Four Centuries of Athenian Pottery

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INTRODUCTION

The four centuries of ceramic development that are the topic of this paper (400 BC to the beginning of the Common Era) fall into no less than three of the standard chronological divisions of antiquity: the Classical, the Hellenistic, and the Roman periods. These have traditionally been the preserves of different scholars, and it is for this reason that the ceramic chronology is rooted in three different works of scholarship: for the fourth century, Brian Sparkes' and Lucy Talcott's analysis, published in 1970 in volume XII of the *Agora* series; for the ensuing Hellenistic period, Homer Thompson's 1934 *Hesperia* article, "Two Centuries of Hellenistic Pottery"; and, for the 1st century, Henry Robinson's 1959 publication of Group F, in *Agora* V.[1] Not surprisingly, the points at which these three great fabrics join are not seamless; there are gaps and overlaps that would not have been there had the weaving been in the hands of a single craftsman. Furthermore, significant new evidence has come to light since the publication of these authoritative studies, now making it possible to refine some of their conclusions. I would like to contribute below some thoughts about the methodology used in the construction of the Agora chronology, along with a review of the chronology itself as I now see it, in light of the most recent discoveries (both archaeological and intellectual) in the field of Greek ceramics. Overstepping the boundaries set by the organizers of the conference, I carry my summary down to the end of the 1st century because, as I will make clear below, the Hellenistic ceramic tradition survived at least that long.

EVIDENCE FOR THE AGORA CHRONOLOGY

The Agora ceramic chronology rests on two main props: fixed chronological points, i.e. deposits that contain a large amount of ordinary Attic pottery, which also can be associated with a dated historical event; and "closed" deposits, stratigraphically isolated groups of material with a limited range of date, most commonly the contents of wells and cisterns. A third form of evidence – material from physically superimposed layers – has traditionally been cru-

cial in the formation of ceramic chronologies. Few such sequences, however, have been recovered at the Agora and consequently this kind of evidence has played almost no part in the development of the Agora chronology.

Historical fixed points

In evaluating the Agora chronology, an obvious question to ask is, how sturdy are these two props? First let us consider the historical anchors. There are only a handful: the destruction of Olynthos; the foundation of Alexandria; the occupation of Koroni; the destruction of Corinth; and finally, the attack of Sulla on the city of Athens. We might add the purification pit on Rheneia for, although it falls before our period, it provides the only mooring until we reach the middle of the 4th century. The date emerges from Thucydides' account (3.104) of the purification of the sanctuary at Delos undertaken by the Athenians in 426/425. The association of the pit – rich in both figured and black gloss pottery as well as much earlier material – with the purification has not been challenged, but the presence of some indubitably later material urges that it be used with caution.[2]

The large collection of pottery at Olynthos, destroyed by Philip II in 348, is the linchpin of 4th century ceramic chronology.[3] The presence of later 4th century coins on the site, and the fact that, according to Diodoros Sikulos (19.52.2), much of the population of the new foundation at Kassandreia in 316 was drawn from among the Olynthians, have prompted some scholars to challenge 348 as a reliable *terminus ante quem* for pottery from this site, and to suggest that the mass of ceramics there should be dated well down in the 4th century, rather than in its second quarter.[4] It is certainly true that the city was not completely deserted after 348, but Nicholas Cahill's recent analysis of the distribution of the post-348 coins demonstrates that most of the rehabitation was in the northwestern section of the North Hill.[5] In this part of the excavation, Robinson contented himself for the most part with tracing walls; few floors were excavated, and almost none of the published pottery comes from this part of the site. We can still, I believe, rely on the bulk of the pottery from the remainder of the site for a view into the mid-4th century cupboard.[6] Just how much of that pottery is Attic, however, remains open to question. David Robinson thought that most of the black and plain wares and lamps were of local manufacture,[7] while Peter Corbett and Lucy Talcott felt confident that much of the fine pottery was Attic.[8] The issue remains unresolved. If the pottery is not Attic, we may well ask how useful it is for framing an Attic chronology, for it is quite likely that the products of different centers of production, even if heavily Atticizing in character, would follow somewhat different developmental paths.

Alexandria provides a likely *terminus post quem* of 331, the date of its foundation, for deposits excavated there – although we cannot affirm that no one was living there earlier. Even if we discard the notion of earlier settlers or

visitors, it is difficult to evaluate the pottery found in the earliest cemeteries. We can say that it was buried after 331, but we cannot tell how long after. Nor can we be certain that any single object was not an heirloom brought from abroad, decades old at the time of its inhumation. It is problematical as well that much of this material was excavated early in the 20th century and is not published to a standard that makes it easy to use for the investigation of fine chronological questions. Fortunately, Alexandrian archaeology is undergoing a revival, and new excavations have brought to light more material from the early years of the city. Even so, we are again plagued by the question of the origin of the pottery: is it Attic, or not? Some scholars are convinced that much of it is; others have expressed doubts.[9] In any event, the site, no matter how meticulously excavated, is unlikely to be as useful as contained sites with a *terminus ante quem*.

Such a site is the Ptolemaic encampment on the headland at Koroni, on the east coast of Attica, excavated in a short, three-week season in 1960.[10] The modest ambition of the project was to determine the date and nature of ruins long visible on the surface. The results, however, were an archaeological bombshell. Coins found on the site enabled the excavators to date its occupation to the reign of Ptolemy II, and furthermore to associate it with the presence of Ptolemaic troops in Attica at the time of the Chremonidean War, between 267 and 262/261 BC. This conclusion led to another and far more wide-reaching one: that the ceramic chronology outlined by Thompson for the first sixty years of the Hellenistic period was too high by about a generation. After a series of initial challenges,[11] the dating of the site has achieved widespread acceptance, and Virginia Grace's 1974 downward revision of her Rhodian amphora chronology on the basis of evidence unrelated to Koroni[12] lent important support to the new, lower chronology. It did not, however, resolve the discrepancy altogether, for it gave a date in the late 270's for the amphoras,[13] which had therefore to be regarded as serving a secondary use as water containers in the latter half of the 260's. Now, however, Gerald Finkielsztejn's further revision of the Rhodian chronology places the three eponyms documented at Koroni – Chrysostratos, Agrios, and Antileon – in the years 267-265.[14] This solves the problem neatly and allows us to imagine that the amphoras were brought to the site fresh from the vintner when the troops occupied the site. Although it has been suggested that there may have been some earlier habitation at Koroni,[15] nothing has happened in the forty and more years since the excavation to undermine c. 261 as a terminal date.

The next fixed point, the destruction of Corinth by Roman soldiers under Mummius in 146, is of only limited usefulness for the Attic chronology. First of all, evidence has been growing over the years that there was substantial squatter activity on the site during the 100 years between its destruction and the establishment of the Roman colony. This is most clearly documented by stamped amphora handles, but imported fine ceramics of the intervening period have been identified as well.[16] Most of the Mummian destruction debris

is in secondary deposits, representing clean-up at the time of resettlement a century later, in the course of which later material may have entered the archaeological record. And, finally, the Attic pottery from Corinth remains largely unpublished, further limiting the utility of the site for the purposes of Attic chronology-building. Potentially more useful for the mid-2nd century is the construction fill of the Stoa of Attalos, which, if the foot-high inscription on its facade means anything, must have been constructed during the reign of Attalos II, from 159 to 138. Here, however, we have quite a wide range for *a terminus ante quem*: the fill could have been dumped within the foundations during any one of the twenty-one years of Attalos' reign. In any event, it has never received systematic study and remains unpublished; it is clear, however, that, like many building fills, it covers a very long range of date and is largely composed of very fragmentary material.

Our final fixed point is the sack of Athens in 86 BC by the Roman general Sulla. Several deposits may be associated with this event on the basis of the coins and amphora handles that they contain. The coins are the final issue of the Fulminating Zeus series, marked with Mithradates' star between crescents on the reverse.[17] The Knidian amphoras are those of the latter part of the *duoviri* period, which probably ended in 88 BC. Twenty-three deposits at the Agora contain one or both of these markers, and one has been fully published from elsewhere in the city.[18] None, however, is lying where it fell on the fateful first of March in 86 BC. Like the destruction debris at Corinth, these are secondary deposits, cleared away when the area in question was rebuilt or renovated, often decades after the event. Hence, most of these deposits contain some identifiably later material – be it a coin, an amphora handle, or a fragment of Roman sigillata – and one must remain alive to the possibility that some contain material that is not identifiably later, but is later nonetheless.

"Closed" deposits

No one of the fixed points discussed above – except perhaps Koroni – presents a perfect case, but they are nonetheless indispensable landmarks along the course of Attic ceramic development. The next challenge is to chart the unknown territory between them. For the Agora chronology, these gaps have been elucidated by creating what amount to a secondary series of fixed points, in the form of the so-called "closed" deposits. This approach was a bold innovation by Homer Thompson,[19] the first scholar, as far as I am aware, to use deposits other than graves in this manner. The fine tuning of the Agora chronology of the 4th to the 1st century depends on some 300 "closed" deposits of this sort. Valuable as they are, however, they present significant difficulties.

First: How truly "closed" are these deposits? None is protected by an impervious sealing, such as a cement floor – although some approach that situation, lying at the bottoms of wells, beneath sterile layers of mud or col-

lapsed bedrock. In almost all cases, however, it would have been possible for later objects to enter the cistern or well some time after it was originally filled with debris, or to have sifted down to lower levels from higher ones – in the course of time or during excavation – or to have fallen in from the surface at the time of excavation. Connecting tunnels in cistern systems also offer avenues for contamination. In addition, many of these deposits presented difficult excavation problems: in some cases, partial collapse confounded the contents; danger of collapse made stratigraphic excavation difficult or impossible in others. In cisterns, particularly, it was not easy to sort out the typically cone-shaped layers of accumulation when digging underground, in the dark and in the damp. Direct observation of excavation in progress was difficult, and workmen were often left on their own for long stretches as the cistern was cleared. And of course the possibilities for intrusion in the construction fill of a dirt-floored building are legion. A prime difficulty in the use of this evidence, then, is distinguishing between the original deposit and intrusions of later date. A single fragment some hundreds of years later than the bulk of the material can easily be dismissed; material seemingly only a decade or a generation later than the whole poses a more challenging question. Is it an intrusion, or is it evidence that the deposit was closed later, and that other material within that deposit may also date later? Paradoxically, this problem becomes more acute as the chronology becomes finer.

A closely related problem is the estimation of the terminal date of the deposit. The first step, of course, is an evaluation of the most closely datable objects: figured pottery in the first fifty years of our span, stamped amphora handles and coins thereafter. These are a godsend, but their utility is nonetheless limited, as Figure 1 illustrates. Over half (58%) of the c. 225 Hellenistic deposits included in *Agora* XXIX contain amphora handles, although it is in

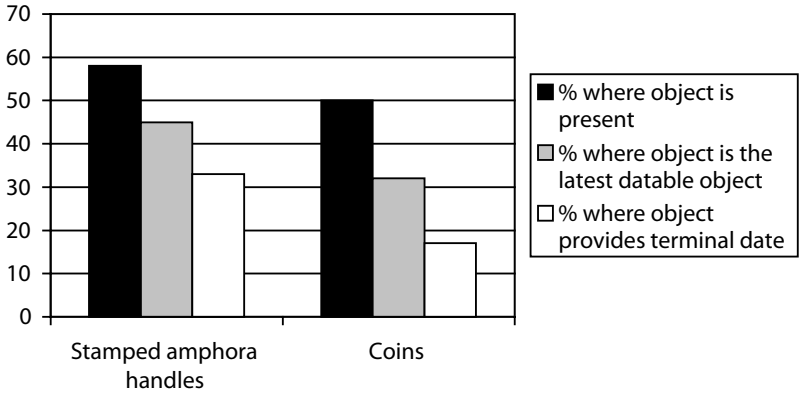

Fig. 1. Percentage of Hellenistic deposits in *Agora* XXIX containing stamped amphora handles or coins.

only 45% of the deposits that an amphora handle is the latest datable object. Even in those cases, other evidence (usually the pottery itself) may indicate that the terminal date must be substantially later. When this is taken into consideration, it turns out that amphora handles are useful in determining the date of deposit in only about one third of the cases. Coins, as it develops, are considerably less useful. Half of the deposits contain coins, largely bronzes, usually badly corroded, and only rarely closely dated. They constitute the latest datable objects in one third of the deposits, but they are instrumental in suggesting a terminal date in only 15% of the cases.

The latest datable object (assuming that we do not reject it as intrusive) tells us only the earliest possible date at which the material could have been discarded. Although the lapse between manufacture and discard is, ultimately, not recoverable, it is essential to scrutinize the state of preservation of the dating object, which may provide some hints. Worn coins must have circulated for some time, and fragmentary and battered objects are likely to be older than whole ones in a given deposit. I have generally assumed ten year lapse after the latest amphora handle – considering that the amphora had to be imported, discarded, smashed to bits, and then thrown away. Complete amphoras must be regarded differently from fragments of handles, but there is ample evidence of long-term reuse of amphoras as storage jars, and we can never assume they were new when discarded.

Occasionally datable objects and other information can be combined to turn one of these deposits into an historically "fixed" point. Such is the case with the debris from abandoned water sources around the Tholos.[20] It contains abundant material of a public nature: fragments of official measures, clay and lead seals, fragments of inscriptions, and rooftiles labeled *demosion*. For this reason it had been conjectured ever since its excavation in 1934 that the debris resulted from some event in the chaotic history of Athens in the late 4th or early 3rd century. A somewhat worn coin of the owl-left issue, which John Kroll now dates beginning in 307,[21] provides a *terminus post quem*, and it seems likely that the damage took place during the brief reign of the tyrant Lachares in 294. The material from these deposits, then, can be placed in the latter years of the 4th century and the earliest years of the 3rd, providing a useful checkpoint between Olynthos and Koroni.

Finally, how homogeneous – in terms of date – can we expect any one deposit to be? The amphoras often cover many decades, and figured pottery in well deposits of the last half of the 5th and first half of the 4th century frequently documents a range of thirty to fifty years, at least for fragments; even wider spans are not unheard-of (see Fig. 2). We can assume, then, that a range of fifty years within a dumped deposit is not unusual – though of course there will be wide variability in the degree of chronological homogeneity.

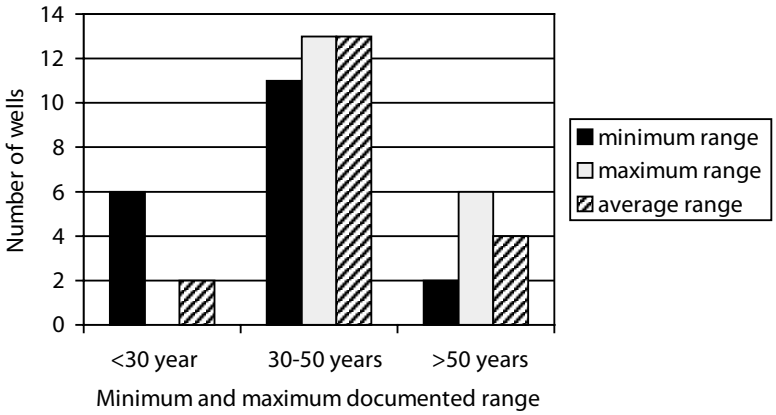

Fig. 2. Range of red-figure in Agora wells containing five or more red-figure fragments (450-350 BC).

Note: absolute ranges cannot be calculated because individual fragments of red-figure are themselves dated within a range (e.g., 410-400, or last quarter of 5th century). Three figures are used here to give a realistic impression of the data. The minimum range is the smallest possible range documented by the fragments. The maximum range is the largest possible range documented by the fragments. The average range for a deposit is the average of the minimum and maximum range figures for that deposit. Data and dates are taken from Moore 1997.

The Komos Cistern

A chronology is like any other structure: once it has been built, it requires maintenance if it is to continue to function effectively; and our chronological evaluation of the deposits must frequently be adjusted to take account of new evidence. The Komos Cistern (deposit M 21:1), excavated by Eugene Vanderpool in 1947, provides a good example of the evolution of scholarly interpretation of a single deposit. Whatever Hellenistic house or workshop it served has left no trace; the cistern itself had collapsed in antiquity, and the resultant hole had been filled with a pottery-rich debris. The physical situation made it impossible to excavate the cistern stratigraphically: instead, a circle something over 1.00 m in diameter was dug through this fill to a depth of 4.00 m and then expanded outwards. Below the pottery-rich fill lay a sterile layer of broken bedrock about 2.00 m thick – the remnants of the collapsed cistern wall – and below it a layer of mud, 40-50 cm thick, that rested on the bottom of the chamber, representing sediment that had accumulated while the cistern was in use. Unfortunately these tidy householders had dropped no significant trash into their water source; the silt contained only a few sherds. (See Fig. 3 for a schematic reconstruction of the excavation situation and the various interpretations that have been proposed).

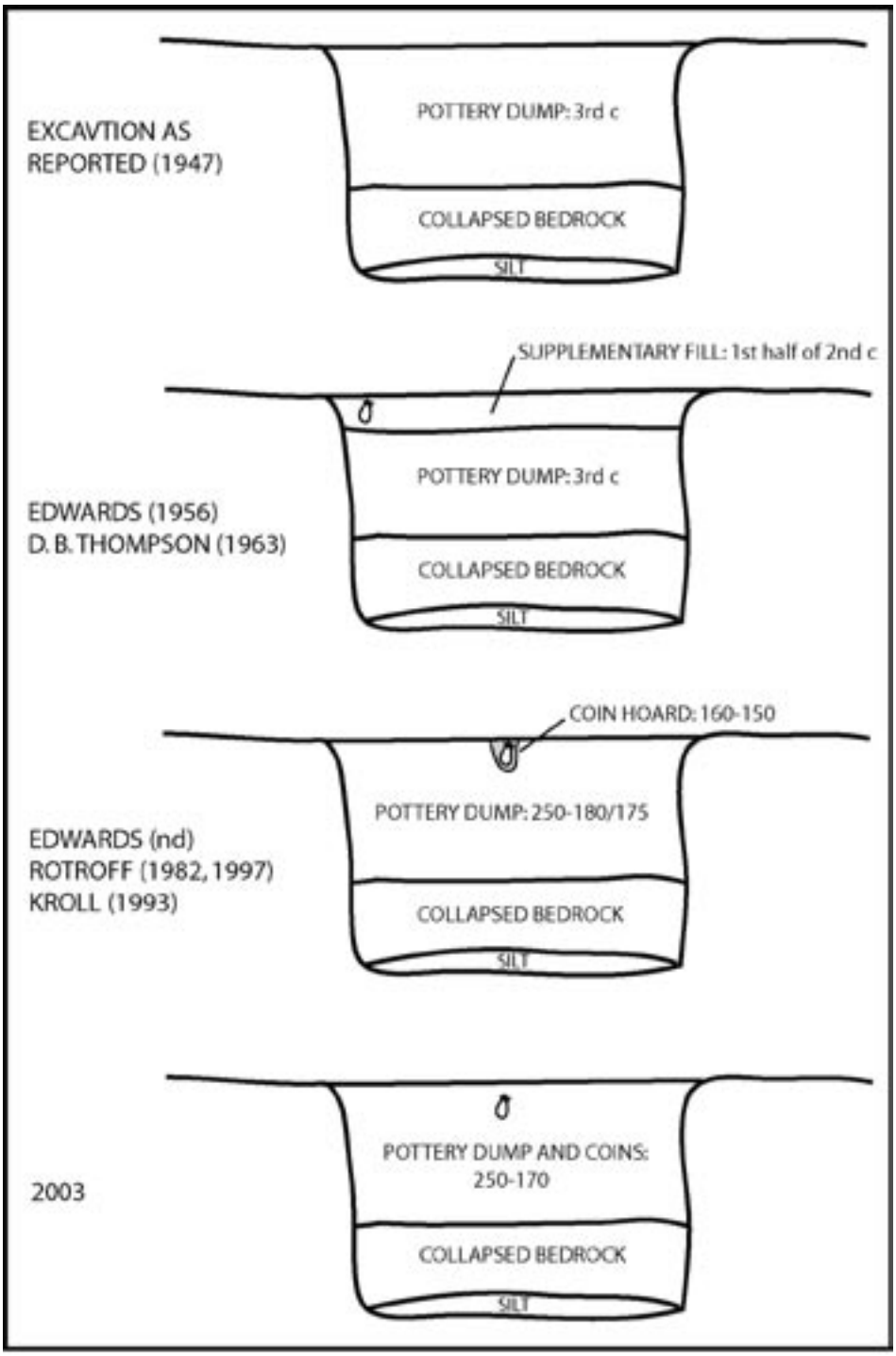

Fig. 3. Schematic representation of the evolving interpretation of the stratigraphy and chronology of the Komos Cistern.

The total of inventoried objects from the Komos Cistern is over 250; in addition, a large amount of uninventoried pottery was retained. This material includes many terracotta figurines and one mold for their manufacture, along with at least seven molds for moldmade bowls, wasters, and kiln furniture, indicating that it is at least in part the refuse from a potter's workshop. Most of the moldmade bowls and molds could be associated with the workshop of Bion, one of the earliest producers of moldmade bowls at Athens, which makes this deposit particularly important for the chronology of this type of object. Consequently, it has been scrutinized with some care, by me, and before me by Roger Edwards.

Vanderpool thought that the pottery-rich debris was a single fill: "because of the way we were forced to dig the cistern, no stratification can be recorded. There probably is none, however," he wrote in the field notebook in 1947. Subsequent study, however, cast doubt on this conclusion. In 1956, Roger Edwards discussed the Komos Cistern in a letter to Dorothy Thompson, responding to a query from her about its date. He suggested a wide range for the material – the whole of the 3rd century – but identified nothing he would date after 200. This conclusion was in line with the dating of the thirty-four stamped amphora handles, as it was then understood. Thompson, however, thought that some of the terracottas were later;[22] to which Edwards replied "if some of your material is a bit later than 200, I would settle for ascribing it to a supplementary fill it wasn't possible to distinguish in digging." As he explains, "It is very usual in cisterns, as I'm sure you appreciate from your own experience, to have a supplementary fill since the original filling inevitably settles," adding parenthetically "architects won't erect buildings on a fill until it has settled for 7 years, I'm told." This reasonable suggestion also had the advantage of accounting for the numismatic evidence, which pointed to a later date as well. While the latest legible Athenian bronze coins from the deposit appeared to date in the 3rd century, there were eight silver coins of Histiaia dating between 196 and 146. Seven of these were found in a concreted clump, suggesting that this was a hoard or a lost purse. The level at which they were found was not recorded, but the eighth appeared on the first day of excavation; the hoard, then, is likely to have been located near the top of the deposit, and it could therefore be assigned to the supplementary filling. This hypothetical supplementary filling went on to become published fact in Thompson's article on the terracottas from the Komos cistern, published in *Hesperia* in 1963. She wrote, "A supplementary filling presumably occurred before the middle of the 2nd century," quoting a 1961 letter from Roger Edwards to that effect.[23]

Edwards, however, was also able to envision another scenario. In an undated typescript[24] that he has been kind enough to share with me, he wrote: "It is not unreasonable to suppose, since the associated house apparently continued in use after the filling [of the cistern] occurred, that the hoard was deposited beneath the floor level for safekeeping by one of the inhabitants

at a much later date and was actually intrusive in the filling." In this case, the hoard need have no impact whatsoever on the chronology of the other material in the deposit.

So the matter stood until the post-Koroni revisions were applied to the amphoras from the Komos Cistern. These indicated a date of c. 186 for the latest Rhodian handle, which names the eponym Kallikratides II. The chronology of Athenian coinage of this period has also been revised, as reported by Kroll in *Agora* XXVI, with new dates based in part on the amphora chronology. On this new reading, the latest of the Athenian coins, representing early issues in the Fulminating Zeus series, date after c. 190.[25]

A date of deposit *post* 186 might seem to solve the problem of the Histiaian coins, which had been dated 196 and 146. But in the estimation of numismatist Malcolm Wallace, who examined them shortly after they were excavated, these particular coins do not fall near the beginning of the series; furthermore, the degree of wear he observed on them suggested to him that the coins were sequestered "considerably after 170, say 160-150."[26] A gap of at least twenty-five years therefore remained between these coins and the next latest datable object. Consequently, in my discussions of the deposit in *Agora* XXII and *Agora* XXIX I adopted Roger Edwards' suggestion that the Histiaian coins constituted an intrusive hoard.[27] Kroll, too, in *Agora* XXVI, regarded them as intrusive.[28]

Now, however, the implications of Finkielsztejn's revised amphora chronology must be considered. As it turns out, if the lower dating is correct, the chronological inconsistencies of the Komos Cistern all but disappear. The new date for the latest Rhodian eponym, Kallikratides II, falls between 175 and 173,[29] not so very much earlier than the proposed 160-150 for deposit of the coins. Remembering that Wallace's estimate of the date was just that – an estimate – we may claim the flexibility to suggest the coins might have been deposited as early as 170 or so. It now looks as though we can discard both of the explanatory scenarios and regard the deposit, lost purse and all, as the result of a single ancient event – just as Vanderpool originally thought.

The Komos Cistern is only a single deposit, though a rich one. In an edifice as elaborate as a ceramic chronology, however, each adjustment has multiple implications. If the Komos Cistern is a little later than we thought, then other deposits with closely similar contents may be a little later too. A simple, wholesale downward shift or stretching of the chronology is unlikely to bring satisfying results; each case needs to be reexamined in the search for a more precise estimate of ancient dates. That type of thoroughgoing revision is a major research task, requiring review of the original data, and hence beyond the scope of most users of the chronology. This inescapable fact fosters a conservatism in the assignment of dates, as people must continue to refer to the published or conventional chronology, even while realizing that it is in need of revision.

A REVIEW OF THE PRESENT STATE OF THE CHRONOLOGY

Given these various adjustments and challenges, what is the present state of the Athenian chronology? Dates for the earliest part of the period under consideration here are strung out between the Rheneia purification deposit and Olynthos. The middle third of that seventy-five-year span – the first quarter of the 4th century – continues to be problematical. It predates the introduction of bronze coinage at Athens, and closely datable stamped amphora handles are virtually absent in Athenian deposits of that date. Dating therefore depends almost entirely on the red-figure pottery recovered from the deposits, which itself presents serious chronological challenges, for 4th century vase painting remains under-studied and insufficiently understood.

The deposit record at the Agora is also poor for this span. A plot of the estimated dates at which the deposits included in *Agora* XII were discarded illustrates the disparity of the evidence for different parts of the period. Although some material found more recently changes the picture, this is the evidence that Sparkes and Talcott relied upon in generating their chronology, and so it has a direct impact on the dates that they published. As Figure 4 shows, deposits discarded at the end of the 5th century or slightly thereafter greatly outnumber deposits laid down in the course of the first half of the 4th century. Even taking into account a natural tendency to choose a round number (400) as a terminal date, it is clear that the amount of evidence diminishes as one progresses into the century. Furthermore, ten of the deposits in this latter period are ritual pyres – small deposits made up mostly of miniature vessels and lacking external evidence for their dating; they can contribute little to the chronology. Finally, most of the remaining deposits are poor in figured pottery. A plot of the number of red-figure pieces per deposit throughout the

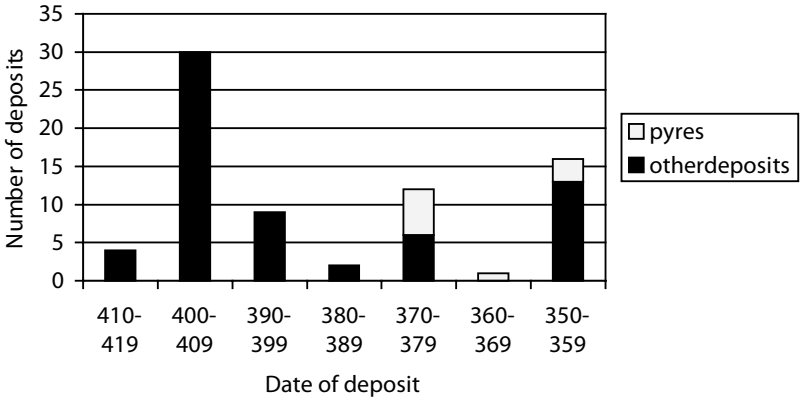

Fig. 4. Distribution over time of deposits of later 5th century to first half of 4th century.

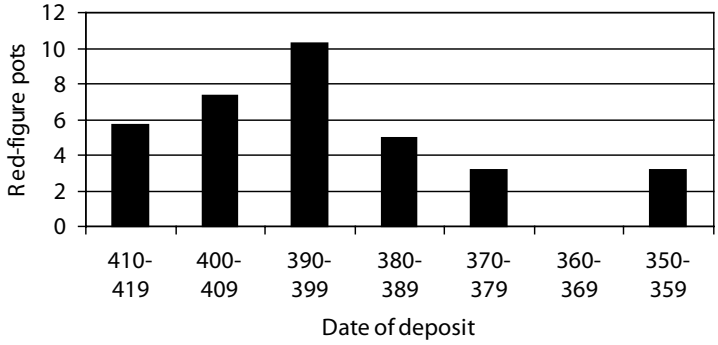

Fig. 5. Average number of red-figure pieces per deposit (excluding ritual pyres).

period shows how the amount of chronological evidence of this sort declines sharply after about 390 (Fig. 5). This leaves us with very little independent evidence upon which to base the dates of deposits in this span.

Things become clearer in the second quarter of the century, when the pottery from Olynthos serves as a reliable comparandum. The eighty-year span between Olynthos and Koroni is also fairly well charted, for deposits of the late 4th and early 3rd century are relatively abundant. The introduction of bronze coinage at Athens around the middle of the 4th century contributes to the closer dating of some of them – although, since the dating of these coins is in part dependent on the pottery chronology, one must beware of circular argumentation. Crucially important to the sequence is the large collection of well-preserved pottery from the destruction debris of phase 3 of Bau Z in the Kerameikos.[30] Although, as far as I am aware, the destruction of the building has not been associated with any documented event, the date of deposit is firmly fixed by numismatic evidence. Bau Z-3 must have been destroyed after c. 320-317, the date of a posthumous silver coin of Alexander the Great found in the debris; and the absence of the owl-left issue among the fifty-three Athenian bronze coins indicates that the deposit was formed before that issue began to be struck, probably in 307/6.[31]

Koroni provides a point of comparison in the late 260's, supported, as I said above, by Finkielsztejn's lowered amphora chronology. Once we leave Koroni behind, however, it is 115 years to our next landmark in the destruction of Corinth. Fortunately, this span is punctuated by two significant ceramic innovations: the moldmade bowl and the long-petal bowl. Absolute dates are difficult to achieve, but deposits that fall between the two fixed points can be placed in relative sequence on the basis of whether or not they contain either of these two ceramic types.

It is within this same span that Attic ceramic chronology is most immediately affected by Finkielsztejn's lower chronology for Rhodian amphoras. To judge from the Agora excavations, Athenians imported Rhodian wine mas-

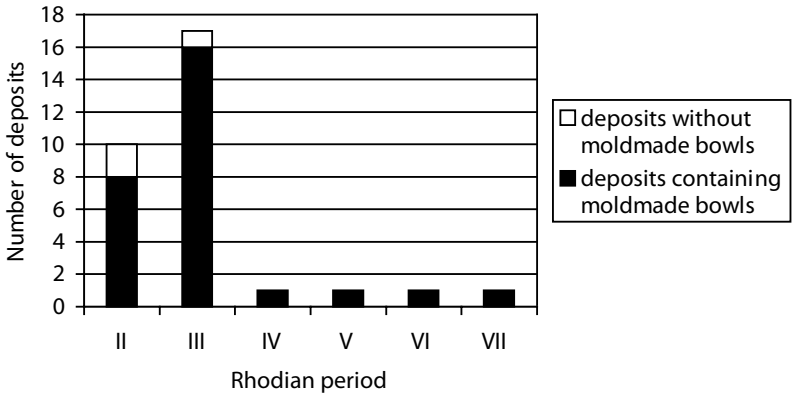

Fig. 6. Deposits in which a Rhodian amphora provides the terminal date.

sively in the second half of the 3rd century and the first third or so of the 2nd century; thereafter, Rhodian amphoras are less frequent in the archaeological record and rarely provide a terminal date for an archaeological context. At issue here are amphoras of periods II and III of the Rhodian sequence: about 239-175 in Grace's estimation; c. 234-161 in Finkielsztejn's chronology. There are thirty-one deposits (about 14% of the whole) among those that I used in writing *Agora* XXIX where a Rhodian amphora handle provides the terminal date; as Figure 6 shows, almost all of them fall within this period. It is here, then, that acceptance of Finkielsztejn's lower chronology requires a downward shift of deposit date. I would like to take this opportunity to examine the consequences of such a shift for the dating of the moldmade bowl, which was introduced during this span.

In *Agora* XXII, I dated the inception of the moldmade bowl after 240 on the basis of its absence from Thompson's Group B.[32] The group is dated by an amphora stamped by the Rhodian fabricant Zenon, made at about the time when months began to be used on Rhodian stamps, an innovation that Virginia Grace placed around 240. The fact that the amphora is nearly complete suggests that it may not have been very old at the time of its discard, so one might conjecture that the group was closed not much later. I noted also that the earliest deposit with significant numbers of bowls was the upper fill of the Altar Well, which contained a Rhodian amphora handle of the eponym Xenostratos, dated by Virginia Grace c. 217. This is a handle, not a complete amphora, so some time would have been required for it to be broken and discarded. I therefore suggested a deposit date of c. 210. Thus the introduction of the moldmade was bracketed, on the basis of archaeological evidence, within the years c. 240 and 210, and I presented an historical argument that 224 was the most likely date. That was the year of the first Ptolemaia, a likely occasion for the import and display of the sort of flashy, Alexandrian silver ware that the moldmade bowls clearly imitate.

Finkielsztejn's new dates push everything down.[33] They place the amphora in Group B within the span 233-220 – perhaps close to c. 226 if, as Grace speculated, the eponym (whose name is entirely missing) is Philokrates.[34] Finkielsztejn places Xenostratos, the latest eponym present in the Altar Well, in 211 or perhaps a little later; a date of deposit near the end of the 3rd century seems called for. Consequently, the introductory date for moldmade bowls is now bracketed between c. 226 and 200. On the face of it, while 224 remains possible as an initial date, the downward shift of the chronology would seem to make it less likely.

Another piece of evidence, however, argues against a downward shift. In his 1934 article, Homer Thompson declared that moldmade bowls did not "occur at all in any part of Cistern B";[35] but when, in the course of preparation of *Agora* XXIX, I reexamined the uninventoried pottery from the deposit, I discovered among it a single fragment of a moldmade bowl, attributable to the workshop of Bion.[36] I am at a loss to explain how Thompson could have overlooked it, and I suppose it might have made its way into the lot by mistake in the intervening years. In my discussion of the group in *Agora* XXIX I dismissed the fragment as intrusive (along with three other significantly later fragments that date in the 2nd century);[37] but if the terminal date of the group is after 226, a single fragment of a moldmade bowl is unexceptional, and I am now inclined to believe it is part of the original deposit. I can also point to another deposit dated by the eponym Philokrates (P 10:2) that contains fragments of three moldmade bowls.

A review of the earliest contexts for moldmade bowls in the Agora, using Finkielsztejn's amphora dates, reveals eight deposits in which the latest amphora dates before 200, and where no other evidence is present to suggest a later date of deposit. First comes Group B, with its single fragment; two more deposits are probably close to it in date (N 21:9, P 10:2), with amphoras of Period IIa (which ends, according to Finkielsztejn, in 220). The other five deposits[38] contain amphoras of periods IIb or c (for Finkielsztejn, 219-199); with the exception of the Altar Well, none contains more than a few fragments of moldmade bowls. Moldmade bowls are a small but consistent presence in deposits with amphoras dating in the subsequent periods IIIa and IIIb (to which Finkielsztejn assigns the years c. 198-182).[39] Numbers then begin to grow, and moldmade bowls are always very numerous in deposits that have as their latest object amphora handles that Finkielsztejn assigns to periods IIId and e, dated by him to the span 175-161.[40] This suggests that, whether the precise date of their introduction is 224 or a decade later, moldmade bowls tend to be scarce in the archaeological record before the beginning of the 2nd century, and that they do not begin to become a substantial part of the archaeological record until as late as c. 180. It must always be kept in mind, though, that the nature of a deposit – whether domestic or industrial waste, or a potter's dump – must also have an impact upon whether or not it contains substantial numbers of these elegant drinking vessels.

But we are now approaching another difficult question: the date of the introduction of the long-petal bowl, distinguished by its severe scheme of tall, ribless petals. The bowls were being made in considerable numbers at Corinth before the Roman destruction put an end to the ceramic industry in 146. They do not figure very prominently in the plates of Roger Edwards' publication of the site's pottery,[41] but a visit to the storerooms at Corinth is enough to convince anyone that they were in full production at the time when Corinth was destroyed. At Pergamon they are found deep within the foundations of the Great Altar,[42] but that, unfortunately, is a monument without a secure date. Gioia de Luca and Wolfgang Radt have recently placed the beginning of construction in 172,[43] and Peter Callaghan has argued for a date of c. 165.[44] Judged by an Athenian comparandum that seems particularly apt – pottery from the construction fill of the stoa built by the Pergamene King Attalos II at Athens – an even later date would be preferable. The fill of Attalos' Athenian stoa contains perhaps one fragment of a long-petal bowl (the piece is too small to be identified with certainty). Set beside the approximately ten fragments known from the fill of the Pergamene monument, this suggests the Great Altar was constructed by Attalos, and not at the very beginning of his reign. Still, since that remains in the realm of conjecture, it brings us no closer to the date of the bowls.

The earliest securely dated deposit at the Agora for long-petal bowls of canonical type – that is, with flat petals and minimal rim decoration – is a cistern fill containing Knidian amphoras of period IV B (167 to 146 BC),[45] and they occur in large numbers in deposits with Knidian amphoras of period V (146-108); their floruit, therefore, belongs firmly in the second half of the 2nd century. Four earlier deposits, however, contain fragments of long-petal bowls that diverge in various ways from the canonical type. Four fragments, probably from two bowls, come from a fill that lay over the floor of the Square Peristyle (deposit Q 8-9).[46] The latest Rhodian amphora handle in that deposit was stamped in the term of Hieron I, dated by Finkielsztejn to c. 186 BC;[47] but the pottery is very similar to that in the Middle Stoa building fill, suggesting a common source for both and a closing date no earlier than c. 170. Another fragment, so similar to one of the bowls just mentioned that it could come from the same bowl, was found in cistern P 21:4,[48] along with fragments of seventy-two bowls of earlier types. The latest datable objects in the deposit are four bronze coins of c. 190-183 and a largely complete amphora stamped by the Rhodian fabricant Aristokrates II (periods IIIa-b, c. 195-184); but the similarity of the large collection of moldmade bowls to those in the Komos Cistern discussed above suggests this deposit might be about contemporary with it, and so deposited c. 170 or a bit later. Another possible fragment of early type has been detected among the c. forty bowls from cistern F 17:4.[49] All of its sixteen amphora handles probably date in the 3rd century, but a single coin indicates a deposit date after 190. Again, similarity to material from the Komos Cistern hints that the deposit date could be decades later.

Finally, fragments of a long-petal bowl with unusual overlapping petal were found behind the Middle Stoa, spread through deposits laid down in leveling operations after the building was completed – some time in the 2nd quarter of the 2nd century.[50] At present, it looks as though Athenian potters had begun experimenting with the long-petal design by around 170, though its years of popularity lay some 15 to 20 years in the future.[51]

Long-petal bowls in quantity are the marker of deposits laid down after about 150, and Thompson's Group E furnishes a rich collection of Athenian pottery in use not too long before the end of the century. Its dating is based on the absence, from among its thirteen amphora handles, of any Knidian amphoras naming an eponym of period VI, during which the *duoviri* were named; this practice is thought to have begun c. 108. Two of the fabricants named, however, occur elsewhere on handles marked by *duoviri*, so we must be close to the beginning of the period; a date of deposit in the decade before the end of the century seems to be called for. The uniformity of the deposit suggests that its range is not very great, and the material is probably typical for the last quarter of the 2nd century. There is very little evidence, however, for a detailed chronology of the third quarter of the 2nd century, that is, the period between the wholehearted adoption of the long-petal bowl and Group E. Only six of the many Agora deposits can be dated to this span (and their dating is tentative);[52] they do not document any ceramic changes in fine or plain that can be used for chronological purposes. Further study of the pottery associated with the construction of South Stoa II may eventually elucidate this timespan. At present, however, it is hard to put a date more precise than "second half of the 2nd century" on most of the ceramics of this general period.

Not surprisingly, pottery made shortly before 86 is well known. Despite the fact that most of the Sullan deposits were cleared away long after the time of the sack, the material they contain is generally very uniform, and we may assume that most of it was broken in the course of the disaster. Not surprisingly, it is not very different from the pottery in Group E, deposited a couple decades earlier; but there is one new feature. It was during this span that Athenian potters – or at least some Athenian potters – began to apply gloss only to the interior and upper exterior of bowls and plates. This semiglazing – typical of the entire Hellenistic period on some sites – is at Athens the identifying mark of the early 1st century.

Earlier Agora scholars saw the Sullan sack as the watershed between the Hellenistic and the Roman period. There is no doubt that the Roman onslaught was politically and economically devastating, but an analysis of ceramics from deposits laid down throughout the course of the century reveals that it had little impact on the style of Athenian ceramics. The assemblage became impoverished as shapes gradually went out of production, there was a marked decline in quality, and a significant rise in the number of imports. Of innovation there was very little: the one exception is the reversible lid, now fired red but still decorated in West Slope technique, which grew to enormous

proportions and, judging from the motifs painted on its walls, served some function in the cult of Isis.[53] It was still, however, a shape that could trace its ancestry directly back to Hellenistic and even Classical forms. A number of new household and cooking shapes emerged in the course of the 1st century, but the table wares, such as they are, continued to be much as they were. Athenian tableware did not undergo substantial stylistic change until a decade or two into the Common Era, when the import of Eastern Sigillata B in some quantity provided new and very different models for imitation. This observation suggests locating the end of the Hellenistic ceramic sequence in the early years of the Emperor Tiberius. I think it likely that this pattern is not limited to Athens, but rather that the survival of Hellenistic ceramics well into what we term the Roman period may be a widespread phenomenon.[54]

CONCLUSION

In conclusion I would like to consider briefly the question of the relevance of the chronology of Attic pottery for the archaeology of sites around the Black Sea. The products of Athenian potteries were widely exported in the 4th century and many found their way to the north – the so-called Kerch vases offer an obvious example. This situation continues into the first half of the 3rd century, when pottery of the early West Slope style is regularly found outside of Athens, including sites on the Black Sea.[55] One might also expect, then, to find local reflections of Attic developments in the first 150 or so of the years under consideration here. Thereafter, however, Athens' ceramic exports decreased dramatically – to the point that they all but escape archaeological notice. There was a modest overseas market for the mold-made bowls of the late 3rd to early 2nd century, examples of which have been reported widely in the Aegean, the Anatolian coast, as well as in southern Russia.[56] There seems to have been a brief period of vigorous ceramic entrepreneurship, with at least one pottery perhaps expanding its operations outside of Athens: what appears to be an Attic mold has been found on Tinos,[57] and at both Lemnos and Argos potteries with strong connections to the Workshop of Bion were established.[58] Attic wares and influence, then, might be anticipated within the span c. 225-165. Attic West Slope amphoras of the 2nd century are occasionally found around the Black Sea as well[59] and even inspired local imitations;[60] but other Attic West Slope shapes rarely traveled. There are thus only limited periods in which Attic influence or the presence of Attic imports seems likely.

This situation presents a potential pitfall in the dating of deposits on sites around the Black Sea. If one depends heavily on Attic pottery for dating, one may mistakenly interpret the absence of Attic vessels dating after a certain point as evidence for the terminal date of the deposit, while the truth may be that the deposit was laid down significantly later, but at a time when Attic

pottery was no longer being imported. And this makes the development of local chronologies all the more important.

But if Attic pottery cannot always offer comparanda, perhaps the Attic chronology can provide one example of how a model of diachronic development can be built and maintained. Athens provides what is arguably the finest-grained chronology that exists for any pottery of the 4th to the 1st centuries BC – the result of the large amount of material that has been found, the contexts in which it has been found, and the years of intensive study that many scholars have devoted to it and continue to devote to it. Like every other chronology, however, it is a hypothesis, and it must constantly be tested by new material that comes to light. Luckily for us, excavation in Athens, around the Black Sea, and elsewhere, continues to provide the means for that testing, and for moving towards an ever more accurate chronology for Hellenistic pottery.

Notes

1 Sparkes & Talcott 1970; H.A. Thompson 1934; H.S. Robinson 1959, 10-21.
2 Dugas & Beazley 1952, 3, 66-67.
3 D.M. Robinson 1933; D.M. Robinson 1950.
4 See, for example, Coulson 1987.
5 See Cahill 2002, 49-61, for an exhaustive consideration of the historical and archaeological evidence. Distribution of the later coins is plotted on 55, fig. 10.
6 For more detailed analysis, see Rotroff 1990.
7 D.M. Robinson 1933, x; D.M. Robinson 1952, 335.
8 Corbett 1951; Talcott 1951.
9 Much of the fine black gloss pottery from recent excavations shown to me by Cecile Harlaut in 1999 appeared Attic to my eye. Jean-Paul Morel, however, argues that much is non-Attic (Morel 1995).
10 Vanderpool, McCredie & Steinberg 1962.
11 Edwards 1963; Grace 1963.
12 Grace 1974.
13 Grace 1974, 197.
14 Finkielsztejn 2001, 184.
15 Lauter-Bufe 1989.
16 Williams 1978, 21-23; Romano 1994.
17 For discussion of the type, see Kroll 1993, 69-71 (variety 97).
18 For the Agora deposits, see Rotroff 1997b, 34-36; one (M 20:1) is fully published (Rotroff 2000). A Sullan deposit from the South Slope of the Acropolis has been published by Vogeikoff-Brogan (2000).
19 H.A. Thompson 1934; for comments on Thompson's innovation, see Rotroff 1987, 2.
20 H.A. Thompson 1940, 134-135; Rotroff 1984, 344-346; Rotroff 1997b, 449, under F 11:2.
21 Kroll 1993, 32-34 (variety 50).
22 See her publication of the figurines (D.B. Thompson 1963, 281-282), where she gives her reasons for dating, nos. 4 and 16 in the early 2nd century.
23 D.B. Thompson 1963, 276, footnote 3: "as far as I know now, the supplementary filling probably occurred within the first half of the 2nd century."

24 Probably written some time between 1947 and 1956.
25 Kroll 1993, variety 82 or later. Kroll (1993, 312) gives the variety as 78-80, but apparently in error, since he describes the two coins in question as belonging to the Fulminating Zeus series, the earliest issue of which is his variety 82. For the date of the beginning of the Fulminating Zeus series, see Kroll 1993, 49-51. The closing date of the Middle Stoa building fill is an important anchor in the chronology of Athenian coins of the late 3rd and early 2nd century; re-examination of the data in consideration of a later date for the fill might well result in a small shift in the dating of the latest Athenian coins in the Komos Cistern.
26 From a letter written by Wallace on Sept. 7, 1949 (quoted in Kroll 1993, 213). The coins in question are Kroll 1993, 213, nos. 632a-h, pl. 26.
27 Rotroff 1982, 103, under M 21:1; Rotroff 1997b, 461, under M 21:1.
28 "… a 'purse' of eight Histiaian tetrobols lost or secreted at the top of the filling" (Kroll 1993, 213.); "hoard from the top of the fill, apparently inserted there later" (Kroll 1993, 312).
29 Finkielsztejn 2001, 192, table 19.
30 Knigge 1980; Knigge & Kovacsovics 1981, 385-389. The definitive publication is being prepared by Ursula Knigge.
31 For analysis of the coins, see Kroll 1993, 298.
32 Rotroff 1982, 9-11.
33 For a summary of dates, see Finkielsztejn 2001, 191, table 18.
34 For the suggestion, see Grace 1963, 326, note 16; Grace 1974, 197, note 17.
35 H.A. Thompson 1934, 457.
36 Pottery from the drawshaft and the tunnel that connected it with the north chamber (lot ST 105).
37 Rotroff 1997b, 456, under H 16:3.
38 B 20:7 (the Altar Well), H 6:4, L 17:7, L 19:2, and the lower fill of N 21:4.
39 B 13:1, upper fill of B 18:7, K 7:1, K 18:2, lower fill of O 20:1, with from two to five fragments; O 20:2, with fragments of six or seven bowls; B 13:3 contains none (among 28 documented fragments of fine ware). P 21:4, with at least 73 moldmade bowls and latest amphora stamped by a Rhodian fabricant who was active in period IIIa-b (Aristokrates II), is anomalous. Close similarities with a number of other deposits argue for a somewhat later date of deposit, but the character of the deposit as workshop debris would also have an impact on its content.
40 There are no deposits with a handle of period IIIc as its latest datable object.
41 Edwards 1975, 176-179, pls. 38, 77.
42 de Luca & Radt 1999, 107-109, pls. 15, 19, 24, figs. 7, 12.
43 de Luca & Radt, 124.
44 Callaghan 1981.
45 Upper fill of L 19:2, fragments of at least five long-petal bowls in a total of c. thirty bowls.
46 Townsend 1995, 192, nos. 187-189, pl. 47; the three fragments of nos. 187 and 188 may be part of a single bowl. Nos. 187 and 188 have convex petals; no. 188 has a battlement and running spiral rim pattern; and the arches that normally form the tops of the petals are omitted on no. 189, which also has an unusual low, straight rim.
47 Finkielsztejn 2001, 192, table 19.
48 P 30432, with a battlement and running spiral rim pattern; for the deposit, see Rotroff 1982, 106 and Rotroff 1997b, 468.

49 P 30396, with convex petals; for the deposit, see Rotroff 1982, 100; Rotroff 1997b, 452.
50 Rotroff 1982, 85, no. 344, pls. 62, 87; Rotroff 1988. In addition, five fragments have been found in the building fill of the Middle Stoa (P 21048, P 21049, P 22858, P 24819, P 24822), but further study is needed to determine whether they are intrusive or inherent to that large deposit, which contains substantial evidence of disturbance.
51 The very slight representation of the type in the fill of the Stoa of Attalos (built between 159 and 138, when the bowls must certainly have been in production) and the terrace behind South Stoa II (thought to have been built after c. 150) remains a puzzle that will not be solved until the complex stratigraphy of those buildings has been thoroughly analyzed.
52 Lower fills of E 6:1 and E 6:2, H 16:4 (Group D), G 11:1, O 17:6, and perhaps E 15:4.
53 Rotroff 1997b, 193-196, figs. 81, 82, pls. 98-100.
54 For further discussion, see Rotroff 1997a.
55 E.g., Rotroff 1991, nos. 21, 24, 25, 28, 33, 37, pls. 18-20, 22, 23.
56 See Rotroff 1982, 10, note 43 for a list of sites and references.
57 Etienne & Braun 1986, 224, An. 9, pl. 111.
58 Massa 1992, 244-245; Rotroff 1994. Lawall et al. 2002, 428-430.
59 E.g., at Istros (Alexandrescu 1966, 194, XXXVII 8, pls. 95, 96), Olbia (Knipovič 1949a, 279, fig. 5.6; Belin de Ballu 1972, 118, pl. 39.4; Parovič-Pešikan 1974, 124, fig. 100.4-5), and Pantikapaion (Knipovič 1949a, 274, 278-279, figs. 2.3 and 5.2).
60 Knipovič 1949a, 279-280, fig. 5.4; Maksimova 1979, 114-115, no. 2, fig. 52, pl. 5.6); *CVA* Mainz 2 [Germany 43], pls. 36 [2093].6 and 36 [2093].9; perhaps *CVA* Kassel 2 [Germany 38], pl. 86 [1886].1-2.