

# Morphological aspects of the pelvic cavity in european badger (*Meles meles*)

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**Abstract:** The gross anatomical techniques were used in the study and description of the morphological aspects of the pelvic cavity in three cadavers of european badger (*Meles meles*). The pelvic cavity is framed by the sacrum dorsally, and the hip bones ventrolateral. The sacrum consists of three fused vertebrae whose spinous processes are not united. The gluteal surface of the wing of ilium is deep, while the sacropelvic surface is planiform. The greater ischiadic notch has two parts. Acetabulum is rounded and the acetabular notch very large. Obturator foramen resemble a bean-shaped contour. The ischiadic arch is convex and the ischial tuberosity doubled. The body of the ischium is twisted and the lesser ischiadic notch is linear.

The badger's pelvic cavity showed different characteristics compared with the pelvis of other carnivores.

**Keywords:** morphology, european badger, pelvic cavity.

## Introduction

The european badger (*Meles meles*) is an omnivore mammifer enclosed in the group of Mustelidae together with the otters, wolverines, minks, martens, polecats, ferrets and weasels. It can be found in whole Europe, as well in USA, in far East Asia and Arabian desert.

In Romania the badger is found in whole country and the national legislation protects this animals.

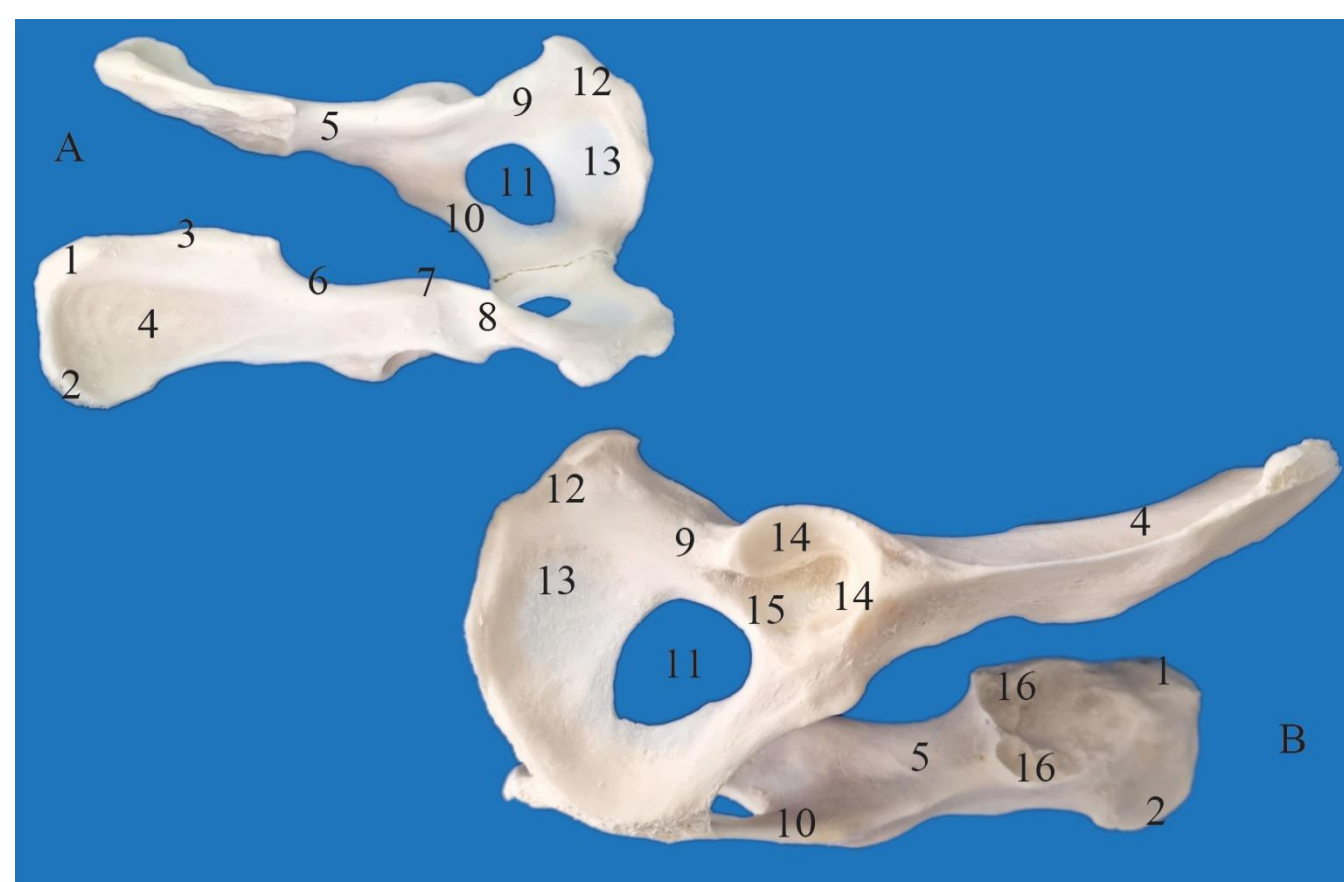
Some studies investigated the axial skeleton and some organs of the digestive apparatus in European badger.

The aim of the study was to describe the hip bones and the sacrum in this specie, serving for identification of the animal in case of litigations.

This findings will contribute to the improving of the current knowledge related to the axial and appendicular skeleton in badger.

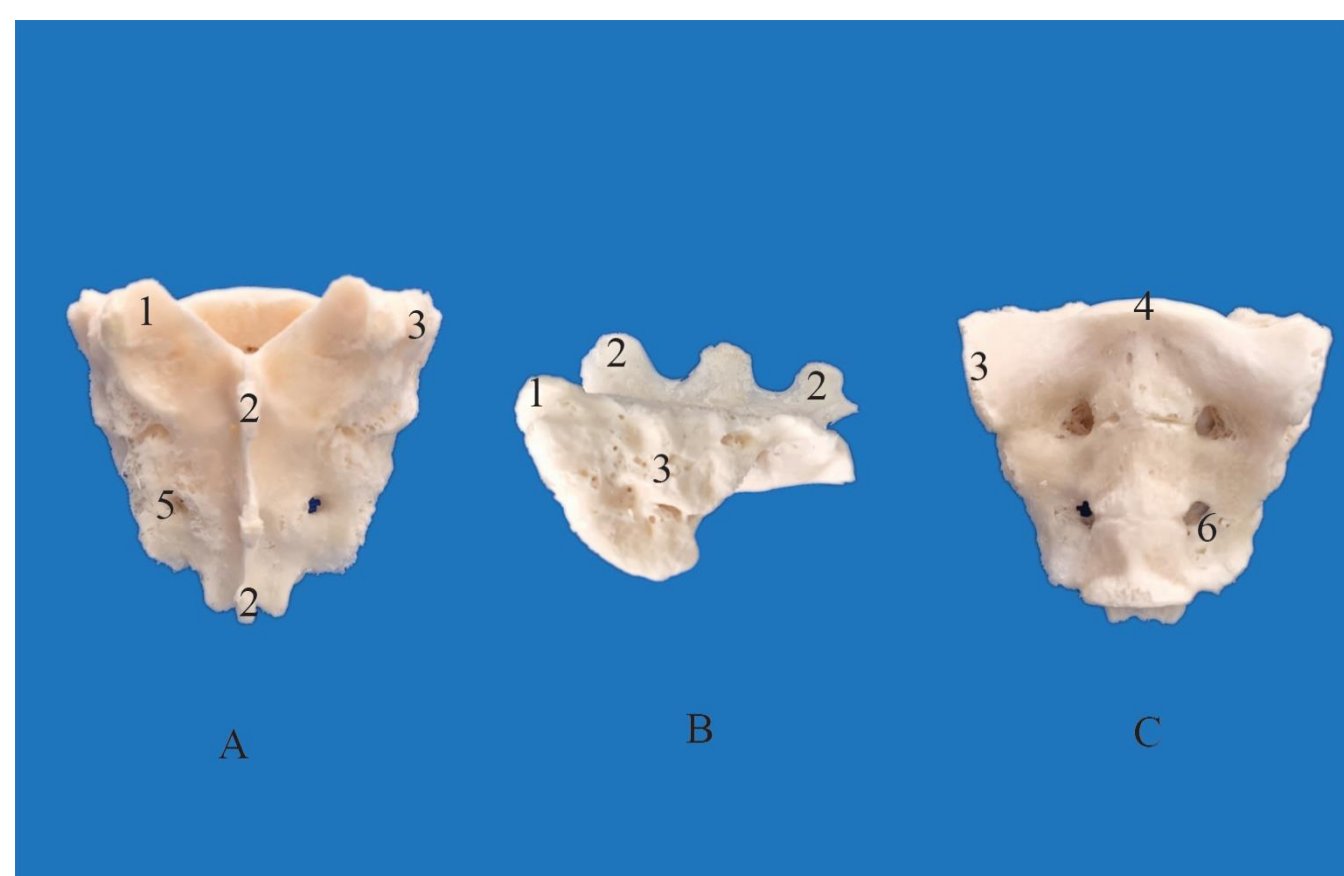
## Material and method

In this study were used the pelvic bones from three cadavers of european badger (*Meles meles*). The materials were prepared according with the gross anatomical techniques. The resulted bones were described and interpreted in relation with the NAV (2017) and correlations with the specific literature were made.



**Fig. 1 Dorsolateral (A) and ventrolateral (B) view of the hip bones in badger (*Meles meles*)**

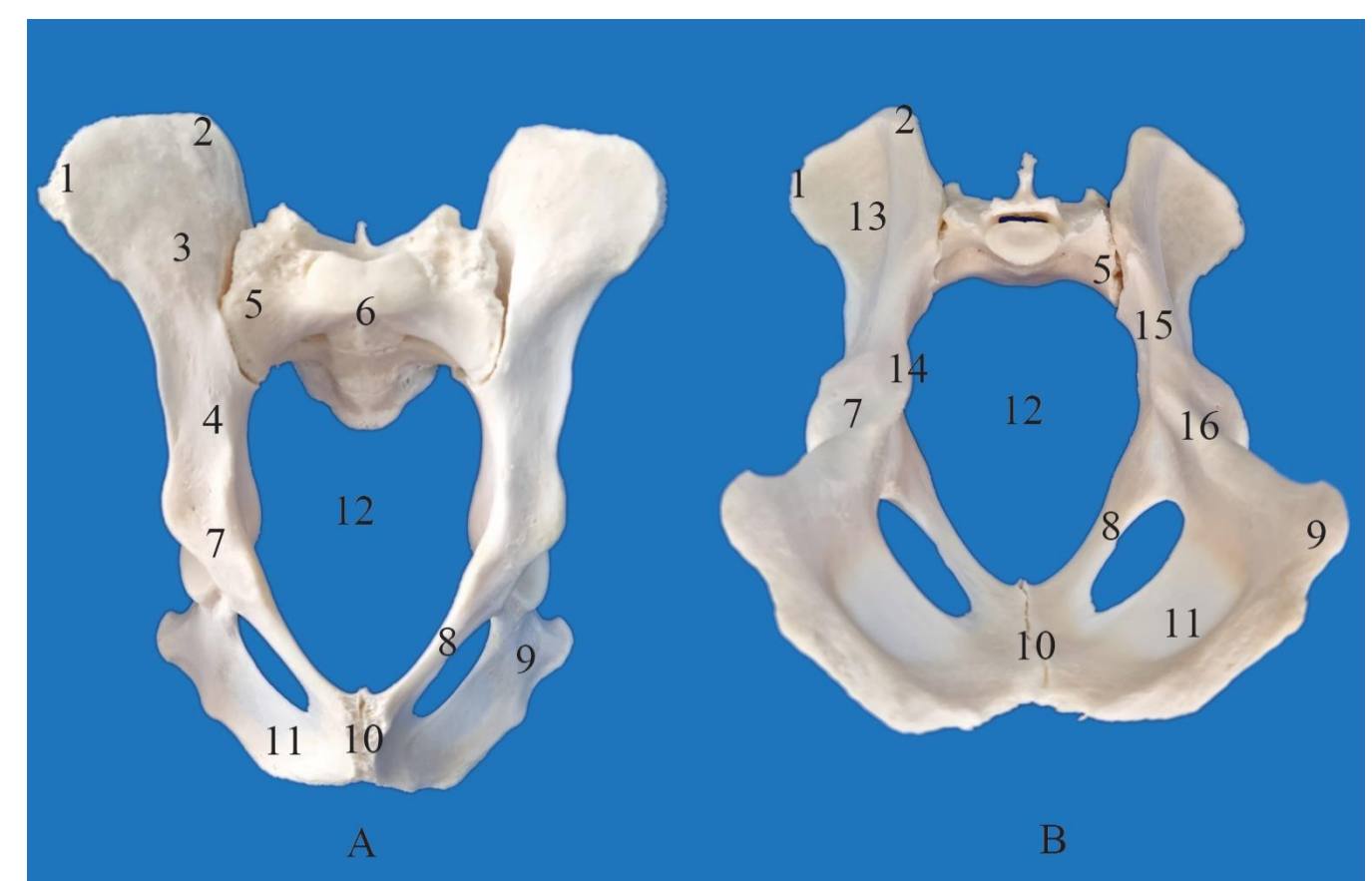
1. Iliac crest; 2. Coxal tuberosity; 3. Sacral tuberosity; 4. Gluteal surface; 5. Shaft of ilium; 6. Greater ischiadic notch; 7. Ischiadic spine; 8. Acetabulum; 9. Lesser ischiadic notch; 10. Shaft of the ischium; 11. Shaft of the pubis; 12. Obturator foramen; 13. Ischial tuberosity; 14. Ischial plate; 15. Articular surface; 16. Auricular surface.



**Fig. 2 Dorsal (A), lateral (B) and ventral (C) view of the sacrum in badger (*Meles meles*)**

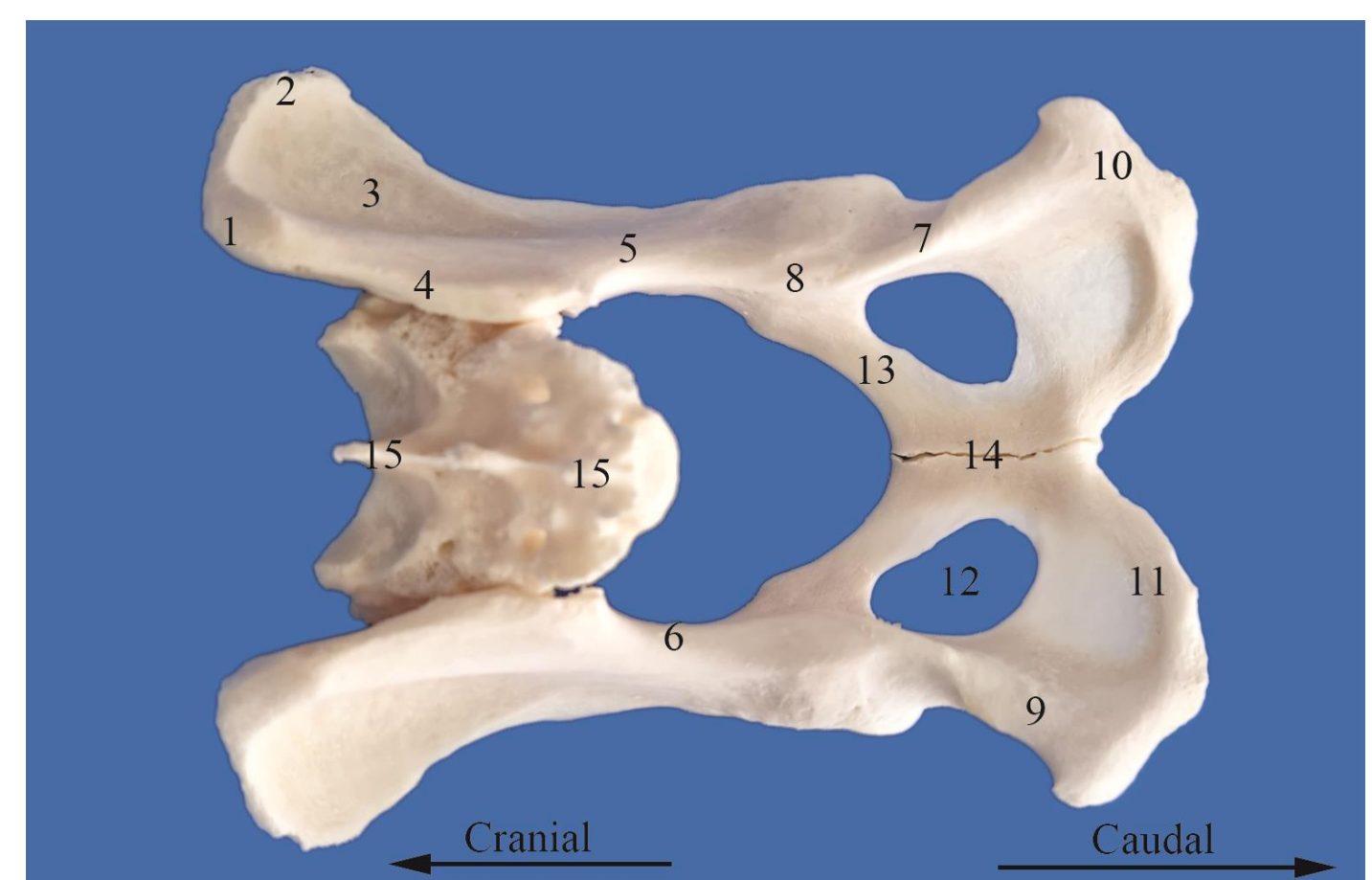
1. Cranial articular process; 2. Spinous processes; 3. Wing; 4. Promontorium; 5. Dorsal sacral foramen; 6. Ventral sacral foramen.

## Results and discussions



**Fig. 3 Cranial (A) and caudal (B) view of the pelvic cavity in badger (*Meles meles*)**

1. Coxal tuberosity; 2. Sacral tuberosity; 3. Sacropelvic surface; 4. Shaft of ilium; 5. Wing of sacrum; 6. Promontorium; 7. Acetabulum; 8. Shaft of the pubis; 9. Ischial tuberosity; 10. Pelvic symphysis; 11. Ischial plate; 12. Cranial aperture of the pelvis; 13. Gluteal surface; 14. Ischiadic spine; 15. Greater Ischiadic notch; 16. Lesser Ischiadic notch.



**Fig. 4 Dorsal view of the pelvic cavity in badger (*Meles meles*)**

1. Iliac crest; 2. Coxal tuberosity; 3. Gluteal surface; 4. Sacral tuberosity; 5. Shaft of ilium; 6. Greater ischiadic notch; 7. Lesser ischiadic notch; 8. Ischiadic spine; 9. Ischial plate; 10. Ischial tuberosity; 11. Ischiadic arch; 12. Obturator foramen; 13. Shaft of the pubis; 14. Pelvic symphysis

## CONCLUSIONS

- ✓ The sacrum consists of three fused vertebrae whose spinous processes are not fused and decrease in caudal direction.
- ✓ The shaft of ilium is three-faced on cross-section, the gluteal surface of the wing of ilium is deep and wide, while the sacropelvic surface is planiforme.
- ✓ The greater ischiadic notch consists of a short cranial part and a long caudal part.
- ✓ The acetabular notch is very large.
- ✓ Obturator foramen presents a bean-shaped contour.
- ✓ The ischiadic arch is convex and the ischial tuberosity doubled. The body of the ischium is twisted and the lesser ischiadic notch is linear.