

SARDINIA IN THE  
MEDITERRANEAN:  
A FOOTPRINT  
IN THE SEA

Studies in Sardinian Archaeology  
Presented to Miriam S. Balmuth

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## Sardinian Amphora Studies: Past and Future

Elizabeth Lyding Will

Miriam Balmuth's research and excavation in Sardinia have contributed materially to the renewal of interest in Sardinian antiquities throughout the scholarly world. She has also devoted great energy and attention to stimulating and fostering research on Sardinia by scholars from a wide variety of archaeological and historical disciplines. The result, as this Festschrift in her honor so clearly proves, has been a flowering of studies that have thrown light on Sardinian antiquity from many perspectives.

As far as Roman amphoras are concerned, the study undertaken at Miriam Balmuth's request of the small assemblage of amphora fragments from her excavation of the nuraghe at Ortu Còmidu led later, again at her suggestion, to a survey in 1983 of the amphoras stored in the major museums and collections on the island (Will 1986). I had never before made a systematic survey of the amphora material in an entire area; that survey could not have been accomplished without her energetic help. Time restrictions meant that permissions, transportation, and the process of locating, identifying, studying and photographing each piece had to be accomplished on a strict schedule. The results both of the study of the pieces from Ortu Còmidu and of the amphora survey added important information to our knowledge of the Roman period in Sardinia. On the basis of chronological evidence provided by the series of Roman amphoras found in the excavations of the Athenian Agora, amphora imports into Ortu Còmidu covering a period of about 500 years were identified. The survey helped to document a similar story for the island as a whole.

Miriam Balmuth's excavation at Ortu Còmidu was done with meticulous care. One need cite only the fact that small, unstamped amphora fragments, objects not treasured by most excavators, were treated with the same deference accorded other finds (Balmuth 1986: 377-78 figs. 30: 5, 35, 37-38; Will 1986: 214-15). Though few in number, those fragments provide a broad outline of the nuraghe's history during the Roman period, a type of history that is at present not available for many other Sardinian sites. Both

stamped and unstamped amphora fragments have in recent years been published in Sardinian journals by scholars such as Acquaro, Boninu, Lo Schiavo, Moravetti, Righini Cantelli, Rodero Riaza, Sotgiu and others; but at the time of the 1983 survey the material available for study in the major museums and collections consisted chiefly of whole amphoras and, occasionally, very large fragments. A few smaller fragments from the Spargi wreck were on display in the Nino Lamboglia Museum of Naval Archaeology in La Maddalena and occasional fragments were seen elsewhere. But the small group of Ortu Còmidu pieces stored in the National Archaeological Museum in Cagliari provided the only complete amphora record of any of the sites and collections studied. For the most part, the amphora material examined during the survey consisted of whole or slightly damaged jars. Many of them came from the sea, where amphoras are regularly found in an undamaged state. Finds of unbroken jars on land are rarer, and those identified in the survey were probably for the most part from tombs. For every whole jar excavated on land, dozens of amphoras are found in fragments. At the time of the survey in Sardinia, such fragments were apparently stored or consigned to excavation dump heaps. While the whole jars provided very useful information, the fragments could have given a much more complete record. The material available for study in 1983 provided a valuable outline of Sardinian economic history during the Roman period, but study of fragmentary finds would have helped to flesh out that outline and to document the history in more detail. In that connection, it is encouraging to note that recent digging on the island seems to be practicing 'total retrieval' and recording all amphora finds.

Earlier Sardinian archaeologists were not alone in overlooking amphora fragments. Until total retrieval became accepted archaeological practice, amphora fragments found at sites throughout the Roman world were saved from excavation dumps or other forms of anonymity only if they bore stamped trademarks, or graffiti, or painted inscriptions. A wealth of precious information

about economic history was thereby lost. We can hardly blame the excavators; money and storage space were limited. It seemed logical to keep and study only those objects of evident value or about which one knew something. Roman amphoras had never been thoroughly studied, and the fragments looked so nondescript that excavators threw them aside as coarse ware or, worse, locally made coarse ware. The implication of both phrases seemed to be that what was coarse, unless it bore some kind of inscription, would never throw light on antiquity. I remember as if it were yesterday a conversation I had 40 years ago with a young excavator at a site in the eastern Mediterranean. I was looking over his finds for the day and exclaimed in amazement that an amphora handle in the group came from a jar manufactured in southern Spain in the early Empire and was seldom found in the Aegean area. He hardly heard my words. The piece was unmarked and therefore of no interest. It was, I later learned, consigned to a dump. But the practice of total retrieval brought about a change in attitude. During the 1950s and especially the 1960s, it slowly became accepted procedure. At the town of Cosa and Port of Cosa (Tuscany) excavations, for example, every amphora fragment, no matter how unpromising its appearance, was kept. When I later studied and classified the pieces, a most valuable picture of the economic history of the town and its port emerged (the publication of the amphoras from the town of Cosa is forthcoming; on the port amphoras, see Will 1987a). The amphoras shipped from the port and the town have thrown new light on the Republican wine trade with the West and with the Celts in particular. The imports into the town of Cosa during the Empire can also be closely documented. What was saved from the excavation dump proved to be precious historical evidence.

Three other excavations in which the study of amphora fragments has led to important chronological and historical insights might be mentioned. At none of these sites has a complete amphora been found; the tale is told by fragments alone. Manching, a Celtic city on the Danube north of Ingolstadt in central Germany, can be dated by the close study of Roman wine amphora fragments from between c. 200 BC and the 80s or 70s BC (Will 1987b; 1990). These dates are in accord with those indicated for the founding and destruction of the site by other categories of objects discovered there. They do not agree, however, with the dates of c. 150–50 BC suggested for the amphora fragments in their original publication (Stöckli 1979). In my 1987 study of

the Manching finds, I discussed the complexities of amphora dating and the numerous variations, as far as shape is concerned, that are possible within each category of jar. In that respect, a specialist has a distinct advantage over a non-specialist. Stöckli did not distinguish among the various early types of amphoras represented at Manching, and he confused some of those types with a later category. Manching is an example, then, of the rich historical record that amphoras represent; but it also suggests the complications of fragment typology. I will return to that topic below in some remarks about the need for care in the analysis of fragments.

Another excavation in which fragmentary Roman amphoras have helped to clarify chronology is the palace of Diocletian at Split. Here, many pieces, chiefly of olive oil amphoras, were found from 1968 to 1974 in the American-Yugoslav Joint Excavations (Will 1989). Little was known about the history of the site before the building of the palace and after the death of Diocletian. The amphoras indicate that there was a certain amount of trading activity at the site before the building of the palace and as early as the 1st century BC. Most of the fragments, however, date to the 4th and 5th centuries AD, an indication that the site remained a center of importation after Diocletian's death in 313. Importation continued into the 6th and possibly the 7th centuries AD.

A third site where fragmentary amphoras, both Greek and Roman, are proving to be of considerable use chronologically is Arikamedu, on the southeast coast of India (Will 1991). Excavations are still in progress, but study of the fragments originally published by Sir Mortimer Wheeler and his Indian colleagues (Wheeler *et al.* 1946: 41–45) indicates that the earliest amphoras, Greek Koan jars, date from as early as the 2nd century BC. Only a few of the latest fragments now appear to be later than the end of the 1st century AD. Wheeler felt that the site dated to the first two centuries of the Empire, but he was writing at a time when very little work had been done on amphora chronology. He also failed to publish all the fragments he found at Arikamedu. Only pieces of wine jars were published, whereas study of his finds now stored in the museums of Pondicherry, Madras, and Delhi reveals several fragments of jars for Spanish and Istrian olive oil and Spanish garum. Once again, amphoras are helping us to see a more complicated picture of ancient economic history.

Amphoras have a useful story to tell. For the story to be accurate, the amphoras must be studied with great care. Measurement of heights, widths and diameters is essential for accurate

typology. When only a fragment of a jar is preserved, it can easily be confused with fragments from jars similar in appearance or fabric. The several types of amphoras manufactured in the 2nd and 1st centuries BC in the Cosa area, for example, all made of the same clay, can only be distinguished by measuring diameters, in the case of rims, and width and thickness, in the case of handles. Also diagnostic for accurate typology are the estimated greatest diameters of belly fragments, demonstrating that all fragments must be carefully measured. The Romans were adept at producing by hand objects that were surprisingly uniform in size (even down to small parts of the jars). We know now the standard dimensions of the chief types of amphoras (see discussions in Will 1987a; 1987b, and elsewhere). There are, as I have mentioned, variations that must always be taken into account in the case of each category; but on the whole it is easy to assign fragments to type if the critical measurements are taken.

Total retrieval and close measurement of fragments bore fruit in the case of Ortu Còmidu. Only five Roman amphora fragments were found, but they showed that wine came to the area from central Italy in the latter part of the 3rd century BC. In the early 1st century BC, olive oil was imported from the Adriatic region. Spanish garum was used at the site in the Augustan period, and the importation of Spanish olive oil in the 1st century AD signalled the end of exportation of oil from Italy itself and the replacement of Italian products by provincial producers. A fragment of an African olive oil amphora of the 3rd century AD dates from the time when Africa was replacing Spain as the chief exporter of olive oil.

In general terms, the material studied in the 1983 amphora survey of the major collections on Sardinia paralleled the evidence at Ortu Còmidu. Wine and a little olive oil reached the island from Italy during the late Republic. With the advent of the Empire and the decline of Italian agricultural production, almost all importation of wine into Sardinia ceased. We must assume that domestic production of wine took its place. At the same time, there was a dramatic rise in the importation of olive oil into Sardinia, initially from Spain, which took over from the Italian exporters in the Adriatic area, and later from Africa, which in its turn took over from Spain. During the Empire garum also became a major import into Sardinia from Spain.

The amphora evidence from Sardinia helps confirm and complete the picture of Roman trade in the western Mediterranean in general. The island imported from Italy for as long as possible and then turned, at least for oil and garum, to the

same export centers which served the Italian peninsula during the Empire. From this evidence we see that Sardinia was an integral part of the western Mediterranean economic community during the entire Roman period.

Amphoras can provide precious historical evidence about the Roman period in Sardinia. Miriam Balmuth recognized that fact and saw to it that a beginning was made toward filling a gap in our knowledge of the history of Roman trade in the western Mediterranean. Future excavation on the island can add much to that picture. In addition, a comprehensive study of the amphoras already excavated would also be of great value. The amphoras identified in the 1983 survey should be studied in detail and either published or, in some cases, republished. Collections of fragments should be identified, analyzed and published. In this way the role of Sardinia in the economic history of the western Mediterranean will be understood in far greater detail than is possible on the basis of our present evidence.

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## Riassunto

Secondo la professoressa Will, una nota scoperta di anfore romane, è importante preservare e studiare i frammenti d'anfora recuperati durante gli scavi archeologici. Il ritrovamento fatto da Miriam Balmuth ad Ortu Còmidu è l'esempio di uno studio attento e paziente di frammenti d'anfora. Il ritrovamento sopra menzionato ha condotto nel 1983 ad un'indagine sulle anfore conservate nei musei sardi che ha aumentato la nostra conoscenza del periodo romano in Sardegna.

La collezione dei frammenti d'anfora di Ortu Còmidu, oggi conservata nel museo archeologico nazionale di Cagliari, è una delle poche collezioni complete di frammenti d'anfora sino ad ora ritrovate. Troppo spesso accade che i frammenti d'anfora ritrovati, vengono 'immagazzinati' e dimenticati o addirittura scartati. Dal momento che è raro ritrovare anfore intatte, scartare o ignorare frammenti d'anfora significa non considerare evidenze inestimabili della storia economica del Mediterraneo romano. Per questa ragione è assolutamente necessario che tutti i ritrovamenti fatti durante gli scavi archeologici vengano conservati.

Oltre ad Ortu Còmidu, ci sono stati altri tre studi effettuati presso tre siti, che hanno rivelato importanti scoperte sulla cronologia e la storia del mondo romano. Lo studio di frammenti ritrovati a Manching, una città celtica sul Danubio nella Germania centrale, ha rivelato una possibile revisione delle date di fondazione e distruzione di questo sito. Numerosi frammenti di anfore, nella maggior parte dei casi contenitori di olio d'oliva, sono stati ritrovati presso il palazzo di Diocleziano presso Spalato. Alcuni cocci risalgono addirittura al I secolo a.C., ma molti risalgono al IV e al V secolo d.C. Ciò sta ad indicare che in questo

luogo esisteva un commercio prima che il palazzo fosse costruito, e che il sito è rimasto un centro d'importazione dopo la morte di Diocleziano nel 313 d.C.

Presso Arikamedu, nella costa sud-est dell'India, sono stati ritrovati e si stanno ritrovando frammenti d'anfora che completano i ritrovamenti precedenti fatti da Mortimer Wheeler, pubblicati nel 1946. Questi studi successivi stanno estendendo la cronologia del sito. C'è da aggiungere che una revisione di frammenti non pubblicati, conservati nei musei di Pondicherry, Madra e Delhi, ha rivelato l'esistenza di un'importazione di olio d'oliva dalla Spagna e dall'Istria, e un'importazione di vino da Roma e dalla Grecia.

La pubblicazione di ritrovamenti riguardanti anfore sarde, fatta da numerosi studiosi, ha aiutato a confermare e completare le ipotesi riguardanti il commercio esistente nel Mediterraneo occidentale. I frammenti ritrovati ad Ortu Còmidu mostrano che questa regione importava vino dall'Italia centrale durante il tardo III secolo d.C., olio d'oliva dalla zona adriatica durante il primo secolo a.C. e *garum* dalla Spagna durante il periodo Augusteo.

Il fatto che l'olio d'oliva venisse importato dalla Spagna durante il I secolo d.C. sta ad indicare la fine delle esportazioni italiane di questo prodotto e la sostituzione dell'olio italiano con quello proveniente dalle provincie. Il materiale studiato nell'indagine della collezione di anfore sarde del 1983 conferma questa ipotesi per tutta l'isola. L'Autrice conclude l'articolo sostenendo che è importante continuare gli studi su questo tipo di materiale (frammenti d'anfora), che è importante ripubblicare e rivedere materiale precedente e identificare le nuove collezioni di anfore.