

# Morphological study of the Forestomach of the Japanese Serow (*Capricornis crispus*)

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## Abstract

Details of the morphology of the forestomach of the Japanese serow (*Capricornis crispus*) were examined macroscopically, and by light and scanning electron microscopy. The rumen was sac-like in shape, and the right accessory longitudinal groove was not visible externally. The reticulum was relatively small, while the omasum was oval and large. Inside the rumen, even in the dorsal sac, the ruminal papillae were densely distributed, although absent on the pillars. The caudodorsal coronary pillar was indistinct. In the ruminoreticular fold, ruminal papillae were observed even on the reticulum side. In the reticulum, the primary reticular fold was apparent and the ill-defined secondary folds were also detected in some reticular cells. In the omasum, the omasal laminae of four sizes were recognized. The fourth order of laminae was occasionally absent. Histological sections of ruminal papillae revealed that softly keratinized epithelium covered the entire ruminal mucosa. In the reticulum, soft keratinized epithelium was observed throughout, with the exception of the tips of reticular papillae on which the epithelium showed evidence of hard keratinization. The epithelium of the omasal laminae was moderately keratinized. On the floor of the reticular groove, interlaminae area and in the omasal groove, the accumulations of numerous eosinophilic cells were observed in the superficial region. Under the scanning electron microscope, shallow transverse grooves were seen on the surface of the ruminal papillae. In general, the surface structure seemed to be similar to that of sheep rather than cattle. Cellular formations of the collagen fibrils were observed at the subepithelial region. In conclusion, examination of the forestomach allows classification of the Japanese serows as requiring an intermediate type of feeding habit and being between concentrate selectors and grass-roughage eaters from a morphological view.