

iii) Storage of food: Subdermal thick fat layer acts as food storage (e.g. whales, seals, sea cows).

iv) Secretion: The skin acts as an organ of secretion. Mammary glands, scent glands and sebaceous glands are present in the skin and serve their functions accordingly.

5. Write in brief the epidermal derivatives in mammals. 6. State the significance/ importance of epidermal modification in mammals.

i) With a relatively thick cornified epidermis and a dermis that, unlike the earlier vertebrates, is many times thicker than the epidermis.

ii) The thickness of the epidermal part of the skin remains fairly constant because the rate of proliferation of the stratum germinativum is nearly equal to the loss of corneal cells.

Epidermal derivatives:

Claws, nails, hoofs— (The distal end of the digits in mammals is provided with either claws or nails or hoofs. They are derived from the horny layer of the epidermis), horn, antler, epidermal scales.

Epidermal derivative	Features in brief	Example
Claw	Composed of scale like plate (unguis) at dorsal position and subunguis, lies ventral to the unguis.	Lemur
Nails	The unguis is better developed, broad and flat	Human
Hoofs	Unguis is most well developed and curves all the way round the digital end closing the subunguis. The torus or pad lies just behind the hoof	Horse
Scales	When present remain confined in tail and paw (exception: scaly ant eater, armadillos)	Armadillos.
Antlers	(Need little more information so follow the answer out of the table)	
Horn		

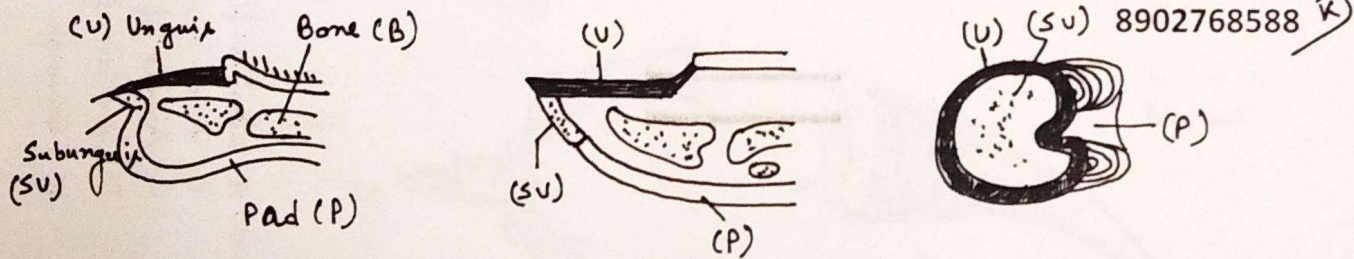


Figure: Modifications of the digital tips in mammals. A. Section view of the claw of carnivore. B. Sectional view of the hoof of horse. C. Front view of the hoof of horse.

**HORN:**

A horn is a permanent pointed projection on the head of various animals consisting of a covering of keratin and other proteins surrounding a core of live bone. Horns are distinct to antlers which are not permanent. In mammals, according to structure and mode of formation the following major types of horns are recognized— a) Keratin-fibre horn, b) Hollow horn, c) Prong horn.

**a) Keratin-fibre horn:**

i) Keratinized fibers about 1/2 mm in diameter that are compacted into a solid structure and located on the frontonasal region of the skull.