

Travaux du Muséum National d'Histoire Naturelle «Grigore Antipa»	Vol. XLIX	pp. 383–386	© Octobre 2006
---	-----------	-------------	-------------------

**MORPHOLOGY OF THE COXAL BONE IN *LONCHOPHYLLA*  
*MORDAX* THOMAS, 1903 (CHIROPTERA: PHYLLOSTOMIDAE)**

NĂSTASE RĂDULEȚ

**Abstract.** The coxal bone in *Lonchophylla mordax* Thomas, 1903 (Chiroptera: Phyllostomidae: Lonchophyllinae) is described hereinafter. The material was collected from Serra do Veado – Amapa (Brazil) on 6th of May 1994. Having a characteristic structure, useful in identifying the species, the coxal bone can be used for completing the identification keys for the South American chiropterans. The paper is necessary for the mammalogists, ornithologists and paleontologists.

**Résumé.** On présente l'os coxal de *Lonchophylla mordax* Thomas, 1903 (Chiroptera: Phyllostomidae: Lonchophyllinae). Le matériel a été capturé à Serra do Veado – Amapa (Brésil), le 6 mai 1994. Ayant une structure caractéristique, utile en identifiant les espèces, l'os coxal peut être utilisé dans les clefs d'identification pour les chiroptères sud-américains. Le travail est nécessaire pour les mammalogistes, les ornithologistes et les paléontologistes.

**Key words:** coxal bone, morphology, description, Mammalia, Chiroptera, Phyllostomidae, *Lonchophylla mordax*.

For the species identification and systematical classification, the scientists used especially the phenotypical, genetical and serological characteristics.

Miller (1912), Grassé (1955 a, b), Eisenberg (1989) Topál (1969) (for chiropterans), Pucek (1981) made drawings of the skull, mandible in different genera, mammal species but without underlining the morphological differences between them.

Grassé (1967) made a detailed comparative study of the pelvic region and he also illustrated the coxal bone in different mammal genera.

Several studies of comparative anatomy refer to: the skull and cervical region in *Blarina brevicauda* (Say, 1823) and *Scalopus aquaticus* (Linnaeus, 1758) - George & Gaughran (1954); the spine - Dornescu & Nițescu (1965), Nițescu (1966); pelvic girdle - Heráň (1968); turbinated bones – Andreescu-Nițescu (1970); the small mammal skeleton – Nițescu-Andreescu (1971); the shoulder blade - Žalman (1971); postcranial skeleton - Červený & Žalman (1974), Červený (1978); mandible in 30 Romanian mammal species - Răduleț (2005). Measurements of the coxal bones were also made by Heráň (1967).

Răduleț (2003) described the coxal bone in 11 Romanian bat species, and Răduleț & Murariu (2000) presented the coxal bone, too, but in six South-American bat species. Thus, the present studies complete the previous researches on the coxal bone in bats (Mammalia, Chiroptera) from Brazil (South-America).

*MATERIAL AND METHOD*

Studied bat specimens were collected by the author during the expedition of “Grigore Antipa” National Museum of Natural History (Bucharest) made in Brazil (1994). The material was captured in Serra do Veado – Amapa (Brazil) on the 6<sup>th</sup> of

May 1994. Coxal bones were obtained by maceration, mechanical cleaning and treating with oxygenated water. The examination was made using the stereomicroscope, and the drawings using *camera lucida*. For this papers I had two specimens of *Lonchiphilla mordax* Thomas, 1903. The nomenclature is after "Nomina anatomica veterinaria" - Červený (1978); Tudor & Constantinescu (2002).

Abbreviations:

<i>corpus ossis ilii</i>	COI
<i>eminentia iliopubica</i>	EIP
<i>facies glutea</i>	FG
<i>facies lunata</i>	FL
<i>fossa acetabuli</i>	FA
<i>foramen obturatum</i>	FO
<i>incisura praeacetabularis</i>	IPA
<i>ramus caudalis ossis pubis</i>	RCOP
<i>ramus ossis ischii</i>	ROI
<i>tabula ossis ischii</i>	TAI
<i>tuber ischiadicum</i>	TI

RESULTS AND DISCUSSIONS

Family Phyllostomidae Gray, 1825

Subfamily Loncophyllinae Griffiths, 1982

Genus *Lonchophylla* Thomas, 1903

From the 7 present species of the genus I present the coxal bone of *Lonchophylla mordax* Thomas, 1903 (Fig. 1), distributed from Costa Rica to Ecuador, eastern Brazil, probably in Peru and Bolivia.

Coxal bone has: *facies glutea* (FG) slightly convex; *eminentia iliopubica* (EIP) is like a vertical elongated spine, in lateral view, and in the anterior view has the tip slightly flattened; *incisura praeacetabularis* (IPA) is oval; *corpus ossis ilii* (COI) prominent; *fossa acetabuli* (FA) deep; *facies lunata* (FL) horseshoe-shaped with the anterior and posterior horn well individualized; *foramen obturatum* (FO) sac-shaped; *ramus caudalis ossis pubis* (RCOP) thinner and thinner from EIP downwards; *ramus ossis ischii* (ROI) like a slightly convex blade; *tabula ossis ischii* (TAI) with a rugged surface; *tuber ischiadicum* (TI) rounded.

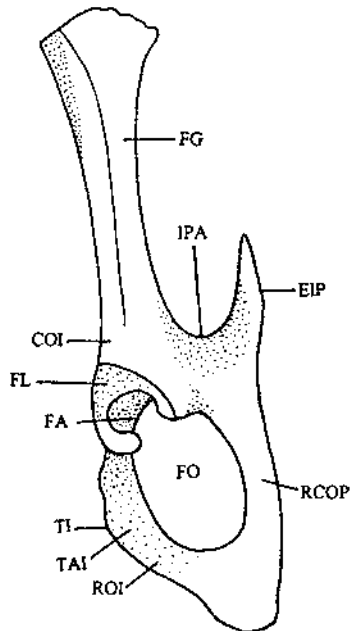


Fig. 1 – External lateral view of the coxal bone in *Lonchophylla mordax* Thomas, 1903.

Conclusions

As in the other mammals, the main parts of the coxal bone (EIP, COI, IPA, FA,

FG, FL, FO, RCOP, ROI, TAI) are characteristic to each species. The illustration of the coxal bone morphology in *Lonchophylla mordax* Thomas, 1903 completes the studies on the phenotypical features of the species and enrich the identification keys of the Brazilian chiropterans (South-America). The paper is necessary to the mammalogists, ornithologists and paleontologists.

## ACKNOWLEDGEMENTS

The author sincerely thanks to the referees and Mrs Aurora Dinu for tracing the drawing in China ink.

MORFOLOGIA OSULUI COXAL LA SPECIA *Lonchophylla mordax* THOMAS, 1903 (CHIROPTERA: PHYLLOSTOMIDAE)

## REZUMAT

În lucrare este descris osul coxal de la specia *Lonchophylla mordax* Thomas, 1903 (Mammalia: Chiroptera). Materialul a fost colectat de la Serra do Veado – Amapa (Brazilia) la data de 6 mai 1994. Prezentul studiu vine să completeze cercetările privind caracterele fenotipice ale speciei și fac posibilă îmbogățirea cheilor de determinare pentru chiropterele din America de Sud. Lucrarea este necesară mamalogilor, ornitologilor și paleontologilor.

## LITERATURE CITED

- ANDREESCU-NIȚESCU, I., 1970 - Étude comparative des cornetes nasaux chez: *Talpa europaea* L., *Crocidura leucodon* Herm., *C. suaveolens* Pall., *Sorex araneus* L., et *Neomys fodiens* Schreb. (Ord. Insectivora) de Roumanie. Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 10: 359–363.
- ČERVENÝ, J., 1978 – Comparative anatomy of large bones in three models of european bats (*Rhinolophus*, *Myotis*, *Tadarida*). Vestník Československé Společnosti, Zoologické, 42 (3): 161–171.
- ČERVENÝ, J., J. ŽALMAN, 1974 - Diagnostické znaky na kostech přední končetiny vrápenců. Lynx, ser. nov., 16: 86–100. Praha.
- DORNESCU, TH., I. NIȚESCU, 1965 – Anatomie comparée de la colonne vertébrale chez plusieurs especes de rongeurs de Roumanie. Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 5: 423–441.
- EISENBERG, J. F., 1989 – Mammals of the Neotropics. The University of Chicago Press. Chicago and London, 1: 449 pp.
- GEORGE, R., L. GAUGHRAN, 1954 – A comparative study of the osteology and myology of the cranial and cervical regions of the shrew, *Blarina brevicauda*, and the mole, *Scalopus aquaticus*. Miscellaneous. Michigan, 80: 82 pp.
- GRASSÉ, P., 1955 a – Traité de zoologie. Anatomie, systematique, biologie. Mammifères. Libraires de l'Academie de Médecine. Paris, 17 (1): 1167 pp.
- GRASSÉ, P., 1955 b – Traité de zoologie. Anatomie, systematique, biologie. Mammifères. Libraires de l'Academie de Médecine. Paris, 17 (2): 2285 pp.
- GRASSÉ, P., 1967 – Traité de zoologie. Anatomie, systematique, biologie. Mammifères. Libraires de l'Academie de Médecine. Paris, 16 (1): 1162 pp.
- HERÁŇ, I., 1967 – K rozdílu v morfologii pánce sviště horského (*Marmota marmota* L.) veverka obecné (*Sciurus vulgaris* L.) a sysla obecného (*Citellus citellus* L.). Lynx, ser. nov., 8: 7–14. Praha.
- HERÁŇ, I., 1968 - Diagnostické znaky na pánevích šelem. Lynx, ser. nov. 9: 25–33. Praha.
- MILLER, G. S., 1912 – Catalogue of the Mammals of Western Europe (Europe exclusive of Russia) in the Collection of the British Museum, London: 1019 pp.
- NIȚESCU, I., 1966 – Anatomie comparée de la colonne vertébrale chez *Ondatra zibethica* L., *Apodemus agrarius* Pall. et *Spalax leucodon* Nordmann. Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 6: 345–356.
- NIȚESCU-ANDREESCU, I., 1971 – Contributions à l'étude de la morphologie du squelet des Mammifères de petite taille. Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 11: 417–427.

- PUCEK, Z., 1981 – Key to vertebrates of Poland Mammals. PWN – Polish Scientific Publishers, Warszawa. 367 pp.
- RĂDULEȚ, N., 2003 – Contributions to the morphological study of the coxal bone of 11 bat species (Mammalia: Chiroptera) from Romania. *Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa"*, 45: 373–380.
- RĂDULEȚ, N., 2005- Comparative anatomy of the mandible in the mammal systematic (Mammalia: Insectivora, Chiroptera, Rodentia) from Romania (I). *Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa"*, 48: 373–380.
- RĂDULEȚ, N., D., MURARIU, 2000 – Taxonomical value of the morphological differences of the coxal bone in six South – American bat species (Chiroptera: Emballonuridae, Mormoopidae and Phyllostomidae). *Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa"*, 42: 225–234.
- TUDOR, D., GH. M. CONSTANTINESCU, 2002 – *Nomina anatomica veterinaria*. Edit. Vergiliu, București: 378 pp. (in Romanian)
- TOPÁL, GY., 1969 – Denevérek – Chiroptera, Mammalia. *In: Fauna Hungarie. Magyarország Állatvilága*, 22 (2): 281 pp.
- ŽALMAN, J., 1971 – Diagnostische merkmale an den schulterblättern einiger fledermäuse der familie Rhinolophidae Bell, 1836 und Vespertilionidae Gray, 1821. *Vestník Československé Společnosti. Zoologické*, 35 (4): 311–319.

*Received: February 13, 2006*  
*Accepted: May 25, 2006*

*Muzeul Național de Istorie Naturală "Grigore Antipa"*  
*Șos. Kiseleff 1, 011341 București 2, România*  
*e-mail: nesti@antipa.ro*