

# REMAINS OF PIGS FROM BRONZE AGE GRAVES OF ARMENIA

Ninna MANASERIAN\*

## Summary

This paper presents the results of a morphological analysis of skulls of sub-fossil pigs from Bronze Age burials in Armenia. The study has revealed that the skulls are of domesticated pigs. These skulls are unique for the chronological period and are very similar in general form to *Sus scrofa attila* Th.

## Résumé

Restes de porcs provenant de tombes de l'Âge du Bronze en Arménie.

Cet article présente les résultats de l'analyse morphologique de crânes de cochons sub-fossiles provenant de sépultures de l'Âge du Bronze en Arménie. L'étude a révélé qu'il s'agissait de cochons domestiques. Les crânes décrits sont uniques pour la période chronologique concernée et sont très proches, dans leur forme générale, de *Sus scrofa attila* Th.

## Zusammenfassung

Überreste von Schweinen aus bronzezeitlichen Gräbern Armeniens.

Es werden Ergebnisse zu morphologischen Untersuchungen an Schädeln subfossiler Schweine aus bronzezeitlichen Bestattungen Armeniens vorgestellt. Die Analysen haben ergeben, daß die Schädel von Hausschweinen stammen. Die Schädel sind für die genannte Zeitstufe bisher einzigartig und scheinen *Sus scrofa attila* Th. sehr ähnlich zu sein.

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## Key Words

Pigs, Armenia, Bronze Age, Wild, Domestic.

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## Mots clés

Porc, Arménie, Âge du Bronze, Sauvage, Domestique.

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## Schlüsselworte

Schwein, Armenien, Bronzezeit, Wildtiere, Haustiere.

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The rise of stock breeding at the early stages of the history of Armenia is supported by an abundance of osteological material, mainly represented by food remains. In this regard, the presence of skulls of wild and domesticated mammals in burial sites on land after the lowering of the water level of Lake Sevan near Lchashen, unique by its preservation, is extraordinarily rare. The materials allow us to conduct a detailed morphometric analysis of the skulls and determine their belonging to wild-domestic forms, make possible to judge on uninvestigated Early Bronze Age rise of husbandry.

Seven comparatively complete and seventeen fragments of skull of pig have been used as an investigation material. All the skulls are elongated, wedged-shaped, unbroadened anteriorly. Eye-sockets are widely open at their posterior half. Facial area of lachrymal bone is well developed. In most cases there is one lachrymal opening.

Hard palate is elongated and passes further the molar-pre-molar line. Molars have complex pictures.

Analyzing the absolute values of subfossil skulls, it is easy to note that some of the signs are nearly stable: length of eye-sockets, vertical height of intermaxillae, length of premolars; others sometimes have rather broad areal of variations, e.g. length of forehead and basilar-bones and lateral length of facial area of the skull. Breadth of nasal bones, length of the low margin of eye-sockets, height of sockets, greatest breadth of the foramen magnum and length of upper jaw molars are considerably varied. Basal length of the skull, lateral length of brain area, muzzle breadth are variable indicators (tab. 1).

The shape of the external surface of the lachrymal bone, as well as the structure of molars and of skull are to be considered as a ground to divide pigs into species. Authors who study fossil and subfossil pigs consider their

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\* Institute of Zoology, Armenian National Academy of Sciences P. Sevak st. 7, Yerevan 375014, Armenia.

Table 1: Range of the individual variability of absolute sizes of the skull of Lchashen pig specimens (mm).

Examples	Number of specimens	The extreme values	The average values
Basal length	4	277.7-300.2	287.6
Total length of the skull	4	311.4-325.0	317.5
Length of nasal bones	2	168.0-176.0	172.0
Greatest breadth of the forehead	5	67.3-72.3	70.3
Greatest breadth of the head	6	124.0-138.0	132.0
Length of forehead bones	4	84.0-120.0	103.5
Length of parietal bones	5	36.0-49.0	42.8
Least breadth of the forehead	6	21.0-36.0	29.6
Height of eye-socket bones	8	16.5-22.8	22.8
Length of the lower edge of eye-socket bones	8	22.0-30.0	25.6
Length of the upper edge of eye-socket bones	8	38.0-54.0	42.0
Length of M-3 upper	10	26.0-33.0	30.5
Length of the three upper molars	10	55.0-68.0	63.5

skulls as pronounced western type (Philipitschenko, 1933). The difference is seen in longitudinal axis of the forehead and curve of upper line of the skull rather bending inwards the area of nasal bones. Sincipital area is raised in relation to the main skull.

As to the shape of eye-socket bones that are the basis for investigators in dividing them into species it is mainly trapeziform here. Length of the eye-socket bone at lower commissure slightly increases the height of its orbit edges, a narrow branch directed along the bone of upper jaw, passing from its upper margin. The indice of eye-socket, which fluctuates from 1.1 to 1.4 on average of 1.2 in subfossil pigs, is of a significant diagnostic value. In juvenile specimens the indice fluctuation is 1.0-1.1 with an average of 1.07. The skull of a 5,6-month specimen is an exception: height of its facial area, consequently its eye-socket-bone is not completed, and eye-socket bones are square-shaped. A most constant indicator characterizing subfossil population is the parallel location of upper jaw molars. The shape of M-3 surface is complicated, a sign that is considered as progressive. Such an M-3 structure is characteristic to the pigs from burials of Lake Sevan basin. Absolute sizes of the length of a number of molars of upper jaw, and, particularly M-3 length (the best indicator for distinction of wild and domestic pigs) convince us that

subfossil skulls belong to big domestic pigs but some parameters remind the initial wild form.

Length of the skull in the area of malar bones, i.e., maximum length of the skull of subfossil specimens varies between 124-138 mm. The index value of the skull breadth characterizing the dependence of the specimen of domestic and wild form, oscillates at 45.9-48.0 corresponding to domestic pigs. In subfossil skulls high indicators of the total length are 311-325 mm, particularly, when the total length of the skull in *Sus scrofa attila* Th. varies between 305-450 mm in males, and 369-419 mm in females.

Single bones of pigs: tarsus, metatarsus, astragalus and other fragments of low and upper jaws and separate teeth were determined in nearly all Holocene monuments of Armenia (Manaserian, 1991). The material from these monuments are rare and mainly represented by food remains. Reverse picture is the studied skulls from burials, associated with wild boars, horses and sheep pig, that have been kept in exclusive safety. We came across such a phenomenon when studying the remains of sheep and goats from the same burials (Manaserian, 1986). This suggests an idea that the basin of Lake Sevan acted as a "selection centre" with well-developed pastoralism.

The aforesaid is confirmed by the cuneiform data, that gives evidence about highly developed pastoralism in

plateaus by the regions of Lake Sevan. There are notes in Khorkhar chronicle on conquering the tribes of Eldarunia and Uduri-Ethiyuni by Urartu tribes (Lake Sevan basin) and capturing a great amount of cattle, among which pigs are especially mentioned (Harutunian, 1964).

It is necessary to note that in the materials from the synchronic monuments of the neighbouring regions (Georgia, Daghistan, North Assetian Republic) remains of pigs have not been revealed completely or they have been presented by fragments not available for studying. Literature data confirm the presence of the genus *Sus* 4.0-4.5 thousand years ago. Rock carvings with their characteristic compositions on Synik and Gheghama mountains evidence the richness of the fauna of Armenian plateau, the evolution of domestication and many other faunistic subjects. Rock carvings on boars, mainly hunting scenes, are frequently met on Synik mountains.

A composition in which the boar is among other animals, mainly bezoar goats, where hunters are accompanied with dogs, deserves interest (Karakhanian and Safian, 1970). There are scenes where hunters attack the animals with bare hands, ropes or bludgeons using various traps for taming of the animal, catching it alive. We are prone to think that the necessary condition to support the vital capacity of domestic cattle has been its constant crossing with its wild ancestor.

Thus, remains of pigs from archaeological monuments, settlements and burials of various eras, rock carvings, etc. confirm about its wide distribution in the territory of Armenia. This evidence on animal in ancient inhabitants economy of the mentioned region allow us to confirm the presence of hotbed of domestication in the Armenian plateau.

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