





# **Poisonous Glands of Fishes**

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# Poison Gland

- Any specialized gland in some fishes and amphibians that secretes a mucus like substance containing venomous or poisonous material.
- Poison Gland occurrence
- The poison glands may occur in cartilaginous fishes as well as in bony fishes.
- In cartilaginous fishes it occur in the skin.
- While in bony fishes these glands are associated with spines on the fins, tail, and gill cover.

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- **THE POISON GLAND** of fishes are simple or branched structures which use a holocrine method of secreting a mucous like substance.
  - Holocrine method is a mode of secretion in some exocrine glands in which plasma membrane ruptures releasing the cell cytoplasm in to lumen of the gland.
  - They secrete a venom that when injected by puncture in to man may be painful or rarely lethal.
  - These glands function as protective devices.
  - Also the venom the bottom dwelling fishes by killing the bacteria that try to invade their skin.

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- The study of these glands and their secretions is a part of the field of ichthyotoxism.
  - This field includes:
    - various forms of intoxication from eating poisonous fishes (ichthyosarcotoxism).
    - Or being stung by venomous fishes (ichthyoacanthotoxism).


# POISONOUS FISHES

- Due to the poison glands the fishes become poisonous.
- They contain toxins which are not destroyed by the digestive system of animals that eat the fish.

- **Some poisonous fishes:**

- (A) Porcupine Fishes

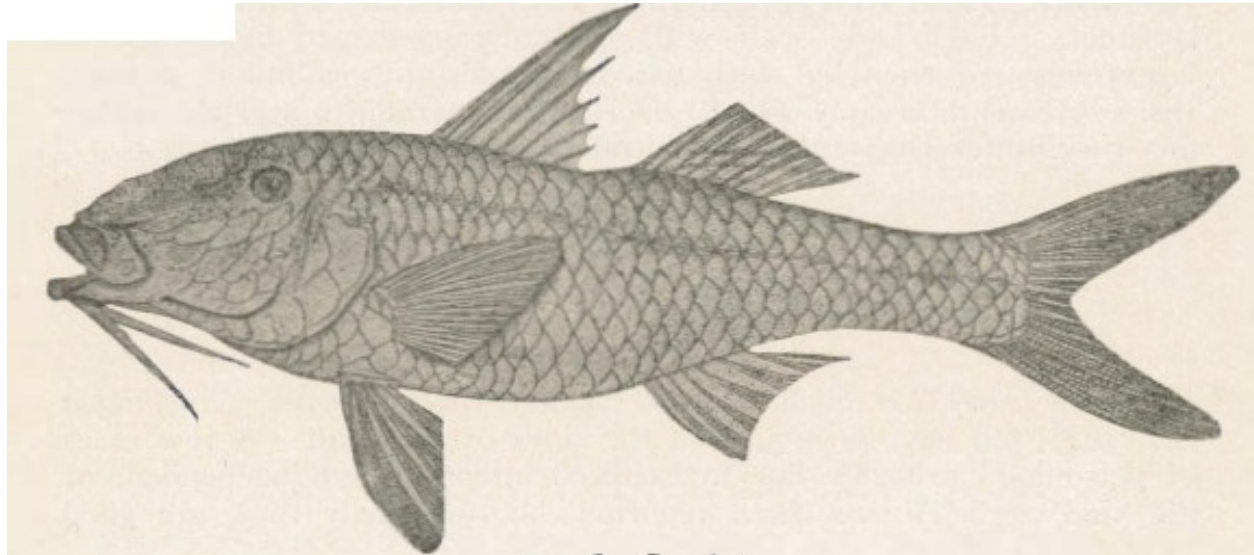
- (Family Diodontidae)
    - These fish have their body beset with long spines and have only two teeth in the jaws ( instead of four), forming a parrot-like beak. They are very poisonous as food.

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- (B) Box fishes :
  - (Family Ostraciontidae)
  - Several species of this family have been listed as poisonous, though it is difficult to imagine people eating them since the whole of the fish's head and body is immovably encased in a bony "box," making whatever flesh .there is inside not worth extraction



## (C) Goatfish or Red Mullet.

- (Family Mullidae)
- The two feelers or barbules hanging from the chin of the goatfish render it easy to identify. The flesh is edible and delicious.
- But it has been found in Hawaii that eating the brain is followed by mental paralysis.

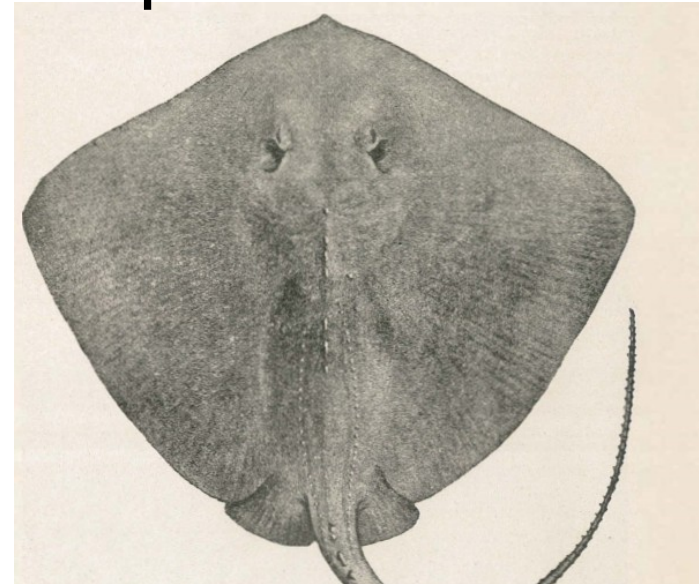


# Venomous fishes

- Some fishes, however, have venom-glands associated with the spines, which make them doubly dangerous.
- The main kinds of stinging or venomous fishes are:
  - ( 1) Stingrays
  - (2) Catfishes
  - ( 3) Stone fishes
  - ( 4) Butterfly fish etc.

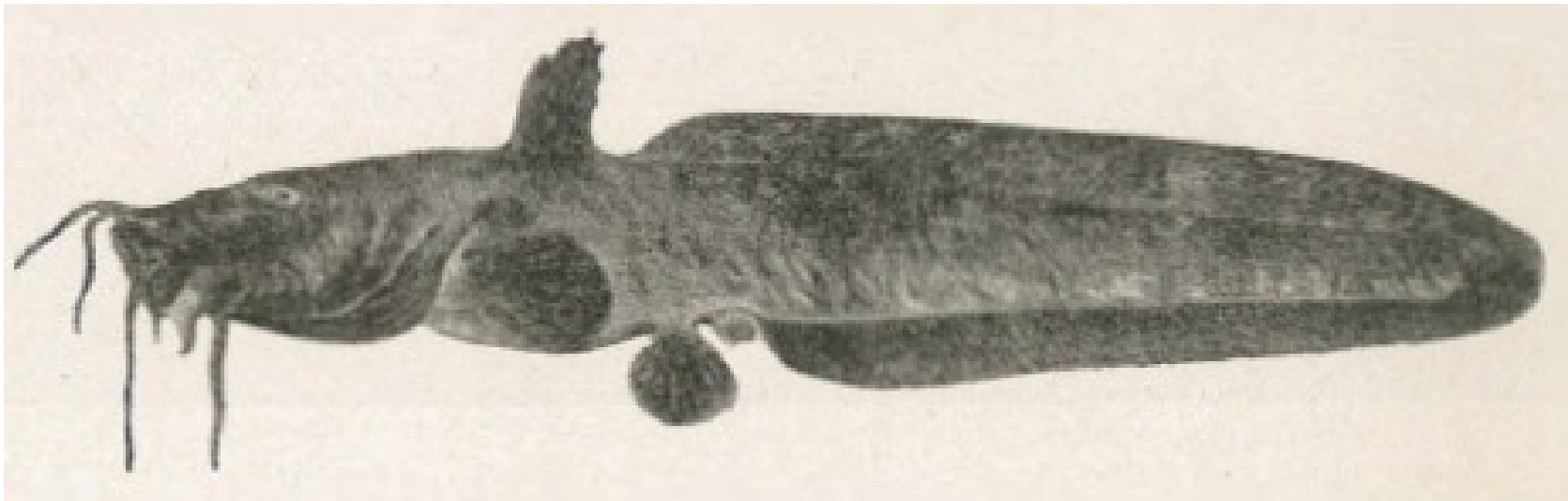


- I. Stingrays.
- Stingrays are flat, kite-shaped animals with the gill-slits under the conjoined head and body.
- They have a long tail, provided with one or more long, hard, barbed spines.
- There are many different species of Stingrays and Eagle Rays, some of very large size, but all can inflict a very painful wound, and the spine is difficult to remove because of its barbs.
- They are good to eat, but the tail, with spine should be chopped or cut off before the fish is handled.



## 2. Catfish

- Catfishes are characterized by the barbels or " cats' whiskers," generally six to eight in number, which protrude around the mouth.
- They have no scales.
- The dorsal and pectoral fins are generally armed with a venomous serrated.



### **3. Stonefishes (Family Synancejidae)**

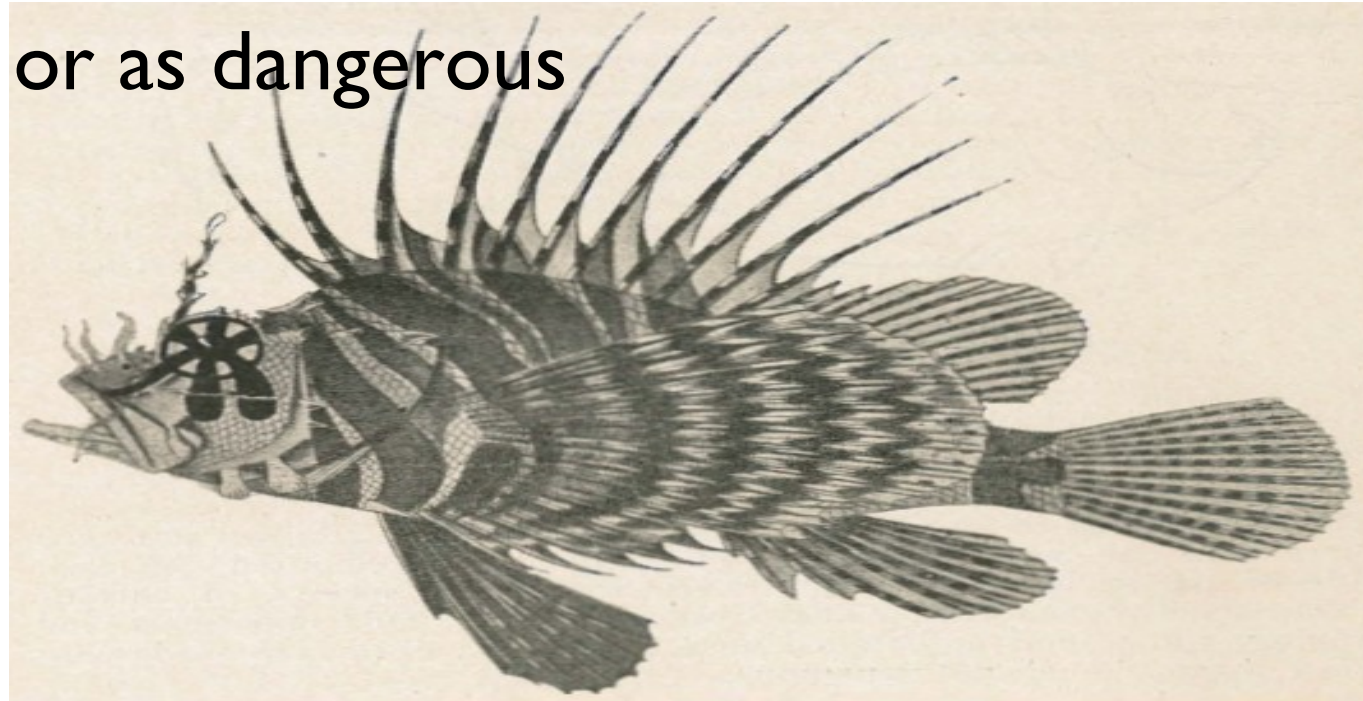
- Stonefishes are so called because of their remarkable resemblance when in the water to blocks of eroded rock or weathered coral
- Unlike most fishes, they do not swim away when approached, but lie quite still, and so are practically indistinguishable from their surroundings.





## 4. Butterfly cod

- The Butterfly Cod or Red Fire fish can be distinguished by its streamer-like fin-rays and membranes which it extends like fans.
- Along the back are needle-like dorsal spines which, when touched, cause a painful wound.
- They are venomous, like those of the Stonefish, but the effects are not so severe or as dangerous





**THANK YOU FOR YOUR PATIENCE**