

Date
21-5-2020

Page no. :- 01

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Dumraon (Bihar), Notes for B.Sc part
2nd, paper 3(A), Unit = 3(C)

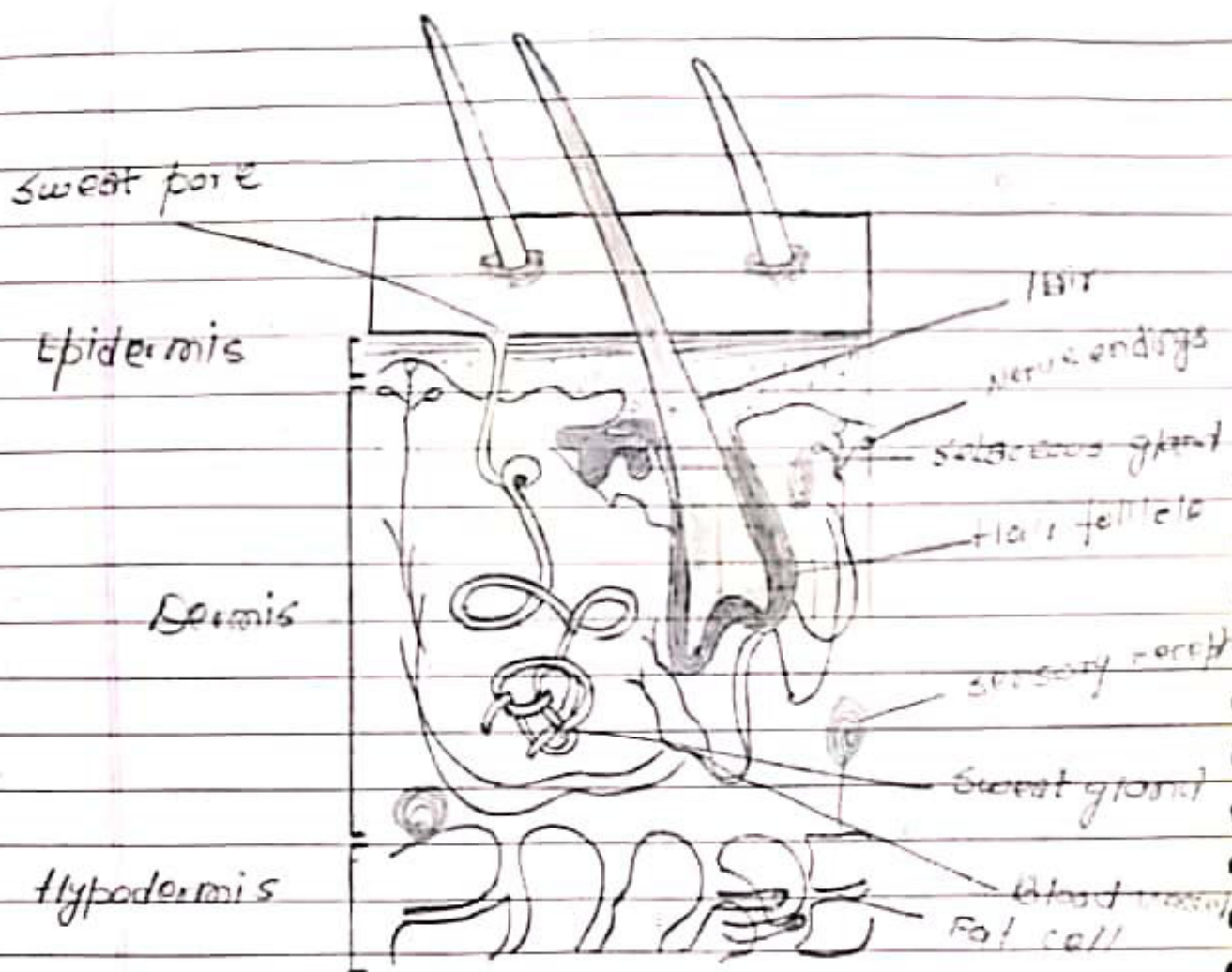
Question :- Comparative Anatomy : Integument
derivatives, and its function ko differ-
ent group me classify karke hue
sachitna varnan karne ?

COMPARATIVE ANATOMY : INTEGUMENT IN REPTILES, BIRDS AND MAMMALS

Cable is a terrestrial Reptile
(Lizard). Columba is flying bird.
Onychologus is a herbivorous mammal.
All these animals are grouped
under Amniota and Columba &
Onychologus are warm blooded
animals. The integument forms
the outermost covering of the
body [yes] in all these animals.
It is multilayered in structure
and is distinguished into epidermis
and dermis. The epidermis
consists of several rows of
flattened stratified epithelial cells
stratum corneum. Below this
layer stratum Malpighi is formed
with living columnar cells.

DATE
21st May 2020

Page no. :- 02



The dermis is formed of connective tissue traversed with collagen and elastin fibres, muscles, nerve, blood capillaries and lymph vessels etc. It possesses an upper stratum spinosum and a lower stratum compactum layers.

The epidermis and dermis are formed from ectoderm & mesoderm layers.

<p>SAUROPSID SKIN (REPTILE INTEGUMENT)</p>	<p>COLUMBA SKIN (BIRD INTEGUMENT)</p>
<p>1. In sauropsids (Reptile) the skin is rough, thick, dry and scaly. skin is suited to the terrestrial environment which prevents any loss of water.</p>	<p>1. In birds the skin is thin, loose and dry.</p>
<p>2. Epidermis has a heavily cornified stratum corneum which produces into horny epidermal scales.</p>	<p>2. The epidermis is thin and delicate all over the body except on snout and feet where it is thick and produce epidermal scales.</p>
<p>3. The exoskeleton of scales is periodically cast off either in fragments or as a single piece. in turtles & tortoises the epidermal body plates the scales are modified into shields, scales, spines etc.</p>	<p>3. The exoskeleton is in the form of leathers which are formed from stratum corneum & stratum malpighii. The feathers are keratinised.</p>

Date
21.5.2020

Page no. :- 04

4. The glands are practically absent. The only glands present are 'scent glands'.

4. The epidermis is devoid of glands except the single "Uropygial gland" present at the base of the tail. The oily secretion of the gland is used for preening the feathers.

5. Dermis is thick having stratum spongiosum & stratum compactum.

5. Two layers are present in the dermis which is thin. Vascular layer is present in between the two layers.

6. Sensory corpuscles are absent.

6. Cutaneous receptors are present in the dermis.

7. Fat cells are not present in the dermis.

Sebaceous glands are present. Distal ends of the digits have nails or claws which

7. Fat cells are present in the dermis.

Similar claws are with unguis in the form of a long plate of keratin sharply curved.

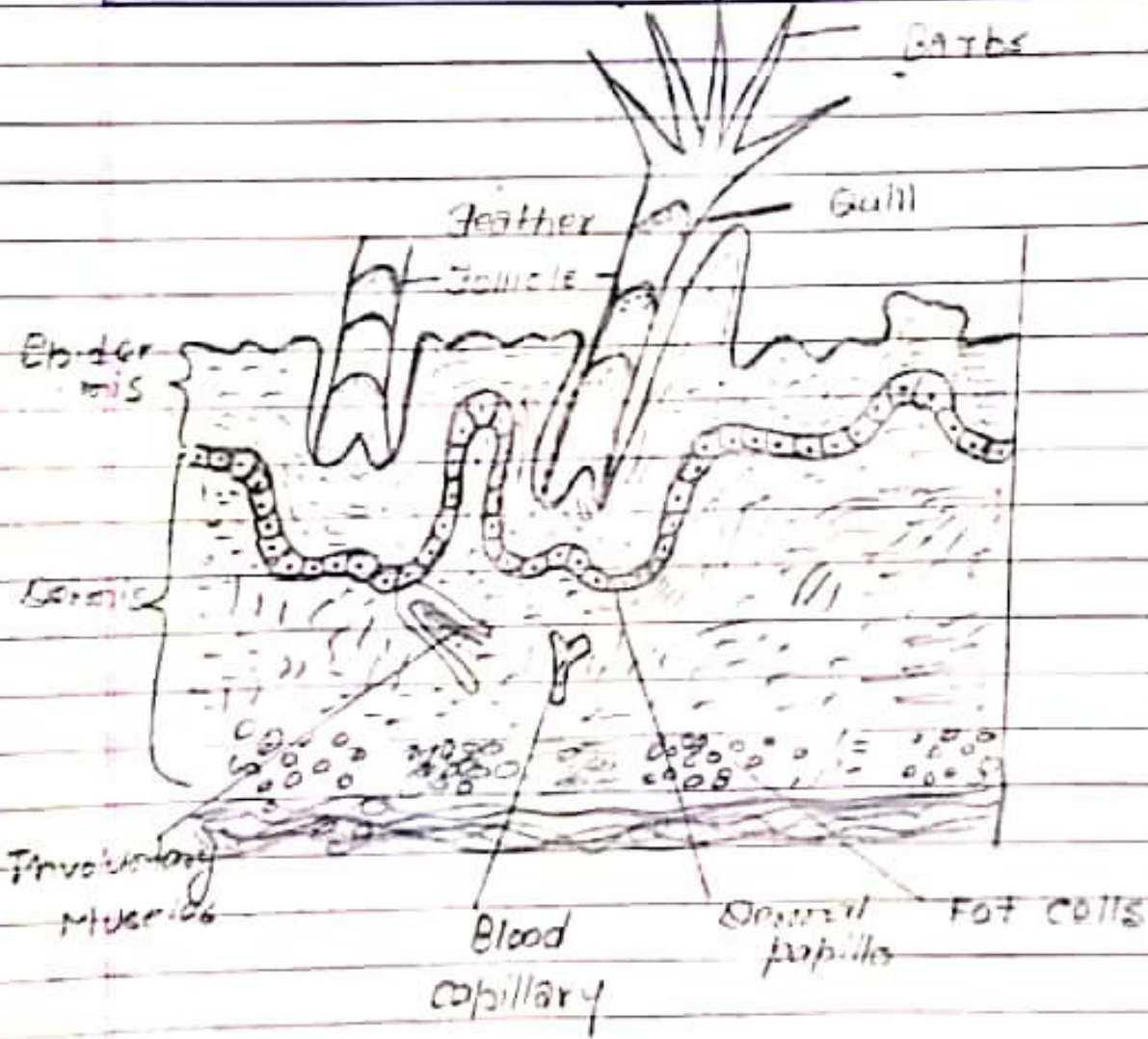
Date
21.05.2024

Page no. :- 05

Serial
No.
Date

8. Horny teeth are present which are acrodont or pleurodont similar class are with unguis in the form of a long plate of keratin.

8. Beaks are formed of enlarged epidermal scales which form hard keratinized covering over the jaw bones.



Bird skin - Cross section