

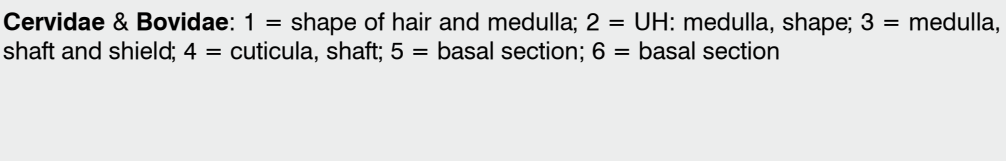
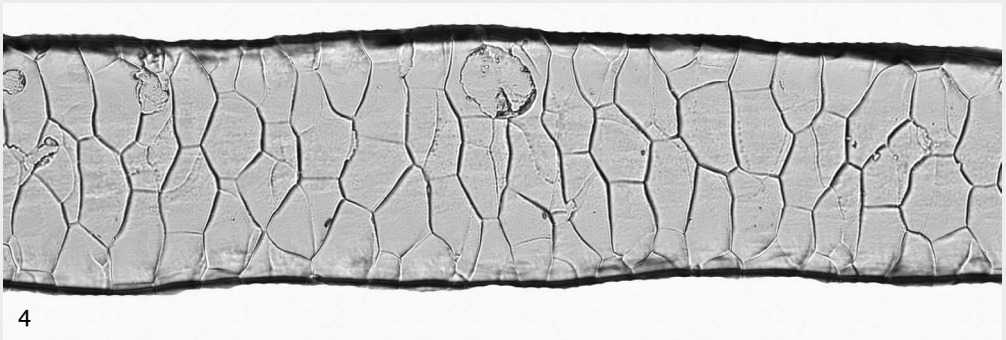
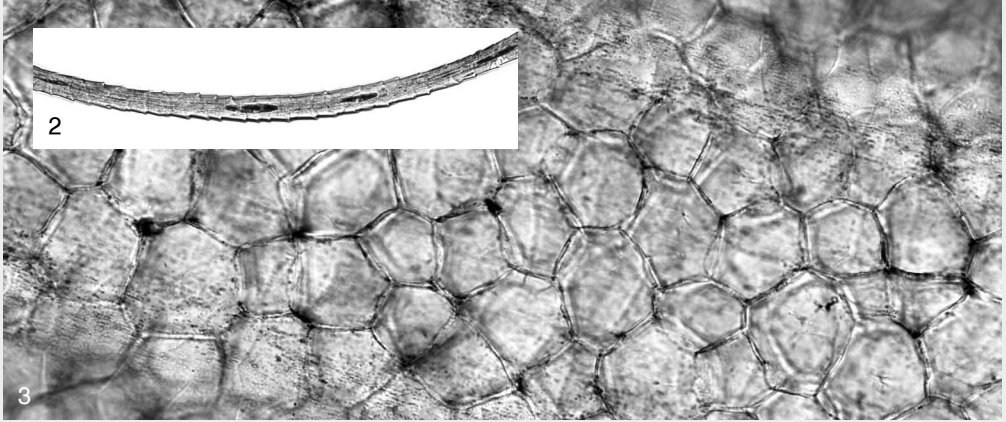
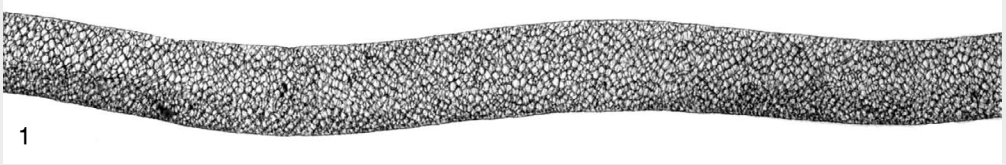
## Cervidae & Bovidae

**FUR:** The fur is coarse and slightly greasy in touch; the ground colour is brown with variable shades. The dorsum is unicolorous, grizzled, mottled or slightly marbled; there are species with masked face and/or contoured rump. The identification of the ruminants is always difficult due to their partially overlapping quantitative and qualitative features, the considerable sexual and seasonal variation, and the different characters of the hairs originating from the different parts of the body. Thus, the species-level separation of the different taxa is often dubious; sometimes, even the generic-level identification is problematic. Melanistic and leucistic animals occur relatively frequently but the albinistic ones are very rare.

**HAIR, MACROSCOPIC:** The hairs are usually fragile; their shape is most often undulating, except the tapering basal and apical sections. The hair is thinner and less undulate in summer than in winter. The GH1 is thicker, more undulating than the GH2. The GH on the ventral and lateral sides of the body is unicolorous. The GH most often banded; the band is very short. The tip is most often abruptly tapering, long. The UH is crispy or undulate.

**HAIR, MICROSCOPIC:** The GH of the Cervidae and Bovidae shows similar macro- and microstructure. The bulb is knobby. The basal part is most often bottleneck-shaped but the GH2 type hairs might have tubular type. The cuticular pattern of GH is meshed mosaic on the shaft and sometimes on the shield; figureless, irregularly waved or sketched on the apical part. The surface of the scales is often scratched. The medulla is spongoid multiserial on shaft, the transit and the proximal shield; porous tubular or foamy multiserial on the distal shield; porous, colonnade or fragmented tubular on the apical section. The shape and size of the medullar cells and the ultrastructures of the septums within and between the cells are strongly variable. The medullar cells are usually larger on the shaft, the transit and proximal shield, their shape is rounded or isodiametric; smaller, polygonal, transversally elongated on the distal shield. The medullar cells arrange in more or less regular rows; the number of the rows and the size of the cells may vary seasonally and may exceed 10 in the shield. The cortex is most often rather thin on the transit and proximal shield. The pigments arrange usually diffusely and concentrate in the medulla. The tip is mostly gradually tapering, but can be abruptly one and long. The medulla of the UH hair is fragmented or absent; the cuticular pattern of UH is rhomboidal or mosaic. The cross-section is variable along the stem due to the constrictions and flat sections of the undulate hair; it is most often circular and oblong, but the distal shield of GH2 may be slightly biconcave, biconvex or concave-convex.

**SIZE:** The medullary index shows high variability, which depends on the species and changes often seasonally:  $m/d_x = 0.45-0.95$ .



**Cervidae & Bovidae:** 1 = shape of hair and medulla; 2 = UH: medulla, shape; 3 = medulla, shaft and shield; 4 = cuticula, shaft; 5 = basal section; 6 = basal section