Hesperia Supplement 39

LAND OF SIKYON

Archaeology and History of a Greek City-State

Yannis A. Lolos

WITH CONTRIBUTIONS BY
Aristoteles Koskinas, Lina Kormazopoulou, Ioanna Zygouri,
Vassilis Papathanassiou, and Angelos Matthaiou

The American School of Classical Studies at Athens
2011

Front cover: Rottmann's *Sikyon-Korinth* (1834); Munich, Staatliche Graphische Sammlung 21 368 Z. Courtesy Staatliche Graphische Sammlung, Munich

Back cover: Arkouda and the coastal plain from Tsakriza

Library of Congress Cataloging-in-Publication Data

Lolos, Yannis A.
Land of Sikyon : archaeology and history of a Greek city-state / Yannis A. Lolos ; with contributions by Aristoteles Koskinas . . . [et al.].
p. cm. — (Hesperia supplement ; 39)
Includes bibliographical references and index.
ISBN 978-0-87661-539-3 (alk. paper)
1. Sicyon (Extinct city)—Antiquities. 2. Archaeology and history—Greece—Sicyon (Extinct city) 3. Historic sites—Greece—Sicyon (Extinct city) 4. Excavations (Archaeology)—Greece—Sicyon (Extinct city) 5. Inscriptions—Greece—Sicyon (Extinct city) 6. Sicyon (Extinct city)—Buildings, structures, etc. 7. Sicyon (Extinct city)—History. 8. City-states—Greece—History. I. Koskinas, Aristoteles. II. Title.
DF261.S5L65 2011
938′.7—dc23 2011017213

CONTENTS

PREFACE AND ACKNOWLEDGMENTS

The archaeological exploration of the territory of an ancient Greek city-state is a formidable task, as I have come to realize. Sikyon in antiquity comprised a land of approximately 360 km^2, which extended from the coastal plain to the semimountainous and mountainous zones of the south, and included various geomorphological units: alluvial plains, conglomerate and marly conglomerate terraces, upland basins, rolling and steep hills, and mountainsides.The sheer size and scope of the land of Sikyon—its geographical variety, but also the legacy of its ancient history as told by the written sources—posed great challenges. Faced with such an overwhelming project, I decided to tackle it in stages. I first familiarized myself with the topography, then investigated the passes and roads crossing the countryside from antiquity to early modern times, and finally explored the settlement patterns and other remains of human activity in the area across the centuries. The end result is a reconnaissance of the land of this important city and should by no means be considered a final treatment of the subject. In fact, in many respects my work invites further exploration of specific areas and sites that have yielded significant finds or have raised puzzling questions.

In all stages of the research, I was fortunate to have wise guidance and tremendous help and support from various individuals. This study started as a doctoral dissertation in the Graduate Group in Ancient History and Mediterranean Archaeology at the University of California at Berkeley. I am deeply indebted to my advisors, Ronald S. Stroud, Stephen G. Miller, and Crawford H. Greenewalt Jr., for their insightful and thorough comments. Ron Stroud, in addition, accompanied me in the field twice, and has enthusiastically embraced the whole effort throughout. I benefited from discussions with the late W. Kendrick Pritchett, who shared with me his unparalleled knowledge of ancient Greek history and topography. Yannis Pikoulas spent two weekends in Sikyonia with me, and he read parts of the manuscript, making important additions. My debt to him and to his scholarly work is apparent throughout the book. Many thanks are also due to John Cherry, with whom I had a number of stimulating conversations on survey archaeology during 1998–1999.

I am grateful to the staff of the 4th and now 37th Ephoreia of Prehistoric and Classical Antiquities—namely, the ephors Elsa Spathari, Zoe Aslamantzidou, and Alekos Mantis; the archaeologists Anna Banaka and Yota Kassimi; and the draftsperson Kiki Athanasouli—for their efficient help in acquiring the permit for the fieldwork. The secretary of the Greek Archaeological Society, Vasilios Petrakos, and the archivist Ioanna Ninou promptly responded to my requests for material from the Orlandos archive. The archaeologist Photini Balla helped me with the survey of the city walls in the early stages of the project. During the 2001 field season I was assisted by three young archaeologists, graduates of the University of Ioannina: Aristoteles Koskinas (author of Appendix II), Myrsini Gouma, and Kostas Satolias. Their great interest in the project, their expertise, and their amazing stamina enabled us to cover significant ground that year. The architectural plans that accompany the text (Figs. 1.34, 3.46, 4.45, 4.56, 4.66, and 4.81) are the product of an electronic survey conducted with enthusiasm and energy by three senior students of topography in the Technological Institution of Athens: Dimitris Karakaxas, Vasilis Marras, and Kostas Botos. I am extremely grateful to them, as well as to their advisors Makis Avoritis and Philippos Zoidis, who made available to us a high-quality laser theodolite (Sokkisha Set 4c). All photographs are my own unless otherwise indicated. Excerpts of ancient literary sources are from the Loeb editions unless otherwise indicated.

Special thanks are due to the local inhabitants of the area, who literally guided me to the antiquities of their villages. Without them my task would have been much more difficult and much less successful. My aunts Charikleia Lolou and Maria Predari, residents of the village of Kokkoni, and my uncle, the late Evgenios Karachalios, native of the village of Stylia, put me in touch with people living throughout Sikyonia. In almost every village I encountered at least one inhabitant (and often more) who was genuinely interested in ancient remains and was willing to share his or her knowledge with me. Among these, I am especially indebted to the following: Angelos Bouvis (Kiato); the late Christos Kakavakis (Vasiliko); Photis Ioannou (Tarsina); Panagiotis Dardanis (Stimanga); Antonis Teknos (Kastraki); Georgios Stasinopoulos and Nikos Mikos (Bozika); Dimitrios Tourgellis (Asprokampos); Takis Kallianiotis, papa-Anastasios Skouphis and the late Spyros Papoutsis (Titane); Dimitrios Triantaphyllou and Christos Kalantzis (Gonoussa); Kostas Zarkos, Panagiotis Zarkos, the late Nikolaos Zarkos, Panagiotis Tsolakos, and Sotiris Lepesiotis (Kryoneri); Vasilis Mytas (Souli); Spyros Drimeris (Megali Valtsa); the late Dimitrios Georgiou (Throphari); Nikos Kampouris and Panagiotis Vasilopoulos (Panariti); Panagiotis Tsatsaris (Manna); Yannis Antoniou (Velina); Vlasis Sotiropoulos and Nikos Valatas (Zemeno); Vassilis Papaioannou (Thalero); Tasos Pappas (Pasio); Stavros Belitsis and the late Aristomenes Arberores (Archaia Korinthos); Andreas Papachristou (Velo); Nikos Bitsakos (Vochaiko); Kostas Sokos (Ano Diminio); Yannis Karathanassis (Evangelistria); Konstantinos Kellaris and Evangelos Theleritis (Kaisari); Georgios Karachalios (Melissi); Dimitris Kitsalias (Poulitsa); Antonis Karachalios (Stylia); and Kostas Tsiougos (Ellinochori). Petros Tsiougos, former head *(proedros)* of the community of Ellinochori, deserves special mention, since

he has been like a father to me during the course of the project, always ready to guide me to the antiquities of his village and its broader area.

During the processing and interpretation of the survey data, I was fortunate to have the unfailing support of the staff of the Corinth Excavations and its former director, Charles K. Williams II. I am especially grateful to Nancy Bookidis, Guy Sanders, and Ioulia Tzonou-Herbst for spending significant amounts of their busy time reading the pottery of the survey. Nancy Bookidis also read sections of the book, making crucial corrections, comments, and suggestions. Chris Hayward and Irene Polinskaya made insightful observations on Chapters 1 and 6, respectively. Jeremy B. Rutter was able to identify most of the prehistoric material from digital photos. Mark Lawall identified most of the amphora fragments, also from digital photos. Karen Sotiriou made the pottery drawings included in this volume. Natalia Vogeikoff-Brogan spent many hours in the *apotheke* of Vasiliko to help with the description of the pottery. Bill Dietrich, Professor of Geomorphology at the University of California, Berkeley, made insightful comments on the geology section of Chapter 1. Panagiotis Kalliris, chief forester of the prefecture of Corinthia, provided me with the flora and fauna data included in Chapter 1, and Kelly Papapavlou assisted me with the terminology for this section and provided helpful comments on its text. Andrew F. Stewart and Peter Schultz helped me with questions pertaining to sculpture. Two of my colleagues at the University of Thessaly, Yannis Varalis and Paris Gounaridis, advised me in the area of Byzantine archaeology and history; the former was even able to accompany me to some of the Medieval monuments of the survey area to answer questions on site. Molly Richardson edited Appendix VI in a professional manner. George Velenis of the University of Thessaloniki helped me to decipher the building inscription presented in Appendix VII. The Blegen Library at the American School of Classical Studies at Athens provided an ideal environment for the actual writing of the book. Greta Vollmer, Tanya Szafranski, and Camilla MacKay edited parts of the text in an early stage, and Jill Hilditch edited the entire manuscript, saving me from many linguistic embarrassments. In preparing the maps and plans I was assisted by many GIS and CAD experts, including Geoffrey Compton at the University of Michigan, the Marathon Data Systems office in Athens, Giorgos Photis at the University of Thessaly, and James Herbst of the Corinth Excavations. In computer-related matters Tarek Elemam, the Information Systems & Technology Manager of the American School, was always there to save me from fatal errors. My brother, Panayotis, designed the database for the survey catalogue entries. In the final stages, the corrections, comments, and suggestions made by the anonymous reviewers, the proofreader (Nancy Winter), and the editor (Carol Stein) helped me to improve both the content and the appearance of the manuscript. I am also grateful to Evi Sikla for preparing the indexes at the end of the volume.

The project would not have even begun without the financial support of many institutions and foundations over the years: the University of California (1996–1997), the Dr. M. Aylwin Cotton Foundation (1999–2000), the American School of Classical Studies at Athens (2002–2003), and, above all, the 1984 Foundation (1997–1998, 2001–2003). Finally, I

would like to thank my family for their encouragement throughout, and Leda Costaki for her unlimited support and assistance. This volume is dedicated to the memory of my father, Andreas, who did not live to see it completed.

Postscript. The manuscript for this book was submitted at the end of September 2005. Since then, a five-year intensive surface survey was conducted on the plateau of Sikyon by the University of Thessaly, in collaboration with the 37th Ephoreia of Prehistoric and Classical Antiquities, the Institute of Mediterranean Studies, and the University of York. The results of these investigations, which are now being processed, supplement and in some cases correct earlier observations presented in this volume. I have tried to take into account these recent findings during the final review of the text, but have kept changes and additions to a minimum.

Introduction

Archaeologists and ancient historians associate the name Sikyon with the artistic excellence exemplified in the now-lost works of her famous sculptors and painters, as well as with two powerful political figures, the tyrant Kleisthenes in the Archaic period and the general Aratos in the 3rd century B.C. Accordingly, excavations in the city have had the specific aim of recovering works of art and monumental buildings, both of which were commonly encountered in the area of the agora and the theater. These artistic expressions, however, are only a single, limited aspect of the history of the area. In my investigation of Sikyonia I have moved beyond the civic and temporal boundaries that have limited earlier studies to focus on the Sikyonian countryside from antiquity to the Ottoman era. At the same time, the geographical extent of my study, within the political boundaries of the city-state, reveals its bias toward the period of the Greek polis. Before that period (in Mycenaean times) and after it (in the Byzantine and Ottoman eras), Sikyonia was part of larger administrative and territorial units. Since the study area was not a self-sufficient unit in these periods, the patterns observed relate to, and are determined by, this broader context.

ORGANIZATION

The structure of this book reflects my gradual approach to the Sikyonian landscape. The first chapter deals with the political boundaries of the ancient city-state, its physical landscape, and its natural resources, and examines how these resources were exploited in antiquity as well as in post-antique periods. In Chapter 2, I outline the political and military history of the area from Mycenaean times to the Greek War of Independence, basing my account mainly on written testimonia.

In the third chapter I deal with the roads that crossed Sikyonian territory, for which literary sources are limited but physical remains are abundant. Literary evidence is even more scanty concerning fortifications; I discuss these in Chapter 4, which, like Chapter 3, is based to a great extent on the results of my topographical survey of 1996–1998. My pairing of these

two chapters assumes a relationship between road networks and military needs in ancient Greece. Modern scholars have not given as much attention to this relationship as to the impact of trade routes on land development,[1] yet we often find in connection with roads, either alongside or overlooking their course, various forts (φρούρια, τείχη) and fortified posts: patrol houses (περιπόλια), guard houses (φυλακτήρια), and watch/signal towers (φυλάκια, φρυκτώρια, and σκοπαί).[2] These posts were meant to accommodate a small garrison, or simply a few guards, in order to watch over the main country roads leading into and out of the state's territory and to patrol its frontiers. Some of these structures were in signal communication with forts or the city itself. Together they formed the defensive web of the state's territory, securing military and civic readiness in critical periods. This does not mean that the guards stationed in these forts and towers could keep a hostile army out of the city's territory.[3] Their role was to watch over any threatening movements of the enemy, and to some extent deter small troops of hit-and-run marauders. Forts also served as rallying points for the people inhabiting the countryside in critical periods.

The various forms of settlement in Sikyonia, from the *asty* itself to small towns (πολίσματα), villages (κῶμαι), and simple farmsteads, are discussed in Chapter 5, which mainly draws upon the results of the extensive site-based survey that we carried out between 2000 and 2002. Finally, in Chapter 6, I explore the sanctuaries of the city and the countryside as they can be reconstructed from literary testimonia, rescue excavations, and our survey evidence.

The text is complemented by a series of appendixes. The Register of Sites in Appendix I includes habitation sites (abbreviated HS in the text); special-purpose sites (SP), namely, nonhabitation sites such as quarries, cisterns, terrace walls, sanctuaries, rural churches, storage sheds, and animal pens; traces of roads (RS); defensive sites (DS); and, finally, alleged sites (AS), that is, sites that are mentioned by earlier investigators or local informants but that no longer exist, or could not be located. The distinction between these different types of sites, particularly between habitation and special-purpose sites, is not always straightforward, as I explain below. In addition, a few sites had more than one function, such as Titane (HS-67), which was primarily a sanctuary with a settlement around it and a fort planted on the hill, or Thekriza (HS-54), a large settlement with a military tower adjacent to it. In such cases, I have usually created a separate entry in the Register for each function (e.g., for the military tower adjacent to Thekriza, see DS-10). In the second appendix, Aristoteles Koskinas presents a preliminary study of the roof tiles observed in the survey, the most common type of artifact found in the countryside and one whose significance has been little explored. The third appendix deals with the two aqueducts of Sikyon, remains of which were found in various places but are not recorded in the Register of Sites. The fourth appendix focuses on a rock-cut inscription that I located near what I consider to be the southwestern border of Sikyonian territory. In Appendix V, Lina Kormazopoulou, Ioanna Zygouri, and Vassilis Papathanassiou present a recently excavated sacred cave—in fact, the only excavated cave of Sikyonia frequented during the Archaic and Classical periods. An inscribed sherd that was found in that

1. The only study to address the road and defensive systems together was published by Pikoulas (1995). The author presents abundant physical evidence for roads connecting the Corinthia to Arkadia and the Argolid, and raises the possibility that some of these roads had been built by the Spartan *symmachia* during the 6th and 5th centuries B.C.; see Pikoulas 1995, pp. 349–352, more emphatically argued in Pikoulas 2001.

2. Contra Munn (1993, p. 16): "the assertion that forts were intended to defend roads is a modern deduction, supported by no ancient authority." This *argumentum ex silentio* is not convincing; ancient sources rarely mention common, let alone obvious, practices of their time. The fact that many Greek forts had a commanding view over main routes and passes is not an accident, but implies a deliberate decision on the part of the state.

3. Harding (1988) and Munn (1993, pp. 18–25) convincingly argue against Ober's thesis (1985) that Athenian border forts were meant to prevent enemies from entering Attica.

cave and identifies the divinities worshiped there is the topic of the sixth appendix, authored jointly by Angelos Matthaiou and myself. In the final appendix, I present a 16th-century inscription built into a church below the village of Vasiliko that gives the name of the founder and the date of that monument.

RESEARCH

Survey Work

As stated above, my approach toward the Sikyonian countryside was gradual, starting with a topographical survey and proceeding to an extensive survey of broader scope. In the earlier stages of the study (1996–1998), I familiarized myself with the landscape, defining its political boundaries, and explored the road network, as well as the defensive installations, forts, and towers. The starting point for such field investigations has traditionally been the local café or *kapheneion,* an ideal place to meet with the inhabitants of a village or town. This method was adopted by Yannis Pikoulas in his surveys of Lakonia, Arkadia, Argolis, and the Corinthia, and it yielded spectacular results.[4] It operates on the simple and logical premise that no one knows a given area better than the people who live there, cultivate the land, graze their animals, or simply hunt for pleasure. Obviously, not every farmer, shepherd, or hunter is aware of all of the visible antiquities in their area; my experience has shown that only a few have the curiosity, sharp eyes, and drive for historical knowledge that mark true connoisseurs.

My first task, then, was to find the "right people," the second to convince them to share their knowledge with me. I was not always successful, and sometimes the information provided was insufficient to guide me to particular spots: a short section of wheel-ruts hidden in the bushes can easily escape the attention of even the most observant surveyor. This is one of the benefits of collaborating with locals, namely, to learn about and access areas that are now completely overgrown with thick vegetation but were formerly traversable. Local inhabitants can also describe structures that no longer exist, whether because of infrastructure work or because of the aggressive agricultural exploitation that is now widely practiced throughout the Greek countryside. In both of these respects our survey work greatly benefited from close collaboration with the inhabitants of local communities.

The exploration of past habitation and other signs of activity in the countryside was the aim of the extensive survey of 2000–2002. It was carried out in two stages. First, I solicited the help of locals, particularly farmers, in order to locate and record sites with artifact scatters. In the second stage, I walked the recorded sites (as well as other areas, chosen at random) with a small team of experienced archaeologists. In addition to the standard equipment (brush, measuring tape, compass, conventional camera, record sheets, etc.), we carried a digital altimeter, a digital camera, and a handheld GPS (satellite coverage in most parts of Sikyonia is fairly good). We walked the fields usually spaced 5 m apart, and occasionally 2.5 m

4. The method is described in Pikoulas 1995, pp. 9–13.

apart. The direction of fieldwalking and the space between walkers was often predetermined by the orientation and layout of the vineyards that dominate the Sikyonian landscape; in most areas of the Corinthia today, vineyards are planted along parallel lines set 2.5 m apart.

Our first concern was to verify that we did have a "site," as opposed to an off-site scatter, and this we established by comparing the artifact density on the site to the density of finds in the surrounding area. Our next concern was the nature of the site, which we determined based on the amount, kind, and overall presence of pottery, as well as on the site's location and associated structures. Thus, miniature vases are typical of sanctuaries, and tableware, cookware, and storage vessels are typical of habitation sites, whereas good-quality tiles (with fine glaze) and dressed blocks are rather inconsistent with a simple animal pen. Of course, reality is always more complex, since a country house can later be converted into a storeroom or an animal pen, as still happens in Sikyonia today. The exact location of a site is given in X/Y coordinates in the Greek Geodetic Reference System (*EGSA* 87).[5]

Written Sources

In identifying and interpreting various sites I took into consideration appropriate ancient and medieval narratives, historical maps, and descriptions offered by early modern travelers and 20th-century scholars. These documents were invaluable in contextualizing, confirming, and often supplementing the physical remains.

Ancient writers not only provide us with historical cases for the use of roads and fortresses, as well as occasionally mentioning settlements and sanctuaries of the *chora,* they also include topographical clues that help us locate and identify some of these sites. Their testimonies are based on autopsy (ὄψις) and personal experience (ἐμπειρία). That autopsy had a value central to ancient historiography has been recognized only relatively recently.[6] Personal experience as a methodological concept developed in the 4th century and appears prominently in the work of Ephoros,[7] which is particularly significant for us since Diodoros, who drew extensively on Ephoros's narrative, is one of our main sources concerning Sikyonian topography. Xenophon, in his *Hellenica,* includes lengthy chapters on events that took place in the northwestern Peloponnese and involved the territories of Corinth, Sikyon, and Phlious. Xenophon's physical presence in Corinth lends credibility to his account: Diogenes Laertius tells us that Xenophon found refuge in Corinth in the aftermath of the battle at Leuktra and quotes Demetrios of Magnesia, who wrote that Xenophon died there in the year 360/59 (Diog. Laert. 2.53, 2.56).[8] Plutarch's *Life of Aratos,* which I used extensively, is based on the memoirs of the famous Achaian *strategos* himself. Pausanias visited Sikyon after leaving Corinth and before heading to Phlious; his itinerary and his topographical notes are particularly helpful in trying to reconstruct the urban topography, as well as the road network and sacred landscape of the state.

However valuable historical testimonia may be, they contain few explicit references to roads, defensive structures, settlements, or sanctuaries

5. For our method of obtaining site coordinates, see below, pp. 269–270.

6. See in particular Nenci 1955; Laffranque 1963; Schepens 1980. Nenci (1955, p. 29) observes that "Greek historiography is the daughter of geography," in which autopsy was the obvious means of research. In this respect it differs radically from modern historiography, which, as Hockett (1955, pp. 7–8) puts it, "is not a science of direct observation." This new conception of the task and method of history goes hand in hand with the appearance of a new type of historian in the 19th century. Whereas in the past, the majority of historians had played a significant role in the public life of a city, the 19th century saw the appearance of the "scholar"; in Schepens's words (1980, p. 12), "the βιβλιακὴ ἕξις took priority over the ἐξ αὐτῶν πραγμάτων ἕξις" (my translation).

7. For the historical method of Ephoros, see Schepens 1970.

8. For Xenophon in Corinth, see Delebecque 1957, pp. 312–341; and Anderson 1986.

unless these sites happen to play a role in the events under discussion. Watch/signal towers, for example, are nearly absent from the narratives of the historians. Likewise, Pausanias is an invaluable source on urban topography and the sanctuaries of the countryside, but he had little interest in other types of sites, such as smaller settlements and defensive structures.

Having considered the limitations of the ancient sources, we can now assess the value of the diaries of early modern travelers. Unlike the ancient historians, early travelers were primarily concerned with the antiquities themselves, including forts, towers, roads, and settlements. They visited Greece when it was still untouched by technological development, even as it was defined in their time. Intensive farming was limited to a few areas, whereas the majority of mountainous land was devoted to grazing and cereal cultivation. An impressive array of travelers visited Sikyon, either from Corinth or Patras, during the early 19th century: Clarke (1801–1802), Gell (1804–1805), Dodwell (1801, 1805–1806), Leake (1805), Pouqueville (1816), and Ross (1840); these were followed by, during the 1840s and 1850s, Rangabé, Vischer, Clark, and Wyse (among others).[9] Travelers from earlier centuries include Cyriaco di Ancona (1436), Wheler (1675), and the infamous Abbé Fourmont (1729–1730). Cyriaco passed by Sikyon briefly in late April 1436 on his way from Corinth to Kalavryta, but his writings are almost entirely lost.[10] Unfortunately, the correspondence of Fourmont remains largely unpublished, but Wheler's description is available.[11] Study of their accounts and the location of their reference points, many of which have since changed, is facilitated considerably by old maps and drawings.

One of the earliest and finest maps is the *Carte de la Grèce,* drafted by the Expédition scientifique de Morée and published in 1852. In the second half of the 19th century, Miliarakis (1886) and the Guides-Joanne (1891) both published maps marking the names of mountains, rivers, plains, and villages in the area. A second tradition, which started with Leake (1830) and Curtius (1851–1852) and continued with Kiepert's *Neuer Atlas* of 1879, emphasized ancient toponyms and aimed to locate them and mark them on a map. The maps produced by these scholars are full of suggestions regarding the locations of various forts, *polismata,* and *komai,* or the courses of ancient roads, based on their own interpretations of the material evidence and of the relevant sources. The maps of the earlier tradition mark the main roads in use during the time they were drafted. Many of these undoubtedly go back to the Classical period: hardly any wagon roads were constructed, at least in this part of Greece, in Byzantine, Frankish, and Ottoman times, due to the general absence of wagons,[12] and we know that the European travelers moved about Greece on foot and on horseback.[13] The first program of road building in Greece was established by King Otto in 1833, but very few roads were actually constructed.[14] On the other hand, not all 19th-century roads marked on contemporary maps were ancient; some were created to serve villages of the post-Medieval era. These villages appear on some early maps as well as in archives dating from the period of the second Venetian occupation, such as the Nani Archive or the list of Alberghetti.[15]

The earliest attempts to address the topography of Sikyonia were made by Robert Gompf and Hermann Bobrik, in 1832 and 1839, respectively,

9. See Clarke 1818; Gell 1817; Dodwell 1819; Leake 1830; Pouqueville 1826, 1827; Ross 1841; Rangabé 1857; Vischer 1857; Clark 1858; Wyse 1865.

10. Stoneman 1987, p. 30.

11. Wheler 1682.

12. The first two-wheeled chariot in Greece was introduced during the first years of Otto's kingship: Despotopoulos 1940, pp. 535–536.

13. In 1800, the French painter and antiquarian François Louis Fauvel, wishing to send antiquities to France, had to have a cart brought to Athens from Toulon; see Pikoulas 1995, p. 25, n. 51.

14. *MEE*, vol. 10, pp. 815–816, s.v. Ὁδοποιία Ἑλλάδος (A. Oikonomou). In 1852, the entire road network of Greece was only 168 km long: see the table in Despotopoulos 1940, p. 537.

15. See below, pp. 354–359.

but neither of these authors was able to visit the area personally. A remarkably high-quality article by Ludwig Ross on the fortresses of the Sikyonian territory appeared in 1840. In the 1920s, Ernst Meyer visited the western section of Sikyonia as part of his Peloponnesian "Wanderings" and produced a chapter on it for his 1939 monograph. He was succeeded in 1970 by Nikolas Pharaklas, who published the results of his fieldwork as a separate volume of the Ancient Greek Cities series. Pharaklas's "survey" is by no means comprehensive, and it contains a number of inaccuracies and errors. Nonetheless it does provide, along with Meyer's chapter, precious evidence for now-lost antiquities. Important topographical and archaeological information is also included in local books and pamphlets dealing with various historical aspects of a handful of Sikyonian villages. Finally, Charles Skalet's (1928) and Audrey Griffin's (1982) monographs on Sikyon focus on the political history of the state and its artistic tradition, but their topographical contributions are minimal.

Excavations

The first reported dig in Sikyonian soil dates from 1802. In late summer/early fall of that year, Sebastiano Ittar, working on behalf of Lord Elgin, spent 15 days in Sikyon where "he employed two diggers for six days for diggings made round the gymnasium, stadium, theatre and other investigations."[16] Systematic excavations came later and concentrated on the plateau of the Hellenistic and Roman city: first the American School of Classical Studies focused on the theater, and later the Greek Archaeological Society worked in the area of the agora under the direction of Anastasios Orlandos and, to a lesser extent, Kalliope Krystalli-Votsi.[17] Orlandos's discoveries are important for understanding the spatial organization of ancient city, as I outline in Chapter 5. Finally, the local Ephoreia of Antiquities has carried out a few rescue excavations both on and below the plateau of the city, as well as in other areas of Sikyonia.[18] Their results supplement our survey data, particularly for areas where surface survey was essentially fruitless—as, for example, on the coast, where the ancient strata are buried beneath a thick alluvial fan.

16. Smith 1916, p. 219. The later American and Greek excavators of the area do not seem to have taken notice of these amateur initiatives.

17. See Brownson and Young 1893; Earle 1889a, 1889b, 1891, 1892, 1893; Fiechter 1931; Fossum 1905; Krystalli-Votsi 1984, 1988, 1991a, 1991b; McMurtry 1889; Orlandos 1933, 1934, 1935a, 1936, 1937, 1938, 1939, 1940, 1947, 1952, 1954, 1955, 1956; Petrakos 1989; Philadelpheus 1926a.

18. See Alexandri 1965; Charitonidis 1968, p. 124; Daux 1956, p. 256; 1958, p. 702; 1963, p. 736; Drosogianni 1968; Georgopoulou 1989; Kassimi 2004; Kormazopoulou and Zygouri 2003; Koutivas 1962, pp. 56–59; Krystalli 1968; Krystalli-Votsi 1976, 1983; Pallas 1977, pp. 175–176; Pyriovolis 1986; Skarmoutsou 1992; Skarmoutsou-Dimitropoulou 1999; Skias 1919; Stikas 1947; Tsophopoulou-Gkini 1988.

CHAPTER 1

Physical Environment and Resources

Sikyonia occupies the area in the northern Peloponnese between Achaia to the west and the Corinthia to the east, opposite the city of Kirra on the north shore of the Corinthian Gulf.[1] In this chapter I discuss the physical environment of the state. I begin with a description of its landscape, and then proceed to an examination of its political boundaries and its geology, climate, and water sources. Next, I briefly present the ecosystem of the area, and finally, its natural resources. Familiarity with all of these physical details is necessary in order to put the political history of the state, its roads and defensive works, and its settlements and sanctuaries in their proper context. Nikolas Pharaklas devotes a section to geography in his monograph on Sikyonia, but it is brief and not comprehensive.[2]

THE LANDSCAPE

The territory of ancient Sikyon stretched from the Nemea River in the east to the Sythas River in the west, and from the Corinthian Gulf in the north to Thyamia and modern Gavrias in the south (Map 1). It included two mountain ranges that run roughly in a northeast–southwest direction and are separated by a deep river valley. There were also two plains: the western plain between Vesiza and the northernmost foot of Mount Kyllene, and the fertile plain along the gulf, fed by numerous rivers and cut by several ravines. Roughly measured, some 83% of the Sikyonian territory (300 out of 360 km^2) was mountainous or semimountainous (240 km^2 and 60 km^2, respectively). The territory rises from sea level to an elevation of ca. 1,200 masl in the south and southwest, and to ca. 700 masl in the southeast.

Mountains

The mountain range of Trikaranon, in modern times known as Spiria, dominates the eastern part of Sikyonia. It is mentioned a number of times by Xenophon, in connection with military events involving the city of

1. On the location of Sikyonia between Corinthia and Achaia (Pellene), see Hdt. 1.145; Ephoros, *FGrH* 2A, F20, 18c; Strabo 8.2.2, 8.7.4; Paus. 7.6.1, 7.26.12, 8.1.2; [Scylax] 42, 43. On Kirra opposite Sikyon, see Strabo 9.3.3: πόλις ἀρχαία Κίρρα . . . ἵδρυται δ' ἀπαντικρὺ Σικυῶνος.

2. Pharaklas 1971, pp. 1–5. The author merely presents the main geographical features (mountains and plains) and refers to the political boundaries of the state, with the exception of its problematic southern boundaries, which are not discussed at all.

Figure 1.1. Kokkinovrachos (K) and Vesiza (V) from Gavrias, looking north

Phlious (*Hell.* 2.5, 2.11–13, 7.2.1). As the etymology indicates, Τρι-κάρα-νον comprises three summits aligned almost perfectly along a north–south axis: Evangelistria (elev. 806 masl), Kastro (579 masl), and Prophetes Elias (724 masl). The last peak separates the valleys of Phlious and Nemea.[3] We know the ancient name only for the northernmost and highest peak, Thyamia, which was the border between the states of Sikyon and Phlious. From Thyamia the mountain slopes down, toward the Sikyonian plain to the north, in three successive steps.[4]

The Trikaranon range is the only one mentioned in ancient literature. The mountainous range to the west and across the Asopos River valley is crowned by the flat summit of Vesiza (1,211 masl), perhaps the ancient Gylis (Fig. 1.1).[5] This range stretches from the coastal plain in the north to Gavrias mountain and the Stymphalian basin in the south, and presents, in addition to Vesiza, a number of elevated points: most conspicuous are Kastro (928 masl), which overlooks the pass from the valley of Kaisari to the Stymphalian basin, Kokkinovrachos (1,009 masl), which is the southernmost peak of the mountain range, and Prophetes Elias of Paradeisi (900 masl), which offers a commanding view toward both the Phliasian and Sikyonian plains. To the northeast of Vesiza, the elevated terraces of Vasiliko (120–240 masl) and Tsakriza (200 masl) present sheer scarps toward the coastal plain.

The plain of Kaisari, which extends between Vesiza to the east and the mountainous plateau to the west, is approximately 7 km long and 1.5 km wide (Fig. 1.2). It is closed to the north by the Thekriza hill, and to the south by a projection of the Vesiza range. The plain slopes slightly toward its southern end, where a lake was formed, locally remembered as λίμνη Παπαρρηγοπούλου. It was drained sometime in the late 19th century to

3. The two valleys are distinct entities, but are easily confused: the modern town in the valley of ancient Phlious has taken on the name of "Nemea" (officially "Nea Nemea" to distinguish it from the small village in the ancient Nemea valley which is officially known as "Archaia Nemea"). For that reason, I will use the name Nemea only with reference to the ancient site and river of that name, and the name Nea Nemea with regard to the town and valley that were called Phlious and Phliasia, respectively, in antiquity.

4. The profile of the mountain ridge is nicely drawn by Philippson (1892, p. 118).

5. The evidence for this identification is presented in Appendix VI.

Figure 1.2. The plain of Kaisari from the Vesiza range, looking southwest: Mount Kyllene (Ky) is in the background, the peak of Konomavra (Ko) to the right

make this part of the plain available for cultivation.[6] The small lake of Kaisari was reported by travelers in the early and mid-19th century, but we cannot be certain of its extent in antiquity, or if it existed at all.[7]

The heights to the west of the plain are essentially the northeastern extension of Mount Kyllene, and they drop steeply to the bed of the Sythas (or Trikalitikos) River to the west. They contain a few characteristic peaks, including Markoutsa (1,338 and 1,266 masl) and Konomavra (1,200 masl) overlooking the plain (Fig. 1.2), and a plateau to the north known as Λάκκα of Velina, after the name of the neighboring village. The Lakka plateau is the only land suitable for plowing; the rest of the area is mostly uneven and until recently was covered by forests. Today, apple trees thrive along the western slopes down to the valley of the river. The forested plateau of Moungostos is separated from the plateau of Velina to the south by a narrow gully. It forms peaks along its sides, most notably Thekriza to the south (900 masl), which overlooks the plain of Kaisari, Prophetes Elias to the west (943 masl), and Skempi to the north (699 masl) above the village of Megali Valtsa.

To the northwest of Moungostos the hill of Tsouka of Zemeno rises to an elevation of 811 masl, and further to the north the Kastro of Xylokastro to 201 masl. The flat summit of Tsouka resembles the top of the Panagia of Koryphi, the mountain to the northwest of Zemeno and across the Sythas River (Fig. 1.3). This Achaian mountain was for some time in the possession of the Sikyonians, after they captured the town of Donoussa.[8] From the area north of Moungostos, the ground descends unevenly toward the plain, interrupted by numerous river gullies and delimited on both east and west by elevated ridges. The western ridge carries the natural pass through the area of Zemeno to Xylokastro, above the eastern bank of

6. The draining was done through the opening of a tunnel that channels water toward the Stymphalian basin: Miliarakis 1886, p. 153.

7. Gell 1817, p. 19; Curtius 1851–1852, vol. 2, p. 499; Clark 1858, p. 337.

8. See below, pp. 17–18 and 65.

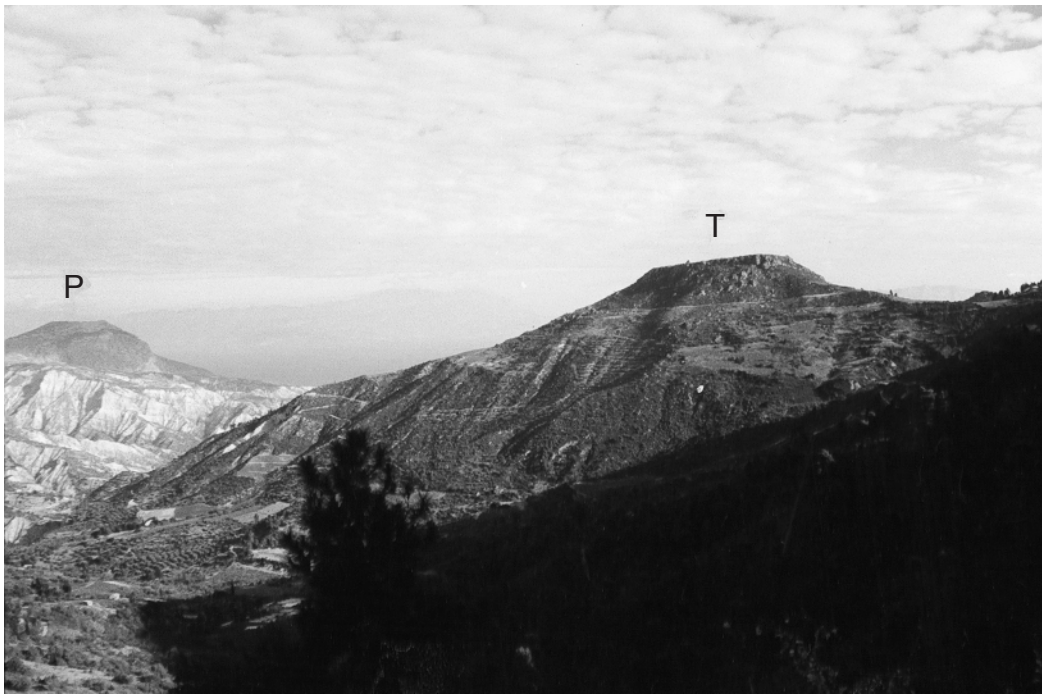

Figure 1.3. Tsouka of Zemeno (T) and Panagia of Koryphi (P), looking north-northwest

the Sythas River. The less prominent, eastern ridge runs almost parallel to the western bank of the Seliandros River through the village of Lalioti to Diminio and the coastal plain.

Rivers

As we have seen, the plain of Sikyon is crossed by several major rivers that flow from the mountains in the south into the sea, as well as by numerous ravines. These water courses are all of torrential type, meaning that their water flow is significantly reduced, or ceases entirely, during the summer.

The Nemea River to the east, known locally as Zapantis, and formerly as the river of Koutsomadi from the name of the village in the Nemean valley, has a relatively shallow but wide bed. It is fed by drainage from the heights to the south of the sanctuary of Nemean Zeus and empties into the gulf by the village of Vrachati.[9] The name of the river is preserved by Strabo and Livy, who both refer to it as the boundary line between Corinth and Sikyon.[10] The history of the river is gradually starting to emerge, thanks to excavation work at Nemea. The former director of the excavations, Stephen G. Miller, kindly shared this information with me:

> The present line of the river along the sanctuary was the creation of trenching by French engineers in 1884. Before that time there was, within the valley proper, no river. Hence it is clear that the valley regularly flooded during the winter, which explains why the modern village of Archaia Nemea was founded only after the valley was drained, namely in 1885. [Here, Miller points to the report of Dodwell, who visited the site in 1805, as well as to engravings

9. On the map drawn by the Expédition scientifique de Morée it is marked as Koutsomati.

10. See below, p. 16. In addition, Bursian (1872, p. 23, n. 4) maintains that the Nemea River is called Langia by Statius (*Theb.* 4.717, 4.775); cf. also Gompf 1832, p. 27. This cannot be so, for Statius refers to the spring east of the Sanctuary of Zeus and not to the river; see *Nemea* I, pp. 220–221 and n. 623.

Figure 1.4. The Asopos River valley, looking northeast

> of the first half of the 19th century, all referring to the existence of a marshy land and the absence of a river at that time.] The excavations have also shown that there was a river, much more substantial than today's, in the 12th and 13th centuries after Christ, but clearly no river between those times. There has to have been a river in Archaic and Early Hellenistic times (the antiquities, such as the drain of the Bath, attest to it), but all traces have been eradicated by the Early Christian version [of the river]. Finally, there is from this year's [1998] work, clear evidence for a good-sized river (although not as large as the Early Christian version) in the 13th century B.C., which also dried up completely and had its course changed dramatically in the Archaic period (it flowed beneath the Heroon of Opheltes).[11]

For the past hundred years, according to travelers' reports and the memory of the locals, the water level in the river has remained low (except for rare winter floods), and the river has always dried up in the summer.[12]

Approximately 7 km (as the crow flies) west of the Nemea River flows the Asopos, the most important river of Sikyonia (Fig. 1.4). Five small ravines intervene between the two rivers, but none contains a stream that flows into the sea.[13] The Asopos, formerly known as Agiorgitikos (Αγιωργήτικος), has its sources on Mount Pharmakas, to the south of the Phliasian plain, and through a long course empties into the sea between Kiato and Velo.[14] The average discharge of the Asopos is 3,800 m^3/hr during the winter months, and 650 m^3/hr in the summer.[15] Pausanias (2.5.2–3), after describing the course of the river, reports the contemporary belief among Sikyonians and Phliasians that its water was not local, but came from the Maeander River, which had crossed the sea from Miletos to the

11. S. G. Miller (pers. comm.).

12. Clarke (1818, p. 530) calls it a "rivulet"; Curtius (1851–1852, vol. 2, p. 505) describes it as shorter and narrower than the Asopos River, with its water flow depending closely on seasonal changes; Bursian (1872, p. 23) says that the water of the river often does not reach the gulf.

13. The *remata* in question are (from east to west): Γουργουρότη, Χαϊκάλη, Περιστεριώνα, Φίλιζα, and Ρουμπί. They are not labeled on Map 1.

14. The modern name Agiorgitikos, or river of Agios Georgios, derives from the town of that name (now called Nea Nemea) in the Phliasian plain.

15. Voudouris 2001, p. 17.

Peloponnese. The origin for this tale may be the convoluted course of the Asopos River, which in sections resembles a meander pattern. During the winter months, the water descended so strongly that the Sikyonians and the Phliasians compared it to the raging of bulls.[16] Leake described the course of the river as "rapid, white, and turbid."[17] In the early 1970s the water rose so high that it spilled over and damaged the 11 m high Turkish bridge in the plain.[18] The valley formed by the river at its northern end was referred to by Strabo as the Ἀσωπία χώρα, cultivated in antiquity as in modern times.[19] The "Asopeia" opens up to the north of Megali Lakka (Μεγάλη Λάκκα) of the village of Ellinochori, and extends toward the sea. Olive trees now cover a substantial part of it, and this must have been true in antiquity as well, given the many ancient references to the great value and healing properties of Sikyonian oil.[20]

The Helisson River, about 3 km to the west of the Asopos and known locally as Zorzi (Ζορζή) or river of Lechova (ποτάμι της Λέχοβας), runs below the northern cliffs of the Sikyonian plateau to meet the gulf just west of the town of Kiato (Fig. 1.5). The ancient name of the river is given by Pausanias who, having descended from Sikyon, reports encountering along the *leophoros* (main road) to Achaia first the Helisson and then the Sythas River.[21] The Helisson's sources are located in the area of the village of Kryoneri, some 7 km (as the crow flies) south of Sikyon. The river forms a fairly wide valley to the northwest of Sikyon. In the 1950s this section of the riverbed was dredged to a considerable depth and the earth was used for the construction of the highway to Patras.[22] Alfred Philippson writes that, in his time, the torrential water of the Helisson had caused many disasters, and that locals had unsuccessfully tried to dam it by means of low walls.[23] Statius writes in a highly poetic fashion of the winding banks of curved Helisson and its reputation of cleansing the "Stygian Eumenides."[24] However, despite the etymology of Helisson, its watercourse today is not very winding and is certainly straighter than that of the Asopos.[25] In addition, the grove of Eumenides was described by Pausanias (2.11.4) as lying above the right bank of the Asopos, not of the Helisson. It is therefore likely, as Conrad Bursian first suspected, that the poet confused the two rivers.[26]

The next large river to the west of the Helisson originates on the slopes of Kyllene above the village of Trikala, and empties into the gulf west of Xylokastro (Fig. 1.6). It is known as Trikalitikos and forms a wide and deep valley. The ancient name for this river is Sythas (Σύθας), and I argue below that it was the boundary between Sikyon and Achaia. Four less important

16. Ael. *VH* 2.33.7.

17. Leake 1830, p. 356.

18. On this bridge, see below, pp. 99–100.

19. Strabo 8.6.24: τῆς δὲ Κηλώσσης μέρος ὁ Καρνεάτης, ὅθεν λαμβάνει τὴν ἀρχὴν Ἀσωπὸς ὁ παραρρέων τὴν Σικυωνίαν καὶ ποιῶν τὴν Ἀσωπίαν χώραν, μέρος οὖσαν τῆς Σικυωνίας; also 9.2.23: . . . καὶ ὅτι ἐν Σικυωνίᾳ ἄλλος ἐστὶν Ἀσωπὸς καὶ ἡ χώρα Ἀσωπία, δι' ἧς ῥεῖ.

20. See below, p. 40.

21. Paus. 2.12.2; for the passage, see below, p. 159.

22. The practice of bulldozing earth from riverbeds for road-terracing purposes has been quite common in Greece; see, e.g., *SAGT* I, pl. 106:b, which shows trucks hauling gravel on a road that descends to the Sarantapotamos River.

23. Philippson 1892, p. 119.

24. *Theb.* 4.52–54: "et anfractu riparum incurvus Elisson. saevus honos fluvio: Stygias lustrare severis Eumenidas perhibetur aquis."

25. The name comes from the word ἕλιξ, "spiral," and serves to remind us of the danger of identifying ancient places solely on the basis of the etymology of their name.

26. Bursian 1872, p. 26, n. 1.

Figure 1.5. The Helisson River valley between Tsakriza (left) and the Sikyonian plateau (right), looking north

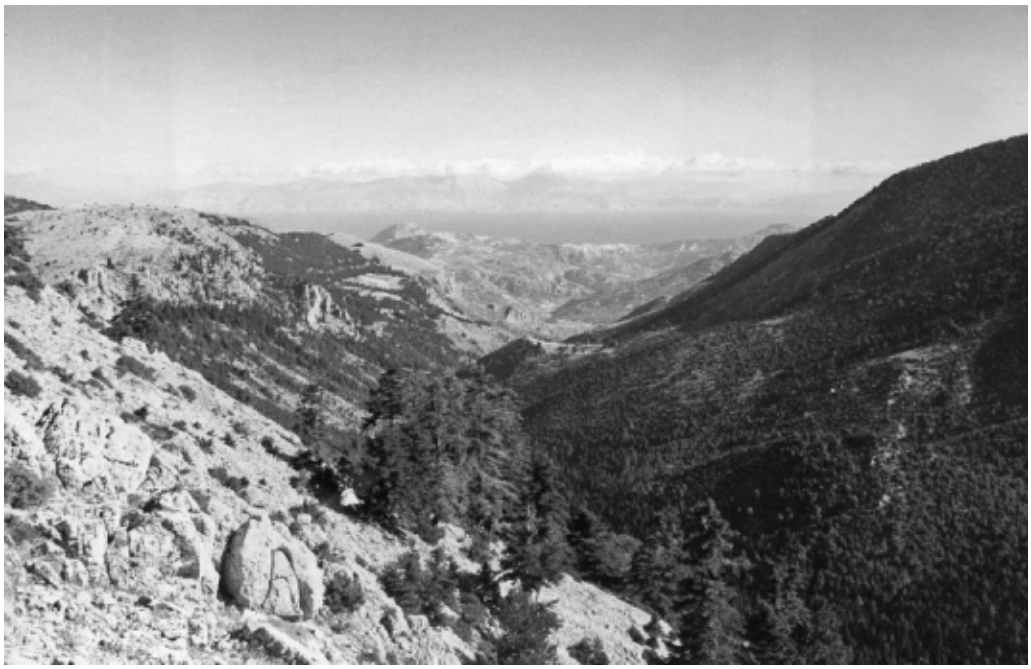

Figure 1.6. The gully of the Sythas River from the northern slopes of Kyllene, looking northeast

Figure 1.7. The Agiorgitiko branch of the *rema* of Thalero from the area of Throphari, looking northeast. Three villages are visible: Sykia (S), Melissi (M), and Thalero (Th).

rivers empty into the sea between Helisson and Sythas (from east to west): Kyrillou (Κυρίλλου), Seliandros (Σελίανδρος) or *rema* of Lalioti, *rema* of Thalero, and Katharoneri (Καθαρονέρι).

The ancient literature preserves the names of two Sikyonian rivers other than those already mentioned. The first, Selleeis (Σελλήεις), is mentioned by Strabo as a river around Sikyon: ἔστι δὲ καὶ περὶ Σικυῶνα Σελλήεις ποταμὸς καὶ Ἔφυρα πλησίον κώμη (8.3.5).[27] The closest river to Sikyon, after the Asopos and the Helisson (and less than a kilometer west of the latter), is the *rema* of Kyrillou, with the larger of its two tributaries (Gourgourati) having its source in the area of Souli.[28] Therefore, until there is evidence to the contrary, I consider the ancient Selleeis to be the *rema* of Kyrillou and not the *rema* of Lalioti, as previous scholars have suggested.[29]

The second Sikyonian river that has yet to be identified is the Kephissos. Strabo mentions it briefly (Ὁ ἐν Σικυῶνι Κηφισσός, 9.3.16) as one of six rivers in Greece with that name. The Sikyionian Kephissos was reportedly mentioned by Polemon in his lost treatise *On the Rivers* (of Sicily).[30] We know nothing more about the location of this river, but it could not lie to the east of Sikyon since none of the ravines between the Asopos and

27. See also Eust. ad *Od.* 1.260 (1.56.17 van der Valk). The *kome* of Ephyra has not been securely identified, and therefore the suggested locations cannot be used for identifying Selleeis: see below, pp. 320–323. Cf., e.g., Curtius (1851–1852, vol. 2, p. 499), who attempts to identify Selleeis with a tributary of the Helisson River, or the Helisson River itself, based on a tentative location of Ephyra to the south of the village of Souli.

28. This is the *rema* described by Leake as a "small stream" and identified with Sythas: see below, p. 16. Rangabé (1857, p. 44) thought that the Selleeis of Strabo and the Helisson of Pausanias refer to the same river, because of the specification περὶ Σικυῶνα. The preposition περί, however, does not necessarily imply physical contact but only proximity.

29. Guides-Joanne 1891, p. 400; Kiepert 1879.

30. The information is given by the scholiast to Euripides' *Medea* (ad 835; vol. 2, p. 185 Schwartz); also Eust. ad *Il.* 2.523 (1.422.14 van der Valk).

Nemea rivers are significant enough to cross the plain and empty into the gulf. If we identify the Selleeis with the *rema* of Kyrillou, then the Kephissos could be any of the remaining three rivers to the east of the Sythas. Seliandros, or the *rema* of Lalioti, originates from the plentiful springs of Megali Valtsa, the same sources that fed the western aqueduct of Sikyon.[31] It carries more water in the winter season than the rivers to its west. The *rema* of Thalero has its sources in the area of Mikri Valtsa and, crossing the plain obliquely, empties into the gulf east of Sykia (Fig. 1.7). Finally, Katharoneri flows from the area of Throphari and Zemeno to the sea, tracing a deep but narrow valley and bisecting the village of Sykia. In the late 19th century, its course served as a dividing line between the demes of Sikyon and Pellene.[32]

Coastal Plain

The southern limit of the Sikyonian plain, which extends along the Corinthian Gulf, is reflected in the line of the corresponding section of the highway to Patras. To the west of Sikyon, it is reduced to a narrow strip of land, with its widest section lying between Sikyon and Corinth. The width of the plain in this area today is between three and four kilometers, although it must have been somewhat less in antiquity since the northwestern side of the Peloponnese has risen over a meter in the past two thousand years, as explained below. The fertility of the plain was proverbial in antiquity. Athenaios reports that to petitioners with trivial requests such as "How could I become rich, son of Zeus and Leto?" the Pythia gave the mocking reply, "If you take possession of the land between Sikyon and Corinth."[33] In the story of the foundation oracle of Taras, the future settlers, originally desiring the territory between Sikyon and Corinth, received the following response: "The area between Corinth and Sikyon is surely good; but you will not inhabit it, not even if you would become embronzed."[34] In Lucian's *Πλοῖον ἢ Εὐχαί* (20), Adeimantos boasts of having bought up all of the land around the Athenian Acropolis, the seafront at Eleusis, a few lands around the Isthmus for the sake of the games, and the plain of Sikyon, and promises that soon "everything thickly covered, or well-watered, or fruitful in Greece" will be his.[35] Livy (27.31.1) calls the plain between Sikyon and Corinth "agrum nobilissimae fertilitatis" with reference to its devastation by the army of P. Sulpicius before the First Macedonian War.

POLITICAL BOUNDARIES

For ancient Greek cities, the existence of a frontier line defining their territory was inextricably linked to the identity of the city itself. Most telling of this mindset is a passage in Xenophon describing how Corinthian citizens felt about the unification of their city with neighboring Argos: "They perceived that their city was put out of existence, inasmuch as boundary stones had been removed and their fatherland was called Argos instead of Corinth" (*Hell.* 4.4.6).[36] In this section I focus on the boundaries of the Sikyonian state, presenting the evidence for the fairly well-established ones and proposing alternatives for the more problematic.

31. On the aqueduct, see Appendix III, pp. 582–584.

32. Miliarakis 1886, p. 115. Accordingly, half of the village of Sykia belonged to the deme of Sikyon, and half to the deme of Pellene.

33. Ath. 5.219a:
πῶς ἂν πλουτήσαιμι, Διὸς καὶ Λητοῦς υἱέ; χλευάζων ἀπεκρίνατο·
εἰ τὸ μέσον κτήσαιο Κορίνθου καὶ Σικυῶνος.
This oracular response was quoted by many ancient and medieval authors; for the references and a discussion on the nature of the reply, see Fontenrose 1978, p. 86 and n. 58.

34. Diod. Sic. 8.21.3: Καλόν τοι τὸ μεταξὺ Κορίνθου καὶ Σικυῶνος· ἀλλ' οὐκ οἰκήσεις, οὐδ' εἰ παγχάλκεος εἴης. Parke and Wormell (1956, vol. 1, pp. 72–73) more or less accept the authenticity of the story, unlike Fontenrose (1978, p. 280).

35. συνηρεφές ἢ ἔνυδρον ἢ εὔκαρπον ἐν τῇ Ἑλλάδι.

36. For more references showing the value of frontiers to a Greek, see Sartre 1979, p. 213.

Eastern Border

The boundary between the Corinthia and Sikyonia, according to Strabo and Livy, was the Nemea River: ὁρίζει δὲ τὴν Σικυωνίαν καὶ τὴν Κορινθίαν ποταμὸς Νεμέα (Strabo 8.6.25); "Nemeam—amnis est Corinthium et Sicyonium interfluens agrum" (Livy 33.15.1). For the century between the end of the Achaian War in 146 B.C. and the foundation of the Roman colony of Corinth in 46 B.C., the eastern Sikyonian boundary extended to include "most of the Corinthian countryside" (τὴν δὲ χώραν ἔσχον οἱ Σικυώνιοι τὴν πλείστην τῆς Κορινθίας).[37] Although neither Strabo nor any other source specifies the extent of the newly acquired land, the fact that Sikyon also gained control of the Isthmian Games at that time suggests that most or all of the coastal plain past the Nemea River to the Isthmus of Corinth came into its possession.[38]

Western Border

Identification of the Sythas River

The western boundary of Sikyonia is more problematic. Pausanias states explicitly that the Sythas River separated Pellene and Achaia from Sikyonia (καθότι δὲ Πελληνεῦσιν ὅροι τῆς χώρας πρὸς Σικυωνίους εἰσί, κατὰ τοῦτο ποταμός σφισι Σύθας, ἔσχατος ποταμῶν τῶν Ἀχαϊκῶν, ἐς τὴν Σικυωνίαν ἐκδίδωσι θάλασσαν, 7.27.12),[39] but the difficulty lies in identifying this river among the several rivers west of Sikyon that now flow into the gulf. Pausanias, after leaving the Sikyonian plateau on his way to Aristonautai, the harbor of Pellene, first crossed the Helisson, and then the Sythas:

> καταβᾶσι δὲ ἐς τὸν Σικυωνίων καλούμενον λιμένα καὶ τραπεῖσιν ἐπ᾽ Ἀριστοναύτας τὸ ἐπίνειον τὸ Πελληνέων, ἔστιν ὀλίγον ὑπὲρ τὴν ὁδὸν ἐν ἀριστερᾷ Ποσειδῶνος ἱερόν· προελθοῦσι δὲ κατὰ τὴν λεωφόρον Ἑλισσών τε καλούμενος ποταμὸς καὶ μετ᾽ αὐτὸν Σύθας ἐστίν, ἐκδιδόντες ἐς θάλασσαν.[40]

The Helisson can be safely identified with the river of Lechova, which descends from the northern side of the Sikyonian plateau and empties into the sea by the town of Kiato. Trikalitikos, which is the next largest river to the west, is the best candidate for Sythas. The great distance, however, between this river and the Helisson (over 13 km), and the fact that four smaller rivers intervene between the two, have given rise to different topographical interpretations.[41] Leake identified Sythas with the *rema* of Kyrillou, which flows west of Kiato.[42] Kyrillou is indeed the first river west of Helisson but it is now, as it was when Leake saw it, a mere stream and not a significant river. The same applies to the other three rivers

37. Strabo 8.6.23; cf. Eust. ad *Il.* 2.570 (1.448.42–43 van der Valk); see below, p. 77.

38. Sikyonian control over the Isthmian Games is attested by Pausanias (2.2.2).

39. Ptolemy (*Geog.* 3.14.28) refers to the same river as "Sys."

40. Paus. 2.12.2.

41. The different suggestions are summarized by Bölte in *RE* IVB^2, 1932, cols. 1836–1838, s.v. Sythas.

42. Leake 1830, p. 383; refuted by Rangabé 1857, pp. 45–47.

to the west of Kyrillou, namely, Seliandros, the *rema* of Thalero, and Katharoneri. Therefore, Pharaklas's suggestion that Katharoneri, a small river that empties into the gulf 4 km east of Xylokastro, is the ancient Sythas can hardly be sustained.[43] The identification of the Trikalitikos River (or river of Xylokastro) with the ancient Sythas goes back to the Expédition scientifique de Morée, and it has since been accepted by a number of students of Greek topography.[44] Corroborating evidence for the location of Sythas by Xylokastro is provided by Pseudo-Scylax, who testifies that the coastline of the Sikyonian state amounts to 120 stadia: Μετὰ δὲ Κόρινθον Σικυὼν πόλις. Ταύτης παράπλους στάδια ἑκατὸν εἴκοσιν (*Periplus* 42).[45] Although the accuracy of the numerical data given in the *Periplus* has been questioned, and the exact equivalence between the "stadion" in question and our metrical system remains unknown, an estimate between a minimum of 21 and a maximum of 24 km for the 120 stadia must be correct.[46] The length of the present coast from the Nemea River to the river of Xylokastro is close to 22 km.

Evidence of Boundary Markers

Two more issues must be addressed here in relation to the western borders of Sikyonia: first, their flexibility, and second, the presence of boundary markers. Pausanias mentions the Sikyonian annexation of the Achaian town of Donoussa, which is probably located on the northern slopes of Mount Panagia of Koryphi, some 5 km beyond the Sythas River and above the village of Kamari.[47] The most likely period for this event to have taken place

43. Pharaklas 1971, p. 5. His suggestion is based on the assumption that the harbor of Pellene (Aristonautai) was located at the present bay of Sykia. Such a location, however, to the east of Trikalitikos, contradicts the ancient evidence. Pausanias (7.26.4) gives the distance between Aristonautai and the harbor of Aigeira as 120 stadia. The harbor of Aigeira has now been securely placed at Mavra Litharia (see Frazer 1913, vol. 4, pp. 176–178, and the recent geological work at the site: Papageorgiou et al. 1993; Papageorgiou and Stiros 1996; Stiros 2001). Consequently, any site east of the Trikalitikos River for the location of Aristonautai would be over 135 stadia from the harbor of Aigeira. Although the shoreline of the northern Peloponnese has changed since antiquity (see below, pp. 29–31), and Pausanias tended to round-off numbers when he described distances, a difference of 15 stadia or more is rather excessive. We have to accept either that Pausanias was wrong or that Aristonautai lay to the west of Xylokastro. Some early travelers placed Aristonautai at the mouth of the Sythas River, but with no hard evidence: Puillon Boblaye 1835, p. 28; Guides-Joanne 1891, p. 399. Anderson (1954, p. 74, n. 19), following Leake (1830, p. 384), places the Pellenean harbor at the village of Kamari, where the colonel saw "a little curve in the coast." As the configuration of the northern Peloponnesian littoral has changed over time, Leake's argument is not conclusive. Anderson reports seeing a stretch of an ancient foundation south of the Kamari railway station, but there is no indication that it belonged to a harbor installation. Besides, Kamari, less than 95 stadia from Aigeira, is too far west to be the site of Aristonautai. I believe the best candidate for the site of Aristonautai has been suggested by Miliarakis and Koutivas; they both saw remains of a breakwater east of the village of Kamari, and 2.5 km to the west of Xylokastro (Miliarakis 1886, p. 124; Koutivas 1962, pp. 35, 111). The site is located almost 22 km (ca. 120 stadia) to the east of Mavra Litharia, the harbor of Aigeira, which agrees with the account of Pausanias.

44. Curtius 1851–1852, vol. 2, p. 498; Rangabé 1857, pp. 46–47; Bursian 1872, p. 30; Miliarakis 1886, p. 11; Lolling 1889, p. 162; Frazer 1913, vol. 4, p. 185; Roux 1958, p. 144.

45. Puillon Boblaye (1835, p. 29) was the first to point out the value of Pseudo-Scylax's testimony for the location of the western Sikyonian borders. The consensus now is that his "Circuit of the Mediterranean" was compiled in the mid-4th century B.C. (Peretti 1979, pp. 496–497; Jameson, Runnels, and van Andel 1994, p. 568).

46. Pseudo-Scylax was, with one exception, proven quite accurate in his section on the coast of the Akte in the Argolid. For the description of that coastline, a long stade of about 200 m is used: Jameson, Runnels, and van Andel 1994, pp. 568–572.

47. Paus. 7.26.13; for further discussion of Donoussa, see below, pp. 324–325.

is the reign of Kleisthenes in the 6th century B.C.[48] It is equally possible, as I argue in the next chapter, that with the consolidation of Achaia from the 5th century onward, Sikyon withdrew from Donoussa and returned to its old boundary east of the Sythas River.

Physical remains of what was interpreted as the western Sikyonian boundary were reported by two early travelers. Dodwell, journeying an hour and a half from Vasilika toward Kamari, "observed the remains of a wall that had once united the hill to the sea, and was constructed for the purpose of guarding the pass."[49] It is most likely that Dodwell is referring to the hill of Kokkinovrachos, between the villages of Melissi and Diminio, and that the pass in question refers to a narrow strip of land separating the hill from the sea. The same wall is described by Leake to the west of the village of Diminio (near the Seliandros) as "some ancient foundations on the road side, where appears to have been a wall reaching to the shore, from the mountain on the left."[50] Meyer tried in vain to find this wall at the beginning of the 20th century; I too have been unable to find any traces of it.[51] Without further description of this wall, and with the physical remains yet to be found, it is not possible to rule on its nature, date, or purpose. Dodwell interprets it as the boundary of Sikyon with Pellene, but this cannot be the case since it presumes that the Sythas River was farther east than is argued here. Nor could we posit a time in the Graeco-Roman history of Sikyonia when there would have been a need to confine the territory of the state more than 8 km to the east of the Sythas River.

A tall, conical heap of stones was excavated in 1906 to the east of this river, at the western edge of the forest of Moungostos. The conical heap was 20 m in diameter, 4 m in height, and consisted of rubble with scattered "Protocorinthian" sherds and fragments of ancient roof tiles.[52] Because the flat area where the stones were found is not rocky, the excavator, Andreas Skias, rightly postulated that the stones had been carried there on purpose, together with the ceramic fragments. According to Skias, this heap of stones was one of the horoi of the Sikyonians toward the Pelleneans. Skias gives no elevation for the stone pile, but presumably what he identified as a *soros* stood on the hill of Prophetes Elias of Moungostos (SP-14), at an elevation of 943 masl. Today, only a few of the stones remain on site; most of them were thrown down the precipitous western flank of Moungostos during the excavation. Recently, a water tank was placed at what had been the center of the mound, further obscuring the ancient remains (Fig. 1.8).

Although he did not visit them, Skias reported the existence of two similar *soroi,* one about 2 km to the north and the other to the south of Moungostos and east of the village of Velina. A possible candidate for the northern *soros* can be found on the summit of Zitouliaris (Ζητουλιάρης, 851 masl), a hill rising to the southwest of the village of Zemeno and opposite the hill of Tsouka. Here I observed a heap of stones, some of them scattered around the slopes of the hill (SP-13; Fig. 1.9). Only the foundations of this heap, consisting of loose rubble, are now visible. The small number of roof tiles in the vicinity, and the nature of the scattered stones, make it unlikely that the material belonged to a towerlike structure. Rather, we have here the remains of a *soros,* located approximately 1 km

48. See below, p. 65.

49. Dodwell 1819, pp. 297–298. Vasilika is the Medieval name of modern Vasiliko; see below, pp. 287–288.

50. Leake 1830, pp. 382–383.

51. Meyer 1939, p. 9.

52. Skias 1919, pp. 45–46. Skias did not illustrate any of the sherds, so it is perhaps unwise to draw chronological conclusions from his term "Protocorinthian."

Figure 1.8. Prophetes Elias of Moungostos (SP-14): the water tank at the center of the *soros* excavated by Skias, looking east

Figure 1.9. View from Zitouliaris of Zemeno (SP-13) toward Prophetes Elias of Moungostos, looking south-southwest; remains of the *soros* are in the foreground.

north-northeast of Prophetes Elias of Moungostos and within visual range of the *soros* excavated there. As for a *soros* to the south of Moungostos and east of the village of Velina, I have not been able it to locate it; if it did exist, the plateau of Velina would be a suitable area for its location, in alignment with the two *soroi* to the north. The hypothetical western border marked by these *soroi,* extending from the area of the village of Zemeno to the surroundings of Velina, would have left outside Sikyonian territory the large, mostly mountainous, area now shared by the villages of Stylia, Panariti, and Manna.

Before we proceed with interpreting the evidence, we should keep in mind that there is no guarantee that these horoi were set up in ancient times, which is to say that they could belong to any post-antique period and

could have been erected for any reason, political, economic, or otherwise. Yet, the practice of marking a city's territory by erecting piles of stones on conspicuous hills and ridges was quite common in antiquity. An inscription found at Corinth and dated to the Roman period refers to Sikyonian horoi, but the fragmentary text gives no details on their nature or location.[53] Heaps of stones used as boundary markers are reported in the ancient sources, and examples have been found in the border area of Hermione and Epidauros; in the associated inscription, dated to the mid-2nd century B.C., the horoi, specified as *boleoi lithoi,* delimit a common territory for the Hermionians and the Epidaurians: εἶναι ταύτην κοινὴν Ἑρμιονέων καὶ Ἐπιδαυρίων, | οὖσαν τῆς Διδυμίας κατὰ τοὺς ὅρους, οἵ εἰσιν βολεοὶ λίθοι κείμε|νοι ἀπὸ τῆς καλουμένης Φιλανορείας καὶ . . . .[54] Pausanias describes these specific βολεοὶ λίθων as σωροὶ λογάδων (2.36.3). Nine piles of rough stones in situ have been identified extending for a distance of 3.5 km and having an average diameter of 7 m.[55] Likewise, the ὅροι Σικυῶνος mentioned in the inscription from Corinth could refer to heaps of stones like the ones at Moungostos and Zitouliaris. Heaps of unhewn stones have also been recognized on the ridge of Mount Parnon in Lakonia, and identified with the Ἑρμαῖ λίθου, which were seen by Pausanias ἐπὶ τοῦ Πάρνωνος, and which constituted the horoi between the Lakonians, Argives, and Tegeans; the three *soroi* were round, 4.55 m in diameter and 1.2–1.5 m in height, and formed a triangle, which was presumably the common territory between the three *homoroi* states.[56]

But did the Sikyonian *soroi* define the same borderline as the Sythas River, or a different one? And if we assume that they did define the same boundary as the deep river gully, why were they necessary, and when were they set up? It is immediately apparent that the two preserved *soroi* were set up some 3 km to the east of the river course. One possibility is that they confined Sikyonia to the east of the Sythas, thus representing a contraction of the territory at some point in history. Accordingly, the narrow ridge between the gully of Sythas to the west and that of Katharoneri to the east, marked on the 1:50,000 topographic map as Rachi Breseri (Ράχη Μπρέσερη), would have constituted the remaining border toward the gulf (Fig. 1.10). A second possibility is that they were somehow associated with the Sythas River. Setting of boundary stelai in conjunction with a river is attested for Asia Minor. In a border settlement between Magnesia and Miletos of the 180s B.C., a river was set as the boundary between the two cities; in addition, the treaty provided for the setting of stones and stelai along both banks of the river:

> τῆς δὲ χώρ[ας | τ]ῆς περαίας, ὑπὲρ ἧς διεφέροντο Μάγνητες καὶ Μιλήσιο̣[ι, ὅλ̣ρ]ον ὑπάρχειν αὐτοῖς τὸν Ὕβανδον ποταμὸν καὶ ἀπὸ το̣[ῦ | πο]ταμοῦ τούτου τὴμ μὲν ὑπεράνω πᾶσαν εἶναι Μαγνήτων, τὴ[ν δ' | ἀπ]οκάτω πᾶσαν ἕως θαλάσσης εἶναι Μιλησίων· καταπῆ[ξαι | δὲ] πέτρους καὶ στῆσαι ἐπ' αὐτῷ̣ν στήλας ἑκατέρους παρὰ [τὸ ῥεῖ̣θρο]ν̣ τοῦ ποταμοῦ ἐν τοῖς αὐτῶν μέρεσιν, καθότι ἐπέγνωσαν | [το]ὺς τόπους παραγενόμενοι οἱ ἀπεσταλμένοι ἐπὶ τὰς συνλύ[σεις | πρ]εσβευταί, καὶ εἶναι αὐτοῖς ὅρον διὰ παντὸς τό τε νῦν ὑπάρχ[ον] | [ῥεῖ]θρον τοῦ ποταμοῦ τοῦ Ὑβά̣ν̣δο̣υ̣ καὶ τοὺς παρατεθέντας π[έτ]ι̣ρ̣υς καὶ τὰς ἐπ' αὐτῶν στήλας.[57]

53. *Corinth* VIII.3, pp. 36–37, no. 65, lines 6–7: ὅροι Σικυ̣ών̣ | [- - -]. The inscription was found east of Temple Hill and contains at least one poem to a hero, possibly Herakles: Powell 1903, p. 58, n. 36; *Corinth* VIII.1, pp. 155–156, no. 155.

54. *SEG* XI 377, lines 15–17. See the latest discussion of this border dispute in Jameson, Runnels, and van Andel 1994, pp. 596–606; on the meaning of *boleoi* and for the relevant bibliography, see Robert 1963, pp. 33–34.

55. Jameson, Runnels, and van Andel 1994, p. 600.

56. Paus. 2.38.7. The identification was made first by early travelers and then endorsed by Rhomaios (1908), who excavated the piles in the beginning of the century. Not everybody, though, has accepted this identification, and the cairns in question have disappeared in recent years. See the discussion in *SAGT* III, pp. 127–134; *SAGT* VI, pp. 105–106, with pls. 167, 168; also Phaklaris 1990, pp. 193–195.

57. *Syll.*[3] 588, lines 28–38 = Ager 1996, pp. 292–296, no. 109.

Figure 1.10. View from Zitouliaris of Zemeno (SP-13) toward the Sythas River, looking northwest: the hill of Tsouka (T) in the foreground; the characteristic badlands of the area of Pellene in the background; to the right is the Breseri ridge (B), which connects Zemeno with Xylokastro.

Similarly, the heaps of stones observed at Moungostos and Zitouliaris could have marked the western borders of Sikyonia together with the Sythas River. Placed where they were, they would have been conspicuous to all, but would not have been so if they were placed lower down and closer to the course of the river. In addition, Pausanias refers to horoi of the Pelleneans toward the Sikyonians by the Sythas River.[58] It is conceivable that these horoi, perhaps heaps of stones as well, stood above the western bank of the river, corresponding to the Sikyonian horoi on the east.[59]

Against this interpretation is the distance between the bed of the Sythas and the actual location of the horoi, which could hardly be described as παρὰ τὸ ῥεῖθρον. To return to the case of the Hermionid, the *boleoi lithoi* there, which are uniformly placed on the highest points in the horizon, delimited a common territory of almost 30 km^2.[60] In our case, too, the course of the Sythas and its sloping terrain, perhaps on both sides, could have been the common territory between Pellene and Sikyon. A low estimate for the area of the κοινὴ χώρα on the Sikyonian side would be about 20 km^2.

In estimating the date when the boundary stones were set up, we have only historical considerations to guide us. Since such horoi were meant to secure recognition and stability of the borders, one would expect them to have been built in periods of tension between the two states. This would have been the period of the Sikyonian tyranny (mid-7th to mid-6th century), when Orthagoras and Kleisthenes were engaged in a long war against Pellene that may have ended, as we have seen, with the Sikyonian annexation of Donoussa. With the gradual decline of Sikyon in the post-Archaic era and the parallel rise of Achaia, it is very unlikely that Sikyon would have been able to hold on to Donoussa for very long. The state may well have felt compelled to set up these boundary markers in order to protect its retrenched borders.

58. Paus. 7.27.12; for the text of this passage, see above, p. 16.

59. On the practice of double boundary marking *(bornage),* see Sartre 1979, p. 217.

60. Jameson, Runnels, and van Andel 1994, p. 603.

Southern Border

The definition of the Sikyonian boundary to the south, that is, toward Nemea, Phlious, and Stymphalos, is even more elusive. For one thing, we do not have an ancient description, as such, of the southern borders of Sikyonia, or of the northern borderline of the neighboring states. Xenophon is the only author to refer to the Phliasian horoi toward the Sikyonians, in the context of the hostilities between the two states shortly after Epaminondas's third descent to the Peloponnese (366 B.C.). The Phliasians complained to the Athenian general Chares because the Sikyonians were fortifying a place on the Phliasian border: χωρίον γὰρ ἐπὶ τοῖς ὅροις ἡμῖν οἱ Σικυώνιοι τειχίζουσιν (*Hell.* 7.2.20). This χωρίον was Thyamia, and it was indeed captured by the Phliasians with Athenian help; its fortification continued for some time until the Phliasians agreed to abandon it in accordance with the peace treaty signed with Thebes probably in 365 B.C.[61] Ludwig Ross placed the fort on Evangelistria (DS-1), the highest peak of the Trikaranon range to the southwest of the village of Stimanga, and his identification has since been accepted by the majority of scholars involved with this part of the Corinthia.[62] The fact that the Phliasians vehemently opposed the enemy's fortification of a place on their own borders, and that immediately after the conclusion of peace they withdrew from it, suggests that neither of the two states had exclusive rights to the summit of Evangelistria; in other words, the border seems to have been common land, as in the case of the horoi on Mount Parnon in Lakonia or of Panakton between Attica and Boiotia.[63]

Thyamia is the only securely established point along the southern border of Sikyonia (Fig. 1.11). The remainder of the borderline is a matter of speculation. In the area east of Thyamia and as far as the Nemea River, a distance of 3 km, Sikyon bordered the valley of Nemea. The valley of the Sanctuary of Zeus is separated from Phlious by the southernmost runners of Trikaranon. Control of the sanctuary and its games, instituted in 573 B.C., was originally in the hands of Kleonai before passing to Argos.[64] If control of the sanctuary suggests ownership of the land, then we can argue

61. On this fort and its history, see below, pp. 216–218. On the dispute itself, see Piccirilli 1973, pp. 183–185.

62. Ross 1841, p. 41; for further bibliography, see the entry for this site in Appendix I. The choice of the highest summit in the range as a boundary provides further evidence for the impact of the landscape on boundary delineations.

63. οἱ μὲν δὴ Φλειάσιοι, ἐπεὶ οὕτως ἡ ξύμβασις ἐγένετο, εὐθὺς ἀπῆλθον ἐκ τῆς Θυαμίας (Xen. *Hell.* 7.4.11). Regarding Panakton, which was disputed between the Athenians and Boiotians during the Peloponnesian War, Thucydides (5.42.1) writes that according to ancient oaths the hill was to be grazed in common (κοινῇ νέμειν) by the two contestants. On this issue, see Ober 1995, p. 113 (with bibliography).

64. On the control of the Nemean Games, see Miller 1982, pp. 106–107; Perlman 2000, pp. 131–152. Excavations at Nemea have shown that the games were not held on the site from the late 5th century until the 330s: Miller 1980, p. 186. At that time the games returned to Nemea but Argos probably still kept control of them, and in the first half of the 3rd century the Argives brought the games to Argos again. Perlman, based on literary sources, doubts that the games were transferred to Argos at the end of the 5th century.

Figure 1.11. The suggested southern borders of Sikyon as seen from the heights of the village of Kephalari, looking east: Vesiza (V), Kokkinovrachos (K), Thyamia (T), and Gavrias (G)

that the valley of the Sanctuary of Zeus belonged to Kleonai, at least from the early 6th century. Plutarch mentions a dispute between the Sikyonians and the Kleonaians over the nationality of a Pythian victor, and vaguely places the event in the early 7th century:

> Σικυωνίοις δὲ καὶ διαρρήδην ὁ Θεὸς προεῖπεν μαστιγονόμων δεῖσθαι τὴν πόλιν, ὅτε Τελητίαν παῖδα στεφανούμενον ἐν Πυθίοις ἀφαιρούμενοι Κλεωναίων ὡς ἴδιον πολίτην διέσπασαν.[65]

If we accept that Sikyon and Kleonai had common borders in the 6th century, we can interpret Plutarch's passage as an indication of a boundary dispute between the two states a century earlier, perhaps involving the area around Chalki, a village on the eastern bank of the Nemea River, to the east of Evangelistria.[66]

Sikyonian ownership of the site of Titane (HS-67), to the west of Thyamia and across the valley of the Asopos, suggests that the border between Phliasia and Sikyonia ran to the south of this sanctuary.[67] To the west of the village of Bozika, the hill of Kokkinovrachos rises to an elevation of 1,009 masl. The summit preserves a rectangular tower, which

65. Plut. *Mor.* 553A–B. Plutarch places the event in the period before the reign of Orthagoras.

66. This interpretation was first advanced by Griffin (1982, p. 38, n. 20), though she did not discuss the topography. She interpreted the passage as referring to a victory in athletic contests, and since athletic contests were not introduced in the Pythia before the First Sacred War, she argued that the incident is anachronistic and must be assigned to the 6th century instead. In fact, the chronological discrepancy of this passage was first pointed out by Parke and Wormell (1956, vol. 1, p. 117), based on the fact that the Pythian games in the 7th century did not include any events for boys (παῖδας).

67. On Titane, see below, pp. 389–398.

is surrounded by a fortification wall with six towers spaced at intervals (DS-4).[68] Based on the location of this fort and its substantial size, I interpet this structure as a border fort of Sikyonia toward Phliasia to the southeast and Stymphalia to the southwest. The actual border between the three states must have been located to the south of Kokkinovrachos, perhaps around the villages of Asprokampos and Kastraki, or on Gavrias, which is one of the two highest mountains east of Mount Kyllene (along with Vesiza) and directly overlooks the Phliasian plain.[69] The fact that the summit of Gavrias, rising 1,208 masl, has no traces of ancient fortifications favors the latter possibility.[70]

In the area west of Kokkinovrachos and Gavrias to Mount Kyllene, Sikyon bordered Stymphalos, but the precise boundary line is not known. Two questions are central here: (1) was the plain of Kaisari part of Sikyonian territory;[71] and (2) did Sikyonia stretch as far as the Sythas River, thus occupying the forested area defined by the villages of Manna, Kaisari, Velina, and Stylia? On the basis of the natural resemblance between the plain of Kaisari and the plain of Stymphalos to the south, Ernst Curtius assigned them both to Arkadia.[72] However, as Lucien Lerat and Kendrick Pritchett have pointed out, natural features do not always determine political boundaries.[73] If we consider Kokkinovrachos to be a border fort of Sikyonia, it would be reasonable to think that the *kampos* in question, which opens to the north of Kokkinovrachos and closer to Sikyon, was within Sikyonian territory. On the other hand, boundary lines were not

68. For a detailed discussion of this fort, see below, pp. 234–240.

69. The suggestion that Gavrias was the τριεθνές was first made by Curtius (1851–1852, vol. 2, p. 482): "Dem Berge Spiria, welcher auf dieser Thalseite, Phlius näher als Sikyon, die Gränze bildete, entspricht auf dem jenseitigen Ufer der Besitza, dessen Abhänge aber den Sikyoniern gehörthen. Wahrscheinlich reichte das Gebiet derselben bis an den Gaurias, so dass hier die Gränzen von Stymphalos, Phlius und Sikyon zusammenstiessen." Russell (1924, p. 43), following Curtius, believes that the western boundary of Phliasia lies along Gavrias. Similarly, Jost (1985, p. 100) considers Gavrias the boundary of Stymphalia toward the east. The close proximity of Phlious to the southern Sikyonian border is mentioned by a scholiast to Apollonios Rhodios: κεῖται δὲ ἡ Φλιοῦς ἐπὶ ὅροις τῆς Σικυῶνος (schol. Ap. Rhod. 1.116 [p. 16 Wendel]). In modern times, during the administrative organization of the independent Greek state in 1840, it was the watershed of the Vesiza range that determined the boundary between the demes of Sikyon and Nea Nemea. Accordingly, the villages of Kryoneri (Mantzani), Paradeisi, and Gonoussa (Liopesi) were assigned to Sikyon, while Titane (Voivoda), Bozika, and Kastraki (Mazi) were part of Nea Nemea (Kousoulos 1971, pp. 407–408).

70. A rubble wall runs along the western side of the summit of Gavrias, but it is mostly likely Medieval in date; see below, pp. 264–265. Rousset (1994, pp. 121–122) argues that in inscriptions dealing with city borders *phrouria* are never mentioned as being along the borders, but are slightly set back.

71. This question was first formulated by Bobrik (1839, p. 8), who tentatively attributed the Kaisari plain to Sikyonia, but with no supporting arguments.

72. Curtius 1851–1852, vol. 2, p. 488: "Es [the plain of Kaisari] ist die Vorhalle des grösseren Seethales [of Stymphalos] und wie dieses an seiner tiefsten Stelle mit stehendem Wasser bedeckt ohne sichtbaren Abfluss. Es ist wahrscheinlich, das dies seiner Natur nach zu Arkadien gehörige Thal auch politisch mit demselben verbunden war." Lolling (1889, p. 176) discusses the plain of Kaisari in his paragraph on Stymphalia, and says that the northern exit of the plain was separated from Sikyon only by low hills. Pharaklas (1971, p. 2) drew the western "natural" boundaries of Sikyonia along Gavrias, Vesiza, and Tsouka of Zemeno (from south to north), thus leaving the valley of Kaisari and the mountainous area to the west of it outside Sikyonian territory. He offers no discussion of the ownership of the plain of Kaisari, and I suspect that his reason for defining the western Sikyonian frontier east of this plain is his belief that Katharoneri is the ancient Sythas River.

73. Lerat 1952, pp. 76–77; endorsed by Pritchett, *SAGT* VII, pp. 49–50; *SAGT* VIII, p. 12. In the case of the Lokrian boundary with the Aitolians, for example, the boundary line was not along the river Mornos, but must have been further south and closer to the Corinthian Gulf, confining the territory of Lokris to a coastal stretch of only seven or eight kilometers. See also Rousset 1994, p. 119, n. 86.

necessarily straight, and may well have presented projections and recesses. To the west of Kokkinovrachos and along the *kampos,* I recorded several structural remains.

On a hill called Kastro, rising to 928 masl between the villages of Kephalari and Asprokampos, Ioannis Peppas reported traces of a circular rubble wall (SP-18).[74] The summit is now densely covered with prickly oaks that prohibit thorough investigation. A thick layer of rubble is, however, visible around the top, showing clear signs of recent illegal digging on the site. Nearby I observed three scattered rectangular blocks of limestone with swallowtail and Γ-shaped clamp cuttings on their short sides, and some roof-tile fragments. Very few instances of horizontal fastening have been observed in the masonry of Greek military structures, particularly in the case of independent towers.[75] Therefore, these blocks and roof tiles must be assigned to a different type of structure, perhaps one of religious character—a peak sanctuary. Although more evidence is needed to establish the sacred character of the structure that stood on the Kastro, it is worth noting here that Arkadian mountain peaks were exceptionally well endowed with sanctuaries.[76] Some of them were associated with plains and valleys, some with main lines of communication, and others with disputed border areas.[77] Regarding Stymphalos, however, we have no textual reference to a sanctuary in the countryside and very little archaeological data.[78] The situation is different regarding Sikyonia, where we have some textual and physical evidence for sanctuaries in the *chora.* Most relevant to our discussion is the Sikyonian cult of Dionysos Ἀκρωρείτης, literally "of the mountain ridge," mentioned by Stephanos of Byzantion.[79] It is conceivable that a peak sanctuary was founded on the Kastro of Asprokampos, defining the Sikyonian ἄκρα toward Stymphalos.[80]

On the hillslope west of Kastro and above the village of Kephalari, no traces of ancient buildings have been found.[81] Remains of a fortification wall can be seen around the summit of a hill known as Goulas (DS-6), at the southern end of the plain of Kaisari, together with ancient tile fragments, broadly datable from the Archaic to the Hellenistic periods, and a few ashlar blocks scattered on its eastern side. Recent bulldozing of the top of the hill makes the interpretation of the remains even more difficult, but it is certain that a garrison stationed on that hill would have been able to control the two passes from the plain of Kaisari, to Stymphalos in the southwest and to

74. Peppas 1993, p. 183.

75. Lawrence (1979, p. 216), speaking of the wall of Athens: "Sockets for these and other types of clamps are commonly seen in temples, or even in civic buildings, but rarely in fortifications." The corner blocks of Classical towers 1, 2, 4, 5, and 7 at ancient Leukas show clamp and dowel cuttings, but perhaps all of these massive structures were part of large rural farms: Morris 2001, pp. 295, 310–314, 317–319, fig. 13.

76. For the wealth of Arkadian peak sanctuaries, see Jost 1994, p. 218.

77. Artemis and Poseidon, and sometimes Demeter, were often associated with plains liable to flooding, as at Stymphalos, Alea, Orchomenos, Kaphyai, and Pheneos (Jost 1994, p. 220). Cult places dotted along the main lines of communication have been observed at Thelpoussa (Jost 1994, p. 223). Locations for Artemis worship proliferated along the mountain borders of Arkadia and the Argolid (Schachter 1992, p. 55; de Polignac 1995, pp. 36–38); Apollo and Hermes were also worshipped on frontiers (Sartre 1979, pp. 221–223).

78. Jost 1985, p. 106.

79. Ἀκρώρεια: ἄκρον ὄρους: οὕτω δὲ παρὰ Σικυωνίοις ἐτιμᾶτο [ὁ Διόνυσος]· ἐκαλεῖτο δὲ παρὰ μὲν Σικυωνίοις Ἀκρωρείτης. . . .

80. On border sanctuaries, see Rousset 1994, pp. 119–121. In addition, de Polignac (1995, pp. 37–38) points to cases where a cult was shared by two (neighboring) states.

81. The hill of Dyo Vouna, to the south of Kephalari, shows scattered rubble from a modern sheepfold.

Phlious in the southeast.[82] The ancient fort of Agios Vlasios (DS-9), 1,600 m to the northeast of Goulas, allowed its garrison a panoramic view of the plain, but not a visual link with Goulas. A circular tower (DS-16) standing on a low hill between the two forts and above the road to Stymphalos served this very purpose, since from it one could see both Goulas and Agios Vlasios.[83] Finally, the foundations of a square tower, 9.5 m on a side, are preserved on the summit of Thekriza (DS-10), a hill at the northern end of the plain with a commanding view of the plain below.[84] It is possible that this tower marked the southern limits of Sikyonian territory, thus leaving the plain of Kaisari to the Stymphalians. Towers built near state borders are known from other areas in Greece, although the "nationality" of many of these towers has not been established.[85] Moreover, one could associate this tower with the two heaps of stones to the north, and draw the southwestern borders of Sikyonia along the line of Moungostos. In this case, the entire area to the west of the plain of Kaisari, and as far as the Sythas River, would be outside Sikyonian territory. Yet, there is some evidence suggesting that the tower of Thekriza was not built on the borders of the state.

Possession of the plain of Kaisari is somewhat connected with possession of the mountainous area between the plain and the Sythas River. If we suppose that the plain was Sikyonian and that the Sythas River was the boundary between Achaia and Sikyon all the way to Kyllene, then we must assign the forested area to the west of the plain to Sikyonia as well. This would explain the presence of Late Classical or Hellenistic ashlar blocks and roof tiles at the site of Vourlies (SP-10), to the southwest of the village of Manna. The remains may belong to a border watch/signal tower of the Sikyonians with an unimpeded view of the Sythas gully and Pellene. On the other hand, Curtius and Kiepert both drew the area west of the plain of Kaisari as part of Achaia, perhaps influenced by the organization of the Greek provinces earlier in the 19th century.[86]

The archaeological and epigraphical evidence from this area includes two segments of ancient road, a polygonal terrace wall, fragments from a Doric temple, and two inscriptions. The first inscription, alleged to have been found at Baltiza, above the village of Klimenti, provides perhaps the strongest evidence for assigning the plain and the highlands to the west to Sikyon. It is a bronze tablet relating in meter the story of Iphinoe, one of the daughters of Proitos, who were cured by Melampous.[87] This 4th-century B.C. inscription is significant for our purpose because, according to one tradition, the Proitidai were healed of their madness at Sikyon. The inscription claims to mark the place where Melampous hid the drugs used for the cure; if the area of Baltiza was that place, then Baltiza lay within the political boundaries of Sikyon. The second inscription, located above the village of Manna, contains the word "public" and can be dated to the 4th century B.C. In my discussion of this inscription in Appendix IV, I argue that it must be connected to the forest area between the Sythas River valley and the *kampos* of Kaiseri and its exploitation for lumber.[88] Although, the ownership of this public land is not securely established, its location to the east of the Sythas River valley favors its connection to Sikyonia. Thus, the ancient road located near the village of Stylia may be connected with the transportation of wood supplies to Sikyon from the southwestern fringes of its territory.[89]

82. See below, p. 240.

83. See below, pp. 240–244.

84. On this tower, see below, pp. 244–246.

85. A good example of a border tower is the one at the village of Rhakai in Boiotia. Camp (1991, pp. 193–197) convincingly showed that the tower was Boiotian and stood on the border between Koroneia and Livadia.

86. Curtius 1851–1852, vol. 2, pl. XIV; Kiepert 1879. In 1840 this mountainous area, along with the villages of Klimenti, Panariti, Markasi (later Manna), and Velina, was designated as the "deme of Pellene" (Kousoulos 1971, p. 408). Doing so, however, was historically inaccurate, as Miliarakis (1886, p. 116) first observed, since Pellene lies above the west bank of the Sythas River.

87. For the text and a translation of this inscription, see below, pp. 403–404.

88. See Appendix IV, pp. 585–588.

89. On the remains of this road (R11 on Map 4), see below, pp. 163–166.

Estimated Size of Sikyonian Territory

First, to summarize what I propose concerning the frontiers of the Sikyonian state: the eastern borders, toward the Corinthia, are securely established since they followed the course of the Nemea River probably as far south as the area of the village of Chalki. The western borders, toward Pellene, were determined by the Sythas River, fairly securely identified with the river of Xylokastro. The two heaps of stones found 3 km to the east of that river either could represent a second (retracted) boundary line or could define, together with possible stone markers above the western bank of the river, a common land between the two states. The southern borders, toward Nemea, Phliasia, and Stymphalia, stretched from the summit of Evangelistria to the pass between Gavrias and Kokkinovrachos. From here the line could extend either (1) northward along the ridge of Vesiza to Moungostos and the Sythas River, or (2) westward to the Kastro of Asprokampos and along the foothills of Kyllene to the Sythas River, thus incorporating the plain of Kaisari and the adjacent highland to the west. In the former case, the total planimetric area of Sikyonia equals 285 km^2, in the latter, 364 km^2.[90] If we associate the *soroi* between the plain of Kaisari and Zemeno with the (western) boundary line along Vesiza range, then the total area is limited to 270 km^2.[91] Based on the evidence presented above, I am inclined toward the higher figure for the area of the territory (360 km^2); I assign the plain of Kaisari to Sikyon, and consider the Sythas River to have served as a borderline as far as the hill of Isomata, to the south of Manna. If we add to this planimetric area the uncalculated area of the hills and mountain slopes (represented on the maps by contour lines), then we arrive at 372 km^2 as the total surface area of the Sikyonian territory. Compared with its neighboring states, Sikyon possessed the second largest territory, yet it was still considerably smaller than the Corinthia.[92]

Medieval and Ottoman Periods

The structures of the ancient polis system collapsed with the fall of the Roman empire in the late 4th century, and Sikyon became part of larger administrative units—initially, the province of Achaia, and later the *theme* of Peloponnesos, with Corinth as its capital.[93] With the coming of the

90. Beloch (1906, p. 57) gave an estimate of 360 km^2 for the Sikyonian territory, while Cavaignac (1912, p. 274) proposed 400 km^2. Adcock (*CAH* 3, p. 698) appears to have followed Beloch. Beloch's estimate is quite close to the larger of the two figures I propose here. Hyginus, a Roman geographer of ca. A.D. 100, lists Sikyon among the large islands ("insulae maximae") and calculates its perimeter to be 1,200 stadia: "Sicyon, ager bonus, circuitu stadia mille centum" (*Fab.* 276.4). This number, which represents a minimum of 200 km, is totally fictional since the actual perimeter of the "large version" of Sikyonia can hardly exceed 78 km.

91. Pharaklas (1971, p. 3) also gives 270 km^2 as the post-Hellenistic Sikyonian territory, defined to the west by the Katharoneri River. The pre-Hellenistic area would amount to 315 km^2, because of the incorporation of Donoussa. There is no indication, however, that Donoussa remained Sikyonian throughout the Classical period. I consider both the annexation of Donoussa (in the tyrannic period) and of the entire Corinthian plain (in the post-Achaian War era) as exceptional events, with only temporary consequences on the territory of Sikyon.

92. Size estimates for neighboring territories: Corinth: 880 km^2 (Beloch 1886, p. 115); Phlious: 180 km^2 (Beloch 1886, p. 115); Corinth and Kleonai together: ca. 1,000 km^2 (Sakellariou and Pharaklas 1971, p. 3). No figures are available for Stymphalos or Pellene, but their territories were manifestly smaller than that of Sikyon.

93. See below, pp. 81–82.

Franks in the early 13th century, the Corinthia constituted a separate *castellania,* which included part of the modern Argolid as well.[94] The Ottomans, in their turn, adopted the Franco-Venetian administrative division with only minor changes, as shown in an Ottoman register of 1668–1669.[95] According to this register, the *sancak* of Morea was divided into 22 *kaza,* among which was Corinth *(Kördus).*[96] When the Venetians again became masters of the peninsula in the late 17th century they converted the *kaza* into *territorii.* The main difference is that the *sancak* of Morea was now divided into four provinces *(provincie),* one being Romania. The province of Romania included the *territorii* of Nauplion *(Napoli),* which served as its capital, Corinth *(Corinto),* Tripolis *(Tripolizza),* Argos, and Tsakonia *(S. Pietro di Zacugna).*[97] The *territorio* of Corinth included 113 villages that spread beyond the boundaries of modern Corinthia into the Argolid.[98] The extent of this territory (also known as *Corintia* or *Saccania*) is shown *grosso modo* on several maps of the early 18th century.[99] It comprised, in ancient terms, the *chorai* of Corinth, Sikyon, Pellene, Pheneos, Stymphalos, Epidauros, Troizen, and Megara.[100] When the Ottomans returned to the Morea, they reestablished their previous administrative divisions, but the geographical boundaries of the *territorii,* now *kaza,* remained unaltered.

GEOLOGY, CLIMATE, AND WATER SOURCES

Geology

Neogene extension—that is, crustal extension of the later Tertiary period, which produced grabens and horsts including the Gulf of Corinth graben—has affected the northeastern part of the Peloponnese where the territory of Sikyon extends.[101] The great fertility of the coastal plain is due to alluvial deposits that derive from the weathering of the neighboring rocks and are transported by the rivers and torrents. Early travelers through this plain were struck by the characteristic whitish color of the soil.[102] These alluvial deposits, which accumulated over two great ages and which Claudio Vita-Finzi labeled Older and Younger Fills, are also responsible for the

94. On the geographical extent of the diocese and *castellania* of Corinth, see Bon 1969, pp. 479–486; Kordosis 1981, p. 32.

95. See the comparative table in Panagiotopoulos 1985, pp. 160–162.

96. Stojkov 1970, pp. 215–216.

97. Panagiotopoulos 1985, pp. 162–165. The territory of Corinth included the coast opposite the island of Poros *(Porto Porro).*

98. For a list of the *ville*, see Pacifico 1704, pp. 118–119.

99. See Zacharakis 1982, pls. 136 (by J. Danckerts), 155 (by N. de Fer), 173 (by J. B. Homman), 448 (by M. Seutter), 477 (by G. and L. Valck), 484 (by N. Visscher), 486 (by C. Weigel), 494 (by F. de Wit).

100. Sakellariou 1939, pp. 99–103.

101. Higgins and Higgins 1996, p. 69. In my study of the geology of this region, I used the following sheets of the Hellenic Institute of Geology and Mineral Exploration (IGME), scale 1:50,000: Korinthos (1971), Nemea (1970), and Xylokastro (1989).

102. "It is composed of a white argillaceous earth, which is is extremely slippery after rain, and our baggage horses were continually falling" (Dodwell 1819, p. 293). Philippson (1892, pp. 118–119) describes it as "ein weisslicher Mergel."

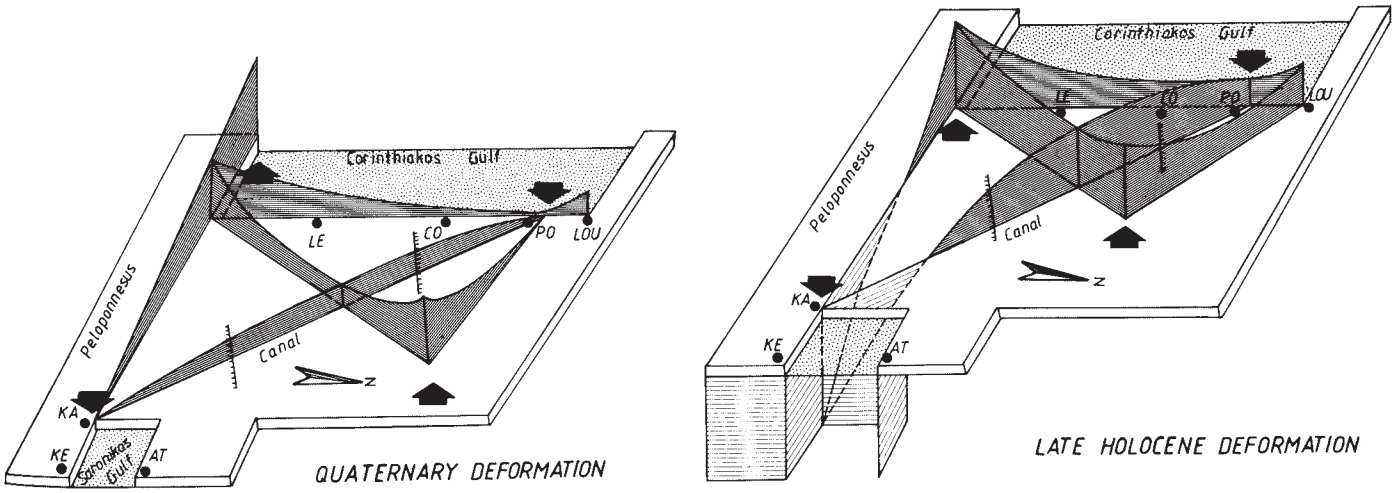

Figure 1.12. Quasi-perspective block diagram of the Isthmus deformation. Arrows indicate torsional deformation: Le = Lechaion, Co = Corinth, Lou = Loutraki, Ka = Kalamaki.
Mariolakos and Stiros 1987, p. 227, fig. 4

progressive silting of the plain. Accumulations of the Younger Fill since the Classical period range between one and three meters in depth, depending on where one stands in the plain.[103] The phenomenon is common in sites located in a plain and in close proximity to hills and torrential rivers.[104]

Another phenomenon that affected the shape of the coastal zone of Sikyonia, and of the northern Peloponnese in general, is the uplift of the northern half of the peninsula since antiquity. This theory, proposed by Pritchett in 1965, has received closer attention from geologists in recent years.[105] Research based on geomorphological, marine biological, and archaeological data points to a Quaternary deformation of the northern Peloponnese, understood as an arc-type uplift (Fig. 1.12).[106] As a result of this uplift, the southern coast of the Corinthian Gulf is emerging, while the northern one is submerging. Thus, the Corinthian deformation is represented as two antithetic folds, a bulge to the south and a depression to the north. The middle of the coast experiences the maximum amplitude of this motion, and marine Pleistocene strata have been found in this area at a height of 1,800 masl.[107] This conclusion has been confirmed by examining the sites of the harbors of ancient Lechaion and Aigeira, to the east

103. My estimate of the thickness of the alluviation is based on the depth of fill overlying (1) an ancient rectangular building, recently excavated at the upper (southern) reaches of the plain near the church of Agios Nikolaos (unpublished); and (2) a funerary monument, located lower in the plain, at the intersection of the highway to Patras with the road connecting Vasiliko to Kiato. The latter monument is part of the large cemetery of Chtiri, which was in use from the 6th century B.C. to the 1st century A.D., and which was excavated in 1966 and again from 1976 to 1979. It is worth mentioning here that the excavator, Krystalli-Votsi, fails to give the depth of the graves in any of her brief reports. On Vita-Finzi's fills, see Grove and Rackham 2001, pp. 290–291 and 305–311.

104. Most characteristic is the plain of the panhellenic sanctuary at Olympia, which extends below the hill of Kronos and is bounded by the Alpheios and Kladeos rivers. There, the clay that was swept down from the Kroneion and the overflowing of the Kladeos formed a deposit over the ancient buildings of an average depth of six meters: *Olympia* II, p. 64, fig. 28, p. 83, fig. 39 (track of the stadium, Leonidaion). Pritchett devoted part of his introduction to *SAGT* VIII (pp. xiv–xxi) to the heavy alluviation in the plains, citing examples from many parts of Greece including the plains of Amphilochian Argos, Arkadian Orchomenos, and Marathon; cf. Grove and Rackham 2001, pp. 291–295.

105. *SAGT* I, pp. 12–13; Vita-Finzi 1978, p. 55; Mariolakos and Stiros 1987; Stiros 1988.

106. The uplift is believed to have extended to the peninsula's southern end, although with a much smaller amplitude: the Corinthian uplift is 1,800 m versus 800 m for the central Peloponnese (Stiros 1988, p. 204).

107. Mariolakos and Stiros 1987, p. 227; Papageorgiou et al. 1993, p. 279.

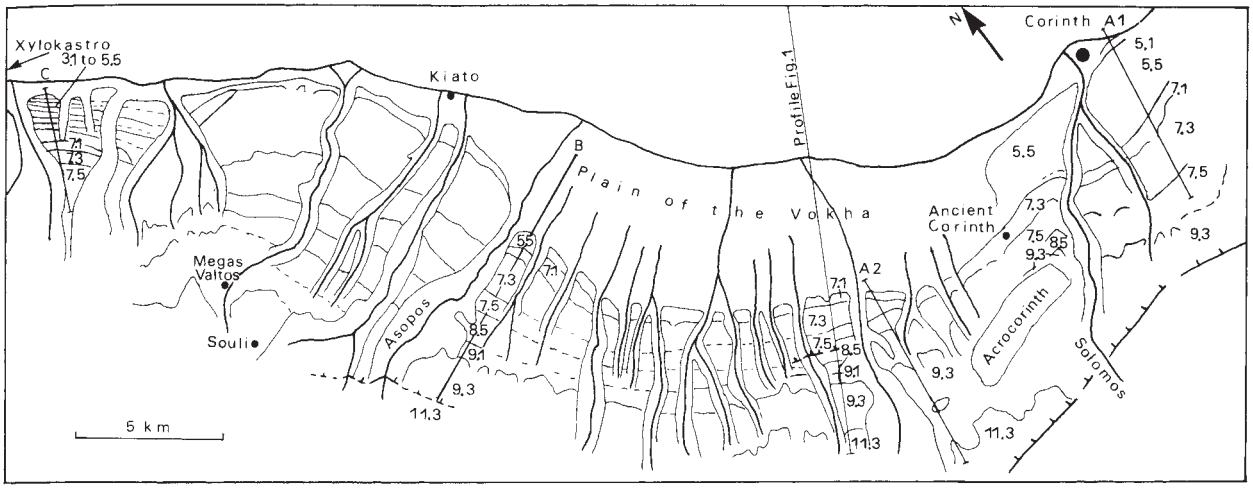

Figure 1.13. Morpho-stratigraphic map of the principal marine terraces between Corinth and Xylokastro.
Keraudren and Sorel 1987, p. 101, fig. 2

and west of Sikyon, respectively.[108] At Lechaion, lithophaga mollusks are exposed on the walls of a channel connecting the open sea with the inner basin of the harbor, at a height of ca. 1.1 m above the present sea level.[109] At Mavra Litharia, the harbor of Aigeira, marine conglomerates containing pottery fragments were found up to a height of 2 m above the water. These conglomerates must have been formed at the bottom of the harbor, during or even after its period of use; in other words, the ground has risen at least 2 m in about 2,000 years.[110] The rate of uplift was not steady over time, but was caused by a series of violent earthquakes, a not uncommon occurrence in this tectonically active area.[111] Lakis Papaphotiou has gathered references to 50 earthquakes that may have affected the Corinthian Gulf since antiquity.[112] Sikyon is explicitly mentioned in connection with the earthquakes of 303 B.C. and A.D. 142–144; the latter quake nearly depopulated the city, according to Pausanias (2.7.1).[113]

Seismic uplift is thought to be responsible for the presence of older fossiliferous rocks at the entrance of the harbor of Lechaion, tentatively dated between 500 and 200 B.C.[114] Remains of vermetid shells at the harbor of Aigeira, lying 1 m above present sea level and dated to ca. A.D. 1000–1200, correspond to an episodic uplift of the area at that time.[115] If we take into consideration that the Corinthian uplift reaches 2 m (maximum value) around Aigeira, that it equals 1 m at Lechaion, and that it dies out toward the Isthmus, we could expect the uplift of the Sikyonian coast to have been close to 1.5 m over the past 2,000 years. No estimates have yet been made concerning the effect of such an uplift on the ancient coastline, in particular, how far inland the water would have come in antiquity as compared to the present day.

Seismic uplifts in the Quaternary period may also account for a number of marine terraces in the northern Peloponnese. Twenty such terraces have been recognized between Xylokastro and Corinth, climbing westward regularly from the low area of the Isthmus and resembling a large staircase (Figs. 1.13, 1.14).[116] The inhabitants of the northern Peloponnese often refer to these formations as πατήματα, literally "steps." A zone ca. 3 km wide, extending from the Nemea River to the area of Megali Valtsa and including the plateau of Sikyon, is characterized by a layer of consolidated

108. For geological examinations of these two harbors, see Papageorgiou et al. 1993, Papageorgiou and Stiros 1996, and Stiros et al. 1996; cf. Papaphotiou 2002, pp. 280–304.

109. Mariolakos and Stiros 1987, p. 227; Stiros et al. 1996, p. 256.

110. Papageorgiou et al. 1993, pp. 277–278.

111. Papageorgiou et al. 1993, p. 280; for a discussion of earthquakes in Greece since antiquity, see Papazachou and Papazachou 1989.

112. Papaphotiou 2002, pp. 166–272.

113. See also Papaphotiou 2002, pp. 181–182 and 196–197.

114. These dates are based on radiometric data; Stiros et al. 1996, p. 259.

115. The date was established by radiocarbon analysis of a sample of a fossil *Dendropoma:* Papageorgiou and Stiros 1996, pp. 212–213; Stiros 2001.

116. Keraudren and Sorel 1987; Stiros et al. 1996, p. 255.

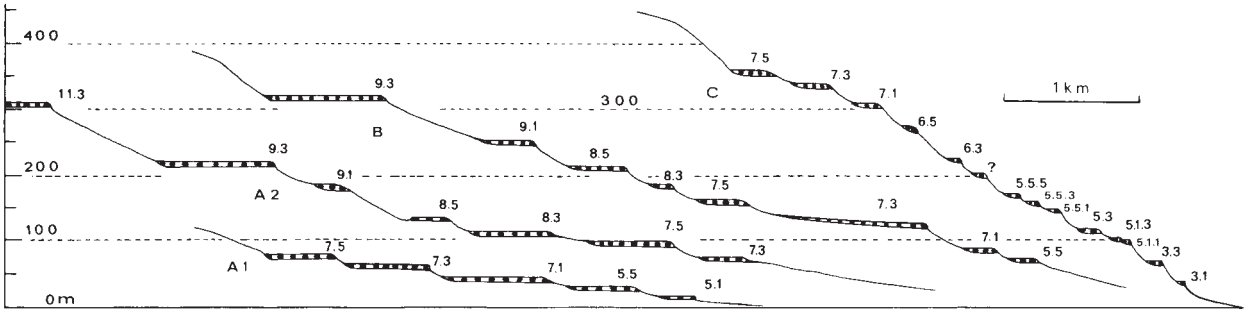

Figure 1.14. Morphological profiles of the principal marine terraces between Corinth and Xylokastro showing their numbers, homology, and westward altitudinal growth: A1 = Corinth section, C = Xylokastro section. Keraudren and Sorel 1987, p. 102, fig. 3

Quaternary conglomerates (Map 2). Further south, the mountainous area, which includes the Trikaranon and Vesiza ranges and extends as far as the Nemean and Phliasian valleys, consists of various types of marls, including sandstones and pebbly conglomerates. The peaks of these mountain ranges are covered with well-cemented conglomerates.[117]

The plain of Kaisari, just like the Corinthian plain to the north, is characterized by alluvial deposits. To the north of this plain, the area of Souli is characterized by marls, whereas Moungostos to the west is marked by cohesive conglomerates 150–200 m thick. Similar types of conglomerates dominate the plateau to the west of Kaisari, among the villages of Kephalari, Manna, Velina, Stylia, and Klimenti. However, the eastern slopes of this plateau (including the areas of Kaisari and Klimenti) consist mainly of marls.[118] The area centered around Megali Valtsa, and including Mikri Valtsa and Thalero to the north, Throphari, Zemeno, and Stylia to the west, and Lalioti to the northeast, is a distinct formation; it consists of an alternation of white to yellowish marls, gray sandy marls, sparse sand, and loose conglomerate intercalations of small thickness. To the north of the Megalos Valtos formations, the terraces of Melissi, Diminio, and Pasio are characterized by colluvial formations, that is, terra rossa and clay material originating from the weathering of the conglomerates. However, the scarps of these terraces are marly. Finally, the area delimited by Melissi, Zemeno, and Stylia in the east to the Sythas River in the west and beyond is mainly composed of sandy marls (called "of Rethi-Dendro").[119] This loose earth gave way to a number of landslides over the centuries, and led to the formation of very characteristic scarps, locally called ρίπες—the recognizable feature of badlands (see Fig. 1.10).[120]

The main geological features of the area of ancient Sikyon—namely, the alluviation of the plain, the uplift of the coast, its intensive seismic history, and the predominance of relatively soft stones—have a direct bearing on the preservation and identification of antiquities today, as I will show in subsequent chapters. The question of harbors and beaches also relates to the geology of the area. The present coastline of Sikyonia, from the Nemea River to Xylokastro, includes only one natural bay, that of the village of Sykia. Although the shape of the coast has been altered since antiquity, we can be fairly certain that there was no other natural bay closer to Sikyon. This forced the Sikyonians to create an artificial harbor between the Asopos and the Helisson rivers.[121] The construction of the harbor may well go back to the tyrannic period (mid-7th/early 6th century B.C.), since we know that

117. As correctly drawn by Philippson (1892, p. 117, fig. 15).

118. As was already quite accurately described by Philippson (1892, p. 121): "Am Ostrand des Plateaus steigen wir nur sehr wenig nach dem Dorf Klimenti hinab (973 m), welches ebenfalls wieder an der Grenze des Konglomerates gegen den darunter liegenden Mergel liegt."

119. The territory of ancient Pellene is almost entirely dominated by this type of soil.

120. Grove and Rackham (2001, pp. 283–284) noticed that badlands in the northern Peloponnese coincide with the Corinth fault zone.

121. The northern end of the breakwater of this harbor appears today as a conspicuous mound within the town of Kiato. I provide a description of this mound and discuss the topographical relationship of the harbor to the city and its acropolis in Chapter 5.

Kleisthenes and his fleet took part in the First Sacred War.[122] Due to the lack of bays along the coast, the beaches, which consist of small pebbles, form an essentially continuous line from the village of Vrachati in the east to Xylokastro in the west.

Climate

Climatic conditions in Sikyonia have not changed dramatically since antiquity, although considerable fluctuations on both a global and a local scale are attested through literary sources and modern scientific analysis.[123] Thus, we know that winters became progressively cooler from Classical to Late Roman times, a Medieval Warm period was succeeded by a Little Ice Age, and extreme events (deluges, cold, and drought) alternated between ca. 1200 and 1700.[124]

The present climate of Sikyonia is overall semiarid, but varies according to the seasons: from November to February it is subhumid, in March subarid, in April and October arid, and between May and September extremely arid. Also, in the coastal and low-elevation zones the climate is drier than in the western mountainous zones.[125] Total annual rainfall at the Sikyon weather station (150 masl) is 484 mm, at the Velo station (20 masl) 471.4 mm, and at the Chalki station (250 masl) 552.5 mm, whereas at Kephalari (760 masl) it is 936.3 mm (Table 1.1).[126] There is a clear division in terms of precipitation, and a definite correlation between elevation and rainfall. Furthermore, it has been estimated that rainfall increases by 40 mm for every 100 m in elevation. Thus, the western Corinthia, which contains higher elevations, experiences the maximum rainfall, whereas the eastern, lower part and the coastal zones experience the minimum.[127] Rainfall is distributed unevenly throughout the year; maximum precipitations are observed in the fall and winter months (from October to March), whereas June and July are the driest months of the year.[128] Extreme weather conditions are rare in Sikyonia. Between 1981 and 1987, the Sikyon station recorded only two days of snow per year, seven days of thunder, and zero days of frost.

The average temperature taken at the Sikyon and Velo stations was 17.5°C (Table 1.2). The coldest months are December through March, with average temperatures ranging between 8°C and 11°C, and the warmest are June through September, with average temperatures of 23°C to 28°C. Again, temperature changes with elevation; thus, the average temperature at the Kyllene station (1,500 masl) is 8.28°C.[129] It has been estimated that in the Corinthia the temperature drops 0.589°C for every 100 m in elevation.[130] This means that the average annual temperature of Sikyonia ranges between 17.5°C at the Velo station (almost at sea level) to ca. 11°C at the highest, southwestern fringes of its ancient territory.

Sunshine in Sikyonia is relatively abundant, as shown in Table 1.3. The annual hours of sunshine at the Velo station amount to 2,767, while the total at the Sikyon station is 2,706 hours. The summer months have the most sunny days as opposed to the winter period.[131] Correspondingly, cloudiness is greatest in winter months (between 4 and 5) and minimal (between 1 and 2) in the summer period (Table 1.4).[132] One interesting

122. Schol. ad Pind. *Nem.* 9.5; see below, pp. 64–65.

123. See Grove and Rackham 2001, pp. 141–142. Air temperature from 1900 to 2000 has risen between 0.3°C and 0.6°C due to the phenomenon of global warming: Voudouris 2001, p. 80; cf. Grove and Rackham 2001, p. 128. My discussion of climate, and that on hydrology that follows, is based primarily on data obtained from the National Meteorological Service (EMY), and on Voudouris's (2001) climate study of the *nomos* of Corinthia, of which Sikyonia forms the western part.

124. Grove and Rackham 2001, pp. 130–145 and 150.

125. Voudouris 2001, pp. 74–76.

126. Voudouris 2001, p. 23, table 4.

127. Voudouris 2001, pp. 28, 34–36.

128. Voudouris 2001, pp. 31–32.

129. Voudouris 2001, p. 46.

130. Voudouris 2001, pp. 50–51.

131. Voudouris 2001, pp. 52–53.

132. Cloudiness is measured on a scale of 1–8.

TABLE 1.1. AVERAGE MONTHLY AND TOTAL ANNUAL PRECIPITATION AT THE SIKYON, VELO, CHALKI, AND KEPHALARI WEATHER STATIONS*

Station	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Total Annual*
Sikyon (1981–1987)	58.6	79.0	61.3	54.3	16.7	7.3	1.4	6.8	7.3	58.5	68.7	64.1	484.0
Velo (1987–2000)	77.1	48.3	57.5	26.2	27.0	4.8	4.9	15.3	21.5	37.2	87.1	64.5	471.4
Chalki (1975–1999)	85.3	65.8	71.5	36.2	24.1	9.2	5.3	10.9	14.0	54.0	83.3	92.9	552.5
Kephalari (1950–1997)	127.9	87.1	120.9	67.8	48.7	22.8	17.2	40.8	47.6	103.2	119.0	133.3	936.3

Source: Voudouris 2001, p. 23, table 4.

*Measurements are in mm.

TABLE 1.2. AVERAGE MONTHLY AND ANNUAL TEMPERATURES AT THE SIKYON AND VELO WEATHER STATIONS*

Station	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Annual*
Sikyon (1981–1987)	9.6	8.5	10.1	15.3	20.3	25.2	27.5	26.9	24.0	18.4	13.0	10.6	17.45
Velo (1988–1997)	8.8	9.1	11.2	15.0	20.3	25.3	27.9	27.2	23.2	18.3	13.1	10.0	17.45

Source: Voudouris 2001, p. 46, table 15.

*Measurements are in degrees Celsius.

TABLE 1.3. MONTHLY AND TOTAL ANNUAL HOURS OF SUNSHINE AT THE SIKYON AND VELO WEATHER STATIONS

Station	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Total Annual*
Sikyon (1981–1987)	146	107	150	225	291	341	358	335	283	195	143	132	2,706
Velo (1987–1998)	146	151	180	226	292	343	366	339	265	200	146	113	2,767

Source: Voudouris 2001, p. 52, table 20.

TABLE 1.4. AVERAGE MONTHLY AND ANNUAL CLOUDINESS AT THE SIKYON WEATHER STATION*

Station	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Annual*
Sikyon (1981–1987)	3.9	4.8	4.7	3.5	2.8	1.7	1.1	1.1	1.3	3.1	4.0	4.0	3.0

Source: National Meteorological Service.

*Measurements are on a scale of 1–8.

TABLE 1.5. AVERAGE MONTHLY AND ANNUAL RELATIVE HUMIDITY (%) AT THE SIKYON AND VELO WEATHER STATIONS

Station	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Annual Average*
Sikyon (1981–1987)	68.9	71.3	67.6	60.6	55.2	51.5	47.3	49.1	52.1	62.8	70.4	69.9	60.6
Velo (1988–1996)	73.9	70.6	71.0	66.5	60.4	53.8	51.7	54.1	61.5	68.8	75.6	75.9	65.3

Sources: Sikyon = National Meteorological Service; Velo = Voudouris 2001, p. 56, table 23.

feature is that cloudiness is rarely complete even in winter, since most days fall within the 1.6–6.4 bracket. Relative humidity is generally less in eastern than in western Greece, and the coastal zone of Sikyonia has an annual average of 60%–65% (Table 1.5). Humidity is higher in winter months (around 70%) and lower in summer (around 50%). Along the coast (Velo), humidity never falls below 50% because of the proximity of the sea; in the mountainous regions, the differences are greater, with very humid winters and dry summers.[133]

The intensity of the winds in Sikyonia and their direction are analyzed in Table 1.6. I grouped the winds into four categories—calm, light, moderate, and strong. Light winds correspond to 1–2 on the Beaufort scale (i.e., a speed of 1–12 km/hr), moderate to 3–5 Beaufort (13–35 km/hr), and strong to 6–7 Beaufort (36–55 km/hr). Both stations show a high percentage of calm, although at Sikyon it reaches an annual average of 81.1% as opposed to 46.5% at Velo, undoubtedly due to the proximity of the sea. Both areas are dominated by moderate winds, light winds are not as common, and strong winds are rare. The two areas also differ in their prevailing winds. The coastal zone is affected by winds blowing from the northeast and east, and less so by northern and southern winds.[134] On the contrary, the prevailing winds on the Sikyonian plateau are (in decreasing order) the northwest, west, east, and north, while northeast winds appear from July through October. The Etesian winds (commonly called *meltemia*) blow from northern directions (north, northeast, and northwest) from late July to September, and are occasionally strong. In antiquity it was no different, if we trust the comment of Eustathios: "the northern wind, according to the Sikyonians, comes in late summer, namely the Etesian. And they say that the Etesian winds are stronger and drier than the winds blowing in wintertime."[135]

Water Sources

The landscape's form, its soil composition, vegetation, and climatic conditions all have a direct impact on the aquifer and the location of springs. Along the coastal plain, the aquifer was very close to the surface, and this explains the number of wells dug in antiquity as well as in modern times. In recent decades, however, excessive tapping of the aquifer by means of deep boreholes and electric pumps for irrigation has exhausted the shallow water-bearing strata and the springs that used to flow in the coastal plain.[136] As a

133. Voudouris 2001, pp. 56–57 (based on comparison of data from the Velo, Corinth, and Trikala stations).

134. Voudouris 2001, pp. 68–71.

135. Eust. ad *Il.* 21.346–349 (4.515.7 van der Valk): ὀπωρινὸς δὲ Βορρᾶς κατὰ τοὺς Σικυωνίους ὁ θερινός, ἤγουν ὁ ἐτησίας. ἰσχυρότεροι δέ, φασί, καὶ ξηρότεροι τῶν ἐν χειμῶνι πνεόντων οἱ ἐτησίαι.

136. For example, the springs of Vrachati and Nerantza, both located on the coast, dry out completely during the summer; this was not so as recently as the early 1980s. On the overuse of groundwater, see Grove and Rackham 2001, pp. 351–360.

TABLE 1.6. MONTHLY FREQUENCY (%) OF WIND INTENSITY AND DIRECTION AT THE SIKYON AND VELO WEATHER STATIONS

	Sikyon (1981–1987)									*Velo (1987–1997)*								
January	N	NE	E	SE	S	SW	W	NW	Total	N	NE	E	SE	S	SW	W	NW	Total
Calm									80.1									45.4
Light	0.5	0.5	0.5	0.2	0.2	0	3.5	0.3	5.7	1.2	3.6	2.6	2.1	3.4	1.4	0.9	6.6	21.8
Moderate	1.5	2.4	1.6	0.3	1.6	0.5	4.7	1.2	13.8	2.2	13.3	6.7	1.2	1.4	0.8	0.9	2.2	28.7
Strong	0.2	0	0	0	0	0	0.2	0	0.4	0.7	2.2	0.9	0	0.1	0	0.1	0.1	4.1
Subtotal	2.2	2.9	2.1	0.5	1.8	0.5	8.4	1.5		4.1	19.1	10.2	3.3	4.9	2.2	1.9	8.9	
February	N	NE	E	SE	S	SW	W	NW	Total	N	NE	E	SE	S	SW	W	NW	Total
Calm									79.0									45.1
Light	1.0	0.7	0.6	0	0	0.2	0.8	0.2	3.6	0.5	3.0	2.3	2.1	8.0	4.3	1.1	0.8	22.1
Moderate	2.0	1.8	3.0	0	3.1	1.2	4.1	1.4	16.5	2.4	10.9	7.7	2.0	1.5	0.8	1.3	2.6	28.7
Strong	0.0	0.2	0	0	0.6	0	0	0	0.8	0.2	2.0	0.5	0	0	0.3	0.2	0.6	3.7
Subtotal	3.0	2.7	3.6	0	3.7	1.4	4.9	1.6		3.1	16.0	10.5	3.6	9.5	5.5	2.6	4.0	
March	N	NE	E	SE	S	SW	W	NW	Total	N	NE	E	SE	S	SW	W	NW	Total
Calm									79.2									45.0
Light	1.0	0.5	0.9	0	0	0	0.9	0.5	4.0	1.5	3.5	2.0	3.0	6.1	2.8	1.6	0.8	21.4
Moderate	1.5	3.0	6.8	0.2	0.9	0.2	2.5	1.3	16.7	3.9	9.7	6.6	2.3	1.7	0.7	1.8	3.5	30.1
Strong	0	0.2	0	0	0	0	0	0	0.2	0.1	2.0	0.3	0	0.1	0	0.2	0.5	3.1
Subtotal	2.6	3.8	7.7	0.2	0.9	0.2	3.4	1.9		5.6	15.2	9.0	5.4	7.8	3.5	3.6	4.8	
April	N	NE	E	SE	S	SW	W	NW	Total	N	NE	E	SE	S	SW	W	NW	Total
Calm									79.8									47.3
Light	0.9	0	1.1	0	0.9	0	1.3	1.3	5.5	0.9	5.8	2.6	2.5	7.8	2.4	1.0	0.7	22.0
Moderate	1.1	1.3	1.5	0.5	1.0	0.7	2.6	4.8	13.7	4.1	6.3	6.5	3.1	2.4	0.9	1.6	4.4	29.4
Strong	0	0	0	0	0.2	0.2	0.2	0.4	1.0	0	0.1	0.2	0.1	0	0	0.2	0.6	1.2
Subtotal	2.0	1.3	2.6	0.5	2.2	0.9	4.0	6.5		5.1	10.1	9.3	5.8	10.3	3.2	2.7	6.0	
May	N	NE	E	SE	S	SW	W	NW	Total	N	NE	E	SE	S	SW	W	NW	Total
Calm									78.6									46.2
Light	1.8	0.6	1.2	0	0.3	0	1.0	0.8	5.8	2.0	4.3	3.0	3.1	5.0	1.7	1.3	2.0	22.6
Moderate	2.9	1.5	1.2	0.5	0.5	0.3	1.7	5.6	14.3	5.3	9.5	5.7	1.8	1.0	0.3	0.9	4.9	29.5
Strong	0	0.1	0	0.1	0.1	0.1	0	0.6	1.2	0.1	0	0	0.1	0	0.1	0.2	0.9	1.5
Subtotal	4.8	2.3	2.4	0.6	0.9	0.5	2.7	7.0		7.5	13.9	8.8	5.1	6.0	2.1	2.4	7.9	
June	N	NE	E	SE	S	SW	W	NW	Total	N	NE	E	SE	S	SW	W	NW	Total
Calm									79.2									45.7
Light	2.3	0.9	0.8	0	0	0	0.9	1.9	7.0	1.8	3.5	4.2	3.1	5.5	1.4	1.3	1.9	22.8
Moderate	3.0	1.7	0.5	0	0.3	0	2.5	5.3	13.5	6.2	6.7	4.9	1.4	0.8	0.3	1.5	7.8	29.6
Strong	0	0	0	0	0	0	0	0.3	0.3	0.2	0	0.1	0	0	0	0.3	1.2	1.8
Subtotal	5.4	2.7	1.3	0	0.3	0	3.5	7.6		8.1	10.2	9.2	4.5	6.3	1.7	3.1	10.9	
July	N	NE	E	SE	S	SW	W	NW	Total	N	NE	E	SE	S	SW	W	NW	Total
Calm									80.8									44.7
Light	1.4	2.1	1.7	0	0	0.1	1.5	2.1	9.0	2.2	6.5	4.2	2.5	4.3	2.4	1.4	1.1	24.8
Moderate	1.5	2.3	1.0	0	0	0.5	0.6	3.8	9.8	5.6	11.0	5.8	0.4	0.1	0.3	1.1	4.7	28.9
Strong	0	0	0	0	0	0	0	0.3	0.3	0.2	0.2	0	0	0	0	0.3	0.7	1.3
Subtotal	2.9	4.5	2.8	0	0	0.6	2.1	6.3		8.0	17.7	10.2	2.9	4.4	2.6	2.8	6.5	

TABLE 1.6—*Continued*

	Sikyon (1981–1987)									*Velo (1987–1997)*								
August	N	NE	E	SE	S	SW	W	NW	Total	N	NE	E	SE	S	SW	W	NW	Total
Calm									82.1									48.7
Light	2.0	1.4	1.0	0	0	0	0.5	1.4	6.3	3.0	5.8	4.6	1.9	5.0	2.4	1.0	1.0	24.6
Moderate	2.8	2.9	0.6	0.1	0.1	0	2.5	2.1	11.1	6.2	11.0	5.4	0.4	0.5	0.3	0.4	2.2	26.2
Strong	0	0.1	0	0	0	0	0.1	0	0.3	0.2	0	0	0	0	0	0	0	0.2
Subtotal	4.8	4.5	1.7	0.1	0.1	0	3.0	3.5		9.3	16.9	9.9	2.3	5.4	2.6	1.4	3.3	
September	N	NE	E	SE	S	SW	W	NW	Total	N	NE	E	SE	S	SW	W	NW	Total
Calm									85.9									46.6
Light	1.4	0.6	0.6	0	0	0	0.5	0.5	3.7	2.7	4.5	3.1	1.8	5.6	3.5	1.4	1.8	24.4
Moderate	2.0	2.5	1.4	1.1	0.1	0.1	1.7	1.8	10.0	4.9	9.5	4.8	0.4	1.7	0.6	0.7	5.1	27.6
Strong	0	0	0	0	0.1	0	0	0.1	0.3	0.2	0.2	0	0	0	0	0	0.8	1.2
Subtotal	3.5	3.2	2.0	0.1	0.3	0.1	2.1	2.5		7.8	14.2	7.9	2.2	7.2	4.1	2.1	7.7	
October	N	NE	E	SE	S	SW	W	NW	Total	N	NE	E	SE	S	SW	W	NW	Total
Calm									83.4									46.7
Light	0.8	1.0	0.5	0	0	0	2.3	0.3	5.0	1.4	3.5	3.2	1.8	6.8	2.8	0.7	0.9	21.0
Moderate	1.2	4.8	2.8	0	0.3	0	2.1	1.7	11.6	3.8	10.3	7.1	1.5	2.1	1.4	0.6	2.8	29.6
Strong	0	0	0	0	0	0	0	0	0	0	1.7	0.6	0	0	0	0	0.2	2.4
Subtotal	2.0	5.9	3.3	0	0.3	0	3.0	2.0		5.2	15.4	10.9	3.3	8.9	4.2	1.3	4.0	
November	N	NE	E	SE	S	SW	W	NW	Total	N	NE	E	SE	S	SW	W	NW	Total
Calm									82.2									48.4
Light	0.5	0.3	1.1	0	0	0	1.8	0.3	4.0	1.4	2.3	3.0	1.9	7.0	4.1	1.2	1.1	22.1
Moderate	2.2	2.4	2.9	0.1	0.3	0.8	4.5	0.3	13.7	1.5	9.3	7.0	2.2	2.3	1.4	1.4	2.4	27.4
Strong	0	0	0	0	0	0	0	0	0	0.1	1.0	0.5	0	0.1	0	0	0.1	1.8
Subtotal	2.7	2.8	4.0	0.1	0.3	0.8	6.3	0.6		3.1	12.6	10.6	4.1	9.4	5.5	2.5	3.7	
December	N	NE	E	SE	S	SW	W	NW	Total	N	NE	E	SE	S	SW	W	NW	Total
Calm									83.5									48.3
Light	0.7	0.2	0.2	0.2	0.2	0.2	1.0	0.3	3.0	1.0	2.3	4.2	3.2	8.9	3.7	1.5	0.9	25.6
Moderate	1.4	2.7	3.6	0	0.7	0.5	2.3	2.0	13.2	2.0	7.5	5.6	1.5	2.6	1.2	1.2	1.6	23.1
Strong	0	0	0	0	0	0.2	0	0	0.2	0.3	1.5	0.7	0	0.1	0.1	0	0	2.8
Subtotal	2.2	2.9	3.8	0.2	0.9	0.9	3.4	2.3		3.3	11.3	10.5	4.7	11.6	5.0	2.7	2.5	

Sources: Sikyon = National Meteorological Service; Velo = based on Voudouris 2001, p. 70, table 33.

whole, Sikyonia is relatively well watered with hundreds of springs, some of which I mention in connection with settlements. The most copious ones are located in its southern and particularly its western semimountainous and mountainous areas. In fact, four of the most important water sources of the entire province of Corinthia fall within Sikyonian territory (Map 2): the springs of Se at Megali Valtsa (with an hourly discharge of 380 m^3); the springs of Mikri Valtsa (350 m^3/hr); the springs of Goura outside the village of Manna (300 m^3/hr); and the springs of Kyrillou near Pasio (110 m^3/hr).[137] Other abundant springs are located at Agia Paraskevi of Vochaiko, Anavara of Bozika, Gonoussa, Paradeisi, Melisiklias of Kryoneri (ca. 40 m^3/hr), Souphi of Lalioti, and Stylia. Many of these springs were tapped in antiquity: the springs of Se and Melisiklias fed the aqueducts of

137. Voudouris 2001, p. 17.

Sikyon in the Hellenistic and Roman periods, as well as several mills in the Ottoman period, Anavara fed one of the aqueducts of the sanctuary of Titane, while Souphi and Mikri Valtsa provided water to large cisterns in Late Roman times for irrigation.

Athenaios, in discussing various wines, says that in Athens and Sikyon the water is hard: σκληρὰ τὰ ὕδατα (1.33c). Perhaps this further induced the Sikyonians to bring water to the city, by means of aqueducts, from springs located to the southwest and west of the plateau.[138]

FLORA AND FAUNA

Flora

Before embarking on a discussion of the Sikyonian flora, we may legitimately ask how far back its typical Mediterranean vegetation goes.[139] Largely thanks to pollen analysis, we know that by 7000 B.C. Mediterranean wildwood was "not much less varied than the vegetation today."[140] A marked difference with regard to the present situation is that the dominant maquis or savanna of today was not as ubiquitous then, and wildwood forest consisting mainly of deciduous oaks was more extensive instead. During the Neolithic period, deciduous oaks were gradually cleared from soils with agricultural potential, and this "progressive degradation"[141] of the aboriginal vegetation accelerated in subsequent periods of demographic growth, mainly during the Late Helladic and Classical eras. Paleobotanical and palynological studies carried out in other parts of Greece have shown that the "natural" vegetation as encountered on uncultivated slopes and long fallow fields has not changed dramatically since the Early Bronze Age. As Grove and Rackham explain, "Xenophon would instantly recognise most of nineteenth-century Greece, before the recent decline of cultivation and expansion of woodland in the mountains."[142]

Ancient written testimonia on the plants of Sikyonia are limited to a handful of references in Theophrastos, Athenaios, Pliny the Elder, Pausanias, and the lexicographer Hesychios. I will supplement this evidence with information on the principal plant communities of modern Sikyonia. Theophrastos offers a unique testimony on *herpyllos,* a wild species growing on Sikyonian mountains, and transplanted to the city (*Hist. pl.* 6.7.2): καὶ γὰρ ἕρπυλλός ἐστιν ἄγριος, ὃν κομίζοντες ἐκ τῶν ὀρῶν φυτεύουσιν ἐν Σικυῶνι καὶ Ἀθήνησιν ἐκ τοῦ Ὑμηττοῦ.[143] Pliny (*HN* 19.55), relating the same story, lists *serpyllum et sisymbrium. Herpyllos* is the tufted thyme *(Thymus sibthorpii),* but the exact identity of *sisymbrium* is unknown—it is probably a kind of mint. Semus of Delos, in his work *On Paeans,* says that the Sikyonian *phallophoroi* do not use a mask, but wear a chaplet of *herpyllos* and *paideros,* on top of which they put a thick wreath of violets and ivy (*apud* Ath. 14.621f, 622c): οἱ δὲ φαλλοφόροι, φησίν, προσωπεῖον μὲν οὐ λαμβάνουσιν, προπόλιον δ'ἐξ' ἑρπύλλου περιτιθέμενοι καὶ παιδέρωτος ἐπάνω τούτου ἐπιτίθενται στέφανον δασὺν ἴων καὶ κιττοῦ. ἴον is the violet *(Viola odorata),* and κιττός (or κισσός) a kind of ivy *(Hedera helix).* Athenaios quotes Timachidas and Philitas on a specific wreath that the Sikyonians call *iaccha*: Ἀλλὰ μὴν καὶ IAKXAN τινὰ καλούμενον οἶδα

138. For the aqueducts of Sikyon, see Appendix III.

139. For the flora of the region, see esp. Polunin 1987; Sphikas 2001; and Grove and Rackham 2001.

140. Grove and Rackham 2001, p. 159.

141. Grove and Rackham 2001, pp. 162–163.

142. Grove and Rackham 2001, p. 171. Indeed, due to the depopulation of the modern Greek countryside and the underexploitation of woodlands, forests and maquis have increased, expanding to areas that were hitherto cultivated: Grove and Rackham 2001, pp. 184–185.

143. Cf. Ath. 15.681f.

στέφανον ὑπὸ Σικυωνίων, ὥς φησι Τιμαχίδας ἐν ταῖς Γλώσσαις· Φιλίτας δ'οὕτως γράφει· "Ἰάκχα, ἐν τῇ Σικυωνίᾳ, στεφάνωμα εὐῶδες . . ." (15.678a). Pausanias says that the *paideros,* offered by the sacrificers to Aphrodite, grew only in the precinct of Aphrodite in the city, and nowhere else on earth, not even elsewhere in Sikyonia: ἔνεστι δὲ ὁ παιδέρως ἐν υπαίθρῳ τοῦ περιβόλου πόα, φύεται δὲ ἀλλαχόθι οὐδαμοῦ γῆς, οὔτε ἄλλης οὔτε τῆς Σικυωνίας (2.10.5–6). *Paideros* is considered to be the holm oak (*Quercus ilex*), a common evergreen shrub, but in light of Pausanias's passage we should reconsider this identification. Vinciane Pirenne-Delforge argues that *paideros* was a kind of hawthorn (*Crataegus* sp.), perhaps the *Crataegus azarolus,* endemic to Crete but rare in other parts of Greece.[144]

A shrub commonly found in Sikyonia, as in most other parts of peninsular Greece, is the kermes oak *(Quercus coccifera).* Pausanias (2.11.4) saw a sacred grove of kermes oaks (ἄλσος πρίνων) on the east side of the Asopos River, opposite Titane.[145] Indeed, the maquis covering the marly western slopes of Trikaranon, below modern Stimanga, includes kermes oaks. In the peribolos of Asklepios at Titane, Pausanias saw "old" cypress trees: καὶ κυπαρίσσων ἐστὶν ἐντὸς τοῦ περιβόλου δένδρα ἀρχαῖα (2.11.6). This is not the only place in Sikyonia where cypress trees grew. Thanks to the Delphic accounts, we know that the *naopoioi* of Apollo purchased cypress wood from Sikyon.[146] Among the species of submarine vegetation, Pliny lists sea vines, sea figs, and sea palms that grow in Sikyon: "et aliae traduntur praegrandes circa Sicyonem, vitis enim passim nascitur, sed ficus sine foliis, rubro cortice; fit et palma fruticum generis" (*HN* 13.49).

Besides these explicit references to Sikyonian plants, we have a few pieces of indirect evidence for Sikyonian vegetation. Eustathios derives the very name "Sikyon" from the word σικύα, the bottle gourd *(Lagenaria vulgaris),* or σίκυς, the cucumber *(Cucumis sativus),* either or both of which would presumably have grown in the area (ad *Il.* 23.299 [4.1302.20 van der Valk]: ἐκ δὲ σικύων, Σικυών). Photius (*Lex.* 1096) says that the Sikyonian name for "plums" (κοκκύμηλα) is ἀμάδρυα. Finally, Athenaios comments on the Alexandrian κολοκασία, adding that there is a sanctuary of Kolokasia Athena in Sikyon: ἐστὶ δ' ἐν Σικυώνι Κολοκασίας Ἀθηνᾶς ἱερόν (3.72b). It is possible that the goddess's epithet was derived from these roots *(Nelumbium speciosum)* growing in and around the sanctuary.

In modern times, approximately 28% of Sikyonian territory is shown covered by forests and shrubs on maps of the Hellenic Army Geographical Service (Map 3).[147] This corresponds to ca. 66 km^2 of forested area and 34 km^2 of shrubland. As elsewhere in the Mediterranean, the most common evergreen maquis of Sikyonia is the extremely resilient prickly or kermes oak *(Quercus coccifera),* which occurs both in shrub form and as a fully grown tree.[148] It is commonly found on the slopes of the Klimenti-Kaisari valley and of the valleys of the Nemea and Asopos rivers, as well as on the slopes of many marine terraces including those of Ellinochori and Stimanga. Among the deciduous oaks, *Quercus pubescens* grows on the slopes of Vesiza mountain, and makes up most of the Moungostos forest.[149] Firs and pines grow from the first terraces above the plain to the mountainous zone of Kyllene.[150] Most common are the Aleppo pine forests *(Pinus*

144. Pirenne-Delforge 1994, pp. 146–150.

145. See below, pp. 388 and 412.

146. See below, pp. 57–58.

147. In reality, the percentage is much larger (probably as high as 50%) given that only sizable tracts of forests and shrubs are marked on the military maps. Smaller areas are normally not indicated.

148. The shrub form predominates where flocks are grazed. Nowadays one encounters more kermes-oak trees than before the Second World War, when there were many more herds of goats.

149. Cf. Gell (1817, p. 19), who noted the "oaks" on Vesiza.

150. The coastal pine forest of Xylokastro (so-called Pefkias) was planted.

halepensis), which are encountered at lower elevations and on hillsides and usually have a rich understory of broadleaf evergreens, including prickly oaks *(Quercus coccifera),* strawberry trees (*Arbutus* spp.), lentiscs *(Pistacia lentiscus),* and cedars (*Juniperus* spp.). One finds them on the terraces of Ellinochori, the western slopes of Stimanga toward Asopos, the slopes of Kokkinovrachos (southwest of Vasiliko) toward the Helisson and Asopos rivers, the slopes of Kapandri and Lalioti toward the Seliandros River, the rocky slopes of Ano Melissi toward the coastal plain, the northern slopes of Moungostos, and the steep slopes of the Throphari and Zemeno areas toward the Katharoneri and Sythas rivers. Among the mountain conifers, the Cephalonian fir *(Abies cephalonica)* covers the summit of Vesiza and parts of the highlands bound by the villages of Kaisari, Kephalari, and Manna. In the same area one encounters black mountain pines *(Pinus nigra),* especially around the village of Velina.[151]

Willow trees (*Salix* sp.), plane trees *(Platanus orientalis),* poplars (*Populus* spp.), osiers *(Vitex agnus-castus),* myrtles *(Myrtus communis),* and oleanders *(Nerium oleander)* grow near the banks of the streams. Other trees and shrubs scattered amid forests, old fields, and abandoned terraces, and around the villages of Sikyonia, include musk trees *(Acacia farnesiana),* cypress trees *(Cypressus sempervirens),* fig trees *(Ficus carica), Prunus cocomilia,* maple trees (*Acer* sp.), judas trees *(Cercis siliquastrum), Calliotome villosa, Paliurus* sp., and *Pyrus spinosa.* The undershrub vegetation *(phrygana)* includes many herbs, such as thyme *(Thymus capitatus)* and oregano (*Origanum* sp.), and a variety of wildflowers commonly found in Greece.

Fauna

Very little is known of the animal communities of Sikyonia in the premodern periods, and almost nothing of its nondomesticated species. The mammals observed most commonly today are red foxes *(Vulpes vulpes),* golden jackals *(Canis aureus),* Eurasian badgers *(Meles meles),* beech martens *(Martes foina),* weasels *(Mustela nivalis),* hares *(Lepus europaeus),* rabbits *(Oryctolagus cuniculus),* wildcats *(Felis silvestris),* eastern hedgehogs *(Erinaceus concolor),* and mice (*Mus* sp. and *Apodemus* sp.). We have much less data on the presence of the Chiroptera order (bats) and the regional small mammal fauna (rodents and voles).

Better known are the numerous species of birds that can be found in the region. These include house martins *(Delichon urbica)* and red-rumped swallows *(Hirundo rustica),* jackdaws *(Corvus monedula),* magpies *(Pica pica),* robins *(Erithacus rubecula),* goldfinches *(Carduelis carduelis),* greenfinches *(Carduelis chloris),* nightingales *(Luscinia megarhynchos),* rock pigeons *(Columba livia),* wood pigeons *(Columba palumbus),* quails *(Coturnix coturnix),* woodcocks *(Scolopax rusticola),* house sparrows *(Passer domesticus),* swifts *(Apus apus),* blackbirds *(Turdus merula),* falcons (*Falco* spp., especially *eleonorae*), shelducks *(Tadorna tadorna),* kingfishers *(Alcedo atthis),* eagle owls *(Bubo bubo),* little owls *(Athene noctua),* scops owls *(Otus scops),* and, in the mountainous areas, partridges (*Alectoris* spp.).

151. Cf. Gell (1817, p. 19) and Leake (1830, p. 224), who recorded the "pine woods" of the highland between Klimenti and Manna; see also the description offered by Rangabé (1857, p. 47): "D'un côté, la vallée [of the Trikalitikos River] s'élève jusqu'au vaste plateau qu'occupent les villages de Velina, de Markasi et de plusieurs encore, et ses flancs sont couverts d'un rideau de forêts de sapins."

Figure 1.15. ***Trapetum mortarium*** **photographed between the villages of Poulitsa and Tarsina, present whereabouts unknown**

RESOURCES OF THE LAND AND SEA

Agriculture, pastoralism, fishing, quarrying, and woodcutting have been some of the major activities of the inhabitants of Sikyonia from antiquity to modern times.

Agriculture

Ancient Times

Judging from ancient references, olive trees and grapes must have been the major cultivars in the plain. Sikyonian olive oil was world famous, at least by Roman times, if we trust the testimonies of Vergil, Statius, and distinguished physicians and medical writers. Statius in his *Thebaid* (4.50) praises the fields of "olive-bearing Sikyon" *(oliviferae Sicyonis).* Vergil in his *Georgics* (2.519) refers to "Sikyon's olive bruised in the mill" *(teritur Sicyonia baca trapetis),* and his scholiast Servius adds that "Sikyonian oil is of great value."[152] Pausanias, when talking about the Phokian city of Tithorea, says that its olive oil "is less abundant than Attic or Sikyonian oil" (10.32.19). Dioskorides (*De materia medica* 1.30.5) describes the therapeutic qualities of the oil packed in Sikyon: σκευάζεται δὲ τοῦτο μάλιστα ἐν Σικυωνίᾳ, Σικυώνιον καλούμενον. δύναμιν δὲ ἔχει ποσῶς θερμαντικήν, ἁρμόζον ἐν πυρετοῖς καὶ τοῖς περὶ νεῦρα πάθεσι. This quotation makes it clear that Sikyonian oil was exported in the 1st century A.D.; it must have continued to be exported in the 2nd century, since Galen repeatedly recommends it in his treatises.[153]

Surprisingly, we were able to find the *mortarium* of only one olive mill along the coastal plain, near the village of Poulitsa (Fig. 1.15).[154] Two hemispherical millstones *(orbes),* 0.55 m and 0.52 m in diameter, lie in the courtyard of the Sikyon Museum (Fig. 1.16), but their provenance is unknown. Part of the reason for the scarcity of this equipment in the plain must be their reuse in modern households.[155] To the south of the plain, we found pressing equipment, especially olive-crushers, at 10 sites (HS-30, HS-34, HS-38, HS-52, HS-67, HS-74, HS-90, HS-94, HS-97, HS-106),

152. Serv. ad Verg. *G.* 2.519: *oleum Sicyonium magno in pretio est.*

153. E.g., in *De simplicium medicamentorum temperamentis ac facultatibus* 6: vol. 11, p. 686, line 18; vol. 12, p. 340, line 17 (ed. Kühn).

154. The Poulitsa *mortarium* is made of conglomerate stone, 1.8 m in diameter, and has a preserved inner depth of ca. 0.2 m; the height could not be measured because the *trapetum* was set into the ground.

155. Even the Poulitsa *mortarium*, which I recorded in the summer of 2001, has since disappeared.

Figure 1.16. Millstones in the courtyard of the Sikyon Museum

located on the first terraces above the plain and as far inland as Titane and Stylia (Fig. 1.17).[156] The mortaria that are preserved sufficiently for measurement are quite large: 1.5 m in diameter, 0.8 m in height, and with 0.2–0.3 m inner depth. Titane (HS-67) seems to have been especially active in olive production, since we found two *mortaria* here of large dimensions (see, e.g., Fig. 1.18). Likewise, the site of Kotroni below Stylia (HS-90) preserves two kinds of pressing equipment, a *trapetum mortarium,* 1.8 m in diameter and with 0.24 m inner depth, and a rectangular press bed, 1.1 × 1.3 m, both of conglomerate stone (Fig. 1.19). Nine of the ten sites have a Late Roman phase (HS-34 is the exception), and for four of those Late Roman was the period of primary occupation (HS-38, HS-74, HS-90, HS-94). This cannot be accidental, nor is it unique; the surveyors of the Methana peninsula, who documented a large assemblage of pressing equipment, observed that the great majority are associated with Roman and Late Roman sites.[157] Earlier pressing equipment, of the Archaic, Classical, and possibly Hellenistic periods, must have been made of wood, as suggested by a reference to a wooden press in the early-5th-century B.C. inscription from Kryoneri.[158]

The rectangular stone press bed of Kotroni was part of a lever-and-weight press, which could be used for either olive or wine production. The press would have included a cut block or natural boulder with two or more circular holes to hold a wooden press beam. At Kotroni, the press bed was not found in situ, and the remainder of the pressing apparatus was not in the vicinity. But additional evidence for a lever-and-weight press was found within the fort of Gonoussa (DS-3). Here the bedrock has been smoothly

156. In fact, the *trapetum*'s *mortarium* piece, that is, the large saucer, was found, not the *orbes,* the two hemispherical millstones attached to its cylindrical stem. In the whole of Sikyonia I was able to find only one such millstone, in a private house in Stimanga. A similar phenomenon is observed in samples from the Argolid and Arkadia: see Pikoulas 1995, pp. 365–366.

157. Mee and Forbes 1997, pp. 262–264.

158. See below, p. 405 (for the inscription); also Mee and Forbes 1997, p. 261 (on the ephemeral nature of earlier pressing equipment).

Figure 1.17. *Trapetum mortarium* photographed at Loutro of Lalioti (HS-106), present whereabouts unknown

Figure 1.18. *Trapetum mortarium* below (east of) the hill of Agios Tryphon of Titane (HS-67)

Figure 1.19. Rectangular press bed at Kotroni (HS-90), below the village of Stylia. Note the abundance of olive trees in the surrounding area.

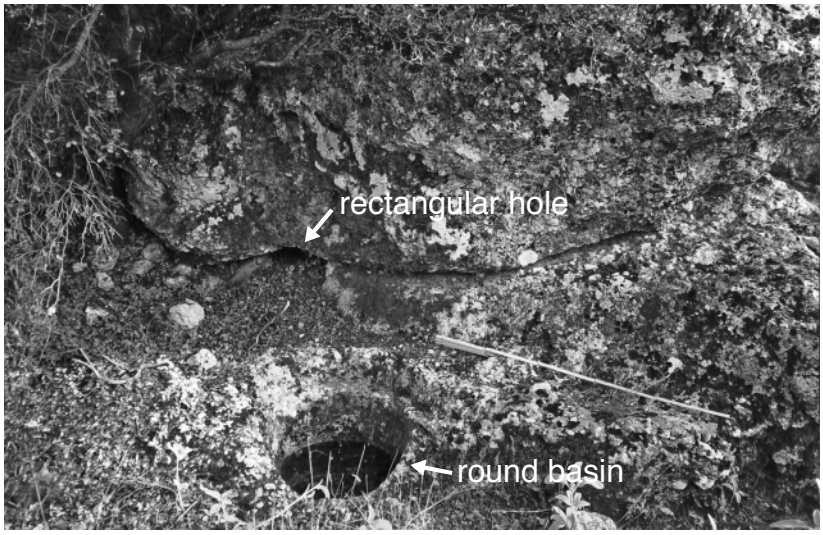

Figure 1.20. Olive- or wine-press installation within the Kastro of Gonoussa (DS-3)

Figure 1.21. Smooth, ellipsoidal stone, probably a press weight, at Sesi 1 of Titane (HS-74)

dressed in order to form a vertical and a horizontal surface joined at right angles. On the vertical surface, measuring ca. 1 × 1 m, a rectangular hole with dimensions 0.14 × 0.11 m is cut to a depth of 0.1 m (Fig. 1.20). On the horizontal surface, a round basin is carved, 0.45 m in diameter and 0.40 m in depth. The rectangular hole was meant to receive the end of a wooden beam, which would have squeezed the stacks (presumably baskets, or *kophinoi*) of olives or grapes by means of heavy counterweights attached to its other end. The liquid produced would have been collected in the basin and then funneled into clay jars *(hypolenia)*. The fort is of Classical date, and the pressing installation may date from the same period.[159] We also found smooth, ellipsoidal stones, ca. 0.5 m in diameter and 0.2 m thick, at three settlement sites (HS-74, HS-94, HS-97; Fig. 1.21). These were probably used as weights for olive or wine presses. In addition, we found one possible stone roller, part of a "roller and bed" olive crusher, on a Late Roman farmstead site (HS-108).[160]

159. Another possibility is that the equipment was brought into the fort at a later date; on the installation of Roman and Late Roman olive-press equipment in ancient forts and towers, see Philaniotou 2003; Pikoulas 2003.

160. On this type of olive crusher, see Mee and Forbes 1997, pp. 262–263.

Figure 1.22 *(left)*. **Stone mortar at Bouzaka of Tarsina (HS-13)**

Figure 1.23 *(right)*. **Stone grinder from Pinigouri of Kryoneri (HS-55)**

Sikyon was also known for its production of wine, which Pliny (*HN* 14.74) lists among the highly esteemed foreign wines of his time. We found a characteristic wine-pressing basin, the ancient Greek *lenos lithinos* and modern Greek *patitiri,* near Krinai (HS-40). Unfortunately, this stone vat, used for treading grapes, disappeared before we were able to photograph and measure it. A clay floor, probably of a wine-press installation, was exposed at Melissi (HS-143) as part of a 6th-century A.D. settlement, but its excavator provided no details.[161]

Other food-processing equipment includes stone mortars, handheld grinders, and rotary querns. We found stone mortars at three settlements (HS-13, HS-47, HS-94), and another was reported and drawn by Eustathios Stikas from the tower of Thekriza (DS-10).[162] The mortar at Thekriza was found in four joining pieces within the Classical tower. It measures 0.59 m in height, with inner and outer diameters of 0.4 m and 0.7 m, respectively. The mortar at Tarsina (HS-13), found in a Roman/Late Roman context, measures 0.4 m in diameter and 0.3 m in height (Fig. 1.22). Pieces of stone grinders, which were used mainly for cereal grinding, were found at six sites (HS-48, HS-55, HS-73, HS-76, HS-97, HS-100), the majority in pre-Roman contexts (Fig. 1.23). Although cereals are not mentioned in the sources, they were certainly produced to satisfy the basic needs of the population. In a waste pile at Pano Kokkinia of Vasiliko, I found a fragmentary rotary quern, 0.36 m in diameter. Polybios (18.16.3) tells us that in a period of crisis, the Sikyonians appealed to Attalos I of Pergamon for help, and that the king responded in 197 B.C. by sending 10,000 *medimnoi* of wheat. Given the average rainfall, cereal cultivation would have been practiced from the coastal plain to the southern marine terraces around villages and farmsteads, as was the case up until a few decades ago. The agricultural produce, either solid or liquid, was stored in jars, mainly pithoi and amphoras, fragments of which our survey found by the hundreds.[163]

161. Drosogianni 1968.

162. Stikas 1947, fig. 2.

163. The southern Argolid surveyors argue that LR2 amphoras, ubiquitous in our survey, seem to have been used for olive oil: Jameson, Runnels, and van Andel 1994, p. 402.

Figure 1.24. Terrace wall at Dardiza of Stimanga (HS-22)

Figure 1.25. Terracing on the southern slope of Rakitiza (HS-53), looking north

Terrace walls consolidated the cultivated surface by retaining the soil. We found seven walls constructed for this purpose, six built of irregular trapezoidal masonry (HS-22, HS-53, HS-59, HS-86, HS-90, HS-96) and one (SP-5) in *opus testaceum* (Fig. 1.24). On most sites, there was more than one retaining wall, thus forming successive terraced fields (Fig. 1.25).[164] Based on the masonry and their context, the former must predate the Roman period, unlike the brick wall, which should date from Roman or Late Roman times.

164. For good examples from Attica, see Lohmann 1992, pp. 46–55.

Figure 1.26. The northern side of the cistern at Melistra below Kryoneri (HS-52)

Figure 1.27. Loutro of Thalero (HS-121). Part of the barrel-vaulted room of the cistern.

Occasionally water tanks were built for the purpose of irrigating the fields in periods of drought. We recorded four cisterns (HS-52, HS-121, HS-128, SP-19), and Pharaklas drew one more installation, near the village of Lalioti (HS-106). All of them were built at or near water sources, typically in *opus testaceum*. The cistern of Melistra below the village of Kryoneri (HS-52) measures 7.25 × 12.01 m and its maximum visible height is 0.75 m (Fig. 1.26). The rectangular cistern at Koimisi of Thalero (SP-19), ca. 16 × 15 m, is coated with plaster on the interior and has buttresses along the exterior side of its north wall. At Loutro of Thalero (HS-121), the installation, lined with waterproof cement and most likely representing the remains of a cistern, was barrel-vaulted (Fig. 1.27). The peculiar building of cruciform shape at Loutro of Lalioti (HS-106) was measured and drawn by Pharaklas as 10 × 9 m (Fig. 1.28). Unfortunately, this building no longer exists, but its interpretation as a cistern, rather than a bath, is strengthened by its proximity to the Roman and Late Roman settlement and the arable lands that spread below it. The same applies to the cistern of Lakka near

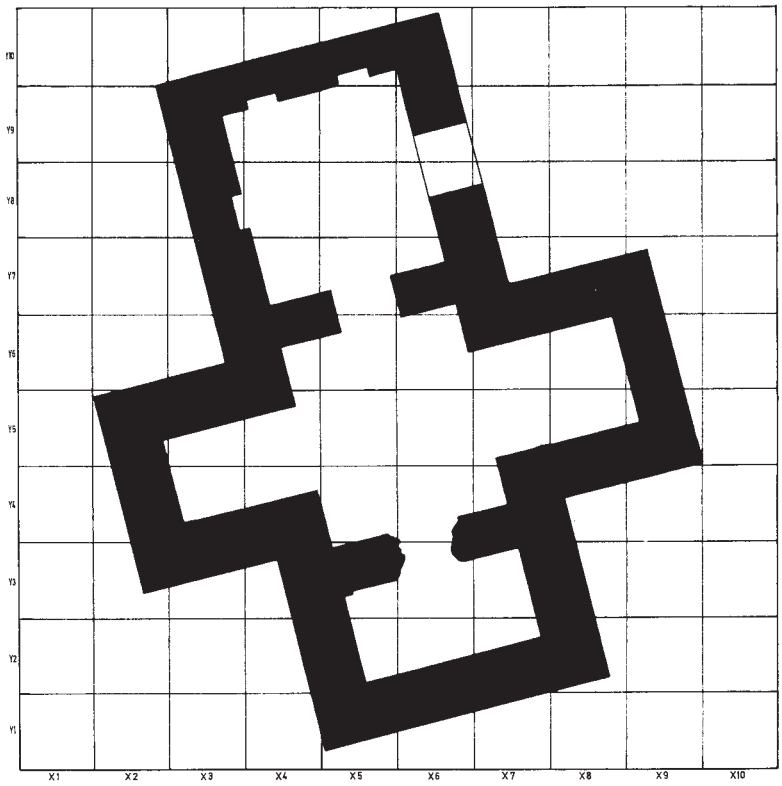

Figure 1.28. Plan of Loutro of Lalioti (HS-106). Pharaklas 1971, fig. 43

Mikri Valtsa (HS-128), which is associated with a Late Roman settlement at a lower elevation.

Post-Antique Period

Olives, grapes, and grains have been cultivated in the Sikyonian plain for several hundred years. Francesco Balducci Pegolotti, an agent of the Florentine company of Bardi during the 1330s, mentions the Corinthian raisins ("uve Coranto"), which Nicolas de Martoni had the opportunity to taste while in Corinth in April of 1395.[165] In 1675 Wheler found the plain between Corinth and Sikyon "well watered by two rivulets, well tilled, well planted with olive-yards, and vine-yards."[166] Currants in the Corinthian plain were planted right after the Venetians regained possession of the Peloponnese in 1687. This information is provided by Randolph, who first praises the "most pleasant plains of Corinth and Basilico, which abound with Olive-trees, Vine-yards, and many small Villages," and then goes on to say, "in the Plains of Corinth were the first Currant vines planted."[167] In the Corinthian sections of the Nani Archive (early 18th century), olives and vineyards are regularly mentioned as growing around both coastal and mountainous villages, including Vrachati, Bolati, Nerantza, Vasiliko, Stimanga, Gonoussa, Stylia, Panariti, and Manna, among others.[168] After 1715, the main agricultural products of the Morea were olive oil and wheat, which together represented more than 80% of its exports. Corinth was not a major port for exports, but it did have considerable traffic.[169]

Prior to the Greek War of Independence, Dodwell saw in the coastal plain "extensive olive-groves, which are thickly planted," and Clarke, riding from Sikyon to Corinth, commented on "the finest corn land in Greece"

165. Zakythinos 1953, p. 250.
166. Wheler 1682, p. 443.
167. Randolph 1689, p. 2.
168. Ms. 3924, ff. 294v, 299r, 309v, 311v, 312v, etc.; Ms. 3927, ff. 549v, 551r, 555v, 575r, 582v, 593v, 596r, etc.
169. Kremmydhas 1972, pp. 27, 198–201.

and "olive plantations producing the sweetest oil in the world."[170] Some travelers must have indulged in romantic embellishment, for Pouqueville writes that in the Vocha plain "the principal produces are wheat, barley, flax and cotton, because the lack of running water limits the cultivation of corn and other pulses on the banks of the Asopos. Its [Sikyon's] olives, once famous, are of mediocre quality; and we draw, for consumption purposes, wines from Phliasia."[171] Leake gives a somewhat similar account after riding on the same route: "many other small villages are seen in the plain, which, as formerly, is planted in many parts with olives, and still preserves its ancient agricultural riches, in proportion to the general desolation. In natural fertility, however, it is not to be compared to Elis or Messenia; the best part is that immediately around Sicyon. The soil . . . is more adapted, I believe, to olives and vines, particularly the currant, than to grain."[172]

Cultivation in the early 19th century seems to have been limited in the eastern part of the coastal plain, precisely between Sikyon and Corinth. The western side, between the Helisson and Sythas rivers, was only partly exploited. Dodwell writes, with regard to the "expanded vale" between Melissi and Sykia, that it is in "an uncultivated state, and covered with bushes, while part is enriched with vineyards and corn land . . . with scattered olive-trees."[173] Some years later, Leake saw the same plain "almost wholly uncultivated."[174] Likewise, parts of the mountainous hinterland, now cultivated with vineyards, were then not cultivated at all. Thus, Clark in the mid-19th century reports that on the ridge between Souli and the valley of Kaisari, "the thin and arid soil produces nothing but a few scattered stunted oaks and a scanty undergrowth of familiar shrubs."[175]

After the formation of the modern Greek state, agricultural production increased and the surplus of olive oil and raisins was exported, as indicated by the storehouses ("magasins") marked on the *Carte de la Grèce* at Neapolis of Kiato (see below, Fig. 3.1), and by Pouqueville's description. The traveler saw the warehouses of Xylokastro where the "coasters come to load the olive oils and the Corinthian raisins."[176] Furthermore, Rangavis mentions a customs house (φυλακεῖον τελωνειακόν) near Kyparissi (AS-10), the hamlet that is thought to have existed between the villages of Velo and Krinai.[177] He also provides some basic information on the main produce of each village in 1851; the coastal villages cultivated cereals, raisins, olives, wine, and some cotton, while the semimountainous districts produced mainly cereals and maize.[178] Vischer identifies the Corinthian raisin as the principal crop in 1852.[179] In the 1880s, the production of Corinthian raisins had reached the enormous amount of 3,638,000 liters, representing one of the principal exports of Greece. In addition, 782,080 kg of wine, 203,392 kg of olive oil, 37,025 kg of cereal, and 35,200 kg of legumes were produced to satisfy the needs of the populace of the deme of Sikyonia, which then counted 5,438 inhabitants.[180] The descriptions and figures offered above are, I believe, more representative of the fertility and natural inclination of the soil than are the figures available from the first half of the 20th century, when the irrigation of the plain was supplemented with water brought from Lake Stymphalos.[181]

The earliest census of the main agricultural produce of the Corinthia per village that is currently available at the National Statistical Service of Greece (ΕΣΥΕ) is that of 1911 (Table 1.7). Cereal cultivation covered

170. Dodwell 1819, p. 292; Clarke 1818, p. 546.

171. Pouqueville 1826, p. 440 (my translation).

172. Leake 1830, p. 227.

173. Dodwell 1819, p. 298.

174. Leake 1830, p. 384.

175. Clark 1858, p. 337.

176. Pouqueville 1826, p. 431 (my translation).

177. Rangavis 1853, p. 379.

178. Rangavis 1853, pp. 379–389.

179. Vischer 1857, p. 268.

180. Figures given by Miliarakis (1886, p. 114).

181. On the irrigation of Vocha from Lake Stymphalos, see Lolos 1997, p. 289.

TABLE 1.7. PRINCIPAL AGRICULTURAL PRODUCE OF SIKYONIA ACCORDING TO THE 1911 CENSUS*

Village	*Wheat*	*Barley*	*Corn*	*Oats*	*Vineyards*	*Raisins*	*Olives*	*Uncult. Lands and Private Forests*
Bolati	296	40	–	–	144	524	69	25
Bozika	1,620	299	12	–	199	361	–	–
Diminio (Ano)	771	248	1	–	267	697	8	1
Diminio (Kato)	–	334	13	–	139	254	–	–
Evangelistria	483	101	1	–	146	347	42	–
Geliniatika	351	3	–	–	90	323	21	–
Gonoussa	1,757	13	89	–	144	415	2	43
Kaisari	2,915	192	1,063	–	557	544	–	313
Kiato	356	–	8	–	606	1,737	213	1,182
Klimenti	1,268	151	311	–	307	281	29	158
Kokkoni	153	63	3	–	245	1,614	2	123
Krinai	1,495	270	210	–	227	1,010	70	4
Kryoneri	3,056	208	192	–	396	841	142	7
Lalioti	790	277	65	–	171	426	8	211
Manna	1,975	–	260	–	490	1,004	4	353
Megali Valtsa	1,686	278	212	–	342	635	93	1,686
Melissi	487	112	–	–	251	463	28	21
Mikri Valtsa	1,098	13	149	–	222	583	3	383
Moulki	368	76	14	–	224	881	69	23
Nerantza	107	4	9	–	97	653	36	45
Panariti	1,563	82	99	–	534	1,943	51	87
Paradeisi	356	12	62	–	65	166	13	–
Poulitsa	1,360	416	–	–	160	402	137	20
Souli	1,767	59	120	–	219	491	70	35
Stimanga	2,226	352	27	2	338	521	91	2,252
Stylia	688	18	33	–	172	460	138	578
Sykia	9	–	1	–	36	94	8	–
Tarsina	388	110	–	–	47	148	28	–
Thalero	328	1	–	–	92	324	31	–
Throphari	636	8	60	–	129	315	–	1,089
Titane	1,080	187	–	–	103	166	–	–
Vasiliko	895	545	12	–	371	1,636	208	98
Velina	1,288	128	269	–	232	529	53	1,191
Velo	517	110	9	4	374	1,813	124	22
Vochaiko	678	117	–	–	260	493	119	–
Vrachati	241	105	26	–	372	1,167	85	72
Xylokastro	219	26	3	1	130	345	235	5
Zemeno	1,046	73	7	–	369	1,079	–	1,119
Total	36,317	5,031	3,340	7	9,267	25,685	2,230	11,146

* Units = stremmata (1,000 m^2).

Figure 1.29. Early modern water mill in the village of Throphari. In the foreground is what is left of the penstock, which brought water to the mill.

almost 4,500 ha (44,695 stremmata), olives 223 ha (2,230 stremmata), vineyards almost 930 ha (9,267 stremmata), and raisins (both Corinthian and Soultanina varieties) close to 2,600 ha (25,685 stremmata). Cereals were grown predominantly in the semimountainous and mountainous districts, while vineyards dominated the coastal plain. In the last 30 years, the type and volume of agricultural production have been decisively influenced by the application of modern technology, marketplace competition, and the directives of the European Community.[182] Citrus fruits, apricots, and raisins constitute the bulk of the agricultural production in the plain today, while forests and maquis that once covered semimountainous and mountainous areas have been cleared to allow the cultivation of raisins.[183] Two characteristic examples of the kinds of changes that have taken place can be found on the western slopes of Trikaranon and the eastern slopes of Vesiza (almost to the Asopos valley), where prickly oaks and pine trees used to grow; today, these areas have been almost entirely cultivated with vineyards.[184]

The grinding of corn in the preindustrial era was facilitated by water mills, placed on the banks of rivers and streams or along the outlet of a perennial spring. In Sikyonia, most water mills date from the early modern period, but some may go back to the Ottoman era since early travelers occasionally took notice of them. The Nani Archive records a mill in the village of Titane that was previously owned by a Turk.[185] This specific mill is no longer preserved, but it may have been similar to the mills that we recorded within the villages of Throphari and Zemeno, both of the late 19th century (Fig. 1.29). Leake saw "some mills on the right, worked by a derivation from the stream," probably referring to mills on the Helisson River.[186] I observed traces of horizontal water mills on the banks of the Nemea, Asopos, Helisson, and Sythas rivers.[187] In addition, I recorded three mills below the springs of Se near Megali Valtsa, and one more below Kryoneri, all in a state of ruin (Fig. 1.30). Their most

182. By modern technology, I mean the use of chemical fertilizers and heavy, motorized farm machinery, as well as drilling for water, both in the plain and the mountainous region to the south.

183. In fact, citrus fruits were introduced by the Ottomans in the 16th or 17th century: Jameson, Runnels, and van Andel 1994, p. 277.

184. In the 1911 census, no fewer than 225 hectares of uncultivated and forested areas were recorded for Stimanga. On the environmental destruction that accompanies such "development," see below, pp. 417–418.

185. Ms. 3924, f.297v: "un Molino nella Villa Voivodeus de Turco Isuf Sabani."

186. Leake 1830, p. 226.

187. On the horizontal water mill and its history, see Forbes 1965, pp. 88–105.

Figure 1.30. Part of a ruined water mill below Kryoneri

characteristic feature is the penstock that rose above the mill house and received the running water.[188] It should be noted that not all water mills produced flour. In 1675, Wheler was told of some powder mills on the Asopos River, "which are the first I ever saw in Turkey."[189] Today the ruins of a late-19th-century water mill stand a few meters to the south of the Turkish bridge.

Animal Husbandry and Pastoralism

The only domesticated equid mentioned in the ancient sources for Sikyonia is the horse. Sikyonian horses were famous in antiquity, particularly in the Archaic period. In the *Iliad,* the Sikyonian Echepolos, son of Anchises, gave to Agamemnon his mare Aithe so that he might stay home and not follow him to Troy (*Il.* 23.293–299). A scholiast to the *Odyssey* (11.271) says that Sikyonian horse-keepers (ἱπποφορβοὶ) undertook the upbringing of Oedipus until the exposed child came of age. The tyrants Myron and Kleisthenes were both winners in chariot races at Olympia, and the latter won a chariot race at the Pythia at Delphi as well.[190] In addition, the "hippo-" component in the names of some Sikyonian kings suggests their connection with horses, as Charles Skalet has pointed out.[191] In the 4th century B.C., Sikyonian horses were associated with ostentatious display, judging from a passage in Demosthenes (21.158) where he rebukes Meidias for driving a pair of white horses from Sikyon. It is likely that the Sikyonians raised a special breed of horses called *samphoras,* because they were branded with the letter σάν, which was the initial of Sikyon.[192] We can imagine that the coastal plain provided an excellent training ground for the horses of the Sikyonian upper class.

The names of two of the three tribes created by Kleisthenes—ὀνεᾶται and χοιρεᾶται—may allude to the abundance of donkeys and pigs in that period.[193] Donkeys were the prime transportation animals from antiquity

188. For early modern examples from the Berbati-Limnes area, see Wells and Runnels 1996, p. 437.

189. Wheler 1682, p. 446.

190. Paus. 6.19.2, 10.7.6; Hdt. 6.126.2.

191. E.g., Zeuxippos, Leukippos, and Hippolytos: Skalet 1928, p. 32.

192. The connection is convincingly argued by Jeffery (1990, p. 142, n. 2); see also Griffin 1982, p. 30.

193. See below, p. 63.

TABLE 1.8. ANIMAL HUSBANDRY OF SIKYONIA ACCORDING TO THE 1911 CENSUS

Village	*Horses*	*Mules*	*Donkeys*	*Oxen*	*Pigs*	*Sheep*	*Goats*	*Beehives*
Bolati	18	–	6	–	–	137	39	10
Bozika	23	41	41	109	71	1,286	781	10
Diminio (Ano)	80	10	29	3	50	279	74	14
Diminio (Kato)	20	5	7	1	2	167	36	1
Evangelistria	24	–	–	–	–	222	38	4
Geliniatika	2	8	2	2	–	36	7	1
Gonoussa	6	49	17	59	40	312	375	18
Kaisari	97	95	56	86	210	2,088	810	20
Kiato	38	13	18	15	44	205	267	24
Klimenti	14	78	65	128	89	745	238	6
Kokkoni	33	4	17	–	2	219	66	45
Krinai	70	14	3	–	10	678	93	–
Kryoneri	7	118	52	172	94	1,611	1,115	64
Lalioti	18	26	35	60	27	497	166	127
Manna	7	94	92	142	86	892	719	48
Megali Valtsa	7	79	63	86	60	586	274	28
Melissi	41	11	37	2	21	213	75	16
Mikri Valtsa	9	40	16	65	20	415	214	55
Moulki	53	10	11	–	24	396	78	13
Nerantza	11	3	11	–	1	72	68	–
Panariti	3	113	45	93	63	406	270	68
Paradeisi	6	14	9	28	1	154	155	–
Poulitsa	45	3	3	–	–	554	49	53
Souli	14	63	30	90	–	366	739	–
Stimanga	30	61	27	49	52	1,182	967	255
Stylia	1	28	20	96	12	225	363	9
Sykia	2	2	–	–	–	22	20	–
Tarsina	16	6	2	–	1	268	52	19
Thalero	16	8	32	7	7	285	38	65
Throphari	1	25	14	35	31	292	305	62
Titane	5	22	6	54	27	317	109	–
Vasiliko	70	75	47	16	44	291	157	110
Velina	29	41	45	80	62	1,723	575	78
Velo	53	21	11	1	3	111	110	123
Vochaiko	62	6	1	–	–	352	42	5
Vrachati	38	1	8	–	–	185	72	–
Xylokastro	13	6	13	3	10	56	50	–
Zemeno	–	75	41	36	41	265	253	114
Total	982	1,268	932	1,518	1,205	18,110	9,859	1,465

to the early modern period, while pigs were raised solely for food. Oxen are not mentioned in the sources, but were certainly bred, since they were the primary work animals, mainly used in plowing and hauling, and provided meat for sacrifices. The principal sources of meat, dairy products, wool, and hair were sheep and goats, which are also absent from our sources. Considering the extensive mountainous land of Sikyonia, pastoralism must have been one of the main sources of subsistence in antiquity, as it has been in recent centuries (see Table 1.8). Ancient historians and students of the Greek countryside have argued for the symbiosis of animal husbandry and agriculture in antiquity, and the close collaboration between herders and farmers.[194] This also applies to later periods down to the modern era, as we can see by comparing the 1911 data of Tables 1.7 and 1.8. Even villages that did not extend beyond the coastal plain and had substantial agricultural production, such as Vrachati, Kokkoni, Nerantza, Kato Diminio, and Melissi, had a considerable number of sheep and goats. Inversely, mountainous villages with numerous herds and limited arable lands, such as Stimanga, Bozika, Velina, Panariti, or Manna, did manage to produce sufficient quantities of cereals, olives, and even grapes.

Overall, for the year 1911, 18,110 sheep and 9,859 goats are recorded from the villages of Sikyonia, together with 1,518 oxen, 1,205 pigs, 1,268 mules, 932 donkeys, and 982 horses. Goats are more numerous in areas with maquis vegetation, such as Stimanga or Kryoneri. Also, coastal villages have more horses than mules or donkeys, and only a handful of oxen. On the contrary, mules and donkeys outnumber horses in the semimountainous and mountainous villages, since these pack animals could handle sloping terrain better than horses. Mules were also used for plowing in the same capacity as horses on the coast, and for working olive crushers, presses, and mills. For the purposes of plowing and hauling, they replaced the oxen that must have been more numerous in previous centuries.[195] Pairs of oxen *(paio di Bò)* appear regularly in the Nani Archive, always in connection with land *(terreni),* both in coastal villages (Bolati, Varella, Vasiliko) and mountainous/semimountainous ones (Lalioti, Stimanga, Panariti, Manna).[196]

The number of sheep and goats has dramatically decreased in the last four decades, mainly due to the expansion of agriculture. At the same time, the appearance of the automobile and the construction of asphalt roads have reduced reliance on horses, donkeys, and mules.

Fishing

Far from being merely supplementary to agriculture and pastoralism as a means of subsistence, fishing must have been a considerable resource for the Sikyonians living on or near the coastal zone since prehistoric times. One of our Late Helladic settlement sites located above the coastal plain yielded a conical lead weight most likely used for fishing (HS-98; Fig. 5.19:s). Later, fish became a Sikyonian specialty (ἰδίωμα), if we trust Antiphanes (*apud* Ath. 1.27d), who selects Sikyonian fish (ἰχθὺς Σικυῶνος) for his perfect *symposion:* "From Elis comes the cook; from Argos the cauldron, from Phlius wine, from Corinth bedspreads; fish from Sikyon, flute-girls from Aegion, cheese from Sicily . . . perfumes from Athens,

194. See esp. Forbes 1994, 1995.

195. The southern Argolid surveyors estimate that in the early 19th century about half of Greek farming families possessed a yoke of oxen: see Jameson, Runnels, and van Andel 1994, pp. 285–286.

196. See, e.g., Ms. 3927, ff. 555r+v, 556v, 560v, 565v, 571r, 575r, 582v.

eels from Boiotia." The only creature among marine fauna mentioned in the sources in connection with Sikyon is the conger eel (γόγγρος), a large, strictly marine, scaleless eel. Athenaios, who devotes a paragraph to the species (7.288c–d), describes them as follows: "These, as Hikesios says, are tougher than lake eels, have a more spongy flesh, are less nourishing and much inferior in flavor, but are wholesome [εὐστομάχους]." He also quotes Eudoxus, who "in the sixth book of his *Description of the Earth,* says that many are caught in Sikyon as large as a man can carry; in some instances one of them even fills a cart" (γόγγρους δὲ φησιν πολλοὺς ἀνδραχθεῖς ἐν Σικυῶνι ἁλίσκεσθαι. ὧν ἐνίαιους εἶναι καὶ ἁμαξιαίους). He continues by saying that "Philemon, the poet of New Comedy, also mentions the different conger eels of Sikyon" (τῶν ἐν Σικυῶνι διαφόρων γόγγρων). In Philemon's play, the cook, boasting of his art, says pompously: "If I had, then, got something rare, an Attic sea lizard—O Savior Zeus—or Argive boar, or conger eel from Sikyon, which Poseidon carries to heaven as an offering to the gods, then all who ate would have become gods."

Conger eel, the colloquial Greek δρόγγος or μουγκρί, is still fished in the Corinthian Gulf, although demand for it is very low. The earliest statistical data on commercial fishing per port authority in Greece date from 1936.[197] According to the data of the port authority of Patras, on which Kiato depended, the following species produced over 1,000 kg: codfish, anchovies, smelts, boces, striped gray mullets, chub mackerels, whitebaits, saddled breams, conger eels, red mullets, sardines, horse mackerels, scorpion fishes, two-banded breams, and doradoes. That particular year, 1,160 kg of conger eels were caught.

Quarrying

The presence of ancient stone quarries between Sikyon and Corinth has been known for many years,[198] but no quarries have thus far been reported from the area of Sikyon itself. I have located eight areas with clear signs of ancient quarrying: five in the city itself, two to the east of the Sikyonian plateau (RS-6 and HS-47), and one to the northwest of it (SP-9). The plateau carries the most extensive traces of quarrying activity: along the eastern edge of Pano Kokkinia, both to the west and south of the ancient agora (Quarries 1–3); near the eastern edge of the plateau due north of the gully of Mikri Vrysi (Quarry 4); and along the northwest edge of the plateau following the line of the fortification wall (Map 6). In addition, large portions of the theater and the stadium have been carved out of the bedrock.[199] Quarries are both pitlike and trenchlike, of conglomerate, oolitic limestone, and sandstone (Fig. 1.31). The latter was extracted from Quarry 4, which has recently been excavated by the local Ephoreia. The trenchlike quarrying along the northwest edge of the plateau was probably made in order to provide footing (and material) for the city wall (Fig. 1.32).[200]

The trenchlike quarry of Saitaiika (Σαιταίικα), south of the village of Velo, is located at the edge of one of the first low, steplike terraces rising to the southwest of the plain. The conglomerate rock is cut vertically to a depth of at least 1 m and a length of ca. 45 m. In two places a square block has been quarried but left in place (Figs. 1.33, 1.34). A road cut (RS-6) at

197. *Statistique sur la pêche en Grèce 1936,* p. 13.

198. For the quarries between ancient Corinth and the Nemea River, see Wiseman 1978, pp. 68, 104, and Hayward 2003.

199. Many more distinct areas of quarrying have been recognized in the course of the intensive surface survey and of the geoarchaeological survey conducted in the urban area of Sikyon from 2004 to 2009; see Lolos et al., forthcoming, and the annual reports of the project at <http://extras.ha.uth.gr/sikyon>.

200. See below, pp. 210–211.

Figure 1.31. Pitlike quarry at Sikyon (Quarry 2 on Map 6)

Figure 1.32 ***(below, left)*****. Trenchlike quarry at Sikyon along the northwest edge of the plateau, looking north**

Figure 1.33 ***(below, right)*****. Trenchlike quarry at Saitaiika of Velo, along the conglomerate face of a marine terrace, looking south. Notice the partially cut block beneath the measuring stick.**

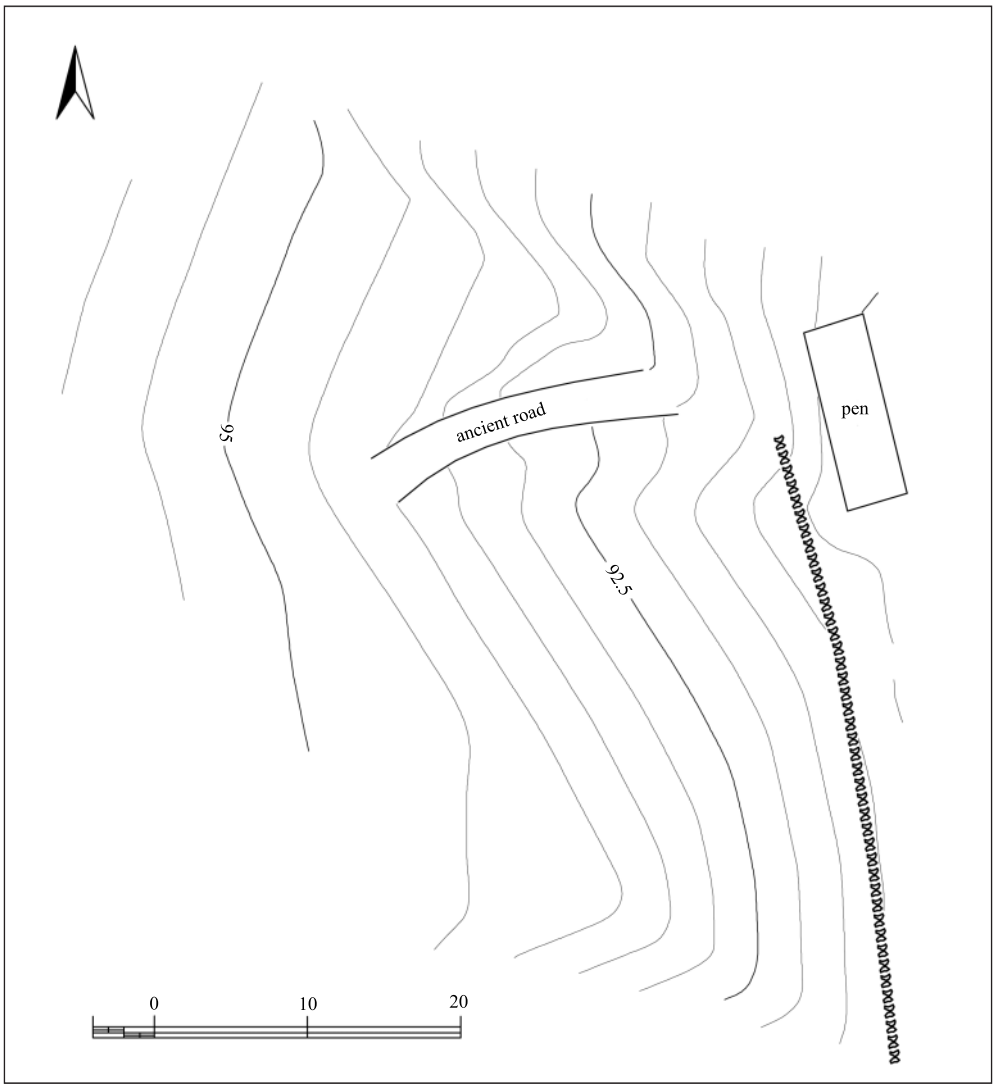

Figure 1.34. Plan of the quarry and road (RS-6) at Saitaiika of Velo

the northern end of the visible part of the quarry was presumably associated with the transportation of the stones. It is possible that the quarry continues on the other side (north) of the road, and I spotted possible signs of trench-like quarrying further to the southeast, near the village of Evangelistria (HS-3). Again, the friability of the conglomerate obstructs the recognition of quarried surfaces, and further research is needed for their identification and accurate mapping. To the west of Saitaiika, at Prophetes Elias of Velo (HS-47), I recorded traces of pitlike quarrying with a face over 40 m in length (Fig. 1.35). Nearby I observed a rock-cut well and basin, as well as an ashlar stone, which was apparently extracted from the quarry. In the western part of Sikyonia, I found only one quarry, near the village of Ano Melissi (SP-9). Vegetation and fencing on adjacent land plots prohibited me from exploring the limits of this pitlike, conglomerate quarry.

I do not claim to have located all of the quarries in ancient Sikyonia, but such a project would be a worthwhile undertaking because there are indications that Sikyonian stone was used in construction projects at the

Figure 1.35. Pitlike quarry at Prophetes Elias of Velo (HS-47)

sanctuaries of Delphi, Olympia, and Epidauros. The French excavators of Delphi observed that the first two Sikyonian "treasuries" at the sanctuary, namely the Tholos and the Monopteros, were made of "oölithic tufa with pebble inclusions" commonly found in the area between Corinth and Sikyon.[201] In addition, a Sikyonian carved his ethnic on a poros stone block found in a pile at the southwest corner of the temple terrace.[202] The excavators argue for a Sikyonian provenance for the stone and believe it was used in the construction of the Archaic sanctuary in the late 7th/early 6th century B.C.

The Sikyonian treasury at Olympia is described as being built of calcareous sandstone ("Kalksandstein"), which is not used in any other building of the sanctuary. The stones bear marks in the Sikyonian alphabet, which led Wilhelm Dörpfeld to suggest that they were quarried at Sikyon.[203] Sandstone is found on the Sikyonian plateau and possibly in other parts of Sikyonia as well.

Finally, a fragmentary inscription built into a Late Roman wall to the south of the Tholos of the Epidaurian Asklepieion refers to transportation of "poros" stones from Sikyon and Corinth to Epidauros by sea.[204] No further details of this inscription are known, and it remains unpublished. Closer examination of the building material used in the treasuries and temples of all three sanctuaries and their comparison with samples of quarries from the Corinthia and Sikyonia is needed in order to identify the source of the stone.

Woodcutting and Other Activities

The texts of ancient historians contain a number of references to the considerable strength of the Sikyonian navy, for the building of which ample resources of timber were needed.[205] In addition, from two Delphic

201. Bommelaer 1991, pp. 118–123. By "oölithic tufa" the excavators probably mean oolitic limestone, which is found on the Sikyonian plateau. The recent excavations for the new railway from Athens to Kiato exposed in 2005 parts of an extensive quarry of conglomerate stone, the first time that quarrying activity has been detected in the Sikyonian plain. The location of this quarry, very close to the site of the ancient harbor, meant that its stone could have been transported to Delphi relatively easily.

202. Daux 1937, pp. 57–60. The dimensions of the ashlar block: H. 0.92, L. 0.9, Th. 0.32 m.

203. Dörpfeld 1883, 1892; also Mallwitz 1972, pp. 167–169.

204. Kritzas 1987, p. 14.

205. Hdt. 8.1, 8.43; schol. ad Pind. *Nem.* 9.5; Thuc. 2.9.3, 8.3.2; Xen. *Hell.* 6.4.18.

inscriptions of the 4th century B.C. we learn that the *naopoioi* of Apollo bought cypress from Sikyon, which was then transported by sea to Kirra.[206] The forested mountainous areas of Sikyonia—particularly its black pine, fir, and cypress—would have been prime sources of timber in antiquity. In Appendix IV, I argue that the "public" land defined by a rock-cut inscription that I found near the southwest fringes of the territory was exploited for its timber resources, namely, fir and black pine.

Pine trees were tapped for their resin, which was used for a variety of purposes including sealing jars and the planks of the boats. Conifers are also associated with apiculture, although our sources do not mention such activity, and we found no ancient ceramic hives during the survey. This does not mean that beekeeping was not practiced in Sikyonia, but rather that straw or wooden hives were used instead.[207] In the 1911 census, 1,465 beehives were counted in Sikyonian territory.

206. Bousquet 1977, pp. 91–95; 1988, pp. 85–90, 226–233; *CID* II 60 and 62 IIIB, lines 72–75; also Meiggs 1982, pp. 430–432.

207. Likewise the southern Argolid intensive surveyors found fragments of a ceramic hive at only one site: Jameson, Runnels, and van Andel 1994, p. 290.