

## Gross Anatomy of the Blue Wildebeest Stomach (*Connochaetes taurinus* Burchell, 1823)

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### Abstract

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Wildebeests, also called gnus, are antelopes belonging to the genus *Connochaetes* of the family Bovidae. The macroscopic anatomy of the stomach of an adult blue wildebeest (*Connochaetes taurinus*), was studied. The stomach of the blue wildebeest was composed of the four classic compartments of the ruminants. The weight of the full stomach was 47.0 kg. The ruminal papillae were distributed unevenly in the rumen. The maximum height of the *Cristae reticuli* was 0.7 cm. The *Cellulae reticuli* were divided and contained secondary and tertiary crests. The *Curvatura omasi* measured 41.5 cm and the omasum had 12 primary, 12 secondary, 21 tertiary and 16 quaternary *Laminae omasi*. The abomasum had about 16 *Plicae spirales abomasi*. We concluded that the stomach morphology of the blue wildebeest had characteristics of the other grazing feeders, i.e. ruminants, so we considered it as a 'cattle-type' ruminant.

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### Introduction

The classification of ruminants into three groups according to their feeding types (browsers, intermediate feeders, grazers) has been linked to anatomical studies, mainly of African, European, and North American species (Hofmann & Stewart, 1972; Hofmann, 1973, 1988), and two digestion types are proposed by Clauss *et al.* (2010): the 'moose-type' and the 'cattle-type'. Moose-type ruminants are browsers, whereas cattle-type ruminants are intermediate feeders or grazers (Codron & Clauss, 2010).

Some important morphological differences between moose-type and cattle-type ruminants are associated with the rumen. The moose-type's ruminal mucosa shows papillation homogeneously distributed over the whole surface, while the papillation in the cattle-type

ruminal mucosa is more heterogeneous (Hofmann, 1989; Clauss *et al.*, 2009). The uneven papillation is an indication for stratified rumen contents, which are seen in cattle-type ruminants, (Clauss *et al.*, 2009; Codron & Clauss, 2010).

The second compartment of the stomach of ruminants, the reticulum, the organ of classification, directs the larger floating particles to the rumen, and the finer and denser particles along with the fluids towards the omasum. Its light disappeared in this last stage in the case of cattle. The height of the reticular crests and consequently the depth of the cells have great variation among ruminant species. Grazing ruminants generally have higher reticular crests than browsers and secondary, tertiary and even more pronounced quaternary crests (Hofmann, 1973; Langer, 1988). Hofmann (1973, 1989)