## Geometric Period Plithos Burial Ground at Chora of Naxos Island, Greece: Anthropology Report

## Anagnostis P. Agelarakis



# Archaeopress Publishing LTD Gordon House 276 Banbury Road Oxford OX2 7ED 

www.archaeopress.com

ISBN 9781784913038
ISBN 9781784913045 (e-Pdf)
© Archaeopress and A P Agelarakis 2016

All rights reserved. No part of this book may be reproduced or transmitted, in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of the copyright owners.

## Contents

Prologue ..... 1
Geometric Component Burial Contexts and Anthropological Remains ..... 2
Anatomic Distribution of Preserved Skeletal Remains ..... 3
Aspects of Population Sample Demographic Profile ..... 4
Biological Sex Assessments .....  4
Age Assessments ..... 5
On Skeletal Morphology ..... 7
Palaeopathological Profile ..... 11
Palaeopathologic Conditions ..... 11
Trauma Manifestations ..... 14
Non-Anthropological Organic Materials of Burial Contexts with Emphasis on Faunal Remains ..... 16
Epilogue ..... 19
References Cited. ..... 21
Acknowledgements ..... 23
Graphs ..... 24
Tables ..... 53

## List of Graphs and Tables

Graph 1 ..... 25
Graph 2 ..... 25
Graph 3 ..... 26
Graph 4 ..... 27
Graph 5 ..... 28
Graph 6 ..... 29
Graph 7 ..... 30
Graph 8 ..... 30
Graph 9 ..... 31
Graph 10 ..... 32
Graph 11 ..... 32
Graph 12 ..... 33
Graph 13 ..... 33
Graph 14 ..... 34
Graph 15 ..... 34
Graph 16 ..... 35
Graph 17 ..... 36
Graph 18 ..... 37
Graph 19 ..... 37
Graph 20 ..... 38
Graph 20a ..... 38
Graph 21 ..... 39
Graph 21a ..... 39
Graph 22 ..... 40
Graph 22a ..... 40
Graph 23 ..... 41
Graph 23a ..... 41
Graph 24 ..... 42
Graph 25 ..... 43
Graph 26 ..... 43
Graph 27 ..... 44
Graph 28 ..... 44
Graph 29 ..... 45
Graph 30 ..... 45
Graph 31 ..... 46
Graph 32 ..... 47
Graph 33 ..... 48
Graph 34 ..... 48
Graph 35 ..... 49
Graph 36 ..... 50
Graph 37 ..... 51
Graph 38 ..... 51
Graph 39 ..... 52
Graph 40 ..... 52
Table 1 ..... 54
Table 2 ..... 86
Table 3 ..... 86
Table 4 ..... 86
Table 5 ..... 87
:

## Prologue

Significant questions remain unanswered regarding the dynamics of the human condition that prevailed during the transitional period within the Early Iron Age, from the ProtoGeometric into the Geometric Period in ancient Greece. Sustained population growth in mainland and island communities in augmenting demographic stability, economic growth and incentives for long distance trade, support for the resurgence of the letters and arts, developments in the domains of the political milieu and administrative organizational abilities, as well as the availability of necessary diplomatic and military capacities must have been some of the critical objectives, decisive prerequisites, for the emerging contexts and subsequent sovereignty of the early city-states (Ahlberg 1971; Boardman 1998; Coldstream 2003; Hesiod; Kirk 1949; Kourou 1984; 1998; and 1999; Lambrinoudakis 1988; Moore 2000; Morrison and Williams 1968; Reber 2011; Snodgrass 2000; Schweitzer 1971; Zafeiropoulou 1983; 2001; and 2003; Zafeiropoulou and Agelarakis 2005).

Hence, data that may offer reflections on features and nuances of the circumstances and living conditions of populations which were active during this important temporal juncture are essential in providing comprehensive understandings of the time period dynamics; particularly when it may be possible to retrieve, study, and evaluate life aspects of the individual members ${ }^{1}$ of those populations. Such an approach based on archaeological anthropology offers valuable research applications providing, in addition to bioarchaeological data, aspects on the subtleties of individual members' life hues and conditions, components of the communal dynamics and actions which facilitated transformations that in effect created the foundation pillars, the visions, and legacies of the Geometric period, thus also providing launching platforms for the modes of the subsequent Archaic period in Greek antiquity.

This report aims to offer glimpses of the human condition on Naxos island focusing on the archaeoanthropologic study of the human skeletal remains along with associated contexts of faunal materials recovered from the Geometric ( $9^{\text {th }^{4}-7^{\text {th }} \text { c BC) component of the burial ground site of Plithos in Chora }}$ at Naxos island. The record of skeletal remains was recovered mainly during the late 1970s with some additional materials unearthed in 2002 (Reber and Zapheiropoulou 2012; Zafeiropoulou 1988; and 2007). As provided by assessments of the anthropological laboratory study, carried out at the Naxos Archaeological Museum in 2005, the human skeletal population sample was identified to comprise 60 individuals ${ }^{2}$, along with an associated assembly of faunal remains; see Table $\mathbf{1}$ for a concise report. The human skeletal record had been recovered as primary and secondary burials, in inhumed or in cremated form, representing 48 burial contexts that involved either individual or multiple interments. Of the 60 human individuals identified during the laboratory analysis, four were atypically featured by few fragmented small infracranial bone fragments, or by a single ex situ tooth in dry form, while one in cremated form was represented by a flaked off bone fragment weighing $1.0 \mathrm{gr}^{3}$. While the recorded fragments representing these 5 individuals could be considered as of intrusive nature into the specific burial contexts from which they were recovered, juxtaposed to population approach assessments of the skeletal collection recovered, and based on their extremely limited condition of preservation as well as lack of further diagnostic anatomic criteria were not involved in subsequent inspectional and mensurational bioarchaeological analyses, or in palaeopathological assessments. Hence, the data of the skeletal record were retrieved from the remaining fifty-five individuals, while the unit of analysis in this project was based on the skeletal individual.

[^0]Analyses of the human skeletal record were carried out through the interdisciplinary methodological processes of BioArchaeology and Physical/Forensic Anthropology, following a protocol guided by the requirements of an Archaeological Anthropology laboratory substrate, in working with the unique, nonrenewable, remains of the site's human skeletal record (Agelarakis 1996; Angel 1981; Aufderheide, Rodriguez-Martin, and Langsjoen 1998; Bass 2005; Brothwell 1981; Buikstra and Beck 2006; Hillson 2002; Iscan and Kennedy 1989; Komar and Buikstra 2008; Krogman, and Iscan 1986; Larsen 1997; Ortner 2003; Ortner and Putschard 1981; Shipman, Walker, and Bichell 1985; Steele and Bramblett 1988; Ubelaker 1982, and 1999; Wells 1960; White and Folkens 1991). Henceforth, primary focus was placed in the domain of skeletal biology through the arc trajectory of growth and development to degenerative and aging processes, the manifestations of anatomic morphology and epigenetic/non-metric variability, the nature of demographic composition dynamics, the composite of the palaeopathological profile, along with the tangible traces unveiled through the osteological study reflective of burial customs and practices; constituent elements as these may be in a reassembling of ingredients of life-milieus and of concepts on the passing to afterlife during the Geometric period at Naxos.

## Geometric Component Burial Contexts and Anthropological Remains

Archaeological excavations at the Geometric component of the burial ground documented 48 burial contexts. The laboratory study of the anthropological record determined that 43 out of the 48 burial contexts that yielded human burials had involved single interments while 5 had contained multiple interments (Graph 1). These comprised an assemblage of 55 human individuals given that in addition to the 43 single individuals, 12 individuals were identified from the 5 burial contexts which involved multiple interments (Graph 2). One of those 5 burial contexts included 4 interments; the remaining 4 burial contexts involved 2 interments respectively. The latter appeared during the early stages of laboratory analysis to reveal a rather non-random condition, possibly featuring aspects of burial practice patterns. It was therefore rendered prudent to conceivably establish through the results of the anthropologic analysis the presence or absence of nuances of distinction or variability between the individuals that had been interred as single versus those of multiple interments; it was hypothesized that a set of data could have been yielded, conceivably instrumental in helping illuminate additional facets of the archaeo-anthropological study.

The skeletal population sample of 55 human individuals (homini) contained anthropological remains in both dry and cremated form. The 43 individuals yielded from burial contexts that involved single interments revealed a nearly isometric distribution ratio of $22: 21$ ( $51.16 \%: 48.84 \%$ ) between dry and cremated anthropological remains while of the 12 interments retrieved from burial contexts that yielded multiple interments, $7(58.33 \%)$ were in dry and $5(41.67 \%)$ in cremated form. Hence, the skeletal collection of 55 individuals involved 29 ( $52.73 \%$ ) dry, and 26 ( $47.27 \%$ ) cremated individuals (Graph 3). The distribution of the 29 individuals interred in dry form, recovered from both burial contexts of single and multiple interments, comprised 9 infants and individuals of incomplete skeletal biological-development and maturation at the incidence of death which were designated as of "Indeterminate" biological sex, along with all 14 individuals within the cluster ${ }^{4}$ of Females, and 6 individuals within the cluster of Males. Regarding the distribution of the 26 homini interred in cremated form, it clearly appears that the burial practice involved individuals which were assessed within the cluster of the male biological sex [25 $(96.15 \%)$ out of 26 cases] with the exception of a case ( $3.85 \%$ ) of an adult individual, of "Indeterminate" biological sex due to the very poor condition of skeletal preservation (Table 2).

[^1]
## Anatomic Distribution of Preserved Skeletal Remains

A variety of 9 prescribed subcategories were designated to characterize the nature of skeletal anatomic composition of the collection, annotating a site specific variability on the condition of preservation of the anthropological remains, reflective as it may be of burial customs and practices, as well as of diachronic processes and circumstances including bioturbation which had afforded physical and chemical changes on skeletal anatomic associations, and on individual dental, as well as on bone components within the taphonomic environment of the burial ground.

In addressing skeletal and anatomic representation among the 43 individuals (in both dry and cremated form) retrieved from burial contexts that yielded single interments, 15 (34.88\%) individuals comprised both cranial, dental, post cranial axial, and post cranial appendicular remains, thus presenting the highest score among the ten prescribed subcategories on the curve of skeletal anatomic preservation, followed by the next subcategory comprising $7(16.27 \%)$ individuals preserving postcranial appendicular remains. These were trailed by 8 successive subcategories tapering off at the prevalence score of $2.32 \%$ on skeleton-anatomic preservation, representing a single individual that had preserved post cranial axial and appendicular remains (Graph 4).

Regarding the skeletal preservation among the 12 individuals (of both dry and cremated form) retrieved from burial contexts that yielded multiple interments, $6(50.00 \%)$ individuals comprising of cranial, post cranial axial and postcranial appendicular remains presented the apex on the curve, followed by 2 individuals ( $16.67 \%$ ) preserving postcranial axial and appendicular remains, subsequently tapering off through four contiguous in prevalence subcategories involving 1 ( $8.33 \%$ ) individual respectively (Graph 5).

In juxtaposing the measures of skeletal preservation and degree of anatomic representation of dental and skeletal surfaces between burial contexts which yielded single versus multiple interments, it clearly appears that the former fared better in this regard. Considering that there had not been any particular spatial distribution within the burial ground of graves holding single versus multiple interments, so as to suggest selective pressures of taphonomic impacts, yet without barring the effects of additional postinterment parameters of the natural environment (such as seasonal abiotic conditions of humidity, water level changes, and/or inundation), it is suggested that the reopening and reuse of those graves that received a second interment (with the exception of an unknown case(s) where the burial of multiple individuals took place at conterminous junctures) impacted the skeletal preservation of the earlier interment by altering, at a minimum, the geodynamic conditions ante in relation to the anthropological remains. Such changes alone could have afforded considerable deterioration to human remains, under any phase toward a state of stabilizing equilibrium the anthropological remains may have attained with the surrounding sediments and overall burial environment (Agelarakis 2014; Devlin and Herrmann 2015; Haglund and Sorg 1997). Emphasis to the latter provided the results of sediment acerbity in the burial ground, based on a selective sampling process of burial deposit analyses carried out by the anthropology team; these had revealed a chemical environment of relative acidity. This was an overall unfavorable attribute of the burial environment in the mode of preservation of human skeletal remains in either dry or cremated form. In fact it was reflective of the rather poor condition of preservation of all dental and bone surfaces recovered, indiscriminately between burial contexts of single versus multiple interments, particularly of the dry remains, given that considerable physical and chemical modifications are afforded on cremated dental and bone components prior to interment, initiating during pyre exposure (Bohnert, Rost and Pollak 1998; Buikstra and Swegle 1989; Gejvall 1969; Muller et al., 1998; Myers, Williams and Hodges 1999; Shipman, Foster and Schoeninger 1984; Thompson 2004; and 2005). The human cremated remains showed a mean value on the degree of thermal alteration sustained at a range between the "subcalcined", ${ }^{5}$

[^2]and more rarely at the "calcined" ${ }^{6}$ level (Chochol 1961; Malinowski and Porawski 1969; Wahl 1983). The so called calcined degree of thermal alteration may represent the highest degree of funerary cremation changes on human bones in antiquity, reaching temperatures between $>800^{\circ}$ to ca. $1000^{\circ} \mathrm{C}$ whereby the organiccollagenous/protein components of bones would have been thermally obliterated (Push et al., 2000).

In considering, however, the configuration of skeletal preservation and anatomic representation of the collection at large, comprised of 55 homini, the highest cluster was scored by 16 ( $29.09 \%$ ) interments which retained cranial, dental, post cranial axial, and post cranial appendicular remains, followed by 12 ( $21.815 \%$ ) individuals with cranial, post cranial axial and post cranial appendicular remains, subsequently by $8(14.54 \%)$ individuals with just postcranial appendicular remains, 6 ( $10.90 \%$ ) individuals with only cranial remains, and successively tapering off toward the lowest prevalence score shared by three subcategories, each representing 2 (3.63\%) individuals (Graph 6).

## Aspects of Population Sample Demographic Profile

Evaluations of anatomic morphology and mensurational analyses of the skeletal individuals comprising the population sample were conducted through the scope of Physical/Forensic Anthropology methods and protocols, regarding the retrieval of data on the range of biological growth and maturation processes, reflections of biocultural adaptations permanently recorded on dental and bone surfaces, of acquired, degenerative, and aging changes in order to assess aspects of demographic composition dynamics on biological sex and age subgroups (Gejvall 1963; Graw, Wahl, and Ahlbrecht 2005; Jankauskas, Barakauskas and Bojarun 2001; Norèn et al., 2005; van Vark 1974; and 1975).

## Biological Sex Assessments

Based on the level of assessment certainty ${ }^{7}$, considering among other limiting parameters the state of dental and bone preservation per skeletal individual, seven subcategories have been designated to categorize biological sex determinations (Table 2), among the 55 individuals comprising the collection ${ }^{8}$.

In cases where biological sex could be determined, it was documented that the majority of "Males" were identified as having been interred in cremated form, whereas "Females", and individuals designated within the "Indeterminate" biological sex subcategory" were retrieved in dry form. Addressing the composition of biological sex among the group of 43 individuals, retrieved from burial contexts which yielded single interments, Males comprised $46.51 \%$, Females $23.25 \%$, the "Indeterminate" subcategory $16.28 \%$, followed at an isometric $4.65 \%$ between "Probable Females" and "Probable Males", and tapering off at $2.32 \%$ among the "Possible Females" and "Possible Males" respectively (Graph 7).

Regarding the 12 individuals retrieved from burial contexts which yielded multiple interments, the majority were Males ( $50.0 \%$ ), followed by the "Indeterminate" subcategory ( $25.0 \%$ ), and successively culminating with Females, Probable Males and Possible Males at $8.33 \%$ respectively (Graph 8). Hence, it appeared that Males dominated the synthesis of individuals interred in burial contexts which yielded single interments, followed by Females and chiefly tapering off with the "Indeterminate" subcategory. Among the burial contexts which yielded multiple interments Males were more prevalent, followed by the "Indeterminate" subgroup and tapering off with Females; hence Males showed in both cases the greatest

[^3]prevalence while Females and "Indeterminate" reversed positions between the two groups of single versus multiple interments (Graph 9). In fact, the ensemble of the 55 individuals comprising this population sample, lumped in correlating aggregates on the male, and female biological sex assessment accounted for an $56.36 \%$ proportionality for the Males and $25.45 \%$ for Females; therefore, Females were only represented at the $45.16^{\text {th }}$ percentile of the Male prevalence. The "Indeterminate" subcategory equated to $18.18 \%$ of the population sample (Graph 10).

## Age Assessments

Similarly to the methodological processes implemented for the biological sex assessments, considering the level of assessment certainty, twelve subcategories (Table 3) were designated, interweaving where appropriate between the boundaries of eight basic age categories (Table 4), for establishing age determinations among the 55 individuals of the collection.

The better state of skeletal preservation among individuals recovered from burial contexts which yielded single interments presented fewer limiting parameters in age assessment processes compared to the group of the burial contexts which yielded multiple interments. Regarding the latter, it should be of interest to note that the composition of interments in each of those 5 burial contexts consisted in 3 out of the 5 cases by a skeletally mature Male individual paired with an infant, in the fourth case by three skeletally mature Male individuals and an infant, while the fifth case included a mature Male and a Female individual. Hence, in sequence of interment biological sex and age prevalence herein, there were 7 Males, 4 infants, and 1 Female.

Referring to the age at death variability documented among the 43 individuals retrieved from burial contexts which yielded single interments, all twelve age subcategories ${ }^{10}$ were designated depicting a mortality curve initiating at early post natal years, within "Infancy I", through to old age, within the "Older or Senilis"(Graph 11). An integration of the twelve age at death subcategories, as illustrated in an abridged version of the eight basic age subgroups, clearly reveals a greater mortality prevalence clustering among three sequential age subcategories of Adulthood ${ }^{11}$, cresting within Middle Adulthood ${ }^{12}$ (Graph 12). In further evaluating the intra-age at death dynamics of this group of single interments, the isomerous values documented within "Infancy I" and "Infancy II", initiate an ascending course on a curve depicting an increase of loss of life, by a $25 \%$ proportionality, during the next age subgroup of "Subadulthood", reflective of aspects of demographic attrition during the adolescent years of life, while the range of subsequent years, within "Young Adulthood", show the greatest sequential increase of mortality prevalence between age subcategories, by a nearly two and a half times increase ${ }^{13}$, then further ascending to the apex scored during "Middle Adulthood", subsequently diminishing during "Late Adulthood", at a relevant measure to "Young Adulthood", and thereafter most drastically tapering off, by more than eighteen times toward the "Maturus", and the "Older" age subgroup years (Graph 13).

In regards to the age at death variability documented among the 12 individuals retrieved from burial contexts which yielded multiple interments, six of the twelve age subcategorizations ${ }^{14}$ were designated depicting a mortality curve initiating at early post natal years through to "Late Adulthood", presenting a number of variabilities to what was documented among the individuals recovered from burial contexts

[^4]with single interments (Graph 14). A review of the six age at death subcategorizations compiled in an abridged form involved only five of the eight basic age subgroups (Table 4) revealing the traces nevertheless of an non-continuous sigmoidal curve (Graph 15). In this particular group of the multiple interments the template of mortality curve, even if though when evaluated for a qualitative review, was rather initiated within "Infancy I", indicative of population attrition in the early years of life, subsequently sharply diminishing, by a threefold, during the "Infancy II", and absolving during "Subadulthood"; showing herein an improved survivorship during those two later age subcategories compared to the single interments' group. Subsequently, mortality prevalence ascended within the "Young Adulthood" years, at a predominance that simulated the proportionality documented among the group of the single interments, cresting during the "Middle Adulthood" years, and subsequently decreasing during "Late Adulthood", thus simulating in these loci the curve of the single interments' group; however differing from it by lacking any representation in the cohorts of the "Maturus" and "Older" age subgroups (Graph 16).

A rather detailed age at death distribution among the entire sample of 55 individuals, combining both groups of single and multiple interments are shown in Graph 17, appropriately providing the dynamics of numeric prevalence and percentage values per subcategory. An abridged version of the previous, depicting the score values analogous to eight basic age subgroups (Graph 18) reflects on a sigmoid-shaped curve whereby the earliest juncture of population attrition initiates in moderate ways within "Infancy I", abating during "Infancy II" and "SubAdulthood", subsequently increasing within "Young Adulthood", to crest in "Middle Adulthood", and then to sharply taper off at the "Maturus"/"Older" cohorts.

Surpassing the more dangerous early years of life during "Infancy I", often characterized by the potential of increased morbidity and mortality (from a range of conditions imposed i.e. from weanling diarrhea to communicable/infectious childhood diseases), the "Infancy II" and "SubAdult" age subgroups seem to have fared better in survivorship ability. This is suggested to have been based among other parameters on matters of available cultural buffer mechanisms to alleviate physiological and pathological stress during those critical years of biological growth and development. Thus, the sharply ascending mortality prevalence sustained past "Subadulthood", namely within "Young Adulthood", the successive cresting during "Middle Adulthood", and it's still considerable although somewhat abating prevalence within "Late Adulthood" (with the exception of a case(s) of epidemic) could be revealing of the highly demanding and taxing responsibilities and on the anatomic and physiological burden placed on those age subgroups on matters of obligations and dependability of both private matters and interests, and of communal mandates required or exacted on the membership of the cohorts involved. In reference to the drastically diminishing prevalence of morbidity by nearly an eight- fold, among the "Maturus" and "Older" cohorts combined, it is assessed it may rather be characteristic of the diminished, if not improbable, potential for the majority of the population membership to extended longevity and survivorship to old age (Graph 19). Apropos, in a synthesis that were to further abridge the population membership of the two Infancy and SubAdult age cohorts, representative of the precarious years (from birth to $<18$ years) during active biological growth and developmental processes, critical for population growth dynamics, sustainability, and strength in genealogical succession, the mortality prevalence scored a formidable range of $25 \%$, whereas population attrition reached the daunting range of a $78 \%$ prevalence during the combined "Adulthood" age cohorts (within a range of 27 years, that is from 18 to 45 years); hence leaving only a feeble less than $3 \%$ of the combined survivorship scores to the "Maturus" and "Older" age cohorts (a chronological range from 45+ to $65+$ years).

The mortality prevalence by age subgroup of the Naxian population sample, reflective as it may be of a random subset of their demographic dynamic, directs one to cogitate on the complex ensemble of site specific conditions and parameters coeval to the time period that could and would have pertained to it. Such conditions reflective of their realm of life, it is suggested, would involve a multitude of aspects ranging from the sphere of the population's gene pool attributes to the macro-horizon of conditions relative
to the dimensions of their physical environment and territorial expanse, the domain of their socio-cultural and political organizational abilities and mandates, as well as of their techno-economical capacities implemented, to mention a few.

## On Skeletal Morphology

Seeking to better decipher aspects of life conditions permanently recorded on the skeletal record of the population sample, despite the limiting parameters imposed by preservation issues, emphasis was placed on inspectional evaluations indicative of ante mortem biological growth, development, and maturation, as well as of degenerative processes due to aging and pathogenesis. Emphasis was placed in the identification of non-metric and mensurational features of skeletal changes reflective of population specific acclimatizations, adaptability issues, and intra-population variability on matters of skeletomuscular build and robustness, labor diversity issues by age or biological age subgroup, and of the realm of traceable kinetics in physical activities showing skeletomuscular changes as markers of habitual and/or occupational stress (Agelarakis 1996a). The latter mainly represented cranio-infracranial skeleto-anatomic loci where ligamento-muscular attachments of origin and insertion, of muscles that functioned in synergistic and/or antagonistic ways, had left emphasized skeletal imprints. These bone marks are a consequence of ante mortem skeleto-muscular actions which had caused modifications and enhancement of the bone substrate through plasticity changes as had been required by the particulars of life modes ${ }^{15}$; although more rarely it may be possible to palaeopathologically document cases of musculo-skeletal trauma in a variety of phases during the healing process.

During this multifaceted stage of analysis, as with the age and biological sex assessments, the group of individuals recovered as single interments was initially examined as a population subgroup to be compared with data yielded from the subgroup of individuals recovered as multiple interments. This was carried out as a precaution against any presumptions, considering that the observed variability in the particulars of the burial praxis and customs could yield (or even not yield), through forensic anthropologic analysis, additional data in favor of the archaeo-anthropologic investigation.

Out of the group of single interments comprising 43 homini, 17 (39.33\%) individuals were either not adequately preserved or were representing, due to young age, immaturely developed skeletal bodies for such a study. The remaining 26 ( $60.47 \%$ ) individuals showed adequately preserved skeletal surfaces pertinent for studies in morphologic anatomy. Of those, 18 individuals showed manifestations of skeletal robustness and/or particular features of emphasized skeletomuscular changes, whereas the remaining 8 individuals lacked an emphasis in such skeletal features; the latter were assessed as of a gracile skeletomuscular build (Graph 20). The specific composition of these three morphologic anatomy subgroups, regarding the mode of their interment between inhumation and cremation, of the biological sex and age subgroup distribution appears as follows. The non-adequately preserved, for said analysis, subgroup of 17 individuals comprised 8 cremations and 2 inhumations of adults, and 7 inhumations of skeletally immature as well as poorly preserved homini. The subgroup of the 8 individuals assessed as of a gracile skeletal build comprised 4 cremated adult males and 4 inhumed adult females. Finally the subgroup of 18 individuals that showed emphasized skeleto-muscular manifestations consisted of 9 cremated adult males and 9 inhumed adult females (Graph 20a).

Henceforth, of the subgroup of 18 individuals, all 18 showed some form of skeletomuscular robustness, 17 of which revealed traces of tangible bone plasticity changes in loci of muscular origin and insertions, particularly on the appendicular skeletal structures relevant to a prevalent specificity of kinetic in vivo

[^5]actions, designated as markers of habitual and/or occupational stress (MHOS); yet 5 of those individuals revealed a combination of considerable manifestations of overall robustness in skeletal build in addition to significantly enhanced loci of muscular origin and insertions in structures of the appendicular skeleton (Graph 21). Further, regarding the documented prevalence of some form of skeletomuscular robustness within this subgroup, a $100 \%$ observation ratio was discerned, involving all 18 adult individuals (of both female and male biological sex). Of the 17 of them that showed skeletomuscular markers characterized as MHOS, 8 were cremated males and 9 were inhumed females; the 5 individuals which combined skeletomuscular markers of MHOS along with overall skeletal robustness comprised 4 cremated males and one inhumed female (Graph 21a).

Of the group of 12 homini representing the multiple interments, 2 adult individuals ( $16.67 \%$ ) were preserved in an inadequate state of preservation, whereas the remaining 10 ( $83.33 \%$ ) showed adequate skeletal surfaces for evaluations of morphologic anatomy. Of the latter, 6 individuals showed manifestations of skeletal robustness and/or particular features of emphasized skeletomuscular changes whereas 4 individuals lacked an emphasis in such skeletal features due to their very young age and hence of immature skeletal development (Graph 22). The composition of the three morphologic anatomy subgroups described above, regarding the mode of their interment between inhumation and cremation, and of their biological sex and age subgroup distribution appears as follows. The non-adequately preserved subgroup comprised 2 inhumations of an adult male and female individual in a very poor state of preservation. Of the subgroup of the 4 individuals of immature skeletal development, interred in dry form, 3 were of the "Infancy I", and 1 of the "Infancy II" age cohorts. Finally the subgroup of 6 individuals that showed emphasized skeletomuscular manifestations consisted of male individuals, 5 in cremated and 1 in dry form (Graph 22a).

Regarding the subgroup of 6 male individuals, all showed some form of skeletomuscular robustness in body build. With the exception of one of those individuals, whereby the appendicular skeletal surfaces were not well preserved for further analyses, the remaining 5 males showed a combination of considerable manifestations of robustness in skeletal build and significantly enhanced loci of muscular origin and insertions, MHOS, in structures of the appendicular skeleton, relevant to prevalent kinetic actions carried out ante mortem (Graph 23). While features of some form of skeletomuscular robustness within this subgroup of male individuals showed a $100 \%$ observation ratio, their age subgroup distribution ranged from "Young Adulthood" to "Late Adulthood", and of the 5 of them that showed MHOS changes, having retained appendicular surfaces, the Late Adult had been inhumed while the rest had been cremated (Graph 23a).

Henceforward, in considering features of morphologic anatomy with a focus on robustness of skeletal build along with skeletomuscular markers among both groups of the individuals representing the single versus those of the multiple interments, 24 individuals were documented to reveal such manifestations, whereas 12 individuals lacked them ${ }^{16}$; the remaining 19 individuals had shown inadequate skeletal preservation (Graph 24). Further, it clearly appeared in comparing the 36 individuals of the two groups ${ }^{17}$, those of the multiple interments comprised a proportionally greater number of individuals which showed adequately preserved skeletal surfaces for studies in morphologic anatomy at a rate of $83.33 \%$ compared to $60.47 \%$ of the individuals of single interments.

Although regarding the overall representation of dental and skeletal remains (on matters of general preservation of the anthropological remains) the individuals from the group of single interments fared better compared to the group of multiple interments, as explained above, the study and evaluations of

[^6]skeletal anatomic morphology (also a matter subject to the realm of preservation of anthropological remains) depended on discrete preservation parameters. It was not merely the quantitative completeness of the skeletal representation of each individual unearthed that critically contributed to the subject matter at hand. Equally important for the study of morphologic anatomy was the quality of preservation of clinical and anatomic dental surfaces, and of the skeletal components their ectosteal surfaces preserving and clearly revealing diagnostic loci, features, and manifestations pertinent to the study of anatomic morphology.

In continuing with the intra-site evaluation of morphologic anatomy features juxtaposed between the groups of single versus multiple interments ${ }^{18}$ (Graph 24), the subset of 6 individuals of the group of multiple interments superseded by a 1.19 ratio $(50 \%: 41.86 \%)$ the prevalence in adequate skeletal preservation with observed manifestations of robustness and MHOS the subset of 18 individuals of the group of single interments ${ }^{19}$. Yet, the latter subset revealed among its constituent members an overwhelming ( $94.44 \%$ ) prevalence of MHOS changes while they were lacking an overall robust skeletal build; in relation to $27.8 \%$ which showed robust skeletal build along with MHOS markers. This was ostensibly variable to the subset of the multiple interments which showed an $100 \%$ prevalence in overall robustness in skeletal build, in relation to $83.33 \%$ that showed prevalence of combined MHOS markers along with overall robustness in skeletal build (Graph 25). It should be of interest to note that among both groups, of single versus multiple interments, a respective subgroup of 5 male individuals, that in both cases had been interred in cremated form, were observed to have presented the most robust skeletal build and emphasized skeleto-muscular markers compared to the rest of the adult individuals of the entire skeletal collection.

With regards to the population sample morphologic anatomy features, it was apparent that males from both groups of the single and the multiple interments revealed a more robust skeletal body build than females in reference to their infracranial axial and appendicular skeletal structures and with emphasis on skeletomuscular changes. Yet it clearly appears that while females may have been buffered from required exposure to excessively demanding physical activities, particularly as it may have concerned trajectory forces of stress during load bearing activities, they were not in fact lacking in skeletomuscular changes on the lower extremities which were indicative of most frequent ante mortem involvement in extensive locomotory behavior in nearly precipitous substrates; while in matters of a particular body posture, the squatting position was documented to predominate with knee joint hyperflexion along with hyperextension of the hip joints.

Apropos, regarding a manifestation exclusively observed among several female individuals (and of at least one suspected female individual within the Infancy II age subcategory), members of the single interment group, ranging in age cohorts at the occurrence of death from "SubAdulthood" to "Middle Adulthood", showed at their cranial vault bones a continuously smooth yet discernibly well-defined form of postcoronal depression, running from the vertex bilaterally along the lateral walls of the parietals and fading bilaterally at the approximate region of the inferior temporal line of M. temporalis. The manifestation, it is suggested, could be explained along the lines of gender based variability, as the consequence of a band of webbing worn since infantile years, synchronous with the developmental formation of the calvaria and neurocranium; it would have strapped over the particular domain of the head affording benign compression effects between the juncture of the coronoid suture to the anterior parietal eminences. Hence, it is assessed that the post-coronal depression was the result of a head-attire worn for both functionalutilitarian purposes and/or for aesthetic reasons rather than for an intentional artificial deformation of the head, given the inconspicuous morphological changes that would have been afforded in vivo.

Further on female prevalence of skeletomuscular changes at loci of muscular origin and insertion, their upper extremities indicated long term, copious skeletomuscular systems' actions which had involved

[^7]scapulo-humero-clavicular, synergetic in nature kinetics in extension/flexion and abduction/adduction movements of the upper arms with elbows in flexion-extension modes along with wrist rotatory actions, and with significant strength in the flexion ability of hand phalanges. Incidentally, males also revealed similar upper extremity skeletomuscular changes, however with greater prominence, particularly at the muscular attachments of the Ms. deltoideus and trapezius. These, as an allotted portion of their respective function, strengthen and secure the humero-scapular joint during substantial load-bearing actions and particularly while the encumbrance of the burden is amplified by the upper arms held in transverse extension, positioned forwardly and laterally from the body's axial center of gravity ${ }^{20}$. Consistent to the latter, among males, were their strongly emphasized muscular attachments at the M. supraspinatus that offers antigravity stamina in the abduction and rotation of the arm, stabilizing the shoulder joint, before the engagement of M. deltoideus in contributing synergistically further strength and stamina to the ongoing kinetic action. Further, unlike females, males indicated a robust emphasis on the combination of skeletomuscular changes at the occipito-nuchal and infra-nuchal regions indicative of strength in head and neck ipsilateral and contralateral as well as forward movements in combination with the sterno-clavicular areas, the spine (with emphasis at the cervical domain), as well as the shoulder blades. Particularly in the shoulder blades there were emphasized imprints observed at the loci of attachment of M. triceps brachii. The latter, while adducting the shoulder extends the elbow joint, which combined with traces of robust imprint changes documented at the $M$. brachialis would have powerfully aided in the flexion of the elbow joints. Additionally, on the scapular splanchnic surface, robust imprints of M. subscapularis indicated supplementary support to arm kinetic functions in mesio-rotatory actions of the humerus in extension, and in forward as well as supero-inferior movements while also securing the stability (against dislocation) of the shoulder joint.

Females in addition to their moderately emphasized skeleto-muscular imprints of the upper arm bones, conditions which simulated male imprints, showed a particular predilection in the humeral domains of attachment of Ms. latissimus dorsi that extends, adducts, and internally rotates the upper arm, the medial head of M. triceps brachii that extends the forearm at the elbow joint, M. pronator teres that abducts and flexes the wrist, Ms. flexor carpi radialis and ulnaris, which abduct, adduct, and flex the wrist, M. flexor digitorum superficialis that flexes the fingers, as also attested by the radial diaphyseal imprints of the later, and further substantiated by the ulnar imprints of M. flexor digitorum profundus that flexes the interphalangeal joints of the hand.

Whereas a considerable number of physical activities may implicate the kinetic actions of the upper extremities as documented among females, it is suggested that we may be witnessing traces of long term labor intensive aspects, revealing of a thorough participation in economic output process, possibly in activities required in agriculture, in the processes that simulate the milking of domesticates, yet particularly in the spinning and making of thread and of the weaving process in the vertical and/or horizontal loom, to mention a few. On the other hand, traces of male activities may be reconstructed, which among a plethora of heavier load impact tasks required could include, it is suggested, intensive work in agricultural activities, and particularly in seafaring with emphasis in the stamina and dexterity required in powerrowing.

Lending support to the latter on the demanding physical activities and tasks required by the male individuals were lower extremity manifestations showing imprint traces from the iliac crests of the innominate bones with emphasis on the M. obliquus externus abdominis that compresses the chest area and slightly rotates the torso contralaterally, M. transversus abdominis that both compresses the abdomen and aids in lifting the body assuming the action to buffer vertebral column vertical pressure, as in cases of heavy load-bearing, while M. obliquus internus abdominis compresses the abdomen and aids in the

[^8]ipsilateral rotation of the spine. Similarly, the ensemble of femoral muscle attachments that extended and both rotated as well as adducted the hip joint, in standing, walking and running acts, the involvement of the abduction, flexion, extension and slight rotation of the legs, the stability and flexion of knee joints, were most emphasized. Tibio-fibular muscular imprints further substantiated robustly featured muscular imprints for the hip flexion, knee extension and stabilization, plantar-, and dorsi-flexion of the feet in both inversion and eversion, all indicative of extensive ante mortem courses of bipedal locomotory behavior.

Additional lines of evidence in support of the inspectional morpho-anatomic evaluations which revealed that male individuals had developed and retrained robust body frames were mensurational data retrieved from the cremated remains (cremains), given that the majority of the male individuals had been cremated. These, representing 27 male individuals, comprised metric indicia of a select number of 313 well preserved cremains from the cranial vault and appendicular-tubular bone fragments ${ }^{21}$ yielding an abridged cranioinfracranial appendicular statistical bone thickness average of 5.571789 mm (Graph 26). The score of the average value offered evidentiary data corroborating the inspectional morpho-anatomic evaluations and further substantiating the assessment indicative of the well developed and robustly built skeletomuscular systems of the male individuals regarding their biological developmental growth processes ${ }^{22}$. Furthermore, in order to sustain and possibly even enhance the strong build of powerful body frames, multifactorial in nature, engaging, physically active life conditions indirectly refer to embracing of biological sex-specific cultural norms, responsibilities and directives, inclusive but not limited to aspects of gymnastics, military training and service, as well as of occupational requirements.

At an inter-site comparative context, the above mentioned bone metric average value supersedes relative average scores of the warrior aggregate interred in the Athenian Demosion Sema Polyandria (Agelarakis 2013), at $5.150643522 \mathrm{~mm}^{23}$, dating to the $5^{\text {th }} \mathrm{c}$. BC, and of the Eleuthernian warriors from the Orthi Petra burial ground in Rethymnon, Crete, interred in the monumental tomb-heroon A1K1 (Agelarakis 2005), at $5.259928 \mathrm{~mm}^{24}$, dating from approximately the end of the $9^{\text {th }}$ to the very beginning of the $6^{\text {th }}$ century BC, whereas it clusters below the lower proximity of the average scored by the warrior cremains of the ParosParoikia polyandria ${ }^{25}$, dating from the lower third of the $8^{\text {th }}$ to possibly the early years of the $7^{\text {th }}$ century BC (Zafeiropoulou and Agelarakis 2005).

## Palaeopathological Profile

## Palaeopathologic Conditions

Further to intra vitam traces permanently recorded on the skeletal record, the palaeopathological profile of the population sample involved revealed aspects of the human condition, particularly on matters of acquired and degenerative disease, initially examined per group, namely of the individuals of single versus those of the multiple interments.

Based on the criteria of dental and skeletal surfaces' condition of preservation for conducting palaeopathological evaluations 14 ( $32.59 \%$ ) of the 43 individuals of the single interments' group were excluded while $29(67.44 \%)$ were selected for analysis. Twenty two of the latter were assessed to have been affected by disease discernible on the dental and skeletal surfaces, while the remaining 7 showed a

[^9]lack of such pathological changes (Graph 27). Regarding the 12 individuals of the multiple interment group, $11(91.67 \%)$ were selected for analysis of which 5 showed lack of disease manifestations on the dental and skeletal record (Graph 28). Comprising the sample membership in both groups were individuals of both biological sex subgroups at a range of age cohorts, as well as individuals that although had been assessed as "Indeterminate" for either age or sex subgroups determination, for lack of preserved diagnostic anatomic morphology, they nevertheless had preserved aspects of their dental and skeletal components sufficiently for retrieving evidence of palaeopathological changes.

Subsequently, the proportional relation between the individuals manifesting palaeopathologic changes among the single versus the multiple interment groups yielded a ratio of $51.16 \%$ versus $50.00 \%$ respectively ${ }^{26}$. Thus the proportional relation among the individuals that revealed palaeopathologic manifestations between the two groups seemed to lack prevalence variability, suggestive as it may be of a rather similar if not shared contextual environment for the possibilities of pathologic onset and/or of non-significant variability in the conditions that would engender the acquisition of infectious, traumatic, or degenerative in nature pathogenesis. The latter however could be skewed when considering that the proportional percentiles between the individuals not afflicted by disease, between the single versus the multiple interments groups, yielded a ratio of $16.28 \%$ versus $41.67 \%$; seemingly indicating a 2.559 ratio in favor of the multiple interments' group to avoid disease manifestations such that would have been traceable on their dental and skeletal record. Providing a complicating parameter in the aim toward a better understanding of this intra-site investigation remained the disparity between the inadequately preserved skeletal individuals for palaeopathologic study of the single versus the multiple interment groups yielding a ratio of $32.59 \%$ to $8.33 \%$ respectively; the single interments' group exceeding by a 3.906 ratio their counterpart group, of individuals that remained excluded from palaeopathologic analysis ${ }^{27}$. Hence, it could be ostensibly stated that in reference to an observationally based correlation there was predominance in the overall prevalence of palaeopathological manifestations among the single compared to the multiple interments. In such cases where intra-site population subgroups' palaeopathologic evaluations are essential for retrieving additional forensic clues on the esoteric folds of their relational dynamics, emphasis may be placed in the particulars of the kind and type of causative agents of documented pathogenetic changes, and the nature of their distribution among the membership of said subgroups.

In graphs 29 and 30, a concise view may be presented of palaeopathological profile dynamics among the afflicted individuals of the two groups, with their respective distribution and prevalence per subcategory of pathological changes. In the proportional relations of the incidence of palaeopathologic manifestations among both groups ectocranial porosity clearly scores the greatest prevalence, sustained at $54.55 \%$ among the individuals of the single interment group, and at $100 \%$ among the individuals of the multiple interments group; the latter exceeding their counterpart group by a 1.833 ratio.

Regarding both groups, cranial palaeopathologic changes of ectocranial porosity manifestations, mostly of porotic and rarely of cribrotic sizes, chiefly affected the vault and lateral wall areas, and in fewer cases the intra-orbiral roof surfaces. These were mainly assessed as primary periosteal reactions, secondary responses to infectious (some of contagious nature) and inflammatory causative agents, as well as due to acquired complications ${ }^{28}$ relative to anemias ${ }^{29}$. Porotic and in fewer cases hyperporotic changes had also affected, yet less frequently, endocranial surfaces; these manifestations were revealing of the morbidity potential of

[^10]infectious/inflammatory conditions that had affected the meningeal domain. Diseases of jaws and teeth were documented in the form of periodontal disease diagnostically manifested with mild to rarely moderate supra-gingival calculus deposits, absorption of alveolar and interdental septae for the most part conducive to aging, alongside with continuous "eruption" of dental anatomical surfaces within the oral cavity. The greater prevalence of dental and periodontal disease manifestations diagnosed among the single interment group mainly relies in the domain of preservation given that in cases of cremation the dental arcades and the dental tissues ${ }^{30}$ tend to succumb to the effects of thermal alteration during pyre exposure ${ }^{31}$.

Traces of temporomandibular joint osteoarthitic changes documented exclusively among the aging were accompanied by discernible height reductions of the mandibular bodies, occasionally along with the flaring out of the mandibular angles (gonion loci) based on progressively modified, and intensified, demands on the muscles of mastication with emphasis at the attachments of Ms. masseters, but also of the mesial and lateral M. pterygoidei; particularly when posterior (buccal) teeth in the dental arcades had been lost long before the occurrence of death. Incidentally, whereas periapical abscesses were rare, a number of cariogenic lesions affecting interdental crown surfaces, had initiated their infectious lytic lesions at the cervical regions of the cemento-enamel junctions. Carious cavities were not widespread however on dental surfaces of the individuals involved, a good number of dental arches having not been affected at all. The low prevalence of cervical cariogenic lesions was indirectly revealing of a dietary intake partially based on agricultural products while indicating ${ }^{32}$ a rather infrequent consumption of concentrated simple sugars derived as soluble carbohydrates (i.e. monosaccharides, glucose and fructose) from plants and/or honey, or (as galactose) from milk and relevant byproducts. Wear of dental incisal and occlusal surfaces revealed that the bulk of the foods consumed had been well prepared, whereas in several cases it was possible to document the preferable use of labial incisal surfaces in "third hand" functions, however without obliterating or severely modifying the proximal thirds of the dental clinical surfaces.

Apropos to ante mortem traces permanently imprinted on dental surfaces, enamel hypoplastic defects were documented in the form of sporadic pitting, and lines of arrested and improved growth. The study of the latter, coined as linear enamel hypoplasias (LEH), indicated conditions of early life systemic (corporeal) stress which temporarily arrested the growth of the sensitive enamel producing cells (enameloblasts) of the developing dental crowns; their function rebounded when the health of the individuals improved ${ }^{33}$. Hence, it was possible to record through mensurational LEH analyses that four temporal junctures within the range of "Infancy I" age subgroup would broadly represent biological age occasions of stress, affecting the membership of the population involved, namely at $2.5,3.2,4.2$, and 5.0 years of age. The majority of individuals manifesting LEH were not affected during all biological age instances mentioned above, while the fact that all individuals affected by LEH survived the stress condition(s) reflects on a favorable survivorship trend; the latter mirrors on the ability of the socio-cultural system to have alleviated and buffered the occasions of both physiological-exterior, and pathologic stress when it affected a number of the very young of its membership. It should be noted, however that the near absence of dental pathologies (abbreviated as DP in Graphs 29, and 30) inclusive of cariogenic lesions and LEH among the group of multiple interments is chiefly based on the lack of adequate dental preservation and thus the inability for subsequent diagnostic assessments rather than that the said group was unaffected.

[^11]Post cranial palaeopathologic changes mainly involved periosteal changes of the appendicular structures and few cases of vertebral body height reduction due to aging processes. Post cranial pathologies appeared to have scored the second most prevalent conditions among both groups of single versus multiple interments (abbreviated as PCP in Graphs 29, and 30). Spondyloarthropathic changes (mainly degenerative, and in few cases secondary to compression trauma due of excessive loadbearing impact) reflected on infracranial axial skeletal manifestations ${ }^{34}$, whereas osteoarthopathic changes, principally documented in the form of marginal lipping and relative articular surfaces' and facets' changes from porosity to postosteoarthropathathic, sclerotic-necrotic (eburnated), conditions involved joints of the appendicular skeletal structures. Based on an observational correlation the group of single interments uniquely exceeded its counterpart group in the prevalence of spondyloarthropathies, and in osteoarthropathic changes by a ratio of 1.636 (Graphs 29, and 30). Further, conditions of appendicular articular surfaces' eburnation were exclusively observed among the group of single interments, indicative as it may be of long term most frequent use of those joints in specific actions required it is suggested by both cultural mandates and/or occupational parameters ${ }^{35}$.

Evaluating the dynamics of the palaeopathological profile of both groups combined, 15 (27.27\%) out of 55 individuals of the population sample could not be assessed due to preservation limitations, 12 ( $21.82 \%$ ) individuals involved in the analysis showed no discernible dental or skeletal pathologic changes, while 28 ( $50.90 \%$ ) had been affected revealing palaeopathologic manifestations (Graph 31). A considerable number of individuals from the latter subcategory typically showed more than one palaeopathologic manifestation on their dental and/or skeletal remains preserved; and rather of both associated and/or varied causative agents. As communicable disease is one of the major morbidity factors with the potential for mortality and thus population attrition, particularly among members of settled socio-cultural environmental contexts, the ostensibly high ${ }^{36}$ incidence of 28 ( $50.90 \%$ prevalence) out of 55 individuals documented to have been affected by palaeopathological conditions may not be perceived, it is suggested, as an ominous characterization of the population's health status, or ability to buffer disease should one contemplate that a good number of the documented palaeopathologic manifestations had not been in themselves the cause of death nor had they been imminently life threatening to the individuals involved; they were rather of benign, degenerative, nature (Graph 32). On the other hand, a number of palaeopathological cases, particularly regarding those of endocranial wall changes, along with those of the ectocranial hyperporotic changes, and in combination with similar symptomatic manifestations on the appendicular structures, hence of systemic nature and/or coupled by the gravity of comorbidity issues, must have been quite serious, and with the probability to prove fatal; these were indicative of infectious conditions caused by pathogenicity of a range of causative agents including, but not limited, to aspects of zoonotic infectiousfebrile diseases transmitted from domesticated animals and/or in relation to contamination of the dietary intake, i.e. from said animal byproducts, infection due to communicable diseases, and/or infectious complications secondary to trauma impact by external causes.

## Trauma Manifestations

Cases of trauma impact were evaluated inspectionally ${ }^{37}$ as an integral component of the palaeopathological analysis, having implemented a separate system of screening for the adequately preserved skeletal surfaces; one that discriminated against any deterioration, groove imprints, notches or similar indentation traces that may have been caused either taphonomically, by possible excavation trauma, curation handling, and/or by conditions in the museum repository environment. Hence, of the 55 individuals of the entire skeletal

[^12]collection, 15 ( $27.27 \%$ ) individuals showed inadequately preserved surfaces, whereas the remaining $40(72.73 \%)$ were selected for analysis. Of the 40 individuals selected for study $30(75.00 \%)$ showed an absence of discernible traces of trauma impact, whereas $10(25.00 \%)$ individuals revealed traumatic manifestations ${ }^{38}$. Graph 33 reflects said break down, based on the single versus the multiple interment group comparison with percentile values per subcategory, while the proportional prevalence between the two groups figure as follows. Among the 29 individuals of the single interment group with adequate skeletal preservation which were selected for trauma analysis, 20 ( $68.96 \%$ ) showed absence of dental and skeletal trauma manifestations, whereas the remaining 9 homini ( $31.03 \%$ ) scored positively. Amid the 11 individuals of the multiple interment group with adequate skeletal preservation for evaluations of trauma analysis only one individual showed trauma impact whereas the remaining $10(90.90 \%)$ homini showed lack thereof. Regarding the documented manifestations of trauma impact, the proportional relations between the two groups revealed a prevalence of $31.03 \%$ among the individuals of the single interment group versus $9.09 \%$ amid those of the multiple interment group; hence the former exceeded in trauma prevalence the group of multiple interments by a 3.413 ratio.

The majority of the trauma impact sustained involved the postcranial skeleton, dominated by the axial structure of the vertebral column whereby there were four cases of Schmörl's nodes of a varied level of impact severity, ranging from moderate to severe ${ }^{39}$, indicative of excessive load bearing stress or of accidental force afforded on the spine at nearly close approximation to axially, broadly supero-inferior, oriented directions. The four individuals involved were of male biological sex and ranged from "Middle to Late Adulthood" age subgroups, three of whom had been cremated. A "Middle Adult" individual of the latter subgroup, in addition to having sustained Schmörl's nodes, also presented a trace of trauma impact discerned by a clearly defined, sharply bordered, V-shaped outline along its length axis, having pierced a lumbar vertebral body up to the middle of its transversal width ${ }^{40}$, indicative of an entry wound from the right dorsolateral surface toward a left ventro-lateral direction. Based on the anatomic locus of impact and the characteristic trace of the penetrating object which simulated the outline tip element of a spearhead, the puncture wound was diagnosed as of perimortem nature, caused by close encounter armed conflict, that had penetrated from the right dorsolateral region of the retroperitoneal anatomic space affording morbid wounds to venous and arterial vessels causing death primarily by excessive blood loss combined with organ failure.

In a sequence of diminishing prevalence of documented trauma conditions observed, there were two cases of Colle's fractures sustained by an older male and a female individual respectively, caused either by accidental fall, usually with an outstretched hand in dorsiflexion, or in a defensive posture to protect the neck and face by the raised forearm. Both cases had healed well, long before death, with discernible callus formations and in one of the two cases with a compromised radial articular realignment at the wrist joint.

Further, a case of dental trauma affected a left side deciduous first maxillary molar ( $\mathrm{m}^{1}$ ) of an individual (ca. 9 years of age) within the Infancy II age subgroup, due to excessive stress of masticatory causes, while three additional trauma cases affected adult individuals. These had included a healed rib fracture, traces of slight traumatic impact afforded on a humeral head, and a superficial cranial vault trauma. The latter was sustained by a young female, age assessed between 17-20 years. It pertained to a compressed fracture superiorly to the right frontal bone tuberosity (the locus of the frontal belly region of the right M. occipitofrontalis [M. venter frontalis]) that had been surgically treated, possibly to remove ectocranial bone splinters and to attend with a healing regimen, presenting a long before death well healed, smooth, ellipsoid outline with diameters measuring 8.97 mm by 9.67 mm , and 1.93 mm in maximum depth.

[^13]
## Non-Anthropological Organic Materials of Burial Contexts with Emphasis on Faunal Remains

Along with the anthropological remains, a considerable number of the burial contexts yielded samples of ecofactual materials of both inorganic and organic nature, some of which were components of the sedimentological attributes of the site's stratigraphic composition, while others, such as floral macrocomponents and soil fauna remnants (of the latter, some of the detritus chain), were indicative of the taphonomic environment characteristic of the human activity area's functional purpose. In addition, comprising a valuable component of burial contexts' cultural stratigraphic deposits were aggregates of faunal remains. These, being conterminal with the events of interring processes, presented a significant record of cultural data, which in addition to the value of their own zooarchaeological merit (Marean, Abe, Nilssen, and Stone 2001; Nicholson 1993; Spenneman and Colley 1989) could enable, based on the nature and specificity of their assemblages, the tracing of distinct funerary behaviors (Agelarakis 2011; Ahlberg 1971a; Garland 2001; Morris 1989; and 1992; Vermeule 1981) permanently bestowed by the ancients by the type and particular features of the animal bone fragments preserved, revealing important aspects of burial customs and of mortuary, sacrificial, practices.

Burial practices of funerary meals, the functional and symbolic provisioning of those at the threshold of Hades' gates during the interment event, as well as propitiating to the gods and deities of the underworld through ceremonial animal sacrifice were reflected, notwithstanding the passage of time, by the material evidence of the associated faunal remains; supporting the reasoning asserting clear reflections of awe, of dutiful respect and obligation for the burial and veneration of the dead, as well as of pious act, ritual, and religious conduct. Further, the considerable concentration of faunal remains representing sacrificial animals at this funerary activity area, and their inclusion as well as proximity to the human remains, signifies the importance of their function and of the blood ritual in the transitioning process to the afterlife.

A concise view of associations of the faunal materials and their distribution allocated by group of single or multiple interments is presented in Graph 34. Hence, faunal remains in dry and/or thermally altered form were associated with 28 ( $58.33 \%$ ) out of the 48 burial contexts studied. Distribution aspects of preserved faunal remains documented among the groups of single versus the multiple interments revealed a $53.49 \%: 100 \%$ prevalence respectively; the latter exceeding the former by a ratio of 1.87 .

The faunal remains associated with burial contexts were studied in a preliminary manner through the approaches of taphonomy and zooarchaeology. They offered evidence that illuminated processual conditions of sacrificial animal dressing, a roster of taxonomic classifications mainly to the genus level of the faunal assemblage represented, as well as the distribution of faunal anatomic components apportioned to the burial contexts juxtaposed to an assemblage of faunal remains recovered from an intra-site well context, functionally in use during the particular cultural component, suggested to have been mainly serving communal functions in the burial ground and/or of mortuary depository needs in relation to interment processes. The latter, is suggested, may offer an explanatory recommendation for $20(46.51 \%$ out of 43$)$ of the burial contexts of single interments (Graph 34, and 35) which were found during analysis void of a contextual association with faunal remains.

While it has been challenging, primarily due to issues of preservation, to discern accurate zoological taxonomic patterns across genus, size of individuals, and anatomical seriations from the assemblages of the faunal record associated with the burial contexts, continued research promises to better elucidate aspects of interest to zooarchaeology and the study of sacrificial offerings in funerary ritual at the site of Plithos. Nevertheless, faunal remains recovered in association within the burial contexts were compared to those recovered from the well context and it clearly appears that both revealed the taxonomic range of "expected" sacrificial animals in relation to funerary ritual and mortuary religious ceremony. This provided some insight into the complex and often regionally idiosyncratic facets of burial customs, reflecting on aspects of the human condition and the dynamics of the beliefs, obligations, and expectations in afterlife.

Hence, food animals dominated the profile of the faunal record whereby ovicaprical bones comprised the most prevalent aggregates, although a number of burial contexts yielded genera represented by a number of combinations between bovid ${ }^{41}$, Ovis, Capra, Sus, and canid ${ }^{42}$, as well as of several unidentified faunal individuals of smaller sizes. Eleven single interments involving cremated remains of male individuals ${ }^{43}$ were found in association with both cremated and/or dry faunal remains in the following prevalence sequence. In eight of the eleven cases there were dry faunal remains, in two cases cremated remains, and in one case a combination of dry and cremated faunal remains. Further, in seven of the above cases the remains were of ovicaprical nature, and in the remaining four cases of suspected ovicaprical origin (Graph 36). Furthermore, along with the ovicaprical remains only two of those cases involved offerings of multiple genera, one with bovid remains and a second one with Sus.

Of the five contexts that involved multiple interments (Graph 37) there were four cases combining cremated and dry homini ${ }^{44}$, involving dry faunal remains of ovicaprical nature, while the fifth case included ovicaprical bones along with a smaller in size unidentified faunal individual. Regarding, however, the twelve burial contexts which yielded single interments in dry form ${ }^{45}$, the aggregates of associated faunal remains were found to exclusively be in dry form. Here, ten of the contexts included remains of ovicaprical nature, indiscriminately of biological age or age subgrouping, while in two of the contexts based on limited preservation of the faunal remains it was possible to only recon the presence of herbivoran ${ }^{46}$ faunal remains. Individuals within the Infancy I and II cohorts were associated with dry ovicaprical remains without involvement of other identifiable genera; parenthetically as also observed with the four out of the five cases ${ }^{47}$ of multiple interments where Infancy I and II individuals were involved, even though associated with mature in age male individuals. Thus it should be of interest to consider that in all cases of Infancy I and II individuals, in both single and multiple interments, there were associated ovicaprical remains, strictly of dry form. It appears that this correlation may not be coincidental, hence possibly reflecting on a pattern of the burial custom relative to the interment of young individuals; it appears that there had been no provisioning at their burial context with thermally altered/cremated sacrificial animal portions. Further with the individuals of the single interments group, although ovicaprical remains appear to have been the most prevalent of the domesticated animals to serve in the functions of the burial ritual, it was possible to discern that in five ${ }^{48}$ (out of the seven) cases exclusively of female burial contexts, there had been offerings of multiple faunal genera. These involved two cases combining ovicaprical and Sus individuals, two cases with ovicaprical and bovid individuals, and one case that combined ovicaprical, Sus, and bovid individuals. It thus appears that these post-subadult in age female interments retained an association with the richest record of faunal offerings/provisioning among the entire membership of the population sample recovered at Plithos, particularly compared with the rest of the post-subadulthood individuals involved.

Overall, the faunal record offered additional, valuable, diagnostic traces of human activity through the traces of mechanical impacts sustained on bone surfaces. There were sixty cases of both superficial and deeper animal dressing cut marks documented on the osseous surfaces, as well as through and through

[^14]cuts ${ }^{49}$ in apportioning edible shares and as importantly of non-edible but of symbolically important components of the faunal anatomical parts, apparently as mandated by the burial customs and practice. In reference to horn cores, out of the several cases identified only once was there an association with a female individual, ${ }^{50}$ from the single interment group. Hence, the vast majority of horn core remains were associated with male individuals.

In aiming to address the cluster of the 20 single interment contexts that were found not to have been associated with faunal remains, they comprised $46.51 \%$ out of the group of 43 single interments involving an isometric distribution of ten inhumations and ten cremations. In aiming to provide an explanation for the absence of faunal remains, potentially as part of the burial custom, it was considered that the possibility could not be excluded whereby faunal offerings could had been deposited in other site relative contexts, as for example alluded above referring to the well feature that had served as a repository context for relevant functions of the funerary rights. Further, regarding particularly the cremations involved, the offerings of faunal materials, could have been allocated to contiguous contexts used during the procedure of the burial custom at the juncture when the interment was under pyre exposure. Overall, in relation to the demographic composition, the individuals from the 20 burial contexts appeared to lack any patterns of discrimination against age or biological sex subgroups; both biological sex subgroupings and all age cohorts were involved. This was in concert with the distribution dynamics of biological sex and age cohorts documented among the rest of the population sample that had been associated with remains of faunal offerings. Hence there were no discernible patterns of varied analogy on those parameters between these two population groups that could for example provide clues on different mortality causing circumstances, such as the strike of an epidemic that could have necessitated a hurried implementation of the burial rights, nor were there any discernible archaeological anthropology cues retrieved that would have reflected on a perfunctory act of interment process. Further, looking into the possibility of skeletal biological growth and physiology issues, along with morphological observations on skeletal robustness, and of the prevalence and specificity of MHOS changes, there was no percipient variability that could be established between those individuals associated with remains of faunal offerings, versus those without them. A distinct correlation was made notable among the individuals lacking association with remains of faunal offerings, from the domain of palaeopathology. Seven (out of ten) of the inhumed individuals that had retained cranial vault bones showed manifestations of hyperporotic changes ${ }^{51}$. Such a prevalence of palaeopathologic manifestations however was not established among the subset of cremated individuals lacking association with offerings of faunal remains, while the particular palaeopathologic manifestation was not absent from the population group that was associated with faunal remains.

It thus appears that the only perceptible distinction characterizing the 20 burial contexts lacking tangible association with offerings of faunal remains, as afforded through the bioarchaeological study ${ }^{52}$ of the osseous record, laid in the fact that they comprised a subset ( $46.51 \%$ out of 43 ) of the single interments' group. If the possibilities alluded above such as that the well feature or adjoining contexts may have served a relative repository function, and/or even if any taphonomic in nature causative agent(s) could not offer a plausible explanation, the anthropological analysis void of data contributed from the study of the archaeological record, could not lend support to an explanatory hypothesis arguing for differences in the domain age, biological sex or socio-economic standing. Regarding the burial custom of inhumation and cremation, both were practiced as with the rest of the population sample. Regarding a concise osteological point of view there appeared to have been no clearly defined distinctions as far as variability in skeletal biologic growth and development compared to the rest of the population sample. Similarly, there were no

[^15]differences in the preparation quality of dietary intake ${ }^{53}$ and in the rostrum of dental pathologies sustained. There were no apparent dissimilarities in skeletal physiology and skeletomuscular changes. The overall palaeopathogic profile offered no sharp differences from early life stressors, to communicable diseases, and degenerative conditions. Further there were no distinctions on aspects of the demographic dynamics.

## Epilogue

While the project involving the bioarchaeological study of the 55 human skeletal individuals, see Graph 2, and where available of the zooarchaeological record, recovered at the Plithos formal burial ground in Chora of Naxos island is ongoing, a number of demographic and palaeopathological dynamics may reflect on aspects of the human condition and funerary customs during the Geometric period. Both burial processes of cremation (Table 5), and inhumation had been practiced, see Graph 3. It appears that the burial custom of cremations was distinctly performed according to biological sex and age subgrouping restricted to male individuals from the later years of "SubAdulthood" to terminal "Late Adulthood"; apparently according to additional cultural filters observed as there were individuals within the male cluster from late "SubAdulthood" through the range of the adulthood cohorts that excluded from this funerary practice had been inhumed. Apropos, it should be noted that the record of cremated bone remains revealed the only case of deep penetrating, splanchnic and perimortem, trauma impact that had been caused by armed conflict. Although in matters of statistical implications this is considered as evidence of circumstantial nature, qualitative evidence is provided nevertheless that ties mortality due to armed conflict with the funerary right of cremation.

The population sample included homini that had been buried as single (43), and multiple (12) interments in 48 burial contexts. The group of multiple interments comprised 7 inhumations and 5 cremations in mostly combining infants with adult males, indicative of a funerary practice that did not mandate the interring of very young individuals in a spatially separate burial ground or a specific, dedicated, allocation within the funerary domain of the adults' cemetery. Regarding the 43 graves with single interments a nearly equal distribution was identified between 22 inhumed and 21 cremated individuals. Apropos, at an inter-site comparative context similar conditions were documented at the Geometric burial ground at Pythagoreion of Samos island (Agelarakis, 2003).

On matters of biological growth and bone plasticity changes, the anatomic morphology of the population sample showed with a relative range of variability along biological sex differentiation well-built skeletal bodies, indicative of robust developmental growth during the maturation processes, and lacking significant emphasis of discernible, seriously impairing early life stressors caused by physical or social environmental parameters. Particularly, skeleto-anatomic manifestations in relation to kinetics indicated that age subgroups of both male and female individuals, from the later years of "Subadulthood" (16-17y.) to terminal "Middle Adulthood" (at ca. 45 y.) had been actively involved in demanding physical activities including, but not limited to, those related to food production and economic output processes such as those in agriculture and/or in maritime activities.

Further, on matters of demographic dynamics, an abridged distribution of biological sex assessments indicated that the cluster of 31 male individuals comprised $56.36 \%$, the female cluster of 14 individuals $25.45 \%$, and the subgroup of "Indeterminate" $18.18 \%$ of the population sample (see Graph 10). Regarding the mortality prevalence, it clearly appears that the combined "Infancy" age subgroups reflected on life periods with tumultuous health episodes (suggested to have been the result of a combination of weanling conditions, childhood infectious diseases, and comorbidity) for the survivorship of those young age subgroups; the demographic attrition curve reaching at that cohort a tally of $18.17 \%$ (Graph 38). Subsequently the mortality score among the "Subadults" remained isometric as during the "Infancy II" subgroup, at $7.27 \%$, indicative of a cautiously safer period for the prospects of survivorship for the

[^16]membership of these cohorts than "Infancy I", whereas attrition effects clearly tripled among the "Young Adults" at $22.10 \%$, crested at the apex of $28.47 \%$ among the "Middle Adults", and subsequently declined at $21.20 \%$ within the years of the "Late Adults"; the combined adulthood cohorts comprised an ominous $71.78 \%$ of the population attrition record. Successively it sharply tapered off at a level of insignificant score values among the cohorts of "Maturus" and the "Older"; illuminating as it may be of the rather unfavorable expectations faced by the grizzling members of this population sample for longevityprobability past the terminus of the "Late Adulthood", after approximately the 45th year of age.

Apropos to the demographic components of mortality and survivorship reflected by the population sample of the site, a juxtaposition to comparable data from the burial ground at Pythagoreion of Samos island may provide facets of the elemental dynamics that were in effect at the background milieu; and had ingrained the mode of experiences and realities at an inter-site environment during the Geometric period (Graphs 38, and 39). It appears, based on proportional scores, that at Pythagoreion of Samos, population attrition uniquely initiated during the critical "Perinatal" ${ }^{54}$ period, a mortality element absent from Plithos of Naxos, coupled by the fact that Plithos faired a fourfold better in survivorship during "Infancy I" than at Pythagoreion where mortality at said age cohort reached a sinister $42.58 \%(\mathbf{G r a p h} 40)$. Should the palaeopathologist lump the mortality scores of "Perinatal" and "Infancy I" at Pythagoreion, it would reach an ominous score of $50.39 \%$. In the subsequent age subgroups however, between "Infancy II" through to "Late Adults" Plithos exceeded Pythagoreion in mortality, notably surpassing the Samians at Pythagoreion with a mortality apex of more than a sixth fold prevalence within the "SubAdulthood" age subgroup, indicative of taxing conditions that had been in effect during this age cohort at Plithos. Although not as sharply, Plithos continued the trend to exceed Pythagoreion in the mortality prevalence of its membership within the three sequent age subgroups of adulthood. Plithos slightly yielded in demographic attrition prevalence to Pythagoreion during the "Maturus" years. Yet in retrospect, this was to reveal of the diminished longevity probabilities of "Late Adults" at Plithos to reach old age.

Naxos island, with its pivotal geolocation within the Cyclades, the splendor of its natural beauty, its landscape magnificence and catchment area, was bound nevertheless to present limitations in available resources to adequately provide for the increasing needs, ambitions, and growth prospects of a largely agriculturally based and yet actively seafaring-supported society. Unavoidably, Naxos was to be involved with competitive and challenging antagonists, best exemplified in its relations with its most proximal of its neighboring islands, namely Paros ${ }^{55}$, on matters of strategic political and military alliances ${ }^{56}$, resource acquisition, the strive for power in maritime routes, and in endeavors seeking to establish and secure other important seaworthy locations in the Aegean Archipelago and the Eastern Mediterranean for trade and settlement.

It is hoped that the study of the human skeletal population sample from the Plithos burial ground may offer tesserae of testimony from Naxos, allowing to bear witness in retrospect even if only of a select number of essentials on conditions that both determined and oversaw life events during the Geometric period.

Continued research on the wealth of information that can be retrieved from the human and zooarchaeological skeletal records promises to yield additional clues, in conjunction with the rest of the archaeological record, in deciphering additional features of the human condition during this period which formed the realities and expectations of the Archaic Period at the pivotal Cycladic region in the sea routes of southeastern Europe, western Asia, and northern Africa.

[^17]
## References Cited

Agelarakis, P. A., (1996) A Field and Laboratory Manual for Archaeologists, for the Excavation, Documentation, and Preservation of Human Osseous Remains. Ariadne, 8, 189-247;
Agelarakis, P. A., (1996a) The Archaeology of Human Bones: Prehistoric Copper Producing Peoples in the Khao Wong Prachan Valley, Central Thailand. In (ed.) P. Bellwood. The Indo-Pacific Prehistory: The Chang Mai Papers, IPAA Bulletin 14:1, 133-139.
Agelarakis, P. A., (2003). Preliminary Anthropology Database Report-Pythagoreion of Samos, Archival, KA' Ephoreia of Prehistoric and Classical Antiquities; Final Anthropology Report in preparation.
Agelarakis, P. A., (2005) The Anthropology of Tomb A1K1 of Orthi Petra in Eleutherna. A Narrative of the Bones: Aspects of the Human Condition in Geometric-Archaic Eleutherna. University of Crete, Rethymnon.
Agelarakis, P. A., (2011) A Dignified Passage through the Gates of Hades: The Burial Custom of Cremations at Orthi Petra in Eleutherna, Rethymno-Crete, Greece, Abstracts, 11th International Cretological Congress, 21-27/10/2011, Rethymnon, 264-265.
Agelarakis, P. A., (2013) On the Anthropology Project of 35 Salaminos Street Site of Kerameikos, Athens: A Brief Account. Archaeologikés Symvolés, Volume B: Attika, A' and $\Gamma^{\prime}$ Prehistoric and Classical Antiquities Authorities, Museum of Cycladic Art, Athens, 369-386.
Agelarakis, P. A., (2014) On the Preservation and Conservation of Archaeologically Recovered Anthropological Remains: A Brief Communication to Younger Colleagues. In (ed.) E. Korka The Protection of Archaeological Heritage in Times of Economic Crisis, Cambridge Scholars Publishing, Newcastle upon Tyne, 254-259.
Ahlberg, G., (1971). Fighting on Land and Sea in Greek Geometric Art. Stockholm, 1971.
Ahlberg, G., (1971a) Prothesis and Ekphora in Greek Geometric Art. Gäteborg.
Angel, J. L., (1981). History and development of paleopathology. American Journal in Physical Anthropology 56, 509-515.
Athanassakis, N.A., (2004). Hesiod: Theogony, Works and Days, Shield (2 $2^{\text {nd }}$ ed.). The John Hopkins University Press, Baltimore.
Aufderheide, C.A., and Rodriguez-Martin, C., Langsjoen, O., (1998). The Cambridge Encyclopedia of Human Paleopathology. Cambridge University Press, Cambridge.
Bass, M.W., (2005). Human Osteology: A Laboratory and Field Manual, (5th ed.). Missouri Archaeological Society, Special Publication 2, Columbia.
Boardman, J., (1998). Early Greek Vase Painting: $11^{\text {th }}-6^{\text {th }}$ Centuries BC. Thames and Hudson, London.
Bohnert, M., Rost, T., Pollak, S., (1998). The degree of destruction of human bodies in relation to the duration of the fire. Forensic Sci. Int. 95, 11-21.
Brothwell, D.R., (1981). Digging up Bones: The excavation treatment and study of human skeletal remains. Ithaca: Cornell University Press.
Buikstra, J.E., and Beck, L.A., (2006). (Eds.). Bioarchaeology: The contextual analysis of human remains. Elsevier, New York.
Buikstra, J.E., Swegle, M., (1989). Bone modification due to burning: experimental evidence. In: Bonnichsen, R.B., Sorg, M.H. (Eds.), Bone Modification Center for the Study of the First Americans. Orono, MN, 258-278.
Chochol, J., (1961). Anthropologische Analyse menschlicher Brandreste aus den Lausitzer Gräberfeldern in Usti Nad Labem-Strekov II und in Zirovice, Bezirk Cheb. In: Plesl, E. (Ed.), Die Lausitzer Kultur in Nordwestbohmen. (Monumenta Archaeologica 8), Akademie der Wissenschaften, Prag, 273-290.
Coldstream, J.N., (2003). Geometric Greece. Routledge, New York.
Devlin, J.B., Herrmann, N.P., (2015). Bone color as an interpretive tool of the depositional history of archaeological cremains. The Analysis of Burned Human Remains, Elsevier, Amsterdam.
Garland, R., (2001). The Greek Way of Death. Cornell University Press, Ithaca.
Gejvall, N.G., (1963). Cremations. In: Brothwell, D., Higgs, E. (Eds.), Science in Archaeology. Thames and Hudson, London, 468-479.
Gejvall, N.G., (1969). Cremations. In: Brothwell, D., Higgs, E. (Eds.), Science in Archaeology Praeger, New York, 468-479.
Graw, M., Wahl, J., Ahlbrecht, M., (2005). Course of the meatus acusticus internus as criterion for sex
differentiation. Forensic Sci. Int. 147, 113-117.
Greek Iambic Poetry: Archilochus, Testimonia, no 4 (Sosthenis inscriptio), A Col. Ia. 50-55, p. 30.
Haglund, W.D., Sorg, M.H., (1997). Introduction to forensic taphonomy. In: Haglund, W.D., Sorg, M.H. (Eds.), Forensic Taphonomy: The Postmortem Fate of Human Remains. CRC Press, Boca Raton, 1-9.

Hesiod, (2006). Works and Days. (Eds.) J. Henderson, and G.W. Most (Translator), LCL, 57, 86-153.
Hillson S., 2002. Dental Anthropology. Cambridge University Press, New York.
Jankauskas, R., Barakauskas, S., Bojarun, R., (2001). Incremental lines of dental cementum in biological age estimation. Homo 52, 59-71.
Iscan, M.Y., and Kennedy, K.A.R. (1989). (Eds.): Reconstruction of life from the skeleton. Alan R. Liss, New York.
Kirk, S. G., (1949). Ships on Geometric Vases. The British School at Athens, Annual 44, 93-153.
Komar, A.D., and Buikstra, E.J., (2008). Forensic Anthropology: Contemporary Theory and Practice. Oxford University Press, New York.
Kourou, N., (1984). Local Naxian Workshops andt he Import-Export Pottery Trade of the Island in the Geometric Period. In (Ed.) H.A.G.Brijder, Ancient Greek and Related Pottery. Proceedings of the International Vase Symposium in Amsterdam, Amsterdam, 107-112.
Kourou, N., (1998). Euboea and Naxos in the Late Geometric Period: The Cesnola Style. In (Eds.) M. Bats and B. D'Agostino (éds.), Euboica. L'Eubea e le presenza euboica in Calcidica e in Occidente. Atti del convegno interna-zionale di Napoli, Napoli, 167-177.
 Athens.
Krogman, W. M., and Iscan, M.Y., (1986). The human skeleton in forensic medicine (2nd ed.). C. C. Thomas, Springfield.
Lambrinoudakis, V.K., (1988). Veneration of Ancestors in Geometric Naxos. In (Eds.) R. Hägg, N. Marinatos, and G.C. Nordquist, Early Greek Cult Practice. Proceedings of the Third International Symposium at the Swedish Institute in Athens, Stockholm, 235-246.
Larsen, C. S., (1997). Bioarchaeology: Interpreting behavior from the human skeleton. Cambridge University Press, London.
Malinowski, A., Porawski, R., 1969. Identifikationsmöglichkeiten menschlicher Brand-knochen mit besonderer Berücksichtigung ihres Gewichts. Zacchia 44, 1-19
Marean, C., Abe, Y., Nilssen, P., Stone, E., (2001). Estimating the minimum number of skeletal elements (MNE) in zooarchaeology: a review and a new image-analysis GIS approach. Am. Antiq. 66, 333-348.
Moore, M., B., (2000). Ships on a 'Wine-Dark Sea' in the Age of Homer. Metropolitan Museum Journal, 35, 13-38.
Morris, I., (1989). Burial and Ancient Society: The Rise of the Greek City-State. Cambridge University Press, London.
Morris, I., (1992). Death-Ritual and Social Structure in Classical Antiquity.Cambridge University Press, New York.
Morrison, S. J., and Williams, T. R., (1968). Greek Oared Ships: 900-322 B.C., Cambridge.
Muller, M., Berytrand, M.F., Quatrehomme, G., M. Bolla, and J. P. Rocca, (1998). Macroscopic and microscopic aspects of incinerated teeth. J. Forensic Odontostomatol. 16, 1-7.
Munsell Color Company, (2000). Munsell Soil Color Charts. Munsell Color GretagMacbeth, New Windsor, NY.
Myers, S.L., Williams, J.M., Hodges, J.S., (1999). Effects of extreme heat on teeth with implications for histologic processing. J. Forensic Sci. 44, 805-809.
Nicholson, R., (1993). A morphological investigation of burnt animal bone and an evaluation of its utility in archaeology. J. Archaeol. Sci. 20, 411-428.
Norén, A., Lynnerup, N., Czarnetzki, A., Graw, M., (2005). Lateral angle: A method for sexing using the petrous bone. Am. J. Phys. Anthropol. 128, 318-323.
Ortner, J. D., (2003). Identification of pathological conditions in human skeletal remains. Smithsonian Institution Press, Washington, D.C.
Ortner, J. D., Putschard, J.C. W., (1981). Identification of pathological Conditions in Human Skeletal Remains. Reprint Edition of Smithsonian Contributions to Anthropology, Number 28. Smithsonian Institution Press, Washington.
 Plutarch, Moralia, E $\rho \omega \tau \iota \kappa$ ó 760-761.
Plutarch, Moralia, T $\omega v \varepsilon \pi \tau \dot{\alpha} \sigma$ o $\phi \bar{\sigma} v o v \mu \pi o ́ \sigma \iota o v 153 f$.
Pusch, C., Broghammer, M., Scholz, M., (2000). Cremation practices and the survival of ancient DNA: burnt bone analyses via RAPD-mediated PCR. Anthrop. Anz. 58, 237-251.
Reber, K., (2011). Céramique eubéenne à Naxos au début de l' Âge du Fer. In (Ed.) A. Mazarakis, The "Dark Ages" Revisited. Acts of an international symposium in memory of William D.E. Coulson, Volos, 929-942.
Reber, K., and Zapheiropoulou, P., (2012). Plithos on Naxos. An Early Iron Age Cemetery. Zagora in Context, Settlements and Intercommunal Links in the Geometric Period (900-700 BC), Meditarch. 25, Abstracts, 317.
Shipman, P., Foster, G., Schoeninger, M., (1984). Burnt bones and teeth: an experimental study of color, morphology, crystal structure and shrinkage. J. Archaeol. Sci. 11, 307-325.
Shipman, P., Walker, A., and Bichell, D., (1985). The human skeleton. Harvard Press, Cambridge.
Snodgrass, M.A., (2000). The Dark Age of Greece. Routledge, New York.
Spenneman, D., Colley, S., (1989). Fire in a pit: the effects of burning on faunal remains. Archaeozoologia 3, 51-64.
Steele, D. G., and Bramblett, C. A., (1988). The anatomy and biology of the human skeleton. Texas A\&M University Press, College Station.
Schweitzer, B., (1971). Greek Geometric Art. Phaidon, New York.
Thompson, T.J.U., (2004). Recent advances in the study of burned bone and their implications for forensic anthropology. Forensic Sci. Int. 146S, 203-205.
Thompson, T.J.U., (2005). Heat-induced dimensional changes in bone and their consequences for forensic anthropology. J. Forensic Sci. 50 (5), 1008-1015.
Ubelaker, D. H., (1982). The development of American paleopathology. In Spencer, F. (Ed.): A History of American Physical Anthropology 1930-1980. Academic Press, New York.
Ubelaker, D.H., (1999). Human Skeletal Remains: Excavation, Analysis, Interpretation. Washington, Taraxacum, DC.
van Vark, G.N., (1974). The investigation of human cremated skeletal material by multivariate statistical methods. I. Methodology. Ossa 1, 63-95.
van Vark, G.N., (1975). The investigation of human cremated skeletal material by multivariate statistical methods. II. Measures. Ossa 2, 47-53.
Vermeule, E., (1981). Aspects of Death in Early Greek Art and Poetry. University of California Press, Berkeley.
Wahl, J., (1983). A contribution to metrical age determination of cremated subadults. Homo 34, 48-54.
Wells, C., (1960). The study of cremation. Antiquity 34, 29-37.
White, T.D., and Folkens, P.A., (1991). Human Osteology. New York, Academic Press.
Zafeiropoulou F., and Agelarakis A., (2005), "Warriors of Paros", Archaeology 58, 1, 30-35.
 X'́paç. Abstracts, The «Dark Ages» Revisited. An International Conference in Memory of William D.E. Coulson, Volos.

Zapheiropoulou, P., (1988). Naxos: Monuments and Museum, Athens.

 $\Sigma i \delta \dot{\eta} \rho o v$, Athens, 285-299.
Zapheiropoulou, P., (2003). La necropoli geometrica di Tsikalario a Naxos, Magna Graecia, 18, 5-6.

## Acknowledgements

The author thanks Argie Agelarakis, MA, for serving as project crew chief during the field seasons in Paroikia-Paros Island. The front and back covers of this publication are hers, inspired by the midsummer etesian winds' interplay with the Aegean waves. Thanks are also extended to Dr. F. Zapheiropoulou, Ephor of Antiquities Emerita and site excavator, for inviting me to study the anthropological materials. Further, the author thanks his student assistants who worked in the field, in Naxos, and at the lab at Adelphi University, A. Sardis, G. and A. Dovas, D. Schoenfuss, S. Zawistowski, A. Adler, K. Lombardy, P. Agelarakis, and L. Jacobsen.

Graphs


| Graph Abbreviations |  | \% Values per Category |  |
| :--- | :---: | :--- | :---: |
| BC | $=$ | Burial Contexts (48) | $100.00 \%$ |
| BCSI | $=$ | Contexts with Single Interments (43) | $89.59 \%$ |
| BCMI | $=$ | Contexts with Multiple Interments (5) | $10.41 \%$ |

Graph 1


| Graph Abbreviations |  |  |
| :--- | :---: | :--- |
| BC | $=$ | Total of 48 Burial Contexts which Yielded 55 Homini |
| BCSI | $=$ | 43 Burial Contexts with Single Interments which Yielded 43 Homini |
| BCMI | $=$ | 5 Burial Contexts with Multiple Interments which Yielded 12 Homini |

GRAPH 2


| Graph Abbreviations |  |  |
| :--- | :--- | :--- |
| H | $=$ | 55 Homini: 29 in Dry Skeletal Form and 26 in Cremated Skeletal Form |
| HRSI | $=$ | 43 Homini Recovered as Single Interments: 22 in Dry Skeletal Form and 21 in Cremated <br> Skeletal Form |
| HRMI | $=$12 Homini Recovered as Multiple Interments: 7 in Dry Skeletal Form and 5 in Cremated Skeletal <br> Form |  |

Graph 3


| Graph Abbreviations |  |  | $\%$ Values per Category out of 43 Homini |  |
| :--- | :--- | :--- | :---: | :---: |
| H | $=$43 Single Interments, 22 in Dry, and 21 in <br> Cremated Form | $=$ | $100.00 \%$ |  |
| C1 | $=$Homini represented by Cranial, Dental, <br> Postcranial Axial, and Appendicular remains <br> $(15)$ | $=$ |  |  |
| C2 | $=$Homini represented by Cranial, Dental, and <br> Postcranial Appendicular remains (2) | $=$ | $34.88 \%$ |  |
| C3 | $=$Homini represented by Cranial, Postcranial <br> Axial, and Appendicular remains (6) | $=$ | $4.65 \%$ |  |
| C4 | $=$Homini represented by Cranial and <br> Postcranial Appendicular remains (3) | $=$ | $13.95 \%$ |  |
| C5 | $=$Homini represented by Cranial, Dental, and <br> Postcranial Axial remains (2) | $=$ | $6.98 \%$ |  |
| C6 | $=$Homini represented by Cranial and Dental <br> remains (2) | $=$ | $4.65 \%$ |  |
| C7 | $=$ | Homini represented by Cranial remains (5) | $=$ | $4.65 \%$ |
| C8 | $=$Homini represented by Postcranial Axial and <br> Appendicular remains (1) | $=$ | $11.62 \%$ |  |
| C9 | $=$Homini represented by Postcranial <br> Appendicular remains (7) | $2.32 \%$ |  |  |

Graph 4

Distribution of Skeletal Remains per Homo out of 12 Homini in both Dry and Cremated Form Recovered as Multiple Interments from within 5 (10.41\%) out of 48 Archaeological Burial Contexts: The sequenc between "C1" and "C9" aims to follow an anatomic supero-inferior direction


Abbreviations of Categories, Distribution of Skeletal Remains, and \% Values per Category in Table Below

| Graph Abbreviations |  |  | \% Values per Category out of 12 Homini |
| :---: | :---: | :---: | :---: |
| H | = | 12 Multiple Interments, 7 in Dry, and 5 in Cremated Form | 100.00\% |
| C1 | $=$ | Homini represented by Cranial, Dental, Postcranial Axial, and Appendicular remains (1) | 8.33\% |
| C3 | = | Homini represented by Cranial, Postcranial Axial, and Appendicular remains (6) | 50.00\% |
| C4 | = | Homini represented by Cranial and Postcranial Appendicular remains (1) | 8.33\% |
| C7 | = | Homini represented by Cranial remains (1) | 8.33\% |
| C8 | $=$ | Homini represented by Postcranial Axial and Appendicular remains (2) | 16.67\% |
| C9 | $=$ | Homini represented by Postcranial Appendicular remains (1) | 8.33\% |

Graph 5


| H | $=$ | 55 Homini Recovered as Single (43 or 78.18\%), and Multiple Interments (12 or 21.81\%) |
| :---: | :---: | :---: |
| C1 | = | 16 (29.09\%) out of 55 Homini which Yielded Cranial, Dental, Postcranial Axial, and Appendicular Remains as Single (15 or $93.75 \%$ out of 16) and Multiple (1 or $6.25 \%$ out of 16) Interments |
| C2 | = | 2 (3.63\%) out of 55 Homini as Single Interments which Yielded Cranial, Dental, and Postcranial Appendicular Remains |
| C3 | $=$ | 12 (21.81\%) out of 55 Homini which Yielded Cranial, Postcranial Axial, and Appendicular Remains as Single (6 or $50.0 \%$ out of 12) and Multiple (6 or $50.0 \%$ out of 12) Interments |
| C4 | = | 4 (7.27\%) out of 55 Homini which Yielded Cranial and Postcranial Appendicular Remains as Single ( 3 or $75.00 \%$ out of 4 ) and multiple ( 1 or $25.00 \%$ out of 4 ) Interments |
| C5 | = | 2 (3.63\%) out of 55 Homini which Yielded Cranial, Dental, and Postcranial Axial Remains as Single Interments |
| C6 | = | $2(3.63 \%)$ out of 55 Homini which Yielded Cranial and Dental Remains as Single Interments |
| C7 | $=$ | 6 (10.90\%) out of 55 Homini which Yielded Cranial Remains as Single (5 or $83.33 \%$ out of 6) and Multiple (1 or 16.66\% out of 6) Interments |
| C8 | = | 3 (5.45\%) out of 55 Homini which Yielded Postcranial Axial and Appendicular Remains as Single (1 or $33.33 \%$ out of 3 ) and Multiple (2 or $66.66 \%$ out of 3 ) Interments |
| C9 | = | 8 (14.54\%) out of 55 Homini which Yielded Postcranial Appendicular Remains as Single (7 or $87.5 \%$ out of 8 ) and Multiple (1 or $12.5 \%$ out of 8 ) Interments |

## Graph 6



GRAPH 7


Graph 8


| Graph Abbreviations, and Values per Subcategory |  |  |
| :---: | :---: | :---: |
| Homini | = | 55 Homini Recovered as Single (43 or $78.18 \%$ out of 55 ) and Multiple Interments (12 or 21.81\% out of 55) from 48 Burial Contexts |
| Males | = | 26 (47.27\% out of 55) Homini Determined to be Male, Recovered as Single (20 or 76.92\% out of 26), and Multiple ( 6 or $23.07 \%$ out of 26 ) Interments |
| Probable Males | = | 3 (5.45\% out of 55) Homini Determined to be Probable Males, Recovered as Single (2 or $66.66 \%$ out of 3), and Multiple (1 or 33.33\% out of 3) Interments |
| Possible Males | = | 2 (3.63\% out of 55) Homini Determined to be Possible Males, Recovered as Single (1 or 50.0\% out of 2), and Multiple (1 or 50.0\% out of 2) Interments |
| Females | $=$ | 11 (20.0\% out of 55) Homini Determined to be Female, Recovered as Single (10 or 90.90\% out of 11), and Multiple (1 or 9.09\% out of 11) Interments |
| Probable Females | $=$ | 2 (3.63\% out of 55) homini determined to be Probable Females recovered as single interments |
| Possible Females |  | 1 (1.82\% out of 55) Homo Determined to be a Possible Female, Recovered as a Single Interment |
| Indeterminate | = | 10 (18.18\% out of 55) Homini of Indeterminate Biological Sex Recovered as Single (7 or 70.0 \% out of 10), and Multiple (3 or $30.0 \%$ out of 10) Interments |

## Graph 9

Male, Female, and Indeterminate Biological Sex Aggregates Within the Population Sample of 55 Individuals


Graph 10


|  | $=$ | Age Range in Years |  |
| :--- | ---: | ---: | :---: |
| IN I | $=$ | Infancy I | Birth-6 |
| IN II | $=$ | Subadults | $>6-12$ |
| SA | $=$ | Subadults to Young Adults | $>12-<18$ |
| SAYA | $=$ | Young Adults | $>12-25$ |
| YA | $=$ | Young Adults to Middle Adults | $18-25$ |
| YAMA | $=$ | Middle Adults | $18-35$ |
| MA | $=$ | Middle Adults to Late Adults | $>25-35$ |
| MALA | $=$ | Late Adults | $25-45$ |
| LA | $=$ | General Adults | $>35-45$ |
| GA | $=$ | Late Adults to Maturus | $18-45$ |
| LAM | $=$ | Senilis (Older) | $35-55$ |
| S |  |  | $>55-65+$ |

Graph 11


Graph 12


Graph 13


| Graph Abbreviations |  | Age Range in Years |  |
| :--- | ---: | :--- | :---: |
| IN I | $=$ | Infancy I | Birth-6 |
| IN II | $=$ | Infancy II | $>6-12$ |
| YA | $=$ | Young Adult | $18-25$ |
| MA | $=$ | Middle Adult | $>25-35$ |
| MALA | $=$ | Middle Adult/Late Adult | $25-45$ |
| GA | $=$ | General Adult | $18-45$ |

Graph 14


Graph 15


Graph 16


| H | = | 55 Homini with Determinable Ages at Death as Single (43), and Multiple (12) Interments |
| :---: | :---: | :---: |
| IN I | = | 6 ( $10.90 \%$ out of 55) Homini within Infancy I, Recovered as Single (3 or $50.0 \%$ out of 6), and Multiple ( 3 or $50.0 \%$ out of 6 ) Interments |
| IN II | = | 4 (7.27\% out of 55) Homini within Infancy II, Recovered as Single (3 or 75.0\% out of 4), and Multiple (1 or $25.0 \%$ out of 4) Interments |
| SA | = | 3 (5.45\% out of 55) Homini within Subadulthood, Recovered as Single Interments |
| SAYA | = | 2 (3.63\% out of 55) Homini within Subadulthood/Young Adulthood, Recovered as Single |
| YA | = | 5 (9.09\% out of 55) Homini within Young Adulthood, Recovered as Single (4 or 80.00\% out of 5), and Multiple ( 1 or $20.00 \%$ out of 5 ) Interments |
| YAMA | $=$ | 3 (5.45\% out of 55) Homini within Young Adulthood/Middle Adulthood, Recoverd as Single Interments |
| MA | = | 7 (12.72\% out of 55) Homini within Middle Adulthood, Recovered as Single (6 or $85.71 \%$ out of 7), and Multiple (1 or $14.28 \%$ out of 7 ) Interments |
| MALA | = | 5 (9.09\% out of 55) Homini within Middle Adulthood/Late Adulthood, Recovered as Single (3 or $60.0 \%$ out of 5), and Multiple (2 or 40.0\% out of 5) Interments |
| LA | = | 4 (7.27\% out of 55) Homini within Late Adulthood as Single Interments |
| GA | $=$ | 14 (25.45\% out of 55) Homini within "General Adulthood" (>18-45y.), Recovered as Single (10 or $71.42 \%$ out of 14 ), and Multiple ( 4 or $28.57 \%$ out of 14 ) Interments |
| LAM | = | 1 Homo (1.81\% out of 55 Homini) within Late Adulthood/Maturus, Recovered as a Single Interment |
| S | = | 1 Homo (1.81\% out of 55 homini) within the Senilis Cohort, Recovered as a Single Interment |

Graph 17


Graph 18


Graph 19

Distribution of Morphological Anatomic Manifestations per Homo out of 43 Homini Recovered as Single Interments from within 43 ( $89.58 \%$ ) out of 48 Burial Contexts


Graph 20


Graph 20A


GRAPH 21


Graph 21A

Distribution of Morphological Anatomic Manifestations per Homo out of 12 Homini Recovered as Multiple Interments from within 5 (10.41\%) out of 48 Burial Contexts


Graph 22


GRAPH 22A


GRAPH 23


Graph 23A


| Values per Subcategory |  |  |
| :--- | :--- | :--- |
| Homini | $=$Remains of 55 Homini in Various States of Skeletal Preservation as Single (43) and Multiple (12) <br> Interments |  |
| Adequate Skeletal <br> Preservation with <br> Observed Manifestations | $=$ | Remains of 24 Homini with Adequate Skeletal Preservation and Observed Manifestations as <br> Single (18 or 75.0\% out of 24), and Multiple (6 or 25.0\% out of 24) Interments |
| Adequate Skeletal <br> Preservation with No <br> Observed Manifestations | $=$ | Remains of 12 Homini with Adequate Skeletal Preservation and No Observed Manifestations as <br> Single (8 or 66.66\% out of 12), and Multiple (4 or 33.33\% out of 12) Interments |
| Inadequate Skeletal <br> Preservation for <br> Observations | $=$Remains of 19 Homini with Inadequate Skeletal Preservation for Observations as Single (17 or <br> $89.47 \%$ out of 19), and Multiple (2 or 10.52\% out of 19) Interments |  |



Distribution of Morphological Manifestations, \% Values per Category in Table Below

| Values per Subcategory |  |  |
| :---: | :---: | :---: |
| Homini with Adequate Skeletal Preservation and Observed Manifestations | = | Remains of 24 Homini with Adequate Skeletal Preservation and Observed Manifestations as Single (18 or $75.0 \%$ out of 24 ), and Multiple ( 6 or $25.0 \%$ out of 24 ) Interments |
| Manifestations of some form of Robustness | = | Remains of 24 Homini with Adequate Skeletal Preservation and Observed Manifestations as Single ( 18 or $75.0 \%$ out of 24 ), and Multiple ( 6 or $25.0 \%$ out of 24 ) Interments |
| Manifestations of MHOS | = | Remains of 17 Homini with Manifestations of MHOS as Single (17 or $94.44 \%$ out of 18 homini which showed manifestations of some form of robustness) Interments |
| Manifestations of Robustness without MHOS | $=$ | Remains of 1 Homo with Manifestations of Robustness without MHOS from the Multiple (1 or $16.66 \%$ out of 6 homini which showed some form of robustness) Interments |
| Manifestations of both Robustness and MHOS | = | Remains of 10 Homini with Manifestations of both Robustness and MHOS as Single (5 or 50.0\% out of 10 ), and Multiple ( 5 or $50.0 \%$ out of 10 ) Interments |

Graph 25


Graph 26


Graph 27

Relationship between Preservation and Observation of Palaeopathological Manifestations per Homo out



Graph 28

Distribution of Palaeopathological Manifestations among 22 Homini with Adequate Skeletal Preservation and Observed Manifestations, Recovered as Single Interments from within 22 ( $\mathbf{4 5 . 8 3 \%}$ ) out of 48 Burial Contexts


Palaeopathological Distribution and \% Values per Sucategory, Abbreviations in Table Below

| Explanations of Graph Abbreviations |  |  |
| :--- | ---: | :--- |
| H | $=$ | 22 Homini as Single Interments with Adequate Skeletal Preservation and Observed <br> Manifestations |
| CP | $=$ | Homini exhibiting manifestations of Cranial Pathologies |
| CPo | $=$ | Homini exhibiting manifestations of Cranial Porosity |
| PD | $=$ | Homini exhibiting manifestations of Periodontal Disease |
| DP | $=$ | Homini exhibiting manifestations of Dental Pathologies |
| PCP | $=$ | Homini exhibiting manifestatiosn of Postcranial Pathologies |
| SP | $=$ | Homini exhibiting manifestations of Spondyloarthropathy |
| OA | $=$ | Homini exhibiting manifestations of Osteoarthropathy |

Graph 29

Distribution of Palaeopathological Manifestations among 6 Homini with Adequate Skeletal Preservation and Observed Manifestations, Recovered as Multiple Interments from within 4 ( $8.33 \%$ ) out of 48 Burial Contexts


Pathological Distribution and \% Values per Category out of 6 Homini Abbreviations in Table Below

| Explanations of Graph Abbreviations |  |  |
| :--- | ---: | :--- |
| H | $=$ | C Homini of Multiple Interments with Adequate Skeletal Preservation and Observed <br> Manifestations |
| CP | $=$ | Homini exhibiting manifestations of Cranial Pathologies |
| CPo | $=$ | Homini exhibiting manifestations of Cranial Porosity |
| PD | $=$ | Homini exhibiting manifestations of Dental Pathologies |
| PCP | $=$ | Homini exhibiting manifestatiosn of Postcranial Pathologies |
| OA | $=$ | Homini exhibiting manifestations of Osteoarthropathy |

Relationship between Preservation and Observation of Palaeopathological Manifestations per Homo out of 55 Homini Recovered as Single and Multiple Interments from within 48 Burial Contexts


| Distribution and \% Values per Subcategory |  |  |
| :--- | :---: | :--- |
| Homini | $=$ | Remains of 55 Homini as Single (43) and Multiple (12) Interments |
| Adequate Skeletal <br> Preservation with <br> Observed Manfestations | $=$ | $28(50.9 \%$ out of 55$)$ Homini with Adequate Skeletal Preservation and Observed Manifestations <br> as Single (22 or78.57 \% out of 28), and Multiple (6 or 21.42\% out of 28) Interments |
| Adequate Skeletal <br> Preservation with No <br> Observed Manifestations | $=$ | $12(21.81 \%$ out of 55$)$ Homini with Adequate Skeletal Preservation and No Observed <br> Manifestations as Single (7 or 58.33\% out of 12), and Multiple (5 or 41.66\% out of 12) Interments |
| Inadequate Skeletal <br> Preservation for <br> Palaeopathologic Study | $=$$15(27.27 \%$ out of 55$)$ Homini with Inadequate Skeletal Preservation as Single (14 or 93.33\% out <br> of 15), and Multiple (1 or $6.66 \%$ out of 15$)$ Interments |  |

Graph 31


| Abbreviation Explanations and \% Values per Category |  |  |
| :--- | :--- | :--- |
|  | $=$28 Homini with Adequate Skeletal Preservation and Observed Manifestations as Single (22 or <br> $78.57 \%$ out of 28), and Multiple (6 or 21.42\% out of 28) Interments |  |
| H | $=$4 Homini Exhibiting Manifestations of Cranial Pathology as Single (3 or 75.0\% out of 4), and <br> Multiple (1 or 25.00\% out of 4) Interments |  |
| CP | $=$18 Homini Exhibiting Manifestations of Cranial Porosity as Single (12 or 66.66\% out of 18), and <br> Multiple (6 or 33.33\% out of 18) Interments |  |
| CPo | $=$ | 6 Homini Exhibiting Manifestations of Periodontal Disease as Single Interments |
| PD | $=$8 Homini Exhibiting Manifestations of Dental Pathologies as Single (7 or 87.5 \% out of 8), and <br> Multiple (1 or 12.5\% out of 8) Interments |  |
| DP | $=$10 Homini Exhibiting Manifestations of Postcranial Pathologies as Single (8 or 80.00\% out of <br> $10)$, and Multiple (2 or 20.00\% out of 10) Interments |  |
| PCP | $=$ | 5 Homini Exhibiting Manifestations of Spondyloarthropathy as Single Interments |
| SP | $=$7 Homini Exhibiting Manifestations of Osteoarthropathy as Single (6 or 85.71\% out of 7), and <br> Multiple (1 or 14.28\% out of 7) Interments |  |
| OA |  |  |

Graph 32


| Graph Abbreviations |  |  |
| :--- | :---: | :--- |
| H | $=$ | 55 Homini as Single (43), and Multiple (12) Interments |
| Adequate Skeletal <br> Preservation with <br> Observed Manifestations | $=$ | 10 Homini with Adequate Skeletal Preservation and Observed Manifestations as Single (9 or <br> $90.00 \%$ out of 10), and Mutiple (1 or 10.00\% out of 10) Interments |
| Adequate Skeletal <br> Preservation with No <br> Observed Manifestations | $=$ | 30 Homini with Adequate Skeletal Preservation and No Observed Manifestations as Single (20 <br> or 66.66\% out of 30), and Multiple (10 or 33.33\% out of 30) Interments |
| Inadequate Skeletal <br> Preservation for the study <br> of trauma impact | $=$15 Homini with Inadequate Skeletal Preservation as Single (14 or 93.33\% out of 15), and <br> Multiple (1 or 6.66\% out of 15$)$ interments |  |

Graph 33


| Graph Abbreviation Explanations, and \% Values |  |
| :--- | :--- | :--- |
| ABCSI = Archaeological <br> Burial Contexts with <br> Single Interments <br> ABCMI = Archaeological <br> Burial Contexts with <br> Multiple Interments$=$Out of the 43 (ABCSI) Contexts 23 (53.48\%) Yielded Faunal Remains, the Remaining 20 <br> $(46.51 \%)$ did not |  |



| Graph Abbreviation Explanations, and \% Values per Category |  |  |
| :---: | :---: | :---: |
| ABCSI = Archaeological Burial Contexts with Single Interments | $=$ | 43 Contexts which Yielded 21 (48.84\%) Homini in Cremated Form, and 22 (51.16\%) Homini in Dry Form |
| ABCSI-F = <br> Archaeological Burial Contexts with Single Interments Associated with Faunal Remains | $=$ | 11 Contexts with Single Cremated Interments (52.38\% out of 21, and $25.58 \%$ out of the 43 ) Associated with Faunal Remains, and 12 Contexts with Single Dry Interments (54.54\% out of 22, and $27.90 \%$ out of 43 ) Associated with Faunal Remains |
| ABCSI-V = <br> Archaeological Burial Contexts with Single Interments Void of Faunal Remains | $=$ | 10 Contexts with Single Cremated Interments ( $47.62 \%$ out of 21 and $23.25 \%$ out of the 43 ) Void of Faunal Remains, and 10 Contexts with Single Dry Interments (45.45\% out of 22, and 23.25\% out of 43) Void of Faunal Remains |

Graph 35


| ABCSI-F = <br> Archaeological Burial Contexts with Single Interments Associated with Faunal Remains | $=$ | 23 Contexts with Single Interments Comprising 11 (47.83\% out of 23) Homini in Cremated Form and 12 ( $52.17 \%$ out of 23 ) in Dry Form Associated with Faunal Remains |
| :---: | :---: | :---: |
| ABCSI-OV = Archaeological Burial Contexts with Single Interments Associated with Ovicaprical Remains | $=$ | 16 Contexts with Single Interments Comprising 7 (43.75\% out of 16) Homini in Cremated Form and 9 (56.25\% out of 16) in Dry Form Associated with Ovicaprical Offerings |
| ABCSI-SOV = Archaeological Burial Contexts with Single Interments Associated with Suspected Ovicaprical Remains | = | 7 Contexts with Single Interments Comprising 4 ( $57.14 \%$ out of 7 ) Homini in Cremated Form and 3 (42.86\% out of 7) in Dry Form Associated with Suspected Ovicaprical Offerings |

Graph 36


| Graph Abbreviation Explanations, and \% Values per Category |  |  |
| :--- | :--- | :--- |
| ABCMI = Archaeological <br> Burial Contexts with <br> Multiple Interments | $=$ | 5 Contexts which Yielded 12 Homini in Cremated and Dry Form, Associated with Faunal <br> Remains |
| H-C $=$ Cremated Homini | $=$ | 5 Cremated Homini with Associated Faunal Remains |
| H-D $=$ Homini in Dry Form | $=$ | 7 Homini in Dry Form Associated with Faunal Remains |

Graph 37


Graph 38


Graph 39


Graph 40

Tables
Table 1

| $\frac{\text { Lab }}{\text { No. }}$ | $\begin{aligned} & \text { Burial } \\ & \begin{array}{l} \text { No. in } \\ \text { Arabic. } \end{array} \end{aligned}$ | Burial No in Latin Numerals or | Assessment of Labs with same contextual data | Intrusive Homo | $\begin{aligned} & \frac{\text { Intended }}{} \\ & \frac{\text { Burial- }}{\text { Homo }} \\ & \hline \end{aligned}$ | C/D | Remains | Cremation Level | Faunal | Ecofactual | Artifactual | Biological Sex | Age | Morphology | Pathology | Trauma | $\frac{\text { Weight }}{(\mathrm{gr})}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Oikopedo Axiopoulou, Square 2, 14/8/78 |  |  |  | Dry | CDPA | - | none | none | none | Female | YA | MHOS | DP, CPo, CP | CT |  |
| 2 |  | Oikopedo Axioupolou, plithos, grave VI, xsa, 3/10/77 |  |  |  | Dry | CDPA | - | dry ovicaprical mandible fragment | none | none | Female | MA | MHOS | PD | None observed |  |
| 3 | 51 | Oikopedo Axioupolou, Square $\delta$, burial LL, Jar $\Pi 4$ |  |  |  | Dry | CDPAA | - | two tibial fragments of large dry ovicapricals | none | none | Possible Female | TIN II | None due to limited preservation | DP, CPo, CP | None observed |  |
| 4 | 58 | LVIII, X6, Oik. Axaopoulou, Bones, 28/8/78 (Lab 4); "D" grave LVIII, Bones of deceased (Lab 30) | Labs \# 4 and 30 are of the same context |  | Homo 1 | Dry | CPAA | - | dry ovicaprical lower jaw and vertebral plates and long bones of younger faunal | none | none | Male | MALA | Robust, MHOS | OA, CPo, PCP | SN, PCT |  |
| 30 | 58 |  | Labs \# 4 and 30 are of the same context |  | Homo 2 | Dry | CDPAA | - | dry ovicaprical tooth incisor | none | none | Possible Male | IN II | None observed | DP, CPo | None observed |  |
| 5 |  | Oikopedo. S. Kambysi, NA Ta 28, Grave LII |  |  |  | Cremated | CDPAA | $\begin{aligned} & \begin{array}{l} \text { Well cremated to a } \\ \text { sub-calcined } \\ \text { degree } \end{array} \\ & \hline \end{aligned}$ | none | none | fragment and iron fragments adhered to conglomerates | Male | MALA | Robust, MHOS | PCP | None observed | 730.00 |
| 6 |  | Oikopedo Kambysi, 8/877 Tafros E, Grave XXXIX, bones of the skeleton |  |  |  | Dry | CDPAA | - | none | none | none | Female | S | Robust, MHOS | $\left.\right\|_{\mathrm{PD}, \mathrm{DP}, \mathrm{SP}, \mathrm{OA},} ^{\mathrm{PCP}}$ | None observed |  |
| 7 | 53 | Oikopedo Kambysi, burial LIII |  |  |  | Cremated | CPApp | Cremated to a sub calcined degree | none | none | none | Male | GA | Robust, MHOS | None observed | None observed | 64.00 |
| 8 |  | Oikopedo B. Axiopoulou $\Delta$. Burial |  |  |  | Cremated | CPApp | Cremated to a subcalcined degree | none | none | none | Male | GA | None due to limited preservation | None due to limited preservation | None due to limited preservation | 187.00 |
| 9 | 29 | Oikopedo Axiopoulou, $\Delta$ burial XXIX, bones of the fire layer |  |  |  | Cremated | CD | Cremated to a subcalcined degree | none | none | none | Probable Male | YA | None due to limited preservation | None due to limited preservation | None due to limited preservation | 13.00 |
| 10 |  | Oikopedo Axaopoulou, Square $\Delta$, South Corner, Amphora 11. Bones from the inside |  |  |  | Cremated | CDPApp | Cremated to a subcalcined degree | none | none | none | Male | MALA | preservation <br> None due to limited preservation | None due to limited preservation | None due to limited preservation | 188.00 |
| 11 |  | Oikopedo Axiopoulou, Ta XIX, bones within amphora |  |  |  | Cremated | CDPAA | Well cremated to a sub-calcined degree | none | none | $\left\lvert\, \begin{aligned} & \text { Pottery } \\ & \text { fragment } \end{aligned}\right.$ | Male | LA | MHOS | OA | None observed | 822.00 |
| 12 |  | XXXIV, Oik. Axaopoulou, Square G', Grave XXXIV, bones around pyre and vases (Lab 12); Bones \& Charcoal (lab 50) | Labs \# 12 and 50 are the same context and Homo, |  |  | Cremated | CPAA | Cremated to a subcalcined degree | cremated faunal remains (animal bone with buthering/cut marks | Rocks | Ceramic fragments, one showing a decorative moti | Male | MA | None observed | None observed | None observed | 216.00 |
| 13 |  | Oikopedo Axiopoulou, Square G, XXXVII, Amphora ח1. Bones within amphora. |  |  |  | Cremated | CDPAA | Cremated to a subcalcined/calcined degree | none | Shells | none | Male | LA | None observed | PD, PCP | None observed | 428.00 |
| 14 |  | Oikopedo $\mathrm{B}^{\prime}$ Axiopoulou, 28/8/78, Building $\theta$, bones |  |  |  | Dry | C (parietal <br> fragment with <br> open sutures) | - | mandibular, cranial, and endocranial fragments of most likely of a dry ovicaprical | none | none | Probable Male | YAMA | None observed | None observed | None observed |  |
| 15 | 28 | Oikopedo Axiopoulou, burial ground, 4/8/78 Square A, grave XXVIII, bones of $\mathrm{n1}$ |  |  |  | Dry | CPAA | - | none | none | none | Indeterminate | IN | None due to limited preservation | CPo | None observed |  |
| 16 | 13b | Oikopedo Axiopoulou, $\Gamma$, Taf. XIII $\beta$, bones, depth- 0.33 |  |  |  | Cremated | CDPAA | Cremated to a sub- calcined degree | none | none | A large core of iron, most probobly from a nail $\qquad$ | Male | MA | None observed | SP | PCT, SN | 149.00 |
| 17 |  | Oikopedo B. Axiopoulou 16/8/78 $\Delta$. Grave XXIII, fragment of the lower jaw |  |  |  | Dry | Only the R. side of mandible w/ dentitions in situ) | - | none | none | none | Indeterminate (Possible Male) | IN II | None observed | DP | None observed |  |


|  | $\begin{aligned} & \stackrel{\circ}{\dot{\circ}} \\ & \stackrel{\rightharpoonup}{4} \end{aligned}$ |  | $\stackrel{\circ}{\text { ¢ }}$ | $\stackrel{8}{4}$ | $\begin{array}{l\|l\|\|} \hline 8 \\ \vdots \\ \dot{e} \end{array}$ |  |  | $\stackrel{\circ}{\text { ¢ }}$ |  | ¢ | \% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ¢ | 0 $\stackrel{0}{0}$ $\stackrel{0}{0}$ 0 0 0 0 $\mathbf{0}$ 2 | $\square$ |  | $\begin{aligned} & 0 \\ & \stackrel{\rightharpoonup}{2} \\ & \stackrel{\rightharpoonup}{0} \\ & \stackrel{0}{\circ} \\ & \stackrel{\circ}{5} \\ & \stackrel{2}{2} \\ & \hline \end{aligned}$ | $\stackrel{0}{0}$ $\stackrel{0}{0}$ $\stackrel{0}{0}$ 0 0 $\vdots$ $\vdots$ 2 |  |  |  |  |  |
| $\stackrel{\circ}{\circ}$ | $\begin{aligned} & \circ \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | 0 0 0 0 0 0 | $\square$ |  |  | $\bigcirc$ | $\begin{array}{l\|\|} 0 \\ 0 \\ 0 . \mid \end{array}$ | O | $\bigcirc$ |  | 0 0 0 0 0 0 |
| $\stackrel{\circ}{0}$ $\stackrel{2}{0}$ 0 0 0 0 $\vdots$ $\vdots$ | $\begin{aligned} & 0 \\ & 0 \\ & \frac{1}{2} \\ & \hline \end{aligned}$ | $\begin{array}{r} 0.0 \\ \stackrel{\rightharpoonup}{2} \\ \stackrel{0}{6} \\ \stackrel{0}{0} \\ \stackrel{0}{6} \\ \stackrel{5}{2} \\ \hline \end{array}$ |  |  |  |  |  |  |  |  | ¢ ¢ ¢ $\Sigma$ |
| ¢ | $\stackrel{\square}{8}$ | $\underline{\underline{z}}$ | S | $\begin{aligned} & \frac{5}{4} \\ & \frac{1}{2} \\ & \hline \end{aligned}$ | ๔ | $\underline{\underline{z}}$ | $\begin{aligned} & \frac{\pi}{4} \\ & \frac{1}{2} \end{aligned}$ | $\underline{\underline{\underline{z}}}$ | $\underline{\underline{z}}$ | ${ }_{6}$ | $\stackrel{¢}{2}$ |
|  | $\stackrel{\text { ¢ }}{\text { ¢ }}$ |  | $\stackrel{\circ}{ \pm}$ | $\stackrel{ \pm}{ \pm}$ | $\stackrel{\text { ¢ }}{\text { ¢ }}$ |  |  |  |  | $\stackrel{\square}{\text { ¢ }}$ | $\stackrel{\square}{ \pm}$ |
| $\stackrel{\circ}{\circ}$ | $\stackrel{\otimes}{\circ}$ |  | $\stackrel{\circ}{\circ}$ | $\stackrel{\otimes}{\circ}$ | $\begin{gathered} \circ \\ \stackrel{\circ}{\circ} \\ \hline \end{gathered}$ | $\stackrel{\circ}{\circ}$ | $\begin{array}{\|l\|\|} \hline \stackrel{\circ}{c} \\ \stackrel{\circ}{c} \end{array}$ |  |  | $\stackrel{\circ}{\circ}$ | $\stackrel{\otimes}{\circ}$ |
| $\stackrel{0}{\circ}$ | $\stackrel{\circ}{\circ}$ | $\stackrel{\circ}{\circ}$ | $\stackrel{\circ}{6}$ | $\stackrel{\circ}{\circ}$ | $\begin{aligned} & \stackrel{\rightharpoonup}{0} \\ & 0 \\ & \hline \end{aligned}$ |  | $\begin{array}{\|l\|\|} \hline \stackrel{\circ}{c} \\ \stackrel{\circ}{2} \end{array}$ |  | $\begin{gathered} \circ \\ \stackrel{\circ}{\mathrm{o}} \\ \hline \end{gathered}$ | $\stackrel{\text { ¢ }}{\text { ¢ }}$ | $\stackrel{\circ}{\circ}$ |
| $\stackrel{\circ}{\circ}$ | $\stackrel{\text { ¢ }}{\stackrel{\circ}{\circ}}$ | $\stackrel{\otimes}{\circ}$ |  |  |  |  | $\begin{array}{l\|\|} \stackrel{\circ}{\circ} \mathrm{C} \\ \stackrel{1}{2} \end{array}$ |  |  |  |  |
| 1 |  | 1 |  |  |  | 1 | 1 | - | 1 |  |  |
| $\begin{aligned} & \text { o } \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \boxed{4} \\ & 0 \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & \circ \\ & \vdots \\ & \hline \end{aligned}$ | $\bigcirc$ | $\begin{aligned} & \frac{\pi}{a} \\ & 0 \hat{0} \end{aligned}$ | $$ |  | 4 0 0 0 | $$ | ¢ | ¢ |
| $\stackrel{\rightharpoonup}{0}$ |  | $\stackrel{3}{0}$ | 물 $\stackrel{\text { in }}{0}$ $\stackrel{0}{0}$ |  |  | 3 | $\stackrel{3}{0}$ | 3 | 3 | \% | \% |
|  |  |  |  |  |  | - | $\begin{aligned} & \text { N } \\ & \stackrel{1}{6} \\ & \stackrel{1}{9} \end{aligned}$ |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | ® | ¢ | is |  | ¢ | $\stackrel{\sim}{\sim}$ | $\xrightarrow[\square]{\square}$ | $\stackrel{\square}{8}$ | - |  | $\stackrel{\sim}{\sim}$ |
| $\stackrel{\infty}{\sim}$ | $\stackrel{+}{+}$ | $\stackrel{\square}{\sim}$ | ֹ | ~ | ~ | ~ | $\stackrel{\sim}{\sim}$ | $\stackrel{\square}{\sim}$ | $\stackrel{\circ}{\sim}$ | $\stackrel{\text { ® }}{\text { ® }}$ | N |









|  | 易 |
| :---: | :---: |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| $\stackrel{\circ}{\text { ¢ }}$ | $\stackrel{\circ}{\circ}$ |
| $\stackrel{\circ}{\circ}$ | ${ }_{5}^{\circ}$ |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  | - |
|  |  |
| $\stackrel{\infty}{\infty}$ | ® |

 I




| 㐭 | 歇 | \% | $\stackrel{8}{8}$ |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  | $\stackrel{\circ}{\text { ¢ }}$ | \% |
| $\stackrel{\circ}{\circ}$ | $\stackrel{\circ}{\mathrm{e}}{ }_{2}^{4}$ | $\stackrel{\circ}{\stackrel{\circ}{\circ}}$ | $\stackrel{\circ}{\text { ¢ }}$ |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| $\stackrel{\circ}{\circ}$ | $\bigcirc$ | $F$ | $\stackrel{\sim}{\sim}$ |



| 119 | Oik. Zateitiopuou, 289887, nu |  |  |  |  |  |  |  |  | none |  |  |  |  |  |  | 127.00 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 120 |  |  |  |  |  |  |  |  |  | none |  |  |  |  |  |  | 900 |
| ${ }^{121}$ | Oik. Zafeiropoulou, 17/9/87, $\Pi_{2}$ (section A well), bones |  |  |  |  |  |  |  |  | none |  |  |  |  |  |  | 360 |
| 122 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 19300 |


| $\stackrel{\stackrel{\circ}{6}}{0}$ | $\stackrel{\circ}{\text { ¢ }}$ | ¢ |
| :---: | :---: | :---: |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| $\stackrel{\text { ¢ }}{\text { ¢ }}$ | $\stackrel{\circ}{\text { ¢ }}$ | $\stackrel{\circ}{\text { ¢ }}$ |
|  | $\underline{\stackrel{\circ}{\mathrm{o}}}$ | $\stackrel{\circ}{\text { ¢ }}$ |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| $\stackrel{\text { ® }}{ }$ | $\stackrel{\text { ² }}{ }$ | $\stackrel{\square}{\sim}$ |






| $\begin{aligned} & \hline \dot{0} \\ & \dot{\oplus} \end{aligned}$ |  |  |  | － |
| :---: | :---: | :---: | :---: | :---: |
| $\circ$ $\stackrel{0}{0}$ 0.0 0. 0 0 0 $\vdots$ 2 |  | $\circ$ $\stackrel{0}{0}$ $\stackrel{0}{0}$ 0 0 0 0 0 | 2 |  |
| $\stackrel{\circ}{0}$ $\stackrel{\rightharpoonup}{0}$ 0 0 0 0 $\vdots$ $\vdots$ |  | $\begin{aligned} & 0 \\ & \stackrel{0}{2} \\ & \stackrel{0}{0} \\ & \stackrel{0}{0} \\ & \stackrel{0}{0} \\ & \stackrel{5}{2} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & \hline \end{aligned}$ |  |
|  |  |  |  |  |
| $\stackrel{\square}{7}$ | § |  | 5 |  |
| $\frac{\stackrel{0}{N}}{\stackrel{\Sigma}{\Sigma}}$ |  |  | $\stackrel{\circ}{\text { \％}}$ |  |
| $\stackrel{\circ}{\circ}$ | $\begin{array}{\|l\|\|} \stackrel{\circ}{6} \\ \stackrel{y}{4} \end{array}$ | $\begin{gathered} \stackrel{\circ}{2} \\ \stackrel{\circ}{\mathrm{E}} \\ \hline \end{gathered}$ | （1） | $\stackrel{\circ}{\circ}$ |
|  |  | $\begin{gathered} \stackrel{\circ}{\circ} \\ \stackrel{\circ}{\mathrm{E}} \\ \hline \end{gathered}$ |  | $\stackrel{\circ}{\circ}$ |
|  |  |  |  |  |
|  |  |  |  |  |
| $\begin{gathered} \frac{1}{d} \\ 0 \\ 0 \end{gathered}$ | $\begin{aligned} & \text { 毫 } \\ & \hline 0 \end{aligned}$ | 彥 | 1880 |  |
| $\begin{aligned} & \stackrel{0}{0} \\ & \stackrel{\rightharpoonup}{i n} \\ & \stackrel{\rightharpoonup}{0} \\ & \stackrel{0}{0} \end{aligned}$ | 름 | 릉 |  |  |
|  | $\begin{gathered} N \\ \text { N } \\ \text { O} \\ \text { ion } \\ \hline \end{gathered}$ |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| 保 | － | 9 | f | ¢ |









|  | $\stackrel{+}{+}$ |  | \% |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| $\stackrel{\circ}{6}$ | $\stackrel{\circ}{\circ}$ | $\stackrel{\circ}{6}$ | $\stackrel{\circ}{\text { ¢ }}$ | $\stackrel{\circ}{\text { ¢ }}$ | $\stackrel{\circ}{\text { ¢ }}$ |
| \% | $\stackrel{\circ}{\circ}$ | $\stackrel{\circ}{\circ}$ | $\stackrel{\circ}{\text { ¢ }}$ | 哀 | \% |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  | \% |
|  |  |  |  |  |  |
| $\stackrel{\text { ® }}{ }$ | $\stackrel{\text { d }}{\text { d }}$ | $\stackrel{\square}{\text { ® }}$ | $\stackrel{\circ}{\circ}$ | $\stackrel{\text { - }}{ }$ | $\stackrel{\sim}{\sim}$ |



[^18]
## Anagnostis P. Agelarakis

Table 2

| Categories | Single Interments |  | Multiple Interments |  | Count |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Biological Assessment | Dry Form | Cremated Form | Dry Form | Cremated Form |  |
| "Males" | 1 | 19 | 1 | 5 | 26 |
| "Probable Males" | 1 | 1 | 1 |  | 3 |
| "Possible Males" | 1 |  | 1 |  | 2 |
| "Females" | 10 |  | 1 |  | 11 |
| "Probable Females" | 2 |  |  |  | 2 |
| "Possible Females" | 1 |  |  |  | 1 |
| "Indeterminate" | 6 | 1 | 3 |  | 10 |
| Subtotals | 22 | 21 | 7 | 5 | 55 |

Table 3

| Age Subcategories Used in Age Assessing the Population Sample | Abbreviations | Age Range in Years |
| :--- | :--- | :--- |
| Infancy I | IN I | Birth-6 |
| Infancy II | IN II | $6.01^{*}-12$ |
| Subadults | SA | $12.01-<18$ |
| Subadults to Young Adults | SAYA | $12.01-25$ |
| Young Adults | YA | $18-25$ |
| Young Adults to Middle Adults | YAMA | $18-35$ |
| Middle Adults | MA | $25.01-35$ |
| Middle Adults to Late Adults | MALA | $25-45$ |
| Late Adults | LA | $35.01-45$ |
| General Adults | GA | $18-45$ |
| Late Adults to Maturus | LAM | $35-55$ |
| Senilis (Older) | S | $55.01-65+$ |
| (*) : The decimal subdivision indicates that an age assessment rubric is considered between age subgroups |  |  |

Table 4

| Basic Categories of Age Subgroups | Age Range in Years |
| :--- | :--- |
| Infancy I | Birth -6 |
| Infancy II | $6.01^{*}-12$ |
| Subadult | $12.01-<18$ |
| Young Adult | $18.01-25$ |
| Middle Adult | $25.01-35$ |
| Late Adult | $35.01-45$ |
| Maturus | $45.01-55$ |
| Older (Senilis) | $55.01-65+$ |
| (*) $:$ The decimal subdivision indicates that an age assessment rubric is considered between age subgroups |  |

Table 5

| No. Contexts | Lab No. | Bone Weights in gr | Bone Weights in Ascending Scale | Valuations |
| :---: | :---: | :---: | :---: | :---: |
| 1 | 5 | 730 | 13 |  |
| 2 | 7 | 64 | 13 |  |
| 3 | 8 | 187 | 13 |  |
| 4 | 9 | 13 | 14 |  |
| 5 | 10 | 188 | 34 |  |
| 6 | 11 | 822 | 45 |  |
| 7 | 12 | 285 | 47 |  |
| 8 | 13 | 428 | 64 |  |
| 9 | 16 | 149 | 66 |  |
| 10 | 19 | 479 | 94 |  |
| 11 | 21 | 94 | 149 |  |
| 12 | 22 | 47 | 174 |  |
| 13 | 23 | 301 | 187 |  |
| 14 | 26a | 45 | 188 |  |
| 15 | 27 | 654 | 285 |  |
| 16 | 29 | 34 | 301 |  |
| 17 | 32 | 174 | 380 |  |
| 18 | 33 | 66 | 428 |  |
| 19 | 40 | 486 | 479 |  |
| 20 | 36 | 13 | 486 |  |
| 21 | 54 | 1337 | 654 |  |
| 22 | 56 | 14 | 730 |  |
| 23 | 129 | 816 | 816 |  |
| 24 | 145 | 380 | 822 |  |
| 25 | 147 | 963 | 963 |  |
| 26 | 211 | 13 | 1337 |  |
|  |  |  | 8782 | Sum |
|  |  |  | 13 | Min |
|  |  |  | 1337 | Max |
|  |  |  | 337.769 | Average |




[^0]:    ${ }^{1}$ In the case of this study from data permanently recorded on the human skeletal record of the ancients, and information gathered through the traces of their "fossilized" ideational world and behavioral conduct, imprinted and relatively safely preserved in the complex strata of their burial grounds.
    ${ }^{2}$ The analysis of the anthropological remains was carried out at a provisional laboratory space adjoining the museum's repository area. The author was assisted by a team of four students, namely: Angela Hernandez, Jessie Blackwood, Anna Sardis, and Sevasti M. Agelarakis.
    ${ }^{3}$ Of the five cases, those that were represented by axial or appendicular skeletal fragments, their maximum diameters ranged from 28.7 mm to 43.76 mm .

[^1]:    ${ }^{4}$ A biological sex assessment "cluster" may indicate the level of certainty of the assessment, for this particular project mainly based on the level of preservation of diagnostic anatomic morphologic criteria and/or availability of metric indicia documentation. Hence, similarly to a "male cluster", the "female cluster" includes for this project assessment rubrics such as "Females", "Probable Females", and "Possible Females". Where based on young age (as in Infancy), immature skeletal development, and/ or poorly preserved skeletal remains hindering the retrieval of morphometric diagnostic data the biological sex assessment rubric designated was "Indeterminate".

[^2]:    ${ }^{5}$ Hue and chroma variables of Munsell readings of cremated bone surfaces, at the "subcalcined" level ranged between $\mathrm{N} 6.5 /$, 5Y 7.5/1, 2.5Y 7.5/0, 10YR 7.5/1.5, 7.5YR 7.5/0, and 5YR 7.5/1 (Munsell Color Company, 2000).

[^3]:    ${ }^{6}$ Hue and chroma variables of Munsell readings of cremated bone surfaces at the "calcined" level ranged between 5Y 8/1, 10YR $8 / 1.5$, and 5 YR $8 / 1$.
    ${ }^{7}$ Centered in the study of morphologic anatomy and mensurational analyses.
    ${ }^{8}$ The core sample of the collection excluded the five cases as described in footnote 3, supra
    ${ }^{9}$ As explained above, this subcategory was designated to include either young in age individuals with immaturely developed skeletal bodies, and/or individuals that showed poorly preserved bone surfaces and structures whereby morpho-anatomic and mensurational evaluations could not substantiate a relative forensic assessment.

[^4]:    ${ }^{10}$ See table of Graph 11.
    ${ }^{11}$ Young Adulthood, Middle Adulthood, and Late Adulthood.
    ${ }^{12}$ In the lumped version of the eight basic age categories a proportional distribution to the three Adulthood age subcategories was implemented from the initial, detailed, age subcategories such as those of the "SubAdults-Young Adults" (abbreviated in Graph 11 as SAYA), the "Young-Middle Adulthood" (YAMA), the "Middle-Late Adulthood" (MALA), the "General Adulthood" (GA), and the "Late Adulthood-Maturus" (LAM).
    ${ }^{13}$ The "SubAdult" score reached only to the level of $40.7 \%$ of the "Young Adult" mortality prevalence.
    ${ }^{14}$ These comprised six of the twelve subcategorizations which were used to designate detailed age at death assessments among the individuals retrieved from burial contexts with single interments; see Footnote 10, supra.

[^5]:    ${ }^{15}$ Such bone changes may be caused by passive or specific, even idiosyncratic in nature, long term, repeated actions, affording conditions of trajectory stress by ante mortem kinetics in activities which had been either habitual or required of the individual(s) involved.

[^6]:    ${ }^{16}$ This subgroup comprised 8 individuals of the single interments (4 cremated males consisting of 1 "SubAdult", 2 "Middle Adults", and 1 "Late Adult"; 1 inhumed "Late Adult/Maturus" male; and 3 inhumed females consisting of 1 "SubAdult", 1 "Young Adult/Middle Adult", and 1 "General Adult"), and 4 individuals of the multiple interments ( 3 in "Infancy I", and 1 in "Infancy II").
    ${ }^{17}$ The combined subsets of : a) 24 individuals documented to reveal skeleton-anatomic manifestations of robustness and MHOS changes, along with b ) the 12 individuals that lacked them.

[^7]:    ${ }^{18}$ Even if for qualitative purposes.
    ${ }^{19}$ Values calculated after making the relative fractions proportional among the respective groups.

[^8]:    ${ }^{20}$ Also attested by emphasis on M. infraspinatus attachments.

[^9]:    ${ }^{21}$ These were selected based on their well-preserved ecto-endocranial, or ecto-endosteal long-bone components and surfaces.
    ${ }^{22}$ A domain inclusive of both genetic and congenital conditions, of developmental growth issues, as well as of physical and social environmental contexts and dynamics.
    ${ }^{23}$ Cf. Agelarakis, A., (2013). On the Anthropology Project of 35 Salaminos Street Site of Kerameikos, Athens: A Brief Account. Archaeologikés Symvolés, Volume B: Attika, A' and $\Gamma^{\prime}$ Prehistoric and Classical Antiquities Authorities, Museum of Cycladic Art, Athens, p: 380.
    ${ }^{24}$ Cf. Agelarakis, A., (2005). The Anthropology of Tomb A1K1 of Orthi Petra in Eleutherna: A Narrative of the Bones: Aspects of the Human Condition in Geometric-Archaic Eleutherna. University of Crete, Rethymnon, p: 45.
    ${ }^{25}$ Agelarakis, A., The Anthropology of the Paroikia Polyandreia of Paros Island. Manuscript in preparation.

[^10]:    ${ }^{26}$ The relation of percentile values of observed palaeopathology manifestations among the single versus the multiple interment group revealed a ratio of 1.023 , indicative of no significant statistical difference between them.
    ${ }^{27}$ And yet, counterpoints to the latter may be raised considering that four individuals of the multiple interment group would have had by the merit of their very young age a lack of degenerative in nature diseases.
    ${ }^{28}$ For example from metabolic imbalances, postpartum conditions for female individuals even if temporary but interrupted by the incidence of death, and even of alimentary tract parasitic infestation.
    ${ }^{29}$ Cases of pernicious, hereditary, anemias were rather not observed, taking in consideration the cranio-infracranial palaeopathologic changes observed, although in several of those cases evaluated among incompletely preserved skeletal individuals.

[^11]:    ${ }^{30}$ Particularly the dental tissue of enamel along with at least the layer of mantle dentin which it superimposes, along with components of primary dentin which superimposes the pulp of cavity, further toward a cervical region involving the entire crown surface peripheral to the cemento-enamel junction.
    ${ }^{31}$ The effects are more drastic when higher temperatures are reached, identified when the skeletal record is affected to the levels of "subcalnined" and "calnined" degrees.
    ${ }^{32}$ Without excluding forms of dental hygiene/care by a number of the individuals involved.
    ${ }^{33}$ LEH causative agents affecting deciduous teeth may include prenatal conditions due to maternal health issues, and in postnatal circumstances, which also affected the permanent set of dentitions, physiological stress (i.e. environmental stressors causing seasonal under/malnutrition-starvation), cultural mandates (i.e. weanling diarrhea, and/or under nutrition/malnutrition) and/or pathological stress (i.e. trauma impact combined during recovery with inadequate dietary intake, fevers, infections-communicable diseases, etc.).

[^12]:    ${ }^{34}$ Including spondyloarthopathic changes on the occipital condyles.
    ${ }^{35}$ It should be further considered if the relation of eburnation manifestations affecting said subgroup may be indicative of in vivo specialization activities inclusive but not limited to occupational requirements.
    ${ }^{36}$ It is suggested that should preservation conditions issues have allowed it, there could have been additional palaeopathological manifestations documented among the 15 ( $27.27 \%$ ) out of 55 individuals that could not be evaluated.
    ${ }^{37}$ As in all aspects of observational evaluations aided where relative by low stereoscopic magnification.

[^13]:    ${ }^{38}$ Comprising $18.18 \%$ out of the sample of 55 individuals.
    ${ }^{39}$ Such severe trauma impact was recorded among older individuals.
    ${ }^{40}$ Hence without an exit wound.

[^14]:    ${ }^{41}$ Suggested of domesticated cattle, of genus Bos.
    ${ }^{42}$ Of the taxonomic family of Canidae.
    ${ }^{43}$ Age subgroup distribution using the abbreviations of Graph 11: 1 YA; 1 YAMA; 2 MA; 1 MALA; 2 LA; and 4 GA.
    ${ }^{44}$ Relative burial contexts with homini, age and where possible biological sex assessments: 1) dry remains of 1 MALA male and
    1 IN II individual; 2) dry remains of 1MALA probable male and 1 IN I individual; 3) 1 GA male and 1 IN I individual; and 4) 3 cremated males ( 1 MA , and 2 GA ) and dry remains of an 1 IN I individual.
    ${ }^{45}$ Age and where possible biological sex subgroupings: 2 IN I; 1 in later IN II (possibly female); 2 YAMA (1 female and 1 probable male); 3 MA females; and 4 GA ( 3 females and 1 probable male).
    ${ }^{46}$ Taxonomic class Mammalia.
    ${ }^{47}$ The fifth case included the remains of a cremated YA male, and the dry remains of a GA female, associated with cremated and dry in form ovicaprical remains, along with the remains of an unidentified, small in size, faunal individual.
    ${ }^{48}$ Age subgroups: 1 YAMA; 2 MA, and 2 GA.

[^15]:    ${ }^{49}$ There were transversal cuts on the long axes of appendiculat skeleton fore-, and hind limbs particularly of larger faunal individuals, while horn cores of both ovis and capra attested to cuts of similar direction.
    ${ }^{50}$ This case included the ovicaprical horn core and Sus remains.
    ${ }_{51}$ Hence a $100 \%$ observation ratio.
    ${ }_{52}$ Without tangible results of high technology archaeometric-molecular studies.

[^16]:    ${ }_{53}$ Through the domain of dental anthropology.

[^17]:    ${ }^{54}$ An age subgroup defined by the period around the time of birth (slightly before to slightly after birth).
    ${ }_{55}$ A decisive victory of the Parians against the Naxians is described in Greek Iambic Poetry: Archilochus, Testimonia, no 4 (Sosthenis inscriptio), A Col. Ia. 50-55, p. 30. For the death of Parian poet Archilochus, in armed conflict, by the Naxian
    
    ${ }^{56}$ In reference to the Lelantine War, cf. Herodotus, 5.99; Plutarch, Moralia, Ep $\omega \tau 1 \kappa$ ó 760-761; Plutarch, Moralia, T $\omega v$ ع $\varepsilon \tau \tau \dot{\alpha}$ бофळ́v бонло́எьov 153f; The latter reference is further cross-substantiated by Hesiod who refers in his Works and Days, v. 654657, to the poetic competition he won in honor of Chalkidian Amphidamas who fell in the Lelantine battles fighting the Eretrians, cf. Athanassakis 2004, commentary 654-659, p:103.

[^18]:    Key: equals Geometric Period Dry Single Individual Burial Context
    
    $\square$ equals Geometric Period Faunal Remains

