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Uncovering the Maritime Secrets of Aperlae, A Coastal Settlement of Ancient Lycia



By Robert L. Hohlfelder and Robert L. Vann

THE RUGGEDLY BEAUTIFUL AREA OF ANCIENT LYCIA LIES IN THE southwestern corner of Turkey (Asia Minor in antiquity). There the Taurus Mountains abruptly march into the sea, creating an irregular littoral distinguished by numerous sheltered bays and natural roadsteads that can provide haven for ships and boats from the vagaries of an uncertain sea. Many other inlets, however, exist along this deeply indented coastline that are far more open and vulnerable to the natural elements. They face directly into the Mediterranean without the benefit of a protective headland or promontory to shield them from the full force of storm waves or heavy winds beating in from the open sea.

Asar Bay

Asar Bay is one such body of exposed water. It is located east-northeast of Uluburun, site of a recently excavated fourteenth century BCE shipwreck (Pulak 1997). The bay runs for ca. six to seven kilometers in an approximate southwest-northeast axis along the line of a local geological fault. Its mouth is open to the sea, while its eastern terminus is an isthmus that now connects the peninsula of Sicak Yarimadasi to the mainland.

When the Mediterranean masquerades as a mill pond, this bay affords a perfect fair-weather anchorage. But when high winds and heavy seas change the sea's character, the bay becomes an unsafe and dangerous cul-de-sac. For ancient mariners caught in this fjord when adverse weather hit, there would have been no safe moorings within and no easy escape route to open water. In antiquity, it was an open roadstead whose use demanded considerable caution, respect, and sometimes a bit of luck.

Asar Bay and the isthmus connecting Sicak Yarimadasi to the mainland. The seaside district of submerged ruins extends beyond the eastern fortifications. The anchorage to the east of the isthmus, Polemos Bükü, is more sheltered, but does not contain evidence of any significant ancient settlement. View from from Sicak Yarimadasi looking to the NE. *All photographs by R. Hohlfelder unless noted.*

The Mysteries of Aperlae

In spite of its exposure and unpredictable reliability as an anchorage, Asar Bay did have an ancient settlement deep in its recess. Aperlae, a fortified coastal town scarcely mentioned in extant literary sources, stood on its northern shore almost at the bay's terminus. Its complex of defensive walls, two baths, two churches, a possible agora, ca. seventy tombs, ca. forty cisterns, and numerous other unidentified structures dramatically adorns the steep slope that quickly rises up from the bay's shoreline.

These impressive terrestrial ruins speak clearly to the prosperity of this town during its millennial existence from the late fourth or the early third century BCE to some point in the middle of the seventh century CE. Some scholars, however, have argued for an earlier settlement, based on an uncertain reading of a silver coin series dated to the fifth century BCE and tentatively assigned to Aperlae (*BMC Lycia* 1897:xxiii; Bean 1978:102). But no archaeological evidence has yet been found on site to support habitation before our proposed Hellenistic date for the lowest courses of the city walls. It seems most unlikely that any sizable community would have existed in the reaches of Asar Bay at an earlier date without requisite defensive installations. Traces of such structures or other features of early Lycian cities, such as rock-cut tombs or inscriptions in a local pre-Greek language, have not yet been found (Zimmermann 1992:201 following Bean 1978:102).



Divers excavate copper ingots at the site of the Bronze Age ship at Uluburun, Turkey. While marine archaeology began with miscellaneous artifacts brought to the surface by sponge divers, it has evolved into a sophisticated archaeological discipline in its own right. *Photograph by Donald A. Frey.*

Maritime Archaeology

Sponge divers to nuclear submarines. This phrase captures in a nutshell the evolution of archaeology underwater in the last hundred years. Chance finds of precious objects pulled from the sea by sponge divers at Antikythera (Greece) in 1900 fired the imagination of the general public and caught the attention of the scholarly world. The salvage of works of art from beneath the Mediterranean (hardly archaeology even by definitions then current) demonstrated in a dramatic way the potential of this timeless sea to be a new archive for the study of the ancient past. Another window to antiquity had opened.

More salvage (e.g., Artemisium, Greece) and some archaeology (e.g., A. Poidebard at Tyre and Sidon, Lebanon) occurred before World War II. Commercial divers or sailors who used cumbersome hard-helmet gear did the field work below the water, while the archaeologists supervised from above. Only after the war did the development of SCUBA (Self-Contained Underwater Breathing Apparatus) permit scholars easily to learn to dive and actually visit underwater sites. SCUBA permitted the previously impossible hands-on analysis of material cultural remains and features in situ and personal control of investigations. The adaptation of the techniques and canons of land archaeology to a watery environment then began in earnest (e.g., J.-Y. Cousteau and P. Benoît at Grand Congloué, France).

While it is difficult to establish the precise beginning of a new discipline, and that is what marine or maritime archaeology has become, the underwater investigations conducted by George Bass at Cape Gelidonya (Turkey) and Edwin Link at Caesarea Maritima

(Israel) in 1960 are certainly early examples of this field of scholarly research in the eastern Mediterranean. Cape Gelidonya set the standards for shipwreck archaeology around the world. Link's explorations at Caesarea only revealed the promise of excavations at major submerged habitation sites. Both, however, moved archaeology beneath the sea to a new level.

Since 1960, the eastern Mediterranean has continued to yield more of its secrets at an ever increasing pace. Shipwreck archaeology off the Turkish coast, in Greek waters, and along Israel's shores has enhanced our knowledge of ancient ships, ship construction, and trade routes. Coastal settlements also have been explored in all three countries with remarkable results. Similar investigations in Cyprus have been limited (e.g., M. Katzev at Kyrenia and R. L. Hohlfelder at Paphos), but sufficient to reveal the potential of that country's vast marine cultural heritage. So too in Egypt where a French team under J.-Y. Empereur astounded the world with the underwater discovery of the ruins of the famous Pharos, the lighthouse of Alexandria and one of the Seven Wonders of the ancient world. Other scientists have recently begun to explore the shores and coastal waters of the Red Sea.

Last summer, off the northwestern coast of Sicily, oceanographer Robert Ballard, working with archaeologists Anna M. McCann and John P. Oleson, opened a truly exciting new pathway to the ancient past in the deep waters of the Mediterranean. Using a U.S. Navy nuclear-powered research submarine, the NR-1, this team found and began scientific surveys of eight ancient shipwrecks in depths of c. 800 m (Discover Jan. 1998:97-98). More survey work with this amazing vessel is planned for the Black Sea in 1999. Tomorrow, for the discipline of maritime archaeology, has arrived.

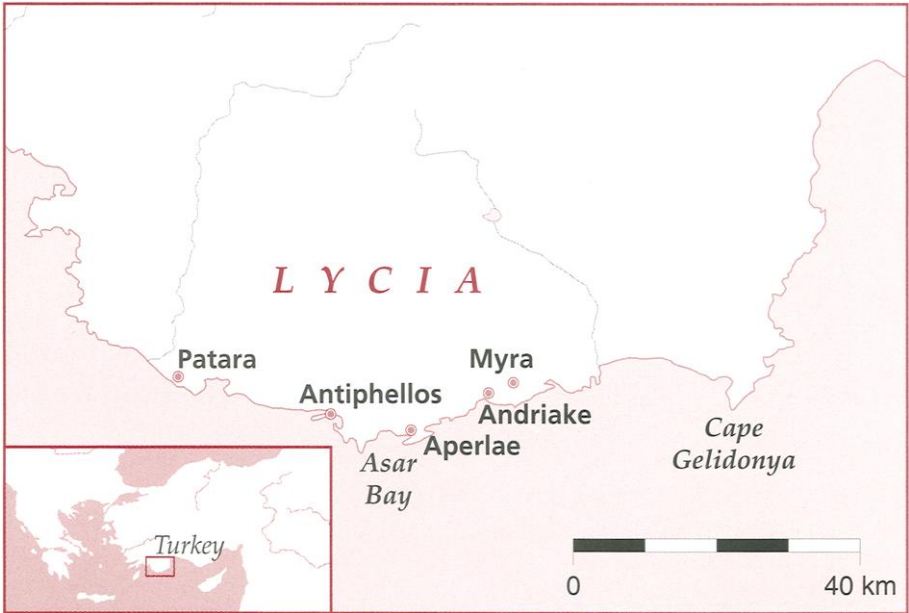
Our work at Aperlée pales technologically when compared to the future of the NR-1 and deep-water archaeology. But what our field work does show is that the new need not sweep away the old. Maritime archaeology now has a rich inventory of experience to bring to bear on different sites. Even a shallow-water underwater survey undertaken from the surface with snorkel gear, plastic tape measures and slates, and underwater cameras and videos, with on-land support from GPS units, a laser theodolite, and lap-top computers still has a role to play in the explorations of the hundreds of partially submerged sites that dot the Mediterranean littoral. In some ways, our survey is "back to the future." Seen through a different prism, however, it provides another example of a simple methodology that will always be able to make a contribution to the discipline of archaeology underwater, even as some of its practitioners rush into the twenty-first century in nuclear submarines. But however archaeologists engage the sea in future underwater investigations, we can expect to be surprised. The best is clearly ahead.

Regarding the end of life at the site, Clive Foss observed masonry associated with a redoubt constructed around a ruined church in the northwest corner of the town. He assigned it to the Lascarid era, 1204–61 CE (Foss 1984:17). Such a late date for the persistence of even a small Byzantine community is unlikely, although the reuse of a portion of the abandoned settlement in the decades before the battle of Manzikert (1071) would not be improbable. A general flight of Aperlites following Byzantine military reverses in southern Asia Minor culminating locally at the naval battle of Phoenix in 655 CE seems a more likely temporal scenario for the advent of the town's demise. As attacks and looting took their toll on organized life, Byzantine control of Lycia ebbed in the following decades. Some squatters may have stayed on and braved the uncertainties and dangers of intermittent Arab raids. Perhaps some filtered back at a later date to a greatly diminished or abandoned Aperlae to eke out an existence amidst the ruins of a more prosperous past. The evidence of late repairs in the northwest church-enceinte noted by Foss may speak to such a settlement. Perhaps a band of monks clustered together in what once had been the consecrated ground of the earlier church and built their cells in its ruins.

While one can only conjecture about the life and death of Aperlae now without excavations, the extant physical features provide dramatic evidence for at least a millennial existence for this coastal settlement. One can also confidently say that its prosperity and longevity were inextricably linked to the sea and maritime trade.

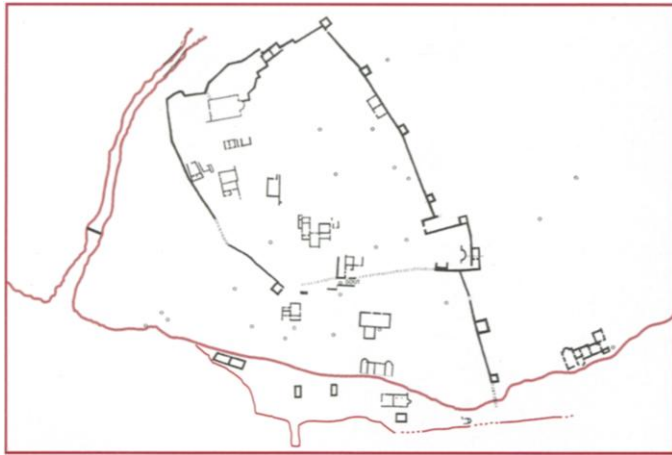
At the same time, however, there is the obvious incongruity of a long-lived settlement that flourished in a geographically disadvantageous situation, standing at the head of a bay exposed to the sea and isolated by rugged mountains from easy access to the interior. Good agricultural land may have been scarce as was readily available potable water. No springs, streams, or lakes existed within Aperlae's walls or its immediate hinterland. The numerous cisterns point to an obvious dependence on rain water collected carefully during the winter months and judiciously doled out during the rest of the year. Water discipline must have been a fact of daily life in this town (contra Zimmermann 1992:201). This deficiency, however, was not unique to this settlement. Much of the ancient Lycian shore suffered from a similar dearth of fresh water (see Beaufort 1818:9ff.), and passage overland to the interior was unusually arduous.

Even facing such adverse conditions, coastal settlements like Aperlae did arise in seemingly unlikely places. Topographical and geographical limitations were not always the final determinants as long as there were compelling reasons for their siting. One of the challenges of our survey of



The ruins of Aperlae, land and sea, looking north from Sicak Yarimadasi.

Aperlae is to understand why the northern shoreline of Asar Bay near its head, where nature did not obviously favor



Preliminary town plan. Prepared by S. Sachs.

human habitation, was a place where enduring persistent hardship was worth the effort.

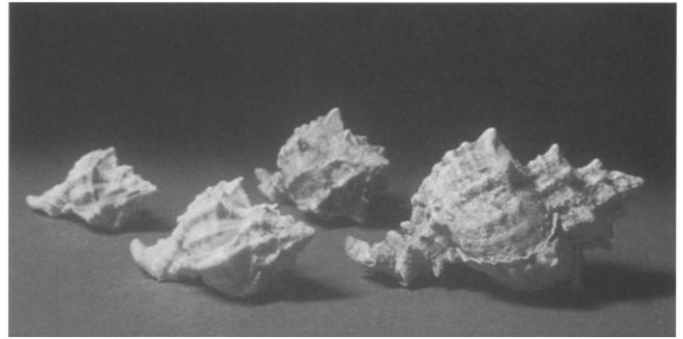
Another intriguing dimension of this ancient site is its submerged ruins. At some point in the last 1,300 years, the seaside district of the town slipped beneath the sea. The inundation of most of Aperlae's waterfront was probably due to a local relative sea level change associated with coastal instability that was induced by a nearby regional fault line, the one responsible for the geological events that formed Asar Bay in the distant past. A specific tectonic event (or perhaps several) or, more likely, a slow slumping over time triggered the coastal sinking that we see today (Pirazzoli 1987:66).

The average depth of this subsidence is difficult to assess, since the ruins beneath the sea are covered by only a few centimeters of water near shore while the deepest structural remains sit on the sea floor at ca. -6.25 m. A reasonable estimate for an average amount of subsidence since the town's floruit would be ca. -2.00 m (Carter 1978:182). It also seems that the water depth over the submerged structures increases as one moves along the drowned waterfront from east to west. Perhaps there has also been a local coastal tilt.

The first step in resolving the mysteries of Aperlae occurred in the 1970s. It was then that the Carters, Robert and Cynthia, while sailing along the Lycian coast, first moored in Asar Bay and began their investigations of the ruins that began in the sea and climbed steeply up the northern shore. Their discovery, identification, and observations revived scholarly interest in a site that had almost disappeared from our historical awareness and had been geographically misplaced (Carter 1978). With the Carters' support and guidance, the authors began a land and underwater survey of the site to expand and complete their 1970s explorations. What follows are some preliminary observations on the maritime life of this coastal town based on field work in 1996 and 1997.

Discoveries at a Snail's Place

One of the most pronounced aspects of Aperlae is the ubiquity of snail shells. Quite literally, they litter the entire



△ *Murex trunculus* shells. The largest one found is the size of a walnut. Photograph by Ken Abbot.

▽ Shells and pottery in the middens.



site, with the heaviest concentrations to be found in two middens to the west of the settlement. With statistically insignificant exceptions, all the shells are from a particular species of sea snail, *murex trunculus*. This animal produced a mucus in its hypobranchial gland that was the basis of Tyrian purple dye, arguably one of the most precious commodities the ancient world produced (Reese 1979-80:83; McGovern 1990:33). Commenting on the shell deposit he had discovered west of the town's center, Carter had wondered if dye production had been a component of Aperlae's history (Carter 1978:183). He was unaware at the time that the type of murex he had observed there was precisely the right kind for purple-dye manufacture.

Our survey found that broken shell fragments were not limited to the two concentrations west of the walls. Rather, shells were everywhere, visible in the mortar used in Aperlae's Roman and Byzantine buildings and on the ground as the residue of this bonding from walls and structures that fell long ago. In other places, there were piles of shells probably stockpiled in anticipation of construction. By chance, they were not burned for lime or crushed to be added to mortar. Their survival speaks to projects begun but not finished.

Our team first attempted to calculate the total surface area of the settlement distinguished by shell finds, but gave up when confronted with the almost universal distribution pattern of these remains. Rather, we concentrated on obtaining linear measurements for the three largest concentrations we could find: the two deposits west of the town's walls on either side of a ravine crossed by a Roman footbridge and the area seaward of the original southern fortification wall. The total surface area for these three deposits was ca. 1,644 m².

In each accumulation, the overwhelming majority of the shells had been smashed into tiny pieces. Amid the fragments, we found a few shells of different marine mollusks as well, suggesting that Aperlites used nets or traps to collect the animals rather than gathering them exclusively by hand. The latter method would have permitted the fishermen to select only what they desired, while the former guaranteed some intruders even in waters rich with *murex trunculus*. Because no animal bones were conspicuous in any shell deposit, the middens were probably not general refuse dumps for the town's trash (see Karmon and Spanier 1988:85). Pottery pieces, particularly heavy in the westernmost midden, were commonly found with muricid remains. A close examination of the surface finds did not reveal sherds that had been stained with the dye. Most of the visible artifacts appeared to be combed ware from ceramic transport containers from Late Antiquity, ca. 330–650 CE (Foss 1984:17).

The presence of the sherds might be associated with the breakage of containers connected in some way with the storage or anticipated transport of dye from Aperlae. On the other hand, they might signal an early effort at landfill. Perhaps the Aperlites periodically covered what would have been an odoriferous dump with broken, discarded pottery in a effort to reduce noxious smells and seal the refuse from birds or animals (Strabo 16, 2, 23 on the notorious stench of Tyre).

Unfortunately, we could not determine the depth of any of these accumulations, for digging test probes was beyond the limits of our archaeological license. In the deposit on the west side of the ravine, however, would-be looters had dug a hole in the shells looking for artifacts of value. Although such robbing efforts are unfortunate and potentially destructive to an archaeological site, in this one instance this pit did provide us with a fortuitous sondage. We could see that shells were not simply on the surface of this midden, but continued to a depth of over ca. 0.50 m. The absence of vegetation over the area of the middens more than 1,000 years after the last dumping of shells may also suggest that the deposit runs deep.

Even if this unexpected peek beneath Aperlae's surface had not been possible, our conclusion would have been that



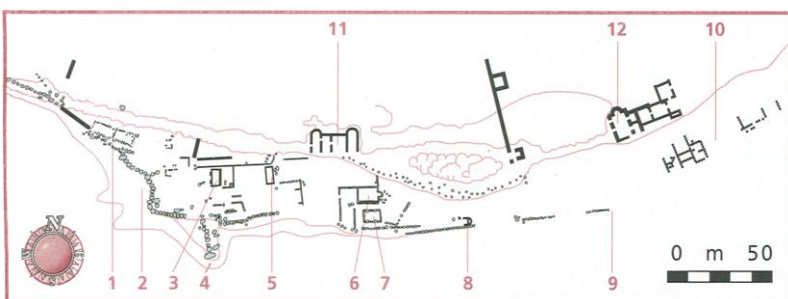
△ Middens of *murex trunculus* shells exist on either side of the ravine west of the fortifications, looking N from Sicak Yarimadasi.

the size of the scatter of murex remains was very impressive. In addition, a search underwater in the ravine that separates the two large middens revealed a massive concentration of shells there as well (ca. 100 m²). Dumping into the sea was undoubtedly a favored means of shell disposal. Calculating the total quantity of refuse material that might have been thrown into the ravine or how much would have been carried away by the sea is an impossible task. All variables considered, however, this find of murex shells is one of the largest known to exist. More impressive middens of *murex trunculus* shells have been reported along the Levantine coast at Tyre and Sidon (Reese 1979–80:85), but a deposit of this size in the Mediterranean area is exceptional.

Our dedicated search for murex shells last summer confirmed Carter's earlier conjecture that Aperlae was clearly involved in the purple industry, but not necessarily as a site where cloth was actually dyed. The dyeing process in antiquity required an ample supply of fresh water that this town might never have enjoyed. We are not yet sure of the seasonal availability and size of the hydro-resources of this town, so we cannot yet estimate if the water supply would have been adequate or inadequate for significant industrial use in addition to the normal needs of daily life.

Even if limited fresh water did discourage dyeing, Aperlae may have played a different role in the purple industry. The dye itself might have been the town's major export product. After its preparation, it could have been shipped to major textile centers located elsewhere in the Aegean or Mediterranean area, either as a liquid or perhaps dried in some way to a solid state for reconstitution elsewhere.

On the other hand, could the presence of this huge scatter of shells be explained by some activity other than the production of dye? Perhaps, but any plausible alternative



Preliminary plan of submerged ruins. Prepared by S. Sachs.

explanations are less likely. As far as we can determine, *murex trunculus* was not harvested exclusively for food in antiquity. The snail is edible but has a distinct, and not universally appreciated, taste. A physiological component of the snail, its *operculum*—the lid or cover used by the animal to seal itself in its shell—was also used in antiquity, and apparently today as well, in the making of some type of incense (Pulak 1988:5; Bass 1997:163). But one imagines that this use of *opercula* was a secondary source of gain or a byproduct rather than the primary reason ancient harvesters collected the snails. Moreover, at Aperlae most of shells, which were from small animals—less than the size of a walnut—had apparently been broken into small, irregular pieces. This treatment does not seem to be the most effect way of removing the mollusk for possible table use or recovering an undamaged *operculum*. It is not inconsistent, however, with preparing the snail for dye-production (Ziderman 1990:100).

The appearance of shell fragments in the mortar of Roman and Byzantine Aperlae probably signals a secondary use as well. The harvesting of such an enormous quantity of marine mollusks, sometimes found at depths of 20 m or more, seems too demanding for such a mundane purpose when other sources of lime or construction binding were readily at hand. But recycling a waste product from a primary industry in such a productive manner was another story.

Ockham's razor seems to apply here. The tremendous number of shell fragments from a sea snail prized in antiquity as a source of purple dye probably means that the Aperlites harvested the marine mollusk for that purpose. Collectively, the intact small shells and shell pieces offer convincing evidence for the existence of a dye industry that may have been Aperlae's *raison d'être* for much of its 1,300 years of life and perhaps an explanation for its specific siting in Asar Bay. Snails may have been the reason why the Aperlites willingly endured the natural challenges of such an isolated and demanding locale. The realization that this town appears to have been a large production center of purple dye in Lycia was a major surprise. It will lead to more focused research exploring the ramifications of this industry in the future.

Structures Beneath Aperlae's Sea

Owing to the restrictions of our archaeological permit from the Turkish government, our underwater exploration

of the submerged sea front area could only be conducted with snorkel gear. While the official prohibition of SCUBA was at times a hindrance and always an inconvenience, the shallow water covering most of this section of the town permitted investigators to make multiple surface dives to gather data, take photographs, sketch features of interest, and measure structural remains. Operating under this restraint, our daily activities were more reminiscent of some of the earliest efforts in Mediterranean marine archaeology conducted in the late 1950s and early 1960s than of practices and procedures now current in this discipline. While our situation was less than ideal, it was not impossible.

Wall Systems

The eastern section of the submerged harbor front was defined by a few ashlar, the only visible remains of what appears to have been a Hellenistic quay running for an undetermined length. Its line of blocks now disappears beneath the mud in the shallows of the easternmost reaches of Asar Bay, while in the west the quay is obscured by later rebuilding that abutted or surmounted it. This installation may have been one of Aperlae's earliest structures, built to define and stabilize the sea front and to delineate a working area along the bayside. The survey produced no data to provide an exact date for its construction, although the placement of the ashlar as headers is more characteristic of regional harbor building techniques in use before the coming of the Romans to Lycia.

We discovered no evidence of an early defensive wall standing atop this header quay. Apparently, the coastal district that stretches down from the southern fortification wall that surrounded the town may have been unprotected originally and simply left vulnerable to naval assaults. If the Hellenistic Aperlites had made a decision not to fortify the seaside, it is likely that only utilitarian or temporary structures dotted the coast during the town's pre-Roman centuries. One other remaining feature besides the quay itself that might have been from this early period was a stretch of massive pavers abutting it in one section. By their very nature, they would not have been at risk during any seaborne raids on the town.

At the point south of the Lower East Gate, there are remains of a Late Antique wall running down to the sea. Traces of this fortification continue underwater for ca. 7 m to the ancient sea front, ending at the projected line of the header quay. This defensive installation appears to have continued west, running along or on top of the course of the earlier seawall. It likely enclosed the entire western segment of the now submerged waterfront before leaving the seaside near the Lower West Gate. In other words, it seems that at some point in Aperlae's later history, the Aperlites restored the walls of the pre-Imperial town and perhaps even finished any sections that had not reached their intended height. Then the builders extended the walls from their southeastern and southwestern termini down to and along the shore where no walls had stood before.

There were reasons for the construction of a protective

umbrella of defensive fortifications. The character of the town's waterfront area had altered, and the dark clouds of new naval threats to Aperlae's existence had appeared after more than 300 years of quiescence under Roman rule. By the end of the 60s BCE, Rome had crushed the pirate menace long present in the eastern Mediterranean and brought peace and security to Lycia and other coastal regions of this area (Rauh 1997:267–68). As the new world order, the *Pax Romana*, took root in Aperlae, its citizens may have intentionally dismantled the original southern defensive wall of the Hellenistic settlement in order to permit growth down to the sea. Its blocks would have been recycled as building material for other structures, for quite simply, it was no longer needed. Rome's control of the entire Mediterranean basin and the contiguous lands had eliminated the need for local defenses.

With the menace of seaborne attack removed and new opportunities for commerce at hand, the Aperlites decided to expand their town seaward. They constructed permanent buildings and streets outside the protective embrace of the town's Hellenistic walls. The newly enhanced seaside, beyond what had been the original urban core, became an integral part of a larger and more prosperous Aperlae.

When momentous geopolitical shifts began in the middle of the third century CE and Rome's majesty tottered in the face of internal and external threats, Aperlae's fortunes became vulnerable once again to seaborne attacks. Either then, when the Goths ravaged Anatolia including the Lycian coast (Mitchell 1993:15–19), or later in the convulsions of the late sixth and early seventh centuries associated with the diminution of Byzantine control in this region, the town seems to have been refortified as the long legacy of Roman peace crumbled and ultimately collapsed.

At either moment in time, the deteriorating global conditions might have precipitated new local security arrangements. There was no point in reconstructing the southern wall of the Hellenistic fortifications because too much of Aperlae was then beyond its line. An extended defensive system, which included new walls and a renovation of the old ones, reached to the bay itself to protect a prosperous Late Antique sea front distinguished by a bath, a church, a small chapel, numerous commercial buildings, some industrial installations, and many other structures.

A bayside curtain wall, built to a height of several meters, provided this security. In places where it is still extant underwater, it rises to the height of ca. 2+ m above the sea floor. Evidence of the use of *spolia* in this area exists and provides a dating clue for its construction in Late Antiquity. In one location, five columns, placed as headers, probably but-



△ Section of Late Antique defensive curtain wall west of jetty, looking north.

▽ Five columns strengthen the Late Antique seawall, looking south.



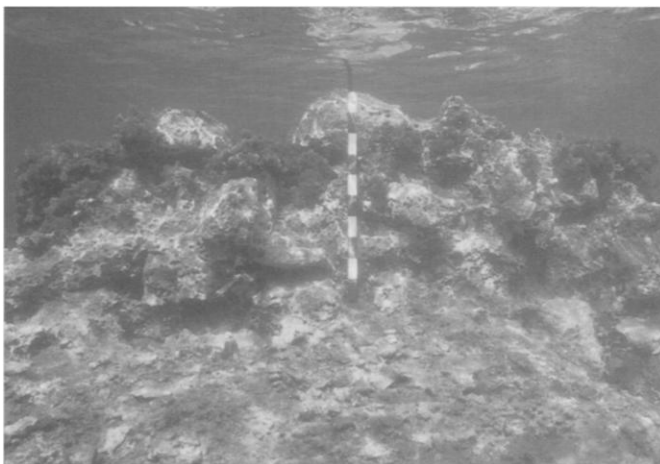
press the inner face of this defensive installation. Another section of the wall has an interesting post-construction history. The force of an earthquake that struck the town hurled a chunk of wall ca. 7 m from its original position only to impale itself at an angle in the Poseidon grass covering the bay's floor.

There also seems to have been a massive effort to in-fill the western section of the harbor area with huge concentrations of pottery sherds. Tons of pottery were dumped there, perhaps to stabilize the new fortifications or to counter a gradual subsidence of the sea wall. The dumping of in-fill might also have been intended to create a fighting platform in the area of the town where defensive efforts against attacking corsairs would have done the most good.



△ **Room B**, the jetty and one of the many yachts that now call daily at Aperlae. The jetty provided the only protection for the bay. Why more extensive constructions were not undertaken remains unknown.

▽ **Tower remains** on north end of jetty, looking west. A fire platform probably signalled Aperlae's existence.



The Finger Jetty

An ancient finger jetty exists near this in-fill area. Its date could not be determined definitively during our survey, but a provenance from later in Aperlae's history is likely. Most certainly, it had a tower at its juncture with the sea wall that was of Late Antique origin. Its total length of ca. 22 m (ca. 6 m wide), extending south into the bay from the quay, would have provided a modicum of protection in its lee for perhaps three small coastal craft secured side by side in a typical Mediterranean fashion.

This structure afforded the only "safe" mooring in the bay. For unknown reasons, the Aperlites did not at any time in their history provide their harbor area with the security that an artificially constructed rubble breakwater would have

offered. Such an installation, built from the shore south into Asar Bay at some point west of the sea front, would have protected the entire harbor district and converted a fair-weather anchorage into an all-weather basin. Such a simple construction was well within available technological abilities during the entire floruit of the town and seemingly within its economic resources as well. But it was never built. Except for the two or three slips that the jetty protected, Aperlae remained an open-water roadstead throughout its long history.

Carter, who knows these waters and winds well today from his many days and nights spent at anchor in Asar Bay, takes the sailor's view that moorings leeward of the jetty would have been satisfactory. Wicker fenders would have

provided protection to ride out normal afternoon winds. The advantage of this mooring was that during the night, a reversal of wind normally would have occurred, permitting a captain of an ancient craft to row or sail his boat out of the bay to wait for favorable breezes.

If weather conditions remained normal, a couple of small boats might have safely berthed behind the jetty. But there always would have been a high degree of danger in such a mooring, for trusting in the weather and the sea has always been risky and sometimes fatal. If an ancient mariner lost his gamble with nature and conditions suddenly turned foul, he would have had no expedient alternative course of action. With seas running heavy, strong winds beating down on Aperlae, and waves rolling over the jetty, there was little he would have been able to do except perhaps attempt to beach his craft somewhere down the bay. Even today, when the seas and wind rise in the late morning or early afternoon, yachtsmen who have come to experience the wonders of Aperlae lift anchors, engage their engines and head out to sea to find a more secure mooring somewhere else. Their ancient counterparts obviously did not have the option and advantage of an engine to overcome adverse sailing conditions.

Carter, however, may well be correct. Maybe the jetty did provide enough protection for this small settlement with its limited coastal traffic. It may have been used, as he has suggested, regardless of the inherent risks. When compared to many other coastal sites around the Mediterranean where ancient mariners called, this town's harbor installations were considerable. It is easy to forget how close to the edge life often was in antiquity.

The finger jetty may have had another role to play in Aperlae's maritime life. It would have been an ideal place for a small lighthouse or, more appropriate for a coastal station of Aperlae's modest size, a simple fire platform that would have announced the town's presence to boats approaching

Asar Bay. A concentration of large stones at its southern terminus may speak to the existence of such a structure.

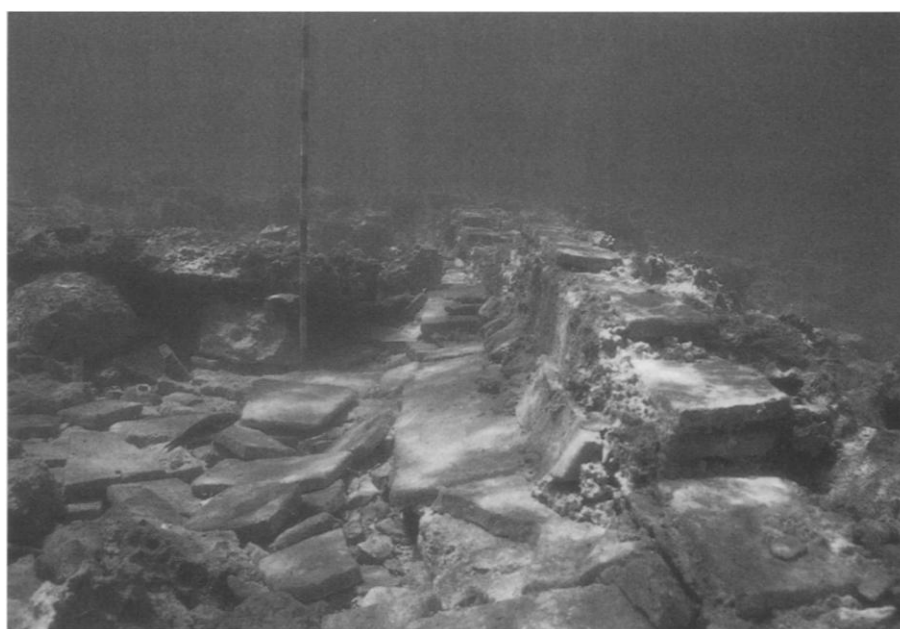
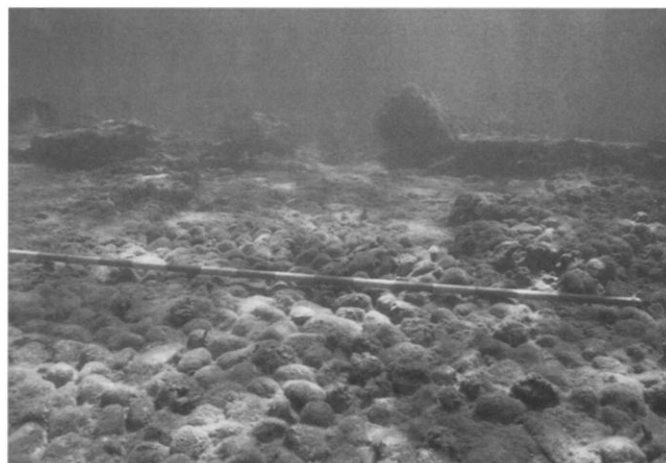
Submerged Buildings

Our survey examined four particularly interesting submerged buildings in some detail. Three of these structures, identified as Rooms A, B, and C, appear to have been hydraulic tanks or basins made of ceramic bricks and tiles with a cobble foundation course. They were clearly intended to hold some type of as yet undetermined liquid.

Although the exact function of these three vats is unclear at this time, it is tempting to associate them in some way with the middens of murex shells. They do not fit the ancient description of processing facilities for the dye offered by the ancient writer Pliny (NH 9, 125–42), although they may have been a local variant. His account speaks of the use of lead tubs or pans in the actual “cooking” of a solution of salt water and the glandular secretions of the *murex trunculus* to produce the dye. It is most unlikely that any lead basins would have survived at Aperlae. They would have been quickly recycled once they no longer were part of the town’s dye industry. Their absence as surface finds on the site would not be unexpected.

If these ceramic vats were not actual dye production installations, could they have been *vivaria*, tanks associated in some way with the storage of the live snails (Higginbotham 1997:7)? The mollusks that had been harvested locally in Asar Bay and elsewhere in the immediate area may have been kept alive in these basins until sufficient numbers were on hand to begin the dye production process. Although these muricid snails are common enough in Asar Bay today, there is no way of knowing how long it would have taken to find sufficient numbers in antiquity for commercial purposes. It seems probable that some sort of holding tanks existed for this purpose, as the Aperlites collected the thousands of snails necessary to produce even a small quantity of dye. Perhaps Rooms A, B, and C were such installations.

On the other hand, it is also possible that the hydraulic vats may have had nothing to do with Aperlae’s murex industry and were designed and built to hold some other liquids. They are, however, unlike basins commonly used for storage and/or production of olive oil, wine, or *garum*, the pungent fermented fish sauce that the Romans considered a



(top) Cobble foundation of Room A. Cobbles are the size of oranges.

(above) Wall and floor remains of Room C, one of the Aperlae’s mysterious basins.

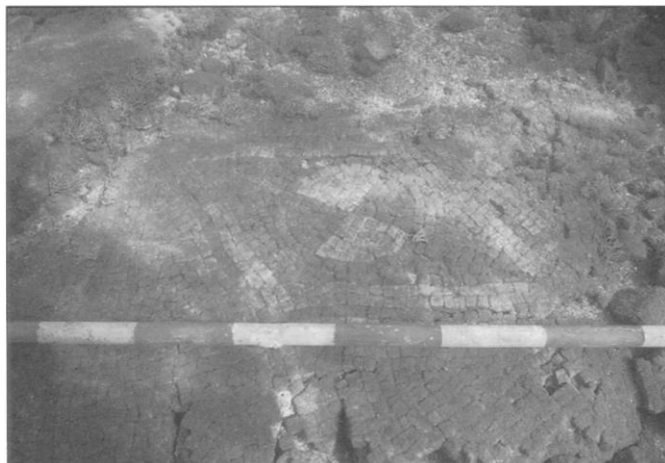
(right) SE corner of Room B, the best preserved of the basins and the only one awash. It is possible that these submerged buildings

were involved in dye production or served as holding tanks for snails until the Aperlites collected the necessary quantity.



delicacy to the palate if not to the nose.

Room D on our plan is actually a building of several rooms apparently linked together. Its location adjacent to the sea and near a large cistern located slightly up the hill from the



Mosaic floor adjoining apse of the underwater church.

shore makes it a more likely candidate for a dyeing facility. At this time, however, any assignment of function to this structure can only be conjectural.

Another building beneath the sea was also a focus of our survey. To the north of Room A was a large structure defined on its eastern face by a small apse that was surrounded on its exterior by a mosaic floor featuring geometric designs. In its form and design—a central nave with two side aisles, this building appears to have been a church in one or more of its many structural incarnations. Considering its prime location on the harbor front, it is not surprising that the ruins in and around this church suggest many different building phases. It is very likely that some structure stood there for as long as Aperlae's sea front functioned. This complicated structure with its many periods of construction and massive overburden obscuring much of its floor level will be the focus of additional survey in future campaigns.

Preliminary Observations on the "Sunken City" of Aperlae

Since Carter's identification of Aperlae in the 1970s, private yachts have come to call to enjoy the beauty and fascination of this abandoned site in numbers that increase annually (contra Bean 1978:103). More recently in the past few years, local tourist companies in nearby Kaş have begun to advertise boat day-trips to see the "sunken city of Aperlae," a hyperbolic, but apparently effective, advertising slogan. The remoteness enjoyed by these ruins for more than a millennium is over. Increased tourist traffic, of course, potentially threatens the site and presents new conservation and stabilization problems for Turkish authorities.

What tourists find at this remarkable site depends on what they are looking for. The land ruins are very striking, but they are not comparable in stature or grandeur to any of the more famous tourist destinations in Turkey, such as Ephesus or Perge. The "sunken city" provides a tourist novelty—ancient structures underwater readily accessible and visible from the surface to anyone who can don a snorkel, mask, and fins. Building remains are there to see, but by them-

selves they do not constitute an entire city or even, for that matter, a typical harbor of a major ancient port. For example, they are in no way comparable to the submerged maritime installations of Caesarea Maritima (Hohlfelder et al. 1983; Raban and Holum 1996).

The submerged ruins of Aperlae are the remnants of structures of modest function and scale. Grand, elegant seaside buildings, such as *villae maritimae*, never distinguished its waterfront. This town or small provincial city stood near, but always off, the main maritime trunk route that ran along the Lycian coast for ships going to and returning from Egypt and the Levant. Large merchantmen passed by the mouth of Asar Bay, but would not have routinely ventured deep in its recess to pick up cargo and/or passengers. Aperlae did not offer the necessary facilities to handle such traffic.

It was always a small coastal settlement that lived in an intimate relationship with the sea, but only as a tiny outpost or station in the maritime world of the Mediterranean. It may briefly have had some military importance before the coming of the Romans, but even that is questionable (Keen 1993:72). When Rome annexed Lycia in 43 CE, any possibility of strategic importance vanished. Its maritime life most surely swirled around the products it imported and exported. What it needed or sold, like purple dye, moved in and out of Asar Bay on small coastal boats, not unlike those that today still transport so many disparate commodities—sage, hay, coal, bags of cement, and soft drinks—between seaside villages. These coasters most certainly were Aperlae's links to the wider Mediterranean world that began beyond the mouth of its inlet, but they did not require elaborate harbor facilities to carry out their business. Even without a breakwater to provide them a secure anchorage in all conditions, Aperlae offered a more accommodating seafront than many other Lycian maritime communities.

These coastal craft, however, were only secondary conveyers of most goods that came to or went from this settlement for sale elsewhere. Aperlae was merely a cog in a trading network for which the larger, more elaborate harbor installations of Lycia, most likely Andriake, the emporium of Myra to the east, or occasionally Patara to the west, were the hubs. These international gateways were the probable destinations for Aperlae's merchants and products. From there, its purple dye could easily have been transhipped anywhere in the Mediterranean basin.

Ironically, the mundane nature of this coastal town may be one of its most attractive archaeological features. International port cities with their technologically advanced harbor installations have been explored. Yet, settlements like Aperlae were far more typical of most ports of call in antiquity (see Houston 1988:560). Even when they were undeveloped and isolated, such small fair-weather anchorages were critical components of the major maritime transportation systems that collectively made the Mediterranean a highway of exchange for products and ideas. They have not yet been studied with as much scholarly attention as they deserve.

Acknowledgements

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Professor David S. Reese of the Field Museum of Natural History in Chicago identified our shell samples and has graciously led us into the vast literature on dye production in antiquity. Professor James Russell of the University of British Columbia visited Aperlae in 1996 to share some of his vast knowledge of Greco-Roman Asia Minor with us and to offer wise observations on the extant ruins. Professor Hugh Elton of Trinity College worked with us in 1996 and began the study of the cisterns. Professor Donald Sullivan of the University of Denver joined us for a few days in June 1997 and began to unravel some of the complexities of Aperlae's physical geography. We extend our gratitude to our colleagues for their participation and contributions to our survey.

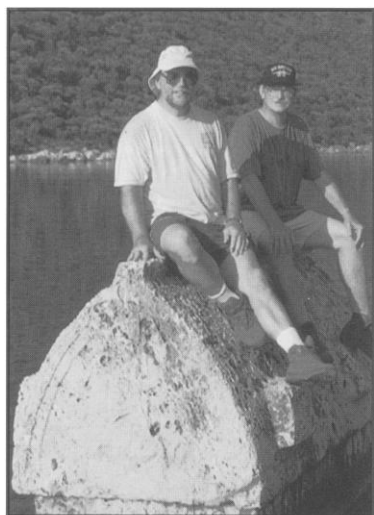
We also wish to thank the students, alumni/ae, and staff from the Universities of Maryland and Colorado who have volunteered their time and labor for the common good. Associate Dean Steve Sachs of the School of Architecture, University of Maryland, charged with the difficult task of coordinating our land and underwater survey and establishing and running our computer lab in the field, accomplished the impossible on a routine basis. We also acknowledge financial and logistical support from the School of Architecture of the University of Maryland and from Dean Peter Spear of the College of Arts and Sciences of the University of Colorado and the Graduate Committee on Arts and Humanities of the same institution. Bob and Cynthia Carter also generously supported both seasons of survey. In addition, Bob joined us for the full season in 1996 and again with Cynthia for part of 1997 to share his incomparable knowledge of Aperlae. His guidance and wisdom have been invaluable to our efforts to understand a place he loves and knows so well. Another financial contributor was Maritima Ltd. of Boulder, Colorado. Trimble Navigation, Inc. of Sunnyvale, Ca. supplied GPS units

for both seasons of survey. Without their wonderful instruments, we could not have functioned in such a remote location. Teletronics of Rockville, Md. provided radios for our use in 1997. The remoteness of the site was less formidable and far more manageable with them in hand.

Bibliography

- Bass, G.
1997 Prolegomena to a Study of Maritime Traffic in Raw Materials to the Aegean During the Fourteenth and Thirteenth Centuries B.C. Pp. 153–70 in *Techne: Craftsmen, Craftswomen and Craftsmanship in the Aegean Bronze Age: Proceedings of the 6th International Aegean Conference, Philadelphia, Temple University, 18–21 April 1996*, edited by R. Laffineur and P. P. Betancourt. Aegaeum 16. Austin: University of Texas at Austin.
- Bean, G. E.
1978 *Lycian Turkey*. London: Ernest Benn.
- Beaufort, Sir F.
1818 *Karamania*. London: R. Hunter.
- Carter, R. S.
1978 The Submerged Seaport of Aperlae, Turkey. *International Journal of Nautical Archaeology* 7:177–85.
- Foss, C.
1984 The Lycian Coast in the Byzantine Age. *Dumbarton Oaks Papers* 48:1–52.
- Higginbotham, J.
1997 *Piscinae: Artificial Fishponds in Roman Italy*. Chapel Hill and London: University of North Carolina Press.
- Hill, G. F.
1897 *Catalogue of the Greek Coins of Lycia, Pamphylia and Pisidia*. London: British Museum.
- Hohlfelder, R. L., Oleson, J. P., Raban, A., and Vann, R. L.
1983 Sebastos: Herod's Harbor at Caesarea Maritima. *Biblical Archaeologist* 46:133–43.
- Houston, G. W.
1988 Ports in Perspective: Some Comparative Materials on Roman Merchant Ships and Ports. *American Journal of Archaeology* 92:553–64.
- Karmon, N. and Spanier, E.
1988 Remains of a Purple Dye Industry Found at Tel Shiqmona. *Israel Exploration Journal* 38:184–86.
- Keen, A.
1993 Gateway from the Aegean to the Mediterranean: The Strategic Value of Lycia Down to the Fourth Century B.C. Pp. 71–77 in *Akten des II. Internationalen Lykien-Symposiums*, vol. 1. Vienna: Österreichische Akademie der Wissenschaften.
- McGovern, P. E.
1990 A Dye for Gods and Kings. *Archaeology* 43:33, 76.
- Mitchell, S.
1993 *Anatolia: Land, Men, and Gods in Asia Minor*, vol. 1. Oxford: Clarendon Press.
- Raban, A. and Holum, K. G.
1996 *Caesarea Maritima: A Retrospective after Two Millennia*. Leiden: E. J. Brill.
- Pirazzoli, P. A.
1987 Submerged Remains of Ancient Megisti in Castellorizo Island (Greece): A Preliminary Survey. *International Journal of Nautical Archaeology* 16:57–66.

- Pulak, C.
 1988 The Bronze Age Shipwreck at Ulu Burun, Turkey: 1985 Campaign. *American Journal of Archaeology* 92:1–37.
 1997 The Uluburun Shipwreck. Pp. 233–62 in *Res Maritimae Cyprus and the Eastern Mediterranean from Prehistory to Late Antiquity*, edited by S. Swiny, R. L. Hohlfelder, and H. W. Swiny. Cyprus American Archaeological Research Institute Monograph Series 1. Atlanta: Scholars Press.
- Rauh, N. K.
 1997 Who were the Cilician Pirates? Pp. 263–83 in *Res Maritimae Cyprus and the Eastern Mediterranean from Prehistory to Late Antiquity*, edited by S. Swiny, R. L. Hohlfelder, and H. W. Swiny. Cyprus American Archaeological Research Institute Monograph Series 1. Atlanta: Scholars Press.
- Reese, D. S.
 1979–80 Industrial Exploitation of Murex Shell: Purple-dye and Lime Production at Sidi Khrebish, Benghazi (Berenice). *Libyan Studies* 11:79–93.
- Ziderman, I. I.
 1990 Seashells and Ancient Purple Dyeing. *Biblical Archaeologist* 53:98–101.



Robert L. Hohlfelder, (on the left) Professor of History at the University of Colorado, Boulder, began his career in marine archaeology 35 years ago at Kenchreai, Greece. Since then, he has conducted underwater explorations in Italy, Spain, Cyprus, and Israel, where he worked for 15 years exploring the harbors of Caesarea (*King Herod's Dream* New York and

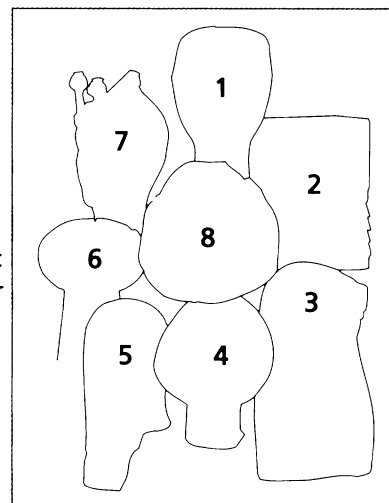
London: 1988 [co-author]). He has published numerous books and articles on his many seasons of field work. His most recent publication is *Res Maritimae, Cyprus and the Eastern Mediterranean from Prehistory to Late Antiquity*, Cyprus American Archaeological Research Institute Monograph Series I, Scholars Press: 1997 (co-editor).

Robert L. Vann is a Professor of Architectural History in the School of Architecture of the University of Maryland. He has conducted archaeological field work at Sardis, Carthage, Sri Lanka, and Caesarea Maritima, where along with Hohlfelder, John P. Oleson and Avner Raban, he co-directed the Caesarea Ancient Harbor Excavation Project from 1981–1990. He also edited *Caesarea Papers*, Journal of Roman Archaeology Supplementary Series 5, Ann Arbor: 1992. In 1991 he returned to Turkey to undertake a series of harbor surveys in Rough Cilicia. In 1996 he extended his archaeological focus to Lycia and invited Hohlfelder to join in an examination of harbor sites there. The survey of Aperlae marks the beginning of this new collaboration.

- Zimmermann, M.
 1992 *Untersuchungen zur historischen Landeskunde Zentrallykiens (=Antiquitas, Series 1, 42)*. Bonn: R. Habelt.

The cover of our premiere issue is a collage of portraits of ancient faces drawn by Art Director Bucky Edgett. (They are not drawn to scale and are not represented in their original colors!)

Can you pinpoint the culture and time period from which each figure derives before consulting the following text?



1. Pre-pottery Neolithic clay human head from Jericho.
2. Eighth-century Phoenician ivory head, possibly Ishtar. A double strand fillet holds her hair which falls in curls down the neck. H. 16cm, w. 13.2 cm. From Nimrud. Iraq Museum, Baghdad.
3. Hellenizing female protome from Carthage. Terracotta mask made from a mould, subsequently daubed with pink and black. Seventh to sixth century BCE. Musée National, Bardo, Tunisia.
4. Ivory statuette of seated goddess from Kültepe (ancient Kanesh), Turkey, ca. 1825–1725 BCE. H. 9.3 cm, w. 2.5 cm. Ankara Archaeology Museum.
5. Gypsum statue of Shubum, surveyor of the land, inlaid with steatite from Mari, 2600–2350 BCE. The whole figure is 1.14 m high. Damascus Museum.
6. Chalcolithic female figurine in squatting position made from limestone, ca. 3000 BCE. H. 39.5 cm. Cyprus. Provenance unknown. J. Paul Getty Museum.
7. Rising young earth mother with arms upraised. Post-palatial Crete. Gazi, probably late Minoan IIIA, ca. 1350 BCE. Archaeological Museum of Heraklion.
8. One of the anthropoid coffin lids from Deir el-Balah in a Late Bronze Age cemetery. Israel Museum.