Hunting behavior of Late Neanderthals in the North-east of Italy. Results from zooarchaeological analysis of unit II assemblage of Grotta Maggiore di San Bernardino (Berici Hills, Vicenza).

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SITE OVERVIEW
Grotta Maggiore di San Bernardino (Vicenza) is located in the Berici Hills, in northeastern Italy, at about 135 m above sea level (Fig.1). Field investigations explored a stratigraphic series of about 4 m thickness, which includes 8 main units dating from MIS 7 to MIS 3 (Fig.2).The focus of this work is the zooarchaeological analysis of Unit II (MIS3). It records an intense human occupation attested by hearths, temperate type associated faunal remains and Mousterian lithic implements.

RESULTS
• Within the analyzed sample of 9,219 bone fragments, it was possible to identify 1,414 remains (NISP), that correspond to 21 species and 56 individuals (NMI) with a predominance of adults.
• The fauna is largely dominated by ungulate remains, with cervids prevailing over caprids. Among the carnivores, the most frequent species is cave bear followed by rarer small carnivores. Were recovered also rhinoceros and beaver remains. (Fig.3).
• High are the rates of bone breakage (more than 70% are smaller than 2 cm).
• The most common causes of degradation are *manganese stains* (80,2%), *trampling abrasion* (15,2%) and *root marks* (9,6%).
• High is the incidence of *burned remains* (58,9%). Within this sample 87,4% were subject to moderate combustion, while 12,6% were calcined (Fig.4).
• 163 remains present *anthropic modifications*. Cuts made by lithic tools constitute the most common mark (Fig.5).

MATERIAL AND METHODS
• Taxonomic and skeletal identifications.
• Microscopic analyses of bone surfaces.
• Taphonomical study.
• Analyses of sex and age at the time of death.
• Count of remains, and of the minimum number of individuals (MNI).

CONCLUSION
• Unit II was occupied by humans in an environment that was forested by temperate-cold woods with wetlands, as suggested by wild boar, elk, beaver and waterfowl finding.
• The high rate of burned remains could suggest the use of butchering refuse, rich in fats, as fuel for fires.
• Bone taphonomy has identified high incidence of anthropic actions ascribable to different stages of the butchering process like skinning, dismembering and filleting. Several fragmentary bone shafts show typical stigmate due to their use as retouchers for flint tools.
• As faunal assemblages similar to Grotta Maggiore di San Bernardino unit II can be observed in the Mousterian levels of other sites of the Berici Hills (Grotta di Paina, Grotta del Col della Stria, Grotta de Nadale) and Lessini Mountains (Grotta di Fumane, Riparo Tagliente).
• Grotta Maggiore di San Bernardino should be used as a case study for understanding the complexity of Neanderthal behavior.

REFERENCES

Fig.1 Location of Grotta Maggiore di San Bernardino.
Fig.2 Stratigraphic section.

Fig.3 Number and percentage of identified Specimens (NISP).
Fig.4 Total burned remains.
Fig.5 Anthropic modifications: CM cut marks, PM percussion notches + percussion cones, R retouchers.

Fig.6 Bovidae: hemimandible with cut marks (B1, B2) and retouch stigmata (B3).

Fig.7 Cervus elaphus: radius/ulna with retouch stigmata (A, B) and cut marks (C). Alces alces: metatarsal with scraping (D). Capreolus capreolus: first phal. with cut marks (E).

Fig.8 Percussion cones.