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The Ancient Commercial Amphora

By Elizabeth Lyding Will

In this modern age, we Americans like the convenience of disposable cans and bottles, but feel guilty about adding them to the earth's trash piles. "Empties" or, as theoreticians of debris term them, "post-consumer solid waste" are a universal dilemma today. "Bottle bills" have become law in several states, and votes on the disposal of waste containers are pending in others. The problem of what to do with the container after the contents have been used seems typically latter twentieth century, but rubbish was not, of course, invented by the modern world. It is an essential part of the human condition. Used containers and trash in general are problems of great antiquity; in fact, the discipline of archaeology might in one sense be defined as the collection and study of ancient rubbish. Ancient "empties" make up a sizable portion of the material that must be handled by the archaeologist.

It seems obvious that containers and trade are inseparable. Once humans began to exchange goods, most of the objects they were trading had to be packaged. Commodities subject to spoilage (fish products, fruits, nuts, olive oil, wine) had to be processed and then tightly sealed in receptacles sturdy enough to withstand shipment on sea or land. The Greeks, Romans and other Mediterranean peoples of antiquity were accustomed, as we are, to transporting choice liquids and perishables in disposable bottles of assorted standardized sizes and shapes. Like the buyer of today, the ancient buyer of wine, for example, could tell at a glance what kind and quantity of beverage a bottle contained.

Ancient containers were made of clay, which was abundant and therefore the least expensive, most practical raw material out of which to construct such packaging. One common vessel of antiquity, the "amphora," was much larger than our cans, Coke bottles and milk cartons. The form developed in response to the need for a container large enough to hold bulk quantities but small enough to be handled by one person. About a meter high on the average, and weighing about forty pounds when empty, the ancient amphora had two thick handles on each side of a long neck. The neck served as both a holder for an airtight stopper and as a funnel for pouring out the contents. A rim or "lip" at the top of the neck was an aid in controlling the flow of the liquid being poured. The main part of the jar, the receptacle or "belly," was joined to the neck by a sloping "shoulder." By Roman times, the body of the vessel, its walls perhaps two centimeters thick, held about six gallons on the average. The belly was in turn supported on a heavy base or "toe" that tapered sharply down, giving the jar the appearance of a one-legged ballerina. The toe permitted the heavy

container to be rolled round by one person, as the jar was guided and balanced by the handles. It also helped in the lifting and emptying of the vessel. The two handles, however, served as the most distinctive feature of the ancient amphora. The word "amphora" comes, in fact, from two Greek words: *amphi* meaning "around, on both sides," and *pherein* which translates as "to carry." An amphora is therefore something "carried on both sides."

By their very nature, Greek and Roman clay shipping amphoras were difficult to throw away. They had to be thick-walled, as a protection against breakage and seepage during rough and dangerous sea voyages. Obviously, small containers would take up too much space in shipping in relation to the amount of liquid they held. The larger the container, the more of the product reached market. The problem of disposal was likely to be solved simply by breakage, so that each massive container might ultimately produce a considerable number of broken fragments. This, it is easy to understand how Greek and Roman sites came to be thickly carpeted by pieces of discarded containers and how these pieces came to make up a large proportion of the remains at such sites. "Empties" were clearly a major factor in the ancient world, and presented a problem hardly hinted at by the Greek and Roman writers. The importance of archaeology to fill the gaps in the knowledge of what life was actually like in Classical antiquity can easily be seen.

Humans are, for better or for worse, human, and ancient solutions to trash-disposal were much like modern ones. Broken pieces were either "let lie," like beer cans along highways or pull-tops in parking lots, or they were disposed of in more orderly ways. Organized dumping, however, can cause almost as many problems as it solves, particularly in large cities. In ancient Rome, Monte Testaccio, a fifty-meters-high hill of broken "empties," mostly shipping containers that brought olive oil and other products to Rome from Spain and Africa, grew up at the southern edge of the city. It was situated near the Tiber River, at the point where ocean-going ships unloaded. After the contents had been sold to middlemen or to retailers at the great warehouses nearby, the shipping jars were broken and piled in a heap that grew ever higher as time passed. No one yet knows when the process began, but it apparently all but stopped in the third century after Christ when trade withered due to invasions and the gradual cessation of the government dole. The hill is not mentioned in ancient literature, but in the Middle Ages its looming mass developed a certain sanctity and it became the site of religious "stations" and other solemn celebrations until the fifteenth century. Today the area is public property. Gypsy squatters, wine-grottoes and several well-kept houses rub shoulders around the base of the mound. Across the street to the west is the Mattatoio, the modern slaughter house, which occupies the space between Monte Testaccio and the bed of the Tiber. To the south, the British Military Cemetery bears witness to the futility of war. With its manicured lawns and lovely flower-plots, it contrasts sharply with the dusty, windblown bulk of Testaccio. Across the street to the east, between Testaccio and the first-century B.C. Pyramid of Caius Cestius, lies the Protestant Cemetery. A crowded, fascinating clutter of Victorian and modern tombstones and crypts, it is famous as the final resting place of Shelley and Keats. Poetry and pottery seem to coalesce here, for many graves are decorated with baroque arrangements of discarded ancient amphoras that certainly came from Monte Testaccio. The aura of death, of reality either gone stale or transformed (depending on one's point of view), seems to cling to the whole region around Testaccio, as it does to modern dumps.

There are other ancient piles like Monte Testaccio, in Rome and elsewhere, but reuse and recycling were also practiced in antiquity as alternatives to dumping. Some amphoras were, for example, kept for storage purposes, in shops or in private houses. On farms, they were regularly reused as containers for produce. Whole jars or pieces of jars were also reused in

construction work, either as fill behind the walls of wells and cisterns or to relieve stresses in domed structures. The use of amphoras in domes was probably suggested by the obvious acoustical properties of the large jars, which also led to their being placed in the walls of theaters and stadiums and under the floors of forums. Additionally, amphoras were sometimes used as containers for cremation burials and, in Christian times, for inhumations, especially of children and babies. By the third century after Christ the olive oil jars made in North Africa reached a height of about four feet. Broken in half either vertically or horizontally, they were ready-made miniature coffins for those who could not afford something more elaborate. Sometimes they also served as covers for bodies about to be cremated. The more cylindrically shaped jars, especially those with long, narrow necks, were also regularly used as sewer-pipes, in drainage ditches and as pipes to conduct air from bellows into draft furnaces. Additionally, small pieces of amphoras were used in making walls or pavements or, broken into tiny bits, as components of cement or concrete. Archaeology clearly proves that recycling must have preoccupied the peoples of antiquity, and their numerous solutions to the problem were both inventive and practical.

As if our own current "bottle problem" were not enough, the archaeologists are still looking for practical ways in which to cope with "post-consumer solid waste" of antiquity. Specialists who study amphoras want them stored in accessible places, yet most museums lack the space to house them properly. Some jars find a place in display cases, others are consigned to museum basements. Underwater wrecks studded with amphoras vastly complicate the storage problem. When Jacques Cousteau discovered the so-called "Grand Congloue wreck" off Marseilles in 1952, storage had to be arranged at Marseilles' Borely Museum for hundreds of jars. All the finds could not be accommodated, and some jars found their way to the United States. Some museums, like the Stoa of Attalos Museum of the Agora Excavations in Athens, now arrange the amphoras in floor-to-ceiling tiers that resemble the closely-knit, herringbone arrangements they must have once had in the holds of ancient ships. In other museums, like the one now being completed at the site of Cosa in Italy, jars not on display inside the museum are used as decorations in the courtyard or on the tops of walls. Reconstructions of ancient shops, like the ones in the Stoa of Attalos Museum or in the House of Neptune and the Amphitrite at Herculaneum, employ amphoras as part of the display. Increasing numbers of restaurants and hotel lobbies in Greece and Italy use the graceful jars as decoration or as flower pots. In Tunisia, an important source of olive oil in Roman times, the disposal of thousands of ancient containers found in excavations takes a wry twist. Similar modern clay containers are still being used for transport and storage, resulting in a twofold modern and ancient clay container problem.

Ancient amphoras should not be thought of, however, as simply a headache for archaeologists and museums. Much more importantly, they serve as the basis for a branch of Classical archaeology that has come into its own in recent years, stimulated by the increasing emphasis on anthropological, economic and social perspectives. The more strictly artistic, military and political approaches which once dominated the thinking about antiquity are slowly giving way to research that seeks to reconstruct the background of past events and to explain why they occurred and what underlying factors brought them about. The commercial amphora clearly plays a large role in such an approach, for not only are these containers abundantly represented at archaeological sites, but they can also be divided into categories and dated quite accurately (to within a generation or so of manufacture). For example, my own research is concerned with some thirty distinct types of Roman amphoras, ranging in date from the early second century B.C. to the late third century after Christ, which were manufactured at a variety of sites. These dates have mostly

been determined on the basis of closely dated contexts at the Agora Excavations in Athens. Although these utilitarian jars were mass-produced and likely to be broken or recycled when empty, the careful standardization of each type is rather remarkable. Capacities seem to have been closely controlled, and the dimensions (heights and diameters) of the jars themselves and of their component parts such as handles and rims are precisely similar within each category. After dimensions have been computed or estimated, a small fragment can enable the practiced eye to identify and date the jar-type from which it originally came.

Amphoras thus supply the archaeologist with clues to the dating of the individual contexts in which they are found, including both land and water, and provide a valuable aid in sketching the general histories of particular sites. They furnish the economic historian with significant information about trade routes, centers of exporting and importing, production methods, economic rivalries, and even monopolistic practices. They restore the names of long forgotten individuals who were active in business and trade. Roman amphoras, like our modern glass and metal containers, were often stamped on the rim or handle, on the base or on the side with the name of the manufacturer. They frequently bore painted or scratched inscriptions designating persons responsible for manufacture, more than had been previously known about ancient lifestyles, and scholars can now safely suggest what kind of wine or oil or other food product was favored, and to what degree, at a given time and place.

Study of the commercial amphora as a class did not proceed seriously until the present age when "total retrieval" was introduced at archaeological sites. Earlier approaches to archaeology had emphasized the study of rare or valuable finds; coarse wares were not recognized for their intrinsic worth. Coarse pottery of all kinds is an acknowledged historical source. In particular, the work of the American archaeologist Virginia Grace, Research Fellow of the Agora Excavations in Athens, has been decisive in calling attention to the importance of amphoras. Forty-five years ago she perceived the important results to which a study of commercial amphoras would lead. Specialized studies of certain classes of amphoras had already been made by the great Swedish scholar, Martin P. Nilsson, and by the Russian archaeologist, B.N. Grakov. Grace was able to construct a typology and a dating system for Greek amphoras on the basis of the impressive number of closely dated wells and cisterns found in the excavations of the Athenian Agora. Her archives, housed at the Agora Excavations in Athens, now include massive documentation of the types of amphoras manufactured and used by the chief Greek centers of antiquity. Her filing system, painstakingly cross-referenced, contains hundreds of thousands of items. It is not only the basis for many of her own studies but is also extremely useful to scholars all over the world. Assisted by the Greek archaeologists Maria Sayyatianou-Petropoulakou and Andreas Dimoulinis, Grace continues to record finds and to study the various important classes of Greek amphoras. It is a Herculean, not to say Sisyphean, task. The abundance of evidence is such that specialization in any single category of jar is a lifetime's work, yet Virginia Grace has made thorough studies of all the chief categories. Carolyn Koehler, an archaeologist from Princeton University also works on Greek amphoras at the Agora Excavations and at the excavations of ancient Corinth. Her work specifically concentrates on amphoras manufactured at Corinth and represents the current and inevitable trend toward specialization in amphora studies. Two French archaeologists, A. M. and A. Bon, had published a study of the amphoras from the island of Thasos in 1957.

This same tendency can be seen in the research presently being done on Roman amphoras, which are distinct from the Greek examples in most important respects. They comprise, in fact, a separate field. Roman amphoras are larger than Greek amphoras. Unlike most Greek

jars, they have a pronounced rim. The Roman clay is coarser than the Greek and walls of the Roman amphoras are thicker. Above all, while Greek jars bear stamps in Greek, most Roman jars are stamped in Latin. Research in Roman amphoras is being actively carried on all over the world. Two of the most informed and energetic specialists are the Italian archaeologists Clementina Panella of the University of Rome and Fausto Zevi, of the Italian Department of Antiquities, who carry on the tradition established earlier by the work of the late Nino Lamboglia, chief Italian underwater archaeologist. They have published helpful studies on various classes of later Roman jars manufactured in the provinces of the Empire, especially in Africa, which were found at Rome and at Ostia, the port of Rome. In England, the pioneering work of Maurice Callender in the years immediately after World War II served the useful purpose of summarizing previous research and presenting important new material on a major class of oil amphora manufactured in Spain. Three other British scholars, Anthony Parker of the University of Bristol, D.P.S. Peacock of the University of Southampton and J.A. Riley of the University of Manchester are currently engaged in researching various classes of Roman amphoras. In France, Andre' Tchernia of the University of Aix-Marseille, has been a vigorous publisher of finds and of perceptive analytical studies of certain types of amphoras. His work was preceded by the important contributions of his countrymen Emile Thevenot and Fernand Benoit. The Swedish archaeologist Paul Astrom has also made useful contributions to the study of Roman amphoras. In Spain, the amphora finds have been summarized in the comprehensive recent book by Miguel Beltran Lloris of the University of Zaragoza. R. Pascual Guasch also studies amphoras in Spain, and another Spaniard, Emilio Rodriguez Almeida of Rome, has undertaken the incredible task of studying the surface of Monte Testaccio, adding to the information carefully and painstakingly collected and published by the great German scholar Heinrich Dressel. Dressel's catalogue of amphora stamps and analysis of amphora shapes, published in 1899, still provides a framework, though an increasingly shaky one, for current specialized studies.

My own work on Roman amphoras has been an odyssey in search of clues which would bring the field up to date and structure the history of Roman amphoras in terms of current archaeological methods. Using an important series of closely dated contexts at the Agora, I was able to construct a chronology for Roman amphoras covering the five hundred years of Roman commercial activity in the eastern Mediterranean area. Before long the finds from other important Roman sites in the eastern Mediterranean, from the French excavations at Delos, the American excavations at ancient Corinth, as well as the extensive collection of the late Lucas Benaki in Alexandria were added to the group of Roman amphoras found at the Agora. Other Egyptian collections followed, notably those housed at the Greco-Roman Museum in Alexandria and at the British Museum. Pieces stored at the National Museum in Athens and others found in the German excavations of the Kerameikos in Athens also enriched the catalogue, which by the late 1960's included some four thousand objects. Only the choicest pieces were studied, namely those bearing stamped trademarks or those that were notable for their particularly good state of preservation.

The material actually available for study was and still is limitless, and progress toward tenable conclusions is correspondingly slow. A single find can still alter basic premises. As my work progressed, my awareness of the complexity of the questions raised and of the ultimate uselessness of partial answers became stronger. The field of Roman amphoras was still a new one, unstructured and lacking in definition.

There was a need to study evidence from other parts of the Roman world as well as actively publish what was found, but only a handful of researchers were working in this area. By the 1960's, however, other scholars were taking an interest in Roman amphoras, and

underwater archaeology was greatly increasing the pool of finds. Excavators both of land and of underwater sites were becoming aware that Roman amphoras provide valuable help in dating contexts, and historians were drawing conclusions from the finds.

Just recently, the finds from Cosa in central Italy, a major site being excavated by Frank Brown of the American Academy in Rome, have been added to the picture of Roman amphoras. Research at Roman Sites had been sporadic, but after two seasons of work on the Cosa material, I have secured the reinforcing evidence needed to form the basic framework for a comprehensive study of Roman amphoras. A volume on the eastern Mediterranean material, to appear in the *Athenian Agora* series, is in the final stages of preparation, and a study of the two thousand-odd pieces from Cosa is also forthcoming. Taken together, the two works ought to provide an inclusive survey of Roman amphoras and pave the way for future specialized studies. Plans for the computerization of both catalogues are also being made. Information about the measurements of the jars, their stamps, clay and shapes is being stored on tape. The work is being done by Steven Sargent, an historian who is also a computer programmer. Electronic study marks a significant step in the digestion of the mountains of material. The throwaway commercial amphoras of the ancient world, once thoroughly studied and understood, should help us see that world, and our own, in better perspective.

For Further Reading on amphoras in general: Lionel Casson, *Ships and Seamanship in the Ancient World* (Princeton, New Jersey 1971), frequent references to amphoras as shipping containers. Joan du Plat Taylor, editor, *Marine Archaeology* (New York 1966), a collection of reprinted reports of major underwater excavations, with many reference to amphoras. Peter M. Fraser, *Ptolemaic Alexandria* (Oxford 1972), chapter four shows compellingly the importance of amphoras, and particularly of the research of Virginia Grace, to our knowledge of economic history in antiquity. Virginia R. Grace, *Amphoras and the Ancient Wine Trade* (Princeton, New Jersey 1961[American School of Classical Studies at Athens]), by far the best general discussion of the topic, for scholar or layman. M.I. Rostovzeff, *Social and Economic History of the Hellenistic World* (Oxford 1941) and *Social and Economic History of the Roman Empire* (Oxford 1926), frequent references to ancient commercial amphoras.

On special studies on Greek amphoras: J.Y. Cousteau, "Fish Men Discover a 2200-year-old Greek Ship," *National Geographic Magazine* 105 (1954):1-35, excellently-illustrated report on the excavation of amphoras most of which are Roman" at the site of the Grand Congloue' wreck (or wrecks). Virginia R. Grace and Maria Savvatiadou-Petropoulakou, "Timbres amphoriques grecs" (in English), in Philippe Bruneau *et al.*, *L'ilot de la maison des come'diens, Exploration archeologique de Delos XXVII* (Paris 1970) Chapter xiv, a more specialized review of the chief classes of stamped Greek amphoras, with recent bibliography.

ON special studies on Roman amphoras: Maurice H. Callender, *Roman Amphorae* (London 1965), a summary of the field, based on material both published and unpublished, up to about 1950. Publication delayed until 1965. Anthony J. Parker, "The Evidence Provided by Underwater Archaeology for Roman Trade in the Western Mediterranean," in D.J. Blackman, editor, *Marine Archaeology: Colston Papers* 23 (1971): 361-381, a summary of types of Roman amphoras found in underwater wrecks in the western Mediterranean. D.P.S Peacock, "Amphorae and the Baetican Fish Industry," *The Antiquaries Journal* 54 (1974): 232-243. A brief discussion of amphoras as containers for Spanish fish products exported in

Roman times. J.A. Riley, Sections on the "quantification" of amphora finds from Carthage in J.H. Humphrey, editor, *Excavations at Carthage 1975, Volume I* (Tunis 1976): 108-120 (forthcoming). K.D. White, *Farm Equipment of the Roman World* (Cambridge 1975): 122-127 and *passim*, a lucid discussion of the amphora as a container for transport and for storage. Elizabeth Lyding Will, "Les timbres amphoriques latins" (in English), in *L'ilot de la maison des comediens, Exploration archeologique de Delos XXVII* (Paris 1970) Chapter xv, discussion of a group of stamped Roman jars found on Delos in a house of the early first century B.C.