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## Under the Erythraean Sea: An Ancient Shipwreck in Eritrea

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"This island is cursed!" Nesreddin spat this invective while the other Eritreans quietly nodded. Indeed, it seemed Nesreddin was right. Little had gone right for us since we had landed on Assarca on February 3, 1997. Rain, high winds, and chilly temperatures had prevailed for weeks. The nearly daily pounding by wind and rain left little opportunity to pursue our goal: the excavation of the ancient shipwreck lying just offshore. The storms typically lasted for four or five days, followed by a calm of two or three days' duration. Compounding this were the daily equipment problems caused by the damp and the wind-blown sand that got into everything. Long periods of inactivity shortened people's tempers, particularly those of ones unaccustomed to "roughing it" in isolated environments. Every day was a challenge. I had long ago realized that each day the team remained on Assarca would be a triumph. We had already been given thirty of them; twenty-five remained.

We had come to this small desert island off the Eritrean coast to excavate a fifteen-hundred-year-old shipwreck (fig. 1). Like many shipwrecks of archaeological import, it was located far from the nearest outpost of civilization. Massawa, Eritrea's main port, lay thirty miles across the sea. Inghel, a group of traditional villages, was several miles away on the mainland at the tip of the Buri Peninsula. Inghel had no shops, roads, cars, or telephones. There was, however, a medical clinic. Aside from our neighbors at Inghel, we were truly isolated. Our one link to the world was our single-side-band radio hooked up to a solar-charged car battery. This, however, enabled only the most intermittent contact with Massawa.

Our wreck had settled in the shallow waters of the Assarca Islands. The Assarcas consist of two islets. One, surrounded by fine sandy beaches and overgrown with trees, is called White Assarca. The other, surrounded by jagged, black coral cliffs and barren but for cacti, is Black Assarca. *Guess which one we were on!*

Black Assarca, our base, is little more than an obstruction to shipping. Essentially, it is nothing but a massive sand-covered coral head lying two meters above sea level. Except for a sandy beach on its northern side, the island is nearly featureless. A reef, never more than a meter underwater, completely surrounds Black Assarca, forming a barrier to landing. At low tide, the highest tops of the coral protrude from the sea like pickets, as though defending the place from intrusion. The island is populated by only goats and hand-sized spiders. The flora is limited to grass and a large cactus species called euphorbia. These cacti provide a windbreak as the only natural shelter on the island.

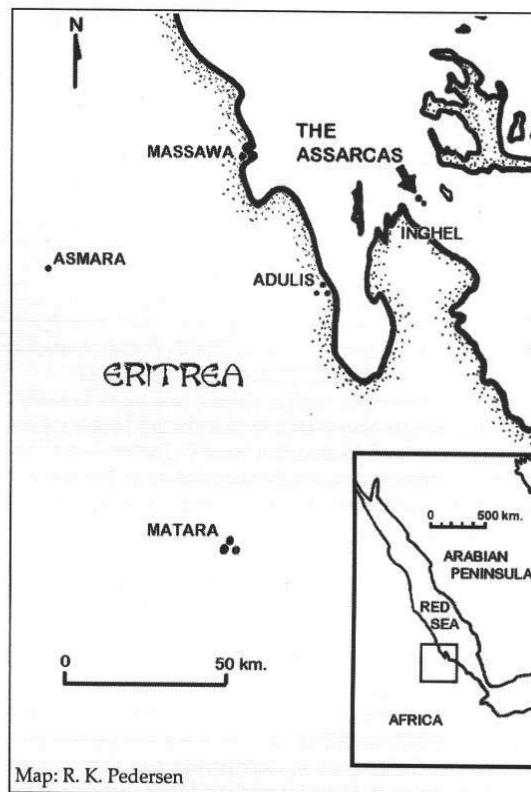


Fig. 1. Eritrea. The location of the Assarca Islands is approximate.

It was some fifteen centuries ago that a ship met disaster on the reef. The wreckage settled at the base of the cliff, possibly remaining undisturbed until 1995. In that year, a group of tourists decided the Assarcas would be a good place for snorkeling. Sailing under the guidance of Doi Malingri, an Italian yachtsman running tours for the Eritrean Ministry of Marine Resources (MMR), their yacht put in at the islands.

During their snorkeling adventure through the clear water, the group noticed odd objects at the base of the reef twenty-five feet below. Malingri investigated these artifacts, which proved to be ceramics. He raised a sherd, containing a neck and handles (fig. 2), that he turned over to the Ministry upon his return to Massawa. Malingri reported to the MMR that there were many more sherds at the island. Shortly

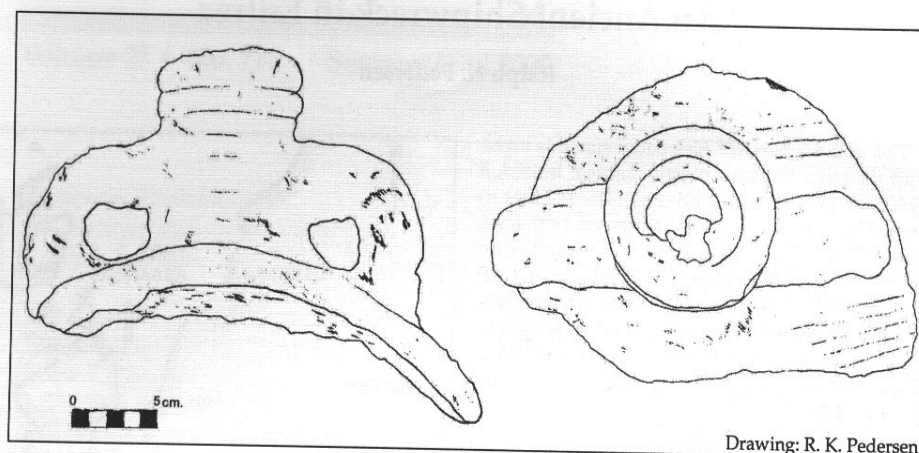


Fig. 2. The sherd raised by Doi Malingri in early 1995.

after this, the sherd was shown to a visiting photographer from the National Geographic Society. The photographer suggested to the Eritrean authorities that, as the piece might be ancient, they should contact Dr. George Bass at INA.

It was at this time that I was preparing for a fact-finding trip to Eritrea. This was in response to an invitation issued to INA in late 1993, by the then-existing Eritrean Department of Culture. By May 1995, all arrangements had been made for my trip. I was planning to merely shake hands and see about the feasibility of conducting a shipwreck survey along the coast. A week before my flight to Africa, I received a phone call from Dr. Bass. He informed me that the Eritrean MMR had contacted him about a possible ancient shipwreck in their waters and they wanted him to examine it. He informed the MMR that one of his research associates was already heading their way to visit the Department of Culture, which surprised the MMR officials. Two weeks later, I was in the Red Sea searching for the shipwreck.

#### The Survey at Assarca 1995

On my arrival in Asmara, Eritrea's capital, I first met with Zemede Tecle, Head of the Department of Culture. I informed him of Malingri's discovery and that the Ministry of Marine Resources in Massawa was expecting me to take a look at it. Zemede had not heard of an ancient wreck being discovered off their coast. I promised to report my findings to him. I then headed down to Massawa, on the edge of the Red Sea.

Asmara lay nine thousand feet above sea level, and the weather in mid-May was still cool. The coastal regions, however, were already baking in the heat. The road to Massawa snaked its way from Asmara down the edge of the Ethiopian plateau to the desert along the sea. The

change in climate was impressive. It ran from greenery in which baboons ran wild to an arid waste in a matter of hours. The coastal desert was forbidding, with dry riverbeds the only evidence that rain ever fell here. Dust devils reached high into the sky. These slender twisting cones appeared to be pillars of smoke and I initially thought they were from fires.

I arrived in Massawa by afternoon. The town is located on two islands and part of the mainland. Its oldest part is on the island of Batsli. Here, Turkish, Egyptian, and Arabic architectures blend together in an exotic mix. The city was still scarred from its battles in 1991 in the war of independence. Bullet holes marred the walls, and spent artillery shells lay half buried in the dust. Shattered Soviet-built tanks lay in ruins about the city. Many people had died in Massawa during the battle for its liberation. More died in a revenge bombing by Ethiopian MIGs after the city had been won by the Eritreans. Despite the overall "shot up" look of the place, the city was slowly being repaired. Feelings of euphoria and optimism were palpable in Massawa as elsewhere in Eritrea. The Eritreans, after all, were forming a new nation.

My contact at the MMR was Dr. J.C. "Chris" Hillman. An overseas Briton, he and his wife Sheila had spent their lives in East Africa. Living in a small trailer that did triple duty as home, office, and school for their two daughters, they were studying the marine life of Eritrea. Once in the MMR offices, I met with officials who showed me the sherd found by Malingri some months previously. Sceptically, I had been expecting the pottery to be relatively modern, perhaps a pot tossed from a nineteenth-century ship. I was stunned to see what my hosts pulled from the storage cabinet. It was the top of an amphora containing a neck and both handles. I had spent over a year preparing

to do the groundwork for an archaeological survey in Eritrean waters. Instead, I was confronted with the real possibility of an ancient shipwreck.

My first instinct was that the sherd had to date to the seventh century CE. It reminded me of the amphoras from Yassiada I used to haul around the museum in Bodrum. The sherd was Mediterranean, at least in style if not origin. It would have been easy to let my imagination run wild, but after spending some time with the sherd, I was confident of my initial analysis. I was holding a piece of a Byzantine amphora found under water in the southern Red Sea. As far as anyone knew, nothing of its like was known to have been found previously in Eritrean waters. Indeed, there were few other known ancient wrecks in the Red Sea. The best known of these was the first-century CE wreck at Zagrabad Island, Egypt. This wreck has been looted by sport divers, and the site was no longer archaeologically viable. Given that Eritrea had been at war since the early 1960s, sport diving had yet to affect the area. Thus, if Malingri's sherd was indeed from a shipwreck, and not merely ancient jettison, there was a good chance the site could be in pristine condition.

The place where the sherd was discovered was the Assarca Islands (var. sp. *Assarka* and *Asarka*). I was told this name derived from an Arabic word meaning "Guardian." The position of the Assarcas, in the middle of the Massawa Channel, explained why the island was so named. A careless captain could easily pile his ship onto the island. Indeed, an old British pilot for the area warned ships to give the Assarcas a wide berth.

Our survey team included Hillman, Yassin Aden of the MMR, and myself. As none of the team had previously visited the site, we searched for it based on Malingri's directions. Once at the islands, we began our search with Yassin at our boat's helm, and Hillman and me in the water equipped with snorkeling gear. We were towed behind the boat scanning the seafloor with Hillman at the end of one line, and myself at the end of a longer one. My first thought was that we were the perfect shark bait: Two large hunks of meat being trolled behind a boat. This, however,

came with the territory: the Red Sea has the highest concentration of sharks in the world. If we were going to worry about sharks, there was no point even getting into the water. After about ten minutes of towing, Hillman spotted something on the seafloor. He immediately dropped off his line. A few seconds later, I saw something too: the long shape of an amphora lying fully exposed on the seafloor. Hillman and I gawked at it, thinking this had been too easy. We grinned at each other before swimming down to take a look. Returning to our boat, we quickly donned our scuba gear, and dived to examine the site.

Located at only twenty feet, the ceramics rested both in the sandy areas between coral heads and atop the reef. Some scattered sherds lay below the coral on sand that sloped down to an undetermined depth. The artifacts were spread over an estimated area of one hundred square meters. The most noticeable aspect of the site was the pile of four or five broken amphoras and assorted sherds lying in a group.

Examination of the site revealed four pottery types. Three of these were closely related in decorative style and fabric color. The most numerous type was a long, conical amphora with a relatively wide mouth. The body was covered with horizontal ridges extending from the neck to the vessel's toe, ending in a button. All examples were broken, exposing a dark brown fabric. Two amphoras had intact bodies, missing only handles and neck. We noticed several examples partially buried and others concreted into the reef. We dubbed these long conical amphoras "Type I" (fig. 3).

The second type of vessel was similar to the sherd raised by Malingri. Like his, none of these amphoras were intact. Small sherds and handles were readily evident, but no large pieces could be found. Malingri had reported that the sherd he raised belonged to a type of amphora that was lentoid in shape. Although we could find no conclusive evidence of this, it was clear that this type was round on at least one vertical axis. We therefore found no reason to doubt his observation. The fabric color was the same dark brown as the conical amphoras, indicating, possibly, a similar origin for the two varieties. These "Type II" sherds had ridges like the conical amphoras but they were verti-

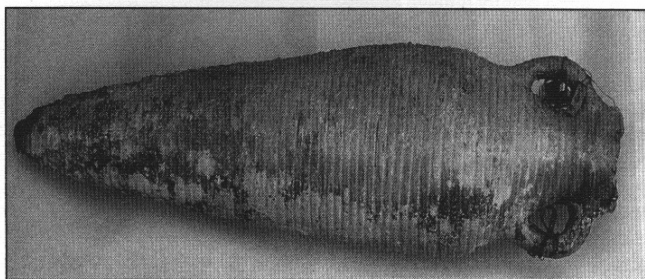


Photo: R. K. Pedersen

Fig. 3. Amphora A3-010. This Type I vessel was the only one found intact in the 1997 season.



Then on the sixth day, Mother Nature rested. Seeing our determination, perhaps she gave us a break. Fine weather followed for three days, during which we were able to locate the site and anchor our newly constructed *Unsinkable II* over it. Then, the storms returned. This weather pattern repeated itself with uncanny predictability. As we moved through February and March, the weather changed to a pattern of five fair days followed by three foul.

All materials, food, and water had to be brought from Massawa on a weekly basis. The thirty-mile journey took two to four hours, depending on which supply boat was sent. Neither the larger *Norah* or the smaller *Abu Salema* could approach the island due to the surrounding reef. In good sea conditions, we off-loaded the supplies into our small inflatable boat from the anchored vessel. All, that is, but the twenty-five jerry cans of potable water. These were lashed together and tossed overboard. Two people would then snorkel out to the cans and swim them ashore. In bad sea conditions the supply boat anchored off the island's far side in the lee of the wind, and everything had to be carried to our camp one kilometer away. This was backbreaking work, but there was no alternative. When it came time to leave Black Assarca, the bad seas meant that we would be forced to carry all our gear, including the excavated amphoras, across the island. This took the better part of two days.

Our cook, an Ethiopian named Mulat (fig. 5), had been a steward on various Ethiopian and Soviet naval ships. Using two kerosene burners, Mulat fed us for near-

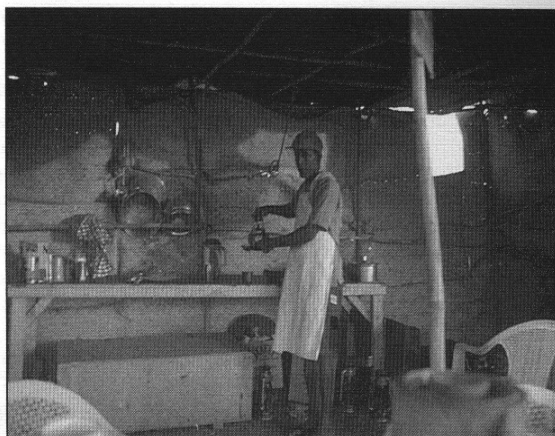


Photo. G. Nilsen

Fig. 5. Mulat, our cook. Veteran steward from Ethiopian and Soviet ships, Mulat worked culinary wonders while battling goats for control of the kitchen.

ly two months. Without refrigeration or electricity, he provided filling and tasty meals, including fresh bread made daily in nothing more than a frying pan. Fresh fish—in abundance just meters away—was our sole source of protein. Mulat made the most of the pasta and lentils that were the bulk of our menu. Good vegetables were hard to come by in Massawa; fruit, however, was plentiful. Our favorite meal was a dish Mulat called *adis*, a spicy stew of lentils and tomato (fig. 6).

Water was always in short supply, so we husbanded it carefully. If we were to run out, we could take our small boat over to the mainland, weather permitting, and purchase water from the local chieftain at Inghel. Fortunately, this was never necessary.

Black Assarca was inhabited by two hundred goats. With no fresh water supply, these caprids had adapted to drinking seawater. It was amusing to see a herd of goats standing in the surf drinking. Their food source was both the scrub grasses and the euphorbia. They were cautious about us at first, but as days progressed they became curious and moved closer to our camp. Soon, the goats were raiding our camp, eating whatever they could. On several nights, I was awakened by an eerie feeling I was being watched. It was the goats. They would stand in a semi-circle about ten feet away from my open shelter watching me sleep. I guess I was the most curious thing they had ever seen.

Four-inch spiders were the other notable inhabitants of our island. They were frightening, but we never learned whether the arachnids



Photo. G. Nilsen

Fig. 6. A breakfast of *adis*. From left: Louise Fisher, Mulat (standing), Tina Erwin, Yassin Aden, Ralph Pedersen, and Tesfay Tadessee.

were poisonous, as no one was bitten. Our first encounter with one was when a spider came out of a roll of drafting vellum. Faces paled at news of this discovery. From then on, reports of the creatures came in regularly. Occasionally, a shriek would ring out across the camp, and everyone knew a spider had just surprised someone.

With *Unsinkable II* on the sea, we had to worry whether her moorings, not to mention her structure, could withstand the storms (fig. 7). The barge was anchored with concrete blocks, which although barely movable on the surface, tended to drag across the sea floor. Fortunately, we had at our disposal the ruins of an old lighthouse and its keeper's hut. A solar-powered lighthouse now stood on the island, while the remains of a propane-powered light-tower along with the ruins of the hut lay strewn about the east side of the island. Concrete blocks, heavy angle iron, corrugated roofing, and several empty propane cylinders proved a bonanza for us. To the anchoring point furthest out, we attached a large ship's anchor we had brought in from Massawa. This anchoring point took the brunt of the storms, as most came remorselessly from that direction.

A second anchoring point was to the reef itself. As this was on the lee of the storms, there was not much stress here. The remaining two points, east and west, were the ones giving us the most problems. Team member Charles Pochin suggested using the propane cylinders as dead weights attached to the barge's concrete block anchors. Then, to keep the block and cylinder assembly from dragging, pieces of angle iron arranged in an x-shape were to be pounded into the seabed directly in front of the assembly with the anchor line passing between the lower legs of the "X."

The system worked. Pounding the pieces of six-inch angle iron into the seabed, however, was no easy task. The anchors lay at a depth of forty feet, the limit of our surface

supplied air. With the exertion of swinging a heavy hammer, air was at a premium. Team member Tesfay Tadessee and I went down to fix the angle irons in place. With the air hoses pulled taut, there was little room to maneuver. The noise of pounding the angle irons amplified to a deafening roar underwater. After a few swings, I saw Tesfay's eyes bulge as he yelled something through his regulator and pointed frantically over my shoulder. With the thought of sharks in my mind, I spun around to see one of the most mesmerizing sights I have ever seen. Swimming broadside to us barely ten feet away was a huge fish. It was larger than our nine-foot inflatable and taller than my six-foot-plus frame. Its huge eye stared at us, while us humans, feeling puny indeed stared back in awe. Barnacles covered parts of its body, indicating great age, while an entourage of small colorful fishes escorted it. The fish obviously had been disturbed in its lair somewhere in the depths off Assarca by the noise we were making. Curiosity getting the better of him, it swam up to see what was creating the disturbance.

As Tesfay and I watched the monster fish swim slowly off, we stood on the seabed transfixed. Then Tesfay tapped me on the shoulder. I turned to see him pointing again, this time not into the sea but directly above us. I looked up. There only a few feet away were two sharks circling. These were the first sharks I had ever seen underwater. We took a split second to admire them, and then dropped to the seabed. We crawled on the sand until we were under the barge. We surfaced and scrambled on board. It was a dive never to be forgotten.

The sharks had come into the area three weeks after we had landed on the island. This was no surprise, as I had noticed two definned shark carcasses, one a hammerhead, on the beach when I visited in 1995. For the first weeks we had seen none. Suddenly they were everywhere. We were a bit puzzled about the sharks' sudden appearance.



Fig. 7. The diving barge *Unsinkable II* in a storm (left), and in calm (right). The small platform, designed by Charles Pochin and the director, survived many a storm and became a symbol of our perseverance.

Photos: R. K. Pedersen

With the next supply delivery, we were informed of the reason: Eritreans from poor villages occasionally cross the Red Sea to the Arabian peninsula to find work as servants. They do this in boats that are often unsafe and overloaded, as this is all done unofficially. One such boat, rated for forty-five people, was loaded with ninety. Once at sea, the overloaded boat capsized. As only three people on board could swim, the rest drowned. This attracted the sharks into the area. Thus, along with foul weather, we also had to deal with sharks that had a taste for human flesh.

We had the good fortune to catch one shark. Two team members were out in the inflatable boat fishing for our dinner when they accidentally hooked the shark. We debated its fate. In the end, it escaped being barbecued. Team member Gary Nilsen removed the hook from its mouth with pliers, and the shark was pushed into the surf. This close encounter removed the fear from most of us, but not the caution. Then, several days into March, the sharks vanished as suddenly as they came. We never saw them again.

The ruins of the lighthouse were useful both for our barge and our artifact storage tank. Using a concrete platform found on the beach, we built a tank with concrete blocks from the ruins of the keeper's hut. Realizing the goats would jump into the tank to get water, we used the remains of the corrugated roof of the keeper's house as a cover. Still the goats came and we frequently had to chase them off the cover. Although the seawater in the tank needed daily replenishing due to leakage and evaporation, the tank was an indispensable asset.

#### The Excavation

Over fifty-five days, we struggled to excavate the site. With one of our two surface-supply compressors mounted to the deck of *Unsinkable II*, two divers at a time could work the site. A dive tender remained on the barge monitoring the compressor, the divers, and the sea conditions. Four small air bottles with regulators were positioned on the site in case of emergency, although the shallowness of the wreck allowed for an easy free ascent. Each dive lasted forty-five minutes to an hour, depending on water temperature.

Handfanning was our sole method of clearing off overburden. Each diver was assigned a specific area to excavate. Artifact recording was by triangulation, the system of measuring the position of an artifact using three points, as the uneven bottom prevented the use of a grid. Several datum points were set up around the site for this. Meter tapes, each with a line level attached to aid in mea-



Photo: R. K. Pedersen

Fig. 8. The deepest level of the excavation revealed yet more vessels and sherds. In the foreground is a Type II amphora. Center left is the top of a Type I amphora, and center right are the toes of two Type I amphoras lying side by side. Whether any of these represent intact vessels is unknown.

surement, and plumb-bobs gave accurate measurements. Coral pieces were removed from the site, and larger pieces were chiseled into more maneuverable sizes. Some artifacts were concreted into the coral. These were removed with careful chiseling.

Each amphora was tagged and its position measured before being removed from the site. Areas were designated "A1" through "A8." Thus, an artifact from area "A1" would be given a number beginning with that designation, such as "A1-001." Once an artifact's position was recorded, it was placed in a storage area off the site until it could be raised by underwater balloon. On the surface, smaller artifacts were stored in buckets or trashcans. Once ashore, amphoras were stored in trashcans and in the storage tank. Each team member was required to keep his own notes about his area and whatever artifacts he raised. These notes included measurements and drawings of the artifacts. Field drawings and conservation were by Tina Erwin. Artifact photography was by the director.

Most artifacts were located in the field immediately at the base of the reef. This area was excavated down to approximately one meter below the original seabed (fig. 8). At this point, there were still ceramics to be excavated, but time did not permit deeper excavation. Judging by one amphora at this level, which was apparently standing straight up, at least another sixty centimeters of wreck level could be present. Indications from the area immediately downslope of this amphora and under a large coral head in the center of the site support this view. As the coral head sat atop the amphoras, this area was excavated horizon-



tally. Thus, it was ascertained how one amphora lay piled upon another to a depth of approximately a meter and a half. As excavation undermined the base of the coral head, threatening to cause it to tumble down, we suspended efforts in this area.

Amphora sherds were ubiquitous. Even at the deepest levels of excavation, the sherds were found mixed in among more intact vessels. The sheer number of the sherds led us to dub the site "The Place Amphoras Go to Die" (fig. 9). Perturbation, responsible for two well-encrusted spark plugs found several centimeters deep in the site, undoubtedly accounts, in part, for the mix of sherds. Wave action in storms may account for our finding the amphoras and sherds atop the reef.

As was noted on the 1995 survey, the most common ceramic form in the site was the conical amphora, Assarca Type I. These were found in all excavated sections of the site. Although all but one was broken, they formed a body of material cohesive in both form and style. Some amphoras were simply missing handles. Others had necks broken off as well, while many had broken bodies. Several Type I amphoras were cleanly broken at the joint where the upper body segment joined the bottom segment. This was a weak spot in the vessels. The juncture was obvious on all Type I amphoras as the ridges, or rilling, at the joint was roughly done. Unlike the evenly spaced rilling applied to the body segments while on the wheel, the rilling added to the joint was irregular.

The rilling was a spiral, interrupted at the joint, but otherwise continuous from toe to neck. On average, the skillfully placed spacing was approximately 1.2

cm. The team observed this decorative motif on all the amphora bodies they excavated or observed. This design was peculiar to vessels of Syria, Palestine, and Egypt in the first century, although later it could also be found distributed throughout the Mediterranean.

The broken amphoras revealed that the Type I vessels were covered in a brown wash or slip. The interior fabric on most sherds of the type was red-brown when wet, drying to dark brown. However, some sherds revealed a light fabric, green-gray when wet, drying to gray. There

appeared to be no overt differences between the amphoras or sherds with the brown or gray fabric. The colors may be attributable to firing temperatures in the kiln, rather than different clay sources, as a kiln that is too hot will cause clays to turn white as they are fired.

Only one amphora was found completely intact. This vessel, amphora A3-010 (fig. 3) was found toward the end of the season near the western end of the excavation. Having been overlaid with sherds of various sizes, as well as coral and sand, the amphora was relatively free of encrustation. Its stopper was missing and the vessel was filled with sand. The amphora's contents were sifted for archaeobotanical analysis but other than the eggs of an unknown type of sea animal, no botanical materials were found. Small chips on the surface of the amphora revealed it had the gray fabric. Otherwise the form and styling were the same as the brown-fabric amphoras.

We also found a number of sherds of Assarca Type II vessels. None of these indicated a lentoid shape, but rather a globular one. More often than not, the necks of these vessels still had their handles attached. Not one of this type, however, was found intact. The largest piece had both neck and handles and included a large section of the body that extended down past the center of the body's side. This enabled us to see that the vertical rilling covered the vessel, spiraling ultimately to a small button in the center of the side. Other Type II sherds contained other areas of these bodies. At least one showed a wide blank band separating the rilling on either side of the body. This band covered the area where the two hemispheres of the ves-

sel were joined. According to *The Handbook of Mediterranean Pottery* by John W. Hayes, this type of vessel is called a *costrel*, common in Egyptian and Palestinian sites of the first half of the first millennium.

The only example of Assarca Type III was that found on the 1995 survey. Missing handles, shoulder, and neck, the body of the amphora was similar in style to Type I (see cover photo this issue, lower left). The shape, however, was considerably wider than that variety. The pattern of the rilling, the shape of the toe, and the brown fabric all

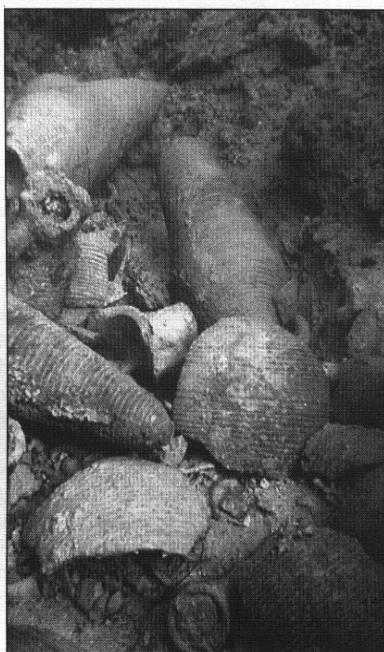


Photo: R. K. Pedersen

Fig. 9. "The Place Amphoras Go To Die." The excavation revealed hundreds of sherds mixed in with more intact amphora bodies. Note here, in the central area of the excavation, the mix of conical Type I and globular Type II amphoras.



displayed an affinity to Type I. No traces of this vessel's missing pieces were found. It is at present unknown whether any of the numerous sherds found at Assarca belong to this type of vessel. As such, the vessel is unique to the site.

As noted during the survey, several thin, undecorated sherds were found. Some of these may have belonged to amphora stoppers, several of which were found during the excavation. The stoppers were plain disks of light brown color and fabric. One of these was found still in place in an amphora neck. The stopper rested on a lip inside the neck and was fixed in place with a black/dark brown resinous substance. Unfortunately, this neck had long since separated from the rest of the vessel. Another type of stopper was found in a neck. Also, set in the resinous substance, this stopper differed from the others. On the exposed face, the stopper had rilling similar to that of the amphoras. Obviously, a ceramic piece from a broken vessel had been knapped into a disk-shape for this use. Such recycling of sherds for stoppers is not unknown. The seventh-century shipwreck at Yassiada, Turkey, contained 165 of these, of varying diameters and thicknesses.

The insides of many sherds and amphora bodies contained the remains of a coating. This was a black resinous substance similar to that used to fix the stoppers in place. Mediterranean wine amphoras were sealed with a resin to prevent leaching through of the liquids inside, and we find the same method in the Assarca types. One sherd, which comprised only an amphora toe split vertically, was filled with a solid mass of this resin. This was the excess resin that collected in the bottom of the amphora when the interior was being sealed. This piece also revealed that the toe itself was not a solid piece but was hollow.

None of the toes of the excavated Type I amphoras showed much wear, indicating the vessels were relatively

new at the time of sinking. The toe was a simple knob 4.5 cm. in diameter and protruding 1.5 cm, with the rilling started immediately above it.

#### Other Ceramics

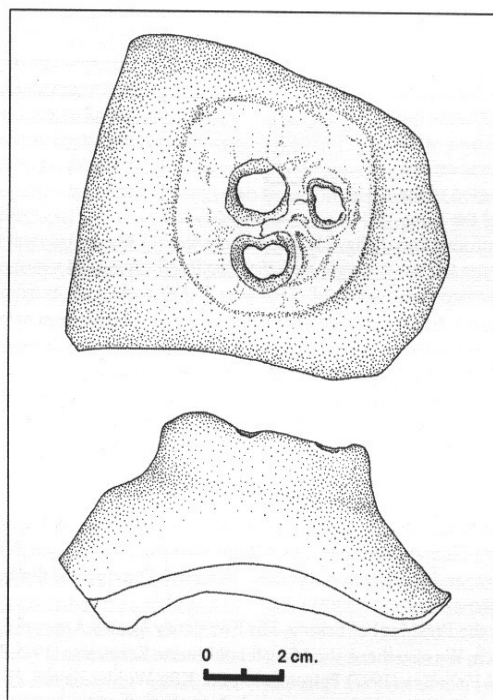
Only one vessel was found that was not an amphora. This was the remains of a jug whose neck contained a filter such as that found on a gargolette. The filter was crudely done, made by simply poking three holes through the clay (fig. 10). Little beyond the neck remained, but the vessel was light in color and thin walled.

#### Other artifacts

Few artifacts were found that were not ceramics. One of these was a piece of glass. Greenish-blue in color, this piece appeared to be the base of a goblet or wineglass. A delicate hollow rim was its most distinctive feature. Wine glasses found at other late Roman and Early Byzantine sites contain this feature. Such glasses, often more crude, were produced in abundance in the fourth and fifth centuries and later. Whether the presence of this shard at Assarca indicates a trade item or merely scrap is unknown.

Found near the glass shard was a weight in the shape of a lead ball (fig. 11). The weight had the remains of a copper-based hook on top. There was no cladding over the lead, and there were no distinguishing features. It weighed approximately 520 gms. The

weight has parallels in Byzantine sites in the Mediterranean dating to the mid-first millennium. The sixth and seventh century levels at Sardis, Turkey, for example, contained several such weights of various sizes. This type of weight was a counterweight used on a steelyard, the basic weighing instrument of the period. A number of steelyards have been found on other wrecks, including those at Yassiada and Serçe Limanı. The presence of this weight on the wreck at Assarca may indicate that the steelyard awaits future excavation.



Drawing: T. Erwin and S. Pulak

Fig. 10. The neck of the gargolette. The filter was crudely done, made by simply poking three holes through the clay.

## Conclusions

At present, it is impossible to determine the nationality of the ship. It is also not possible to determine whether the site involves the remains of a ship headed to India, Arabia, or to some point on Africa's Indian Ocean coast. Possibly, the vessel was a local trader carrying goods along the Eritrean coast or to as yet undiscovered Aksumite settlements in the Dahlak Archipelago. In any case, the site holds great potential for our understanding of Red Sea commerce and seafaring in late antiquity, of which we know little.

Our knowledge of ancient maritime trade on the Red Sea relies in great part on classical authors such as Pliny the Younger and the anonymous author of the *Periplus of the Erythraean Sea*. These writers recorded the kinds of cargoes carried by Red Sea ships during the period of the Roman/Byzantine Empire and the Kingdom of Aksum. However, the information they gave is far from complete, as the authors mentioned only items they considered important. Ships' cargoes often included contraband, private cargoes carried by individual crewmembers, personal belongings, and other mundane items. These cargoes generally were not recorded, and remain unknown. The first season's excavation of the shipwreck at Black Assarca gives us our first glimpse at this little known trade.

## Epilogue

In the spring of 1998, war broke out between Eritrea and Ethiopia. The war has been fought sporadically over the past two years, mostly in the spring when the climate best permits fielding large numbers of men. Approximately one hundred thousand soldiers are reported dead or missing on both sides. The airport in Asmara has been bombed twice. Large numbers of Eritreans have been deported from Ethiopia, and lately Eritrea has been rounding up the Ethiopians in their country. Refugees flooded out of Eritrea into Sudan during the most recent round of fighting, in which Ethiopia struck deeply into Eritrea. The streets of Asmara are deserted of young people, as they are all at the front. Outside the city, burgeoning camps are harboring people fleeing the war zone. Meanwhile, drought and famine are once again wracking the region.

The Eritreans who worked with us on Black Assarca and who became our friends were all veterans of the war of independence. As such, they may have been required to fight in the present war. Mulat, an Ethiopian, may be one of those deported. I wonder if our friends are safe and alive.

As of this writing the two warring countries have agreed to a cease-fire and the installation of a United Nations peacekeeping force along the Eritrean-Ethiopian border. Pray for a lasting peace. ☞

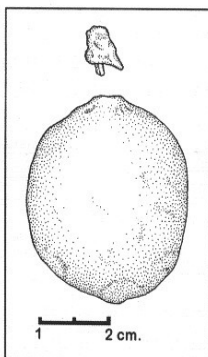


Fig. 11. The lead counterweight with the remains of its hook. Drawing: T. Erwin and S. Pulak.

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## The Aksumite Kingdom and Eritrea: The Historical Background

My interests in Eritrea, Ethiopia, and East Africa extend back to boyhood. My interests were sparked not only by articles in *National Geographic Magazine*, but also by Moorehead's *The Blue Nile*. This tome related the author's journey up the Blue Nile to its source, as well as the history of the area once known as Abyssinia. Later, during the course of graduate studies, I became intrigued by the ancient civilization of the area known as the Aksumite Kingdom.

The Aksumite Kingdom rose to prominence in what are now Ethiopia and Eritrea in the first centuries after Christ. Earlier, the area had frequent contact with Ptolemaic Egypt, and Greek-inscribed stelae have been found in the area. With increased sea-borne traffic and trade from the Roman Empire, Aksum supplied luxury goods gathered from the Ethiopian highlands. The Aksumites fed the Roman hunger for ivory and hides in exchange for wine, fine glass, oil, and metal objects. Aksum also served as a waypoint in the trading network between the Red Sea ports of Egypt and Arabia. This same network extended beyond the Red Sea into the Indian Ocean. Roman, Arab, and Aksumite ships sailed on the monsoon each year to India, a supplier of spices as well as an entrepot for goods from the Far East. Taking advantage of the sea trade, as well as having merchant colonies in Arabia, on Socotra, and in India, the Aksumites rose in wealth and power. They were the only kingdom of ancient Africa to produce their own coinage. These were at first in Greek, and then later in Ge'ez, the ancient language of Abyssinia. The Aksumites' importance was so great the Romans considered Aksum one of the world's great powers.

It was only with the rise of Islam that Aksum began to wane. After the Islamic conquest of Egypt in the early seventh century, contact between the southern Red Sea and the Mediterranean was cut off. Without the impetus of Byzantium, the flow of goods up and down the Red Sea stalled. With this, as well as other factors, Aksum and the power it wielded began to wither. Over the next century, Islam made inroads along the Abyssinian coast and finally, Islamic forces would conquer the area,

leaving the Christian Aksumite Kingdom to languish in the highlands. Henceforth, Eritrea followed a separate course from Ethiopia. Turning in on itself, Aksum would soon be forgotten by the world at large, only to return to consciousness with the Portuguese quest for the legendary Prester John in the sixteenth century.

Archaeologically, Eritrea is little explored. There was a German expedition to the ancient Aksumite port of Adulis in 1906, and further explorations after World War Two. A French expedition under Francis Anfray examined sites such as Matara in the 1970s. War, however, kept much archaeological work in the realm of theory.

Eritrea, having once been part of the Ottoman Empire, the Egyptian Caliphate, the Italian Empire, and then, after 1945, a United Nations endorsed British Protectorate, had hoped for independence. The United Nations placed the country, however, into a federation with Ethiopia. The federation was annulled with the forcible annexation of Eritrea by Ethiopia in 1961. This sparked a struggle for independence that was to last until 1993. With the Marxist coup in Ethiopia in 1972, the Cold War heated up. Bitter fighting against the Soviet-backed power in Addis Ababa, by not only the Eritreans but also the Tigreans, prevented archaeological research in the area for nearly twenty years.

Famine was also endemic. Food supplies were purposefully disrupted by the Marxist government in an attempt to starve the freedom fighters. Many of the photographs and reports of famine that sprinkled the western press during the seventies and eighties were of Eritrea and Tigre. These famines sparked the "Band-Aid" concert of the mid-eighties. Money raised by the concert and record sales was used to purchase food that was then sent to Ethiopia. Once the food arrived in Massawa, however, the Marxist government used it as a bargaining chip to undermine the cause of the freedom fighters. It was not until the start of the end of the Cold War and the collapse of the Soviet Union in 1991 that the Eritrean and Tigreans were able to prevail. With victory in 1993, the Eritreans proclaimed their independence. ✍

### Suggested readings

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