

Diagnostic Characters of Important Orders of Finfishes

Taxonomic Classification of Ray-finned fishes (Nelson's 1994)

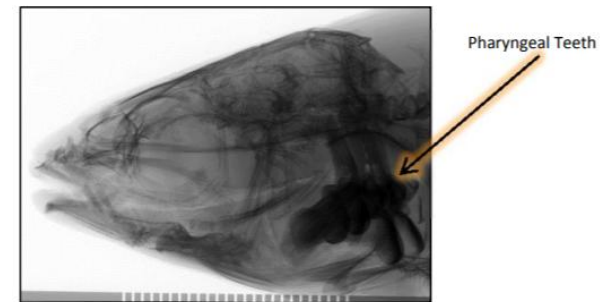
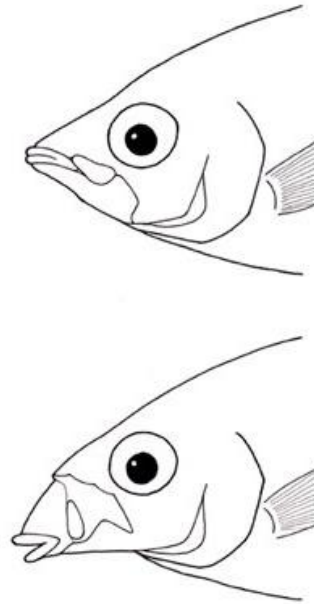
- Phylum: Chordata (Notocord)
- Subphylum: Vertebrata (Vertebrae)
- Superclass: Gnathostomata (Jawed)
- Grade: Pisces (Fishes)
- Subgrade: Teleostomi
- Class: Osteichthyes (osteon= bone, ichthyes=fish)
- Subclass: Actinopterygii (Aktis=ray, pteryx=fin)
- Infraclass: Teleostei
- Order:..... (38 no.)
- Family:.....

Important orders of finfishes

- **Osteoglossiformes**
- **Elopiformes**
- **Anguilliformes**
- **Clupiformes**
- **Gonorhynchiformes**
- **Cypriniformes**
- **Siluriformes**
- **Salmoniformes**
- **Aulopiformes**
- **Mugiliformes**
- **Cyprinodontiformes**
- **Gasterosteiformes**
- **Synbranchiformes**
- **Perciformes**
- **Tetradontiformes**

Order: Cypriniformes

- Head without scale, no bony plates on body
- Mouth usually protractile and **always toothless**
- **Pharyngeal teeth** are present
- **Branchiostegal rays three**
- Single dorsal fin, no adipose dorsal fin except in some cobitios
- Pelvic fin abdominal
- Barbels may present or absent



Order: Cypriniformes

- **No supra branchial organ**
- Lateral Line present
- Air bladder free or often enclosed in a bony capsule in bottom dwelling forms
- **Weberian apparatus mostly modified**, commonly as a fusion of second and third centra

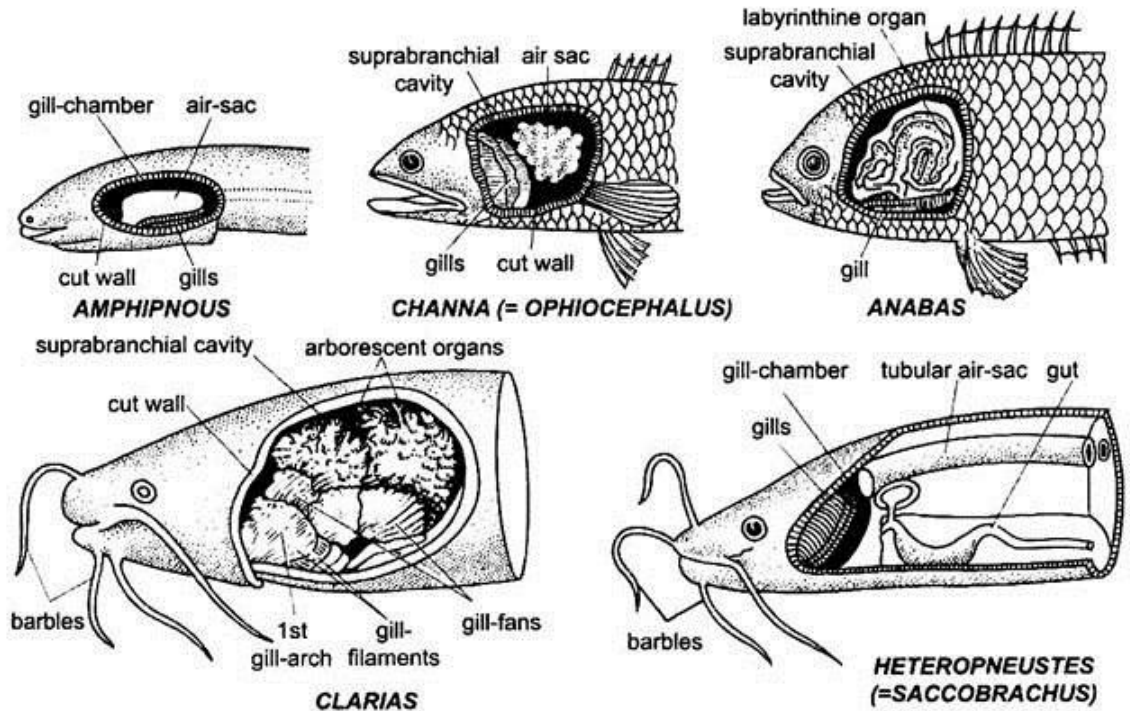


Fig. 17.8. Accessory respiratory organs dissected on the left side in some air-breathing teleost fishes.

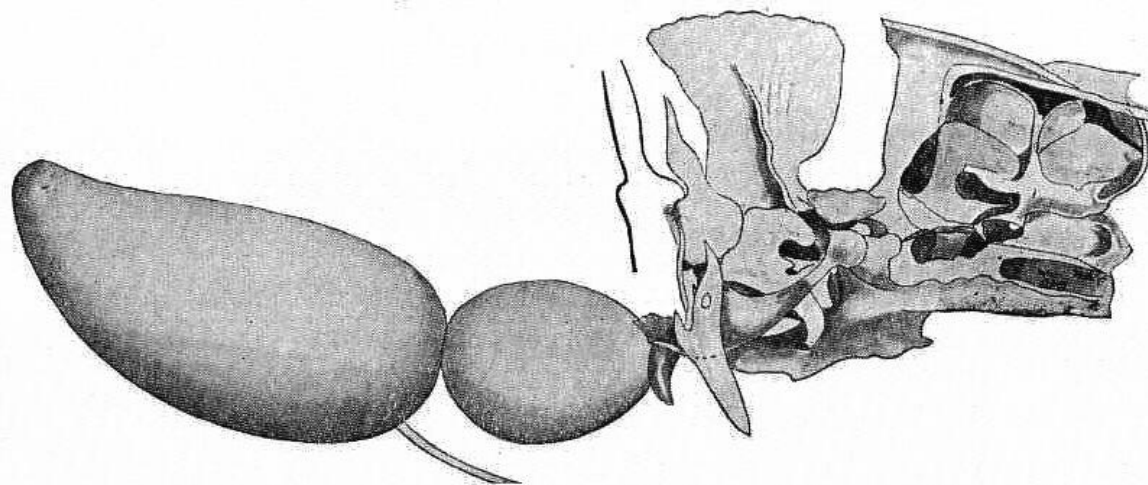
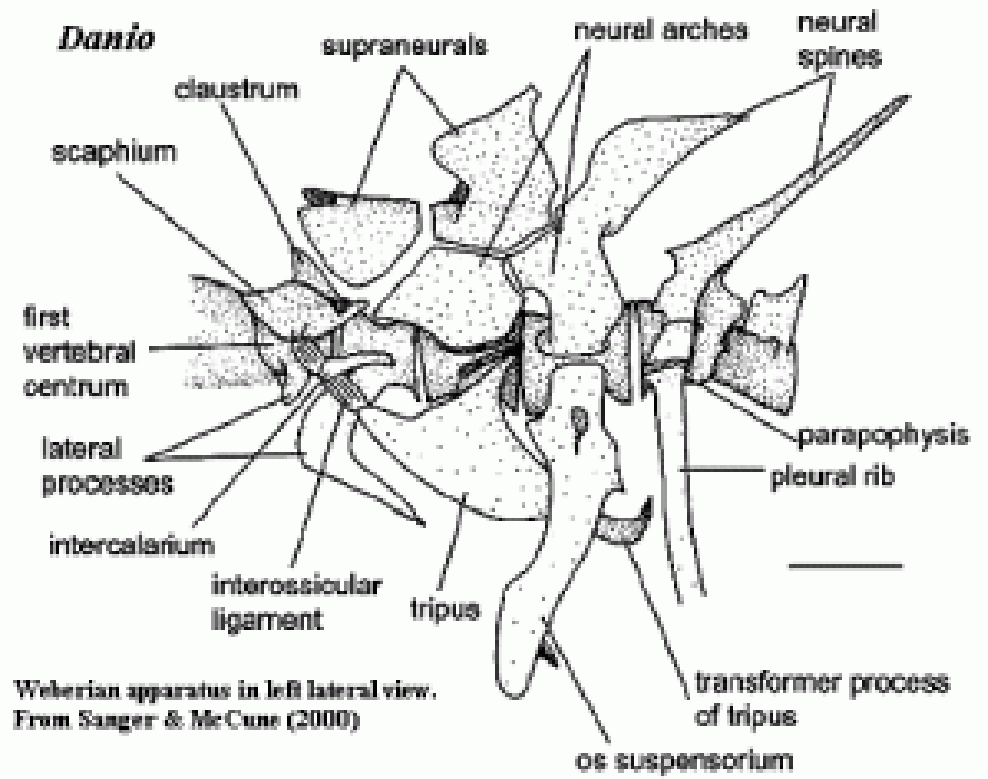


FIG. 289.—Weberian apparatus and air-bladder of Carp. (From Günther, after Weber.)

Five Families Under Order Cypriniformes

Psilorhynchidae

Parapsilorhynchidae

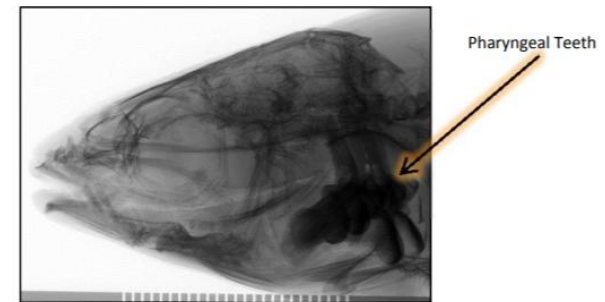
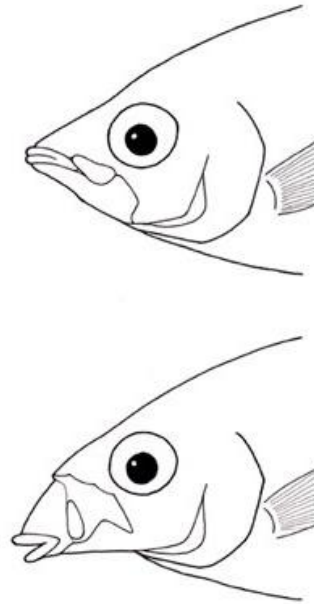
Balitoridae

Cyprinidae

Cobitidae

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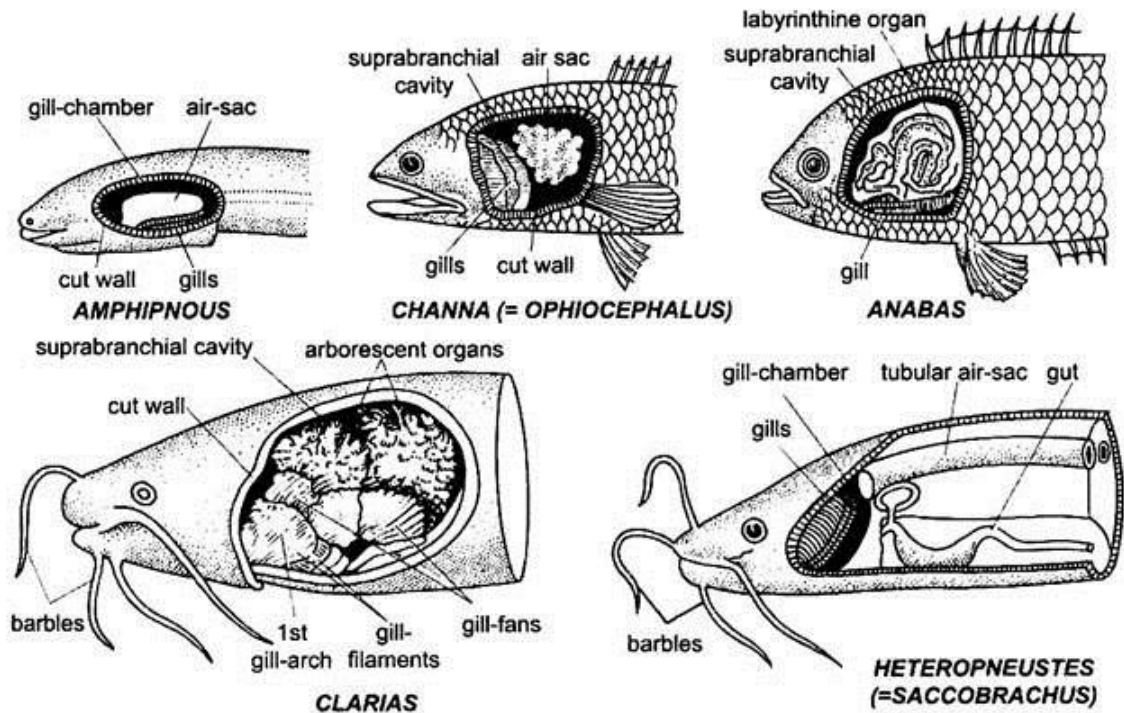


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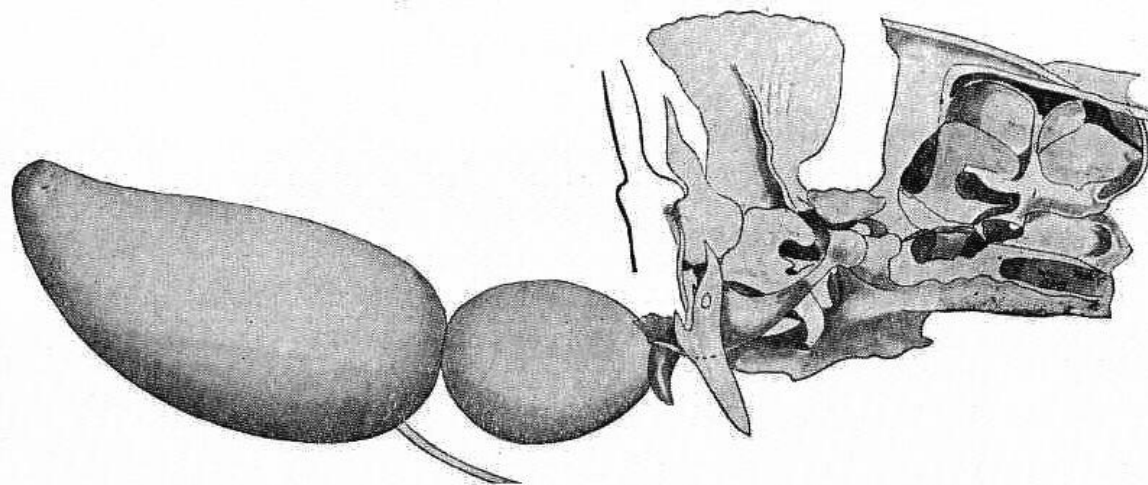
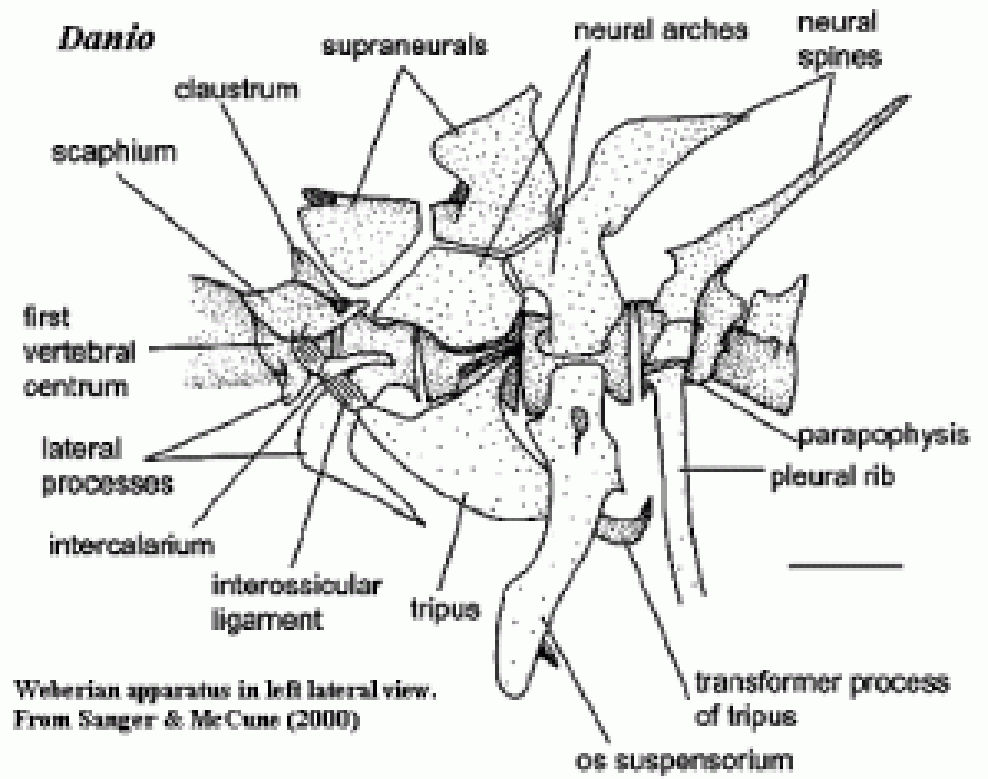


FIG. 289.—Weberian apparatus and air-bladder of Carp. (From Günther, after Weber.)

Five Families Under Order Cypriniformes

Psilorhynchidae

Parapsilorhynchidae

Balitoridae

Cyprinidae

Cobitidae

Psilorhynchidae

a



b



c



Parapsilorhynchidae

One pair of rostral
barbel present

Body spindle shape

Air bladder large and
free



Parapsilorhynchus swaini

Balitoridae

Three or more pairs of
barbel present

Body depressed

Air bladder partially
enclosed in a bone
capsule



Cyprinidae

One or two pairs or no barbels

Body laterally compressed

Paired fin laterally inserted, not more than one anterior ray of pectoral fin simple or may be all branched



Order: Siluriformes

- Skin naked or with bony scutes or plates, never with true scales.
- Mouth non protractile. Superiorly bordered by pre-maxillaries and dentaries which are generally toothed.
- Always 1-4 pairs of barbels, varying in length
- Adipose fin generally present and smooth, may be reduced or absent also.
- Pharyngeal bones with small conical or villiform teeth
- Branchiostegal rays 4-21
- Weberian apparatus is present
- Rayed dorsal fin inserted anteriorly, mostly above pectoral fin
- Total 33 families

Important Families of order Siluriformes

- **Akysidae**
- **Amblycipitidae**
- **Bagridae**
- **Clariidae**
- **Erethistidae**
- **Heteropneustidae**
- **Olyridae**
- **Pangasiidae**
- **Schilbeidae**
- **Siluridae**
- **Sisoridae**

Representatives of Order Siluriformes



Order: Perciformes

- Skin with scale, commonly ctenoid
- Head & cheeks with muciferous canals or pores
- Villiform teeth on jaws
- Two dorsal fins, first spinous
- Adipose fin never present
- Pelvic fin if present thoracic or jugular with spines
- Anal fin with spine
- Principal caudal fin rays never more than 17.
- Largest and most diversified order of fish.
- 156 families

Important families of Order: Perciformes

- [Ambassidae](#)
- [Anabantidae](#)
- [Badidae](#)
- [Channidae](#)
- [Cichlidae](#)
- [Datnioididae](#)
- [Gobiidae](#)
- [Latidae](#)
- [Mullidae](#)
- [Nandidae](#)
- [Scombridae](#)
- [Serranidae](#)

Order: Synbranchiformes

- Body eel like, compressed with small scales if present, arranged in longitudinal rows or absent
- Gill opening in the form of a slit or pore under head or throat
- Vertical fin rudimentary in the form of mere folds of skin
- No paired fins
- Air bladder absent
- Teeth on jaws and palate
- Three families

Three families of order synbranchiformes

- [Synbranchidae](#)
- [Chaudhuriidae](#)
- [Mastacembelidae](#)

Representatives of Order Synbranchiformes



Order: Aulopiformes

- Gill arch specialized, apparently unknown in any other teleost
- Pelvic fins with nine rays
- No fin with spines
- Adipose dorsal fin present
- Rayed dorsal fin in front of anal fin
- No air-bladder
- Single family: **Synodontidae**



**Bombay Duck: Representative of
Order Aulopiformes**