INTEGUMENT - FORM VS FUNCTION IN THE VERTEBRATES

PHYSICAL BARRIER - allows HOMEOSTASIS
MECHANICAL PROTECTION
- stress, abrasion, puncture

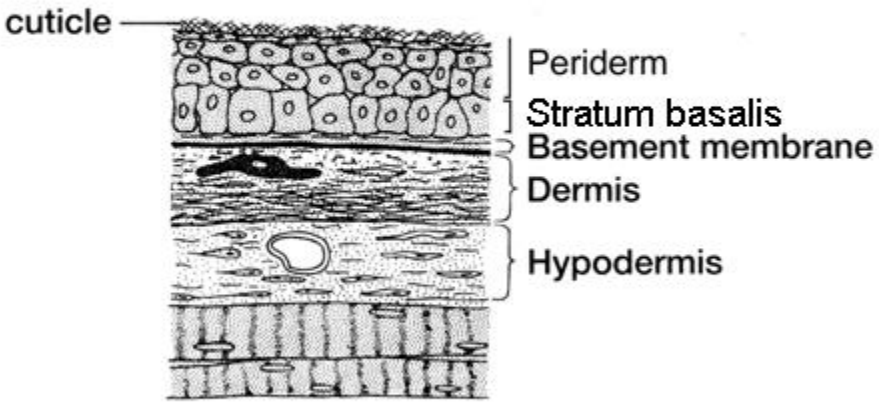
CONFLICT - protection vs flexibility
PERMEABILITY - ADJUSTABLE
- ion and water balance
- gas exchange
- varies with environment - aquatic vs terrestrial

THERMOREGULATION
- control blood flow - heat loss/gain
- sweat
- insulation

SIGNALLING/DEFENCE
- pigments - cryptic/warning for predators
- secretions - pheromones/toxins

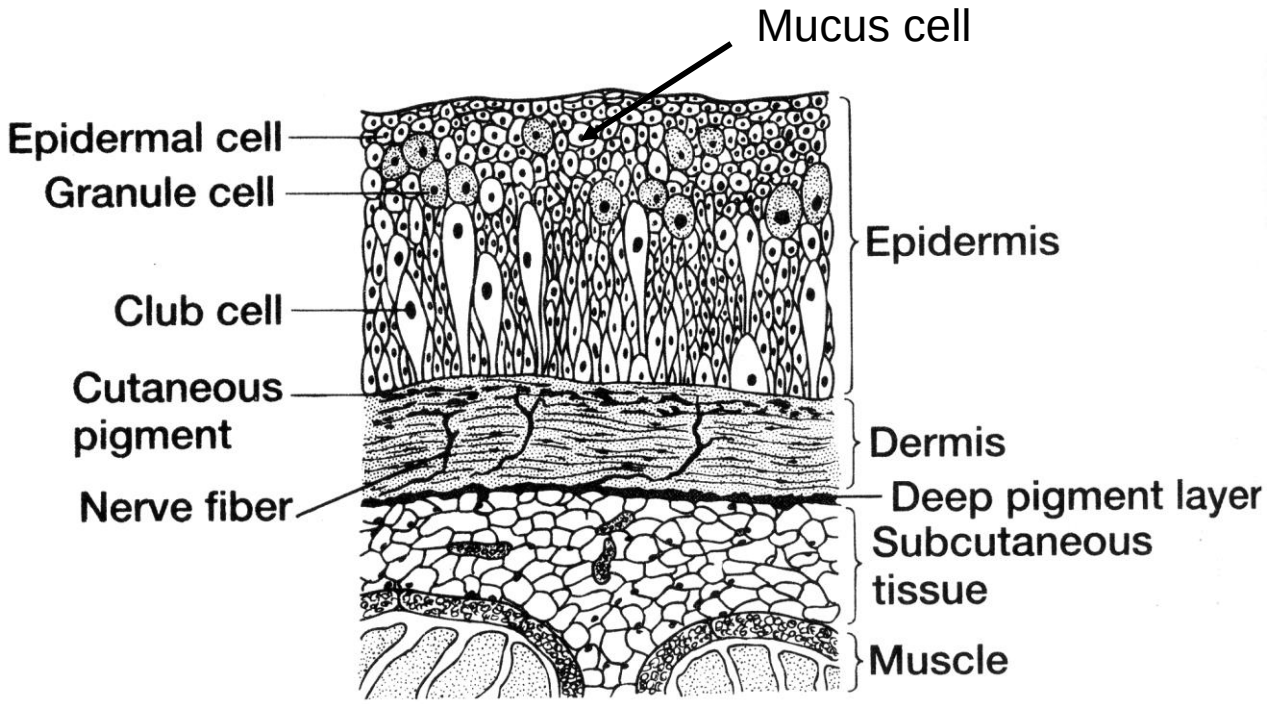
SENSORY
- mechanoreception
- thermoreception

GENERALIZED INTEGUMENT PLAN



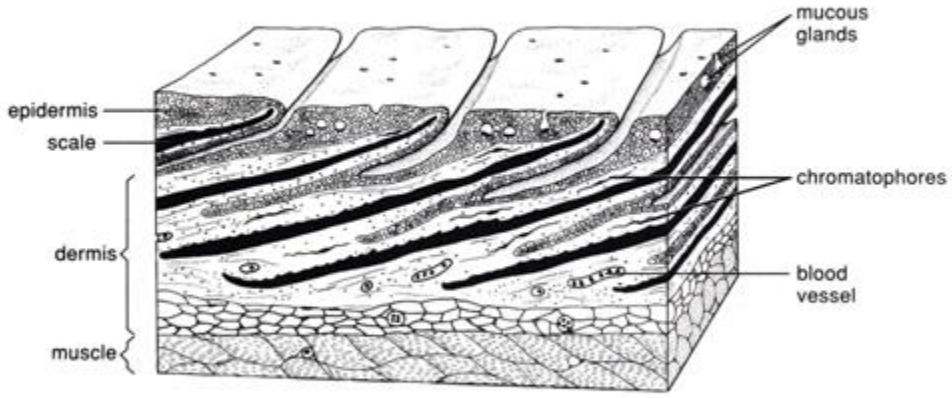
Kardong 6-1

FISH EPIDERMAL CELLS

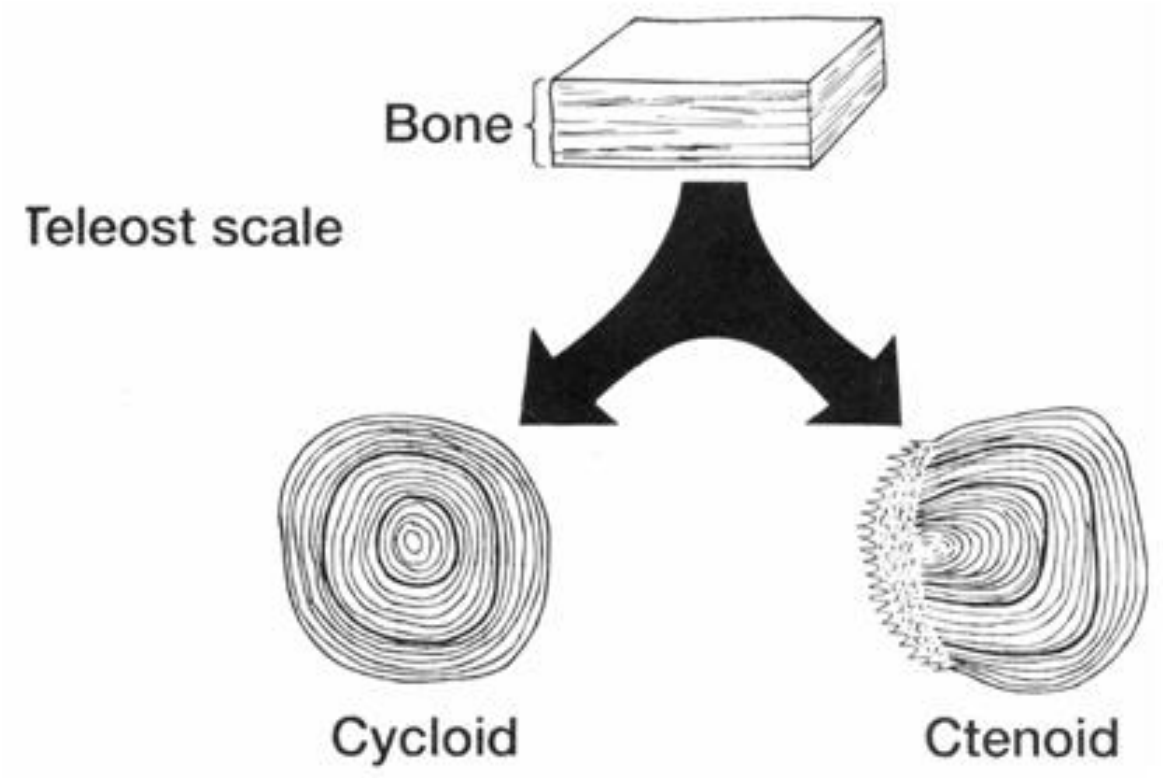


Kardong 6-7

TELEOST DERMAL SCALES

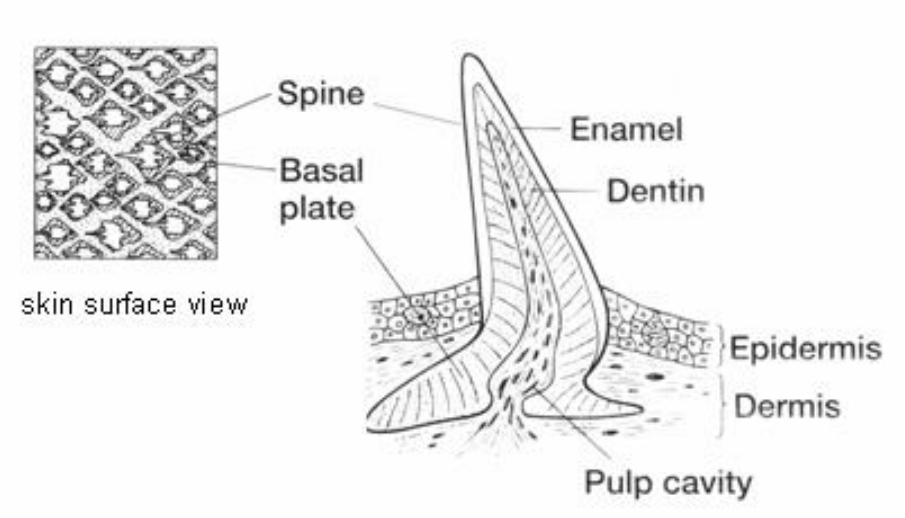


similar to Hildebrand 6-2



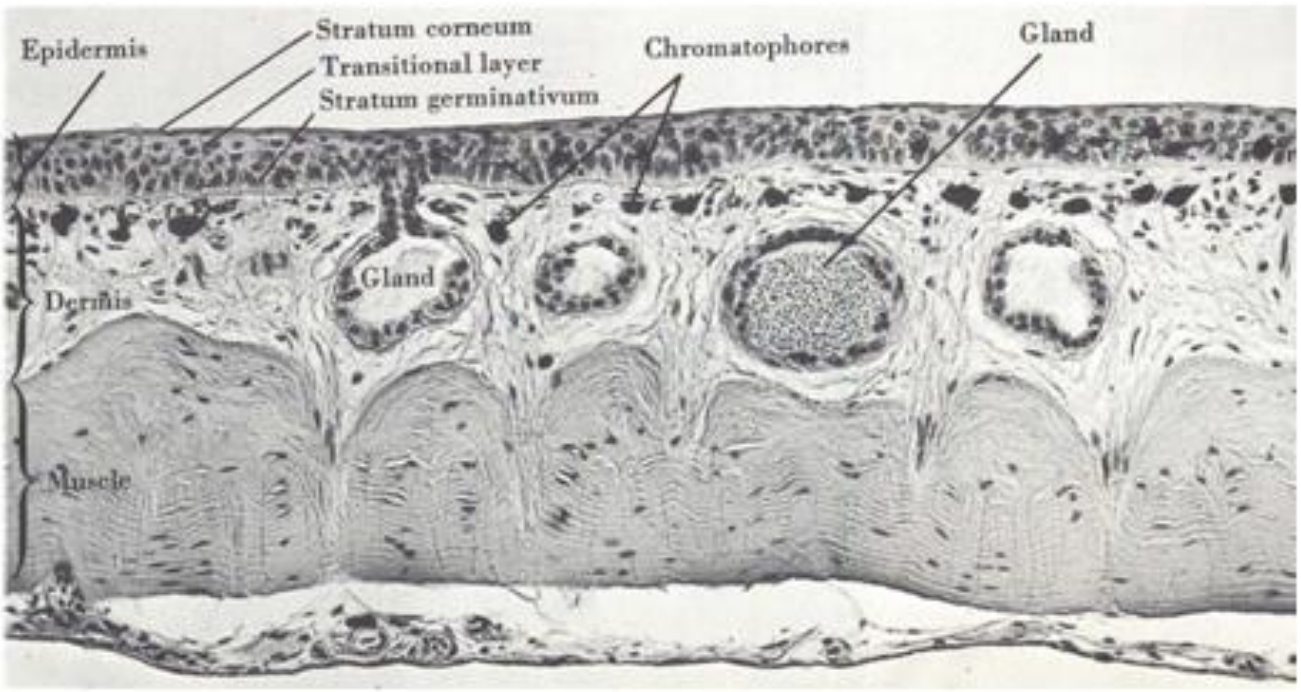
Kardong 6-11

ELASMOBRANCH SCALE - PLACOID SCALE
= DERMAL DENTICLE ("skin tooth")

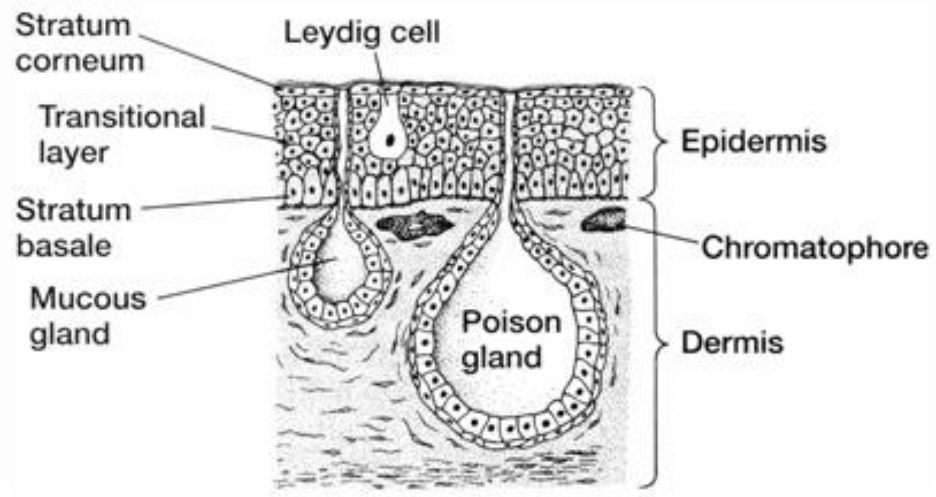


Kardong 6-9

AMPHIBIAN EPIDERMIS - AQUATIC/SEMIAQUATIC FORMS

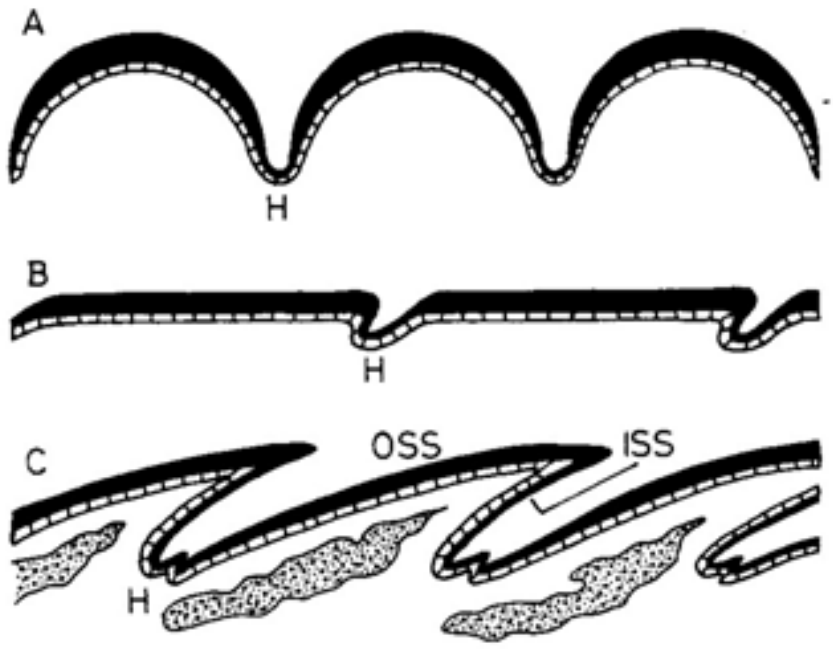


Patt and Patt (1969) f 6-12

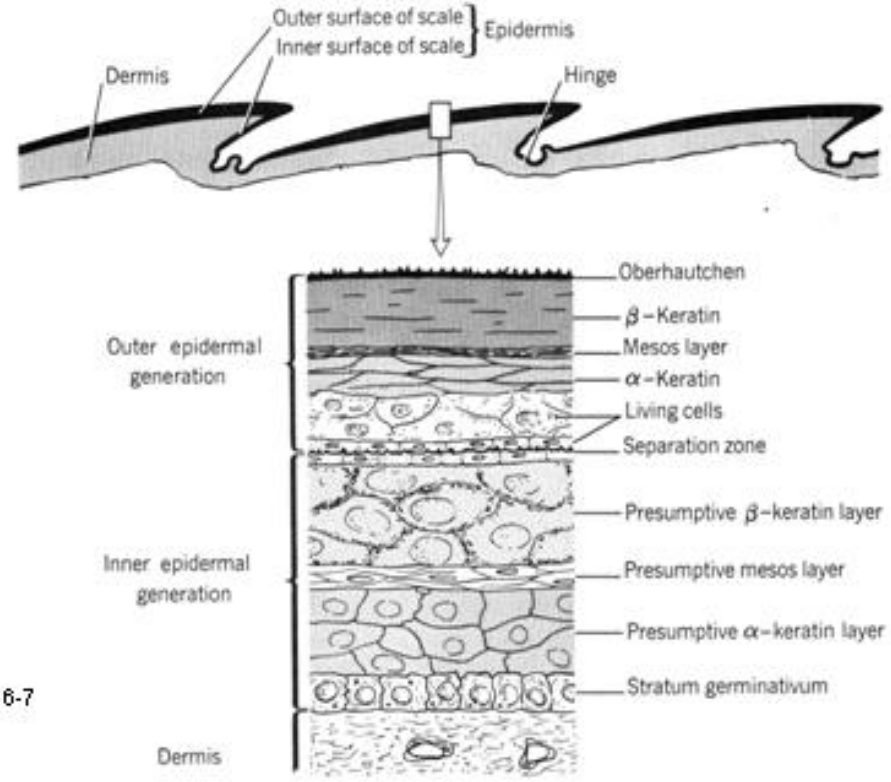


Kardong 6-12

REPTILIAN SCALE PATTERNS

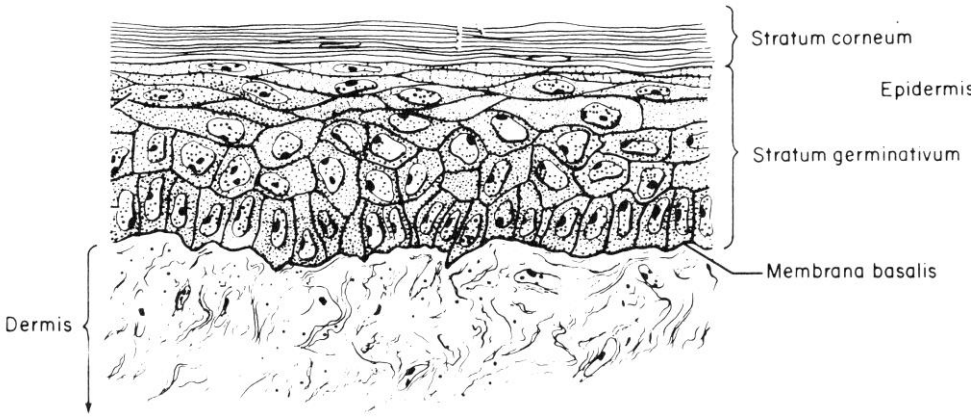


Bereiter-Hahn et al (1984) p 152



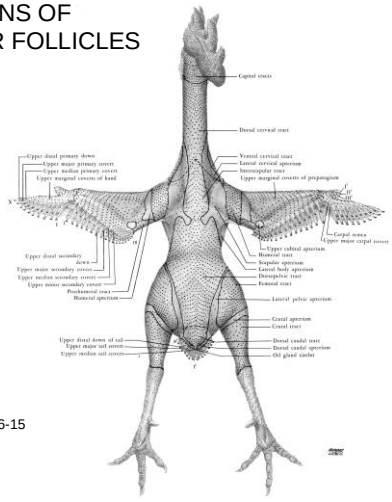
Hildebrand f 6-7

BIRD GENERAL INTEGUMENT ORGANIZATION



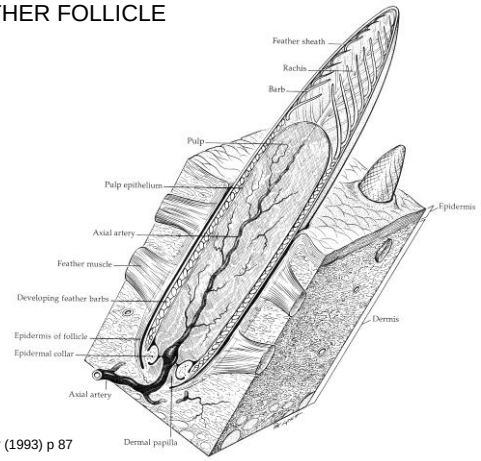
King and McLelland (1979) f 1-2

LOCATIONS OF
FEATHER FOLLICLES

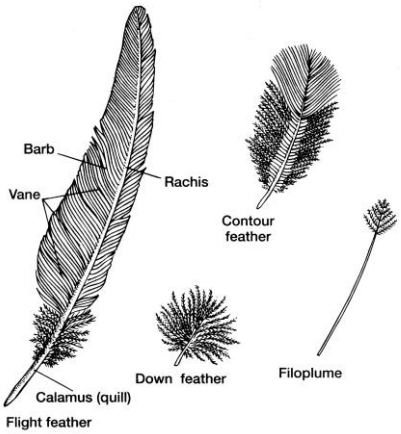


similar to Kardong 6-15

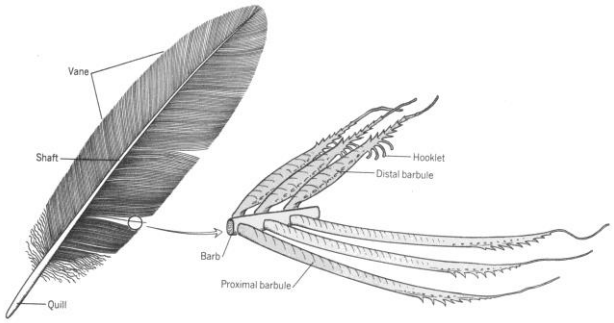
FEATHER FOLLICLE



Proctor (1993) p 87

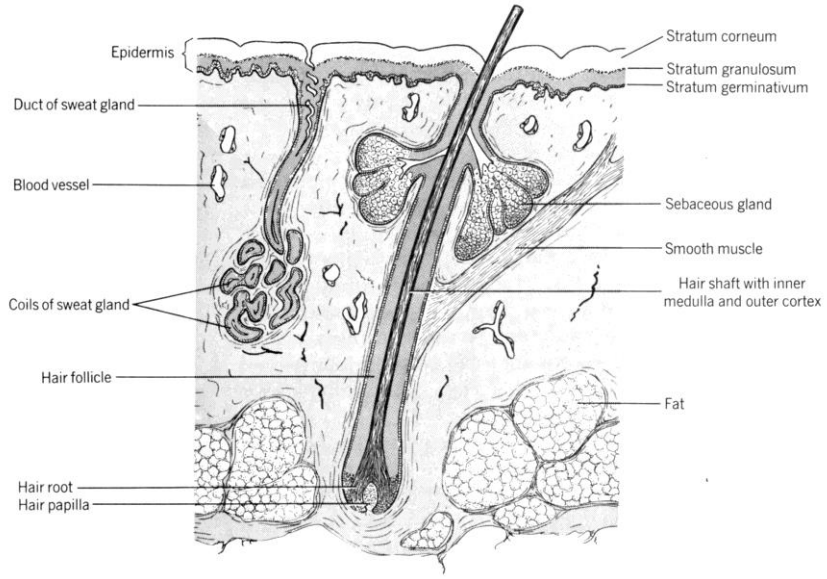


Kardong 6-15

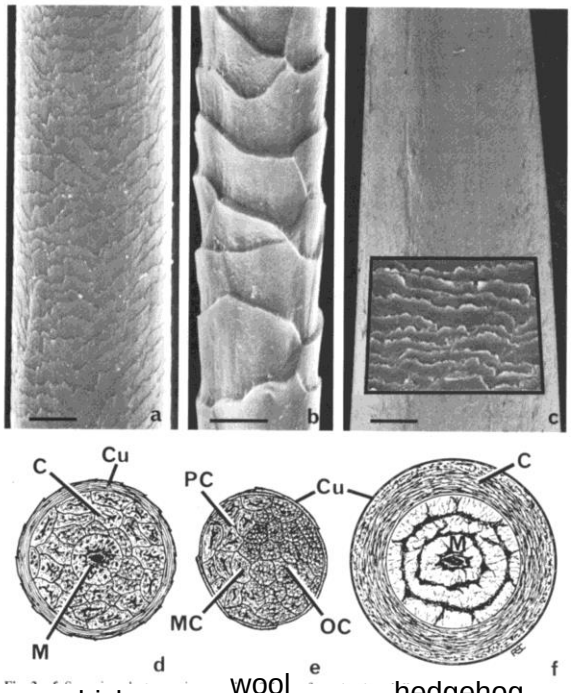


Hildebrand 6-9

MAMMALIAN HAIR FOLLICLE



Hildebrand 6-12



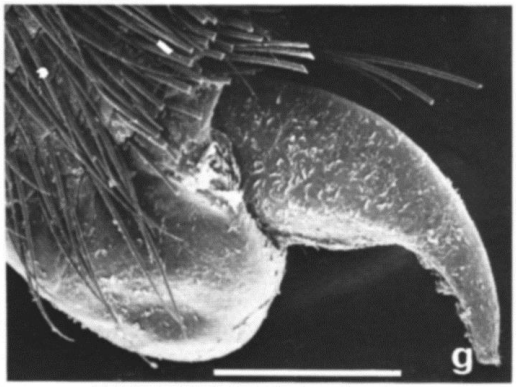
Bereiter-Hahn et al (1984) p 302

whisker

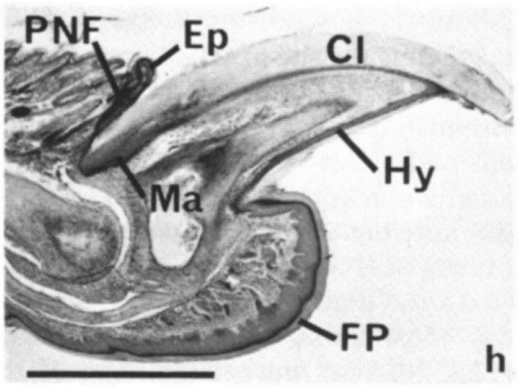
wool fibre

hedgehog spine

MOUSE CLAW



SEM



longitudinal section

Bereiter-Hahn (1984) p 308