

Animal husbandry and hunting in the transitional period from Copper Age to the Bronze Age in the Eastern area of Romania

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In 1970¹, the number of the archaeological sites discovered in Moldova, dated in the period referred to, was of 75 in 63 localities. The number of these discoveries increased considerably, only for the Iași county being signalled 154 sites in 1985². From all of these sites only five have given archaeological bone assemblages, suitable for archaeozoological analysis. These settlements are: Foltești³, Stoicani⁴, Erbiceni⁵, Horodiștea⁶ and Cârniceni⁷.

The number of mammals identified remains is 977 at Foltești, 45 at Stolniceni, 473 at Horodiștea, 1905 at Erbiceni and 582 at Cârniceni.

The aim of this study is to incorporate the results obtained for the fauna sample from Cârniceni settlement into the general picture, which characterise the transitional period to the Bronze Age in the Eastern area of Romania by the archaeozoological point of view. Before beginning to speak properly about the fauna we would like to present the location of the sites (see map):

- the Horodiștea settlement is situated on the right bank of the Prut river, at the north boundary of actual Moldova region;

- the Erbiceni settlement is situated at almost 25 km WNW of Iași town, on the Bahlui river valley;

- the Cârniceni settlement is situated east of Erbiceni, 20 km NNE from Iași town, in the south region of the lower Jijia river;

- the Foltești and Stoicani settlements, both at approximately 30 km N of Galați town, in the vicinity of the Prut river.

In what concerns the domestic fauna, at Cârniceni, cattle is on the first place, followed by caprovines and pig with close frequencies, horse and dog. The wild species in the same sample, in order of their frequencies, are: red deer, roe deer, wild boar, wild cattle, wolf, fox, bear and beaver (diagram 1).

The general picture obtained by using the frequencies of the main groups of mammals (the "Bovine", "Suine" and "Equide" groups include both the wild and the domestic forms of the species; the "Cervide" group includes red deer and roe deer), shows similar images for Foltești, Stoicani, Horodiștea and Cârniceni, with cattle on the first place, followed by caprovines and pig. At Erbiceni, cattle diminishes in importance in the daily diet of the inhabitants and caprovines gain in

importance, having almost 56% on the MNI (diagram 2). This percent, correlated with the small one of the cervide group (3%) and the relative high abundance of hare remains, shows a markedly brackish environment in this area. The above-mentioned data may be due to the high salinity of the soil proper for sheep breeding, caused by a massive deforestation. At Cârniceni, situated practically in the same area, we did not observe this phenomenon, cattle which cannot tolerate very brackish pastures, being here on the first place (50% on NISP and 28.6% on MNI). This fact could be due to the investigated surface of the settlement, which is very small at Cârniceni but, at the same time, to the fact that Cârniceni is probably dated "...within the first evolutive stage of the Horodiştea-Erbiceni culture.", in view of the "...persistence of the painted pottery of the Cucuteni B type."⁸. However, the chronological aspect seems not to be very conclusive because at Erbiceni a high percentage of caprovines was found in both, the inferior and the superior level of the horizon⁹. At the same time it is signalled that in the superior layer the percentage of caprovines is higher than in the first one¹⁰. For the populations from the North-Pontic steppes, the data reveal that the percentages obtained for the caprovines at the end of the Tripolje culture was, in the steppe area, of 48% at Usatovo settlement and of 68% at Mayaki settlement¹¹.

The reconstruction of the age profiles of livestock shows a similar kill-off pattern for cattle in all settlements and indicates that animals were mainly slaughtered after reaching maturity (3.5-5 years of age at Cârniceni), aged individuals representing a major component of the bovine population.

In what concerns caprovines, sheep is everywhere overrepresented, having more numerous remains than goat. The fragments come especially from aged individuals (4-5 years of age at Cârniceni), but at Horodiştea it was observed a change in the kill-off pattern, most animals being slaughtered here before reaching maturity¹².

As to pig, most animals were killed before reaching the age of two years.

In conclusion, cattle, sheep and goat were generally (with the exception mentioned-above at Horodiştea) slaughtered at an adult age, so these species were not only raised for the meat production, but for their secondary products (wool, milk) or to perform labour, for example in the case of cattle. Since pig are only bred for their meat, it was logical to slaughter them at an earlier age. At the same time, in terms of meat consumption cattle was the most important animal. Its remains are not only overrepresented, but its meat production is also superior to that of the small livestock. The exception is that of the Erbiceni settlement, where animal breeding concentrates upon sheep breeding. In addition, small livestock, as well as cattle, provided beside meat also skins and manure.

In what concerns the withers height, for cattle, at Cârniceni, the mean value established was of 115,6 cm¹³. For the period in discussion it was generally

observed that for cattle and pig there were no significant decrease in size in this period. Cattle had the same size as the Neolithic type and it was larger than those of the Bronze Age, the mean value being of 1.20 m¹⁴. Pig was of a small size, belonging to the *palustris* type, also characteristic to the Neolithic period¹⁵. For the caprovines, the situation is a little bit changed, showing an increase in size of the species, which could be due to another ancestor, originating in Central Asia and arrived here by way of the North-Pontic steppes¹⁶. The situation was observed especially at Erbiceni, where sheep seem to be larger (more than 65 cm in size) even than those of the Bronze Age¹⁷ and to a small extent at Cârniceni, where both, the small Neolithic type and the new larger one, were recognised in the bone materials¹⁸. At Horodiştea sheep were smaller than at Erbiceni and have the same size as those of the Cucuteni culture¹⁹.

Remains of horses were collected in a relatively high percentage at Folteşti (19.06%) and it can be taken that the animals were probably domesticated²⁰. At the same time, at Cârniceni we have also found remains from one individual of Eastern type, with slender extremities, probably already domesticated. However, the data are too insufficient for conclusions. At Erbiceni and Horodiştea the percentages of the species are similar with those for the Cucuteni and Gumelniţa cultures²¹.

The inhabitants of all settlements studied, obviously kept small (the *palustris* type) and medium (the *intermedius* type) size dogs²², which were exploited like house and herd protecting and hunting companions. At Cârniceni the *intermedius* type was found.

As regards hunting, the ratio between wild and domestic mammals is, on MNI, almost 1/1 at Folteşti, 2/1 at Horodiştea, Stoicani and Cârniceni and 9/1 at Erbiceni, in favour of the domestics (diagram 3). It is clear that hunting became less important during the period under discussion. Probably the environment offered a more favourable habitat for either wild and domestic species at Folteşti than at Erbiceni, where probably a massive deforestation took place. Here the typical domestic species ensured the main supply of animal proteins. At the same time there was no uniform hunting type. The locally frequent wild species were always hunted first. At Folteşti, where the ratio of wild species is higher, the diversity of the hunted species is also important including among the typical species like red deer, roe deer, wild boar and wild cattle, beaver, wolf, fox, hare, otter, wild cat and *Equus hemionus*. At Horodiştea the list comprises beaver and hare and at Erbiceni especially hare.

The global ecological diagram (diagram 4 a, b), obtained by grouping the wild species in respect to the diet adaptation and taxonomic criteria, indicates the prevalence of the Brachyodont Herbivorous (which includes red deer and roe

deer), correlated with the Artiodactyla group (red deer, wild boar, wild cattle and roe deer) in the surrounding areas of Foltești, Horodiștea and Cârniceni. A possible view of what the environment might have looked like, is reflected in the dominance of game adapted to forest. At Erbiceni, the Hypsodont Herbivorous group (which includes wild cattle and hare) prevails, correlated also with the Artiodactyla group but, at the same time, with a high percentage of the Rodentia group (which includes hare). The environment around Erbiceni could be imagined as an agricultural zone, with fields and brackish pastures and some small areas with wooded vegetation. At the same time, if we follow only the percentages obtained for the Rodentia group, we can see that the level of the deforestation is higher at Erbiceni, relatively high at Horodiștea and small at Foltești and Cârniceni. So the environment of the Erbiceni settlement changed at the end of the transitional period to the Bronze Age, the space becoming more open with small wooded vegetation, because of the anthropic factor which did modify the environment, by massive deforestation.

The farmers from the transitional period to the Bronze Age practised not only hunting, but also gathering molluscs and fishing. The consumption of molluscs seems to have been not insignificant at Horodiștea and Cârniceni, in view of the large number of unio-shells (*Unio* sp.) and shells of edible snails (*Helix* sp.) found (43.6% at Horodiștea and 36.1% at Cârniceni from the total amount of the identified remains). Fishing and fowling were apparently of small importance, as far as we can gather from the evidence of the bones. Also for reptiles, the remains of only one species were found and they belongs to turtle (*Emys orbicularis*).

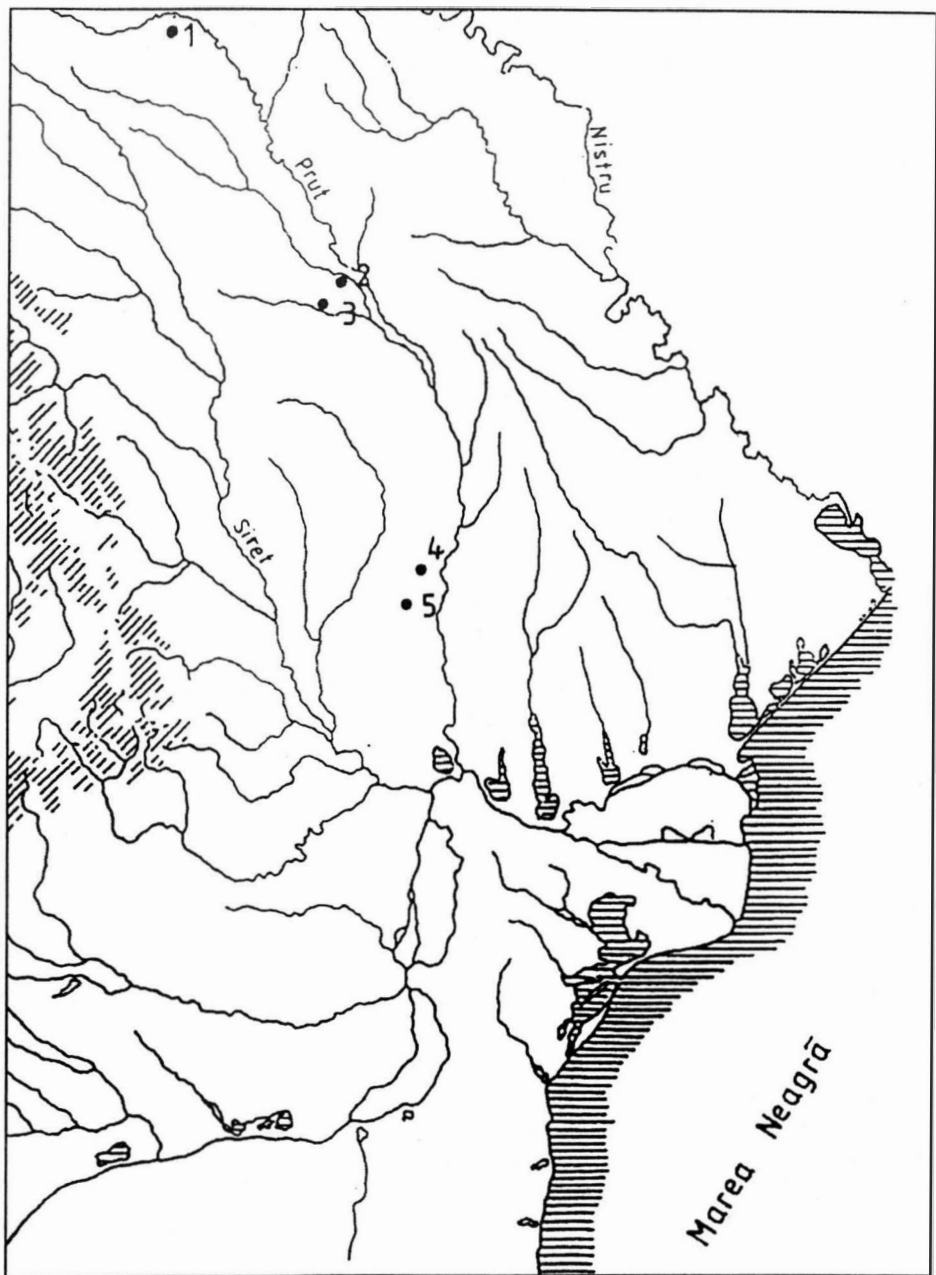
The data obtained for the Danube Valley (Southern Banat) reveals that here the paleoeconomy was based especially "...on the equal exploitation of the three domestic mammals...", that game hunting was practised in a small measure and that gathering of molluscs "...would have had a seasonal character..."²³.

In conclusion, the comparison of the faunal samples from the same period, reveals that, in addition to the divergence produced by the centuries, there are also distinctly regional variations, extremely marked at the Erbiceni settlement.

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NOTES

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Map: The location of sites.

- 1 - Horodiștea settlement; 2 - Cârniceni settlement; 3 - Erbiceni settlement;
4 - Foltești settlement; 5 - Stoicani settlement.

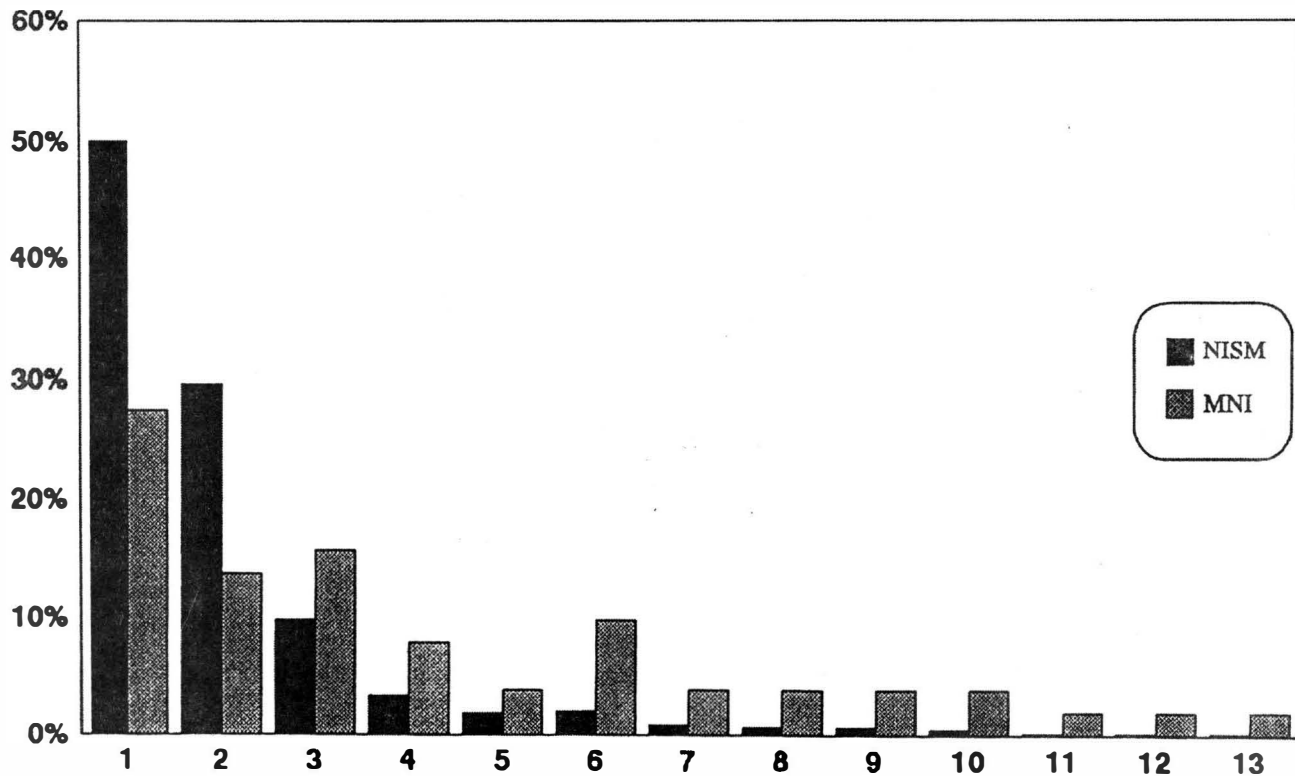
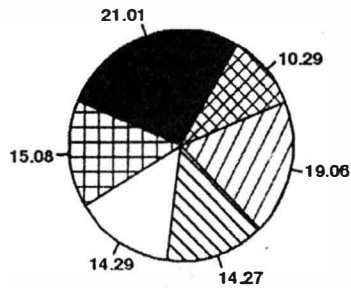
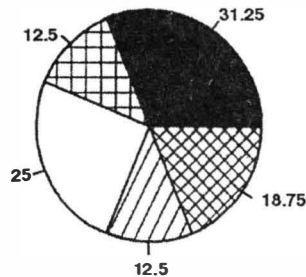


Diagram 1: Frequencies of species at Cârniceni on the basis of NISP and MNI

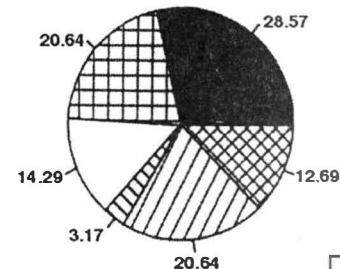
1 = *Bos taurus*; 2 = *Ovicaprinae*; 3 = *Sus domesticus*; 4 = *Equus caballus*; 5 = *Canis familiaris*; 6 = *Cervus elaphus*;
 7 = *Capreolus capreolus*; 8 = *Sus scrofa*; 9 = *Bos primigenius*; 10 = *Canis lupus*; 11 = *Vulpes vulpes*;
 12 = *Ursus arctos*; 13 = *Castor fiber*



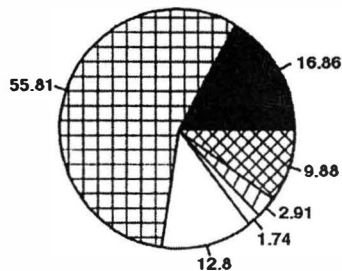
Foltești



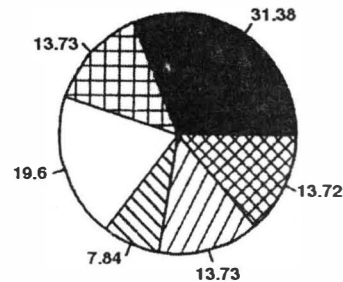
Stoicani



Horodiștea



Erbiceni



Cârniceni

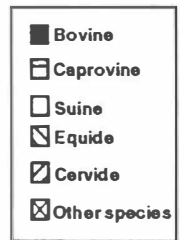


Diagram 2: The global MNI distribution of the main groups of mammals (%).

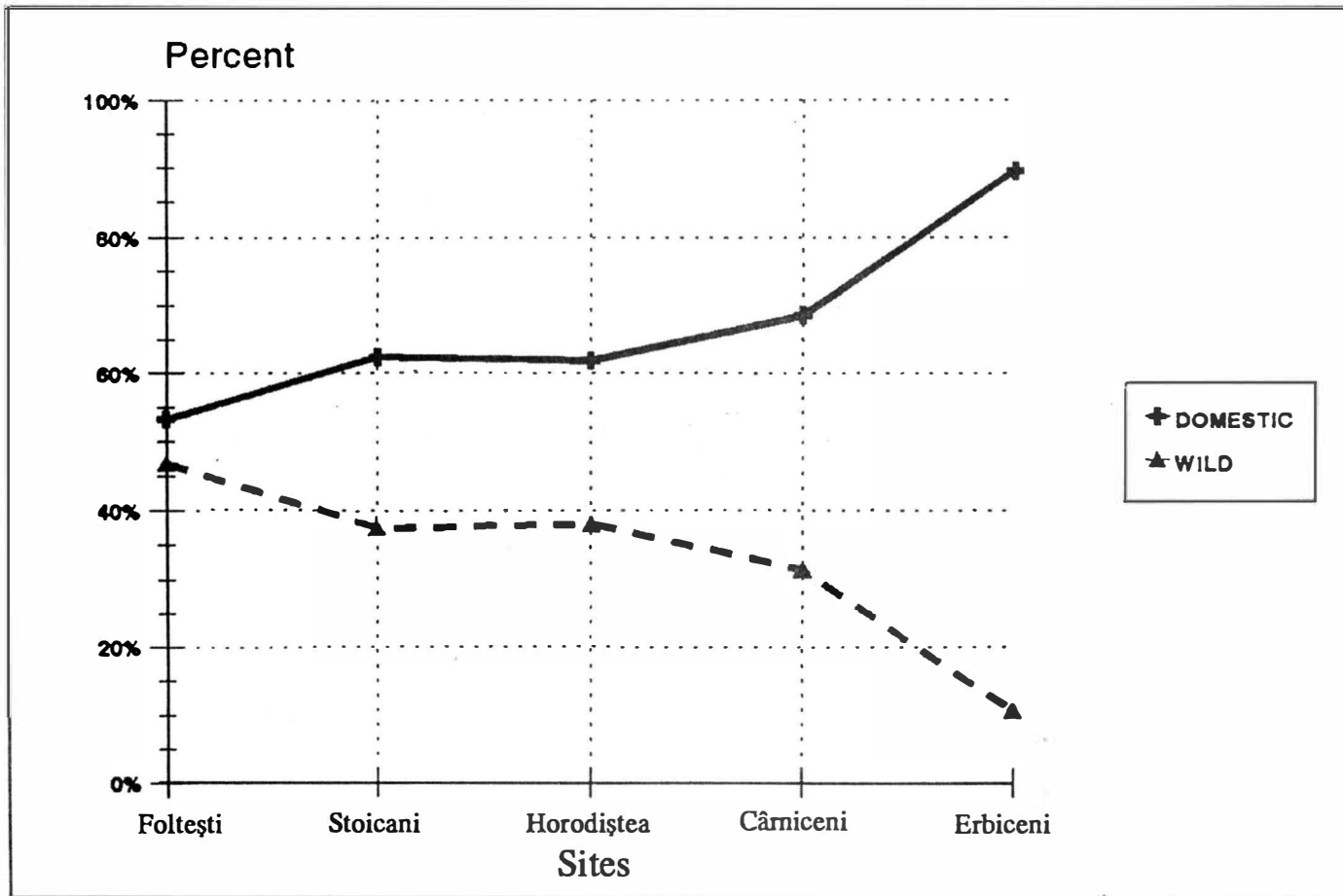


Diagram 3: The ratio between wild and domestic species on the basis of MNI (%).

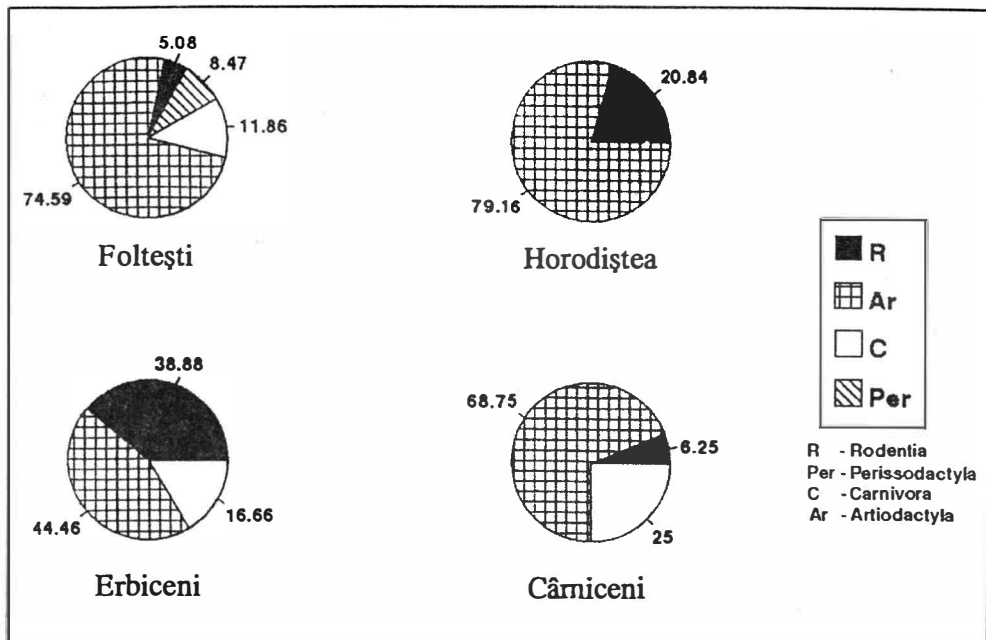


Diagram 4a: Global taxonomic histogram on the basis of MNI (%)

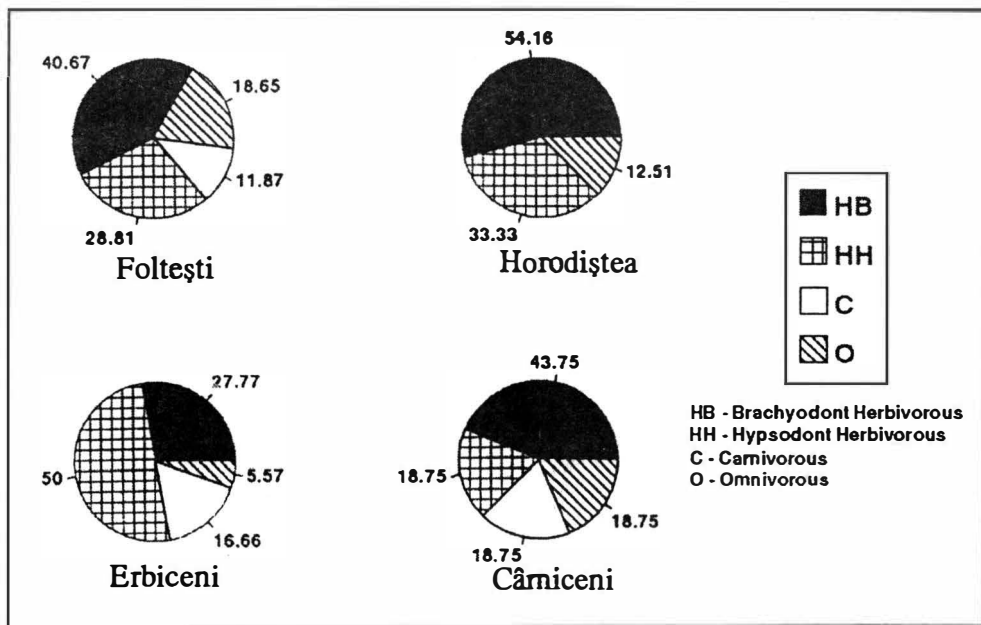


Diagram 4b: Global diet adaptation histogram on the basis of MNI (%)