Anatomy

The Common Integument

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The Common Integument

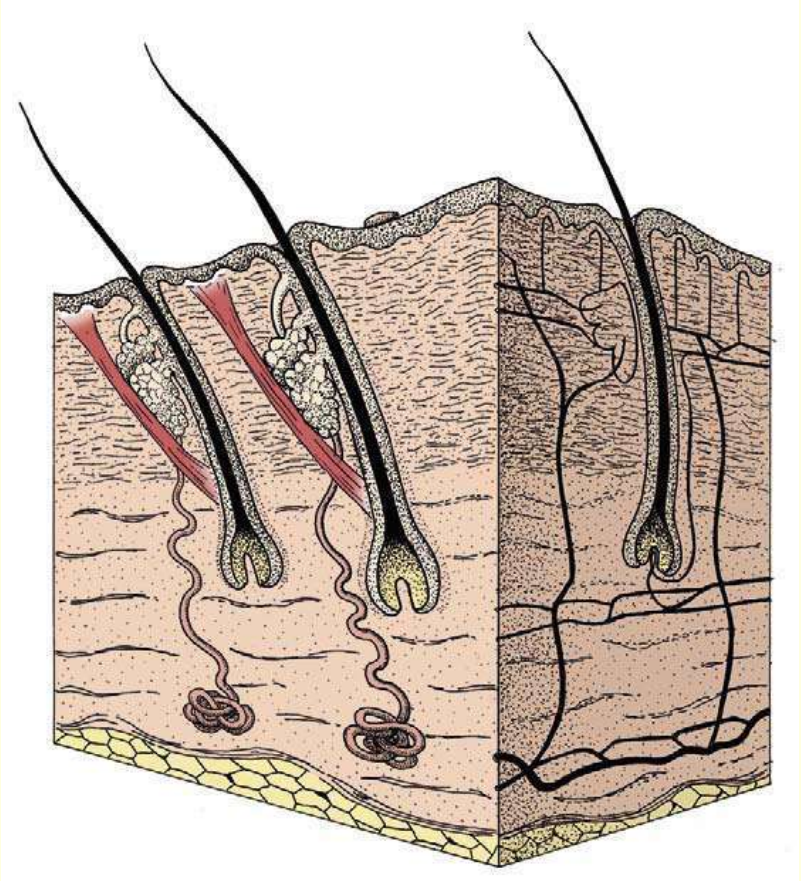
- The term common integument comprehends ordinary skin with its covering of hair and variety of skin glands as well as more specialized parts such as claws, hoofs, and horns.
- The skin completely encloses the body and blends with the mucous membranes at the various natural openings. In its common form it protects against surface wear and tear and invasion by microorganisms,
- plays an important part in thermoregulation and, being practically impermeable to water, prevents the body from drying out (with the accompanying loss of electrolytes and other vital substances); conversely, it
- prevents excessive water uptake in aquatic mammals.
- Certain lipid substances can penetrate skin and are used(in the form of ointments) as vehicles for administration of medication.

- The skin varies greatly in thickness and flexibility, both among species and locally. It is naturally thicker in larger animals.
- Skin consists of two layers, an outer epidermis and an inner dermis, and in most situations it rests on a looser connective tissue variously known as the subcutis, hypodermis, or superficial fascia.
- The epidermis is a stratified squamous epithelium whose thickness is adapted to the treatment it receives; it responds to rough usage, as exemplified by the footpads of dogs and cats.
- Numerous modifications of this layer exist, the most common being the occurrence of sweat and sebaceous glands and of hair.

Sweat glands

are most important as a provision for heat loss by surface evaporation but also play a subsidiary role in the excretion of waste.

The **sebaceous glands** produce an oily secretion that waterproofs the surface and provides certain relatively naked areas, such as the groin of horses, with a characteristic sheen.



The haircoat, which is a uniquely mammalian feature, is a mechanical protection and a thermal insulator. The hair coat is also usually widespread.

Among the more familiar species, only the human and the pig are relatively naked, although naked individuals may appear in other species as occasional “sports,”

which is the origin, for example, of the Sphynx breed of cat. Some aquatic mammals, such as whales, are wholly naked.

The footpads

- The footpads (tori) are the cushions on which animals walk. They are covered by a naked, densely cornified epidermis. The dermis is unremarkable, and the bulk of their substance is provided by a thick, resilient subcutis, an admixture of collagenous and elastic fibers interspersed with adipose tissue.

NAILS, CLAWS, AND HOOFS

Although these structures enclosing the distal phalanx

appear strikingly different at first glance, they are in fact basically similar. Their origins as local modifications of skin are reflected in their retention of epidermal, dermal, and subcutis layers (though perhaps in greatly altered form). Nails, claws, and hoofs serve primarily to protect the underlying tissues, but each is also used for other purposes, such as scratching or digging or as a weapon. The equine hoof, the most complex, reduces concussion on foot impact, and its elastic nature also aids the return of blood to the heart.

The horns

The horns of domestic ruminants have osseous bases provided by the cornual processes of the frontal bones. The dermis is tightly adherent to the cornual process and bears numerous short papillae that are slanted apically, which ensures that the horn elongates as well as thickens as it grows. The horn substance resembles that of the hoof in being an admixture of

tubules and intertubular horn. The horn produced by the epidermis at the base is soft and somewhat sheen.

Chestnuts :above carpus

Ergots: below hock,