

# MORPHOMETRY OF THE HEART OF THE SILVER FOX (*VULPES VULPES VAR*)

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**Introduction:** The literature provides a lot of publication relating to heart morphometry and morphotypes of various species. Among carnivores, these issues are more thoroughly discussed in relation to the domestic dog and cat. However, there are no similar analysis for other representatives of that group of animals. The initial own observations are a completing material in comparative anatomy.

**Aim:** The aim of this study was to provide a detailed morphomertry of the heart of the silver fox.

**Material and methods:** The study was conducted on 32 corpses of the silver fox. The bodyweight (BW) was determined with the use of MENSOR WM150P1 animal weigh scales. The isolated hearts underwent detailed anatomical preparation. The pericardium was cut at the heart base and all the vascular trunks were removed (i.e. the ascending aorta, pulmonary trunk, pulmonary veins, cranial vena cava, caudal vena cava). The preparation were preserved in a solution of 10% formaldehyde and 0.25% ethanol for a period of approximately six weeks. The heart weight (HW) was determined with the use of AXIS AD2000 laboratory scales and the accuracy of 0.01g. Morphometry was performed using an operating microscope with integrated video channel and software for image metric analysis, based on the determined fixed points of reference. The following elements were determined: the heart height (H), i.e. the maximum length between the apex and the basis of the heart and the heart width (W), i.e. the maximum length between the left ventricular border and the right ventricular border (fig. 1). Basing on the obtained data an index was calculated that determined the percentage share of the heart weight in relation to the body weight  $I_1 = HW/BW$ .

**Results:** In the studied material the heart height (49.60 mm - 61.76 mm) of all specimens is greater than the heart width (36.01 mm - 46.78 mm). The studied group of silver foxes, the mean body weight was 5187.5 g, while the average heart weight was 44.90 g. The percentage ratio of the heart weight in the body weight (I1) was 0.87. In the case of silver fox as in many other animal species, there was no significant difference between males and females. An example could be the domestic dog, in which the relative heart weight is between 0.64 - 0.78. According to the literature, the mean relative heart weight of a domestic cat is 0.55 for males and 0.51 for females.

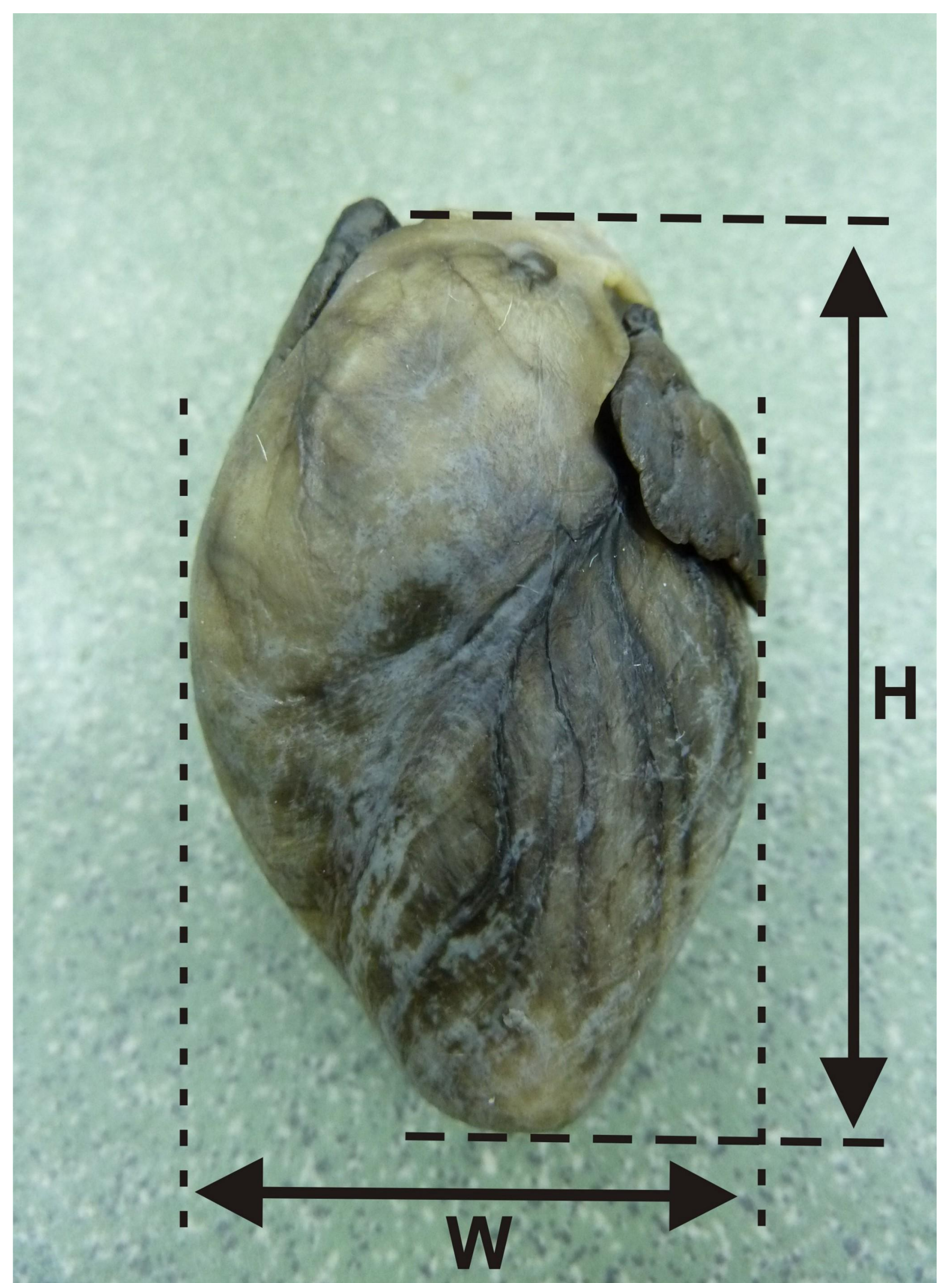


Fig. 1. Auricular surface. Measurement schemes: H – heart height, W – heart width