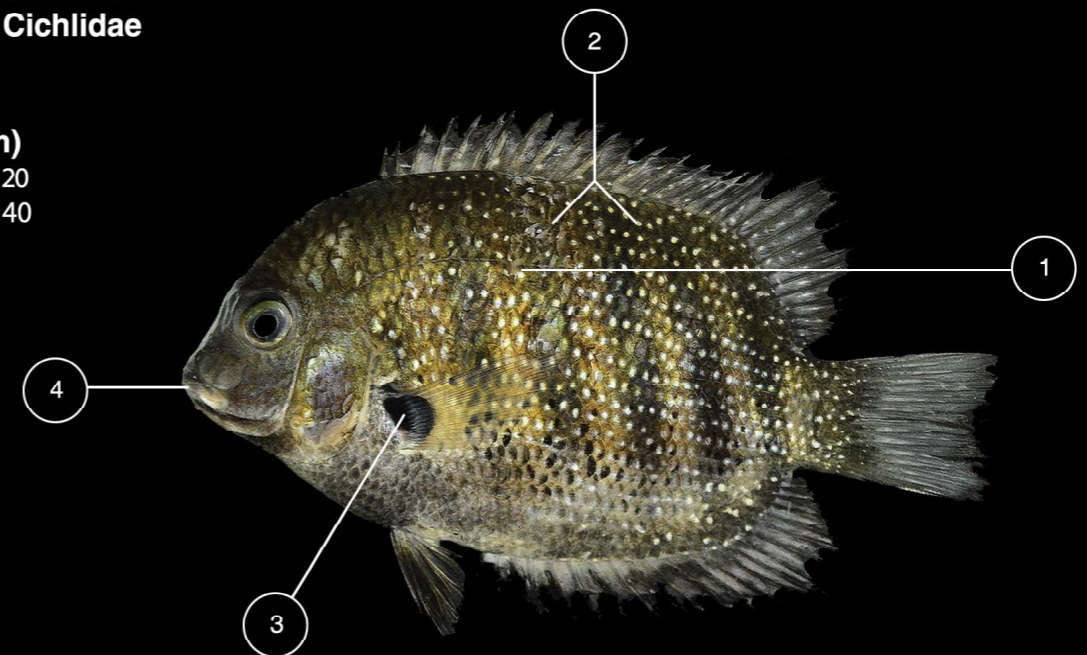
1. Medium-sized, variably shaped mostly brackish water tolerant fish.
2. Head has single nostril on each side.
3. A single back-fin with 8-19 spines and 10-16 soft rays; however, anal fin has 3 spines and 7-12 soft rays.
4. An interrupted mid-line.

## Field Notes

### *Etroplus suratensis* (Bloch 1790) (Pearl Spot) [കരിമീൻ]

**Class** : Actinopterygii  
**Order** : Cichliformes  
**Family** : Cichlidae

**Length (cm)**  
Common : 20  
Maximum: 40



#### Key Characters

1. Mid line interrupted with 13-24 pored scales.
2. Eight prominent dark bars on the sides of the body and lacks stripes on back fin.
3. A black spot on base of anal fin.
4. Lower jaw teeth with broader apex and tapering to the base.

#### Important Facts

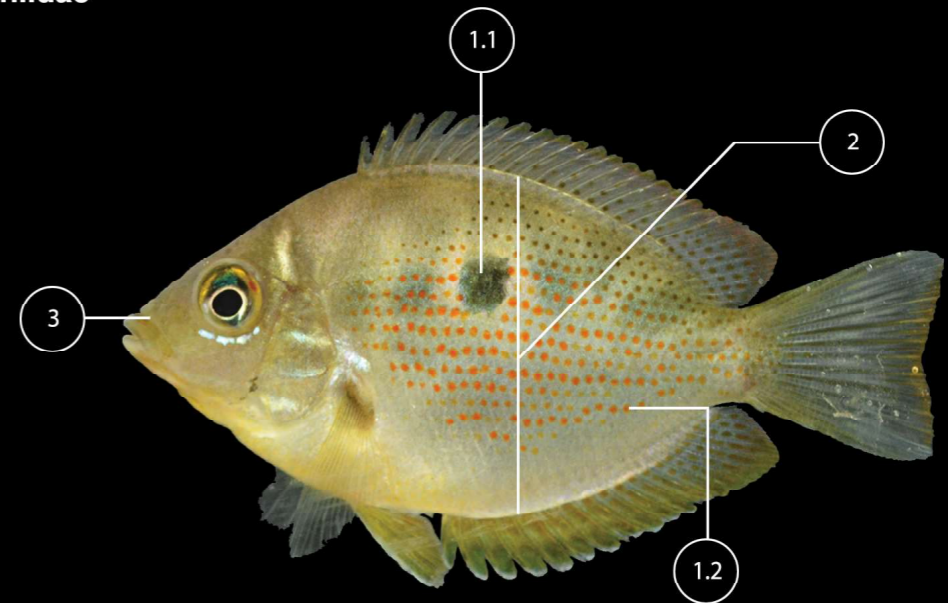


## Field Notes

### *Pseudetroplus maculatus* (Bloch 1795) (Orange Chromide) [പള്ളുത്തി]

**Class** : Actinopterygii  
**Order** : Perciformes  
**Family** : Cichlidae

**Length (cm)**  
Common : 7.5  
Maximum: 9.5



#### Key Characters

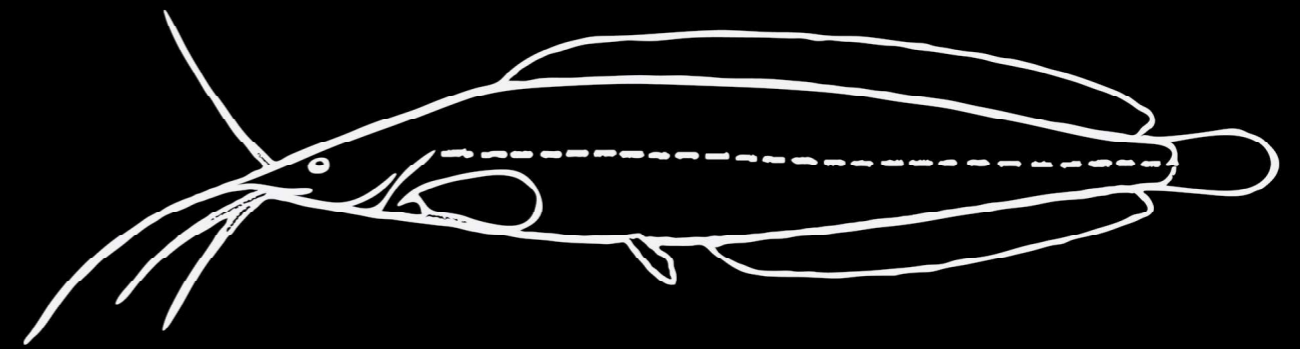
1. Colour:
  - 1.1: Body with 3- 4 black blotches on the dorso- posterior half of the body.
  - 1.2: Greenish yellow with orange chromide spots on body.
2. Body oval and compressed.
3. A single opening of the nostrils.

#### Important Facts



## Field Notes

# Clariidae



### Key Characters

1. Commonly known as air-breathing or walking catfishes.
2. A labyrinth organ near gill arch.
3. The body tapers front to back and possess a flattened head.
4. Back and anal fins long and are not connected to the tail-fin.
5. Possess three pairs of whiskers on head.

## Field Notes

### *Clarias dussumieri* (Valenciennes 1840) (Valencienne's Clariid) [മാടൻ മുൾ]

**Class** : Actinopterygii  
**Order** : Siluriformes  
**Family** : Clariidae

#### Length (cm)

Common : 17  
Maximum: 25



#### Key Characters

1. Back slight green colour and light yellow tinge especially along the front half.
2. Teeth on upper palate in two adjacent rows; the obtuse angle between the two rows is usually large.
3. Whisker: 3.1: Nasal whisker reaches the back edge of eye. 3.2: Chin whisker, base of hand-fin.
4. Fin: 4.1: Hand-fin spine strong and serrated externally.  
4.2: Tail fin very distinct from other unpaired fins.

#### Important Facts

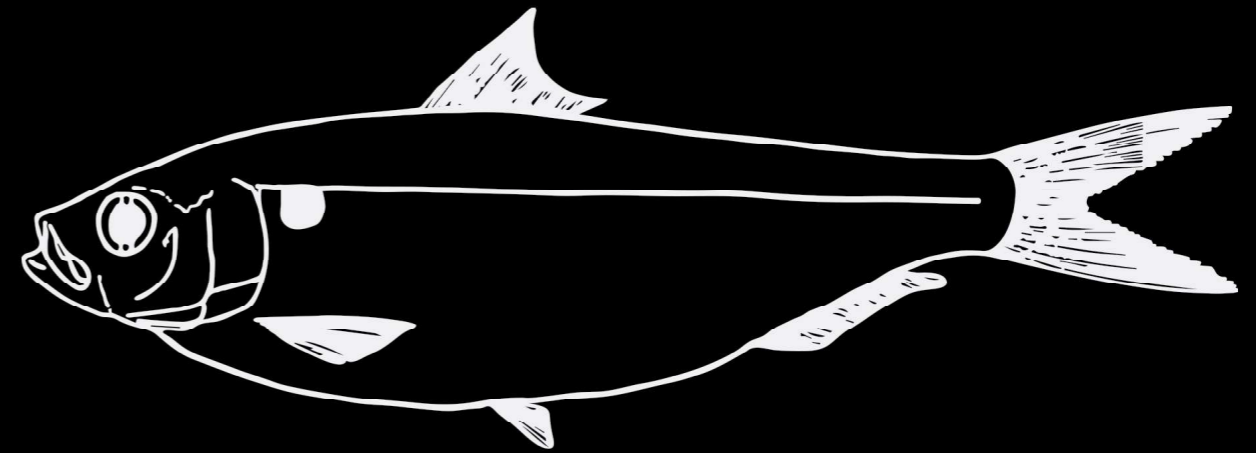


NT



## Field Notes

## *Clupeidae*



### Key Characters

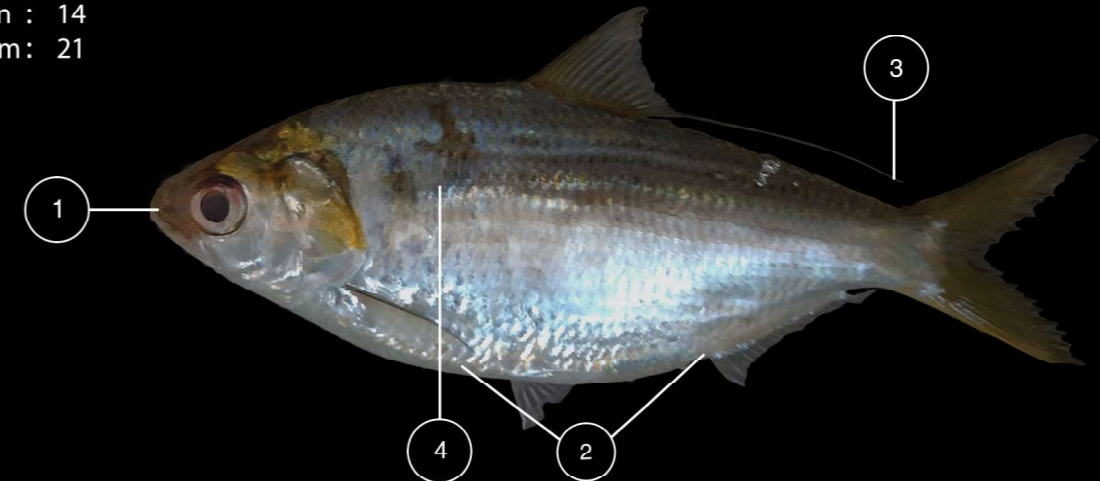
1. Small fishes that are mostly silver in colour.
2. Scutes are present along the belly.
3. Single back-fin and fins in general lack spiny rays.
4. They do not possess a mid-line.

## Field Notes

### *Nematalosa nasus* (Bloch 1795) (Bloch's Gizzard Shad) [കേരളം]

**Class** : Actinopterygii  
**Order** : Clupeiformes  
**Family** : Clupeidae

**Length (cm)**  
Common : 14  
Maximum : 21



#### Key Characters

1. The upper jaw has a distinct median notch or cleft when seen from front and curved downward. The lower jaw is flared outward and the mouth is usually sub-terminal.
2. Scales are cycloid. The bottom scales before and after the leg fins are denticulated posteriorly to form a row of scutes.
3. Last ray of back fin filamentous.
4. A dark spot present behind the gill opening; not prominent in older specimens.

#### Important Facts



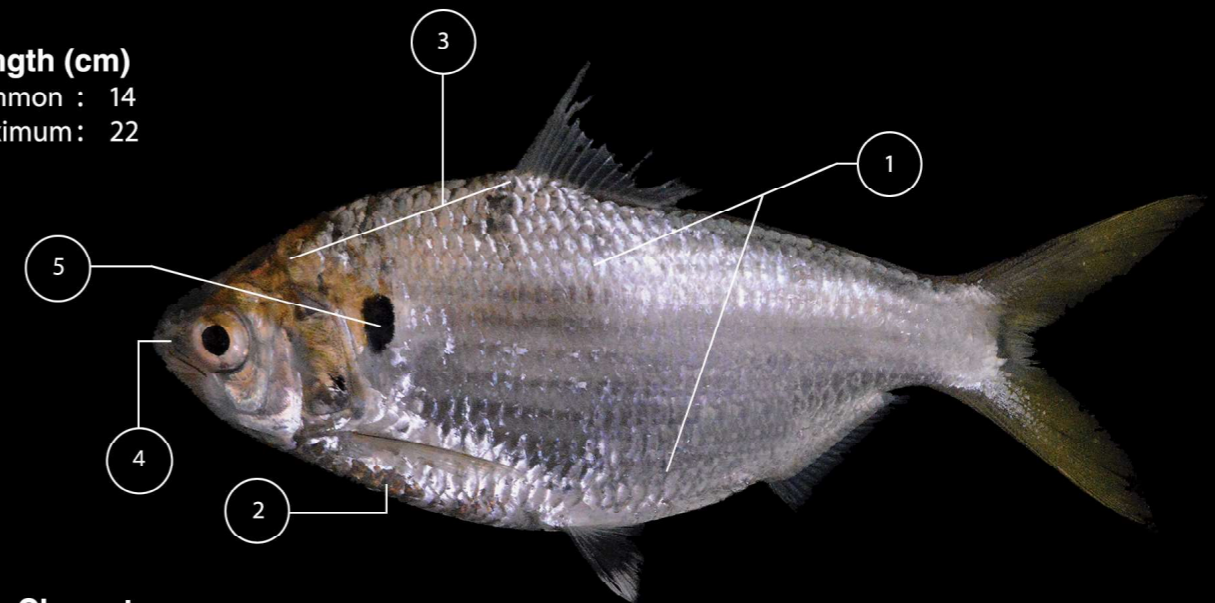
## Field Notes

### *Anodontostoma chacunda* (Hamilton 1822) (Chacunda Gizzard Shad) [மதும]

**Class** : Actinopterygii  
**Order** : Clupeiformes  
**Family** : Clupeidae

#### Length (cm)

Common : 14  
Maximum: 22



#### Key Characters

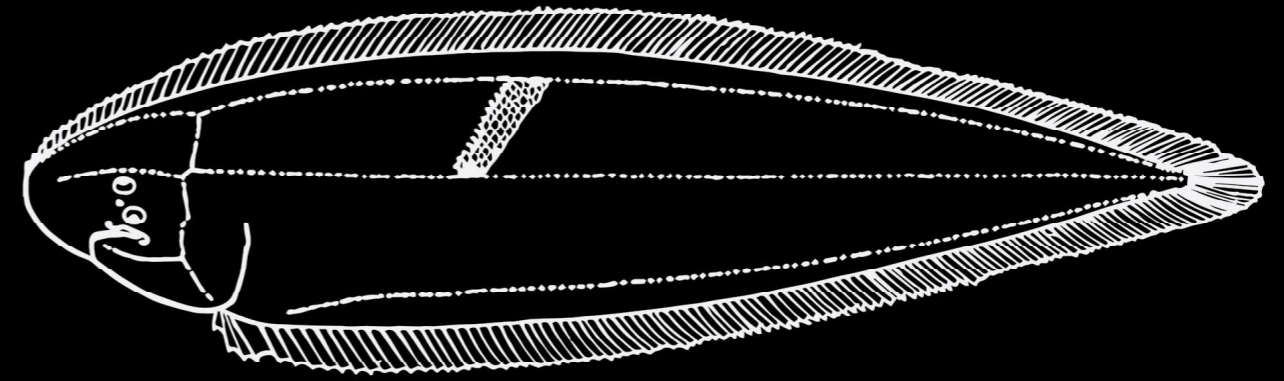
1. Body is wide and compressed.
2. Belly with a keel of scutes.
3. Scales before back fin forming a single series.
4. Inferior mouth.
5. A large black spot behind gill opening.

#### Important Facts



## Field Notes

# Cynoglossidae



### Key Characters

1. Tongue shaped flatfish with eyes on the upper side (left).
2. A hook like structure below mouth.
3. Initial part of gill cover is free and hidden beneath the skin.
4. Back-fin reaches forward onto head, while both back and anal fins join at tail-fin.
5. Hand-fins are absent and leg-fins are seen only on the upper side.

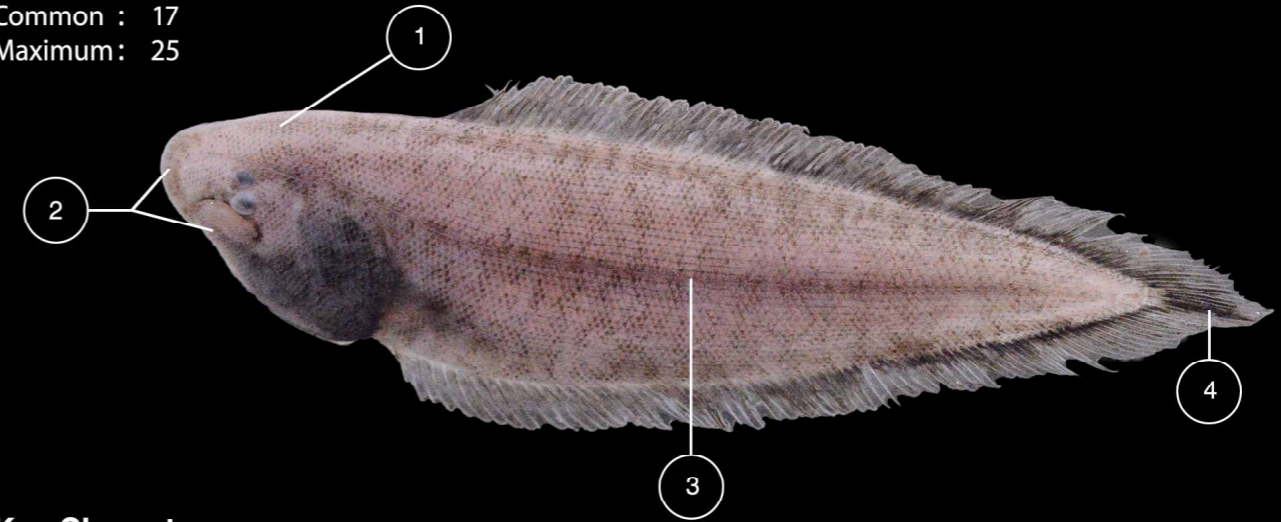
## Field Notes

### *Cynoglossus macrostomus* (Norman 1928) (Malabar Tongue-Sole) [നഖ്]

**Class** : Actinopterygii  
**Order** : Pleuronectiformes  
**Family** : Cynoglossidae

#### Length (cm)

Common : 17  
Maximum : 25



#### Key Characters

1. Two nostrils on the eyed side. The posterior nostril situated between front part of eyes.
2. Angle of mouth nearer to the end of snout. Cleft of mouth extending far back to the margin of eye.
3. Ctenoid scales on blind side and two mid lines on the eyed side but no mid line on blind side.
4. Less than 12 and not more than 10 fin rays in tail fin.

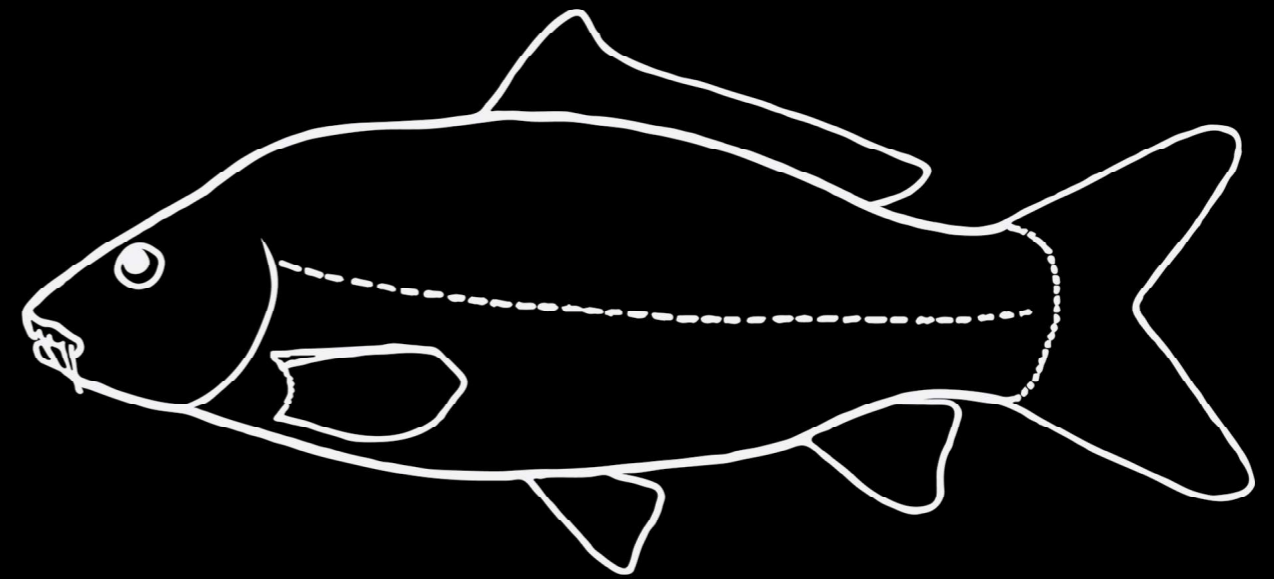
#### Important Facts





## Field Notes

# Cyprinidae



### Key Characters

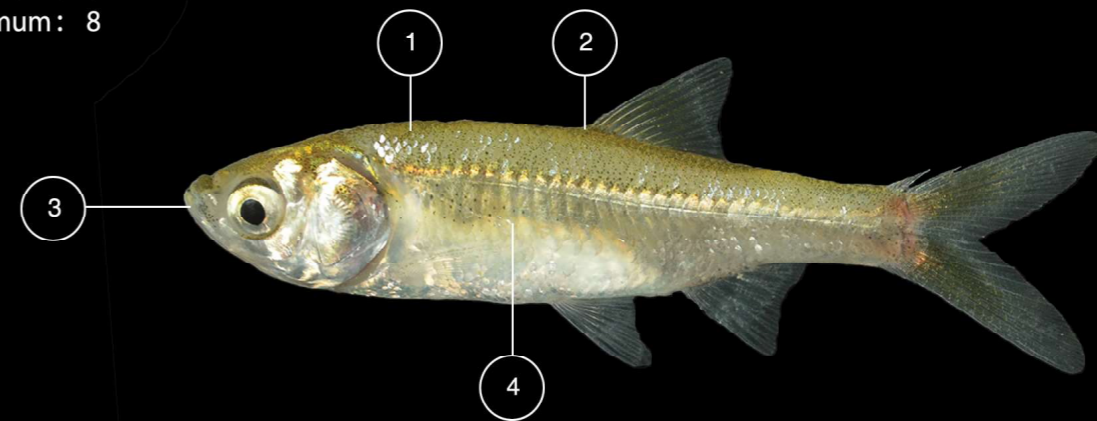
1. Small to large fish with variable lengths.
2. Only a single gill opening on each side.
3. Body has scales.
4. Possess three neck rays and the jaws are toothless.
5. Last gill arch modified to support pharyngeal teeth, which is usually more than one row.
6. Two or fewer pairs of barbels are present.
7. Leg-fin is positioned at the abdomen.

## Field Notes

### *Amblypharyngodon melettinus* (Valenciennes 1844) (Attentive Carplet) [ഠയറു]

Class : Actinopterygii  
Order : Cypriniformes  
Family : Cyprinidae

Length (cm)  
Common : 5  
Maximum : 8



#### Key Characters

1. Elongate, sub-cylindrical body with a rounded abdomen.
2. Back fin begins just after leg-fin and extends till middle of anal fin.
3. Lower jaw more elongated than upper.
4. Mid line concave and incomplete with small and fine 50+ scales.

#### Important Facts



## Field Notes

### *Dawkinsia filamentosa* (Valenciennes 1844) (Filament Barb) [പുറമ്പി പരൽ]

Class : Actinopterygii  
Order : Cypriniformes  
Family : Cyprinidae

Length (cm)  
Common : 11  
Maximum: 18



#### Key Characters

1. A black, horizontally-elongate oval mark above anal fin, falling at least on 4 or 5 mid line scales, starting on pored scale 13, 14 or 15 exactly after anal fin origin.
2. Sub-terminal mouth.
3. Four unbranched and 8 branched back fin; last unbranched ray smooth. Branched rays extending into trailing filaments in mature males and as slight projections in female counterparts.
4. A pair of short cheek whiskers the size of 0.5-2.2% of body length. Rostral whisker absent.

#### Important Facts



## Field Notes

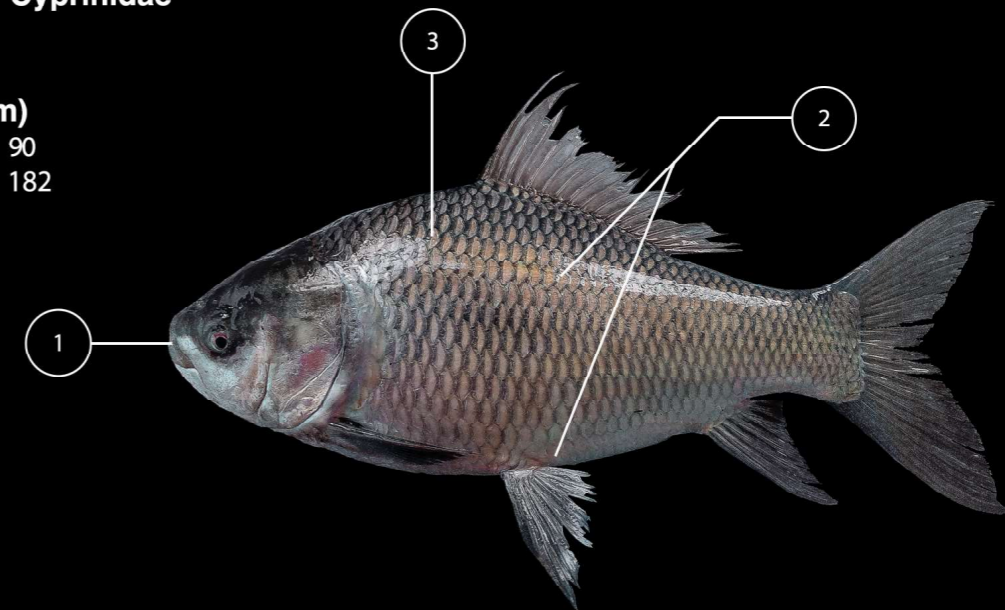
### *Gibelion catla* (Hamilton 1822) (Catla) [കാരകട്ടല]

**Class** : Actinopterygii  
**Order** : Cypriniformes  
**Family** : Cyprinidae

#### Length (cm)

Common : 90

Maximum: 182



#### Key Characters

1. Large, upturned mouth with a prominent protruding lower jaw.
2. Body is wide, with depth 2.5 to 3 times in length.
3. Scales are large with a dotted vertical line dividing each into two divisions.

#### Important Facts

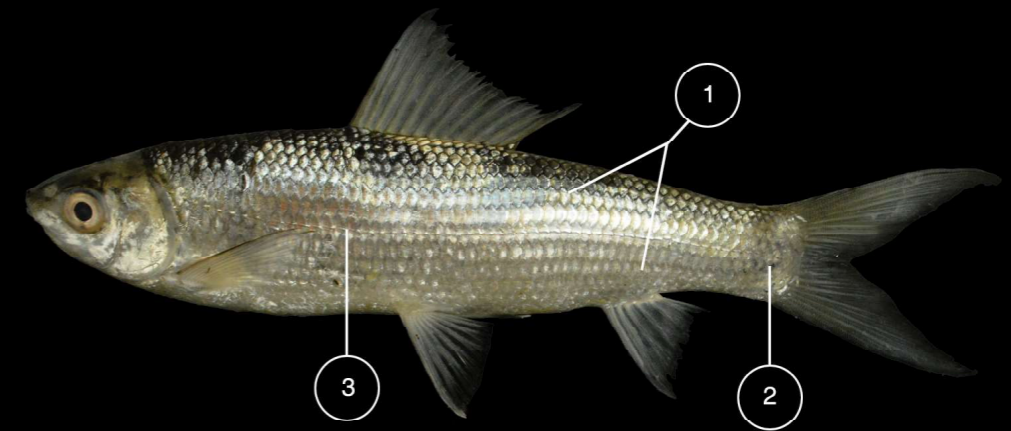


## Field Notes

### *Labeo dussumieri* (Valenciennes 1842) (Malabar Labeo) [പുല്ലൂർ/തൂളി]

**Class** : Actinopterygii  
**Order** : Cypriniformes  
**Family** : Cyprinidae

**Length (cm)**  
Common : 9  
Maximum: 15



#### Key Characters

1. Uniform silver colouration with 8 or 9 very pale brown stripes above and below mid line.
2. A large black very faint black spot on the end of tail in juveniles.
3. 50-55 mid line scales. 5 transverse series scales.

#### Important Facts



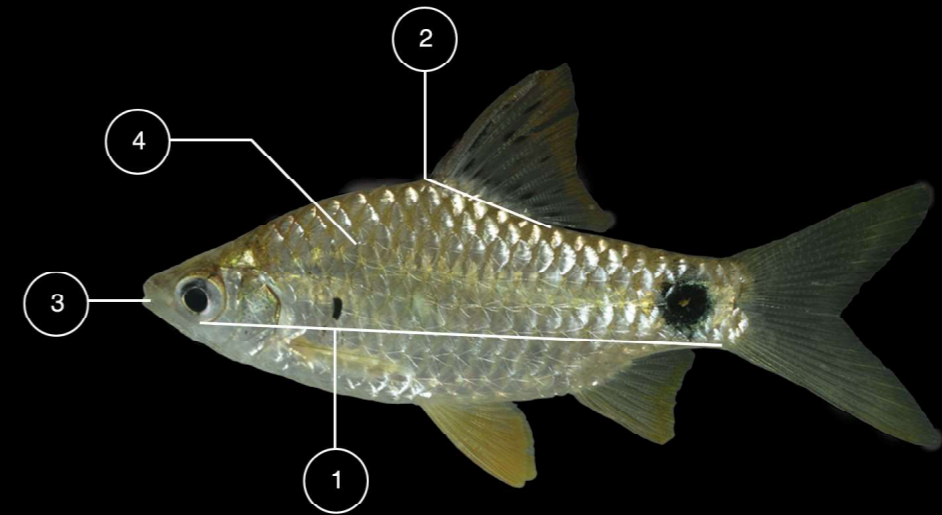


## Field Notes

### *Pethia punctata* (Day 1865) (Dotted Sawfin Barb) [പുളളി പരൽ]

**Class** : Actinopterygii  
**Order** : Cypriniformes  
**Family** : Cyprinidae

**Length (cm)**  
Common : 5  
Maximum : 8



#### Key Characters

1. Elongate, sub-cylindrical body with a rounded abdomen.
2. Back fin begins just after anal fin and extends till mid of anal fin.
3. Lower jaw more elongated than upper.
4. Mid line concave and incomplete with small & fine 50+ scales.

#### Important Facts

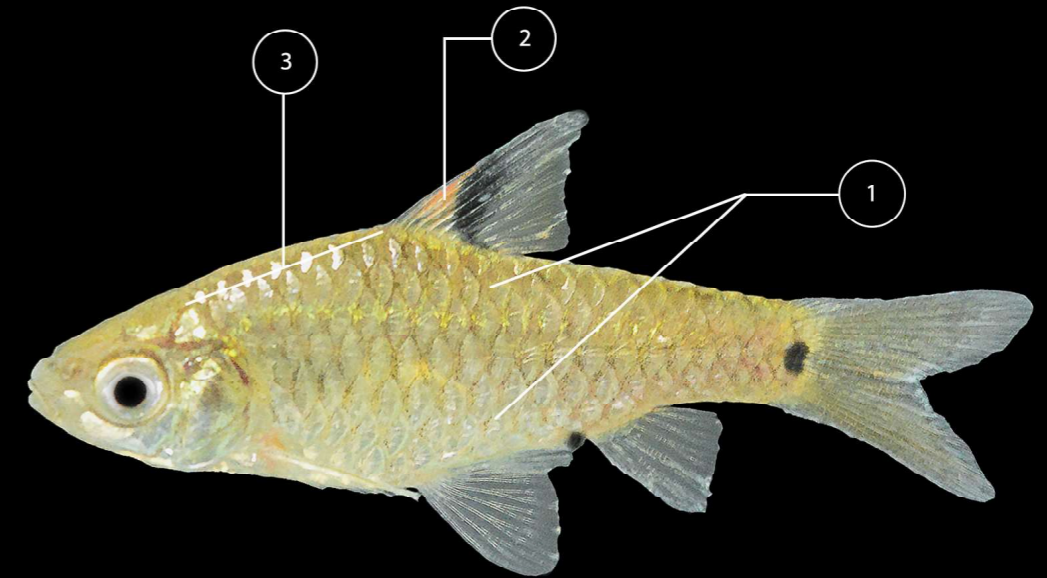


## Field Notes

### *Puntius vittatus* (Day 1865) (Green Stripe Barb) [കയ്പ പരൽ]

**Class** : Actinopterygii  
**Order** : Cypriniformes  
**Family** : Cyprinidae

**Length (cm)**  
Common : 3.5  
Maximum : 5



#### Key Characters

1. Back greenish yellow and stomach silvery.
2. A black and orange streak near the base of back-fin.
3. 6-7 scales before back-fin.

#### Important Facts



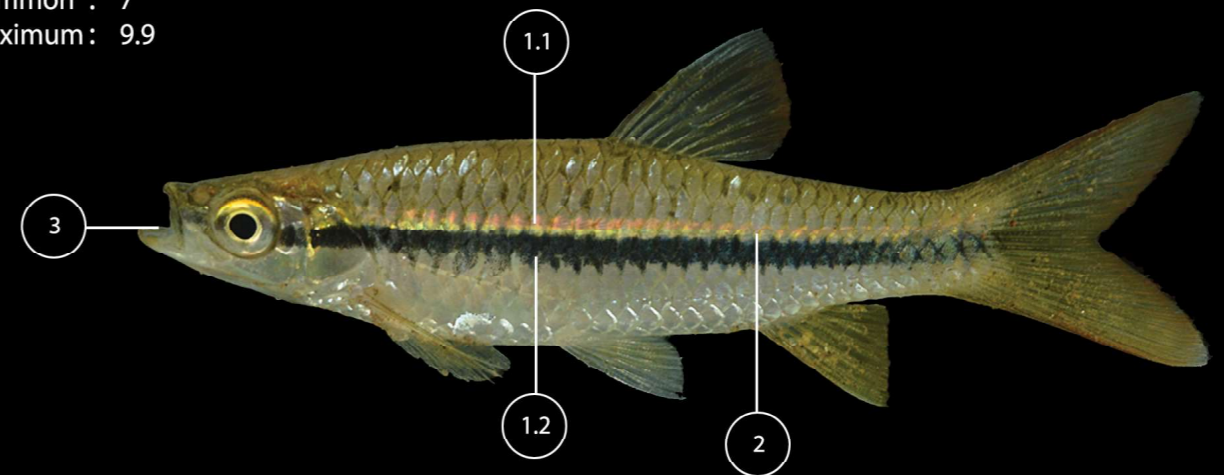
## Field Notes

### *Rasbora dandia* (Valenciennes 1844) (Black Line Rasbora) [തൂപ്പൽ കുടിയൻ]

Class : Actinopterygii  
Order : Cypriniformes  
Family : Cyprinidae

#### Length (cm)

Common : 7  
Maximum: 9.9



#### Key Characters

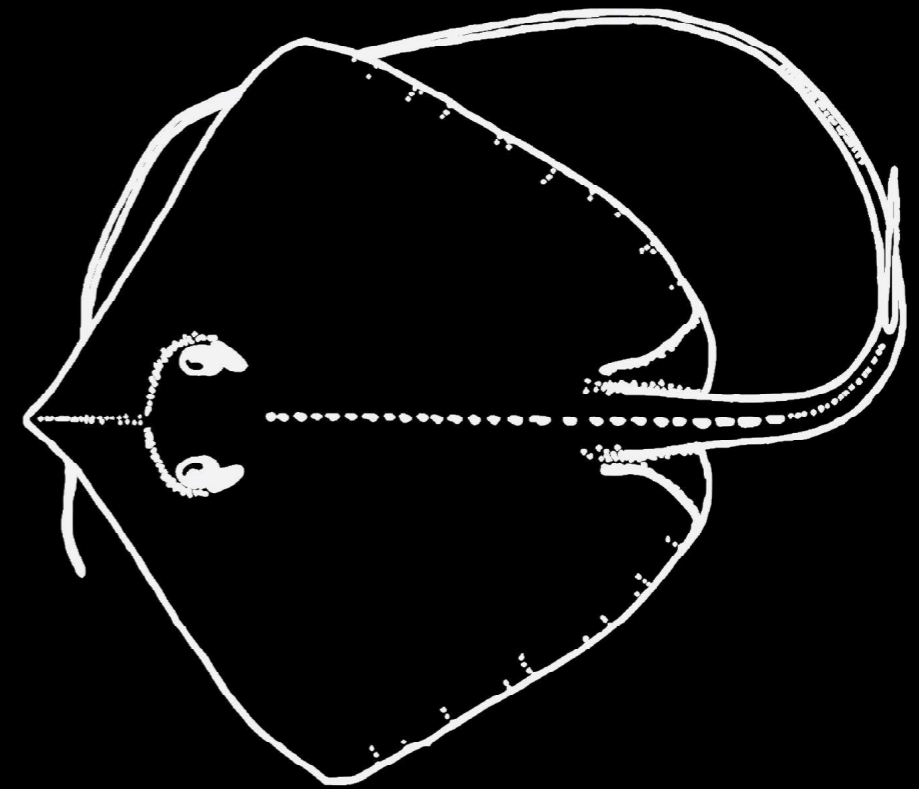
- 1.1: Sides with a light iridescent green stripe.
- 1.2: Sides with a dark inky black stripe, about 1 scale high on tail stalk, 1 1/2 scales high on midbody, narrower anteriorly.
2. Mid line with 27-31 pored scales.
3. Terminal mouth.

#### Important Facts



## Field Notes

## *Dasyatidae*



### Key Characters

1. Flattened and disc like body shape.
2. Gills present on the under-side.
3. Head and eyes slightly elevated above the disc.

## Field Notes

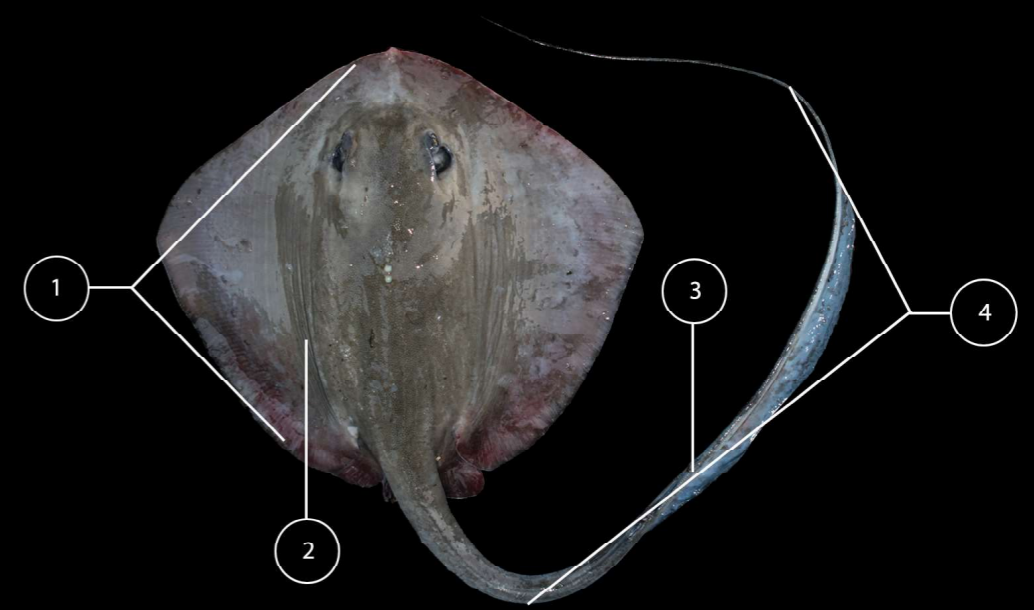
### *Pastinachus sephen* (Forsskål 1775) (Cowtail Stingray) [പശുവാലൻ മുളളൻ തിരണ്ടി]

**Class** : Elasmobranchii  
**Order** : Myliobatiformes  
**Family** : Dasyatidae

#### Length (cm)

Common : 65

Maximum: 183



#### Key Characters

1. A disk-shaped body which is quadrangular
2. Dark brown or black colour in back without visible markings.
3. 1 or 2 long stings on tail.
4. Tail is three-four times that of body.

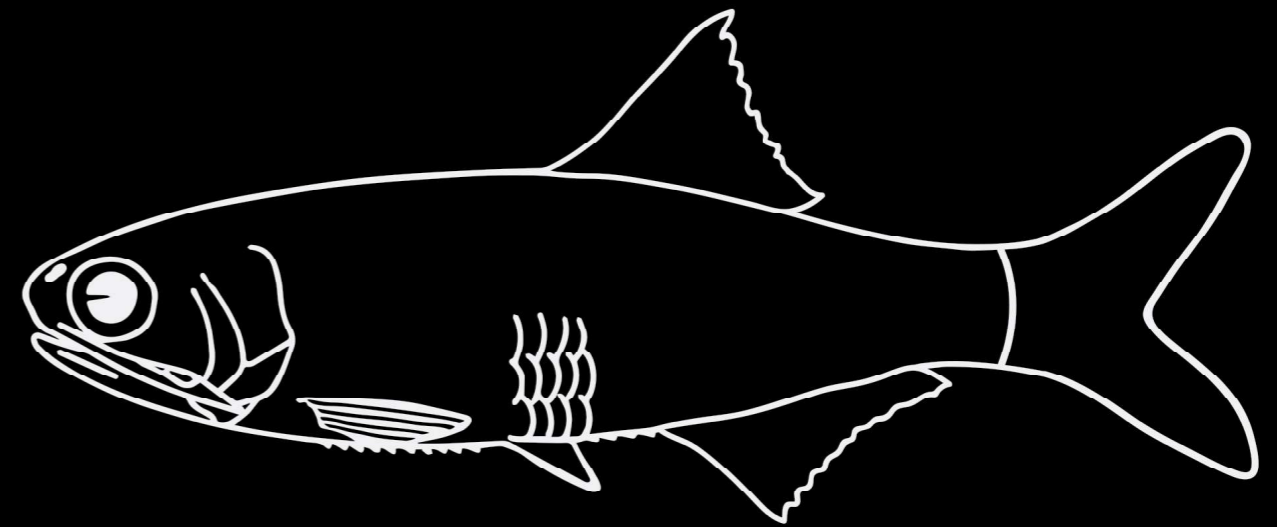
#### Important Facts





## Field Notes

# *Engraulidae*



### Key Characters

1. Small fishes that are mostly silver in colour.
2. Scutes are present along the belly.
3. Projecting pig-like snout with an underslung lower jaw.
4. Back-tip of upper jaw extends far backwards.
5. A single back-fin and fins in general lack spiny rays.
6. They do not possess a mid-line.

## Field Notes

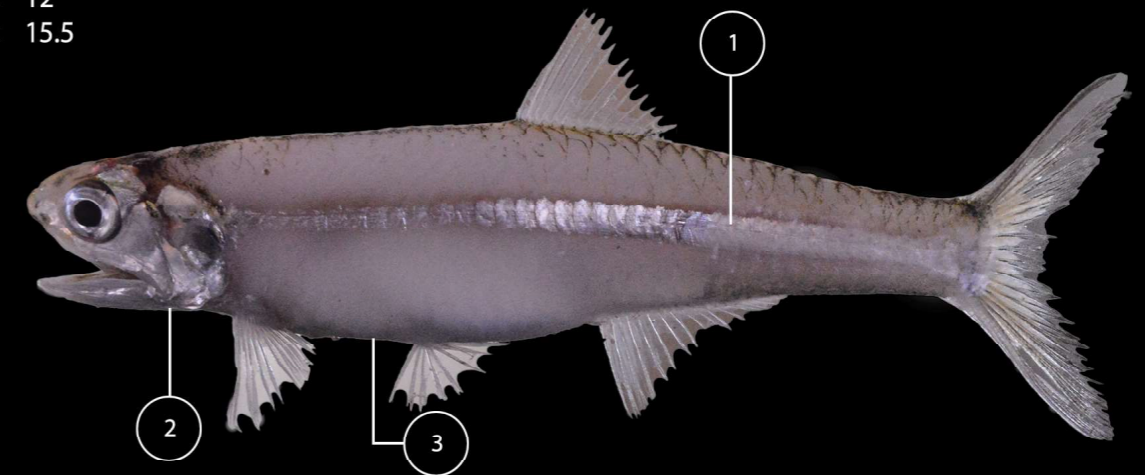
### *Stolephorus indicus* (van 1823) (Indian Anchovy) [ഇന്ത്യൻ നത്തോലി]

**Class** : Actinopterygii  
**Order** : Clupeiformes  
**Family** : Engraulidae

#### Length (cm)

Common : 12

Maximum : 15.5



#### Key Characters

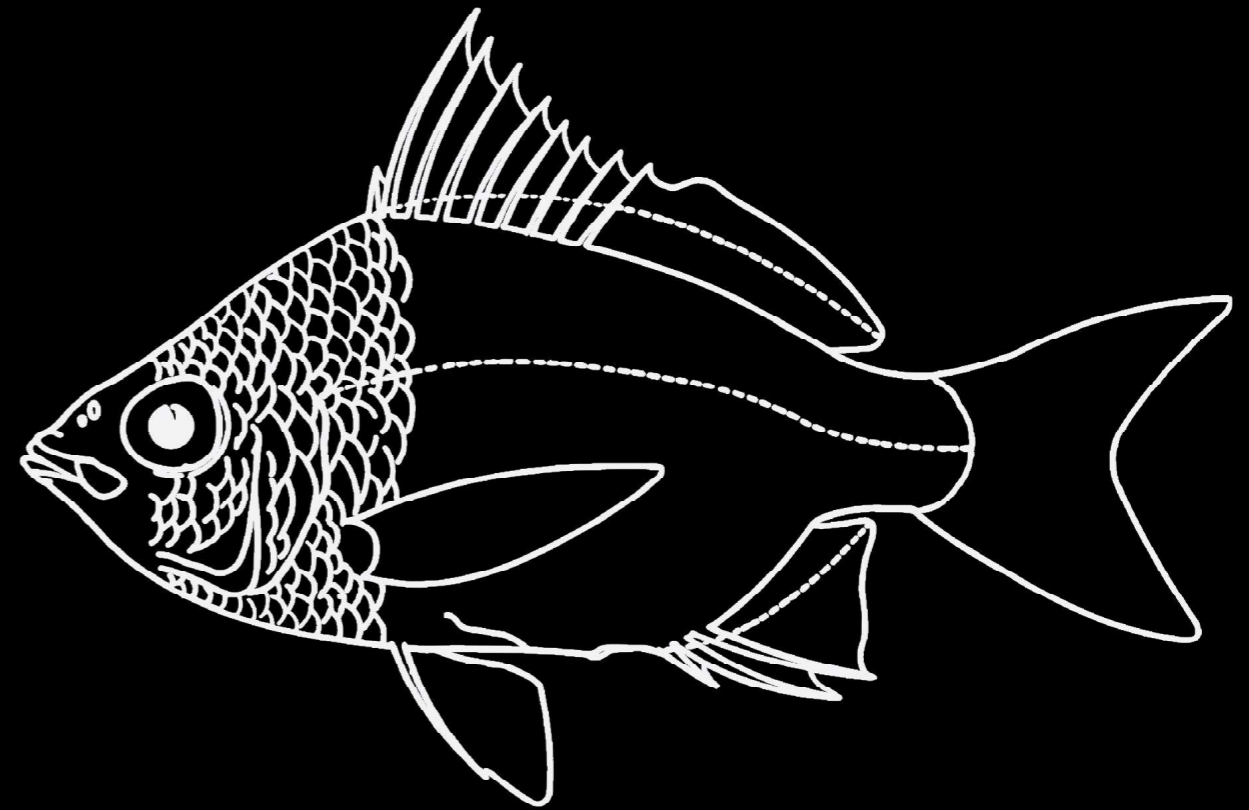
1. Light transparent fleshy brown body with a silver stripe below.
2. Cheek tip pointed, reaching till or only just beyond anterior border in front of the gill cover.
3. 3 to 5 small needle-like scutes between hand and leg fin bases.

#### Important Facts



## Field Notes

## Gerreidae



### Key Characters

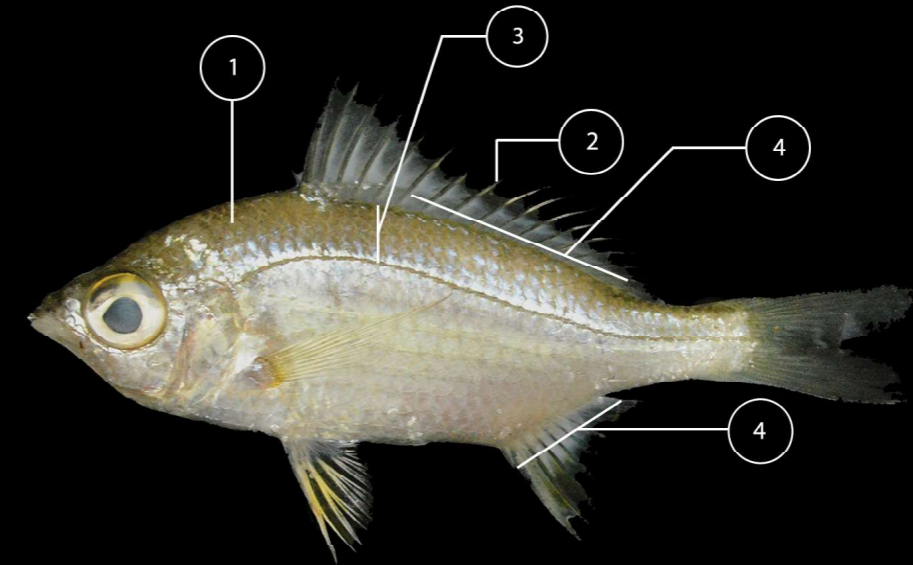
1. Strongly protractile mouth, which points downwards when extended.
2. Long and pointed hand fins.
3. Scales are distinctly large.

## Field Notes

### *Gerres setifer* (Hamilton 1822) (Small Bengal Siver Biddy) [പ്രാദേശികം]

**Class** : Actinopterygii  
**Order** : Perciformes  
**Family** : Gerreidae

**Length (cm)**  
Common : 7  
Maximum: 15



#### Key Characters

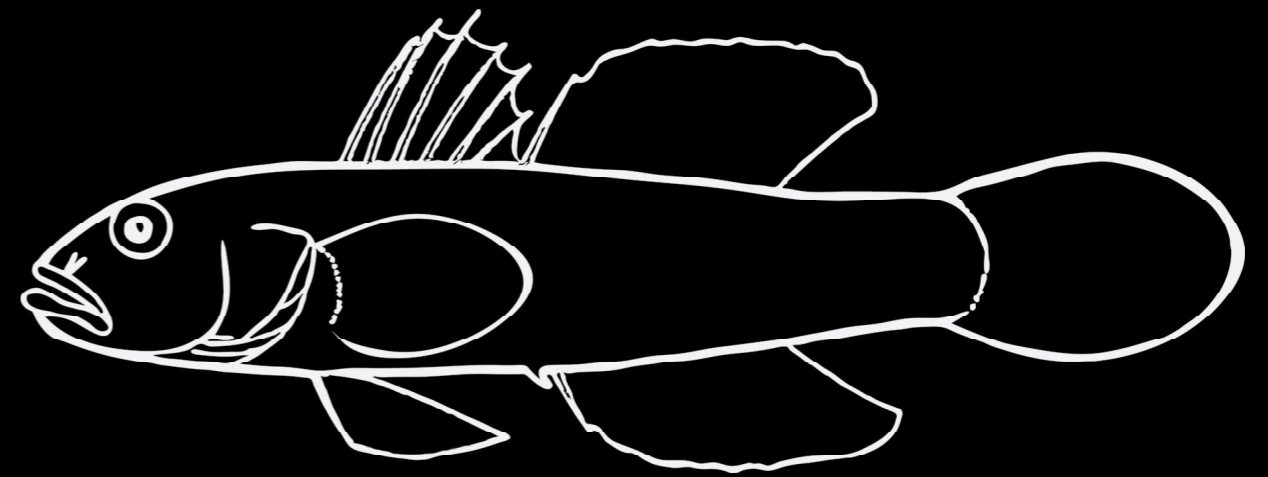
1. Upper sides of head and trunk tinged with silver.
2. Last back fin spine longer than the 2nd last spine.
3. 3 1/2 scales between 5th back fin spine base and mid line.
4. Bases of back fin and anal fin with an elevated scaly sheath.

#### Important Facts



## Field Notes

## Gobiidae



### Key Characters

1. Small to medium sized fish.
2. Leg-fins are united to form a sticky disc.
3. Back-fins are separate.
4. Tail-fin is rounded and separate from anal and back fins.
5. A mid-line is lacking.



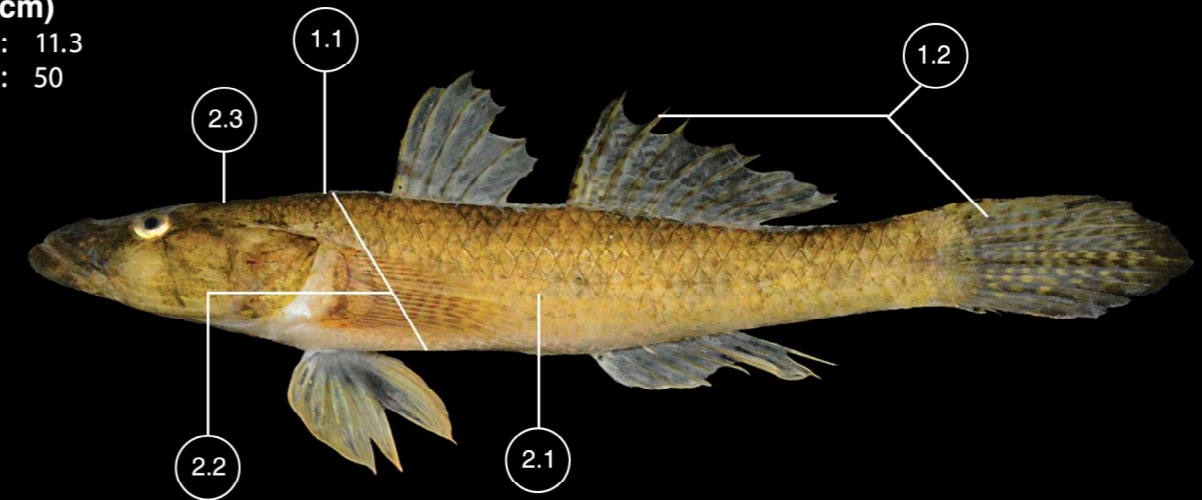
## Field Notes

### *Glossogobius giuris* (Hamilton 1822) (Tank Goby) [പുളാൻ]

**Class** : Actinopterygii  
**Order** : Gobiiformes  
**Family** : Gobiidae

#### Length (cm)

Common : 11.3  
Maximum: 50



#### Key Characters

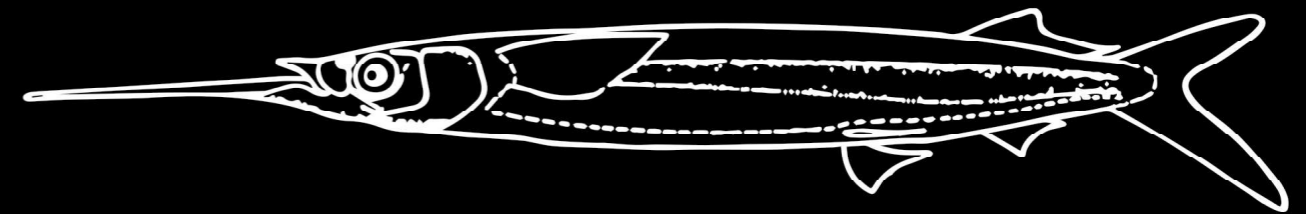
1. Colour: 1.1: Back brown to bottom light brown with blotches along the sides.  
1.2: Back and tail fin contain bars of spots.
2. Scales: 2.1: Mid line scale 32, till base of tail fin and 3 more on tail.  
2.2: Transverse series scales 8-9. 2.3: Scales before back-fin are smaller than those after.

#### Important Facts



## Field Notes

# *Hemiramphidae*



### Key Characters

1. Elongate fishes with a short triangular upper jaw and a prolonged lower jaw.
2. Nostrils are lodged in a pit in front of the eye.
3. Mid-line runs below the position where hand-fin is attached to the body.
4. Leg fin is at the abdomen with 6 soft rays.

## Field Notes

### *Hyporhamphus xanthopterus* (Valenciennes 1847) (Red-Tipped Halfbeak) [മൊറൾ]

**Class** : Actinopterygii  
**Order** : Beloniformes  
**Family** : Hemiramphidae

**Length (cm)**  
Common : 9  
Maximum : 15



#### Key Characters

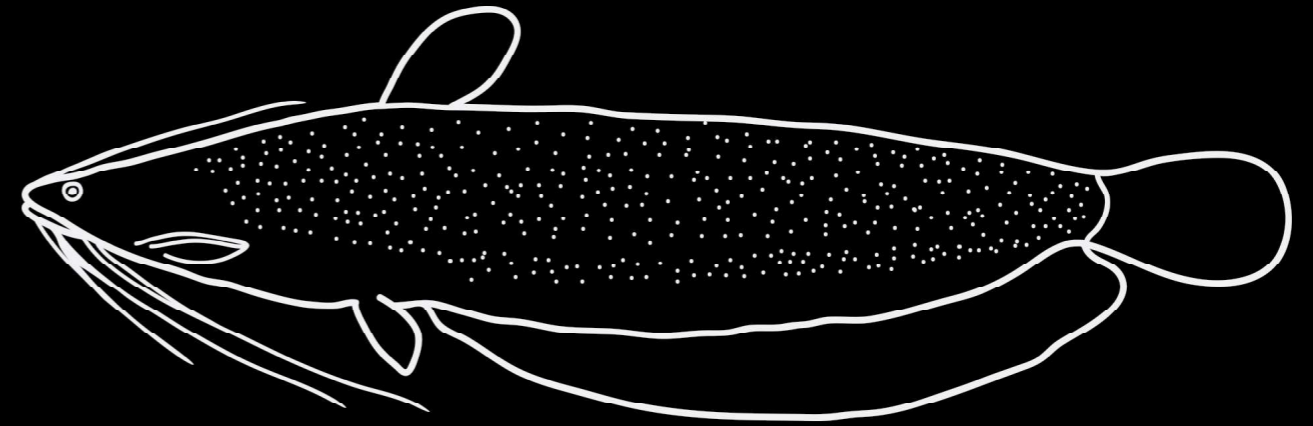
1. Lower jaw is longer than the upper and almost twice the length of the head.
2. Tail fin is forked with a longer lower lobe and yellow in colour.
3. Coral red colour at the tip of the lower beak which is usually seen only in a live specimen.

#### Important Facts



## Field Notes

# *Heteropneustidae*



### Key Characters

1. Elongate and compressed body with greatly depressed head.
2. Four pairs of whiskers protrude around the mouth.
3. Short back fin with no spine.
4. Long anal fin and around tail fin.
5. Both hand fins have sharp poisonous spine.

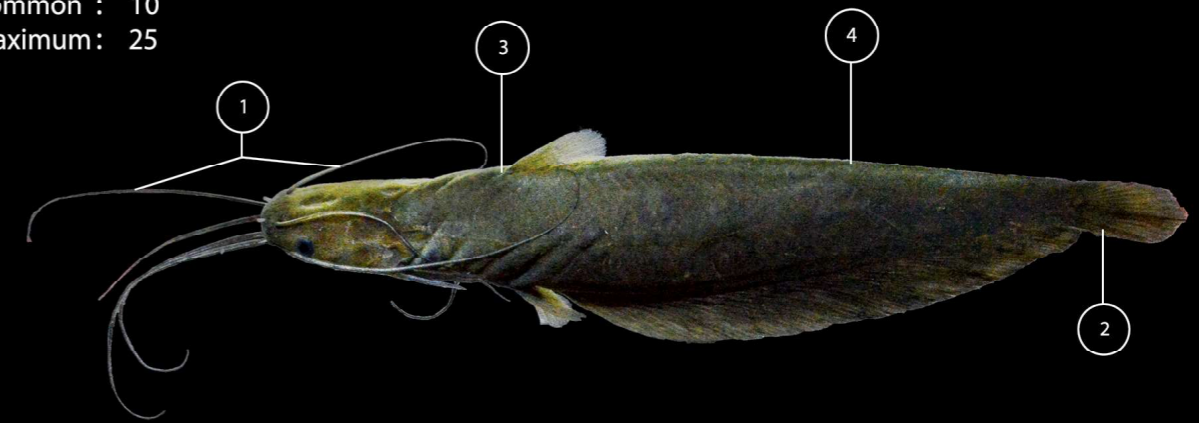
## Field Notes

### *Heteropneustes fossilis* (Bloch 1794) (Stinging Catfish) [കുറുൾ]

**Class** : Actinopteri  
**Order** : Siluriformes  
**Family** : Heteropneustidae

#### Length (cm)

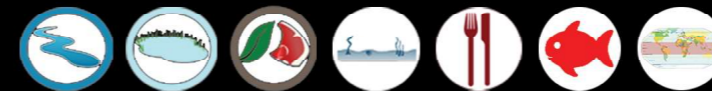
Common : 10  
Maximum: 25



#### Key Characters

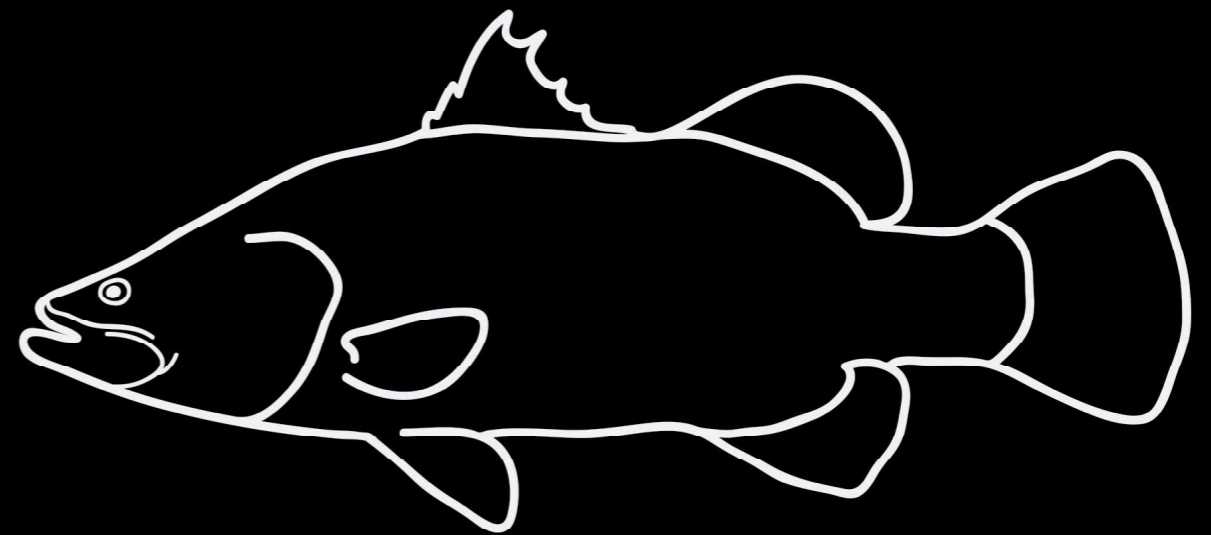
1. Chin whiskers extending to the end of hand fins and cheek pairs extended up to the base of abdomen.
2. Tail fin is rounded and distinctly separated.
3. Back fin inserted to the back just in front of leg-fin.
4. Does not possess a fatty fin.

#### Important Facts



## Field Notes

## *Latidae*



### Key Characters

1. Elongate and compressed body.
2. Distinct tail stalk.
3. Head pointed and duck-bill like.
4. Concave above the eyes.
5. Convex in front of the back fin.
6. Upper jaw reaching behind eye.
7. Mid-line extending up till the tail fin.



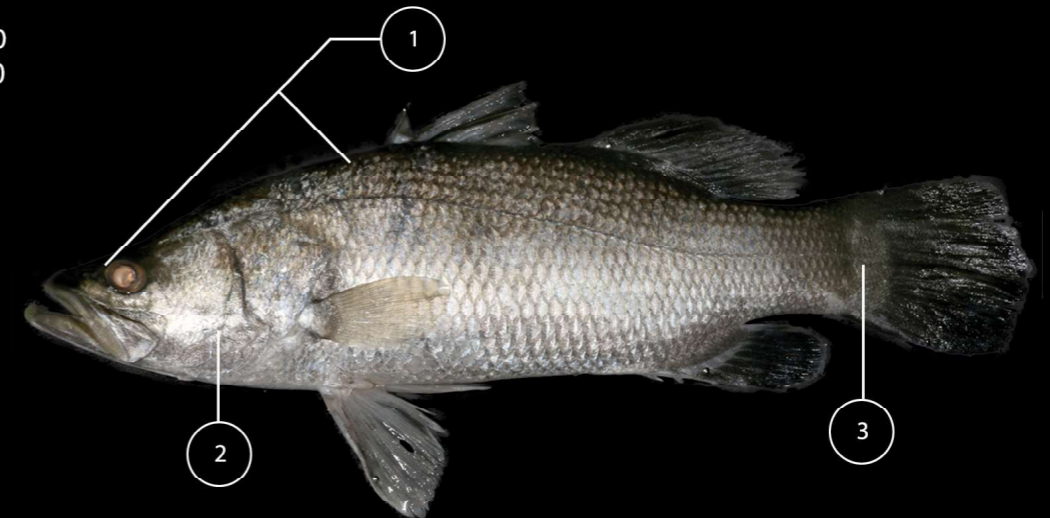
## Field Notes

### *Lates calcarifer* (Bloch 1822) (Barramundi) [കാളാഞ്ചി]

**Class** : Actinopteri  
**Order** : Perciformes  
**Family** : Latidae

#### Length (cm)

Common : 150  
Maximum : 200



#### Key Characters

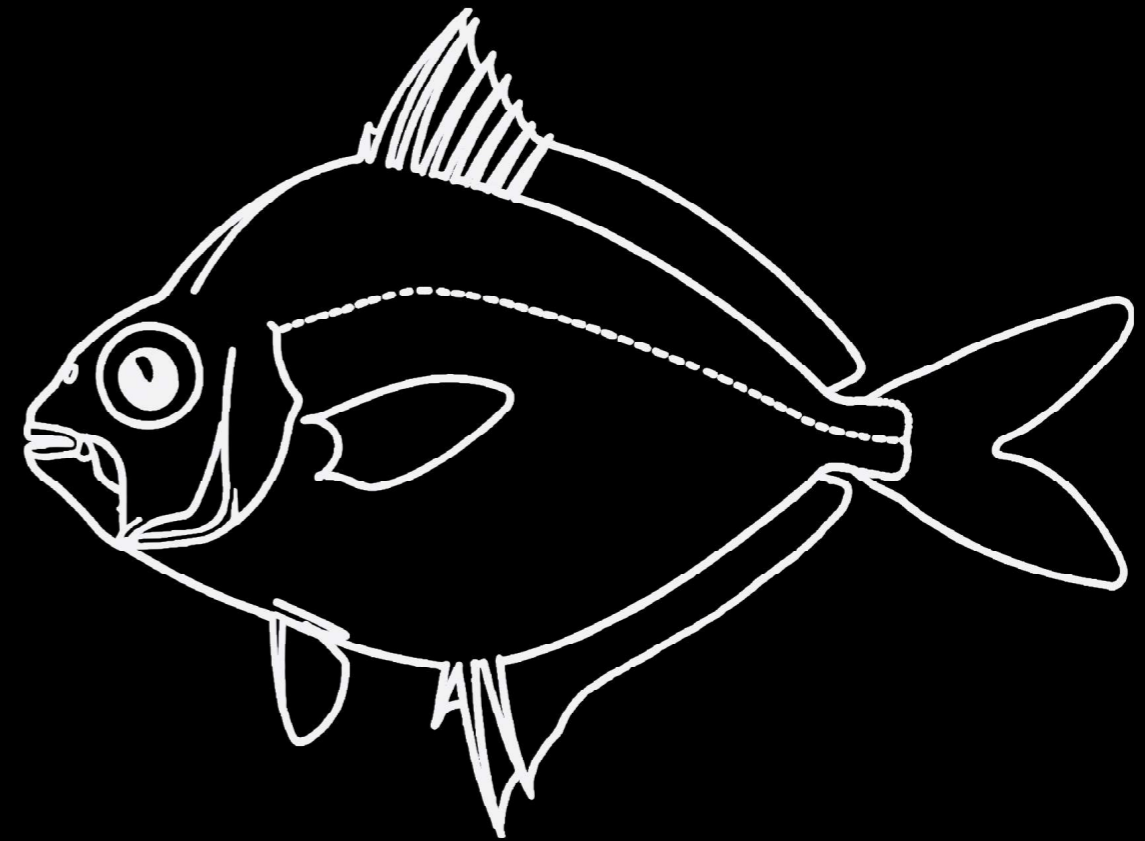
1. Head pointed, with concave dorsal profile becoming convex in front of back fin.
2. Lower edge of flap in front of gill cover serrated, with a strong spine.
3. Mid line extending onto tail.

#### Important Facts



## Field Notes

## *Leiognathidae*



### Key Characters

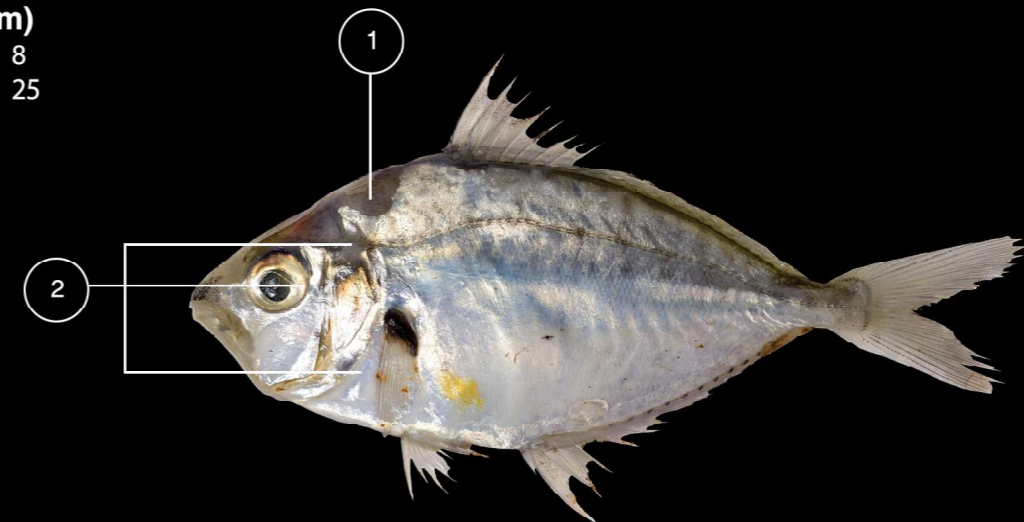
1. Commonly called ponyfish, they have oblong or round bodies that are strongly compressed.
2. Possess a crest or spine on the nape of the neck.
3. They have a mouth which is very strongly protrusible.

## Field Notes

### *Nuchequula nuchalis* (Temminck & Schlegel 1845) (Spotnape Ponyfish) [മുളളൻ കാര]

**Class** : Actinopterygii  
**Order** : Perciformes  
**Family** : Leiognathidae

**Length (cm)**  
Common : 8  
Maximum : 25



#### Key Characters

1. A dark spot on nape.
2. Scales are absent on the chest, head and nape but present elsewhere on the lateral body.

#### Important Facts



## Field Notes

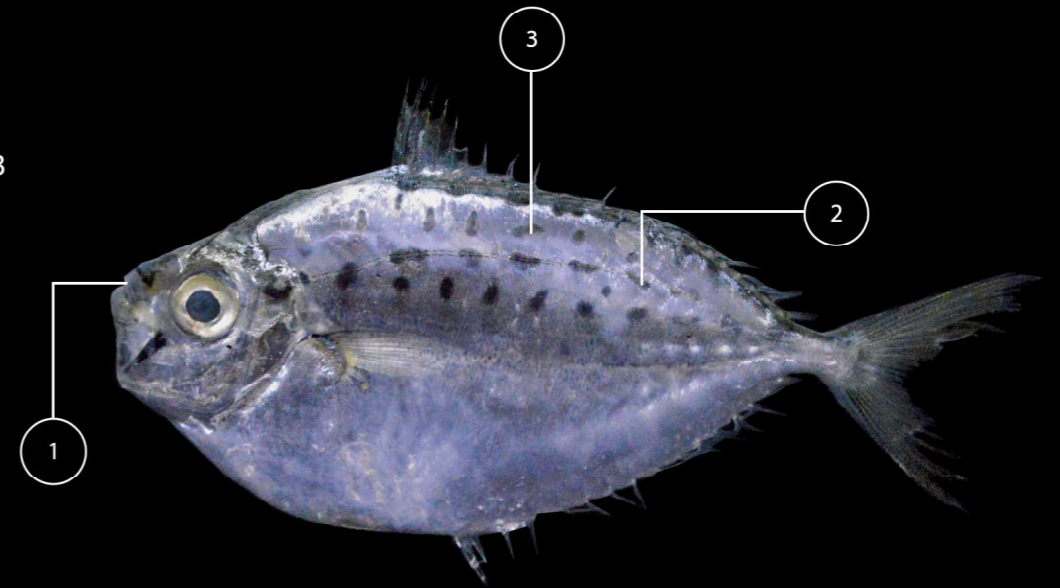
### *Secutor insidiator* (Bloch 1787) (Pugnose Ponyfish) [പതിമൂക്കൻ മുളളൻകാർ]

**Class** : Actinopterygii  
**Order** : Perciformes  
**Family** : Leiognathidae

#### Length (cm)

Common : 8

Maximum: 11.3



#### Key Characters

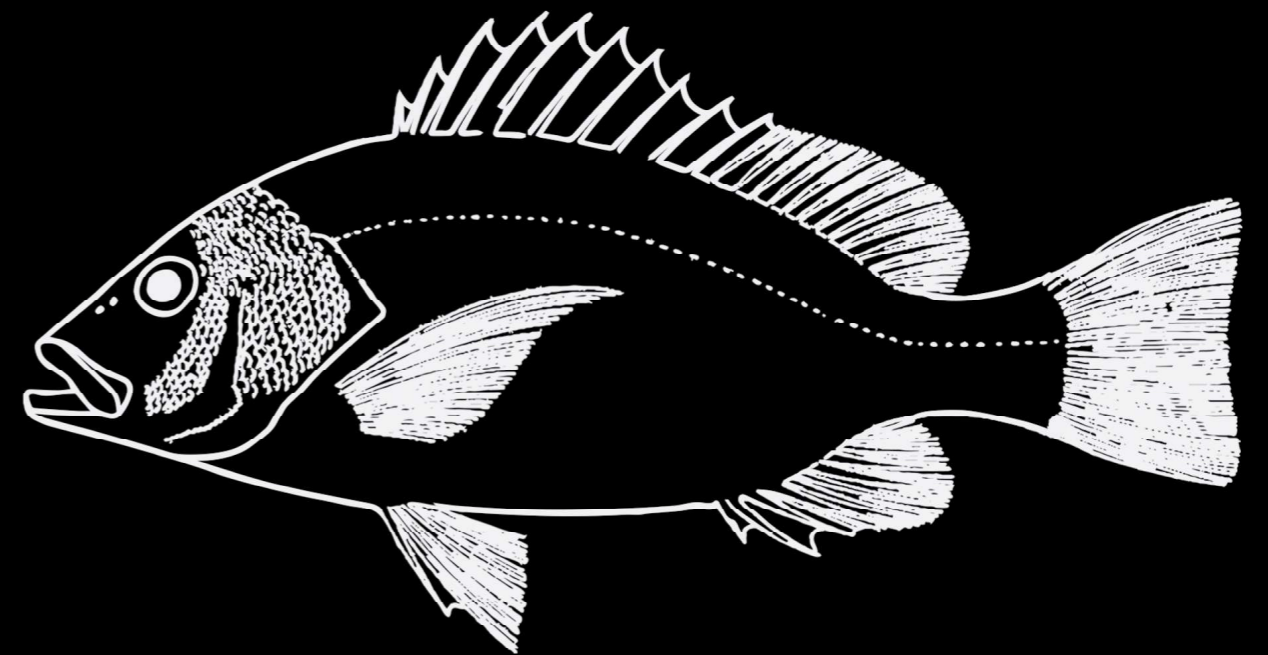
1. Mouth pointing upward when protracted.
2. Mid line reaching backward nearly to below end of back fin.
3. About 10 broken, dark, vertical bars and spots extending to little below mid line.

#### Important Facts



## Field Notes

# *Lutjanidae*



### Key Characters

1. Moderately elongate, perch-like deep bodies fish with a terminal and protrusible mouth.
2. Few rows of teeth in jaw that are conical and sharp.
3. No scales are seen between eye and mouth; however, scales are present on cheek and in front of gill cover.
4. Two back fins that are continuous with 10 to 12 spines and 10 to 17 soft rays and an anal fin with 3 spines and 7 to 11 soft rays.



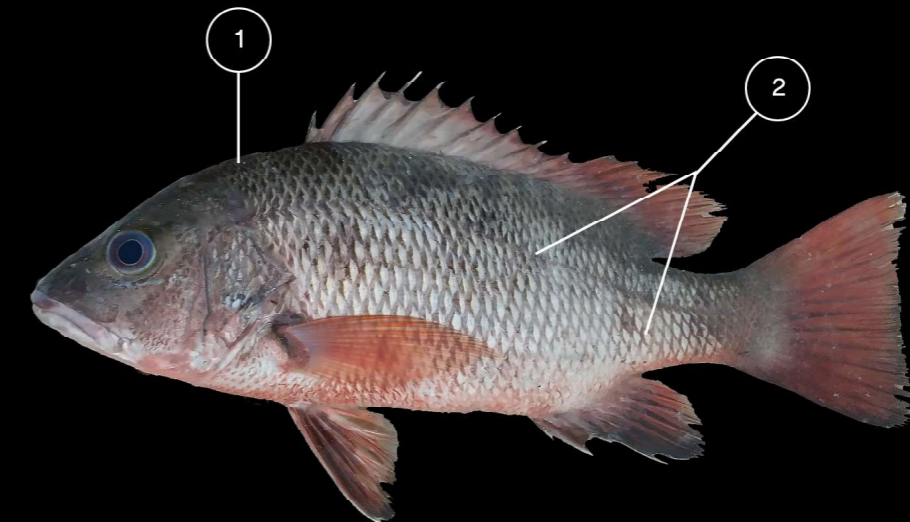
## Field Notes

### *Lutjanus argentimaculatus* (Forsskål 1775) (Mangrove Red Snapper) [ചെമ്പല്ലി]

**Class** : Actinopterygii  
**Order** : Perciformes  
**Family** : Lutjanidae

#### Length (cm)

Common : 80  
Maximum: 150



#### Key Characters

1. Reddish brown, but paler along the belly. Devoid of any oval patches.
2. Scales between mid line and spinous back fin parallel to back profile, then slanting ascend to back profile along the soft rayed back fin stretch and mid line.

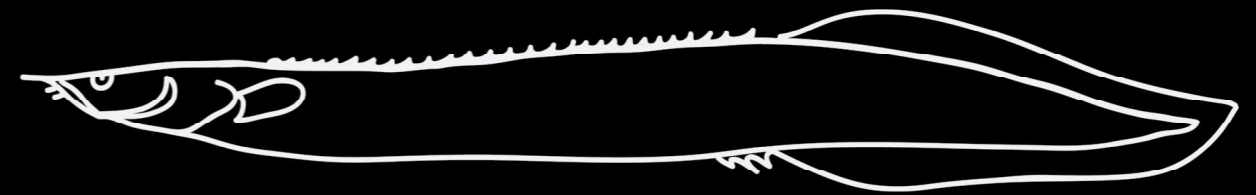
#### Important Facts





## Field Notes

# *Mastacembelidae*



### Key Characters

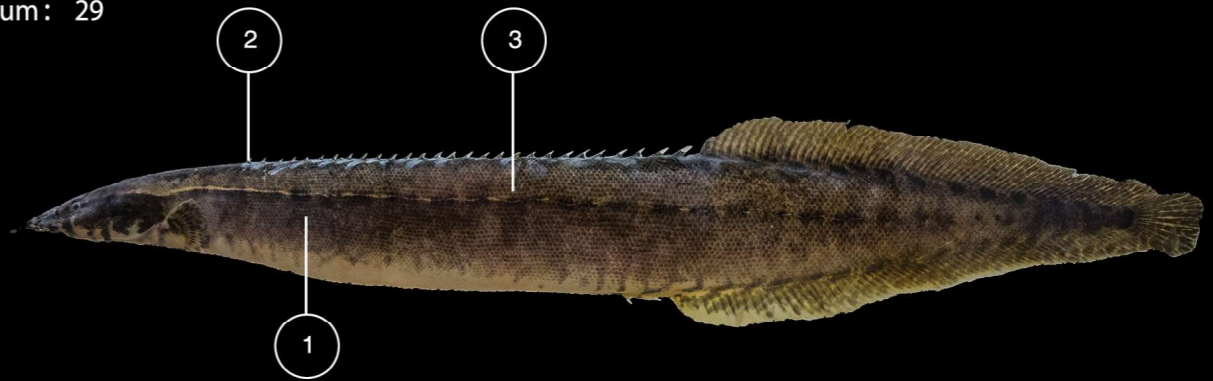
1. Medium to large sized fishes resembling the shape of a snake.
2. Only a single gill opening on each side and is confined to lower side of body.
3. Nostrils are paired and upper jaw is non-protrusible.
4. Leg-fins are absent, but hand-fins are present.
5. A series of 9-42 spines are seen in front of back-fin.
6. Two or three spines in front of anal fin.
7. A small fleshy appendage is seen as an extension of snout.

## Field Notes

### *Macrognathus guentheri* (Day 1865) (Malabar Spinyeel) [മലയാറകൻ]

**Class** : Actinopterygii  
**Order** : Synbranchiformes  
**Family** : Mastacembelidae

**Length (cm)**  
Common : 17  
Maximum : 29



#### Key Characters

1. Olive green back with brown shade which gradients down to yellow; body also possesses black bands that start from the eye and cross below the jaws along with short slanding bars or marblings.
2. The back fin spines commence vertically behind the end of hand fin.
3. The body is scaled with 15 scales between the mid line and 1<sup>st</sup> back fin ray.

#### Important Facts



## Field Notes

### *Mastacembelus armatus* (Lacepède 1800) (Zig-zag Eel) [പനയാരകൻ]

**Class** : Actinopterygii  
**Order** : Synbranchiformes  
**Family** : Mastacembelidae

**Length (cm)**  
Common : 30  
Maximum : 57



#### Key Characters

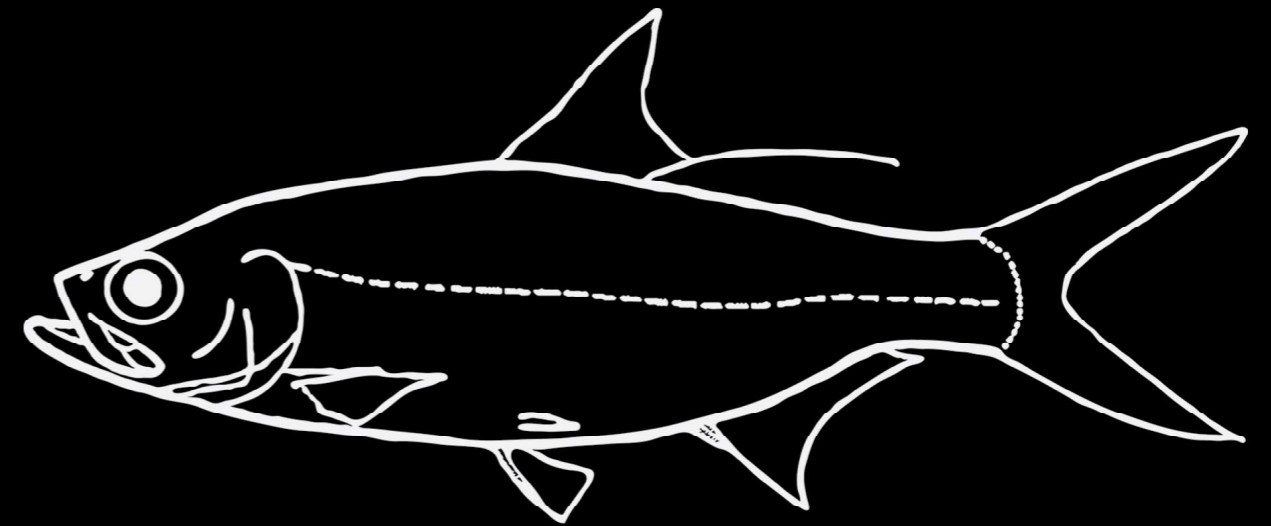
1. Body rich in brown above but lighter towards stomach and a row of black spots below back fin spines which scales till the tail.
2. 30-40 back fin spines commence over the level of middle portion of the hand fin.
3. Tail fin rays 15-20.
4. Fringe of front nostril with 2 fimbria and 2 broad based cover and never 6 equal fimbriae.

#### Important Facts



## Field Notes

# *Megalopidae*



### Key Characters

1. Moderately deep bodied fish with tapering ends.
2. Possess a mid-line but lack scutes on belly like clupids.
3. Single back-fin with rays and the last ray is elongated into a thread like structure.

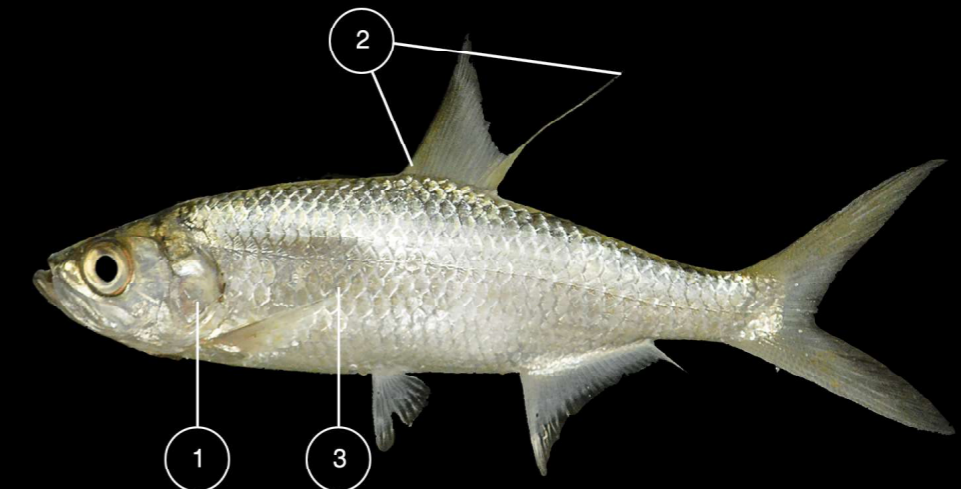
## Field Notes

### *Megalops cyprinoides* (Broussonet 1782) (Indo-Pacific Tarpon) [പാളൻകണ്ണി]

**Class** : Actinopterygii  
**Order** : Elopiformes  
**Family** : Megalopidae

#### Length (cm)

Common : 37  
Maximum: 150



#### Key Characters

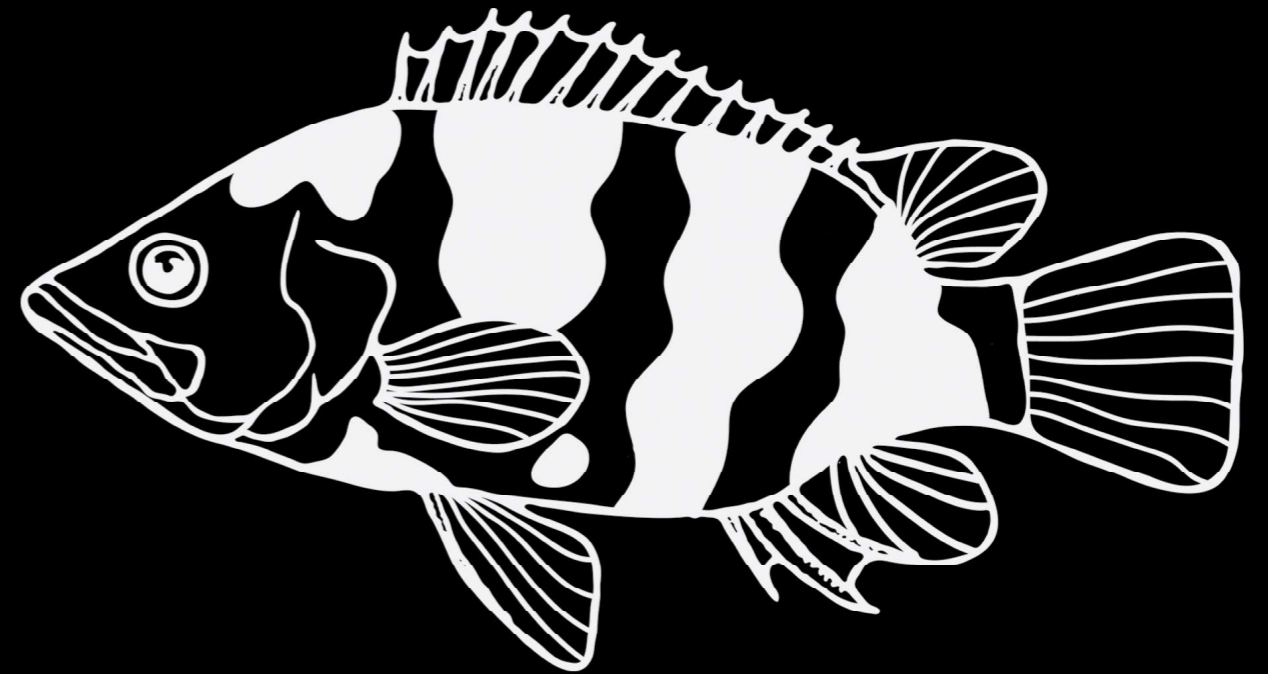
1. Small sized gill filaments in first reduced gill arch. The arch is either rudimentary or absent.
2. Back fin originates opposite to leg fin. Its upper edge is concave and last ray prolonged.
3. Comparitively larger scales than that of *Elops machnata*.

#### Important Facts



## Field Notes

## *Nandidae*



### Key Characters

1. A protractile mouth with five teeth in both jaws, in front and in the middle of the upper palate, and on either side on the palate.
2. Small spine on the gill cover, whereas small toothed structures in the middle of the gill cover.

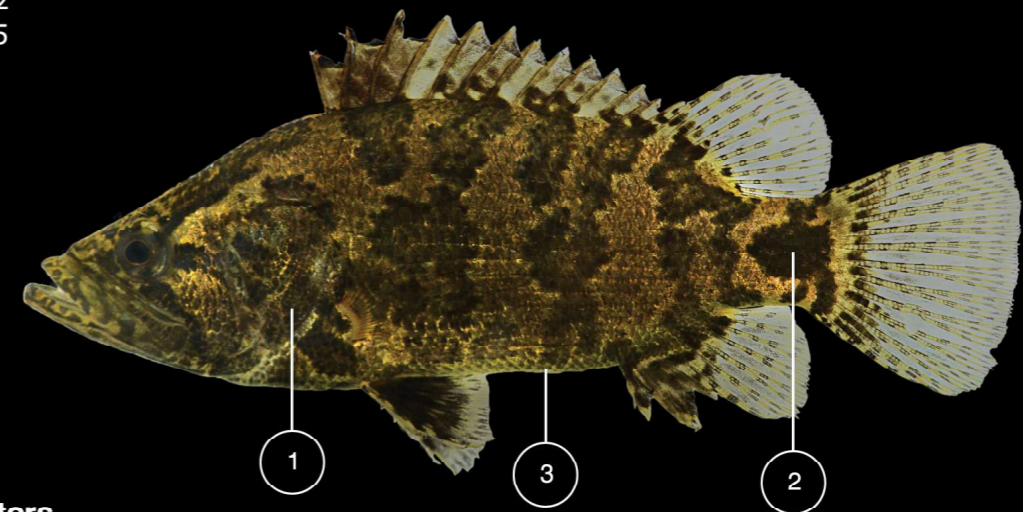


## Field Notes

### *Nandus nandus* (Hamilton 1822) (Gangetic Leaffish) [മുതുകിപ്പ]

**Class** : Actinopterygii  
**Order** : Anabantiformes  
**Family** : Nandidae

**Length (cm)**  
Common : 12  
Maximum: 15



#### Key Characters

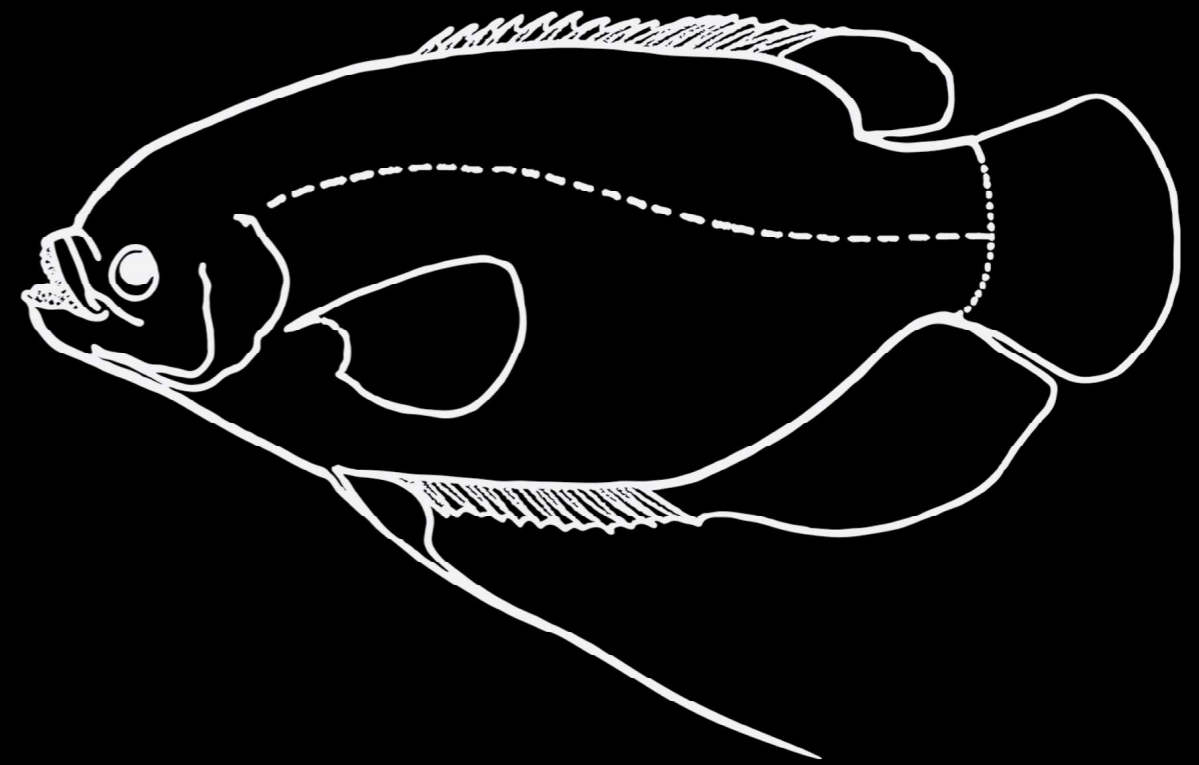
1. Possess a dome-shaped gill arch.
2. A dark spot at caudal peduncle.
3. Convex anal opening after stomach portion.

#### Important Facts



## Field Notes

# *Osphronemidae*



### Key Characters

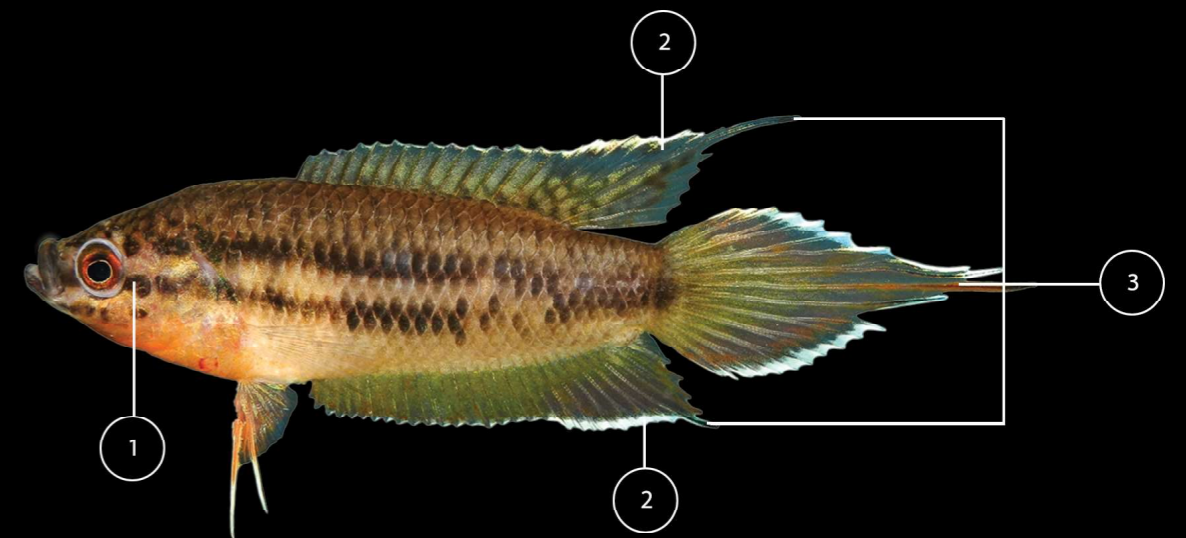
1. Small, brightly coloured, sluggish fish, strictly found in freshwater.
2. Possess an approximately rosette-shaped, highly vascular accessory air-breathing apparatus above gills.
3. Usually, construct a floating nest in the wild.

## Field Notes

### *Pseudosphromenus dayi* (Köhler 1908) (Brown Spike Tailed Paradise Fish) [കരിംകണ്ണ]

**Class** : Actinopterygii  
**Order** : Perciformes  
**Family** : Osphronemidae

**Length (cm)**  
Common : 4  
Maximum : 7.5



#### Key Characters

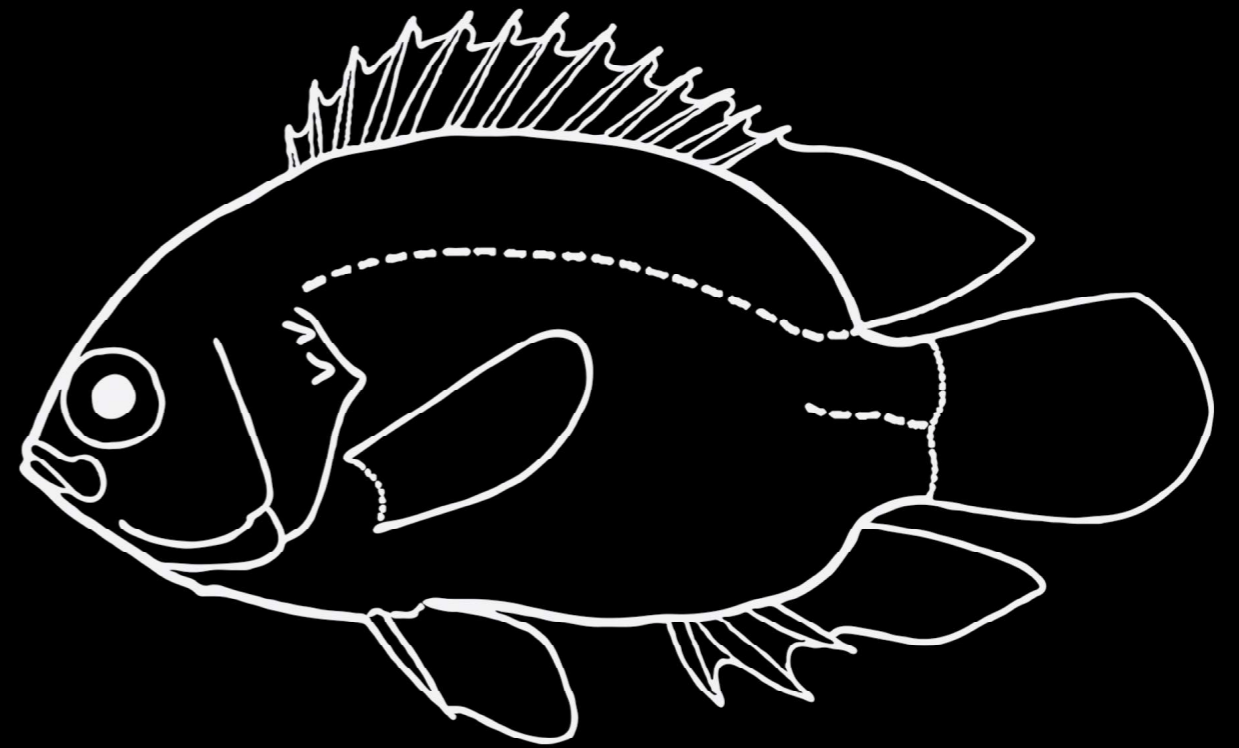
1. A faint black line across the middle of eye horizontally extending till the tail.  
Two other lines are also seen on either side of this line.
2. Ventral fins with blue and white tips.
3. Rear end of back, anal and mid portion of tail fins greatly elongated.

#### Important Facts



## Field Notes

## *Pristolepididae*



### Key Characters

1. Broadly oval and compressed body.
2. Toothed gill cover with two spines.
3. Backfin with small scales at its base.
4. Large, rough, and very finely serrated scales.
5. Interrupted mid-line.

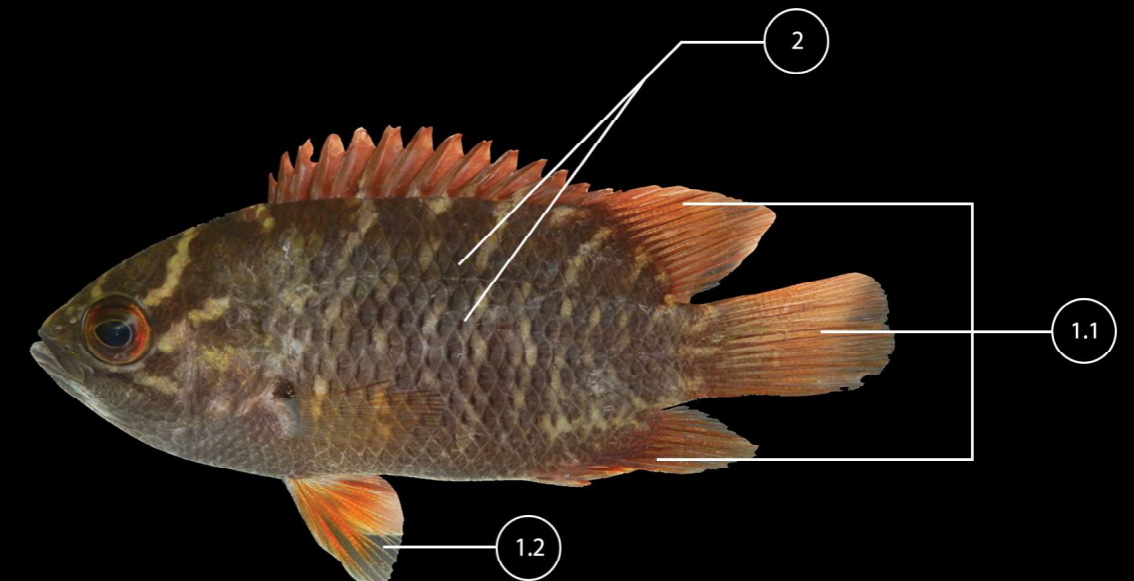
## Field Notes

### *Pristolepis rubripinnis* Britz (Kumar & Baby 2012) (Red Wing Leaf Fish) [ഓറഞ്ച് വാലൻ ആറ്റുചെങ്കല്ലി]

**Class** : Actinopterygii  
**Order** : Perciformes  
**Family** : Pristolepididae

#### Length (cm)

Common : 10  
Maximum: 13.6



#### Key Characters

1. Colour:

1.1: Orange red soft back fin, soft anal fin and tail fin.

1.2: Leg fin with yellow to orange tinge.

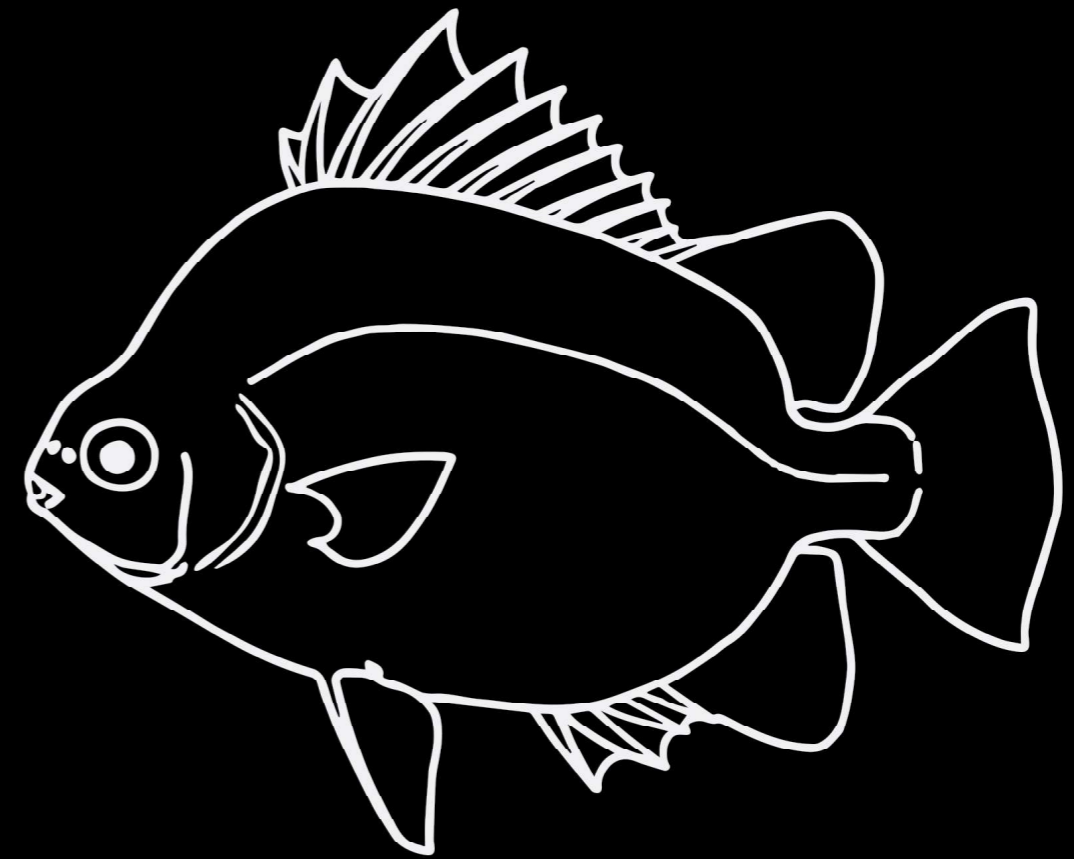
2. 4-5 scales above the mid line and 10 scales below it.

#### Important Facts



## Field Notes

## Scatophagidae



### Key Characters

1. Quadrangular fishes that are highly compressed.
2. Possess a small mouth but is not protrusible.
3. An independent spine in the front of back-fin.
4. A Deep notch between spinous and soft ray portion of back-fin.
5. Anal-fin with 4 strong spines.

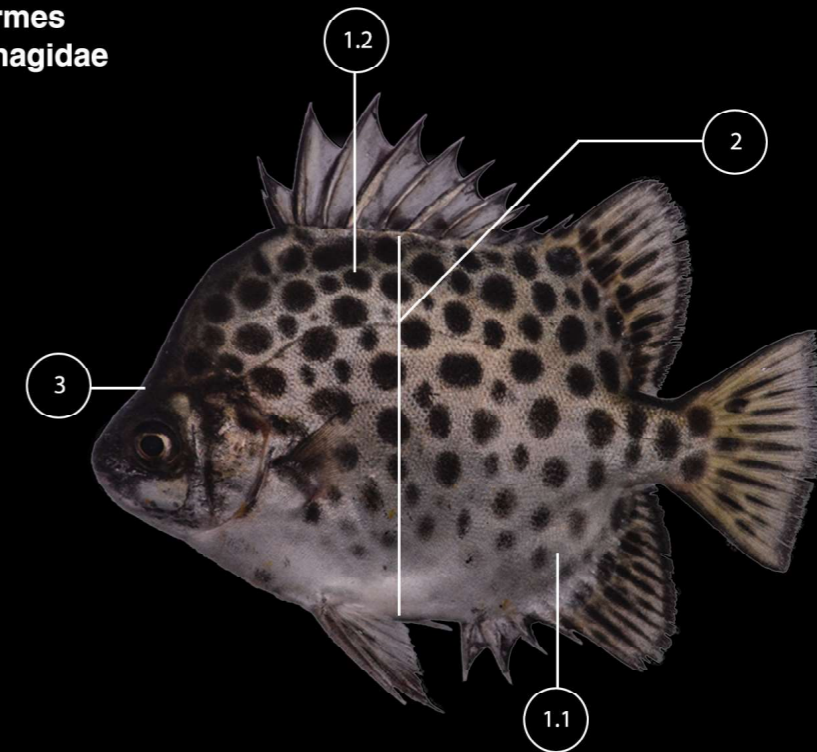


## Field Notes

### *Scatophagus argus* (Linnaeus 1766) (Spotted Scat) [പുളളി നച്ചിറ]

**Class** : Actinopterygii  
**Order** : Perciformes  
**Family** : Scatophagidae

**Length (cm)**  
Common : 20  
Maximum : 38



#### Key Characters

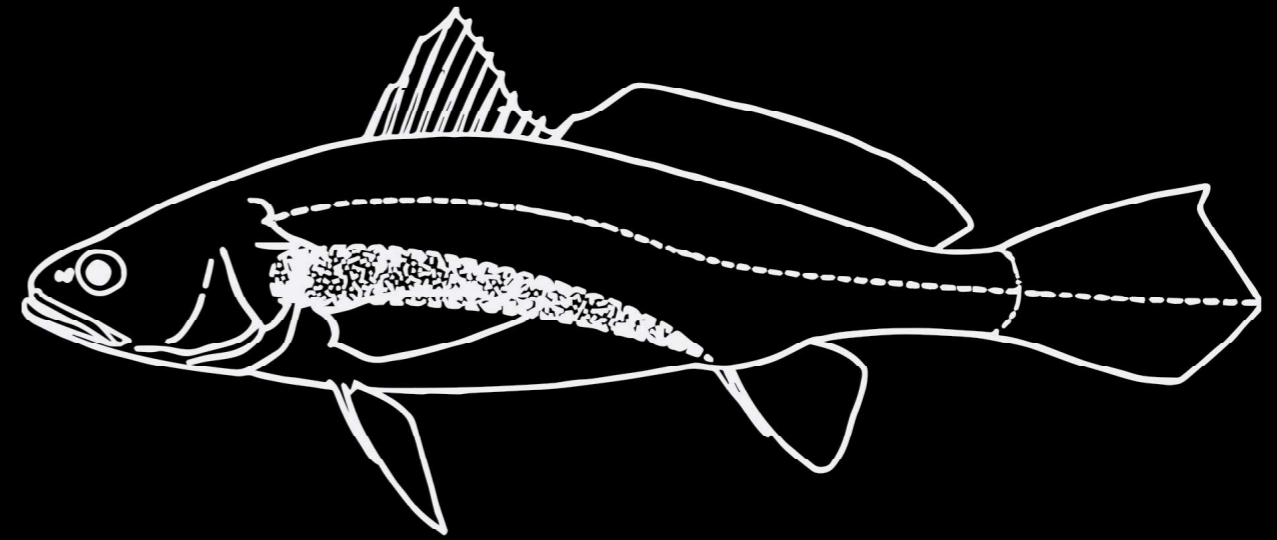
1. Colour:
  - 1.1: Body with greenish to silver colour.
  - 1.2: Body with numerous dark spots mainly confined to upper portion of sides.
2. Body quadrangular and strongly compressed.
3. Upper head profile steep.

#### Important Facts



## Field Notes

## Sciaenidae



### Key Characters

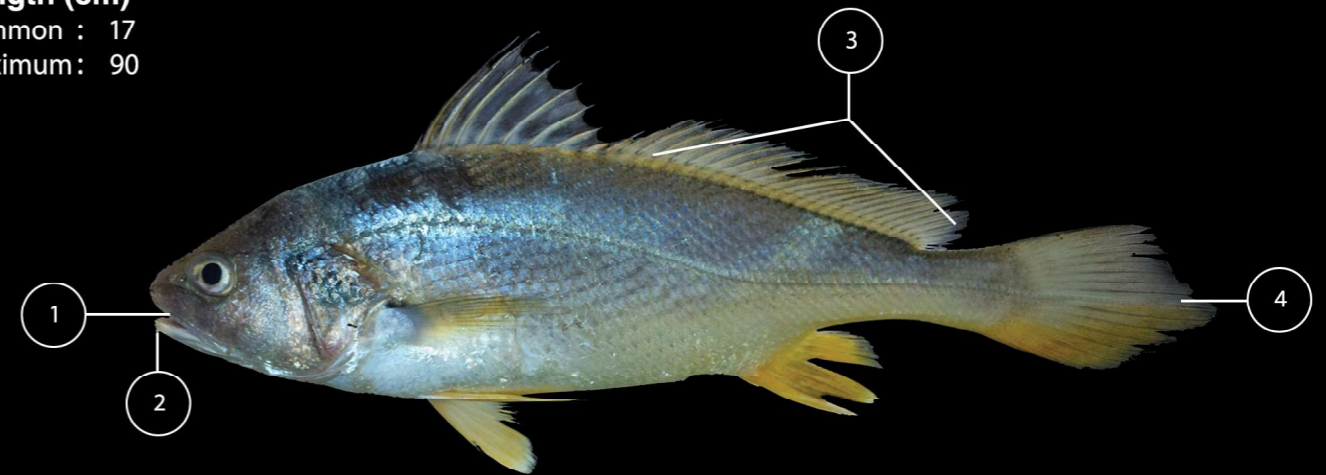
1. Fairly elongate body that is only moderately compressed.
2. Sensory pores on tip and lower edge of snout as well as on chin.
3. Back-fin usually long and continuous with a deep notch in-between.

## Field Notes

### *Daysciaena albida* (Cuvier 1830) (Bengal Corvina) [ബംഗാൾ കോറ]

**Class** : Actinopterygii  
**Order** : Perciformes  
**Family** : Sciaenidae

**Length (cm)**  
Common : 17  
Maximum : 90



#### Key Characters

1. Mouth terminal or only slightly inferior.
2. A pair of small tapering whiskers on chin.
3. Second part of the back fin with one spine and 23 to 26 soft rays.
4. Tail fin bluntly rhomboid in adults.

#### Important Facts



## Field Notes

### *Dendrophysa russelii* (Cuvier 1829) (Goatee Croaker) [റാഴ്ഗുര]

**Class** : Actinopterygii  
**Order** : Perciformes  
**Family** : Sciaenidae

**Length (cm)**  
Common : 15  
Maximum: 25



#### Key Characters

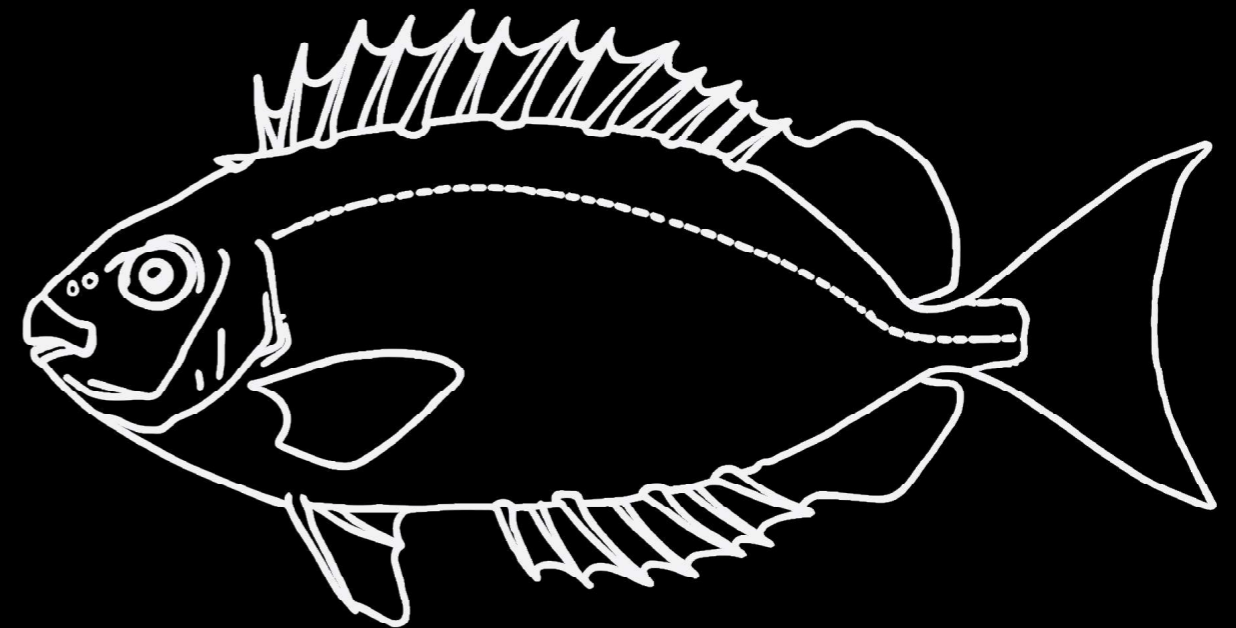
1. Inferior mouth.
2. A single whisker on chin.
3. Gill cover with a deep blue spot.
4. Tail fin rhomboid in shape.

#### Important Facts



## Field Notes

## Siganidae



### Key Characters

1. Laterally compressed oval fish covered with small scales.
2. Possess a strong forward projecting spine succeeded by a back-fin with 13 strong spines and 10 soft rays.
3. Leg- fins have 2 strong spines, separated by 3 soft rays succeeded by 7 strong spines and 9 soft rays in the anal fin.
4. The spines are venomous.

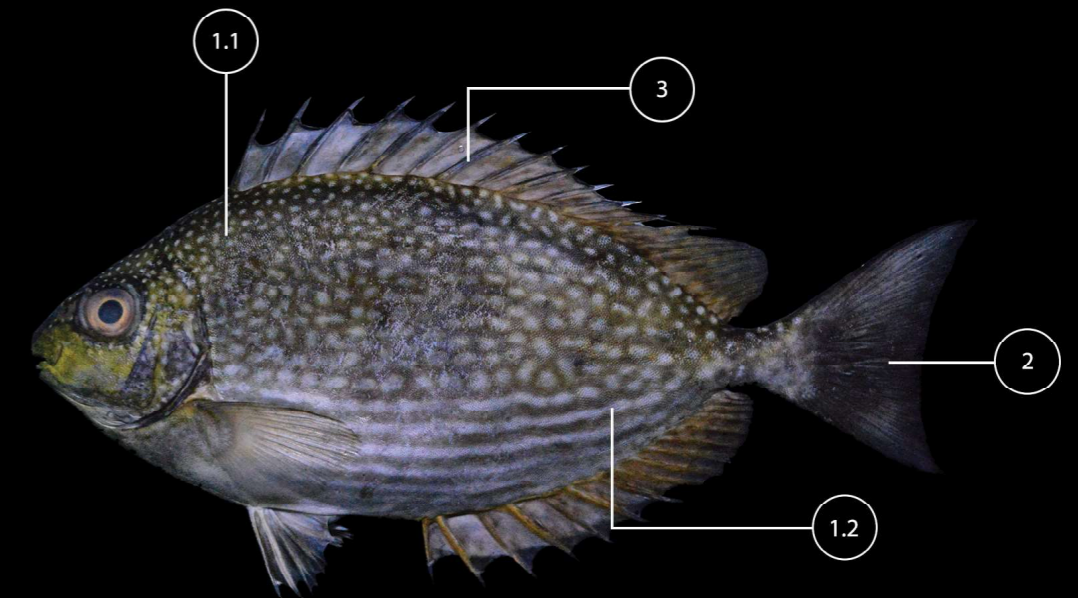


## Field Notes

### *Siganus javus* (Linnaeus 1766) (Streaked Spinefoot) [മൂരിവരയൻ കരട്]

**Class** : Actinopterygii  
**Order** : Perciformes  
**Family** : Siganidae

**Length (cm)**  
Common : 30  
Maximum : 53



#### Key Characters

1. Colour:
  - 1.1: Numerous metal blue spots on head and upper sides.
  - 1.2: Silvery blue undulating lines on mid and lower sides.
2. Tail fin is emarginate.
3. Slender and pungent spines on back fin.

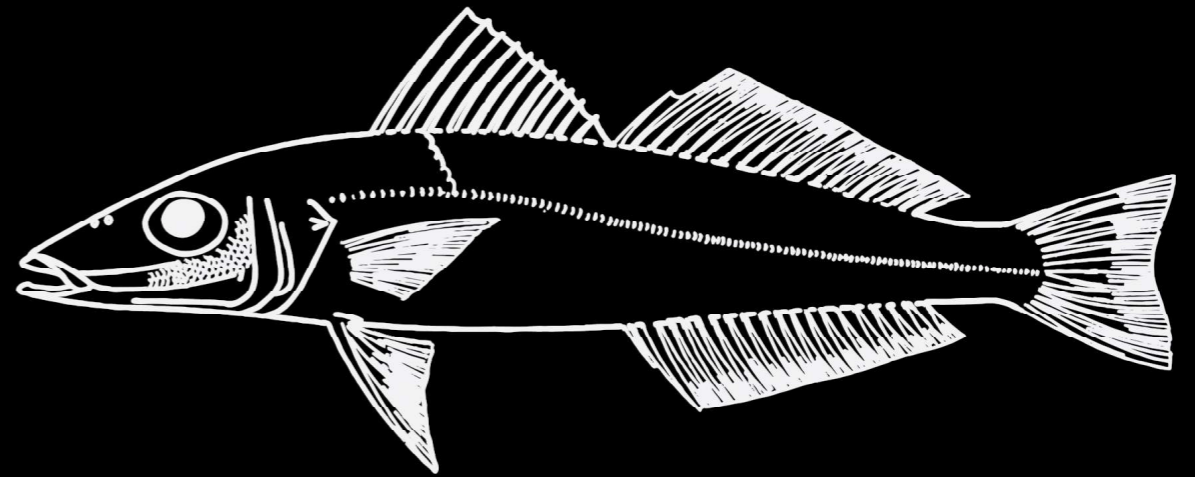
#### Important Facts





## Field Notes

# Sillaginidae



### Key Characters

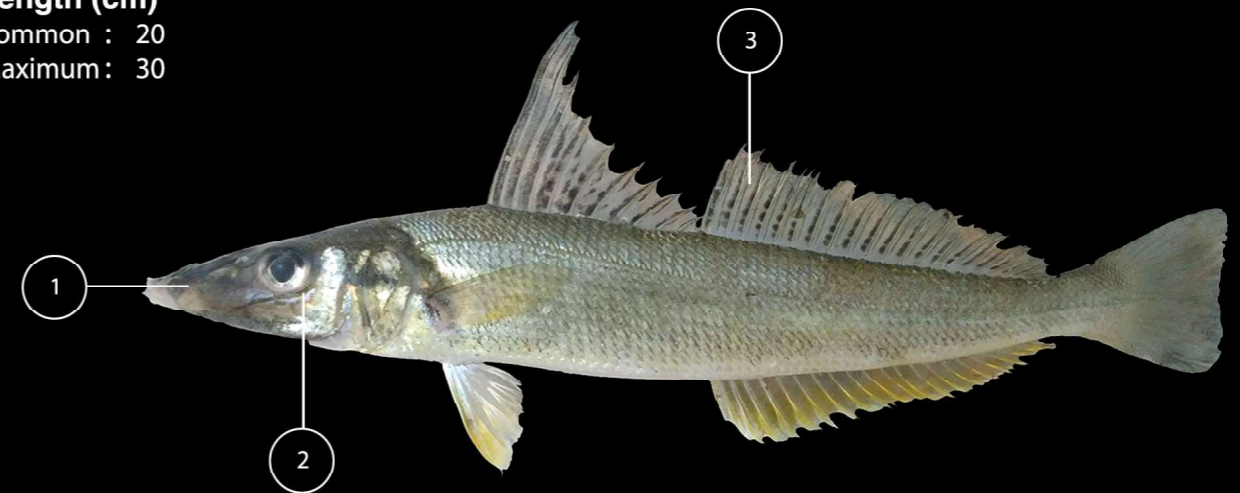
1. Gill cover with a small but sharp spine.
2. A small terminal mouth.
3. Two separate back fins; first usually has 9-12 thin spines and second just one with 16-26 rays.
4. Base of the second back-fin is approximately twice as that of first.

## Field Notes

### *Sillago vincenti* (McKay 1980) (Estuarine Whiting) [പുഴമത്സ്യം]

**Class** : Actinopterygii  
**Order** : Perciformes  
**Family** : Siganidae

**Length (cm)**  
Common : 20  
Maximum : 30



#### Key Characters

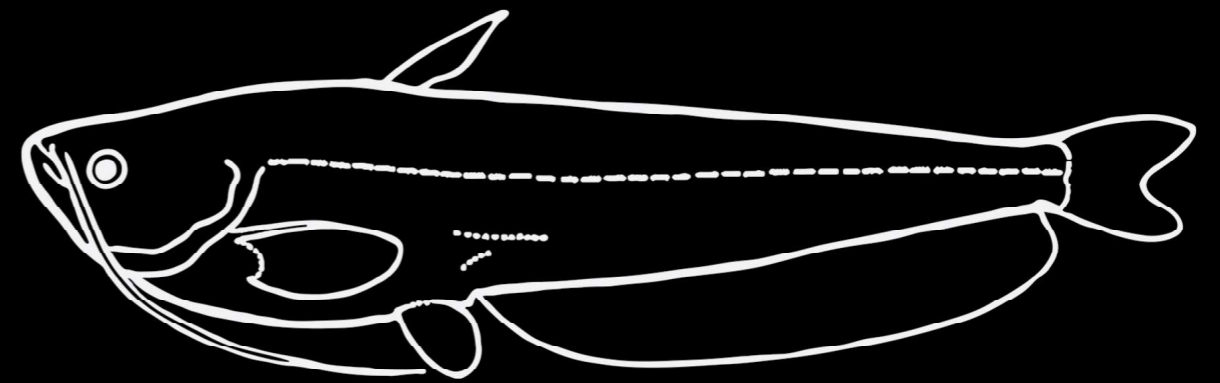
1. Snout pointed with terminal mouth.
2. 2 series of scales on cheeks.
3. Second back fin pale with 5 to 7 rows of tiny blackish spots.

#### Important Facts



## Field Notes

## *Siluridae*



### Key Characters

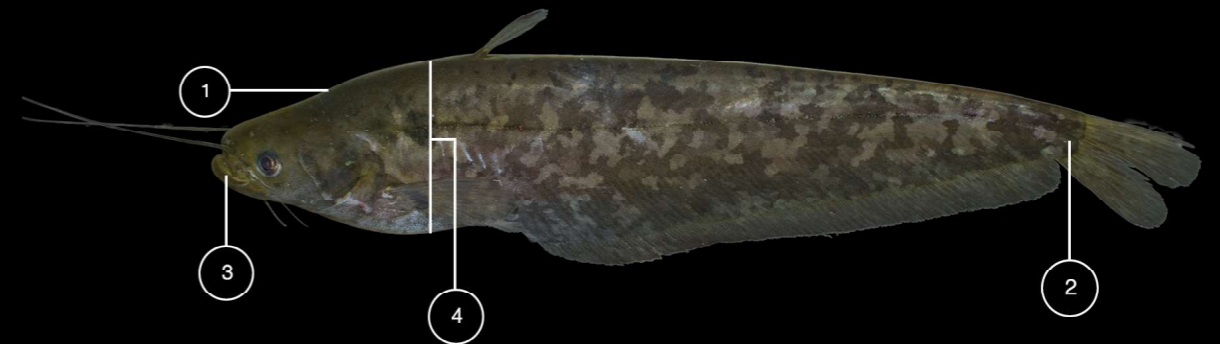
1. Medium to large sized fishes.
2. Only a single gill opening on each side.
3. Body is scaleless.
4. Possess 4-20 neck rays and the jaws have teeth.
5. Cheek whiskers are usually present.
6. Back fin could be present or absent but always lacks a spine.
7. Fatty fin is absent.
8. Tail fin is forked with connection to anal fin and the latter possesses more than 40 rays.

## Field Notes

### *Ompok malabaricus* (Valenciennes 1840) (Goan Catfish) [ഓംപക്]

**Class** : Actinopterygii  
**Order** : Siluriformes  
**Family** : Siluridae

**Length (cm)**  
Common : 5  
Maximum : 8



#### Key Characters

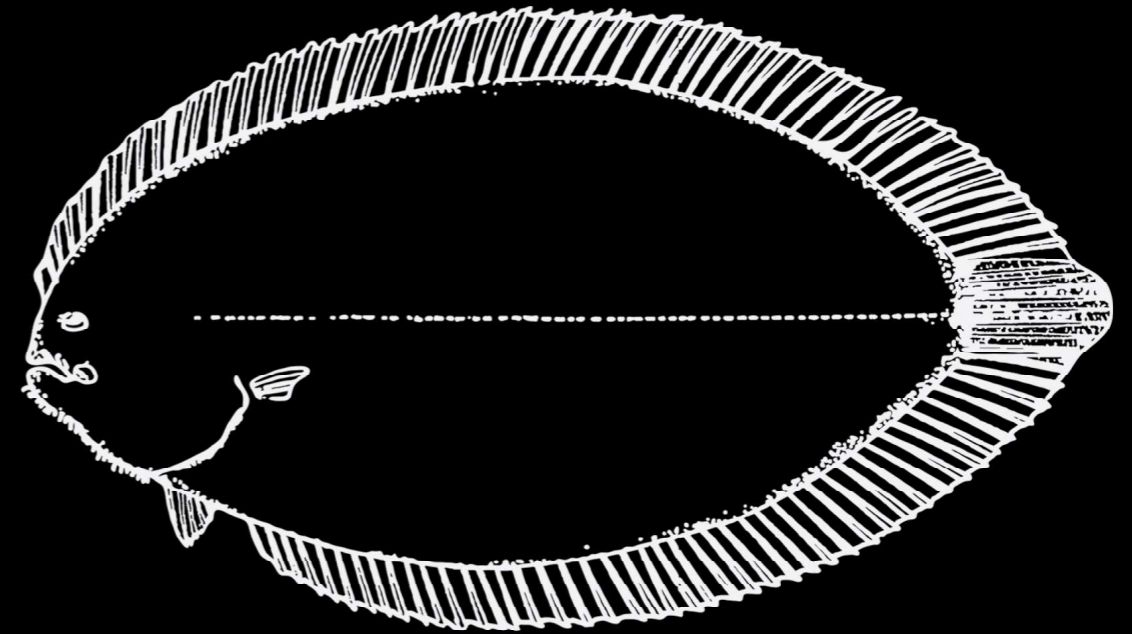
1. No distinct concavity in forehead.
2. Tail stalk, 3.3-4.8% of standard length.
3. Lower jaw more elongated than upper.
4. Body depth 14.8-18% of standard length.

#### Important Facts



## Field Notes

# Soleidae



### Key Characters

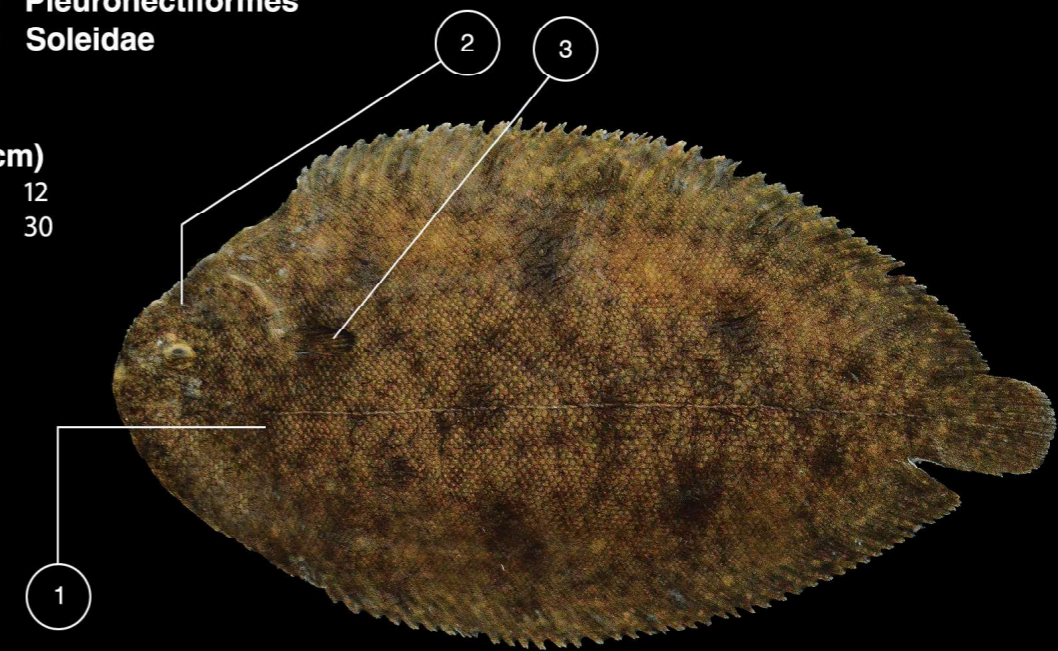
1. Oval and strongly compressed body with eyes on the upper side (right).
2. Initial part of gill cover is not free and embedded beneath the skin.
3. Back-fin reaches forward onto head, while both back and anal fins join at tail-fin.
4. Hand-fins are present.

## Field Notes

### *Brachirus orientalis* (Bloch & Schneider 1801) (Oriental Sole) [പട്ടത്തി/പുള്ളിമാന്തൽ]

Class : Actinopterygii  
Order : Pleuronectiformes  
Family : Soleidae

Length (cm)  
Common : 12  
Maximum : 30



#### Key Characters

1. Body greyish or brownish with scattered black bands or blotches.
2. Scales on nape are not enlarged.
3. Both the hand fins are well developed out of which right is longer.

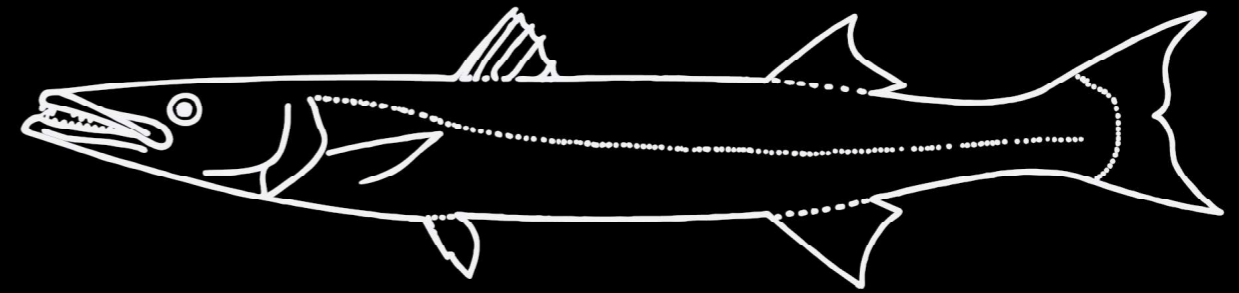
#### Important Facts





## Field Notes

# *Sphyraenidae*



### Key Characters

1. A large head and mouth with a long-pointed snout.
2. Lower jaw projects out slightly than upper.
3. Strong, pointed unequally sized teeth on jaws and roof of mouth.
4. Two small and distantly separated back-fins.

## Field Notes

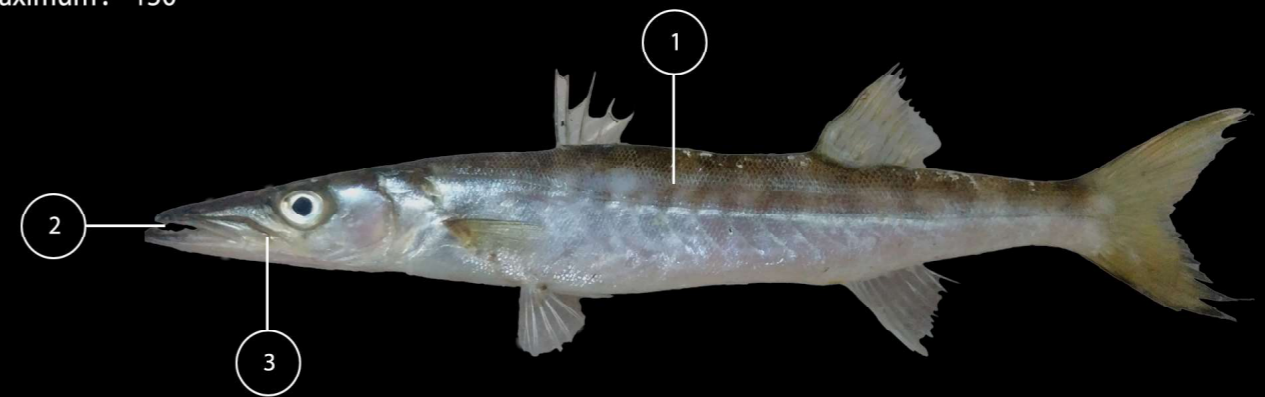
### *Sphyraena jello* (Cuvier 1829) (Pickhandle Barracuda) [പരയൻ ശിലാവ്]

**Class** : Actinopterygii  
**Order** : Perciformes  
**Family** : Sphyraenidae

#### Length (cm)

Common : 120

Maximum: 150



#### Key Characters

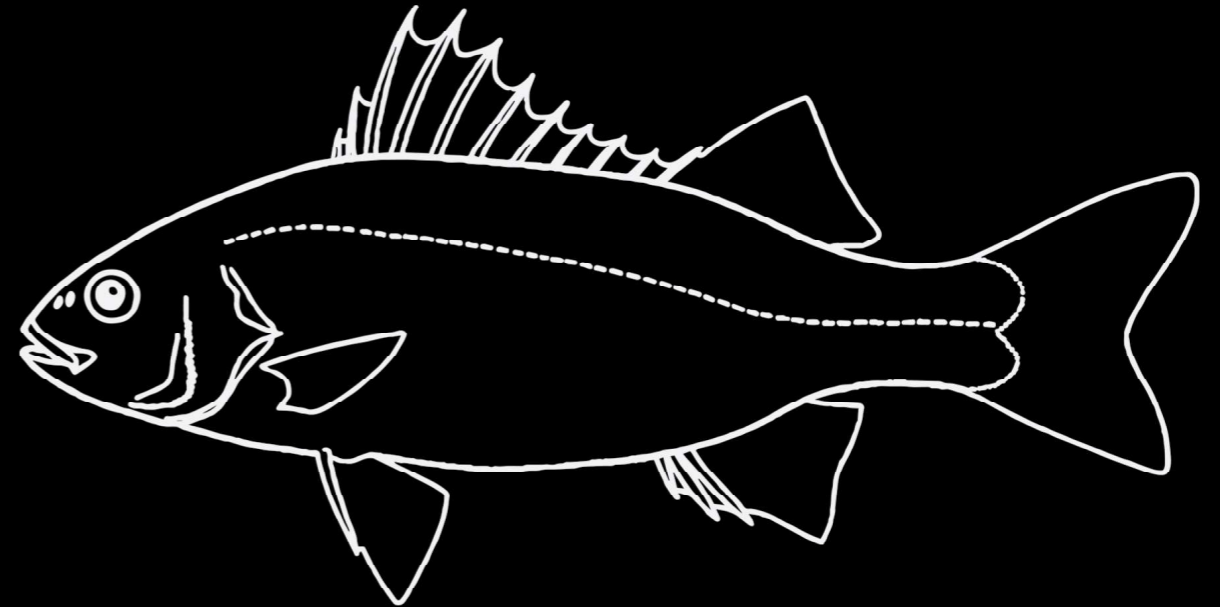
1. Dark pattern of bars reaching a little below mid line.
2. Large head with a long pointed snout.
- 3: Large mouth with upper jaw almost reaching anterior margin of eye.

#### Important Facts



## Field Notes

## Terapontidae



### Key Characters

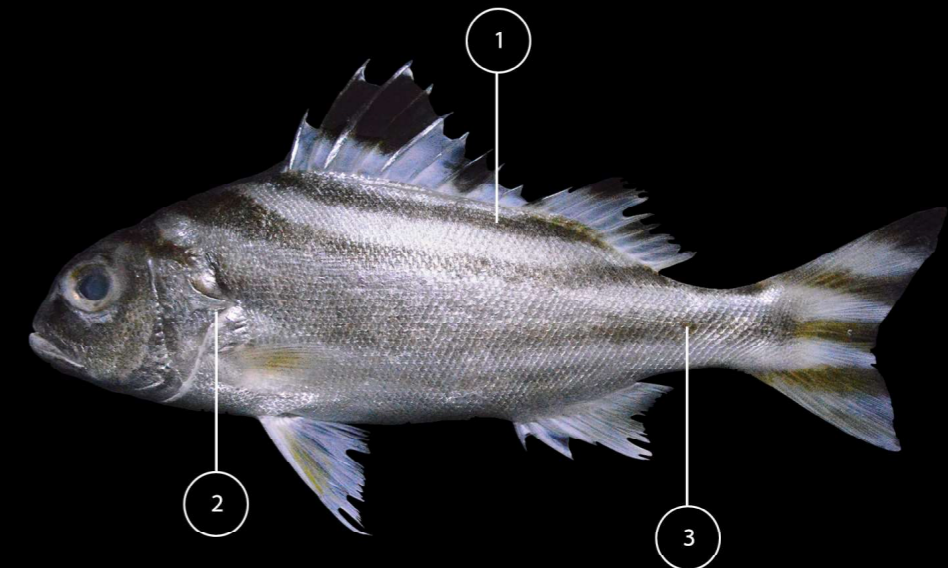
1. Small to medium sized (upto 35cm) oblong bodied and slightly side-wise compressed perch-like fish.
2. The upper jaw of mouth doesn't extend beyond the centre of the eye.
3. Margin of gill cover has two spines at the back, out of which the lower is stronger and bigger.
4. Possess only a single back-fin with 11-14 spines and 8-14 soft rays.
5. Tail fin is usually emarginate, however truncate and rounded as well sometimes.

## Field Notes

### *Terapon jarbua* (Forsskål 1775) (Crescent Perch) [കല്ലൻകോര]

**Class** : Actinopterygii  
**Order** : Perciformes  
**Family** : Terapontidae

**Length (cm)**  
Common : 25  
Maximum : 36



#### Key Characters

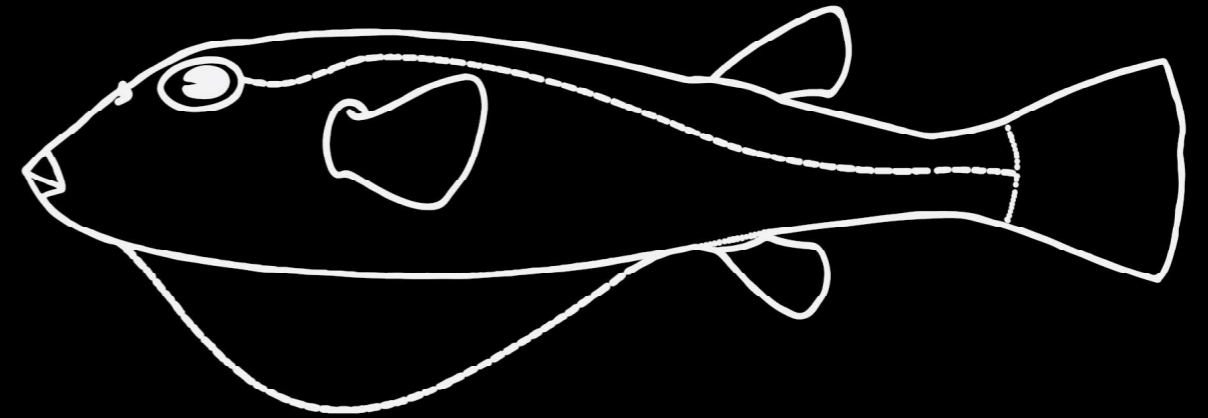
1. 3 or 4 dark brown or black downwardly curved longitudinal stripes on body.
2. Lower portion of gill cover with a long and strong spine.
3. Mid line with 75 to 100 pored scales.

#### Important Facts



## Field Notes

## *Tetraodontidae*



### Key Characters

1. Small to moderate sized fish reaching up to 75cm in length.
2. Have a blunt body which is capable of rapid intake of water or air.
3. Doesn't possess a leg fin.
4. Gill opening is just simple slits above leg fins.
5. They don't have typical scales, but possess numerous spinous structure.

## Field Notes

### *Carinotetraodon travancoricus* (Hora & Nair 1941) (Malabar Pufferfish) [ആറ്റുണു]

**Class** : Actinopterygii  
**Order** : Tetraodontiformes  
**Family** : Tetraodontidae

**Length (cm)**  
Common : 2  
Maximum : 3.5



#### Key Characters

1. The nasal organ is short, rounded tube with a terminal opening and the species is slightly two lipped.
2. The back and the anal fins are similar and situated opposite to each other.

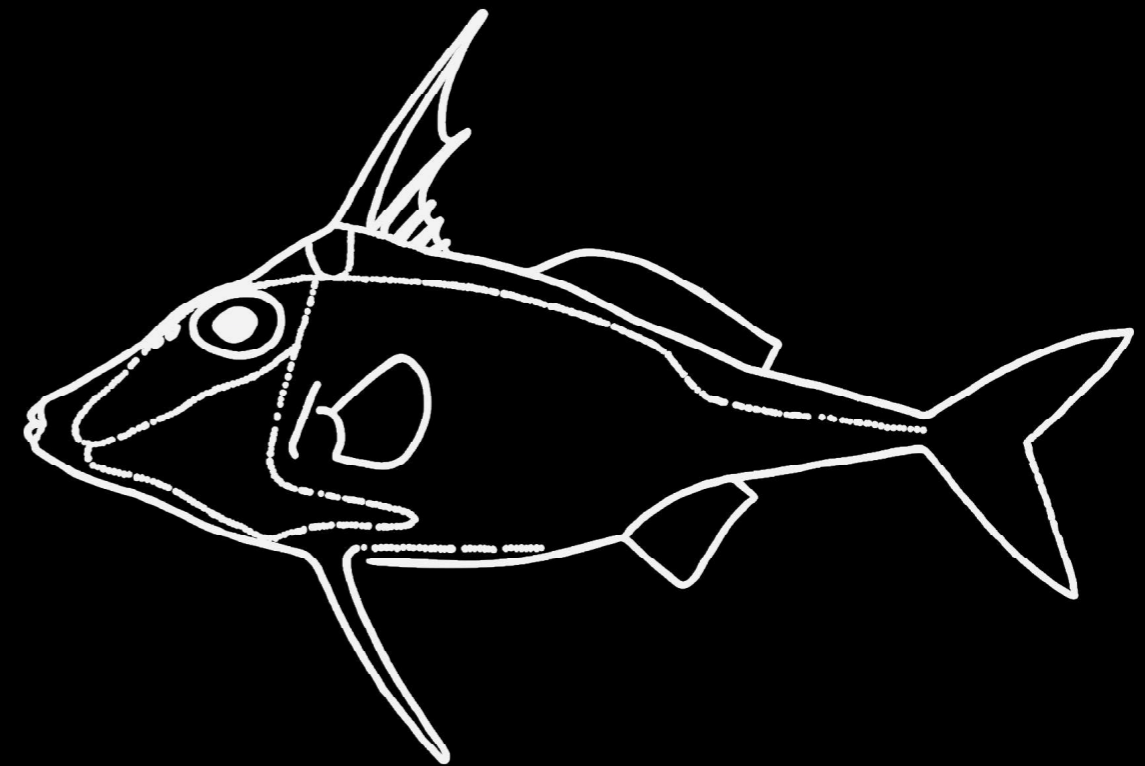
#### Important Facts





## Field Notes

## *Triacanthidae*



### Key Characters

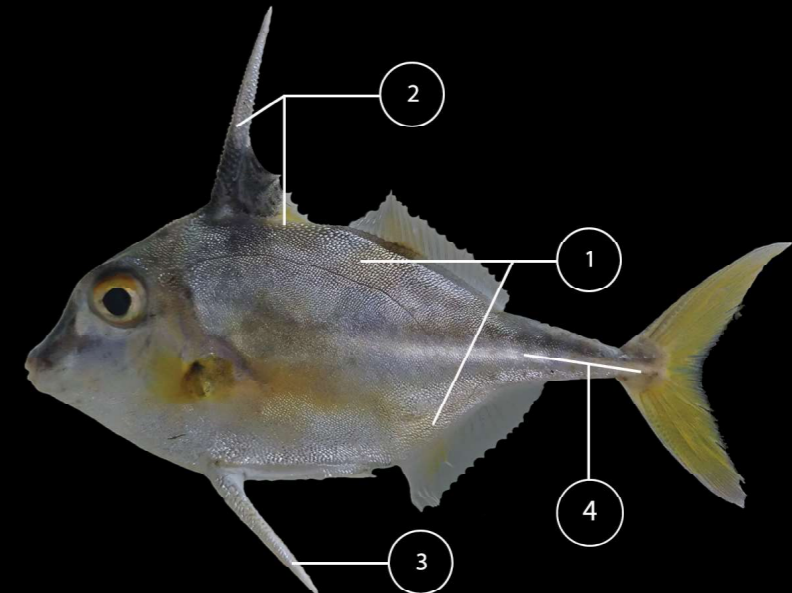
1. Small fish reaching upto a maximum size of 30cm.
2. Leg fins represented by large spines.
3. First back fin has 6 spines, out of which 5 are visible and second back-fin has rays.
4. Tail fin is forked and tail stalk is visibly tapering.

## Field Notes

### *Triacanthus biaculeatus* (Bloch 1786) (Short-Nosed Tripodfish) [ചെറുമുക്കൻ മൂക്കാലിമത്സ്യം]

**Class** : Actinopterygii  
**Order** : Tetraodontiformes  
**Family** : Triacanthidae

**Length (cm)**  
Common : 25  
Maximum : 30



#### Key Characters

1. Upper side of body dusky silver and lower side creamy silver.
2. First back fin with 5 spines with a large first spine.
3. Leg fin with a large spine which is movable.
4. Tail stalk distinctly tapered.

#### Important Facts



# OTHER FISHES OF VEMBANAD

**Class : Actinopteri**  
**Order : Anguilliformes**  
**Family : Anguillidae**

51. *Anguilla bicolor* McClelland, 1844  
 (Indonesian shortfin eel) [കുറുത മലഞ്ഞിൽ]



**Family : Muraenesocidae**

52. *Muraenesox bagio* (Hamilton, 1822)  
 (Common pike conger) [വെള്ളി മലഞ്ഞിൽ]



**Family : Muraenidae**

53. *Strophidon sathete* (Hamilton 1822)  
 (Slender giant moray) [മെലിഞ്ഞ ഭീമൻ മലഞ്ഞിൽ]



**Family : Ophichthidae**

54. *Pisodonophis boro* (Hamilton 1822)  
 (Rice-paddy eel) [വയൽ ചേര]



**Order : Atheriniformes**  
**Family : Atherinidae**

55. *Atherinomorus duodecimalis* (Valenciennes, 1835)  
 (Tropical silverside) [തലയിൽ കല്ലൻ]



**Order : Aulopiformes**  
**Family : Synodontidae**

56. *Saurida undosquamis* (Richardson, 1848)  
 (Brushtooth lizardfish) [ബ്രഷ് പല്ലൻ അരണമീൻ]



**Order : Batrachoidiformes**  
**Family : Batrachoididae**

57. *Colletteichthys dussumieri* (Valenciennes, 1837)  
 (Flat toadfish) [പരപ്പൻ ചൊറിയവള മീൻ]



**Order : Beloniformes**  
**Family : Belonidae**

58. *Strongylura leiura* (Bleeker, 1850)  
 (Banded needlefish) [പട്ട സൂചിമീൻ]



59. *Strongylura strongylura* (van, 1823)  
 (Spottail needlefish) [പുള്ളിവാലൻ സൂചിമീൻ]



60. *Tylosurus crocodilus* (Péron & Lesueur, 1821)  
 (Hound needlefish) [ചീങ്കണ്ണി സൂചിമീൻ]



**Family : Hemiramphidae**

61. *Hyporhamphus limbatus* (Valenciennes, 1847)  
 (Congaturi halfbeak) [അരച്ചുണ്ടൻ മത്സ്യം]



62. *Rhynchorhamphus georgii* (Valenciennes, 1847)  
(Long billed half beak) [ചെറുമേൽച്ചുണ്ടൻ മത്സ്യം]



62. *Rhynchorhamphus georgii* (Valenciennes, 1847)  
(Long billed half beak) [ചെറുമേൽച്ചുണ്ടൻ മത്സ്യം]



**Family : Zenarchopteridae**

63. *Zenarchopterus dispar* (Valenciennes, 1847)  
(Feathered river-garfish) [തൂവൽ അർച്ചുണ്ടൻ]



**Order : Clupeiformes**  
**Family : Clupeidae**

64. *Dayella malabarica* (Day, 1873)  
(Malabar sprat) [ആറ്റുകൊഴുവ]



65. *Ehirava fluviatilis* Deraniyagala, 1929  
(Malabar sprat) [മലബാർ മത്സി]



66. *Escualosa thoracata* (Valenciennes, 1847)  
(White sardine) [വേളുരി]



67. *Sardinella gibbosa* (Bleeker, 1849)  
(Goldstripe sardinella) [സ്വർണ്ണവരയൻ മത്സി]



68. *Sardinella longiceps* Valenciennes, 1847  
(Indian oil sardine) [മത്സി]



**Family : Dussumieriidae**

69. *Dussumieria acuta* Valenciennes, 1847  
(Rainbow sardine) [മഴവില്ല് മത്സി]



**Family : Engraulidae**

70. *Stolephorus commersonii* Lacepède, 1803  
(Commerson's anchovy) [വരയൻ നത്തോലി]



71. *Stolephorus insularis* Hardenberg, 1933  
(Hardenberg's anchovy) [നത്തോലി]



72. *Stolephorus waitei* Jordan & Seale, 1926  
(Spotty-face anchovy) [പുള്ളിമുഖൻ നത്തോലി]



73. *Thryssa dussumieri* (Valenciennes, 1848)  
(Dussumier's thryssa) [നെടു മണങ്ങ]



74. *Thryssa hamiltonii* Gray, 1835  
(Hamilton's thryssa) [മണങ്ങ]



75. *Thryssa kammalensis* (Bleeker, 1849)  
(Kammal thryssa) [കമ്മാൾ മണങ്ങ]



76. *Thryssa malabarica* (Bloch, 1795)  
(Malabar thryssa) [മലബാർ മണങ്ങ]



77. *Thryssa mystax* (Bloch & Schneider, 1801)  
(Moustached thryssa) [മീശ മണങ്ങ]



78. *Thryssa purava* (Hamilton, 1822)  
(Oblique-jaw thryssa) [ചരിഞ്ഞവായൻ മണങ്ങ]



**Family : Pristigasteridae**

79. *Ilisha sirishai* SeshagiriRao, 1975  
(Lobejaw ilisha) [കീഴ്ത്താടി നീളൻ മത്സ്യം]



80. *Ilisha melastoma* (Bloch & Schneider, 1801)  
(Indian ilisha) [ഇന്ത്യൻ കീഴ്ത്താടി നീളൻ മത്സ്യം]



**Order : Cypriniformes**  
**Family : Cobitidae**

81. *Lepidocephalichthys thermalis* (Valenciennes, 1846)  
(Common spiny loach) [മണലാരോൻ]



**Family : Cyprinidae**

82. *Amblypharyngodon mola* (Hamilton, 1822)  
(Mola carplet) [വയമ്പ]



83. *Horadandia brittani* Rema, Devi & Menon, 1992  
(Glass carplet) [ആറ്റു കണത്തോൻ]



84. *Labeo rohita* (Hamilton, 1822)  
(Rohu) [രോഹു മത്സ്യം]



85. *Laubuka dadiburjori* Menon, 1952  
(Dadio) [പുള്ളി ചിലാൻ]



86. *Pethia ticto* (Hamilton, 1822)  
(Ticto barb) [പട്ടരു പരൽ]



87. *Puntius mahecola* (Valenciennes, 1844)  
(Mahe barb) [ഉരുളൻ പരൽ]



88. *Systemus sarana* (Hamilton, 1822)  
(Olive barb) [പച്ച കുറുവ പരൽ]



89. *Systemus subnasutus* (Valenciennes, 1842)  
(Swamp barb) [കുറുവ പരൽ]



**Order : Cyprinodontiformes**  
**Family : Aplocheilidae**

90. *Aplocheilus blockii* Arnold, 1911  
(Green panchax) [പച്ച മാനത്തുകണ്ണി]



91. *Aplocheilus dayi* Steindachner, 1892  
(Ceylon killifish) [ശ്രീലങ്കൻ മാനത്തുകണ്ണി]



92. *Aplocheilus lineatus* (Valenciennes, 1846)  
(Striped panchax) [വരയൻ മാനത്തുകണ്ണി]





**Family : Poeciliidae**

93. *Poecilia mexicana* Steindachner, 1863  
(Shortfin molly) [ചെറുചിറകൻ മോളി മത്സ്യം]



**Order : Elopiformes**  
**Family : Elopidae**

94. *Elops machnata* (Forsskål, 1775)  
(Tenpounder) [വള്ളിപ്പുമീൻ]



**Order : Mugiliformes**  
**Family : Mugilidae**

95. *Chelon parsia* (Hamilton, 1822)  
(Goldspot mullet) [സർണ്ണപ്പള്ളി കണമ്പ്]



96. *Mugil cephalus* Linnaeus, 1758  
(Flathead grey mullet) [ചപ്പത്തലയൻ കണമ്പ്]



97. *Moolgarda seheli* (Forsskål, 1775)  
(Bluespot mullet) [നീലപ്പള്ളി കണമ്പ്]



98. *Moolgarda speigleri* (Bleeker 1858)  
(Speigler's mullet) [ചുണ്ടൻ കണമ്പ്]



99. *Osteomugil cunnesius* (Valenciennes, 1836)  
(Longarm mullet) [നീളൻ കൈയൻ കണമ്പ്]



100. *Planiliza macrolepis* (Smith, 1846)  
(Largescale mullet) [വലിയ ചെതുമ്പൻ കണമ്പ്]



101. *Planiliza planiceps* (Valenciennes 1836)  
(Tade gray mullet) [ചാരൻ കണമ്പ്]



102. *Planiliza subviridis* (Valenciennes 1836)  
(Greenback mullet) [പച്ച മുതുകൻ കണമ്പ്]



**Order : Perciformes**  
**Family : Acanthuridae**

103. *Acanthurus nigrofuscus* (Forsskål, 1775)  
(Brown surgeonfish) [തവിട്ടു പാലമീൻ]



**Family : Ambassidae**

104. *Ambassis ambassis* (Lacepède, 1802)  
(Commerson's glassy) [ഗ്ലാസ്സ് മത്സ്യം]



105. *Ambassis gymnocephalus* (Lacepède, 1802)  
(Bald glassy) [കഷണ്ടി നന്ദൻ]



106. *Parambassis dayi* (Bleeker, 1874)  
(Day's glassy perchlet) [ചില്ലു നന്ദൻ]



107. *Parambassis ranga* (Hamilton, 1822)  
(Indian glassy fish) [ചെറുമന്ദൻ]



108. *Parambassis thomassi* (Day, 1870)  
(Western Ghat glassy perchlet) [ആറ്റുമന്ദൻ]



**Family : Carangidae**

109. *Alectis indica* (Rüppell, 1830)  
(Indian threadfish) [നൂൽവാലൻ പാറ]



110. *Carangoides malabaricus* (Bloch & Schneider, 1801)  
(Malabar trevally) [മലബാർ പാറ]



111. *Carangoides praeustus* (Anonymous, 1830)  
(Brownback trevally) [തവിട്ടുമുതുകൻ പാറ]



112. *Caranx sexfasciatus* Quoy & Gaimard, 1825  
(Bigeye trevally) [വറ്റപ്പാറ]



113. *Megalaspis cordyla* (Linnaeus, 1758)  
(Torpedo scad) [വങ്കട]



114. *Scomberoides tala* (Cuvier, 1832)  
(Barred queenfish) [രാഞ്ജിമീൻ]



115. *Scomberoides tol* (Cuvier, 1832)  
(Needlescaled queenfish)  
[സൂചി ചെതുമ്പൻ രാഞ്ജിമീൻ]



116. *Trachinotus blochii* (Lacepède, 1801)  
(Snubnose pompano) [താലിപ്പാറ]



**Family : Channidae**

117. *Channa striata* (Bloch, 1793)  
(Striped snakehead) [വരയൻ വരാൽ]



**Family : Cichlidae**

118. *Oreochromis mossambicus* (Peters, 1852)  
(Mozambique tilapia) [തിലാപ്പിയ]



**Family : Drepaneidae**

119. *Drepane punctata* (Linnaeus, 1758)  
(Spotted sicklefish) [പുള്ളി അരിവാൾ മത്സ്യം]



**Family : Eleotridae**

120. *Bunaka gyrioides* (Bleeker, 1853)  
(Greenback gauvina) [പച്ച മുതുകൻ പുഴാൻ]



121. *Butis butis* (Hamilton, 1822)  
(Duckbill sleeper) [താറാവ് ചുണ്ടൻ പുഴാൻ]



122. *Eleotris fusca* (Forster, 1801)  
(Dusky sleeper) [ഇരുളൻ പുഴാൻ]



**Family : Gerreidae**

123. *Gerres erythrourus* (Bloch, 1791)  
(Deep-bodied mojarra) [പൊക്ക പ്രാഞ്ഞിൽ]



124. *Gerres filamentosus* Cuvier, 1829  
(Whipfin silver-biddy) [തൂൽ ചിറകൻ പ്രാഞ്ഞിൽ]



**Family : Gobiidae**

125. *Acentrogobius caninus* (Valenciennes, 1837)  
(Tropical sand goby) [മണൽ പുഴാൻ]



126. *Acentrogobius viridipunctatus* (Valenciennes, 1837)  
(Spotted green goby) [പച്ചകുത്ത് പുഴാൻ]



127. *Awaous stamineus* (Eydoux & Souleyet, 1850)  
(Spotted dwarf goby) [പുള്ളി പുഴാൻ]



128. *Gobiopsis macrostoma* Steindachner, 1861  
(Longjaw goby) [നീളൻ താടി പുഴാൻ]



129. *Oligolepis formosanus* (Nichols, 1958)  
(Hooked goby) [ചെറുചെതുമ്പൻ പുഴാൻ]



130. *Oxyurichthys microlepis* (Bleeker, 1849)  
(Maned goby) [കുഞ്ഞൻ ചെതുമ്പൻ പുഴാൻ]



131. *Oxyurichthys tentacularis* (Valenciennes, 1837)  
(Antenna goby) [കുർത്ത വാലൻ പുഴാൻ]



132. *Psammogobius biocellatus* (Valenciennes, 1837)  
(Sleepy goby) [ഉറക്കം തുങ്ങി പുഴാൻ]



133. *Stenogobius gymnopomus* (Bleeker, 1853)  
(Malabar goby) [ചെറു പുഴാൻ]



134. *Taeniooides buchanani* (Day, 1873)  
(Burmese gobyeel) [ചേര പുഴാൻ]



135. *Taeniooides cirratus* (Blyth, 1860)  
(Bearded worm goby) [താടി പുഴാൻ]



136. *Trypauchen vagina* (Bloch & Schneider, 1801)  
(Burrowing goby) [കുരുടൻ പുഴാൻ]



**Family : Haemulidae**

137. *Plectorhinchus gibbosus* (Lacepède, 1802)  
(Harry hotlips) [മുക്കൻ മത്സ്യം]



138. *Pomadasy argenteus* (Forsskål, 1775)  
(Silver grunt) [വെള്ളി മുക്കൻ മത്സ്യം]



**Family : Leiognathidae**

139. *Deveximentum insidiator* (Bloch 1787)  
(Pugnose ponyfish) [വലിയ പതിമുക്കൻ മുളളൻകാര]



140. *Eubleekeria splendens* (Cuvier, 1829)  
(Splendid ponyfish) [മിനുങ്ങൻ മുളളൻകാര]



141. *Gazza minuta* (Bloch 1795)  
(Toothpony) [പല്ലൻ മുളളൻകാര]



142. *Karalla daura* (Cuvier, 1829)  
(Goldstripe ponyfish) [സ്വർണ്ണവരയൻ മുളളൻകാര]



143. *Leiognathus berbis* (Valenciennes 1835)  
(Berber ponyfish) [മുളളൻകാര]



144. *Leiognathus brevirostris* (Valenciennes 1835)  
(Shortnose ponyfish) [ചെറുമുക്കൻ മുളളൻകാര]



145. *Leiognathus equula* (Forsskål 1775)  
(Common ponyfish) [നാടൻ മുളളൻകാര]



146. *Leiognathus ruconius* (Hamilton 1822)  
(Deep pugnose ponyfish)  
[വലിയ പതിമുക്കൻ മുളളൻകാര]



147. *Photopectoralis bindus* (Valenciennes, 1835)  
(Orangefin ponyfish) [ഓറഞ്ച് ചിറകൻ മുളളൻകാര]





**Family : Lethrinidae**

148. *Lethrinus microdon* Valenciennes, 1830  
(Smalltooth emperor) [ചെറുപല്ലൻ ചക്രവർത്തി മത്സ്യം]

**Family : Lutjanidae**

149. *Lutjanus fulviflamma* (Forsskål, 1775)  
(Dory snapper) [കുഞ്ഞൻ കുറുത്തപൊട്ടൻ ചെമ്പല്ലി]

150. *Lutjanus johnii* (Bloch, 1792)  
(John's snapper) [സ്വർണ്ണ ചെമ്പല്ലി]

151. *Lutjanus rivulatus* (Cuvier, 1828)  
(Blubberlip snapper) [കൊഴുപ്പ് ചുണ്ടൻ ചെമ്പല്ലി]

152. *Lutjanus russellii* (Bleeker, 1849)  
(Russell's snapper) [വരയൻ ചെമ്പല്ലി]

**Family : Mullidae**

153. *Parupeneus indicus* (Shaw 1803)  
(Indian goatfish) [ഇന്ത്യൻ ആടുമീൻ]

154. *Upeneus sulphureus* Cuvier 1829  
(Sulphur goatfish) [സൾഫർ ആടുമീൻ]

155. *Upeneus vittatus* (Forsskål 1775)  
(Yellowstriped goatfish) [മഞ്ഞപ്പട്ട ആടുമീൻ]

**Family : Osphronemidae**

156. *Pseudosphromenus cupanus* (Cuvier, 1831)  
(Spiketail paradise fish) [വാലേപ്പൊട്ടൻ കരിങ്കണ്ണി]

**Family : Polynemidae**

157. *Eleutheronema tetradactylum* (Shaw, 1804)  
(Fourfinger threadfin) [നാലുവിരൽ നാരുമത്സ്യം]

**Family : Sciaenidae**

158. *Johnius belangerii* (Cuvier, 1830)  
(Belanger's croaker) [കോരമീൻ]

159. *Johnius dussumieri* (Cuvier, 1830)  
(Sin croaker) [സിൻ കോരമീൻ]

160. *Protonibea diacanthus* (Lacepède, 1802)  
(Blackspotted croaker) [പുള്ളി കോരമീൻ]

**Family : Serranidae**

161. *Epinephelus tauvina* (Forsskål, 1775)  
(Greasy grouper) [പന്നിക്കലവ മീൻ]

**Family : Siganidae**

162. *Siganus canaliculatus* (Park, 1797)  
(White-spotted spinefoot) [വെള്ളപ്പുള്ളി കരട് മീൻ]

163. *Siganus lineatus* (Valenciennes, 1835)  
(Golden-lined spinefoot) [സ്വർണ്ണ വരയൻ കരട് മീൻ]

**Family : Sillaginidae**

164. *Sillago sihama* (Forsskål, 1775)  
(Silver sillago) [വെള്ളി കതിരാൻ]

**Family : Sparidae**

165. *Acanthopagrus berda* (Forsskål, 1775)  
(Goldsilk seabream) [പുഴ അരിമീൻ]

**Order : Pleuronectiformes**  
**Family : Cynoglossidae**

166. *Cynoglossus bilineatus* (Lacepède, 1802)  
(Fourlined tonguesole)  
[നാലുവരയൻ നാക്ക് മാന്തൾ]

167. *Cynoglossus puncticeps* (Richardson, 1846)  
(Speckled tonguesole) [പുള്ളി നാക്ക് മാന്തൾ]

**Family : Paralichthyidae**

168. *Pseudorhombus arsius* (Hamilton, 1822)  
(Largetooth flounder)  
[നീളൻ പല്ലൻ നാക്ക് മത്സ്യം]

**Family : Soleidae**

169. *Dagetichthys commersonnii* (Lacepède, 1802)  
(Commerson's sole) [നീളൻ മാന്തൾ]

170. *Solea ovata* Richardson, 1846  
(Ovate sole) [മുട്ട മാന്തൾ]

Order : Scorpaeniformes  
Family : Platycephalidae

171. *Cociella crocodilus* (Cuvier 1829)  
(Crocodile flathead) [മുതല ചപ്പത്തലയൻ]



172. *Platycephalus indicus* (Linnaeus 1758)  
(Bartail flathead) [വരവാലൻ ചപ്പത്തലയൻ]



Order : Siluriformes  
Family : Ariidae

173. *Arius arius* (Hamilton, 1822)  
(Threadfin sea catfish) [നൂൽ ചിറകൻ തേട്]



174. *Arius maculatus* (Thunberg, 1792)  
(Spotted catfish) [പുള്ളി തേട്]



Family : Bagridae

175. *Mystus gulio* (Hamilton, 1822)  
(Long whiskers catfish) [മീശ കുരി]



176. *Mystus malabaricus* (Jerdon, 1849)  
(Malabar mystus) [മലബാർ കുരി]



177. *Mystus oculatus* (Valenciennes, 1840)  
(Spotted mystus) [ചുട്ടി കുരി]



178. *Mystus vittatus* (Bloch, 1794)  
(Striped dwarf catfish) [മഞ്ഞവയറൻ കുരി]



Family : Heteropneustidae

179. *Heteropneustes fossilis* (Bloch, 1794)  
(Stinging catfish) [കാരി മീൻ]



Family : Siluridae

180. *Ompok bimaculatus* (Bloch, 1794)  
(Butter catfish) [തോണ്ണിവാള മീൻ]



181. *Wallago attu* (Bloch & Schneider, 1801)  
(Wallago) [ആറ്റു വാള]



Order : Synbranchiformes  
Family : Synbranchidae

182. *Ophisternon bengalense* McClelland, 1844  
(Bengal eel) [ബംഗാൾ ഇരൾ മത്സ്യം]



Order : Tetraodontiformes  
Family : Tetraodontidae

183. *Chelonodontops leopardus* (Day 1878)  
(Banded leopardblowfish) [പുള്ളിപ്പുലി കടൽമാക്രി]



184. *Chelonodontops patoca* (Hamilton 1822)  
(Milkspotted puffer) [വാൽപ്പുള്ളി കടൽമാക്രി]



185. *Dichotomyctere fluviatilis* (Hamilton, 1822)  
(Green pufferfish) [പച്ച കടൽമാക്രി]



Class : Elasmobranchii  
Order : Myliobatiformes  
Family : Dasyatidae

186. *Himantura uarnak* (Gmelin, 1789)  
(Honeycomb stingray) [പുള്ളി തിരണ്ടി]



# FISHES OF VEMBANAD (CHECKLIST)

## Acanthuridae

1. *Acanthurus nigrofuscus* (Forsskål 1775)

## Ambassidae

2. *Ambassis ambassis* (Lacepède 1802)
3. *Ambassis gymnocephalus* (Lacepède 1802)
4. *Parambassis dayi* (Bleeker 1874)
5. *Parambassis ranga* (Hamilton 1822)
6. *Parambassis thomassi* (Day 1870)

## Anabantidae

7. *Anabas testudineus* (Bloch 1792)

## Anguillidae

8. *Anguilla bicolor* McClelland 1844
9. *Anguilla bengalensis* (Gray, 1831)

## Aplocheilidae

10. *Aplocheilus blockii* Arnold, 1911
11. *Aplocheilus lineatus* (Valenciennes, 1846)

## Ariidae

12. *Arius arius* (Hamilton 1822)
13. *Arius maculatus* (Thunberg 1792)
14. *Arius subrostratus* Valenciennes 1840

## Atherinidae

15. *Doboatherina duodecimalis* (Valenciennes 1835)

## Bagridae

16. *Mystus armatus* (Day, 1865)
17. *Mystus gulio* (Hamilton 1822)
18. *Mystus malabaricus* (Jerdon 1849)
19. *Mystus oculatus* (Valenciennes 1840)
20. *Mystus vittatus* (Bloch, 1794)

**Batrachoididae**

21. *Colletteichthys dussumieri* (Valenciennes 1837)

**Belonidae**

22. *Strongylura strongylura* (van Hasselt 1823)  
 23. *Strongylura leiura* (Bleeker 1850)  
 24. *Tylosurus crocodilus* (Péron & Lesueur 1821)  
 25. *Xenentodon cancila* (Hamilton 1822)

**Carangidae**

26. *Alectis indica* (Rüppell 1830)  
 27. *Alepes djedaba* (Forsskål 1775)  
 28. *Carangoides malabaricus* (Bloch & Schneider, 1801)  
 29. *Carangoides praeustus* (Anonymous [Bennett] 1830)  
 30. *Caranx ignobilis* (Forsskål 1775)  
 31. *Caranx sexfasciatus* Quoy & Gaimard 1825  
 32. *Megalaspis cordyla* (Linnaeus 1758)  
 33. *Scomberoides tala* (Cuvier 1832)  
 34. *Scomberoides tol* (Cuvier 1832)  
 35. *Trachinotus blochii* (Lacepède 1801)

**Chanidae**

36. *Chanos chanos* (Forsskål 1775)

**Channidae**

37. *Channa diplogramma* (Day, 1865)  
 38. *Channa pseudomarulius* (Hamilton, 1822)  
 39. *Channa striata* (Bloch 1793)

**Cichlidae**

40. *Oreochromis mossambicus* (Peters 1852) [Exotic]  
 41. *Oreochromis niloticus* (Linnaeus 1758) [Exotic]  
 42. *Eetroplus suratensis* (Bloch 1790)  
 43. *Pseudetroplus maculatus* (Bloch 1795)

**Clariidae**

44. *Clarias dussumieri* Valenciennes 1840  
 45. *Clarias gariepinus* (Burchell 1822) [Exotic]

**Clupeidae**

46. *Sardinella longiceps* Valenciennes 1847  
 47. *Sardinella gibbosa* (Bleeker 1849)

48. *Escualosa thoracata* (Valenciennes 1847)  
 49. *Dayella malabarica* (Day 1873)  
 50. *Ehirava fluviatilis* Deraniyagala 1929  
 51. *Nematalosa nasus* (Bloch 1795)  
 52. *Anodontostoma chacunda* (Hamilton 1822)  
 53. *Tenualosa ilisha* (Hamilton 1822)

**Cobitidae**

54. *Lepidocephalichthys thermalis* (Valenciennes, 1846)

**Cynoglossidae**

55. *Cynoglossus bilineatus* (Lacepède 1802)  
 56. *Cynoglossus macrostomus* Norman, 1928  
 57. *Cynoglossus puncticeps* (Richardson 1846)

**Cyprinidae**

58. *Cirrhinus mrigala* (Hamilton 1822)  
 59. *Cyprinus carpio* Linnaeus 1758 [Exotic]  
 60. *Dawkinsia filamentosa* (Valenciennes 1844)  
 61. *Hypselobarbus kurali* Menon & Rema Devi 1995  
 62. *Labeo catla* (Hamilton, 1822)  
 63. *Labeo dussumieri* (Valenciennes 1842)  
 64. *Labeo rohita* (Hamilton, 1822)

65. *Pethia ticto* (Hamilton, 1822)  
 66. *Puntius amphibius* (Valenciennes 1842)  
 67. *Pethia punctata* (Day, 1865)  
 68. *Puntius mahecola* (Valenciennes, 1844)  
 69. *Puntius vittatus* Day, 1865  
 70. *Systemus sarana* (Hamilton 1822)  
 71. *Systemus subnasutus* (Valenciennes 1842)

**Danionidae**

72. *Amblypharyngodon melettinus* (Valenciennes, 1844)  
 73. *Amblypharyngodon microlepis* (Bleeker 1853)  
 74. *Amblypharyngodon mola* (Hamilton 1822)  
 75. *Horadandia atukorali* Deraniyagala, 1943  
 76. *Neochela dadiburjori* (Menon 1952)  
 77. *Rasbora dandia* (Valenciennes 1844)

**Drepaneidae**

78. *Drepane punctata* (Linnaeus 1758)

**Dussumieridae**

79. *Dussumieria acuta* Valenciennes 1847



**Eleotridae**

80. *Bunaka gyrinoides* (Bleeker 1853)  
 81. *Butis butis* (Hamilton 1822)  
 82. *Eleotris fusca* (Bloch & Schneider 1801)

**Elopidae**

83. *Elops machnata* (Forsskål 1775)

**Engraulidae**

84. *Stolephorus commersonnii* Lacepède 1803  
 85. *Stolephorus indicus* (van Hasselt 1823)  
 86. *Stolephorus insularis* Hardenberg 1933  
 87. *Stolephorus waitei* Jordan & Seale 1926  
 88. *Thryssa dussumieri* (Valenciennes, 1848)  
 89. *Thryssa hamiltonii* (Gray 1835)  
 90. *Thryssa kammalensis* (Bleeker 1849)  
 91. *Thryssa malabarica* (Bloch, 1795)  
 92. *Thryssa mystax* (Bloch & Schneider 1801)  
 93. *Thryssa purava* (Hamilton 1822)

**Gerreidae**

94. *Gerres erythrourus* (Bloch 1791)  
 95. *Gerres filamentosus* Cuvier 1829  
 96. *Gerres setifer* (Hamilton 1822)

**Gobiidae**

97. *Acentrogobius caninus* (Valenciennes 1837)  
 98. *Acentrogobius viridipunctatus* (Valenciennes 1837)  
 99. *Awaous stamineus* (Eydux & Souleyet 1850)  
 100. *Glossogobius giuris* (Hamilton 1822)  
 101. *Gobiopsis macrostomus* Steindachner 1861  
 102. *Oligolepis formosanus* (Nichols 1958)  
 103. *Oxyurichthys microlepis* (Bleeker 1849)  
 104. *Oxyurichthys tentacularis* (Valenciennes 1837)  
 105. *Psammogobius biocellatus* (Valenciennes, 1837)  
 106. *Stenogobius gymnopomus* (Bleeker 1853)  
 107. *Taenioides buchani* (Day 1873)  
 108. *Taenioides cirratus* (Blyth 1860)  
 109. *Trypauchen vagina* (Bloch & Schneider 1801)

**Haemulidae**

110. *Plectorhinchus gibbosus* (Lacepède 1802)  
 111. *Pomadasys argenteus* (Forsskål 1775)

**Hemiramphidae**

112. *Hyporhamphus limbatus* (Valenciennes 1847)  
 113. *Hyporhamphus xanthopterus* (Valenciennes 1847)

114. *Rhynchorhamphus georgii* (Valenciennes 1847)

**Heteropneustidae**

115. *Heteropneustes fossilis* (Bloch 1794)

**Horabagridae**

116. *Horabagrus brachysoma* (Günther 1864)

**Latidae**

117. *Lates calcarifer* (Bloch 1790)

**Leiognathidae**

118. *Deveximentum insidiator* (Bloch 1787)  
 119. *Eubleekeria splendens* (Cuvier 1829)  
 120. *Gazza minuta* (Bloch 1795)  
 121. *Karalla daura* (Cuvier 1829)  
 122. *Leiognathus berbis* (Valenciennes 1835)  
 123. *Leiognathus equula* (Forsskål 1775)  
 124. *Leiognathus ruconius* (Hamilton 1822)  
 125. *Nuchequula nuchalis* (Temminck & Schlegel, 1845)  
 126. *Photopectoralis bindus* (Valenciennes 1835)

**Lethrinidae**

127. *Lethrinus microdon* Valenciennes 1830

**Lutjanidae**

128. *Lutjanus argentimaculatus* (Forsskål 1775)  
 129. *Lutjanus fulviflamma* (Forsskål 1775)  
 130. *Lutjanus johnii* (Bloch 1792)  
 131. *Lutjanus rivulatus* (Cuvier 1828)  
 132. *Lutjanus russellii* (Bleeker 1849)

**Mastacembelidae**

133. *Macrogathus guentheri* (Day 1865)  
 134. *Mastacembelus armatus* (Lacepède 1800)

**Megalopidae**

135. *Megalops cyprinoides* (Broussonet 1782)

**Mugilidae**

136. *Chelon parsia* (Hamilton 1822)  
 137. *Crenimugil seheli* (Fabricius 1775)  
 138. *Mugil cephalus* Linnaeus 1758  
 139. *Osteomugil cunnesius* (Valenciennes, 1836)  
 140. *Osteomugil speigleri* (Bleeker 1858)  
 141. *Planiliza macrolepis* (Smith, 1846)

142. *Planiliza planiceps* (Valenciennes 1836)  
 143. *Planiliza subviridis* (Valenciennes 1836)

#### Mullidae

144. *Parupeneus indicus* (Shaw 1803)  
 145. *Upeneus sulphureus* Cuvier 1829  
 146. *Upeneus vittatus* (Forsskål 1775)

#### Muraenesocidae

147. *Congresox talabonoides* (Bleeker 1852)  
 148. *Muraenesox bagio* (Hamilton 1822)  
 149. *Muraenesox cinereus* (Forsskål 1775)

#### Muraenidae

150. *Strophidon sathete* (Hamilton 1822)

#### Nandidae

151. *Nandus nandus* (Hamilton 1822)

#### Ophichthidae

152. *Pisodonophis boro* (Hamilton 1822)

#### Osphronemidae

153. *Pseudosphromenus cupanus* (Cuvier, 1831)  
 154. *Pseudosphromenus dayi* (Engmann 1909)

#### Paralichthyidae

155. *Pseudorhombus arsius* (Hamilton 1822)

#### Platycephalidae

156. *Cociella crocodilus* (Cuvier 1829)  
 157. *Platycephalus indicus* (Linnaeus 1758)  
 158. *Rogadius tuberculatus* (Cuvier 1829)

#### Poeciliidae

159. *Poecilia mexicana* Steindachner 1863 [Exotic]

#### Polynemidae

160. *Eleutheronema tetradactylum* (Shaw 1804)

#### Pristigasteridae

161. *Ilisha sirishae* Seshagiri Rao 1975  
 162. *Ilisha melastoma* (Bloch & Schneider 1801)

#### Pristolepididae

163. *Pristolepis rubripinnis* Britz, Kumar & Babu 2012

#### Pangasiidae

164. *Pangasianodon hypophthalmus* (Sauvage 1878) [Exotic]

#### Scatophagidae

165. *Scatophagus argus* (Linnaeus 1766)

#### Sciaenidae

166. *Daysciaena albida* (Cuvier, 1830)  
 167. *Dendrophysa russellii* (Cuvier, 1829)  
 168. *Johnius belangerii* (Cuvier 1830)  
 169. *Johnius dussumieri* (Cuvier, 1830)  
 170. *Protonibea diacanthus* (Lacepède 1802)

#### Serranidae

171. *Epinephelus malabaricus* (Bloch & Schneider 1801)  
 172. *Epinephelus tauvina* (Forsskål 1775)

#### Serrasalminidae

173. *Piaractus brachypomus* (Cuvier 1818) [Exotic]

#### Siganidae

174. *Siganus canaliculatus* (Park 1797)  
 175. *Siganus javus* (Linnaeus 1766)  
 176. *Siganus lineatus* (Valenciennes 1835)

#### Sillaginidae

177. *Sillago sihama* (Fabricius 1775)  
 178. *Sillago vincenti* McKay 1980

#### Siluridae

179. *Ompok bimaculatus* (Bloch 1794)  
 180. *Ompok malabaricus* (Valenciennes, 1840)  
 181. *Wallago attu* (Bloch & Schneider 1801)

#### Soleidae

182. *Brachirus orientalis* (Bloch & Schneider 1801)  
 183. *Dagetichthys commersonnii* (Lacepède 1802)  
 184. *Solea ovata* Richardson 1846



**Sparidae**185. *Acanthopagrus berda* (Fabricius 1775)**Sphyraenidae**186. *Sphyraena jello* Cuvier 1829**Synbranchidae**187. *Ophisternon bengalense* McClelland 1844**Synodontidae**188. *Saurida undosquamis* (Richardson 1848)**Terapontidae**189. *Terapon jarbua* (Forsskål 1775)**Teraodontide**190. *Carinotetraodon travancoricus*  
(Hora & Nair, 1941)191. *Chelonodontops leopardus* (Day 1878)192. *Chelonodontops patoca* (Hamilton 1822)

193. (Hamilton 1822)

**Triacanthidae**194. *Triacanthus biaculeatus* (Bloch 1786)**Zenarchopteridae**195. *Zenarchopterus dispar* (Valenciennes 1847)**Carcharhinidae**196. *Rhizoprionodon acutus* (Rüppell 1837)**Dasyatidae**197. *Himantura uarnak* (Gmelin 1789)198. *Pastinachus sephen* (Forsskål 1775)

# GLOSSARY

Abdomen  
(Stomach)

Abdominal

Acute

Adipose fin  
(Fatty fin)

Adult

Air breathing  
apparatus  
(Labyrinth)

Anal

Anal fin

Anal fin origin

Angle of mouth

Anterior

Anus

Belly

Pertaining to the belly

Sharp, pointed

A small fleshy fin which lacks fin rays

A fish which is able to reproduce

A special organ, which allows the fish to breathe  
air from the surface of the water

Pertaining to the anus or anal fin

The fin on the median line behind the vent

The most anterior point of the anal fin base

Side-wise limit of each lip of the mouth

Relating to the front portion.

The external opening of the intestine, the vent

## B

Barbel (Whisker)	An elongated fleshy projection, usually about the head
Blind side	The side of flat fishes which does not possess an eye
Blotch	A large irregular patch or unsightly mark on the skin or similar surface
Body depth	The vertical distance from the back margin of the body to the belly margin of the body measured at the base of the head-fin where it attaches to the body; fins or fin bases are not included in the measurement.
Bony shield	Bony plates on their heads and near their back fins
Branched fin	Fin split into 2 or more extensions at the tip
Branched rays	A segmented flexible support element of the fins, often branched at the tip

## C

Caudal	Pertaining to the tail
Caudal fin	The tail fin
Caudal peduncle (Tail stalk)	The region of the body between the end of the anal fin and the base of the caudal fin
Class	Class was the most general rank proposed by Linnaeus; phyla were not introduced until the 19th Century. There are 108 different classes in the kingdom Animalia, including Mammalia (mammals), Aves (birds), and Reptilia (reptiles), among many others
Concave	Having an outline or surface that curves inwards like the interior of a circle or sphere
Convex	Having an outline or surface curved like the exterior of a circle or sphere.

Ctenoid scale Scales with comb-like edge found in higher order teleost fishes, such as perch and sunfish. Cteni are the tiny teeth on the posterior margin of the scale.

Cycloid scale Smooth-edged scales predominately found in lower order teleost fishes, such as salmon, carp and other soft fin rayed fish.

Cylindrical Resembling the shape of a cylinder

## D

Denticulate Having a toothed margin or toothlike projections or processes

Dorsal Pertaining to the back

Dorsal fin The fin on a fish's back

Dorsal fin origin The most anterior point of the dorsal fin base

## E

Elongate Unusually long, especially not in relation with its width, rather stretched

Emarginate tail Slightly curved inward (concave), center rays slightly shorter than upper or lower rays

Eye socket The bony cup surrounding the eye

Eyelid A thin fold of skin that covers and protects an eye

## E

Family	A taxonomic group of one or more genera, especially sharing a common attribute
Filament	A slender or thread-like structure
Fimbria/e	A series of threads or other projections resembling a fringe or margin
Fin base/ base of fin	Part of the fin that is attached to the body
Fin ray	Each of the long slender bony supports in the fins of most bony fishes
Floating nest	Also called foam nests, are created by some fish species as floating masses of bubbles blown with an oral secretion, saliva bubbles in order to guard their eggs.

## G

Gape of the mouth (cleft of the mouth)	To open the mouth wide, openmouthed the most anterior point of the dorsal fin base
Gill arches	The bony arches to which the gills are attached
Gill filaments	A series of projections along the posterior edge of the gill arch, the site of gas exchange
Gill membranes	Membranes covering the gill openings, attached to the branchiostegals
Gill opening	Opening behind each operculum, leading to the gills
Gill rakers	A series of appendages along the anterior edges of the gill arches
Gills, Branchiae	Organs for breathing the air contained in water

## I

Immature	Not fully developed
Inferior mouth	A mouth located on the ventral surface of the head and oriented downwards
Iridescent	Showing luminous colours that seem to change when seen from different angles

## J

Jaw	An opposable, articulated structure at the entrance of the mouth, used for grasping and manipulating food. The outer parts of the jaws in most fishes include the lower jaw (mandible) and the upper jaw (premaxillary,maxillary and supramaxillary)
Juvenile	Sexually immature stage.

## K

Keel	A relatively narrow and sharp ridge-like area of the ventral or dorsal surfaces or the sides of the tail stalk.
Key characters	Fundamental characters required in order to identify an organism to that particular level of taxon.

## L

Lateral	At, or towards the side
Lateral line(Mid line)	A series of muciferous tubes forming a raised line along the side of the body

Length Used in the book instead of standard length; it is the straight-line distance from the most forward part of the head to the end of the vertebral column (i.e. the caudal base) which can be seen as a crease in the skin when the tail is flexed from side to side

## M

Mandible (Chin) The lower jaw

Maxilla, Maxillary (Cheek) The upper jaw

Maxillae, Maxillaries The hindmost bones of the upper jaw; preceded by the premaxillaries

Mouth The oral cavity located at the upper end of the alimentary canal that opens to the outside at the lips and empties into the throat at the rear, and containing structures for mastication and tasting especially in higher vertebrates

## N

Nape The area on the back between the head and the back fin

Nasal Pertaining to the nostrils

Nostril Openings at tip of head, through which water flows into the nasal cavity

## O

Obtuse angle An angle that has a measurement greater than 90 degrees but less than 180 degrees

Occipital process A median dorsal wedge of bone extending backward from the rear margin

Opercule, operculum (Gill Cover) The bony flap that covers the gills

Opercular Pertaining to the operculum

Opercular spine (Gill cover spine) Spine projecting from the operculum

Orbit The eye socket

Order A taxonomic rank used in classifying organisms, generally below the class, and comprising families sharing a set of similar nature or character

Origin The most anterior point of a fin base

## P

Paired fin The pectoral(hand fin) and ventral(leg fins) corresponding to the fore and hind legs of the higher animals. the most anterior point of a fin base

Palate teeth Teeth present in some fishes on the palatine bones, bones that lie inside the upper jaw bones

Palate Roof of the mouth; may be used to include the bones of the roof of the mouth

Pectoral Pertaining to the breast

Pectoral fins (Handfin) The anterior or uppermost of the paired fins, which correspond to the anterior limbs of the higher vertebrates

Pelvic fins ( Leg fin) Paired fins behind or below the pectoral fins

Pharyngeal teeth	Opposing patches of teeth which occur on the upper and lower elements of the gill arches
Pored scale	A mid-line scale with a pore
Posterior	The tail end; at or towards the rear end of the fish
Postorbital	Behind the eye
Premaxillaries	Two bones forming the front portion of the upper jaw
Preopercle, preoperculum ( in front of the gill cover)	The bone between the cheek and the gill cover
Preopercular spine	Spine projecting from the preopercule
Preorbital	The area under and in front of the eyes
Protract project	Capable of being thrust out; describes the capacity of the upper jaw to forward from the snout in fishes with jaws which are not bound to the snout by a frenum
Protrusible	Capable of being protruded or extended

## Q

Quadrangular Having four sides

## R

Rhomboid Having or resembling the shape of a rhombus

Rostrum A projecting snout or beak

## S

Scales	A small, membranous or horny, stiff, typically plate-like body in the skin of fishes, serving to protect, colour, and support the body
Scalation	Pertains to the pattern/arrangement/presence of scales
Scaly sheath	An area covered with scales
Scute	Any external horny or bony plate
Serrate	Notched like a saw
Snout	The area from the tip of the head to the front of the eye
Soft ray	A segmented fin ray which is composed of two closely joined lateral elements. It is nearly always flexible and often branched
Species	Groups of actually (or potentially) interbreeding natural populations which are reproductively isolated from other such groups
Spination	The distribution and arrangement of spines
Sting:	A stiff pointed spine, integumentary sheath, and accompanying venom glands
Subcutaneous	Positioned beneath the skin
Sub-cylindrical	Imperfectly or approximately cylindrical
Sub-terminal mouth	A mouth oriented and opening somewhat ventrally in which the upper jaw and snout clearly extend beyond the lower jaw
Superior	Above or on the upper surface
Superior mouth (Upturned mouth)	A mouth where the lower jaw distinctly projects beyond the upper jaw and mouth opens upward
Supraterminal mouth	A mouth where the lower jaw slightly projects beyond the upper jaw and mouth tends to open upward.

Spine	A sharp projecting point; an unjointed support in the anterior portions of the dorsal and anal fins
<u>I</u>	
Tail	The portion of body posterior to the anus.
Tail fin	The fin at the end of the body
Tail lobe	Divisions of a tail
Taxon	A taxonomic group of any rank, such as a species, family, or class.
Terminal	At the end
Terminal mouth	A mouth opening at the anterior tip of the head in which the upper and lower jaws are approximately the same length with neither one extending beyond the other
Thoracic	Pertaining to the chest
Thorax	The chest region, just behind the head
Tinge	A trace of a colour
Total length (TL)	The length from the tip of the snout to the tip of the tail.
Transverse series scales	The almost vertical rows of scales slanting backwards and downwards across the sides of the body
Truncate tail	Tail with a more or less vertical edge
Trunk:	That part of a fish (other than the fins) between the head and the tail; the region between the last gill opening and vent.
Tubercle	Temporary epidermal projection on head, body, or fins of males of some species which facilitates contact with females during spawning or which is used for defense of territories

U

Underslung	Subterminal mouth or jaw
Undulating	Moving in waves
Unpaired fin	Dorsal( Back fin), Caudal(Tail fin) and Ventral(Anal fin)

V

Ventral	Pertaining to the abdominal or lower surface
Ventral fins( Anal fin)	Paired fins behind or below the pectoral fins.



# BIBLIOGRAPHY

Abraham, K. J., Joshi, K. K., & Murty, V. S. (2011). Taxonomy of the fishes of the family Leiognathidae (Pisces, Teleostei) from the West coast of India. *Zootaxa*, 2886, 1-18.

Abraham, R. K., Kelkar, N., & Kumar, A. B. (2011). Reply to "Need for further research on the freshwater fish fauna of the Ashambu Hills landscape: a response to Abraham et al.". *Journal of Threatened Taxa*, 3(5), 1792-1797.

Ali, A., Katwate, U., Philip, S., Dhaneesh, K. V., Bijukumar, A., Raghavan, R., & Dahanukar, N. (2014). *Horabagrus melanosoma*: a junior synonym of *Horabagrus brachysoma* (Teleostei: Horabagridae). *Zootaxa*, 3881(4), 373-384.

Baby, F., Tharian, J., Philip, S., Ali, A., & Raghavan, R. (2011). CEPF Western Ghats Special Series: Checklist of the fishes of the Achankovil forests, Kerala, India with notes on the range extension of an endemic cyprinid *Puntius chalakkudiensis*. *Journal of Threatened Taxa*, 3(7), 1936-1941.

Batuwita, S., Silva, M., & Edirisinghe, U. (2013). A review of the Danionine genera *Rasboroides* and *Horadandia* (Pisces: Cyprinidae), with description of a new species from Sri Lanka. *Ichthyological Exploration of Freshwaters*, 24(2), 121-140.

Beevi, K. S. J., & Ramachandran, A. (2009). Checklist of freshwater fishes collected from Ernakulam District, Kerala, India. *Journal of Threatened Taxa*, 493-494.

Benziger, A., Philip, S., Raghavan, R., Ali, P. H. A., Sukumaran, M., Tharian, J. C., ... & Antunes,

A. (2011). Unraveling a 146 years old taxonomic puzzle: validation of Malabar snakehead, species-status and its relevance for channid systematics and evolution. *PLoS One*, 6(6), e21272.

Britz, R., & Kottelat, M. (1999). *Carinotetraodon imitator*, a new freshwater pufferfish from India (Teleostei: Tetraodontiformes). *Journal of South Asian Natural History*, 4, 39-47.

Britz, R., Kumar, K., & Baby, F. (2012). *Pristolepis rubripinnis*, a new species of fish from southern India (Teleostei: Percomorpha: Pristolepididae). *Zootaxa*, 3345, 59-68.

Britz, R., Adamson, E., Raghavan, R., Ali, A., & Dahanukar, N. (2017). *Channa pseudomarulius*, a valid species of snakehead from the Western Ghats region of peninsular India (Teleostei: Channidae), with comments on *Ophicephalus grandinosus*, *O. theophrasti* and *O. leucopunctatus*. *Zootaxa*, 4299(4), 529-545.

Collette, B. B. (1981). Rediscovery of *Hyporhamphus xanthopterus*, a half beak endemic to Vembanad Lake, Kerala, southern India. *Matsya*. 7: 29-40

Compagno, L. J., Ebert, D. A., & Smale, M. J. (1989). Guide to the sharks and rays of southern Africa. *New Holland (Publ.) Ltd., London*. 158 pp

Daniels, R. R. (2002). Freshwater fishes of peninsular India. *Universities Press*. 288pp

Day, F. (1865). The Fishes of Malabar. United Kingdom. *Bernard Quaritch*. 293pp

Day, F. (1876). The Fishes of India - Being a Natural History of the Fishes Known to Inhabit the Seas and Fresh Waters of India, Burma, and Ceylon. *Bernard Quaritch, 15 Piccadilly*. Volume 1, 778pp

Day, F. (1878-1888). The Fishes of India - Being a Natural History of the Fishes Known to Inhabit the Seas and Fresh Waters of India, Burma, and Ceylon. *Bernard Quaritch, 15 Piccadilly*. Volume 2.

Iwatsuki, Y., Kimura, S., & Yoshino, T. (2001). New species of *Gerres* from the southern Malay Peninsula, belonging to the *Gerres setifer* complex (Perciformes: Gerreidae). *Copeia*, 2001(1), 164-168.

Jayaram, K. C. (1981). The freshwater fishes of India. A handbook. *Zoological Survey of India*, Calcutta, 12.

Fischer, W., & Whitehead, P. J. P. (1974). FAO species identification sheets for fishery purposes: Eastern Indian Ocean (Fishing Area 57) and Western Central Pacific (Fishing Area 71) Vol. 2. *Food and Agriculture Organization of the United Nations*.

Fischer, W., & Bianchi, G. (1984). FAO species identification sheets for fishery purposes: Western Indian Ocean (Fishing Area 51). v. 1. *Food and Agriculture Organization of the United Nations*.

Hamilton, F. (1822). An account of the fishes found in the river Ganges and its branches (Vol. 1). *Archibald Constable*.

Iwatsuki, Y., & Kimura, S. (1996). First record of the carangid fish, *Alepes djedaba* (Forsskål 1775) from Japanese waters. *Ichthyological Research*, 43(2), 182-185.

Jayaram, K. C. (1981). The freshwater fishes of India. A handbook. *Zoological Survey of India*, Calcutta, 12.

Jayaram, K. C. (2002). Fundamentals of fish taxonomy. *Narendra Publishing House*.

Jayaram, K. C. (2006). Catfishes of India. *Narendra Publishing House*.

Jhingram, A. G., & Talwar, P. K. (1991). Inland fishes of India and adjacent countries. *Oxford & IBH*.

- Katwate, U., Baby, F., Raghavan, R., & Dahanukar, N. (2014). The identity of *Pethia punctata*, a senior synonym of *P. muvattupuzhaensis* (Teleostei: Cyprinidae). *Zootaxa*, 3884(3), 201-221.
- Kimura, S., Kimura, R., & Ikejima, K. (2008). Revision of the genus *Nuchequula* with descriptions of three new species (Perciformes: Leiognathidae). *Ichthyological Research*, 55(1), 22-42.
- Krishnakumar, K., Rajan, P. D., & Street, A. (2011). Fish and fisheries in Vembanad Lake. Consolidated report of Vembanad fish count 2008-2011. *ATREE*.
- Kurup, B. M. (1982). Studies on the Systematics and Biology of Fishes of the Vembanad Lake (Doctoral dissertation, Ph. D. Thesis, *University of Cochin*).
- Menon, A. G. K. (1977). A systematic monograph of the tongue soles of the genus *Cynoglossus* Hamilton-Buchanan (Pisces, Cynoglossidae). *Smithsonian Contributions to Zoology*.
- Menon, A. G. K. (1999). Check List--fresh Water Fishes of India (Occasional paper no. 175). *Zoological Survey of India*. 395pp
- Myers, G. S. (1949) Usage of anadromous, catadromous, and allied terms for migratory fishes. *Copeia*. 1949: 89-97.
- Ng, H. H. (2013). *Ompok karunkodu*, a new catfish (Teleostei: Siluridae) from southern India. *Zootaxa*, 3694, 161-166.
- Pethiyagoda, R. (1991). Freshwater fishes of Sri Lanka. *Wildlife Heritage Trust of Sri Lanka*.
- Pethiyagoda, R., & Kottelat, M. (1994). Three new species of fishes of the genera *Osteochilichthys* (Cyprinidae), *Travancoria* (Balitoridae) and *Horabagrus* (Bagridae) from the Chalakudy river, Kerala, India. *Journal of South Asian Natural History*, 1(1), 97-116.
- Pethiyagoda, R., & Kottelat, M. (2005). A review of the barbs of the *Puntius filamentosus* group (Teleostei: Cyprinidae) of southern India and Sri Lanka. *The Raffles Bulletin of Zoology*, 12, 127-144.
- Pethiyagoda, R., & Kottelat, M. (2005). The identity of the south Indian barb *Puntius mahecola* (Teleostei: Cyprinidae). *The Raffles Bulletin of Zoology*, 12, 145-152.
- Pethiyagoda, R., Maduwage, K., & Manamendra-Arachchi, K. (2014). Validation of the South Asian cichlid genus *Pseudetroplus* Bleeker (Pisces: Cichlidae). *Zootaxa*, 3838(5), 595-600.
- Psomadakis, P.N., Htun Thein, Russell, B.C. and Mya Than Tun. 2019. Field identification guide to the living marine resources of Myanmar. FAO Species Identification Guide for Fishery Purposes. Rome, *FAO and MOALI*. 484pp
- Rainboth, W. J. (1996). Fishes of the Cambodian Mekong. *Food & Agriculture Organization*.
- Rema Devi, K., Indra, T. J., & Emiliyamma, K. G. (1996). On the fish collections from Kerala, deposited in the Southern Regional Station, Zoological Survey of India by NRM, Stockholm. *Records of the Zoological Survey of India*, 95(3-4), 129-146.
- Roshni, K., Renjithkumar, C. R., Raghavan, R., & Ranjeet, K. (2021). Fish distribution and assemblage structure in a hydrologically fragmented tropical estuary on the south-west coast of India. *Regional Studies in Marine Science*, 101693.
- Shaji, C. P. P. S. Easa and A. Gopalakrishnan. (2000). Freshwater Fish Diversity of Western Ghats. Endemic Fish Diversity of Western Ghats. In Proceedings of the workshop on "Germplasm Inventory, Evaluation and Gene Banking of Freshwater Fishes of Western Ghats" organised by National Bureau of Fish Genetic Resources during 12th – 13th October, 1998 at Central Marine Fisheries Research Institute, Cochin, Kerala (Eds. Ponniah, A. G., Gopalakrishnan, A) Lucknow: *National Bureau of Fish Genetic Resources*. (pp. 33-55).

Shetty, H. P. C. (1963). A Preliminary fishery survey of the Vembanad bacwaters, Kerala. Calcutta: *Central Inland Fisheries Research Institute, Barrackpore*. Survey report No. 2. 25pp

Silva, A., Maduwage, K., & Pethiyagoda, R. (2010). A review of the genus *Rasbora* in Sri Lanka, with description of two new species (Teleostei: Cyprinidae). *Ichthyological Exploration of Freshwaters*, 21(1), 27.

Talwar, P. K., & Jhingran, A. G. (1991). Inland fisheries of India and adjacent countries. *Taylor & Francis*. Vol. I, 1-1158pp.

Talwar, P. K., & Jhingran, A. G. (1991). Inland fisheries of India and adjacent countries. *Taylor & Francis*. Vol. II, 1-1158pp

Varghese, A. S. (2005). Systematic and biology of fishes of the family Hemiramphidae of Cochin coast. (Doctoral dissertation, Ph. D. Thesis, *Cochin University of Science and Technology*).

Zeena, K. V., & Jameela Beevi, K. S. (2011). Fish diversity in Ithipuzha and Murinjapuzha, Kerala, India. *Journal of the Bombay Natural History Society*, 108(2), 98-102

## ABOUT THE AUTHORS

### Anu Radhakrishnan

Anu Radhakrishnan holds a Master's in zoology from the Kerala University and associated with ATREE since 2014. He has been involved in studies ichthyology, integrated taxonomy and in participatory conservation efforts. His research hovers around aspects of coastal wetlands, especially regarding its ecological and livelihood facets, followed by policy interventions balance for better governance. He has coordinated "Vembanad Fish Count" for the past six years and possesses a strong understanding about the system. However, his interests are much wider and he intends to understand interlinking patterns of human interactions, among themselves and also with other beings around. This book is his first initiative towards disseminating and homogenizing knowledge to the masses. His other research interests lie along the intersection of evolutionary biology, biogeography, community welfare and cognitive sciences.



### Maneeja Murali

Maneeja Murali currently works as a programme officer with ATREE-CERC, Alappuzha in its flagship Environmental education project 'Jalapaadom'. She has also authored a book 'Ullam'- an environmental education storybook for students. Maneeja has an M.Sc. in Zoology from Kerala University and has over four years of experience in ichthyological research and around 3 years in education. She previously worked on the 'Inland Fishery Database' - a plan project of Kerala's state government at Kerala University of Fisheries and Ocean Studies. Also, she wants to create public awareness regarding nature-friendly activities.





### **Bibin Xavier V. F**

Bibin Xavier V F works with the State Fisheries Department, Alappuzha. He co-ordinates the State Fisheries Department project which tries to create a sustainable fisheries livelihoods and promotes ecosystem conservation across the Vembanad wetland system. Before joining the Fisheries Department, Bibin was part of the project: "Threat-based Conservation Intervention for Sustainability in Vembanad Socio-economic System in Times of Climate Change" which was initiated by CERC, ATREE. He completed his Master's in Fisheries Science with specialisation in Fish Genetics & Breeding from Central Institute of Fisheries Education, Mumbai. As an aspiring researcher, Bibin is interested in conservation sciences and related disciplines. Specifically, he likes to explore themes such as conservation genetics, evolutionary biology, ecology, community-based conservation and taxonomy.



### **Priyadarsanan Dharma Rajan**

Priyadarsanan has a doctoral degree from the University of Calicut (Kerala), and his research interests include conservation biology, insect biosystematics and conservation bio-control. A trained taxonomist and ecologist, Priyadarsanan has authored two books, more than 50 research papers, several popular articles and described 40 species new to science. He is currently working as Senior Fellow at Ashoka Trust for Research in Ecology and the Environment (ATREE), Bangalore. He is a member of various national and international scientific and academic bodies, board of editors of many journals. In the last three years, he is also serving as a member of Board of Governors of Fresh Water Working group of Society for Conservation Biology.



## INDEX

SCIENTIFIC NAME	COMMON NAME	MALAYALAM NAME	PAGE NO.
<i>Anabas testudineus</i> (Bloch 1792)	Climbing Perch	കറുപ്പ്	33
<i>Anguilla bengalensis</i> (Gray 1831)	Indian mottled eel	പുള്ളി മലഞ്ഞീൻ	37
<i>Arius subrostratus</i> (Valenciennes 1840)	Shovelnose Sea- Catfish	ചുണ്ടന്മുട്ട	41
<i>Mystus armatus</i> (Day 1865)	Kerala Mystus	കൂരി	45
<i>Horabagrus brachysoma</i> ( Günther 1864)	Günther's catfish	മഞ്ഞക്കൂരി	47
<i>Xenentodon cancila</i> (Hamilton 1822)	Freshwater garfish	കോലാൻ	51
<i>Alepes djedaba</i> Forsskål 1775)	Shrimp scad	മഞ്ഞവാലൻ മത്സ്യം	55
<i>Channos chanos</i> ( Forsskål 1775)	Milk fish	പുമിൻ	59
<i>Channa diplogramma</i> (Day 1865)	Malabar snakehead	പുലിവാക/വാക വരാൽ	63
<i>Channa pseudomaruilius</i> (Day 1865)	Bull's eye snakehead	ചേന് മീൻ	65
<i>Etroplus suratensis</i> (Bloch 1790)	Pearl Spot	കരിമീൻ	69
<i>Pseudetroplus maculatus</i> (Bloch 1795)	Orange chromide	പള്ളത്തി	71
<i>Clarias dussumieri</i> (Valenciennes 1840)	Valencienne's Clarid	നാടൻ മുശി	75
<i>Nematalosa nasus</i> (Bloch 1795)	Bloch's Gizzard Shad	തോടി	79
<i>Anodontostoma chacunda</i> (Hamilton 1822)	Chacunda gizzard shad	നൂന	81
<i>Cynoglossus macrostomus</i> (Norman 1928)	Malabar Tongue-sole	നക്	85
<i>Amblypharyngodon melettinus</i> (Valenciennes 1844)	Attentive Carplet	വയമ്പ്	89
<i>Dawkinsia filamentosa</i> (Valenciennes 1844)	Filament Barb	പുവാലി പരൽ	91
<i>Gibelion catla</i> (Hamilton 1822)	Catla	കാരകടല	93
<i>Labeo dussumieri</i> (Valenciennes 1842)	Malabar Labeo	പുല്ലൻ/തുളി	95
<i>Pethia punctata</i> (Day 1865)	Dotted sawfin barb	പുള്ളിപ്പരൽ	97
<i>Puntius vittatus</i> (Day 1865)	Green Stripe Barb	കയ്പ പരൽ	99
<i>Rabora dandia</i> (Valenciennes 1844)	Black Line Rasbora	തുപ്പൽ കുടിയൻ	101
<i>Pastinachus sephen</i> (Forsskål 1775)	Cowtail Stingray	പശു വാലൻ മുളുളൻ തിരണ്ടി	105
<i>Stolephorus indicus</i> (Van 1823)	Indian Anchovy	ഇന്ത്യൻ നത്തോലി	109
<i>Gerres setifer</i> (Hamilton 1822)	Small Bengal Silver Bidy	പ്രാഞ്ഞിൽ	113



<i>Glossogobius giuris</i> (Hamilton 1822)	Tank Goby	പുളാൻ	117
<i>Hyporhamphus xanthopterus</i> (Valenciennes 1847)	Red-tipped Halfbeak	മൊരൾ	121
<i>Heteropneustes fossilis</i> (Bloch 1794)	Stinging catfish	കാരി	125
<i>Lates calcarifer</i> (Bloch 1822)	Barramundi	കാളാഞ്ചി	129
<i>Nuclequula nuchalis</i> (Temminck & Schlegel 1845)	Spotnape ponyfish	മുള്ളൻ കാരി	133
<i>Secutor insidiator</i> (Bloch 1787)	Pugnose Ponyfish	പതിമുക്കൻ മുള്ളൻ കാരി	135
<i>Lutjanus argentimaculatus</i> (Forsskal 1775)	Mangrove Red Snapper	ചെമ്പല്ലി	139
<i>Macroganathus guentheri</i> (Day 1865)	Malabar Spinyeel	മണലാരികൻ	143
<i>Mastacembelus armatus</i> (Lacepede 1800)	Zig- Zag Eel	പനയാരികൻ	145
<i>Megalops cyprinoides</i> (Broussonet 1782)	Indo-Pacific tarpon	പാളൻ കണ്ണി	149
<i>Nandus nandus</i> (Hamilton 1822)	Gangetic Leaf Fish	മുതുകില	153
<i>Pseudosphromenus dayi</i> (Kohler 1908)	Brown Spike Tailed Paradise Fish	കരിംകണ്ണി	157
<i>Pristolepis rubripinnis</i> Britz (Kumar & Baby 2012)	Red Wing Leaf Fish	ഓറഞ്ച് വാലൻ ആറ്റുചെമ്പല്ലി	161
<i>Scatophagus argus</i> (Linnaeus 1766)	Spotted Scat	പുള്ളിനച്ചിറ	165
<i>Daysciaena albida</i> (Cuvier 1830)	Bengal Corvina	വഴുത	169
<i>Dendrophysa russelii</i> (Cuvier 1829)	Goatee Croaker	പല്ലികോരി	171
<i>Siganus javus</i> (Linnaeus 1766)	Streaked Spinefoot	മുരി വരയൻ കരട്	175
<i>Sillago vincenti</i> (McKay 1980)	Estuarine Whiting	പുഴാൻ	179
<i>Ompok malabaricus</i> (Valenciennes 1840)	Goan Catfish	തോന്നൻ	183
<i>Brachirus orientalis</i> (Bloch & Schneider 1801)	Oriental Sole	പട്ടത്തി,പുള്ളി മാന്തൽ	187
<i>Sphyraena jello</i> (Cuvier 1829)	Pickhandle Barracuda	വരയൻ ശിലാവ്	191
<i>Terapon jarbua</i> (Forsskal 1775)	Crescent Perch	കല്ലൻ കോരി	195
<i>Carinotetraodon travancoricus</i> (Hora & Nair 1941)	Malabar Puffer Fish	ആറ്റുണ്ട	199
<i>Triacanthus biaculeatus</i> (Bloch 1786)	Short-nosed Tripod Fish	ചെറുമുക്കൻ മുക്കാലി മത്സ്യം	203

**Notes**

**Notes**

