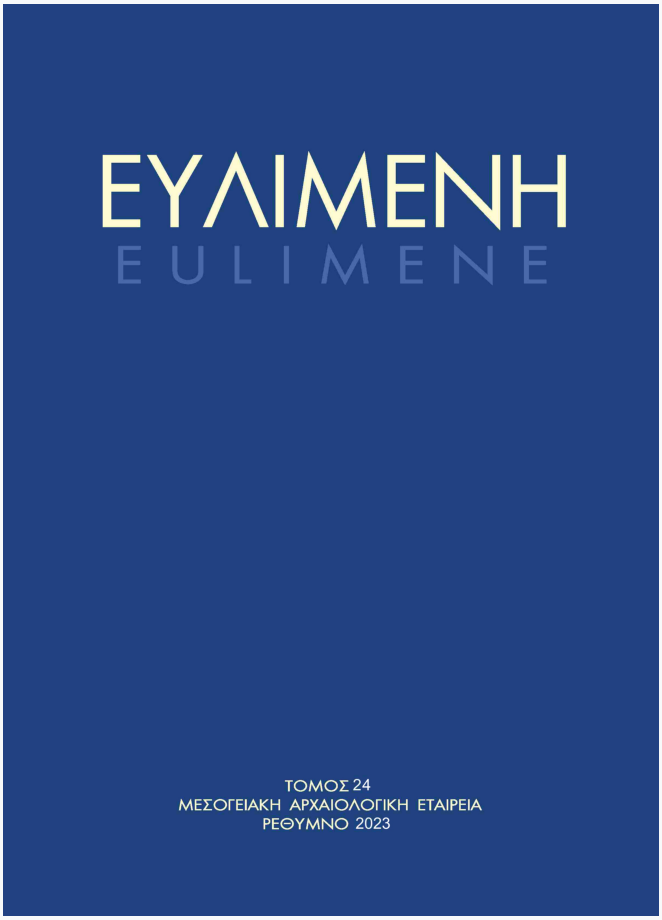
ePublishing

EULIMENE

Vol 24 (2023)

EULIMENE 24 (2023)



Natural and anthropogenic damage in the archaeological sites of Kymissala, Rhodes

Konstantinos Kalogeropoulos; Manolis I. Stefanakis

doi: 10.12681/eul.38577

Copyright © 2024, Konstantinos Kalogeropoulos; Manolis I. Stefanakis

This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0.

https://epublishing.ekt.gr | **e-Publisher:** EKT | **Downloaded at:** 31/01/2026 14:46:05

ΕΥΛΙΜΕΝΗ

EULIMENE

ΜΕΛΕΤΕΣ ΣΤΗΝ ΚΛΑΣΙΚΗ ΑΡΧΑΙΟΛΟΓΙΑ,
ΤΗΝ ΕΠΙΓΡΑΦΙΚΗ, ΤΗ ΝΟΜΙΣΜΑΤΙΚΗ ΚΑΙ ΤΗΝ ΠΑΠΥΡΟΛΟΓΙΑ

Τόμος 24
Μεσογειακή Αρχαιολογική Εταιρεία
Ρέθυμνο 2023

ΕΚΔΟΣΕΙΣ
ΜΕΣΟΓΕΙΑΚΗ
ΑΡΧΑΙΟΛΟΓΙΚΗ ΕΤΑΙΡΕΙΑ

Π. Μανουσάκη 5–Β. Χάλη 8
GR 741 00–Ρέθυμνο

Χατζηχρήστου 14
GR 117 42–Αθήνα

PUBLISHER
MEDITERRANEAN
ARCHAEOLOGICAL SOCIETY

P. Manousaki 5–V. Chali 8
GR 741 00–Rethymnon

Chatzichristou 14
GR 117 42–Athens

ΔΙΕΥΘΥΝΣΗ–ΕΠΙΜΕΛΕΙΑ ΕΚΔΟΣΗΣ
Δρ. Νίκος Λίτινας (Ρέθυμνο)
Καθ. Μανόλης Ι. Στεφανάκης (Ρόδος)

ΒΟΗΘΟΙ ΕΚΔΟΣΗΣ
Μαρία Αχιολά (Ρόδος)
Δρ. Δήμητρα Τσαγκάρη (Αθήνα)
Δρ. Nicholas Salmon (London)

PUBLISHING DIRECTORS, EDITORS-IN-CHIEF
Dr. Nikos Litinas (Rethymnon)
Prof. Manolis I. Stefanakis (Rhodes)

ASSISTANTS TO THE EDITORS
Maria Achiola (Rhodes)
Dr. Dimitra Tsangari (Athens)
Dr. Nicholas Salmon (London)

.

ΕΥΛΙΜΕΝΗ
EULIMENE 2023

Online ISSN: 2945-0357

ΕΠΙΣΤΗΜΟΝΙΚΗ ΕΠΙΤΡΟΠΗ

Ομ. Καθ. Νίκος Σταμπολίδης (Ρέθυμνο)
Ομ. Καθ. Alan W. Johnston (Λονδίνο)
Καθ. Mariusz Mielczarek (Łódź)
Καθ. Άγγελος Χανιώτης (Princeton)
Καθ. Μανόλης Ι. Στεφανάκης (Ρόδος)
Δρ. Νίκος Λίτινας (Ρέθυμνο)
Καθ. Αναγνώστης Αγγελαράκης (Adelphi)
Καθ. Σταύρος Περεντίδης (Αθήνα)
Καθ. François de Callataÿ (Paris)
Καθ. Maria Chiara Monaco (Potenza)
Δρ. Paolo Daniele Scirpo (Αθήνα)
Δρ. Marco Fressura (Rome)
Δρ. Marco Vespa (Fribourg)

ADVISORY EDITORIAL BOARD

Em. Prof. Nikos Stampolidis (Rethymnon)
Em. Prof. Alan W. Johnston (London)
Prof. Mariusz Mielczarek (Łódź)
Prof. Angelos Chaniotis (Princeton)
Prof. Manolis I. Stefanakis (Rhodes)
Dr. Nikos Litinas (Rethymnon)
Prof. Anagnostis Agelarakis (Adelphi)
Prof. Stavros Perentidis (Athens)
Prof. François de Callataÿ (Paris)
Prof. Maria Chiara Monaco (Potenza)
Dr. Paolo Daniele Scirpo (Athens)
Dr. Marco Fressura (Rome)
Dr. Marco Vespa (Fribourg)

Η ΕΥΛΙΜΕΝΗ είναι ένα διεθνές επιστημονικό περιοδικό με κριτές που περιλαμβάνει μελέτες στην Κλασική Αρχαιολογία, την Επιγραφική, τη Νομισματική και την Παπυρολογία εστιάζοντας στον Ελληνικό και Ρωμαϊκό κόσμο της Μεσογείου από την Υστερομινωϊκή / Υπομινωϊκή / Μυκηναϊκή εποχή (12ος / 11ος αι. π.Χ.) έως και την Ύστερη Αρχαιότητα (5ος / 6ος αι. μ.Χ).

Η ΕΥΛΙΜΕΝΗ περιλαμβάνει επίσης μελέτες στην Ανθρωπολογία, Παλαιοδημογραφία, Παλαιοπεριβάλλον, Παλαιοβοτανολογία, Ζωοαρχαιολογία, Αρχαία Οικονομία και Ιστορία των Επιστημών, εφόσον αυτές εμπίπτουν στα προαναφερθέντα γεωγραφικά και χρονικά όρια. Ευρύτερες μελέτες στην Κλασική Φιλολογία και Αρχαία Ιστορία θα γίνονται δεκτές, εφόσον συνδέονται άμεσα με μία από τις παραπάνω επιστήμες.

Παρακαλούνται οι συγγραφείς να λαμβάνουν υπόψη τους τις παρακάτω οδηγίες:

1. Οι εργασίες υποβάλλονται στην Ελληνική, Αγγλική, Γερμανική, Γαλλική ή Ιταλική γλώσσα. Κάθε εργασία συνοδεύεται από μια περίληψη περίπου 250 λέξεων στην αγγλική.

2. Συντομογραφίες δεκτές σύμφωνα με το *American Journal of Archaeology, Numismatic Literature*, J.F. Oates *et al.*, *Checklist of Editions of Greek and Latin Papyri, Ostraca and Tablets, ASP.*

3. Οι εργασίες υποβάλλονται ηλεκτρονικά στις ακόλουθες διευθύνσεις: litinasn@uoc.gr και stefanakis@aegean.gr.

Βλ. https://ejournals.epublishing.ekt.gr/index.php/eulimene/about/submissions

4. Οι εικόνες πρέπει να υποβάλλονται σε μορφή αρχείου .jpg ή .tiff και σε ανάλυση τουλάχιστον 1,200 dpi (dots per inch) προκειμένου για γραμμικά σχέδια και 400 dpi για ασπρόμαυρες εικόνες (στην κλίμακα του γκρι). Όλα τα εικονογραφικά στοιχεία πρέπει να είναι αριθμημένα σε απλή σειρά.

Είναι υποχρέωση του κάθε συγγραφέα να εξασφαλίζει γραπτή άδεια για την αναπαραγωγή υλικού που έχει δημοσιευτεί αλλού ή είναι αδημοσίευτο.

Η ΕΥΛΙΜΕΝΗ παρέχεται ως ηλεκτρονική σειρά εκδόσεων ελεύθερης πρόσβασης: https://ejournals.epublishing.ekt.gr/index.php/eulimene

Συνεργασίες – Πληροφορίες:
Μεσογειακή Αρχαιολογική Εταιρεία
Δρ. Νίκος Λίτινας, Πανεπιστήμιο Κρήτης, Τμήμα Φιλολογίας, Ρέθυμνο – GR 74100 (litinasn@uoc.gr)
Καθ. Μανόλης Ι. Στεφανάκης, Πανεπιστήμιο Αιγαίου, Τμήμα Μεσογειακών Σπουδών, Ρόδος – GR 85132 (stefanakis@aegean.gr)
https://ejournals.epublishing.ekt.gr/index.php/eulimene/index

EULIMENE is an international refereed academic journal which hosts studies in Classical Archaeology, Epigraphy, Numismatics, and Papyrology, with particular interest in the Greek and Roman Mediterranean world. The time span covered by EULIMENE runs from the Late Minoan / Sub Minoan / Mycenean period (12th / 11th c. BC) through to the Late Antiquity (5th / 6th c. AD).

EULIMENE will also welcome studies on Anthropology, Palaiodemography, Palaio-environmental, Botanical and Faunal Archaeology, the Ancient Economy and the History of Science, so long as they conform to the geographical and chronological boundaries noted. Broader studies on Classics or Ancient History will be welcome, though they should be strictly linked with one or more of the areas mentioned above.

It will be very much appreciated if contributors consider the following guidelines:

1. Contributions should be in either of the following languages: Greek, English, German, French or Italian. Each paper should be accompanied by a summary of about 250 words in English.

2. Accepted abbreviations are those of *American Journal of Archaeology, Numismatic Literature*, J.F. Oates *et al.*, *Checklist of Editions of Greek and Latin Papyri, Ostraca and Tablets, ASP.*

3. Please submit your paper to: litinasn@uoc.gr and stefanakis@aegean.gr.

See https://ejournals.epublishing.ekt.gr/index.php/eulimene/about/submissions

4. Illustrations should be submitted in .jpg or .tiff format of at least 1,200 dpi (dots per inch) for line art and 400 dpi for halftones (grayscale mode) resolution. All illustrations should be numbered in a single sequence.

It is the author's responsibility to obtain written permission to quote or reproduce material which has appeared in another publication or is still unpublished.

EULIMENE is freely accessible (Open Access): https://ejournals.epublishing.ekt.gr/index.php/eulimene/index

Contributions – Information:
Mediterranean Archaeological Society
Dr. Nikos Litinas, University of Crete, Department of Philology, Rethymnon – GR 74100 (litinasn@uoc.gr)
Prof. Manolis I. Stefanakis, University of the Aegean, Department of Mediterranean Studies, Rhodes – GR 85132 (stefanakis@aegean.gr)
https://ejournals.epublishing.ekt.gr/index.php/eulimene/index

Περιεχόμενα
ΕΥΛΙΜΕΝΗ 24 (2023)

List of Contents
EULIMENE 24 (2023)

Περιλήψεις / Summaries / Zusammenfassungen / Sommaires / Riassunti vi

Αγγελική Λεμπέση, Ο γλυπτός διάκοσμος του Ναού Α στον Πρινιά. Μία ερμηνευτική πρόταση.....1

Konstantinos Kalogeropoulos – Manolis I. Stefanakis, Natural and anthropogenic damage in the archaeological sites of Kymissala, Rhodes 13

Anagnostis Agelarakis, In defence of the *Aeneid* physician *Iapyx Iasides* in honour and *pietas*..... 43

Βασιλική Ζαπατίνα, Κλεοπάτρα Ζ' – Venus Genetrix 57

Βιβλιοκρισίες – Book Reviews

F. Carbone, Festòs I. La moneta. Produzione, seriazione e cronologia, Monografie della Scuola Archeologica di Atene e delle Missioni Italiane in Oriente, XXXIII, Atene, 2022, 242 pp., 14 b/w pls (ISBN 978-960-9559-28-7) (**Manolis I. Stefanakis**)..... 81

Πολύτροπος. Τιμητικός τόμος για τον Καθηγητή Νικόλαο Χρ. Σταμπολίδη. Επιμ. Μανώλης Ι. Στεφανάκης, Μιμίκα Γιαννοπούλου και Μαρία Αχιολά. Μεσογειακή Αρχαιολογική Εταιρεία, Ρέθυμνο 2023, 2 τόμοι, σσ. 1242 (ISBN: τόμος Ι 978-618-86730-0-7, τόμος ΙΙ 978-618-86730-4-5) (**Μελίνα Φιλήμονος**) 87

Περιλήψεις / Summaries / Zusammenfassungen / Sommaires / Riassunti

Αγγελική Λεμπέση, Ο γλυπτός διάκοσμος του Ναού Α στον Πρινιά. Μία ερμηνευτική πρόταση, *ΕΥΛΙΜΕΝΗ* 24 (2023), 1-12.

The interpretation proposed herein for the sculptural decoration of the so-called Temple A at Prinias takes into consideration its connection with the traditional architectural type of the *oikos-naos*, as well as the representational data of votives from Cretan sanctuaries. The correlation of the above data indicates that the theory whereby the three different types of female figures portrayed in the sculptural decoration reflect the honored Mistress of animals is precarious.

The position which the three types of figures have in the structural type of the *oikos-naos* is subject to the principle of ranking sequence; the higher position of the seated Mistress of Animals is prominent when compared both to the downgraded position of the clothed and the nude female figures who are portrayed standing and also to the procession of the armed charioteers.

This is the way in which the ruling class of the second half of the 7th c. BC notes the necessary subjection of the inhabitants of Prinias who had full political rights to the transcendental world of the honored Mistress of Animals.

Konstantinos Kalogeropoulos – Manolis I. Stefanakis, Natural and anthropogenic damage in the archaeological sites of Kymissala, Rhodes, *ΕΥΛΙΜΕΝΗ* 24 (2023), 13-41.

Ο αρχαίος Δήμος των Κυμισαλέων βρίσκεται στην περιοχή της Κυμισάλας και εκτείνεται ανάμεσα στις κτηματικές γαίες των χωριών Σιάννα και Μονόλιθος της Ρόδου. Είναι ένας εκτενής γεωγραφικός αρχαιολογικός χώρος, με πολλαπλές αρχαιολογικές θέσεις που διασυνδέονται μεταξύ τους και με διάρκεια ζωής από την Ύστερη Μυκηναϊκή περίοδο έως την Ύστερη Αρχαιότητα. Το αρχαιολογικό τοπίο της Κυμισάλας έχει πληγεί από διάφορες φυσικές και ανθρωπογενείς καταστροφές στο πέρασμα των αιώνων. Ο σεισμός και η βλάστηση είναι οι κυριότεροι φυσικοί παράγοντες καταστροφής της περιοχής, ενώ ως προς τους ανθρωπογενείς παράγοντες η λεηλασία αρχαιοτήτων, η χρήση γης μέσω εντατικής καλλιέργειας, η μελισσοκομία και η κτηνοτροφία, οι οικοδομικές δραστηριότητες και η επαναχρησιμοποίηση οικοδομικών υλικών έχουν μεταβάλει ή έχουν καταστρέψει σε μεγάλο βαθμό τις αρχαιολογικές θέσεις. Τα τελευταία 18 χρόνια, η Αρχαιολογική Έρευνα Κυμισάλας έχει λάβει συγκεκριμένα μέτρα για την πρόληψη της πολιτιστικής και οικολογικής καταστροφής της περιοχής.

The ancient Deme of the Kymissaleis is located in the area of Kymissala, Rhodes, and extends between Mount Akramitis and the shore, along the estate districts of the modern villages of Sianna and Monolithos. It is an extensive geographical archaeological

site, which covers an area of about 10,000 acres, with multiple interconnected fields including rural settlements and urban planning, fortresses, an acropolis, graveyards and burial monuments that reflect social stratifications and establishments, as well as a variety of other sites and monuments in a vast chronological period, starting from the late Mycenaean period until Late Antiquity.

The archaeological landscape of Kymissala has been affected by various natural and man-made disasters over the centuries. Earthquakes and vegetation are the main natural factors of destruction of the area, while, in terms of anthropogenic factors, the looting of antiquities, the use of land through intensive cultivation, beekeeping and animal husbandry, construction activities and the reuse of building materials have altered or destroyed largely the archaeological sites. During the past 18 years or work, the Kymissala Archaeological Research Project has taken various measures to prevent the cultural and ecological destruction of the area.

Anagnostis Agelarakis, In defence of the *Aeneid* physician *Iapyx Iasides* in honour and *pietas*, *ΕΥΛΙΜΕΝΗ* 24 (2023), 43-55.

Αυτό το άρθρο ανταποκρίνεται στους επικριτικούς χαρακτηρισμούς σύγχρονων σχολιαστών για τον χαρακτήρα και τη συμπεριφορά του Ιάπυξ Ιασίδη, αλλά και των ικανοτήτων του ως ιατρού κατά την χειρουργική αγωγή του τραυματισμένου με αιχμή βέλους Αινεία, όπως περιγράφεται στο 12ο βιβλίο της *Αινειάδας*. Στο συγκεκριμένο πλαίσιο του έπους, αφενός εμπλέκεται στη δυναμική του ως παράμετρος ο θεός Απόλλωνας και αφετέρου ως ενδιάμεσος παράγοντας η θεά Αφροδίτη στην πιο κρίσιμη στιγμή της μάχης των προσφύγων Τρώων υπό την αρχηγία του Αινεία, για τον απώτερο σκοπό μιας νέας πατρίδας για τον λαό του και για να εδραιώσει τα θεμέλια για αυτό που τελικά θα γίνει η Ρώμη, εναντίον των Λατίνων και του ηγέτη τους Τούρνου.

Εκτός από τη διακειμενικότητα, αυτή η εργασία προσφέρει μέσω μιας διαθεματικής προσέγγισης ένα φάσμα πληροφοριών και επεξηγηματικών στοιχείων που δεν είχαν ληφθεί υπόψη στην εξήγηση της συμπεριφοράς και του επαγγελματισμού του αρχαίου ιατρού. Διευκρινίζονται επίσης, εκτός των ζητημάτων σχετικών της ιατρικής κατάρτισης του Ιασίδη, της επάρκειας της επεμβατικής του επιδεξιότητας και της θεραπευτικής του ικανότητας, εξίσου σημαντικά δεδομένα που αφορούν τα εύσημα του ενάρετου και ευσεβή χαρακτήρα του.

This paper is written in response to modern commentator comments and characterizations on *Iapyx Iasides*' character, behavior, and abilities as a physician and surgeon to treat the wounded Aeneas by an arrowhead, recorded in book XII of the *Aeneid*, a context that also implicates the intermediary agencies of Apollo and Venus. In addition to intertextuality, this paper offers a missing interdisciplinary spectrum of explanatory conditions and arguments in support of the conduct and performance of the ancient physician in honor and *pietas*.

Βασιλική Ζαπατίνα, Κλεοπάτρα Ζ' – Venus Genetrix, *ΕΥΛΙΜΕΝΗ* 24 (2023), 57-79.

In the second half of the 1st c. BC, the mint of Paphos issued a series of bronze coins in the name of Cleopatra VII. The coins bear the bust of a *Kourotrophos* figure, which has been identified either as Aphrodite-Eros, Cleopatra-Caesarion or Isis-Horus. After 44 BC, Cleopatra VII celebrated the occasion of Cyprus's annexation to the Ptolemaic kingdom, with a bronze issue. In Paphos, Aphrodite's significant cult center and birthplace, Cleopatra imported a new iconography of the goddess. *Genetrix* was a title given to Venus by Julius Caesar, who spent his life as *Venere Prognatus*, and considered himself descendant of the goddess. Caesar founded the temple of Venus *Genetrix* in his new Forum in 46 BC. There, he dedicated a statue of Venus which represented the goddess as a mother holding her infant, little Cupid. His second dedication was a gold or gilded statue of Cleopatra, resembling in posture and figure with Venus *Genetrix*. The two statues were depicted on the series of denarii, issued by Caesar during his military expedition in Spain in 45 BC. After his assassination in 44 BC, Cleopatra, as the mother of Caesar's only son, probably dedicated a statue of Venus *Genetrix* to the sanctuary of Paphos. This article discusses the possibility that the bronze Cypriot issue bears this specific kourotrophic figure.

NATURAL AND ANTHROPOGENIC DAMAGE IN THE ARCHAEOLOGICAL SITES OF KYMISSALA, RHODES

Introduction

The ancient *Demos of Kymissaleis* is located about 70 km southwest of the city of Rhodes, in the wider area of Kymissala (fig. 1), extending between Akramitis mountain and the shore, along the estate districts of the modern villages of Sianna and Monolithos. It is an extensive geographical archaeological site, which covers an area of about 10,000 acres, with multiple interconnected fields including rural settlements and urban planning, fortresses, an acropolis, graveyards and burial monuments that reflect social stratifications and establishments, as well as a variety of other sites and monuments in a vast chronological period, starting from the late Mycenaean period until Late Antiquity. The area has been investigated since 2006 by the Department of Mediterranean Studies and the Ephorate of Antiquities of the Dodecanese, in the context of the Kymissala Archaeological Research Project (KARP), with the participation of the National Technical University of Athens.

The acropolis is situated on the hill of Hagios Phokas overlooking at least 11 –known till now– settlements of the deme in Atoumas S., Atoumas hilltop, Vassilika, Napes, Harakas/Amelandrou, Glyfada/Monosyria, Stelies, Marmarounia E., Marmarounia W. Hagios Phokas S. and Kampanes. Cemeteries exist near these settlements, the most important being the central necropolis, which is located between the hills of Hagios Phokas and Kymissala. Minor cemeteries or clusters of tombs have also been identified at the sites of Glyphada/Oglyma, Glyphada/Hagios Georgios, Palaiompampakies, Alonia, Kampanes and Napes (fig. 2)[1].

It is significant to mention that the archaeological sites of the ancient deme of Kymissaleis are located within the territory "Akramitis-Armenistis-Atavyros", which has been integrated into the European network of habitat types of "Natura 2000" and covers an area of 17,000 hectares[2]. Apart from the apparent geomorphological and geological interest, the "Natura 2000" area abounds with habitat types with a distinctive interest in botany and plant geography[3].

---

[1] Stefanakis 2017a, 10-16; 2023, 100-102; Στεφανάκης και Καλογερόπουλος 2021; Stefanakis *et al.* 2015, 263-264; Στεφανάκης και Πατσιαδά 2009-2011, 86-92.

[2] Code GR 4210005, *Official Journal of European Union* 2006, L 259, v. 49, 21 September 2006, 1-104, available at http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L:2006:259:FULL&from=FRN (last accessed 12-02-2024).

[3] Βεργωτή 2017.

The archaeological landscape of Kymissala has been affected by various natural and anthropogenic disasters for centuries, sporadically mentioned over the last years[4]. Here an attempt is made to further assess the damages caused at the cultural sites of Kymissala, after 18 years of fieldwork in the area. Most of the evidence comes from time comparison, research pictures and research by other scholars, on-site observations and site architecture. Therefore, the paper is a preliminary report on the available evidence and experience gained over the years and detailed mapping and systematic archaeological research may confirm or deny these assumptions in the future. Before focusing on the Kymissala area, a brief general reference is made to the major environmental and anthropogenic factors in the context of archaeological sites and monuments destruction.

Environmental factors for the transformation of archaeological evidence

The processes of formation and transformation of the archaeological archive, natural and cultural, produce all the evidence that archaeologists consider when exploring societies of the past[5]. Archaeological data –including monuments– and their surrounding environment, natural or anthropogenic, maintain a close relationship of interaction. This relationship sometimes is considered negative, due to the damage produced, but also positive due to the restoration maintenance applied to several materials. In general, environmental transformation agents are classified into chemical and physical. Chemicals include water as an oxidizing agent. Water in combination with various chemical compounds –polluted atmosphere– can form a coating patina (crust) on stone or metal artefacts[6].

The flow of water in various forms is an important factor in the deterioration of monuments. It penetrates easily into the cracks of the stone, soaking it in depth, entraining components from the soil, such as salts, which in dry periods crystallize as the water evaporates, causing corrosion. As the temperature drops and the water turns into ice, strong pressures are exerted, which can lead to breakage[7]. Also, the constant fluctuations of temperature can cause expansions and contractions in the materials, resulting in cracks, mainly in the stone monuments that are exposed to the sun during the day, and cool down sharply during the night. The rocks are poor conductors of heat, with the result that their exterior heats more than their interior and this temperature difference, if frequent and abrupt, causes peeling and breaking of the stone surface[8].

It will be useful to note that stone is one of the main materials used in the construction of buildings and monuments in antiquity. Mortars, metal joints and other materials are used to connect and fasten the masonry, which is damaged due to the corrosive effects of the atmosphere and the general impact of the environment. Large amounts of rainfall, and rising water levels, causes an increase of soil moisture, and a weakening of soil stability. There is also a risk of erosion and landslides. Very dry

---

[4] Στεφανάκης και Πατσιαδά 2009-2011, 70-71; Μανουσάκη 2012, 77-87; 2014; Stefanakis *et al.* 2015, 262; Manousaki 2017.

[5] Rathje and Schiffer 1982, 105-153.

[6] Renfrew and Bahn 2001, 57.

[7] Schiffer 1987, 149.

[8] Greathouse *et al.* 1954, 109-110.

summers can lower groundwater levels, possibly causing damage to the foundations of buildings and their structure. The activity of various plants and animals, fungi and bacteria, in addition to the erosions caused by wind, water and temperature, can also cause damage to the archaeological evidence. The natural threats to the cultural heritage are many and range from those of soil microorganisms to the catastrophic consequences of earthquakes, volcanic events, landslides, droughts, floods, wildfires, etc.[9].

Erosion caused by extreme weather or wave energy transforms coastal archaeological sites, and therefore knowledge of the geological structure of the coastal zone is necessary. Vegetation, dunes or cliffs act as a natural protective boundary that reduces erosion. Any lack of such natural protection often leads to the removal of geological layers. Waves approaching a shore with an angle of impact different from the vertical create a long coastal current, which removes sediments, reducing the available layer of sand, which forms the beach in the coastal area[10].

Seismic activity is also a serious factor in the transformation of archaeological depots. In the archaeological literature, we find many references to buildings, cities, etc., the destruction of which is likely to be associated with natural disasters, such as earthquakes, landslides or volcanic eruptions. Of great importance is the destruction of ancient structures caused by vertical and horizontal movements of the ground. Archaeological evidence for disasters in combination with written information often identifies seismic activity or seismic fault activity and can thus provide particularly useful information to geologists, seismologists and engineers for active geological processes, i.e., seismic events[11].

The difficulty of surface survey in the Mediterranean zone as a general problem – something confirmed by the geomorphology and dense vegetation of the Kymissala basin– is mentioned by S. Thompson[12]. The author points out that in several surface inspections archaeologists simply plan vegetation and surface visibility on artefacts distribution maps. When vegetation becomes denser, the ability to recognize artefacts, structures and architectural remains is significantly reduced[13].

Anthropogenic factors for the transformation of archaeological evidence

Of all anthropogenic factors, the increase in CO_2 levels is more interesting due to pollutants produced by internal and external combustion engines. The release into the atmosphere of various aerosols, and the cement industry is particularly polluting. Other anthropogenic factors are land-use change, ozone depletion, livestock and deforestation, which individually and in combination, are agents for global climate change[14]. A typical example of a threat due to climate change is Venice, for the protection of which several studies have been carried out, dealing with the phenomenon of rising sea levels. The rising sea level and the most frequent extreme weather events are expected to directly affect the monuments of Venice. Also, indirectly the changes in humidity and

[9] Καλογερόπουλος 2019, 112.
[10] Vögler *et al.* 2011, 3.
[11] Pavlides 1996, 59-60.
[12] Thompson 2004, 85.
[13] Fanning and Holdaway 2002, 256.
[14] Steinfeld *et al.* 2006.

temperature are expected to have a bad effect on the monuments and historical sites of coastal areas with the typical example of Scandinavia[15].

However, many significant dangers come from direct human action and have detrimental consequences for archaeological sites. Destructive actions can be divided into *accidental* and *intentional*.

The motivation for accidental actions is not the destruction of archaeological sites, but the exploitation of natural resources. These activities can be:

a) Agricultural practices (deep ploughing)
b) Grazing
c) Land improvement and flood protection works
d) Recreational activities
e) Construction of new roads over archaeological sites, public utilities, pipelines
f) Mining and quarrying activities; and
g) Industry[16]

Intentional actions that lead to the destruction of archaeological sites and data often have motivations that are difficult to prevent or control. The worst of these actions is vandalism, which is particularly damaging as it leads to irreversible destruction. Intended destructive actions are, of course, arson, and the use of modern vehicles on historic roads. Also, destructive activities can be climbing or walking on monuments. Intentional actions include material reuse activities by totally or partially recycling buildings, structures, or waste at a site, for a short or long period, for functional or symbolic purposes[17].

Another important anthropogenic factor that threatens historical monuments is looting[18]. Lost treasures have always fascinated people and treasure hunting has become a lucrative occupation for many. The illegal excavations, the illegal trade of antiquities and their export abroad were and are a serious blow to the cultural heritage of Greece. Archaeological looting is a form of organized crime that destroys the archaeological evidence, shrinks the world's cultural heritage and is carried out on two levels: the primary and the secondary looting, i.e. the looter and the recipient of artefacts, roles in which state mechanisms are involved sometimes in the event of war[19]. Primary looting involves mostly farmers and stockbreeders, who are engaged in locating antiquities, either occasionally or systematically, as well as people from organized crime who collect ancient objects on their behalf or for third parties for trade. The primary looting concerns the illegal collection of antiquities and it is conducted by the antiquities' looters. In both cases there are two categories of people: a) those who collect antiquities motivated by personal motives –probably believing that they protect the artefacts from a worse fate– and b) those who, driven by gain, promote them in the hands of smugglers (illegal merchants of ancient works of art), who belong in the category of secondary looters[20]. The smugglers, in turn, channel them to the relevant auctions[21]. Most ancient

[15] Lefèvre and Sabbioni 2010, 108.
[16] Nickens 1991, 73-81.
[17] Κουκουζέλη *κ.ά.* 2003, 101.
[18] Μανουσάκη 2012, 69-70; 2014, 38-39; Manousaki 2017, 111-113.
[19] Elia 1997, 85-98.
[20] Μανουσάκη 2012, 69-70; 2014, 38-39; Manousaki 2017, 111-112.

artefacts end up in clients with high purchasing power. The secondary looting also includes the group of final recipients, who may be fanatical collectors or even museums[22].

Environmental pressures and natural disasters in Kymissala

In the vast area of geographical archaeological sites of Kymissala, environmental pressures are mainly connected with forest vegetation, which developed without control at a high rate in recent years, creating a dense pine forest (fig. 3), altering the landscape and deteriorating the monuments of the area[23]. Characteristic is the phrase of E. Biliotti and Cottret, who, heading from the citadel of Hagios Phokas to the hill of Marmarounia in 1881, descended "*towards the three pines*", an area that today is densely forested[24]. The photographic material produced a few decades later by Pernier[25] and Maiuri[26] helps understand the difference in the vegetation of the region. The area of Kymissala in 1915 was rocky and without vegetation (fig. 4), in contrast to its current situation, where forest covers almost 100% of the central necropolis of Kymissala (fig. 5) and the largest part of the archaeological site (fig. 6). As a result, monuments that were visible once, such as the big rock-cut grave at Alonia/Merouli or Koutsofti (fig. 7) are nowadays completely covered by vegetation (fig. 8). The rapid growth of vegetation and the roots of the trees certainly destroyed the foundations of the buildings and many tombs in the necropolis. Pine trees grow in the corridors or entrances of the carved tombs (fig. 9), while the dense bushes and pine needles make archaeological research in the area difficult, as they cover almost everything[27].

Exactly the opposite occurs in the case of the site of Vassilika, where today vegetation is sparse (fig. 10). However, Guérin back in 1854 stated that "*it is a mixed pile of demolished boulders, in the middle of which pines rise and cypresses that have taken root from everywhere, as well as a dense clump of bushes*"[28]. Biliotti and Cottret record something similar in 1881: "*Dense forest of pines and cypresses makes it difficult to pass and approach and study this plateau (of Basilikos)…*"[29]. The most characteristic of the situation at the site is the photograph of Hiller von Gaertringen shot in the early 1890s[30] (fig. 11).

The change of the geomorphology of the island due to repeated seismic activity and consequent geological phenomena that have altered the coastline of Rhodes[31] played yet an important role in the destruction of antiquities.

---

[21] Bowman 2008, 225-242.

[22] Vitelli and Colwell-Chanthaphonh 2006, 20-22; Chappell and Poll 2011, 99-113.

[23] Μανουσάκη 2012, 82-83; 2014, 40.

[24] Biliotti and Cottret 1881, 88; Στεφανάκης 2017, 42.

[25] Pernier 1914, 239-240, figs 22-25.

[26] Maiuri 1916, 286, figs 2, 4.

[27] Στεφανάκης και Πατσιαδά 2009-2011, 70-71.

[28] Παπαϊωάννου 1989, 289; Στεφανάκης 2017, 42.

[29] Biliotti and Cottret 1881, 84; Στεφανάκης 2017, 42.

[30] von Gaertringen 1899, 368, figs 23-24.

[31] Kontogianni *et al.* 2002, 301-303, and tab. 1, 303; Stiros and Blackman 2014, 114-115; Σπαντιδάκη *κ.ά.* 2020, 14-15.

A well-documented example of this change is the case of the *neorion* (dockyard) of Rhodes, where two phases of construction of *neossoikoi* (ship sheds) were identified based on the reconstruction of slipways to adjust to the sea level change before and after ca 220 BC[32]. Based on these data, it was considered that the earthquake that took place shortly before or around 220 BC, is known also from historical sources[33]. The earthquake probably destroyed most of the dockyard and sank the slipways, making their rebuilding necessary before the middle of the 2nd c. BC, about a meter higher than before[34], to counterbalance any sinking of the coastline[35].

The phenomenon of this sea level change affected the entire coastline of Rhodes, as independent upward and downward movements, increasing in width from south to north, occur in most parts of the eastern coastline, while there is a recurring periodicity, which varies from a few hundred up to two thousand years[36]. The last major change is considered to have taken place between 2nd-3rd c. AD (when the slipways of the Rhodian ship sheds were permanently abandoned and the elevation of the land reached +3.8 m from sea level at the NE end of the island), until the medieval times[37]. In general, the elevation is clear along the east coast of the island, as it starts from the NE and gradually disappears at Prasonisi, on the southmost edge of the island[38]. As a result, the anchorages of the west coast are now almost completely lost.

In this context, traces of seismic activity and sea level change are evident at the shoreline of Glyphada Bay (fig. 12), where part of the coastal settlement, probably the ancient Mnaserion (Μνασήριον) of Strabo[39] and all its possible port facilities are today below sea level[40]. Traces of the pier are visible from above, in the middle of the bay, and seem to extend for about 50 m underwater to the west. The sea level elevation in combination with the movement of the waves, has today brought about significant changes and destructions in the coastal settlement of Glyfada with visible ruins and artefacts along the steep walls of the modern coast (fig. 13). Similar phenomenon has been observed on the coast of the isle of Alimnia, across the Glyphada bay, where part of the remains of the harbours' installations are also below sea level today[41]. On the other hand, the elevation of the island from the NE-E is reflected in the traces of the current coastline.

Apart from that it cannot be excluded that the settlement of Vassilika, as well as the temple on the hill of Hagios Phokas, have been destroyed by later earthquakes[42].

---

[32] Pirazzoli *et al.* 1989, 99, 108; Stiros and Blackman 2014, 220. Also Σπαντιδάκη *κ.ά.* 2020, 14-15.

[33] Polybius, *Histories,* 5.88.1-90.4; Diodorus Siculus, *Bibliotheca Historica* 26.8.1; Strabo, *Geography* 14.2.5. On the seismic event in general see Παπαδόπουλος 2014, 48-49. For an alternative dating to 225-4 BC see Cataudella 1998, 197.

[34] Blackman *et al.* 1996, 402-403; Stiros and Blackman, 2014, 118.

[35] Kontogianni *et al.* 2002, 305; Παπαδόπουλος 2014, 48; Stiros and Blackman 2014, 118; Σπαντιδάκη *κ.ά.* 2020, 14.

[36] Pirazzoli *et al.* 1989.

[37] Stiros and Blackman 2014, 119; Pirazzoli *et al.* 1989, 112.

[38] Stiros and Blackman 2014, 116, and fig. 2, 114; Pirazzoli *et al.* 1989, 90, 112; Kontogianni *et al.* 2002, 301, and fig. 2b, 304.

[39] Strabo, *Geography* 14.2.12, 1.

[40] Στεφανάκης και Πατσιαδά 2009-2011, 91; Stefanakis 2017a, 13; Σπαντιδάκη *κ.ά.* 2020, 15.

[41] Blackman *et al.* 2013, 341-342; Σπαντιδάκη *κ.ά.* 2020, 14.

[42] Μανουσάκη 2012, 81; 2014, 40-41.

This can be deduced in the case of Vassilika by the extensive piles of stone (fig. 14) and from the way in which the walls of buildings and entrance pillars have collapsed, and in the case of the temple at Hagios Phokas by the fall of the second row of stones, which was restored to its original position during the Italian excavation of 1915[43] (fig. 15). These cases may be the results of a Late Antiquity earthquake and a recent (early 20th century) earthquake respectively[44], however only a detailed architectural mapping of the ruins and systematic archaeological research will further confirm or reject this hypothesis.

Anthropogenic pressures in Kymissala

Although the archaeological sites of Kymissala have suffered great damage over the past centuries by natural factors, more important is the destruction caused by anthropogenic factors[45].

Alterations and disasters in the landscape are due to agricultural activity, as well as to livestock and beekeeping. There are destructions of ancient masonry by animals (goats) or human intervention, surface destruction of antiquities from ploughing, and conversions of ancient buildings and structures for agricultural use. A cavernous opening in Kampanes (fig. 16) for example, which has been identified as a burial chamber, has been turned into a closed storage area with a concrete floor[46].

Major public works such as the creation of a wide fire protection zone (fig. 17), between the hills of Hagios Phokas and Kymissala, divided the central necropolis into two parts and destroyed many tombs and burial monuments[47]. Also, destructive has been the opening of rural or forest roads, one of which passed right through the east sector of the necropolis at the site of Skali.

Material reuse for building purposes has caused a lot of destruction throughout the ages. The chapel of St Phokas, for example, was built during the Byzantine period atop the ancient temple of the acropolis, damaging irreversibly the Hellenistic monument[48]. During the Middle Ages, many remnants of the past in this area were destroyed to be used as materials for the construction of the two knightly castles of Monolithos and Sianna, and the four watchtowers on the beach, from Vassilika to Glyfada (fig. 18)[49].

In later centuries the locals destroyed ancient structures to build the villages of Monolithos and Sianna. Ancient marmor sculpture from the temple of Hagios Phokas has been reported to be used for the plastering of Saint Panteleimon church in Sianna[50]. Ancient building materials were also used to build the church of St Thomas in Monolithos[51] (fig. 19) and recycling of early Christian materials is observable in other churches in the area (fig. 20). The three discovered so far lime kilns in the area, one

[43] Maiuri 1916, 292, fig. 9.
[44] On the earthquakes of Rhodes since antiquity see Παπαδόπουλος 2014.
[45] Μανουσάκη 2012, 83-87; 2014, 41-44; Manousaki 2017.
[46] Στεφανάκης και Πατσιαδά 2009-2011, 88.
[47] Στεφανάκης και Πατσιαδά 2009-2011, 71.
[48] Στεφανάκης και Πατσιαδά 2009-2011, 72; Maiuri 1916, 294-295 ; Biliotti and Cottret 1881, 86.
[49] Στεφανίδου 2004, 71-72; Στεφανάκης και Πατσιαδά 2009-2011, 71.
[50] Sørensen and Pentz 1992, 126; Maiuri 1916, 294; Στεφανάκης και Πατσιαδά 2009-2011, 71.
[51] Smith 1883a, 139.

within the site of Vassilika (fig. 21), one by the site "stis Floues" near Glyphada[52] and a third right next to the Hellenistic temple of the acropolis, are indisputable witnesses to the large quantities of ancient building material converted to lime, indicating the transformation of the archaeological evidence and the recycling of building material for functional or even religious purposes such as building a church[53]. Large quantities of ancient materials were also used to demarcate fields, to create numerous threshing floors by the site Alonia (fig. 22), and even to decorate private residences (fig. 23) in the nearby villages.

Looting, however, has been among the most important anthropogenic threats to the area. Illegal exportation of antiquities flourished during the 18th and 19th centuries, until the last decades of the 20th century[54]. Among the various visitors to the area of Kymissala a few extracted antiquities[55]. Among them, was Charles Thomas Newton British vice consul in Mytilene and antiquarian (1816-1894), who served as consul at Rhodes in 1853. His main aim was to collect antiquities on behalf of the British Museum where he became Director of Greek and Roman Antiquities in 1861, funding the excavations of the Biliotti brothers on Rhodes. It is known that Newton visited among other sites the area of Kymissala[56]. It is documented that in 1870, the English consul on Rhodes Alfred Biliotti (1850-1863) and the German August Salzmann carried out research and excavations on the hill of Hagios Phokas and in the necropolis of Kymissala, on behalf of the British Museum. Tombs of the Early Iron Age and Archaic period were excavated and most probably it was then that the famous Sianna (type) cups (first half of the 6th c. BC) were first noticed[57].

More work was conducted by Albert Biliotti –Alfred Biliotti's brother– who acted as British vice-consul from 1864 and who had previously collaborated with his brother Alfred in the archaeological expeditions and excavations on Rhodes[58]. Albert got his official permit for excavations by the Sultan on March 3, 1882[59]. Already on March 13, 1882, Charles Newton received new antiquities from Albert Biliotti[60]. The excavations of Albert ended abruptly in 1884, when a new Ottoman law came into use, forbidding the extraction of antiquities outside the territory of the Ottoman Empire, which were then considered as property of the Imperial Museum of Istanbul[61]. In any case, the excavation of the Biliotti brothers in Kymissala brought to light a great number of tombs and numerous finds, which found their way to various museums abroad[62], while a group of 2500 artefacts from the private collection of A. Biliotti (not specified whether it was

[52] Στεφανάκης και Πατσιαδά 2009-2011, 71.

[53] Renfrew and Bahn 2001, 568-569.

[54] Στεφανάκης και Πατσιαδά 2009-2011, 67-70; Μανουσάκη 2012, 85-87; 2014, 42-44; Manousaki 2017, 113-116; Παλαιολόγου 2018.

[55] Στεφανάκης και Πατσιαδά 2009-2011, 67-68.

[56] Newton 1865, 202-205; Στεφανάκης 2017, 31-32.

[57] Στεφανάκης και Πατσιαδά 2009-2011, 68; Στεφανάκης 2017, 35-36.

[58] Smith, 1883a, 136; Gunning 2009, 113; Στεφανάκης 2017, 36-37.

[59] Letter from the Foreign Office to the British Museum, 16/03/1882: British Museum Minutes 1882-1884.

[60] Letter of Ch. Newton, 13/03/1882, British Museum Reports 1881-1882; Smith 1883a, 136; 1883b, 351.

[61] Kersel 2010, 85-86.

[62] Smith 1884, 220.

Albert of Alfred) "from three rhodian necropolises" was auctioned on December 3-5, 1885 in London by Sotheby's[63].

After the pause of excavations by the Ottoman government, the half-excavated necropolis of Kymissala was left in the hands of looters and tomb raiders. The indifference of the authorities and the difficult-to-access area mainly favoured the looting by local villagers[64].

A great part of this destruction was caused by the French company Régie (la Société de la Régie co-intéressée des tabacs de I'Empire Ottoman), established in 1884, in order to control the monopoly of tobacco[65]. The company's monopolies were a great scourge for the farmers, who on the orders of the three agents of the company, Avedin Pasha, Albert Biliotti and Akavi, roamed the countryside of Rhodes and carried out robberies, threatening the villagers that if they did not surrender ancient artefacts, they would not buy their crop. This tactic resulted in the looting of many artefacts by the locals and the sale abroad of many finds from the area of Kymissala. Many locals, unable to cope with the threats and looting, were forced to leave their homeland[66].

The phenomenon of looting was so intense on the island of Rhodes that the Italian archaeologist Amendeo Mauiri, who was appointed as Ephor of the Antiquities of the Dodecanese by the Italian Government, from 1916 to 1924, commented: "*(locals) have submitted their undoubted ability and experience in the service of antiquarians and private collectors. No area of the island escapes the systematic looting. Not a single necropolis, of which the entire area of the island is innumerable, has remained intact, or at least partially untouched and without being looted by tomb riders. It is also known that throughout the Italian occupation, many artefacts of archaeological value have been sent to Italy in private collections. The trade and plunder of the Rhodes and Dodecanese antiquities have been recorded in serious accusations that tarnished the prestige of civilized Italy*"[67].

Looting seems to have ceased, or at least seriously controlled, by the Italian government of Rhodes during the first half of the 20th century, with sporadic attempts of tomb raiding. A serious attempt was made in the early 1970s in the necropolis of Kymissala, where five funeral monuments, unearthed by the Greek Archaeological Service in 1968, were later destroyed (fig. 24) in a desperate and unfruitful illegal quest for tombs and artefacts[68].

Most of the 500 open tombs found in the central necropolis of Kymissala (figs 25-26) have probably been excavated by Alfred and Albert Biliotti, as well as being severely plundered during the great looting activity in the late 19th and early 20th century. From the necropolis of Kymissala probably came many vases in museums abroad with recorded origin from Sianna or Kymissala[69].

---

[63] *Priced Catalogue of a Collection of Antiquities and Miscellaneous Works of Art Excavated in Rhodes*, 3-5 December 1885, Sotheby's London. See Furtwängler 1887, 138-154; Στεφανάκης και Πατσιαδά 2009-2011, 67-68.

[64] Στεφανάκης και Πατσιαδά 2009-2011, 68; Manousaki 2017, 114.

[65] Birdal 2010, 129-165; Μαΐλλης *κ.ά.* 2002, 260.

[66] Μαΐλλης *κ.ά.* 2002, 233, 260; Στεφανάκης και Πατσιαδά 2009-2011, 68, n. 42.

[67] Manousaki 2017, 114. For Mauiri's *Memoirs* see Παπαϊωάννου 1991.

[68] Στεφανάκης και Πατσιαδά 2009-2011, 77-78, figs 22-24; Μανουσάκη 2012, 84; Manousaki 2017, 116.

[69] Στεφανάκης και Πατσιαδά 2009-2011, 70; Manousaki 2017, 115.

Damage assessment and protection initiatives for the area of Kymissala

It is obvious from what has been mentioned so far that the entities called archaeological sites or distinct monuments have at a theoretical level two possible transformation factors, the natural and the anthropogenic. Natural agents, however, are in constant interdependence with human action worldwide. Human action can change the behaviour patterns of nature and through constant intervention allow pressure to be exerted on the physical balance of the system. Therefore, in modern times, in addition to the visible human intervention, there is also an indirect one due to the significant environmental changes that are observed in developing or developed societies.

Kymissala, as a geographical archaeological site acting as a context for the archaeological evidence it provides, seems to have suffered a lot of natural and anthropogenic pressures, which led on the one hand to the transformation of the archaeological evidence and on the other hand to the violent change of the archaeological record.

Earthquakes and vegetation growth are, among others, the most eminent natural destruction factors in the area: the major settlement of the Demos of Kymissaleis at the site of Vassilika seems to have been destroyed by a fierce earthquake and abandoned in Late Antiquity; the partially reconstructed walls of the temple on top of the acropolis in 1915, seem also to have been demolished by earthquake later in the century; the small harbour of the deme, at the site of Glyfada exhibits clear signs of submergence beneath sea level and destruction of the seafront archaeological horizon due to sea erosion. Moreover, during the previous century, the growth of a thick pine forest covered almost 100% of the archaeological sites, causing severe damage to the foundations of remaining buildings and disturbing or destroying numerous tombs in the necropolis.

As to the anthropogenic factors destruction derived from a) looting of antiquities, related to the destruction of many surface monuments and tombs as well as to the illegal extraction of huge quantities of artefacts; b) land use, through intensive cultivation, beekeeping and stock breeding and c) later human construction activity and re-use of building material from the archaeological sites of Kymissala through the centuries, has altered or severely destroyed building and constructions of the antiquity and will be defined, considered in the context of historical events and analysed for its impacts and risks to the archaeological site and the cultural heritage.

Regarding anthropogenic damage, which is the easiest to control, since 2006 various actions have been taken by the Department of Mediterranean Studies of the University of the Aegean, the Ephorate of Antiquities of Dodecanese, the School of Rural and Surveying Engineering of the National Technical University of Athens, the Regional Government of the South Aegean and the Municipality of Rhodes, towards the protection of the natural and cultural reserve of the territory.

The first aim was –and remains– the awakening of the cultural and environmental consciousness of the local community, through a series of public lectures, presentations, and publications in local media; involving the locals in the field work and offering educational and guided tours in the area. All these aim to make clear three parameters: the responsible attitude for the maintenance, salvage and promotion of the cultural heritage of Kymissala at large, and more specifically the effective protection of the minimal archaeological remains of the sites of the area; the responsible attitude towards

the natural environment and chiefly the protection of the forest with the prevention of fires and the supervision of deforestation; the support of the research project, which the University of the Aegean and the Ephorate of Antiquities of the Dodecanese is implementing during the last 16 years[70].

The second aim was the official protection of the antiquities from human intervention, achieved in 2012 by declaring the region an archaeological zone, for the effective protection of the antiquities which are in the broader region that extends from the valley of Glyphada to the Vassilikos basin and the north foot of Akramitis to the coast[71].

The third aim was the protection of the dense wooded area of Kymissala achieved to substantial level a) by detail mapping and plotting, the products of which are at the disposal of the Municipality of Rhodes, the Regional Government of the South Aegean, the Forest Service Division and the Fire Department[72] and b) by the creation of a long archaeological-walking path of ca 1500 m long and two meters wide (fig. 27), with the contribution of the Regional Government of the South Aegean. The path connects three major sites, namely Marmarounia, Hagios Phokas (acropolis) and Kymissala (necropolis), acting not only as an infrastructure for the development of an archaeological park in the future[73]but also as a pathway in the service of the Forest Service Division and the Fire Department for the prevention of fire, while the path itself acts as an obstruction to the deployment of the extremely dangerous creeping fire.

Finally, the protection of a significant part of antiquities from the destructive growth of vegetation was achieved by the cleaning of low and bushy vegetation of the fortification wall of the acropolis and within a zone of 4 m width inside and outside the walls (fig. 28), most of which was completely covered and thus not visible[74].

The implementation of such actions is expected –and has already succeeded to a certain point– both: to protect the cultural heritage and the natural ecosystem of the researched area and to tackle a series of crucial problems of the local community such as the population decline of the Rhodian countryside[75] and the decentralization of the substandard touristic product of Rhodes by creating new types of alternative tourism[76].

Bibliography

Biliotti, E. and L'abbé Cottret 1881. *L'île de Rhodes/Ρόδος* (μτφρ. Μ. Μαλλιαράκη και Σ. Καραβοκυρού), τ. Β. Ρόδος.

Birdal, M. 2010. *The Political Economy of Ottoman Public Debt*. London-New York: Tauris Academic Studies.

Blackman, D.J., P. Knoblauch and A. Yiannikouri 1996. "Die Schiffshäuser am Mandrakihafen in Rhodos", *AA*, 371-476.

[70] Stefanakis 2017b, 168-169.

[71] *Official Government Gazette* 218, 15/06/2012: «Έγκριση κήρυξης και οριοθέτησης αρχαιολογικού χώρου της περιοχής Κυμισάλας-Γλυφάδας Νότιας Ρόδου Δωδεκανήσου, Περιφέρειας Νοτίου Αιγαίου».

[72] Stefanakis 2017b, 167.

[73] Στεφανάκης *κ.ά.* 2022-2023; Stefanakis 2017b, 169; Xanthis and Stefanakis 2020, 208-210. For the proposal on the creation of an archaeological-ecological park see Στεφανάκης 2010.

[74] Στεφανάκης *κ.ά.* 2024 (υπό έκδοση).

[75] Stefanakis 2017b, 163-164.

[76] Stefanakis 2017b, 165-166; Xanthis and Stefanakis 2020, 207-208.

Blackman, D.J., B. Rankov, K. Baika, H. Gerding and J. Pakkanen 2013. *Shipsheds of the Ancient Mediterranean*. New York: Cambridge University Press.

Bowman, B.A. 2008. "Transnational crimes against culture: Looting at archaeological sites and the 'grey' market in antiquities", *Journal of Contemporary Criminal Justice* 24.3, 225-242.

Cataudella, M. 1998. "Polibio (5.88-90) e il terremoto di Rodi", in E. Olshausen and H. Sonnaben (eds), *Stuttgarter Kolloquium zur historischen Geographie des Altertums* (Geographica historica 10). Stuttgart: Franz Steiner, 190-197.

Chappell, D. and K. Polk 2011. "Unraveling the Cordata: Just How Organized is the International Traffic in Cultural Objects", in S. Manacorda and D. Chappell (eds), *Crime in the Art and Antiquities World*. New York: Springer, 99-113.

Elia, R.J. 1997. "Looting, collecting, and the destruction of archaeological resources", *Nonrenewable Resources* 6.2, 85-98.

Fanning, P.C. and S.J. Holdaway 2002. "Artifact Visibility at Open Sites in Western New South Wales, Australia", *Journal of Field Archaeology* 29.3/4, 255-271.

Furtwängler, A. 1887. "Erwerbungen de Königliche Museen zu Berlin 1885", *JdI* 1 (1886), 133-160.

Greathouse, G.A., B. Fleer and C.J. Wessel 1954. "Chemical and physical agents of deterioration", in G.A. Greathouse and C.J. Wessel (eds), *Deterioration of materials: causes and preventive techniques*. New York: Reinhold, 71-174.

Gunning, L.P. 2009. *The British Consular Service in the Aegean and the Collection of Antiquities for the British Museum*. Farnham: Ashgate Publishing Ltd.

Kersel, M. 2010. "The changing legal landscape for Middle Eastern archaeology in the Colonial Era, 1800-1930", in G. Emberling (ed.), *Pioneers to the Past: American archaeologists in the Middle East 1919-1920*. Chicago: The Oriental Institute Museum Publications, 85-90.

Kontogianni, V.A., N. Tsoulos and S.C. Stiros 2002. "Coastal Uplift, Earthquakes and Active Faulting of Rhodes Island (Aegean Arc): Modeling based on Geodetic Inversion", *Marine Geology* 186, 299-317.

Lefèvre, R.A. and C. Sabbioni (eds) 2010. *Climate change and cultural heritage*. Bari: Edipuglia.

Maiuri, A. 1916. "Ricerche archeologiche nell'isola di Rodi", *ASAtene* 2, 285-298.

Manousaki, E. 2017. "The phenomenon of illegal excavations and looting of cultural resources from the area of Kymissala", in M.I. Stefanakis (ed.), *Kymissala. Archaeology-Education-Sustainability*. Oxford: Archaeopress, 111-118.

Newton, C.T. 1865. *Travels and Discoveries in the Levant, I*. London: Day & Son Limited.

Nickens, P.R. 1991. "The Destruction of Archaeological Sites and Data", in G.S. Smith and J.E. Ehrenhard (eds), *Protecting the Past*. Boca Raton, Florida: CRC Press.

Pavlides, S.B. 1996. "Palaeoseismology: a branch of Neotectonics linking Geological, Seismological and Archaeological data-an introduction", in S. Stiros & R.E. Jones (eds), *Archaeoseismology* (Fitch Laboratory Occasional Paper 7). Athens: British School at Athens, 15-19.

Pernier, L. 1914. Ricognizioni archeologiche nelle Sporadi, *BdA* 8, 236-242.

Pirazolli, P.A, L.F. Montaggioni, J.F. Saliege, G. Segonzac, Y. Thommeret and C. Vergnaud-Grazzini 1989. "Crustal block movements from Holocene shorelines: Rhodes Island (Greece)", *Tectonophysics* 170, 89-114.

Rathje, W.L. and M.B. Schiffer 1982. *Archaeology*. New York: Harcourt Brace Jovanovich.

Renfrew, C. and P. Bahn 2001. *Αρχαιολογία. Θεωρίες, μεθοδολογία και πρακτικές εφαρμογές*. Αθήνα: Ινστιτούτο του Βιβλίου-Α. Καρδαμίτσας.

Schiffer, M.B. 1987. *Formation processes of the archaeological record*. Albuquerque: University of New Mexico Press.

Smith, C. 1883a. "Inscriptions from Rhodes", *JHS* 4, 136-141.

Smith, C. 1883b. "Inscriptions from Rhodes (Continued)", *JHS* 4, 351-353.

Smith, C. 1884. "Four archaic vases from Rhodes", *JHS* 5, 220-240.

Sorensen, L.W. and P. Pentz 1992. *Excavations and Surveys in Southern Rhodes: the Post-Mycenaean Period until Roman Times and the Medieval Period: Lindos IV, 2, Results of the Carlsberg Foundation Excavations in Rhodes 1902-1914*. Copenhagen: Arhus University Press.

Stefanakis, M.I. 2017a. "*Kymissaleis*: Archaeology and landscape of an ancient Deme in the Rhodian countryside", in M.I. Stefanakis (ed.), *Kymissala. Archaeology-Education-Sustainability*. Oxford: Archaeopress, 9-29.

Stefanakis, M.I. 2017b. "Planning for the future: the multidimensional importance for promoting Kymissala", in M.I. Stefanakis (ed.), *Kymissala. Archaeology-Education-Sustainability*. Oxford: Archaeopress, 161-169.

Stefanakis, M.I. 2023. "Investigating land and sea routes, at the territory of the ancient Deme of Kymissaleis, Rhodes", in Tuna Kalaycı (ed.), *The Archaeologies of Roads*. Grand Forks, ND: The Digital Press at the University of North Dakota, 93-122.

Stefanakis, M.I., K. Kalogeropoulos, A. Georgopoulos and Ch. Bourbou 2015. "The Kymissala (Rhodes) Archaeological Research Project (KARP): Multi–disciplinary experimental research and theoretical issues", in D. Haggis and C.M. Antonaccio (eds), *Classical Archaeology in Context: Theory and Practice in Excavation in the Greek World*. Berlin/Boston: Walter de Gruyter, 259-314.

Steinfeld, H., P. Gerber, T. Wassenaar, V. Castel, M. Rosales and C. de Haan 2006. *Livestock's long shadow*. Rome: FAO.

Stiros, S.C and D.J. Blackman 2014. "Seismic coastal uplift and subsidence in Rhodes Island, Aegean Arc: Evidence from an uplifted ancient harbor", *Tectonophysics* 611, 114-120.

Thompson, S. 2004. "Side-by-Side and Back-to-Front: Exploring Intra-Regional Latitudinal and Longitudinal Comparability in Survey Data. Three Case Studies from Metaponto, Southern Italy", in S.E. Alcock, and J.F. Cherry (eds), *Side-by-Side Survey: Comparative Regional Studies in the Mediterranean World*. Oxford: Oxbow, 65-86.

Vitelli, K.D. and C. Colwell-Chanthaphonh (eds) 2006. *Archaeological Ethics*. Lanham: AltaMira Press.

Vögler, A., D. Christie, M. Lidster and J. Morrison 2011. "Wave energy converters, sediment transport and coastal erosion", *Annual Science Conference, Gdansk, Poland. CM* 2011/S: 17, https://doi.org/10.17895/ices.pub.25039592.

von Gaertringen, H. 1899. *Thera. Untersuchungen, Vermessungen, Ausgrabungen in den Jahren 1895-1898*. Berlin: Reimer.

Xanthis, A. and M.I. Stefanakis 2020. "The protected area of Kymissala and the contribution of the Department of Mediterranean Studies (University of the Aegean) towards its sustainable archaeological and touristic development", *Επετηρίδα Μεσογειακών Σπουδών* 1, 199-215.

Βεργωτή, Θ. 2017. «Το φυσικό περιβάλλον της Κυμισάλας», in M.I. Stefanakis (ed.), *Kymissala. Archaeology-Education-Sustainability*. Oxford: Archaeopress, 149-160.

Καλογερόπουλος, Κ. 2019. *Ζητήματα αρχαιολογικής θεωρίας και ψηφιοποίησης ανασκαφικών δεδομένων.* Αδημ. Διδακτ. διατρ., Πανεπιστήμιο Αιγαίου, Μυτιλήνη.

Κουκουζέλη, Α., Ε. Μανακίδου και Κ. Σμπόνιας 2003. *Αρχαιολογία στον Ελληνικό Χώρο*, τ. Α. Πάτρα: ΕΑΠ.

Μαΐλλης, Α.Σ., Κ.Ε. Σκανδαλίδης και Κ.Φ. Τσαλαχούρης 2002. *Η Ρόδος τον 19ο αιώνα.* Αθήνα-Ρόδος: Θυμέλη.

Μανουσάκη, Ε. 2012. *Η επίδραση του περιβάλλοντος στη διατήρηση των αρχαιολογικών χώρων: Η περίπτωση της Κυμισάλας στη Ρόδο.* Αδημ. Διπλωμ. διατρ., Πανεπιστήμιο Αιγαίου, Ρόδος.

Μανουσάκη, Ε. 2014. «Η επίδραση του φυσικού περιβάλλοντος και του ανθρώπου στους αρχαιολογικούς χώρους και τα μνημεία: Το παράδειγμα της Κυμισάλας στη Ρόδο», *Δωδεκανησιακά Χρονικά* ΚΣΤ΄, 33-54.

Παλαιολόγου, Σ. 2018. «Οδοιπορικό αρχαιοτήτων από τα Δωδεκάνησα σε μουσεία και ιδιωτικές συλλογές του εξωτερικού: 'νόμιμη' διακίνηση και αρχαιοκαπηλία», *Δωδεκανησιακά Χρονικά* ΚΗ΄, 64-102.

Παπαδόπουλος, Γ.Α. 2014. *Ρόδος. Οι Σεισμοί και τα Τσουνάμι από την Αρχαιότητα μέχρι Σήμερα.* Αθήνα: Οσελότος.

Παπαϊωάννου, Μ.Δ. (μτφρ.) 1989. *Ρόδος και Νεώτερα Κείμενα* 1 *(Etude sur l'Ile de Rhodes, par V. Guerin).* Αθήνα-Γιάννινα: Δωδώνη.

Παπαϊωάννου, Μ.Δ. (μτφρ.) 1991. *Ρόδος και Νεώτερα Κείμενα* 3 *(Amedeo Maiuri, "Dall'Egeo al Tirreno").* Αθήνα-Γιάννινα: Δωδώνη.

Σπαντιδάκη, Σ., Μ.Ι. Στεφανάκης και Ι.Π. Μπαρδάνης 2020. «Ο πολεμικός ροδιακός στόλος και τα υφάσματα του τυπικού εξοπλισμού του ναυτικού της ελληνιστικής Ρόδου», *Ευλιμένη* 21, 1-64.

Στεφανάκης, Μ.Ι. 2010. «Πρόταση ίδρυσης αρχαιολογικού-οικολογικού πάρκου στη Ρόδο (αρχαία Κυμισάλα): Μια πρόκληση για την τοπική ανάπτυξη», στο Η. Μπεριάτος και Μ. Παπαγεωργίου (επιμ.), *Χωροταξία-Πολεοδομία-Περιβάλλον στον 21ο Αιώνα: Ελλάδα-Μεσόγειος.* Βόλος: Πανεπιστημιακές Εκδόσεις Θεσσαλίας, 685-702.

Στεφανάκης Μ.Ι. 2017. «Όψεις της Κυμισάλας κατά τον 19ο αιώνα: από τις πρώτες αρχαιολογικές περιγραφές μέχρι τις έρευνες του Alfred Biliotti (1843-1880)», *Δωδεκανησιακά Χρονικά* ΚΖ΄, 28-57.

Στεφανάκης Μ.Ι. και Κ. Καλογερόπουλος 2021. «Ερευνώντας τον αρχαίο Δήμο των Κυμισαλέων. Δεκαπέντε χρόνια (2006-2020) αρχαιολογικής έρευνας του Πανεπιστημίου Αιγαίου και της Εφορείας Αρχαιοτήτων Δωδεκανήσου στην Κυμισάλα της Ρόδου», *Επετηρίδα Μεσογειακών Σπουδών* 2, 25-38.

Στεφανάκης, Μ.Ι. και Β. Πατσιαδά 2009-2011. «Η αρχαιολογική έρευνα στον Αρχαίο Δήμο των Κυμισαλέων (Ρόδος) κατά τα έτη 2006-2010: μια πρώτη παρουσίαση», *Ευλιμένη* 10-12, 63-134.

Στεφανάκης, Μ.Ι., Δ. Σουρασή, Κ. Καλογερόπουλος, Ι. Γλυμής και Ε. Χατζηιωάννου 2022-2023. «Το αρχαιολογικό μονοπάτι της Κυμισάλας», *Επετηρίδα Μεσογειακών Σπουδών* 3, 31-45.

Στεφανάκης, Μ.Ι., Ε. Δήμα, Δ. Σουρασή και Ε. Χατζηιωάννου 2024 (υπό έκδοση). *Επετηρίδα Μεσογειακών Σπουδών* 4.

Στεφανίδου, Α.Σ. 2004. *Η Μεσαιωνική Ρόδος. Με Βάση το Χειρόγραφο και την Εικονογράφηση του Johannes Hedenborg (1854).* Θεσσαλονίκη: Σταμούλης.

Ancient sources

Diodorus Siculus Biblioteca Historica: Bekker, I. and Dindorf, L. 1964[3]. *Diodori bibliotheca historica,* 5 vols. Leipzig: Teubner.

Polybius Histories: Büttner-Wobst, T. 1889-1905. *Polybii historiae*, 4 vols. Leipzig: Teubner.

Strabo *Geographica*: Meineke, A. 1877. *Strabonis geographica,* v. 1. Leipzig: Teubner.

Konstantinos Kalogeropoulos
Archaeologist, Ph.D., PostDoc,
Department of Mediterranean Studies,
University of the Aegean
k.kalogeropoulos@aegean.gr

Manolis I. Stefanakis
Professor of Classical Archaeology and Numismatics
Department of Mediterranean Studies
University of the Aegean
stefanakis@aegean.gr

Figure 1. Rhodes Satellite Map, courtesy of Laboratory of Cartography and Geographic Information Systems, University of the Aegean, https://www.lib.aegean.gr/doryforikos-hartis-rodoy (last accessed 12-02-2024).

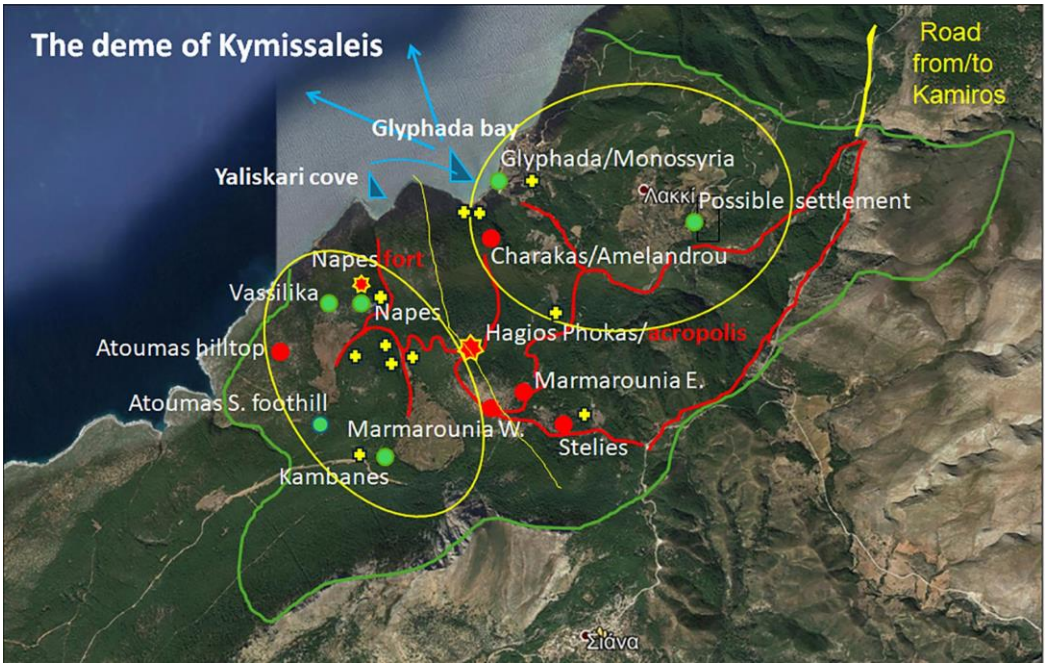


Figure 2. Site map of the wider archaeological area of Kymissala (background Google Earth).

Figure 3. Kymissala. Landscape view from the south from the summit of Mt Akramitis (Source: KARP).

Figure 4. Kymissala. General view from the northeast in 1915 (Source: Maiuri 1916, 286, fig. 2).

Figure 5. Kymissala. General view from the northeast today (Source: KARP).

Figure 6. Site Kymissala, necropolis. Excavations in the forested east slope of the Kymissala hill (Source: KARP).

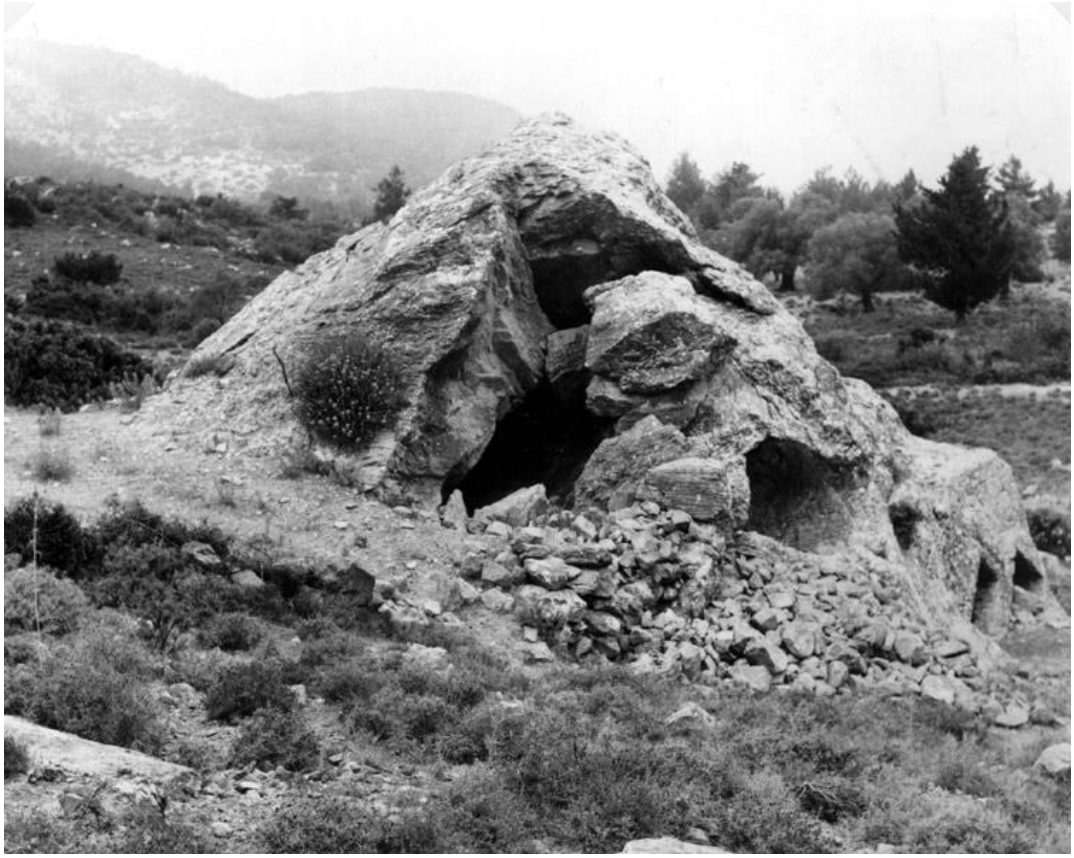


Figure 7. Site Alonia/Merouli or Koutsofti. View of the monumental tomb from the northeast in 1915 (Source: Maiuri 1916, 286, fig. 4).

Figure 8. Site Alonia/Merouli or Koutsofti. Views of the monumental tomb from the northeast today (Source: KARP).

Figure 9. Site Kymissala, necropolis. Chamber tomb with a pine tree growing inside the antechamber (Source: KARP).

Figure 10. Site Vassilika. View of the settlement from the southwest today (Source: KARP).

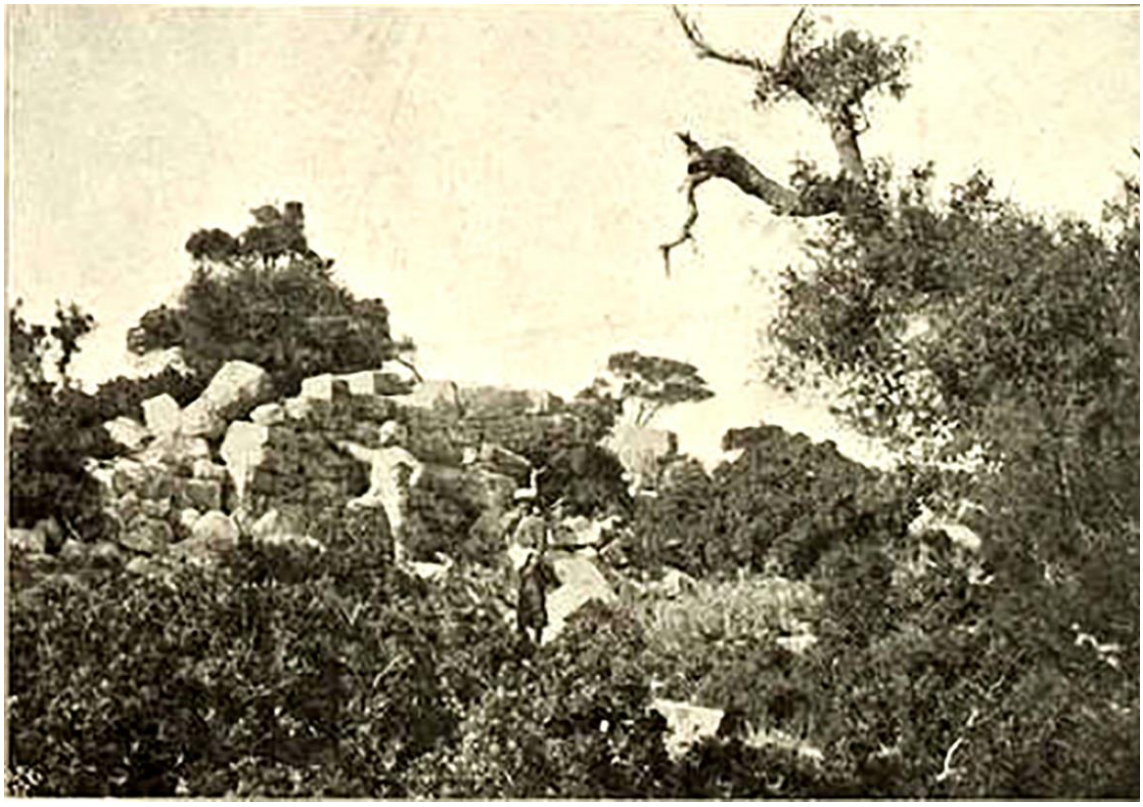


Figure 11. Site Vassilika. View of the settlement from the southeast in the early 1890s (Source: von Gaertringen 1899, 368, fig. 24).

Figure 12. Glyphada. General view of the bay from the north (Source: KARP).

Figure 13. Site Glyphada. Remains of collapsed constructions by the shoreline (Source: KARP).

Figure 14. Site Vassilika. General view of the settlement (Source: KARP).

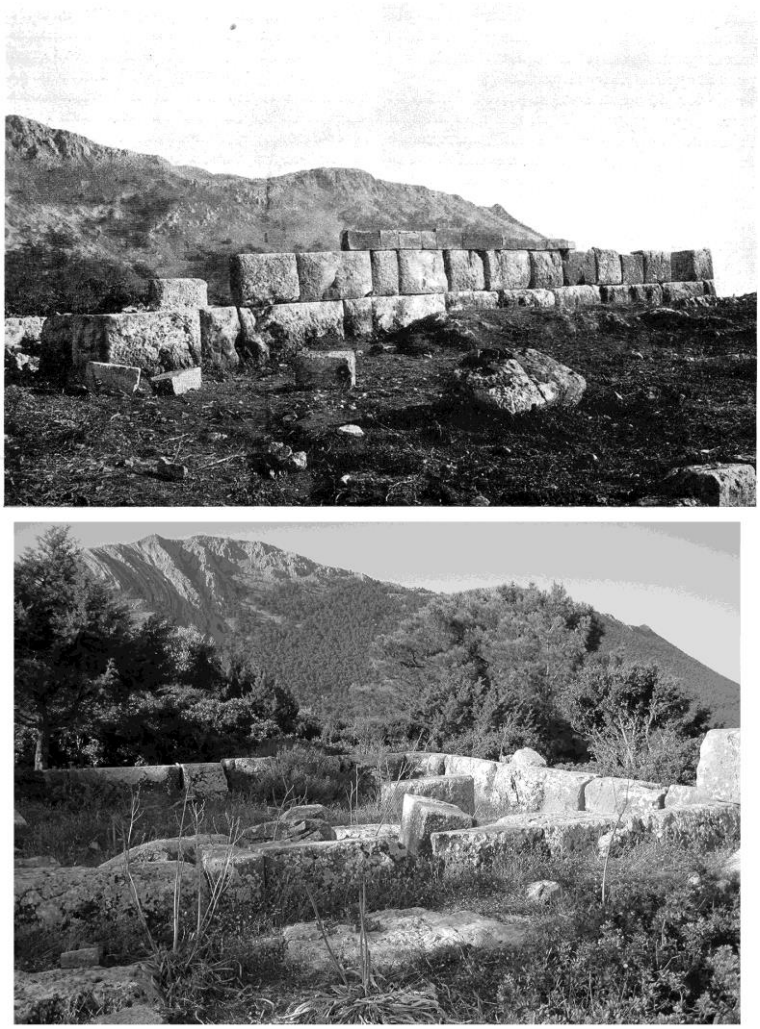


Figure 15. Site Hagios Phokas. Views of the acropolis temple in 1915 (above) (Source: Maiuri 1916, 292, fig. 9) and today (below) (Source: KARP).

Figure 16. Site Kampanes. Chamber tomb reused for modern farming purposes (Source: KARP).

Figure 17. Kymissala. Views of the fire protection zone at the west end of the plain (Source: KARP).

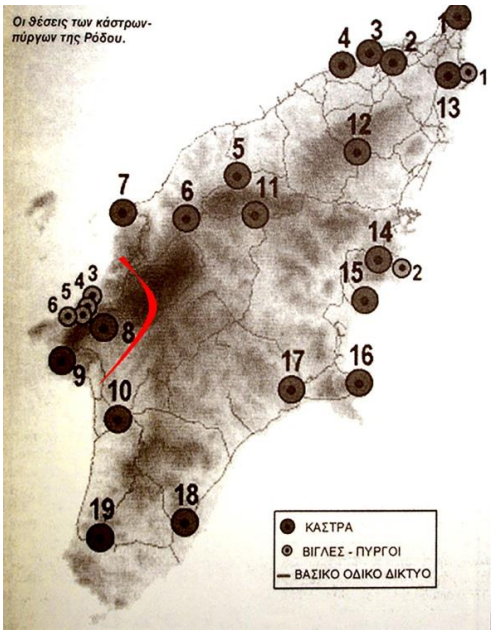


Figure 18. Map of the medieval castles and watchtowers on the island of Rhodes (Source: Στεφανίδου 2004, 129).

Figure 19. Monolithos village. St Thomas' church with reused ancient material (Source: KARP).

Figure 20. Site Monosyria, St Georgios' church with reused early Christian material (Source: KARP).

Fig. 21. Site Vassilika. Limekiln of the early 20th century (Source: KARP).

Figure 22. Site Alonia. Satellite view of threshing floors of the early 20th century (Source: KARP).

Figure 23. Monolithos village. Ancient Greek funerary stele decorating house wall (Source: KARP).

Figure 24. Site Kymissala Necropolis. Disturbed funerary monuments (Source: KARP).

Figure 25. Site Kymissala Necropolis. Looted chamber tomb 4/2007 (Source: KARP).

Figure 26. Site Kymissala Necropolis. Looted chamber tomb 3/2006 (Source: KARP).

Figure 27. Part of the walking path at the west hillside of Hagios Phokas (Source: KARP).

Figure 28. Aerial photo of the fortification walls of the acropolis at Hagios Phokas from the SW (Source: KARP).