

Fig. 27. *Nandus* : Ctenoid scale.

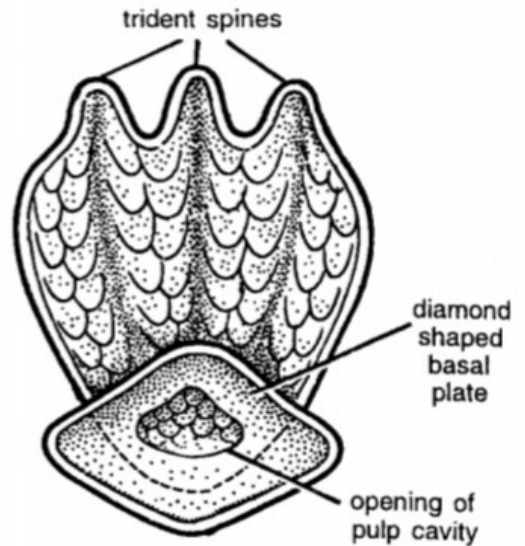


Fig. 28. *Scoliodon* : Placoid scale.

28. *Scoliodon* : Placoid Scales

Comments :

- (1) With very few exceptions, placoid scales are abundantly found in dermis of elasmobranch fishes.
- (2) Placoid scales are arranged in regular oblique rows. They are dermal in origin and cover entire surface of the body, forming dermal exoskeleton of the sharks.
- (3) Each scale is composed of a basal bony plate embedded in the dermis, from which projects trident spines.

- (4) Basal plate is formed of a trabecular calcified tissue.
- (5) Spine is composed of dentine covered by a hard material, vitrodentine.
- (6) Placoid scale contains a pulp cavity in spine.
- (7) Pulp cavity contains odontoblasts dentine forming cells, blood capillaries, nerves and lymph channels.
- (8) General similarity in structure of placoid scales to teeth of higher forms should be apparent. Both are considered to be remnants of bony armour of such primitive vertebrates as ostracoderms and certain placoderms.

Identification : Since this scale has trident spines, hence it is **placoid scale of *Scoliodon***.

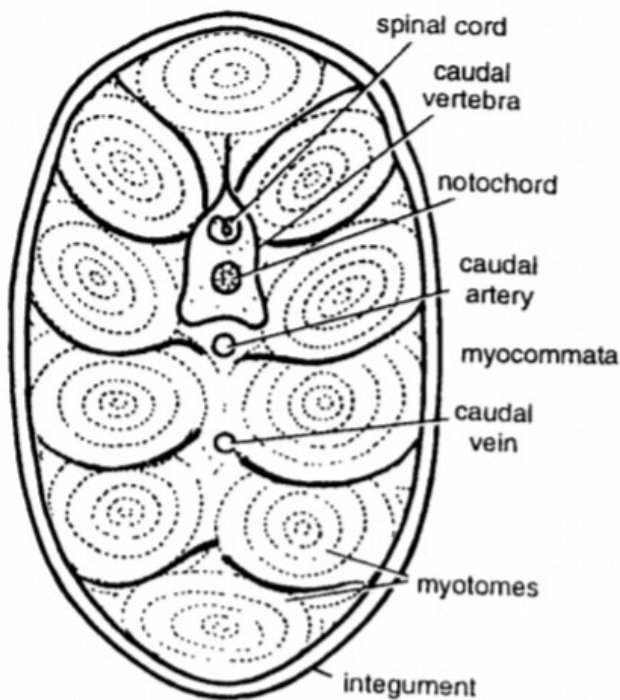


Fig. 25. *Scoliodon* : Hand cut T.S. passing through caudal region.

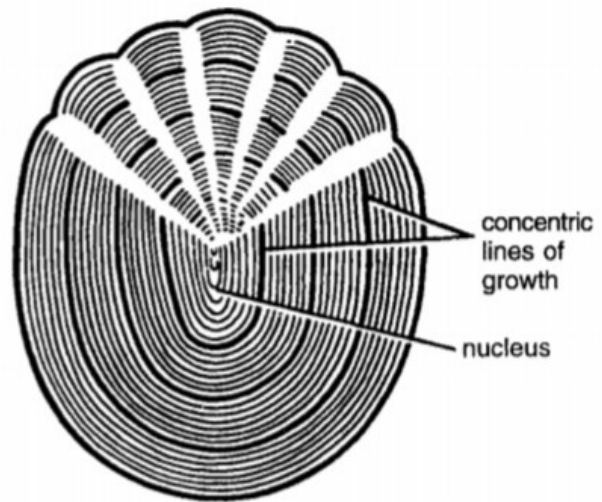


Fig. 26. *Labeo* : Cycloid scale.

26. *Labeo rohita* : Cycloid Scales

Comments :

- (1) **Cycloid scales** are found in carps (teleost) and lungfishes (dipnoi). They are located in the dermal pockets and possess concentric lines of growth.
- (2) Each cycloid scale is roughly circular in outline without pulp cavity and with free and smooth border.
- (3) Scales covering lateral line are frequently perforated permitting the passage of small connectives of lateral line to outside.

- (4) **Cycloid scales** are derived form of ganoid scales in which **ganoin**, cosmine and bone cells are lost.
- (5) Scales are soft, arranged lengthwise in diagonal rows.

Identification : Since the above scale contains concentric lines of growth, hence it is **cycloid scale of *Labeo***.

27. *Nandus* : Ctenoid Scales

Comments :

- (1) **Ctenoid scales** are commonly found in most teleost and actinopterygian fishes.
- (2) They are **thin, soft** and dermal **translucent plates**.
- (3) They are composed of underlying fibrous layer covered by bone-resembling layer.
- (4) They contain **concentric rings**, representing **lines of growth** which vary in different specimens.
- (5) Ctenoid scales **do not contain ganoin**.
- (6) Each scales is embedded in a small dermal pocket.
- (7) Scales are obliquely arranged so that posterior end of one overlaps the anterior end of the following scale.
- (8) Basal end is scalloped and free edge bears numerous comb-like projections.
- (9) Ctenoid scales are derivatives of ganoid scales in which ganoin, cosmine layers and bone cells are lost. Pulp cavity and dentine are entirely absent.

Identification : Since the above scale has concentric lines of growth with teeth like projections posteriorly, hence it is **ctenoid scale of *Nandus***.

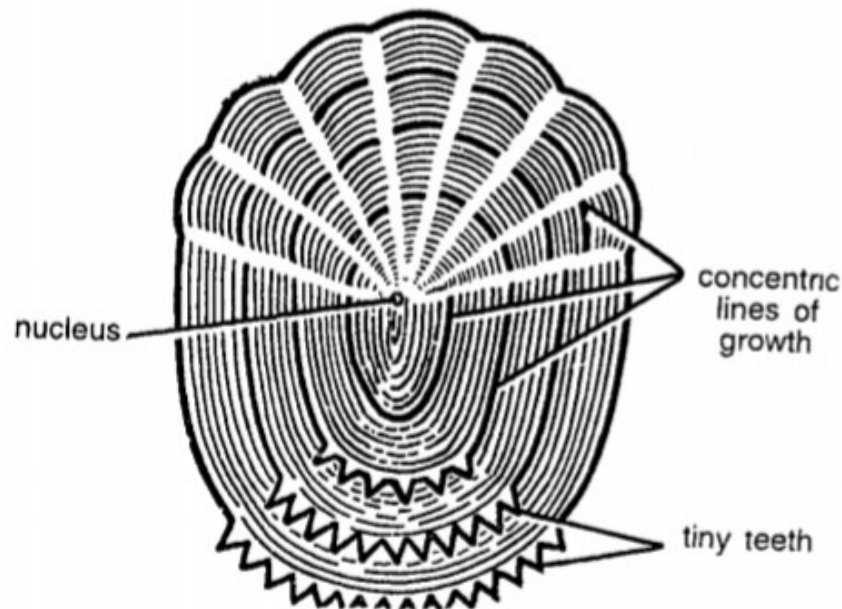


Fig. 27. *Nandus* : Ctenoid scale.

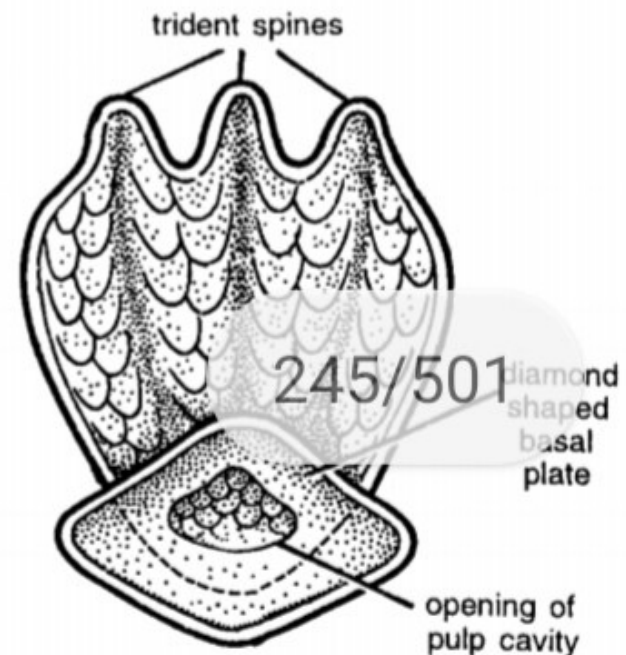


Fig. 28. *Scoliodon* : Placoid scale.