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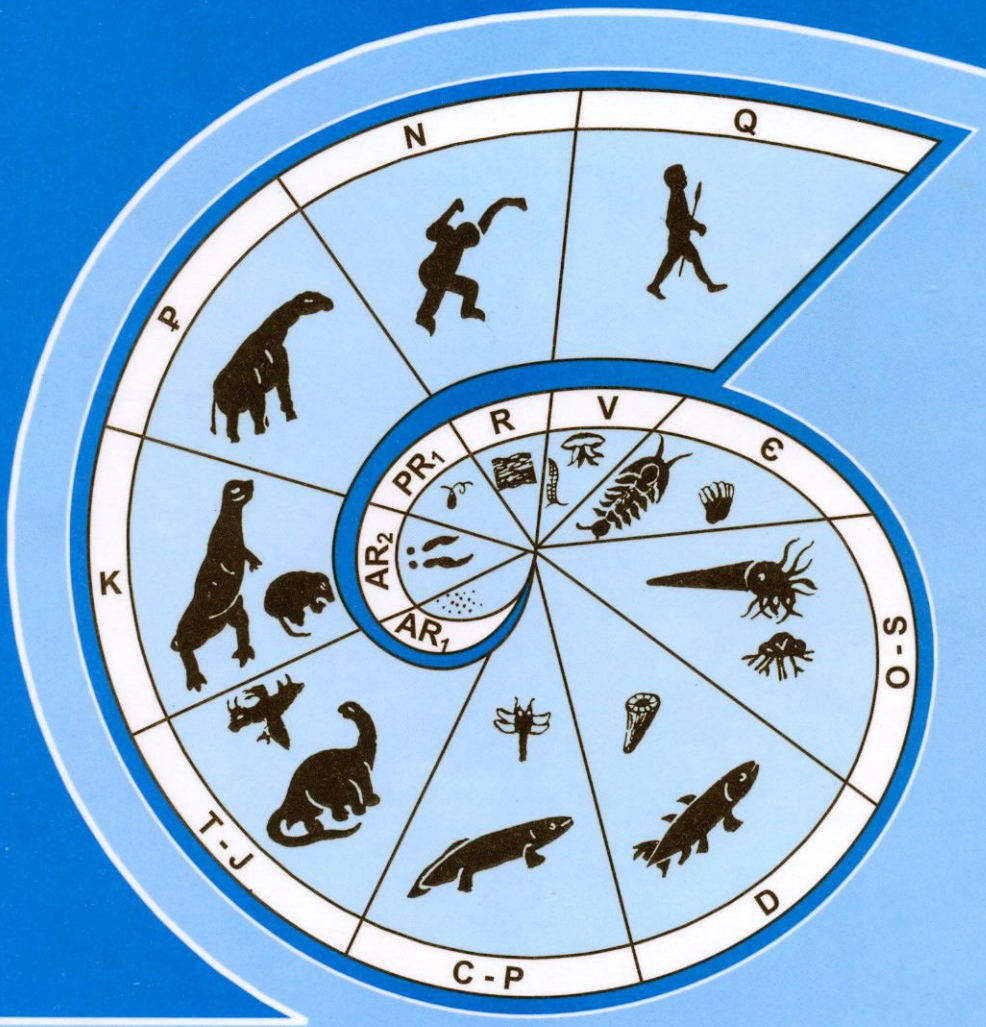

EVOLUTION OF LIFE ON THE EARTH

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МИНИСТЕРСТВО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ
ТОМСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ

МИНИСТЕРСТВО ПРИРОДНЫХ РЕСУРСОВ РФ
КОМИТЕТ ПРИРОДНЫХ РЕСУРСОВ ПО ТОМСКОЙ ОБЛАСТИ
РОССИЙСКАЯ АКАДЕМИЯ ЕСТЕСТВЕННЫХ НАУК
ОРЕГОНСКИЙ УНИВЕРСИТЕТ (США)
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FIRST FINDING OF WOOLLY RHINO *COELODONTA ANTIQUITATIS* (BLUMENBACH, 1799) (MAMMALIA, RHINOCEROTIDAE) IN GARGANO (APULIA, SOUTHERN ITALY)

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Abstract. [Первая находка шерстистого насорога *Coelodonta antiquitatis* (Blumenbach, 1799) (Mammalia, Rhinocerotidae) в Гаргано]. Some fossil skeletal remains, even if few and badly preserved, may confidently be referred to the woolly rhino *Coelodonta antiquitatis* (Blumenbach, 1799). They have been discovered in a breccia quarry along the Garganica Railway at Ingarano (Gargano, Apulia, Southern Italy) which has yielded an extremely rich collection (about 40 *taxa)* of Late Pleistocene vertebrate remains, both temperate-cold and temperate-warm species, found in chaotic assemblage, including *Aquila chrysaëtos* (L.), *Nyctea scandiaca* (L.), *Falco peregrinus* Tunstall, *Pyrrhocorax graculus* (L.), *Corvus corax* L., *Cervus elaphus* L., *Capreolus capreolus* (L.), *Dama dama dama* (L.), *Apodemus sylvaticus* (L.), *Crocuta crocuta* (Erx.), *Ursus arctos* L., *Lynx lynx* (L.), *Panthera spelaea* (Goldfuss), *Vulpes vulpes* (L.), *Felis silvestris* Schreber, *Canis lupus* L., *Equus hydruntinus* Regalia, *Bos primigenius* Boj., *Hippopotamus amphibius* L., *Elephas antiquus* Falc. & Cautl., *Stephanorhinus hemitoechus* (Falc.). The coexistence of some *taxa* suggests, in the Garganic area, a palaeoenvironment characterized by wide grassland more or less treed open spaces.

This new discovery of *C. antiquitatis* is added to those few previously known because, despite its wide spreading in the eurasiatic continent, it is still little found in Italy.

Key-words: Middle and Late Pleistocene, hypsodont, palaeoenvironment, Apulia, Southern Italy.

INTRODUCTION

Excavations in a cave deposit of karst origin, namely Cava della Ferrovia (fig. 1, see colour plate), at Ingarano near Apricena (Foggia, Gargano, Apulia, Southern Italy) (about 270 m a.s.l.) (fig. 2), along the Ferrovia Garganica (Garganica Railway), allowed to bring again to the light a lot (about 40 *taxa)* of Late Pleistocene vertebrate remains (Petronio et al., 1996), both temperate-cold and temperate-warm species, found in chaotic assemblage, including *Aquila chrysaëtos* (L.), *Nyctea scandiaca* (L.), *Falco peregrinus* Tunstall, *Pyrrhocorax graculus* (L.), *Corvus corax* L., *Cervus elaphus* L., *Capreolus capreolus* (L.), *Dama dama dama* (L.), *Apodemus sylvaticus* (L.), *Crocuta crocuta* (Erx.), *Ursus arctos* L., *Lynx lynx* (L.), *Panthera spelaea* (Goldfuss), *Vulpes vulpes* (L.), *Felis silvestris* Schreber, *Canis lupus* L., *Equus hydruntinus* Regalia, *Bos primigenius* Boj., *Hippopotamus amphibius* L., *Elephas antiquus* Falc. & Cautl. Besides the faunal remains given back from the lower part of the deposit, some skeletal elements belonging to Rhinocerotidae have been also recovered.

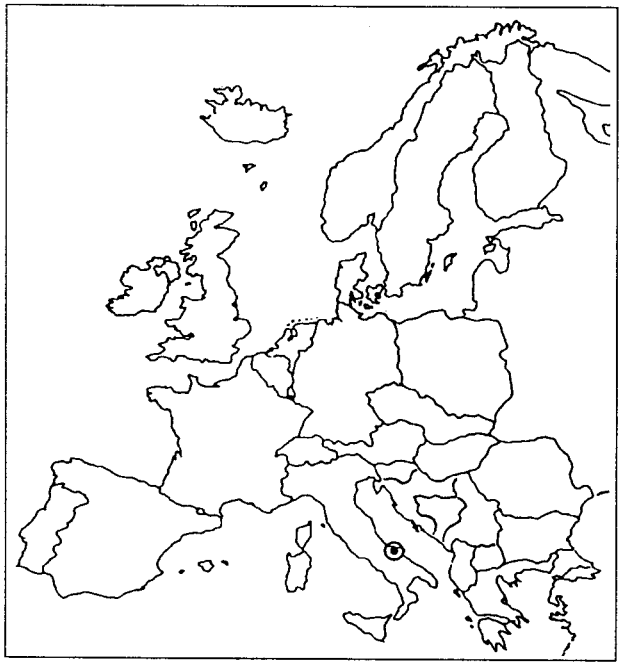


Fig. 2. Ingarano (Apricena, Gargano, Apulia, Southern Italy). Geographical map showing the area of the finding

MATERIALS

The morphological analyses performed on the whole of material from Ingarano referred to Rhinocerotidae revealed that a part of the same is referable to some juvenile specimens of *Stephanorhinus hemitoechus* (Falconer, 1868).

The other skeletal remains consist in an isolated, fragmentary upper molar (probably a second) (fig. 3, see colour plate) and some limb bones discovered in partial anatomical connection, which are: distal epiphysis of *humerus* (pl. 1a), *olecranon*, fragments of *radius,* carpals (scaphoid, semilunar, pyramidal, pisiform, trapezium [first carpal, very rare; as a general rule, it is absent from the collections], trapezoid, *magnum,* uncinate) (fig. 4, see colour plate), metacarpals II, III, IV (the Mc III is fragmentary) (fig. 5, see colour plate), fragments of *femur*, *patella,* proximal epiphysis of *tibia* (pl. 1b-1c), five falanges (some measurements are given in tab. 1).

RESULTS

The upper molar from Ingarano (although really very damaged) allows at least to observe clearly, on the *facies occlusalis,* the *medifossetta* which is closed and, in *norma labialis,* the height of the crown, evidencing a relatively moderate level of abrasion. The postcranial remains show a quite massive character and testify a sub-adult or adult animal of middle-large size, sexual dimorphism apart (the

cranium has not yet been found). By comparison, the morphological features of the *humerus,* of the *tibia*, of the carpals and metacarpals from Ingarano are very close to those available on the palaeontological collections of the Museum of Natural History at London, of the University Museum of Geology and Palaeontology at Florence (Italy) [both the first one and the second one have, among many others, two *humeri* coming from as many unknown localities of Siberia, respectively *humeri* BMNH 16727 and IGF 14836], of the University Museum of Geology and Palaeontology at Ferrara (Italy) and of the Rijksmuseum van Geologie en Mineralogie at Leiden (The Netherlands). Unlike those from Ingarano, the *humeri,* the *tibiae*, the carpals and metacarpals from british localities, from Netherlands (North See) and from Siberia are dimensionally bigger and show a more massive character; in addition, the *tibia* from Ingarano shows a very peculiar morphology concerning the *doccia tibialis*, whose dimensions are, from otherwise, really remarkably much more reduced than in the whole of the omologous specimens which I have examined in the past years.

Anyway, both the upper molar and the postcranial remains from Ingarano present the same taphonomical features; however, they are not the terminal ones, but, as a matter of fact, the upper molar which allows the sure attribution of the remains *in toto* to *Coelodonta antiquitatis* (Blumenbach, 1799), the hypsodont, eurasiatic Middle Late and Late Pleistocene woolly rhino, because of the morphological features of the tooth (particularly the closed *medifossetta,* absolutely peculiar feature) are undoubtedly those of this species. Errors of identification among the species are frequently possible when use is made only of postcranial rests, whereas the attribution by means of teeth is unequivocal.

Table 1

Dimensions (in mm) of *humerus*, *tibia* and metacarpals of *C. antiquitatis* (Blum.) from Ingarano (Gargano, Apulia, Southern Italy)

Humerus *(epiphysis distalis)*	
antero-posterior diameter of distal epiphysis	118
transverse diameter of distal epiphysis	147
minimum antero-posterior diameter of the distal articular surface	48
maximum trasverse diameter of the distal articular surface	96
transverse diameter of the olecranic cavity	52
transverse diameter of the shaft at the level of the fracture	59
Tibia *(epiphysis proximalis)*	
antero-posterior diameter of proximal epiphysis	110
transverse diameter of proximal epiphysis	120
minimum antero-posterior diameter of proximal articular surface	65
antero-posterior diameter of the shaft at the level of the fracture	44
transverse diameter of the shaft at the level of the fracture	42
Second metacarpal	
maximum length (in sagittal plane)	165
antero-posterior diameter of proximal epiphysis	44
transverse diameter of proximal epiphysis	44
antero-posterior diameter of distal epiphysis	42
minimum antero-posterior diameter of the shaft	19.5
minimum transverse diameter of the shaft	33.5
Fourth metacarpal	
maximum length (in sagittal plane)	165.5
antero-posterior diameter of proximal epiphysis	36
transverse diameter of proximal epiphysis	41
antero-posterior diameter of distal epiphysis	40
minimum antero-posterior diameter of the shaft	19
minimum transverse diameter of the shaft	34

Fig. 1. Ingarano (Apricena, Gargano, Apulia, Southern Italy).
The Cava della Ferrovia (height about 12 m) (frontal view); the drawing shows the precise point of the finding

Fig. 3. *Coelodonta antiquitatis* (Blumenbach, 1799); Late Pleistocene; Ingarano (Apricena, Gargano, Apulia, Southern Italy); fragmentary second (?) upper molar; *norma occluso-lingualis*

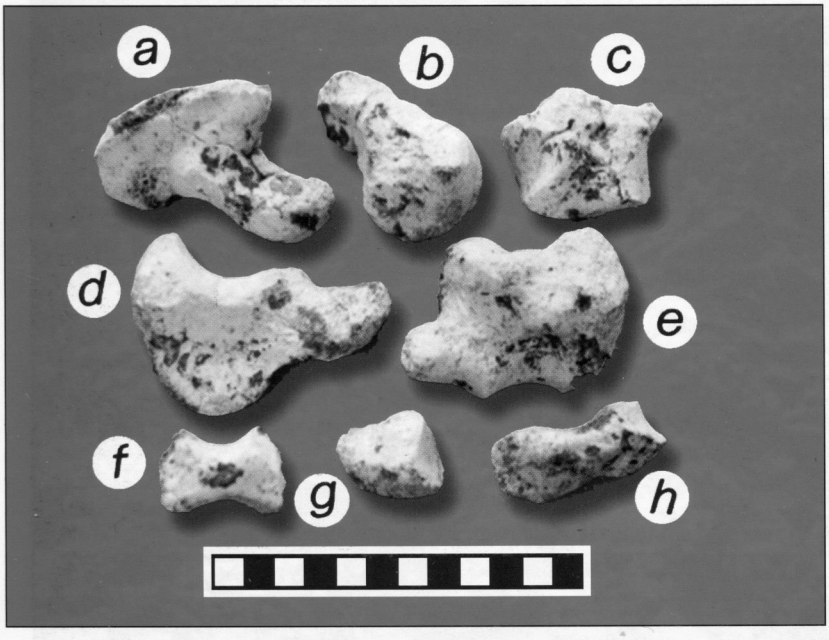


Fig. 4. *Coelodonta antiquitatis* (Blumenbach, 1799); Late Pleistocene; Ingarano (Apricena, Gargano, Apulia, Southern Italy); carpals: (*a*) scaphoid, (*b*) semilunar, (*c*) pyramidal, (*d*) pisiform, (*e*) trapezium, (*f*) trapezoid, (*g*) magnum, (*h*) uncinate

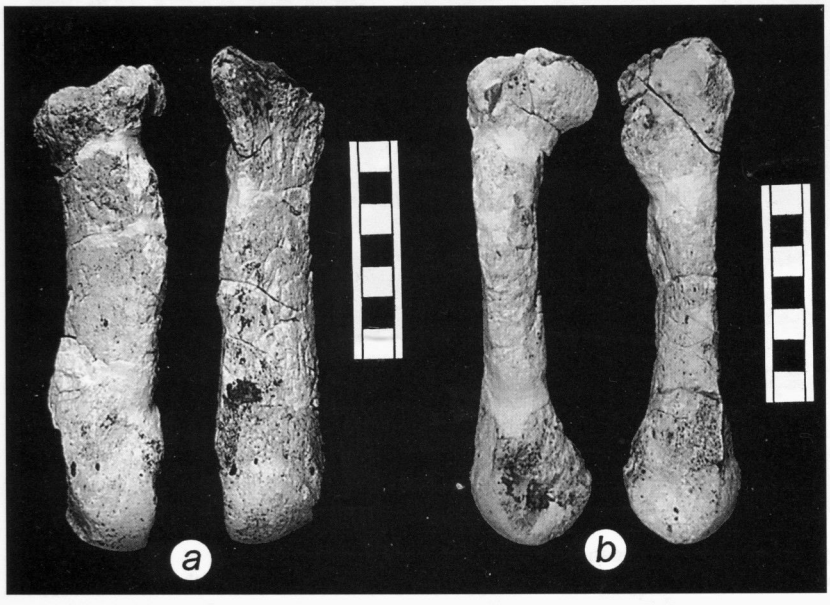
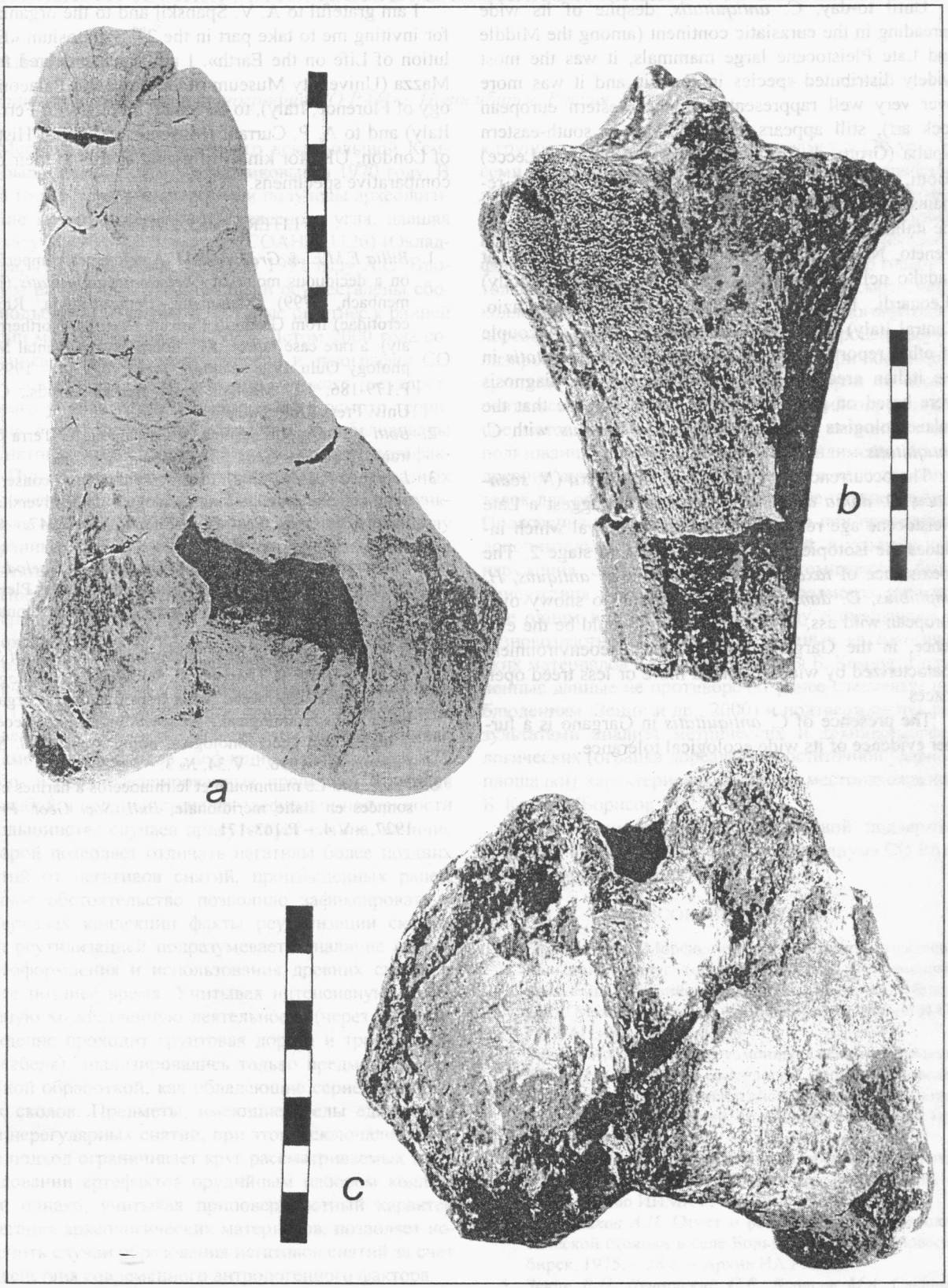


Fig. 5. *Coelodonta antiquitatis* (Blumenbach, 1799); Late Pleistocene; Ingarano (Apricena, Gargano, Apulia, Southern Italy); second and fourth metacarpal; (a) *norma cranialis* and (b) *norma lateralis*

PLATE 1



Pl. 1. *Coelodonta antiquitatis* (Blumenbach, 1799); Late Pleistocene; Ingarano (Apricena, Gargano, Apulia, Southern Italy); (a) distal epiphysis of *humerus, norma caudalis;* (b) proximal epiphysis of *tibia, norma caudalis;* (c) proximal epiphysis of *tibia, norma proximalis*

DISCUSSION

Until to-day, *C. antiquitatis,* despite of its wide spreading in the eurasiatic continent (among the Middle and Late Pleistocene large mammals, it was the most widely distributed species in Eurasia and it was more over very well rappresented in the western european rock art), still appears rare in Italy; in south-eastern Apulia (Grotta di Cardamone, Terra d'Otranto, Lecce) [Botti, 1890; Vaufrey, 1927] some other skeletal remains of *C. antiquitatis* have been found. In the rest of the italian peninsula, it is recorded at Fumane (Verona, Veneto, Northern Italy) [Billia & Graovac, 1999a], at Fadalto nel Polesine (Rovigo, Veneto, Northern Italy) [Leonardi, 1947a], at Monte Circeo (Latina, Lazio, Central Italy) [Palmarelli & Palombo, 1981]. A couple of other reports about discoveries of *C. antiquitatis* in the italian area are also described, but the diagnosis were based on postcranial rests and I suppose that the palaeontologists misidentified *S. hemitoechus* with *C. antiquitatis.*

The occurrences at Ingarano of some *taxa* (*N. scandiaca, D. dama dama, E. hydruntinus)* suggest a Late Pleistocene age referable to the time interval which includes the isotopic stages from stage 4 to stage 2. The coexistence of *taxa* as *S. hemitoechus, E. antiquus, H. amphibius, D. dama dama,* in addition to snowy owl, european wild ass, woolly rhino itself would be the evidence, in the Garganic area, of a palaeoenvironment characterized by wide grassland more or less treed open spaces.

The presence of *C. antiquitatis* in Gargano is a further evidence of its wide ecological tolerance.

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