

THE HUMAN POPULATION OF ITALY - MAN AND ENVIRONMENT IN THE PAST: CENSUS AND ANALYSIS

GENERAL INTRODUCTION

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GENERAL INTRODUCTION

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1. INTRODUCTION

A group of researchers confronted the theme of the project by analysing anthropogenic traces in order to define the dynamics of human population in ancient prehistory.

All of the periods which refer to hunter-gatherer groups have been taken into consideration, from the Lower Palaeolithic to the Mesolithic, and in particular those periods for which the available data consent a thorough investigation of the problem. Particular attention has been paid to time spans characterised by cultural stability, which indicate that an equilibrium had been reached between man and the environment, and periods which witnessed the adaptation of material culture to changing climatic conditions. Distinct geographic regions have been considered, and those areas and sites which are considered to be more significant have been analysed in more detail.

The research assumed a distinctly interdisciplinary character. The process of reconstructing the past environment was entrusted to the earth sciences (geomorphology, sedimentology, pedology) and the biological sciences (palynology, palaeontology). The analysis of the human populations has also taken into consideration data of various different types such as human skeletal remains (which are very rare in Palaeolithic and Mesolithic deposits) and traces of human activity (industries, settlement structures, economic activities, logistical systems, social organization, spiritual life). A significant contribution has been made by the utilization of statistical methods in various disciplines, such as the application of analytical morphometry in the field of human phylogenesis. Finally, the systematic application of absolute dating methods has enabled individual events to be organized according to a time scale.

2. CHRONOLOGICAL FRAMEWORK

The time span taken into consideration is of the order of a million years, to which age the oldest traces of human population in Italy can be dated. From a geological point of view this time span corresponds to the most recent part of the Lower Pleistocene, the Middle Pleistocene, the Upper Pleistocene and the Holocene.

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The most recent part of the Lower Pleistocene is poorly known; it corresponds to the oldest glaciations recognized in the Alpine area (Donau and Günz). As regards the lithic industries, these are called «the oldest human industries» and are considered to be distinct from the Lower Palaeolithic industries. This period ends around 0.73 mya, in correspondence with the Matuyama-Brunhes palaeomagnetic reversal.

The Middle Pleistocene begins with the Günz-Mindel interglacial which corresponds with a palaeontologically well-defined level (Cromerian). This was followed by a series of glacial transgressions, and the ice sheets crossed the southern coast of the Baltic Sea. In the northern part of central Europe three major glacial phases have been identified: Elster stadial (0.48-0.40 mya); Saale stadial (0.35-0.24 mya); and Warthe stadial (0.18-0.13 mya). In the Alps the moraine deposits of this period are referred to two glaciations, the Mindel and the Riss. Traditionally the Mindel glaciation was correlated with the Elster and Saale stadials, and the Riss glaciation with the Warthe stadial. According to this traditional concept, the Mindel-Riss interglacial in the Alps was retained to be the «great interglacial» recognizable by the intensity of the pedogenetic phenomena. In central Europe the deposition of the «Ancient loess» is related to the glaciation of the Warthe stadial. In correspondence to the expansion of the ice sheets and of the Alpine glaciers, there were important regressions of the coastline which considerably modified the configuration of the land above sea-level with the exposure of extensive areas of the continental platform (English Channel, upper Adriatic, Black Sea, etc.). The upper limit of the Middle Pleistocene is identified with the beginning of the Eemian (Riss-Würm), circa 0.13 mya. The lithic industries of this period, referable to *Homo erectus*, are attributed to the Lower Palaeolithic.

The Upper Pleistocene began with the Eemian interglacial, which is well marked on the palaeotemperature curve established on the basis of the oxygen isotope relationship and also in the pollen series, and corresponds to a marine transgression (Tyrrhenian). In the western Mediterranean area the vegetational associations suggest a warm and relatively humid climate, which became increasingly more temperate towards the end. In northern Italy, a phase characterised by the association of pine and spruce was followed by a phase with broadleaved forests. The interglacial saw the development of the Middle Palaeolithic complexes associated with *Homo sapiens neanderthalensis*.

The climate curves show a deterioration after 100,000 BP. Generally the beginning of the last glaciation (called Vistula in central Europe and Würm in the Alpine region) is attributed to a negative oscillation at around 80,000 BP. Within this glaciation in north and central Europe two pleniglacials are recognizable, separated by an interpleniglacial. The initial phase of the glaciation, characterised by a cool-humid climate (Würm I according to French authors), ended with an interstadial which may correspond to a modest marine transgression. The correlation with the temperate pollen zones recognized in central Europe (Amersfoort and Brörup) is fairly uncertain. There then followed the First Pleniglacial which in central Europe is marked by the moraines of the Leningrad stadial, while in the Alps these older Würm moraines have not yet been identified. The deposition of

the lower recent Loess in the European plains corresponds to the arid-cold phase of the First Pleniglacial. South of the Alps a coeval phase of loessic deposition has been recognized in cave and open-site deposits.

The First Pleniglacial was followed, between 40,000 and 27,000 BP, by the Würm interpleniglacial within which various pollen zones have been recognized: the Hengelo-Les Cottés interstadial (40,000-35,000 BP); a phase of «climatic instability» (sensu Arl. Leroi-Gourhan) (35,000-33,000 BP); a phase with an arctic-cold climate (33,000-32,000 BP); the Arcy interstadial (32,000-30,000 BP); and the Kesselt interstadial (29,000-27,000 BP).

The Second Würm Pleniglacial (27,000-15,000 BP) peaked between 23,000 and 17,000 BP with the stadials corresponding to the Brandenburg and Frankfurt moraines in central Europe, and the «Würm» moraines in the Alpine region. In correspondence with this second pleniglacial there was an important regression of the shoreline in which the sea-level was lowered by a hundred metres. During this period the upper Adriatic became completely exposed (the fluvial morphology of the river Po and its affluents have been identified on the sea floor).

There then followed a phase of deglaciation and, around 15,000 BP, the ice sheets abandoned central Europe for ever. This phenomenon is used to mark the beginning of the Würm Late Glacial, which spans the phase of the retreat of the glaciers (Kresta stadal 14,900-14,000 BP; Luga stadal 13,700-13,000 BP; Neva stadal 12,000-11,7000 BP; Salpauselkä stadal 10,900-10,200/9,900 BP). In the pollen sequence these stadials correspond to the Dryas (Dryas 1a, 1b, 2 and 3) which is separated by various temperate zones (pre-Bölling, Bölling and Alleröd). These zones which were defined in north-central Europe have also been recognized in western Atlantic Europe and in the Alpine-Po plain region.

In the Alpine region the deglaciation was marked by stadials of retreat (Bühl; Schlern; Gschnitz; Daun; Egesen) whose correlation with the type stadials recognised in northern Europe is still uncertain; it seems, however, that the Daun moraines which are found at a short distance from the present glacial fronts correspond to the older and middle Dryas (1 or 2); the deglaciation would therefore have occurred before the Alleröd interstadial. The pollen series from the middle to high mountain zone of the Alpine region confirm the presence of a pioneer vegetation in this period. A marine transgression (Flandrian), which brought the shorelines to their present position, corresponds to the retreat of the glaciers at around 5,000 BP.

The early part of the Würm saw the presence of *Homo sapiens neanderthalensis* associated with the lithic industries of the Middle Palaeolithic and the initial phase of the Upper Palaeolithic (Chatelperronian and Uluzzian). During the course of the Würm interpleniglacial *Homo sapiens sapiens* became diffuse, associated with the Aurignacian complexes. The final development of the Upper Palaeolithic in Italy is spanned by the Gravettian complexes, and subsequently by the Epigravettian complexes which are subdivided into an early phase, of pleniglacial age, and a late phase, of Late Glacial age.

Around 10,000 BP the residual ice sheet which was present on the Scandinavian peninsula divided; this phenomenon marks the boundary between the Pleistocene and the Holocene. The chronology of the Holocene is essentially based on the pollen zones. The early Holocene began with two phases of arid temperate and

warm climate (Pre-Boreal 10,200-8,700 BP and Boreal 8,700-7,500 BP) followed by the climatic optimum (Atlantic 7,500-4,500 BP), and finally the Sub-Atlantic and Sub-Boreal. The early part of the Holocene, between 10,000 and 6,500 BP, saw the development of the Mesolithic complexes.

3. EVOLUTION OF THE ENVIRONMENT

The general palaeogeographic and climatic conditions in Italy during the Quaternary have already been briefly discussed in terms of their significance as chronological markers. However the particular geographical configuration of Italy requires that specific regions be distinguished.

In northern Italy the Alpine-Po plain region presented a continental climate, which was accentuated in correspondence with the pleniglacials when the Po plain extended as far as the Dalmatian coast. In these phases the different combination of climatic factors determined either mountain prairie landscapes or steppe landscapes. The Adriatic coast was also exposed to continental influences coming from the east (Balkan). The Tyrrhenian coast, on the other hand, witnessed climatic conditions of a more Mediterranean type. Finally, the southern most part of the peninsula, Calabria and Sicily, maintained a typical Mediterranean aspect.

As part of the scope of this project, original studies were made in order to better define the different environmental situations which accompanied the human population of Italy. As regards the Alpine-Po plain area, numerous contributions published here confront this theme using interdisciplinary methodologies.

The pollen content, the sedimentology, the degree of evolution of the soils and the faunal remains, all document the progressive climatic deterioration which started towards the end of the Pliocene and then continued with the considerable temperature decrease associated with the Pleistocene glaciation. The biological environment thus shows a progressive rarefaction of the more thermophilous vegetation.

With the Donau glaciation, the climatic deterioration was not very marked and an oceanic climate was maintained; the forest assemblage was constituted by spruce, birch, alder and oak of the same types as the modern ones, together with species which then became extinct with successive glaciations.

The Donau-Günz interglacial was characterised by a temperate climate with carex, walnut, oak and chestnut, etc.

The following Günz and Mindel glaciations brought a colder forest vegetation characterised by pines, cedar, birch and spruce, and saw a marked impoverishment of the Tertiary fauna.

With the Riss glaciation the exotic elements such as *Tsuga*, *Cedrus*, *Carya* and *Pteriocarya* became more and more rare and finally disappeared, while others such as *Zelkova* and *Keteleeria* did not survive the first Würm temperature cooling.

Following these extinctions the composition of the forest flora was qualitatively very similar to that of the present day. With respect to the present vegetational order, the different geographic zonation of the fossil plants according to the

altitudinal fascia is therefore a direct expression of the climatic alternations which occurred.

During the course of the Würm glacial events, the Alpine chain constituted a barrier for the biological world which could only be crossed along the Danube-Balkan-Adriatic route. With regard to the Po plain area, forest communities survived in refuge areas at various latitudes even during the periods of maximum glacial rigour. The environmental alternations of the Würm period and the Late Glacial are characterised by a succession of advances from the refuge zones towards the high latitudes, which increased during the periods of climatic amelioration and decreased during phases of climatic deterioration.

To the palaeobotanic data retrieved from the stratigraphic series of the cave deposits containing anthropogenic remains is added the information resulting from studies of the fossil fauna. These are representative not only of the micro-environment characteristic of the site itself (essentially micromammals), but also of the area around the site in which prehistoric man hunted. Therefore, apart from the ecological data which documents the composition of the animal biotic community, such faunal studies also illustrate various cultural aspects related to the acquisition of food (seasonality, extension of the hunting area, butchery activities, etc.).

Within the scope of the geological study, the recognition of the effects of climate on the deposits connected to the prehistoric sites has consented a detailed stratigraphic scanning of the environmental events. The effects of the temperate interglacial climate of the Middle and Upper Pleistocene are recognised as having led to the formation of the soil type known as «Terra Rossa». The glacial and periglacial effects are recognisable on the basis of the different locations of the pleniglacial frontal moraines in the piedmont zone and of the Late Glacial stadial moraines in the mountain zone. The study of other diagnostic sediments adds to our knowledge of these climatic effects.

Apart from fill deposits, which are often intercalated with levels of human occupation, particular interest has been paid to the numerous loess deposits situated along the margin of the Po basin, inside the Alpine chain, and around the Adriatic Apennine piedmont. It is significant that the loess was deposited during distinct periods of the «periglacial» history of the Pleistocene glaciation; furthermore, the presence of lithic industries in some of these loess deposits allows us to determine their chronology and environmental context. Considered together these data enable us to distinguish the following:

- Middle Pleistocene loess deposits (dating elements: Lower Palaeolithic industries, cryoclastic deposits, evolution of the pedological profile);
- Upper Pleistocene deposits with two distinct phases of accumulation (dating elements: Middle and Upper Palaeolithic industries in stratigraphic succession and from open deposits);
- Late Glacial deposits from open sites appertaining to the industrial complex of the Final Epigravettian.

4. THE PROBLEM OF THE ORIGIN OF HUMAN POPULATION IN ITALY

This problem has been confronted in two areas which present a documentation of extreme interest: the Emilia-Romagna Apennines and the Isernia basin in Molise (PERETTO, this volume).

In the Emilia Romagna-Apennines, sites which are still being excavated have produced lithic assemblages which have been dated to the Lower Pleistocene on the basis of their typology and stratigraphic context.

In Molise the large site at Isernia la Pineta dates to 736,000 BP and has revealed the oldest habitation structures known in Europe. The research conducted at this site has notably increased our knowledge about this period, although with regard to the modes of population this is still very scarce since no human remains have yet been found which can be securely attributed to this period.

5. THE LOWER PALAEOLITHIC

The study of the Lower Palaeolithic has been confronted in various areas where preliminary investigations forecasted interesting results.

In northern Italy the Emilia-Romagna Apennines were chosen, and various sites have been explored revealing the following:

- a flake complex with Protolevallois and Clactonian technique, sometimes associated with bifaces;
- a complex of Rissian age with Levallois technique flake industries and bifaces (PERETTO, this volume).

From northern Italy (Carso Triestino) and from Basilicata come human bones which are retained to be the oldest remains of Mindelian age. Some nutritional and pathological information have been drawn from these bones which are attributable to *Homo erectus* on the basis of their metrical and morphological characteristics (MALLEGNI, this volume).

The study of the femur from Ponte Mammolo (near Rome), which is of probable Rissian age, further enriches our knowledge about this «preanderthal» period.

In central Italy research has been carried out at the important Acheulean site of Castel di Guido in Lazio (RADMILLI, this volume). The detailed interdisciplinary study has revealed a living floor dated to 300,000 BP with tools, animal bones and human bones. The discovery of a bone biface represents an exceptional find.

In southern Italy attention has focused on the Gargano promontory (Apulia) which is especially rich in Lower Palaeolithic finds (PALMA DI CESNOLA, this volume). Typological analyses has enabled the identification of more facies of the Acheulean, of which the chronological position is being investigated.

Finally, research has started on the Lower Palaeolithic of Sardinia (PALMA DI CESNOLA, this volume). The finds are particularly interesting because they relate to the problem of the first population of the island and the existence of a land bridge which joined it with mainland Italy.

6. THE MIDDLE PALAEOLITHIC

Palaeoanthropological research on the Middle Palaeolithic has given interesting results, especially for the area of central and southern Italy.

Human bones excavated by Puccioni in Tuscany (1919-22) have been reexamined by COTROZZI *et al.*, and attributed with certainty to a Neanderthal type.

From Calabria and Apulia respectively come juvenile remains and an adult femur, while a fragment of Neanderthal mandible belonging to a juvenile individual which was found in Calabria at Riparo Molare has been the object of a particular study (MALLEGNI, this volume). In the same region, excavations along the Cilento coast have produced industries, the analysis of which enabled PALMA DI CESNOLA (this volume) to propose a regional sequence for the Middle Palaeolithic which includes Charentian complexes of Quina type, Typical Mousterian and Typical Mousterian with Levallois technique.

7. THE UPPER PALAEOLITHIC

New sites appertaining to the archaic phase of the Upper Palaeolithic (Uluzzian) have been explored in Tuscany. At the same time the Uluzzian lithic assemblages have been investigated thoroughly (PALMA DI CESNOLA, this volume).

The ancient and middle phases of the Upper Palaeolithic have been studied principally in the region of Veneto. An Aurignacian site which is exceptional for its high altitude location (1450 m) has been discovered on Monte Avena in the Feltre Pre-Alps. In the Berici Hills the deposit of Grotta di Paina has produced Aurignacian, Gravettian and ancient Epigravettian industries (BROGLIO, this volume).

In the deep stratigraphic series from Grotta Paglicci in the Gargano Promontory an investigation of the ancient Epigravettian levels with foliates and shouldered points has been carried out (PALMA DI CESNOLA, this volume). Of particular interest is the discovery of a fragment of rock which had fallen from the wall, with the hind part of a horse painted on it. From elsewhere in Apulia (Grotta delle Veneri near Parabita, Lecce) come two adult skeletons associated with a large mammal fauna (MALLEGNI, this volume).

8. EPIPALAEOLITHIC AND MESOLITHIC

The research on the final phase of the Upper Palaeolithic and Mesolithic has been principally concerned with the regions of Venetia, Trento, Apulia and Campania.

The discovery of two burials in the Alpine region, one Epipalaeolithic and the other Mesolithic, was quite exceptional. The first was found at Val Cisman in the province of Belluno and the second at Mondeval de Sora near San Vito di

Cadore. The excavation of the burials was undertaken by two groups led by A. Broglio (Val Cison) and A. Guerreschi (Mondeval). Both skeletons are male, the Palaeolithic one of about 25 years old and the Mesolithic one of about 40 years. Their morphology, which was studied using both traditional anthropological methods as well as computerized axial tomography and image processing, demonstrates the persistence in the Dolomites of a Cro-Magnon type until circa 7,000 years ago. The individual from the Mesolithic burial suffered from a poliostotic dysplasia of an obscure ethiology (ALCIATI *et al.*, in press).

In Valdadige a site has been excavated with terminal Epigravettian and Mesolithic occupations in a clear stratigraphic succession. Various high altitude sites, at 1850 and 2000 metres above sea-level, have been explored in the Siusi Alps in Alto Adige (BROGLIO, this volume).

In Apulia an in situ industry of Sauveterrian type has been discovered for the first time, while in Campania a Final Epigravettian industry followed by a Mesolithic industry with triangles and segments was found. These discoveries in southern Italy increase the area of diffusion of Mesolithic and Sauveterrian complexes (PALMA DI CESNOLA, this volume).

9. RECENT PREHISTORY

As regards more recent prehistory, the number of human bones available for study increases considerably; these finds are no longer isolated and rare, and thus it is possible to consider them cumulatively using both their qualitative (epigenetic) and quantitative (metrical and classic) characteristics.

As foreseen in the original project which obtained its five-yearly finance, the program was articulated in three phases:

- First phase: cataloguing of the human bones from recent Italian prehistory with specific reference to their chronological and cultural collocation.
- Second phase: revision and completion of the metrical, morphological and palaeontological data, and related bibliographic documentation.
- Third phase: statistical elaboration of the data and the construction of a tentative anthropological framework.

Almost all the Italian literature was consulted for both the qualitative and quantitative characteristics: for the former, however, this data was integrated with that from the international literature, given the limited number of works available. From this thorough review of the present state of knowledge about the qualitative anatomic characteristics most widely used in palaeoanthropology for multivariate statistics, the asserted superiority of the epigenetic variables with respect to the classic anthropological characteristics was not confirmed; however for the univariate populationistic study it turned out that some of the characteristics considered produce a certain geographic discrimination which would seem to have a phylogenetic significance on a continental scale.

As regards the multivariate analysis (discriminant functions) of the classic quantitative skeletal characteristics, two preliminary indications emerged:

- 1) the variables which discriminate the samples more than others are maximum length of the femur, total length of the tibia, transversal diameter at the tibial foramen, upper transversal diameter of the ulna, and transversal diameter at the middle of the femoral diaphysis, for the first discriminant function (40.6% of explained variability);
- 2) the relationship between the reclassification of the cases calculated from the discriminant functions with respect to the original classification is 78.2% (ALCIATI *et al.*, this volume).

10. CONSIDERATIONS ON THE RESULTS

A necessary premise to any investigation of the relationship between Man and Environment in the past is a correct approach to the research, both in the field and in the laboratory. This project served as an occasion to test the various methodologies followed.

Excavation techniques.

The investigation of anthropogenic deposits was carried out according to the criteria needed to distinguish different phases of occupation. Advanced excavation techniques have been adopted, which have allowed a microstratigraphic scanning of the deposits. Areal methods of site sampling used fine-mesh sieving, flotation etc, which results in the total collection of finds. Documentation has been intensified, and in particular living floors have been plotted three dimensionally with the positioning of individual finds (sometimes using computerised techniques) and, in the most interesting cases, have then been reproduced using casts.

Laboratory analysis.

The study of the micromorphology of the soil has been introduced in sedimentological and pedological analyses, which enables the recognition of the effects of pedogenetic agents at a microscopic scale. This in turn has consented the identification of the climatic and environmental conditions which contributed to their deposition and to the evolution of their profiles. Furthermore, the application of this method to series from a specific area allows correlations to be made between the different profiles and thus may help to date them.

Palynological investigations have been applied to cave and rockshelter sediments as well as to stalagmitic concretions with encouraging results, as a result of new methods for preparing and enriching the samples. Thus one can seriate pollen diagrams coming from series with anthropogenic deposits, and identify the vegetational environment within which prehistoric man lived. The correlation between the pollen series is also of primary importance for the construction of a chronological framework.

The palaeobotanic and archaeozoological investigations have enabled a deepening of our knowledge about the way of life, the systems of provisioning, and the forms of subsistence of prehistoric communities.

In the analysis of the lithic assemblages the study and experimentation of flaking techniques and use wear have been added to the traditional morphotechnical analyses. The latter are in fact giving way to more advanced methodologies in data collection and analysis.

On the basis of refined methods of data collection on the excavations, in some cases it has been possible to proceed to the study of the spatial organization of the tools and other finds. In some areas in which sites are particularly numerous it has also been possible to begin the study of settlement systems (territory analysis).

Definition of the taxonomic units using analysis of the lithic assemblages.

For older prehistory the recognition of the taxonomic units and their chronostratigraphic collocation is an essential premise to research on the modes of population, and important results have been achieved in this field. As regards the «oldest industries» (which precede those of the Lower Palaeolithic), research in the Emilia-Romagna Apennines and at the site of Isernia has allowed the determination of the techno-typological characteristics of the chopper and flake industries and their chronological collocation.

For the Acheulean period morphotechnical investigations have also consented the recognition of different taxonomic units and the organization of their chronological attribution.

For the Middle Palaeolithic in Campania it seems possible to attribute a chronological significance to observed taxonomic differences.

Studies of morphology and flaking techniques have been particularly thorough for the ancient phase of the Upper Palaeolithic (Aurignacian), for the Epipalaeolithic and the Mesolithic. Cluster analyses has enabled the recognition of taxonomic units and the definition of evolutive processes, thus giving statistical confirmation to the conclusions reached by more traditional methods.

Site ecology and logistical systems.

In the sites where depositional conditions have favoured the preservation of organic material (pollen, plant remains, and fauna), it has been possible to reconstruct the environment inhabited by prehistoric man. The papers published here report the results of such paleoecological studies.

In some areas in which research has been more intense and in which it has been possible to recognise coeval sites, the investigations have been oriented towards the definition of territories and logistical systems. Interesting results have been achieved for the Adige Basin in the Epipalaeolithic and Mesolithic periods.

Techniques of skeletal remains analysis.

A critical and experimental revision of the methods used for the analysis of skeletal remains was necessary. A general framework of methods and techniques

destined for such a revision regarded:

- the restoration and casting of surfaces using analytical techniques; the definition of standards of spatial positioning for the recording of measurements and coordinates;
- the definition of the number of individuals in the case of mixing of the remains; the representativeness of the samples and the occurrence of situations of under and over estimation; the problem of missing data and of seriation;
- the age determination of individuals; macromorphological methods; combined method (ACSADI and NEMESKÉRI), histological and radiographic methods;
- the sex determination of individuals; metrical and discontinuous characteristics; mathematical methods for the description of morphological characteristics applicable to the skull and pelvis; methods for the diagnosis of parity; description and quantification of sexual dimorphism;
- the typological study of skeletal remains; quantitative methods; analytical morphometric procedures (upper grade polynomials, Fourier analysis, descriptive parameters of allometry);
- techniques of physical reconstruction (evaluation of the stature from postcranial segments, determination of the cranial capacity, intermembral indices and physical proportions);
- macroscopic and microscopic study methods of pathological material; radiological and tomographic methods; the identification of fatal diseases and operations on the skeleton (deformation and cranial perforations, tooth filing, odontectomy, voluntary and cultural manipulation of skeletal remains);
- investigations on dietary habits; evaluation of occlusions and tooth use; scanning microscopy for the study of use wear traces on enamel; techniques of atomic absorption, microchemical and X-ray fluorescence for the survey of trace elements;
- survey and quantification of the organic fraction of skeletal remains (histological and histochemical techniques for collagen determination of blood groups).

The use of morphometric analytical procedures for the study of cranial sagittal profiles of the hominid phyletic series has enabled the recognition of transformations which are significant for the explanation of the dynamics of evolutive processes of the human skull and their morphogenesis (PESCE DELFINO & ALCIATI, this volume).

In a schematic review of the palaeoanthropology of prehistoric Italian populations, Mallegni and collaborators have underlined aspects of palaeopathology and dietary habits.

Research on prehistoric populations (ALCIATI *et al.*, this volume) have demonstrated that there are no particular advantages in the use of so-called non-metrical skeletal variables (epigenetic characteristics) with respect to the more tested use of classic osteometric characteristics.

	Chronology		Palaeo Magnetism	Isotopic Phases	Glacial Chronology		
10	Holocene			1			
	Upper Pleistocene	Vistulian		2	Tardiglacial II Pleniglacial		
				3			
50				4	I Pleniglacial		
				5	Early Würm Last Interglacial		
100							
120	Middle Pleistocene	Eemian		6	«Riss Complex» Saale	Warta	
				7			
220				8			
				9			
320				10			
		11		Early Saale			
420		12					
		13			Holstein		
520		Cromerian			14	«Mindelian Complex» Elster	Elster
					15		
620	16						
	17						
710	18						
1.0	Lower Pleistocene	Upper Villafranchian		Matuyama	23-19	Early Glaciations	
2.0		Middle					
3.0	Upper Pliocene	Lower Villafranchian					

Chronology		Pollen Zones	Alpine Glacial Chronology	Complexes industries and cultural traditions
B.P. (1950)	B.C. Before Christ			
5000		Atlantic	Holocene	Neolithic
		Boreal		Mesolithic
		Preboreal		Castell-novian
10000		Dryas III	Tardiglacial	Late Epigravettian
		Allerød		
		Dryas II		
		Bölling		
		Dryas I		
		Pre-Bölling		
15000		Angles		
15000		Lascaux		
20000		Laugerie	II Würm Pleniglacial	Early Epigravettian
20000				
		Tursac		
25000				
25000		Kesselt		
30000		Arcy		
30000				
35000		Les Cottès		
35000			Würm Interpleniglacial	Aurignacian
			Upper Pleistocene	Gravettian
			Upper Paleolithic	Middle Paleolithic