

THE TIBETAN-LIKE BEAR FROM GROTTA DI REALE, PORTO AZZURRO (ISLE OF ELBA, ITALY)

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ABSTRACT - *The Tiberian-like bear from Grotta di Reale, Porto Azzurro (Isle of Elba, Italy)* - Il Quaternario, 6(1), 1993, p. 35-38 - Three isolated bear teeth found on the isle of Elba are here referred to *Ursus cf. thibetanus* Cuvier. Asian black bear remains have been found in several Pliocene and Middle Pleistocene sites in Europe. It appears that the Elba black bear is a late Middle or Late Pleistocene representative of this taxon in Europe.

RIASSUNTO - *L'orso di tipo tibetano della Grotta di Reale, Porto Azzurro (Isola d'Elba)* - Il Quaternario, 6(1), 1993, p.35-38 - Tre denti isolati di orso provenienti dall'isola d'Elba sono attribuiti a *Ursus cf. thibetanus* Cuvier. Resti di orsi neri asiatici sono stati raccolti in alcune località europee riferibili al Pliocene ed al Pleistocene medio. L'orso nero dell'isola d'Elba sembra essere un rappresentante del tardo Pleistocene medio o del Pleistocene superiore d'Europa.

Key words: Carnivora, *Ursus*, Pleistocene, Elba island, Italy.

Parole chiave: Carnivora, *Ursus*, Pleistocene, isola d'Elba, Italia.

1. INTRODUCTION

Nesti (1823) was the first to inform the scientific community of the presence of fossil vertebrates in the Elba island, reporting the occurrence of a number of *Ursus spelaeus* Rosenmüller & Heinroth, 1784, remains. In the following years several researchers (Savi, 1825; Forsyth Major, 1873, 1880, 1881; Ristori, 1908) described the Elba fossil fauna. Forsyth Major reported (1873, pag. 8) the occurrence of a small-sized bear, which he referred to a new species, *Ursus mediterraneus*.

In our century, Del Campana (1910) thoroughly

revised the Elba island fossil vertebrates. In his faunal list the small-sized bear is referred to *Ursus* sp. (*Ursus mediterraneus*? Fors. Major).

The aim of the present note is to provide a more precise taxonomic definition of the small-sized Elba bear.

2. DESCRIPTION

The small-sized Elba bear is represented only by three isolated teeth, a left second upper molar and two second lower molars, a left one and a right one, which belong to a single young individual.

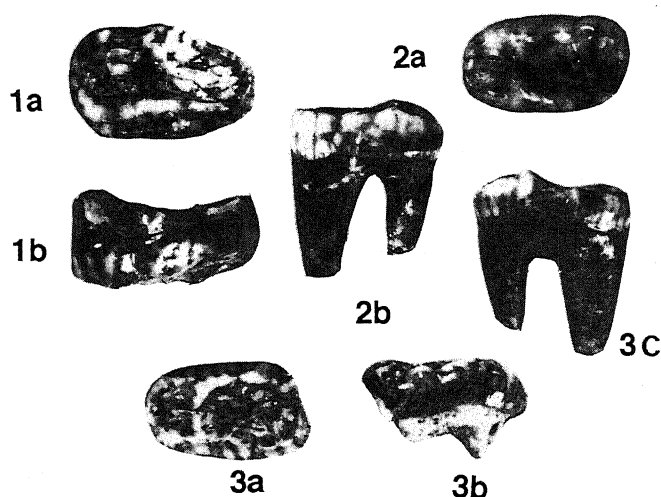


Fig. 1 - *Ursus cf. thibetanus* Cuvier from Grotta di Reale, Porto Azzurro (Elba Island). (Top) Second upper molar: scatter diagram of length vs breadth. (Bottom) Second lower molar: scatter diagram of length vs breadth.

Ursus cf. thibetanus Cuvier di Grotta Reale, Porto Azzurro (Isola d'Elba). (Alto) Secondo molare superiore: diagramma di dispersione lunghezza - larghezza. (Sotto) Secondo molare inferiore: diagramma di dispersione lunghezza - larghezza.

12.1 Second upper molar

The occlusal surface is rather smooth, with very low cusps. The para- and metacone are relatively more developed than the lingual cusps. The talon is not very developed. The tooth bears a short cingulum between the proto- and the hypocone.

As compared with the second upper molars of *Ursus arctos*, L. and *U. spelaeus*, this molar is smaller-sized and much smoother, its cusps being far less developed, especially the buccal ones.

Measurements: greatest length: 26.4; anterior breadth: 15.3; posterior breadth: 15.6.

12.2 Second lower molars

Also the two second lower molars have smooth occlusal surfaces, much more than in the brown and cave bears. In both the teeth the paraconid is more developed than the other cuspids. The entoconids are doubled. No cingula occur.

Measurements: right second lower molar: greatest length: 21.5; anterior breadth: 12.3; posterior breadth: 12.1; left second lower molar: greatest length: 20.7; anterior breadth: 12.4; posterior breadth: 12.7.

3. OBSERVATIONS

The morphological and proportional characters of these scanty teeth closely recall those of the Asian black bear, *Ursus thibetanus* Cuvier, 1823, as shown in Figure 2.

Mazza and Rustioni (in press) united in the black bear group the Pliocene *U. minimus* Deveze & Bouillet, 1827 (synonyms: *U. arvernensis* Croizet & Jobert, 1828, *U. rusciniensis* (Depéret, 1890), the Late Pliocene-Early Pleistocene *U. namadicus* Falconer & Cautley, 1849 and the Middle Pleistocene-Recent Tibetan bear, *Ursus thibetanus* Cuvier, 1823 (synonyms: *U. angustidens* Zdansky, 1928, *U. stehlini* Kretzoi, 1941, *U. schertzi* Dehm, 1943, *U. telonensis* Bonifay, 1971 and the ursids of the genus, or subgenus, *Plionarctos* Frick, 1926-1929). This group is represented in a number of Pliocene localities of France (Roussillon and Auvergne) and Italy (Arondelli (?), Gaville, Ponzano Magra). They are also reported from East Anglia, but this occurrence is uncertain. Pliocene black bears are also present in India, at Nerbudda and Godávarí, and in China, at Huai-Yü and Yushê-Shansi (*Ursus namadicus* Falconer and Cautley, 1849; see also Erdbrink, 1953).

Les Etouaires (France) and Gaville (Italy) represent the last ascertained occurrences of Pliocene black bears in Europe (Rustioni & Mazza, in press); the sites are referred to the Triversa f.u. (Azzaroli *et al.*, 1988). Apparently,

with the intense worldwide climatic cooling, which occurred about 3.0-2.5 million years ago, and which is marked by the faunal turnover known as the "elephant-*Equus* event" (*sensu* Lindsay *et al.*, 1980), black bears first disappeared from Europe. The group survived in Asia, where a continuous record is known from the Pliocene to nowadays.

A lapse of time follows, during which no fossil bears seem to be present in Europe.

Evidence of a return of black bears to Europe is

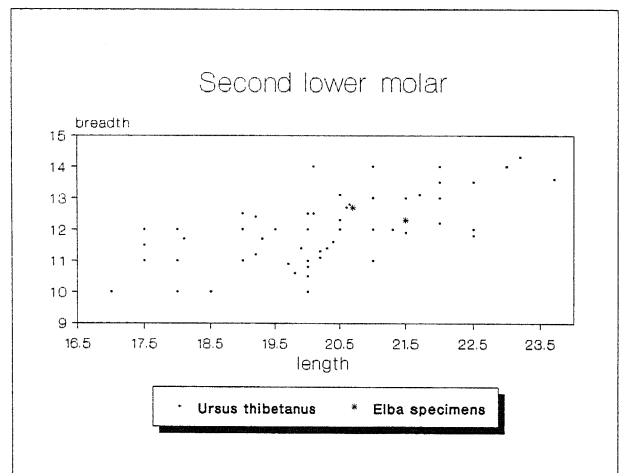
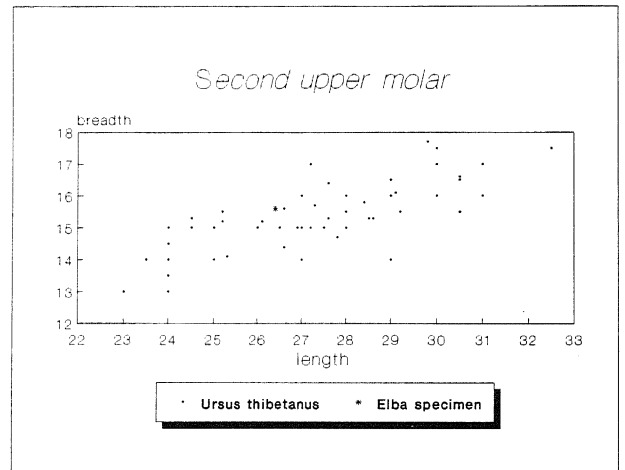


Fig. 2 - *Ursus cf. thibetanus* Cuvier from Grotta di Reale, Porto Azzurro (Elba Island). 1a: occlusal view; 1b: buccal view, left second upper molar (IGF 4806V-Museum of Geology and Paleontology, Florence); 2a: occlusal view; 2b: lingual view, left second lower molar (IGF 4807V-Museum of Geology and Paleontology, Florence); 3a: occlusal view; 3b: buccal view; 3c: lingual view, right second lower molar (IGF 4808V-Museum of Geology and Paleontology, Florence). All figures nat. size.

Ursus cf. thibetanus Cuvier di Grotta di Reale, Porto Azzurro (Isola d'Elba). 1a: vista occlusale; 1b: vista labiale, secondo molare superiore di sinistra (IGF 4806V-Museo di Geologia e Paleontologia, Firenze); 2a: vista occlusale; 2b: vista linguale, secondo molare inferiore di sinistra (IGF 4807V-Museo di Geologia e Paleontologia, Firenze); 3a: vista occlusale; 3b: vista labiale; 3c: vista linguale, secondo molare inferiore destro (IGF 4808V-Museo di Geologia e Paleontologia, Firenze). Tutte le figure a grandezza naturale.

testified by the findings from Mosbach (*U. arvernensis* of von Reichenau, 1906). Tibetan bears therefore may have re-immigrated in Europe during the new faunal turnover which marked the transition from the Villaf ranchian to the Galerian, the so called "end-Villafranchian event", or in slightly later times.

Crégut-Bonnouere and Gagniere (1989) list a number of Middle Pleistocene localities of Europe which yielded scanty black bear material. These are Achenheim, Cimay, Balaruc VII, Baume Longue, Bruges, La Nauterie, in France; Bammenthal, Ehringsdorf, Mauer, in Germany; Laeberg, in Austria; Podumci, Vrhovlje, in former Yugoslavia; Beremend, Betfia, Csarnota, Püspökfördö, Villany, in Hungary; Gombaszög, Koneprussy, in Czechoslovakia.

Leaving aside the Elba island find, black bears are also reported from some Middle Pleistocene sites of Italy, such as Cava Nord (Soave, Verona), Cengelle 1 (Soave, Verona), Fornace di Cornedo (Vicenza) (Bon *et al.*, 1991). Kotsakis (1978) claims the occurrence of small-sized bears, probably referable to *U. thibetanus*, also in Sicily, during the Spinagallo stage (*Palaeoloxodon falconeri* fauna).

The dating of the Elba island fauna is unknown, although radiometric datings of some specimens are under way. The fauna does not show any evidence of endemization, as testified by the presence of large to middle-sized carnivores (lion, bobcat) and by the fact that there are no modifications in the size of any faunal component. This fauna therefore penetrated into the Elba island during a glacial event. The rhinoceros and the hippopotamus are significant elements, since they are known to disappear from Europe during the first phases of the Würm glaciation. On the other hand, the presence of the fullfledged cave bear excludes the first part of the Middle Pleistocene. Therefore we are inclined to believe that the faunal community of Grotta di Reale made its entrance during the Riss glacial or at the very beginning of the Würm. According to Azzaroli (in Azzaroli *et al.*, 1990), the Elba island fossil vertebrates come from two different stratigraphic levels, both Late Pleistocene in age. Actually, the specimens show two different types of fossilization, but in our opinion this does not necessarily prove that they come from different stratigraphic levels. If the black bear from Grotta di Reale is to be dated to the Middle Pleistocene, it would simply add to the list of other European occurrences of this species. On the contrary, if the dating suggested by Azzaroli should ever be confirmed, the Elba black bear would be the only known occurrence of black bears in Europe during the Late Pleistocene and therefore the last European representative of this taxon. We ignore other more recent occurrences of black bears in Europe at the moment.

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