

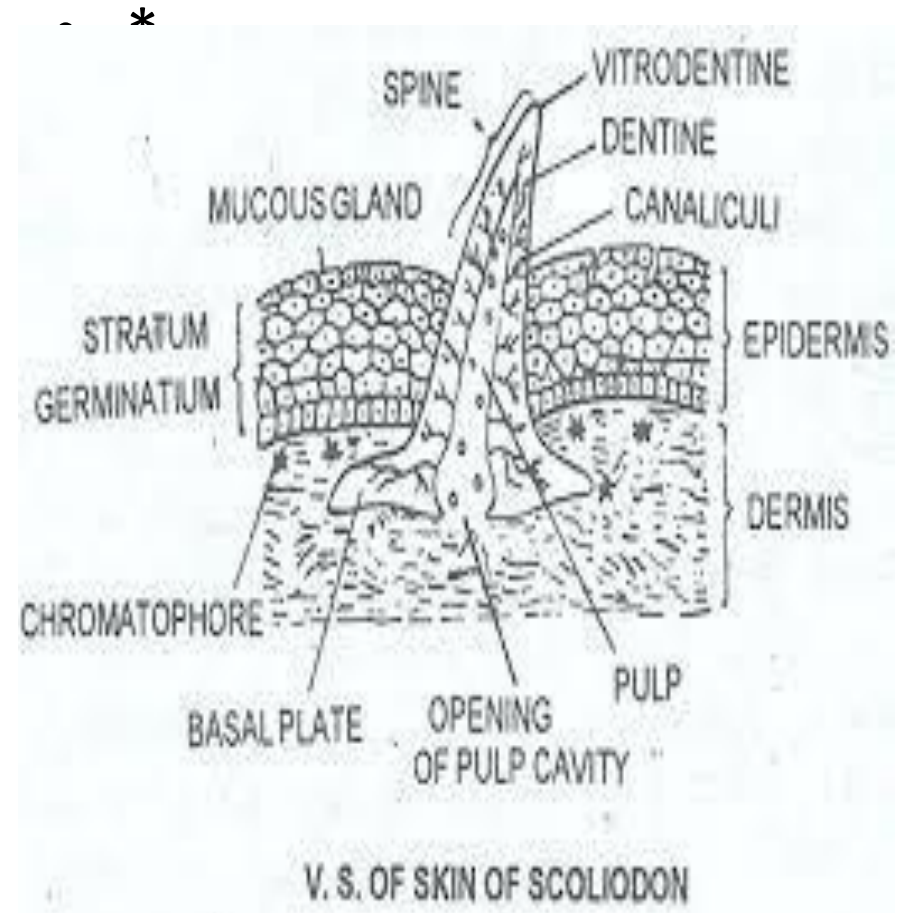
# Skin and development of placoid scales in scoliodon

# Skin:

- The body is invested by an outer leathery covering called skin or integument. In Dogfish (Scoliodon), the skin or integument consists of two layers- an outer ectodermal epidermis and an inner mesodermal dermis.

# 1. Epidermis:

- The epidermis is composed of many layers of epithelial cells amongst which are interspersed numerous unicellular mucous glands secreting mucus for lubricating the body surface. Innermost layer of cells rest on a basement membrane and called stratum germinativum.



## 2. Dermis:

- The dermis comprises dense areolar connective tissue mixed with smooth muscle fibres, blood capillaries, pigment cells and nerves. Dermis or corium is divided into an outer layer having few loose fibres called the stratum laxum, and an inner layer having compact fibres called stratum compactum. Just below the epidermis are found pigment cells, the melanophores or chromatophores.
- The dermis is firmly attached to the underlying muscles. In a fresh specimen the skin is slimy, but in preserved specimens the slimy mucus is generally removed and the skin becomes rough. This roughness of the skin is due to the presence of closely lying minute dermal denticles called placoid scales which are arranged in regular oblique rows and form the exoskeleton of the shark covering the entire surface of the body and even parts of the fins.

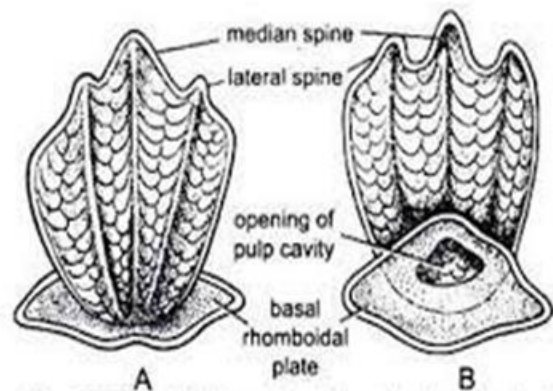


Fig. *Scoliodon*. Placoid scales. A—Dorsal view;  
B—Ventral view.

# Functions of Skin:

- (i) Like a wrapper, it protects internal organs against mechanical injuries,
- (ii) Secretion of slimy mucus makes body surface slippery and difficult to catch by predators, minimises friction in locomotion and resists entry of microorganisms into body.
- (iii) Its colouration imparts camouflage, as the fish blends with silvery surface of water when seen from below and with the dark bottom when seen from above, by predators,
- (iv) Skin receptors help in reacting to changes in the surrounding.