

calendar were referred to as "Old Style." Documents in the eighteenth century often give dates in both the New Style (NS) and the Old Style (OS). The Gregorian calendar also regularized the beginning of the year at January 1. Prior to its adoption it had been placed by various nations at December 25, January 1, or March 25 (as in England before 1752).¹¹

The recording and measurement of time has been a preoccupation of a great number of people in many different parts of the world, and the passage of time remains to this day at the center of human consciousness. Only the bare outlines of the development of the western tradition of measuring the passing of time could be recounted here. This method is in use in most of the modern world and provides a workable way to indicate the movement of events and their temporal relationships to one another. The problems involved in relating objects made by humans in the past to our own time is somewhat different from the measurement of the days or the progression of the seasons. The age of an object must be established in relationship to the present by both relative and absolute means, and these different approaches are outlined in the following chapters.

Relative dating

The development of the study of fluvial geology in the nineteenth century led to the recognition that earth can be observed to have been laid down in sequences of layers, or strata, piled one above the other. When animal bones and human implements of different types were observed in various strata at different depths, the understanding developed that the upper strata were likely to have been laid down after the lower ones and were therefore likely to be younger in time. The concept of stratification, that the deeper one goes into the earth, the earlier will be the material found in the superimposed strata, is the basis of all land archaeology and was first probably regularized by Worsaae in Denmark in the 1880s. The idea, however, had been recognized occasionally earlier, notably by the polymath Thomas Jefferson in his *Notes on the State of Virginia* in 1784.¹

The stratification observable in excavations is derived from decay, abandonment, or destruction. A city or a town once a thriving entity can disappear over the centuries so that its very location is forgotten, and nothing observable marks its position. Buildings and streets can be covered up and disappear beneath the earth. How does this happen?

An abandoned building will eventually fall down, and its constituent components return to nature, assuming they are not artificial. This is particularly true for the ancient world in which most buildings, until the widespread use of Roman concrete, were built of perishable materials such as wood or mudbrick, which can disappear almost without a trace. Even major buildings built of cut and shaped stone can provide building material for later generations and as a result be completely quarried away. The normal erosion of the soil, particularly from hills and mountains, will quickly bury a wall, and years of rain and wind-borne earth causes revegetation to occur, which accumulates layers of humus over the remains, burying them further. Such specific events as the shifting of river beds, or sinking of a coastline, also contribute to the disappearance

plain at Marathon that later yielded bones, ashes, and pottery usually considered to belong to the burial of the Athenian dead from the battle of Marathon in 490 BC.³

Often objects are found in what is known as a “closed” or “sealed deposit,” in other words, an undisturbed deposit completely separate from any possible intrusion. An example of a sealed deposit could be a buried pot containing coins, or a stratum completely sealed by an impervious upper level, such as a Roman concrete floor. In the latter case, anything found under this floor would presumably have been made earlier than the floor or at least cannot be later than it. Therefore, anything found on the floor or in habitation levels immediately above it must be later in date than the material sealed under the floor. Two Latin phrases are often used in relation to deposits in which dated material is found. They are *terminus post quem* (limit after which) and *terminus ante quem* (limit before which). In the example just cited of a sealed deposit, an object under the floor would have a *terminus ante quem* of the date of the floor, since it could not have been deposited after the floor sealed the deposit. This says nothing about the absolute date of the object; it could have been made at any time *before* the floor was laid. The contents of the deposit could be very mixed with a number of objects produced well before the deposit was closed. Since dating is done on the basis of the latest datable object in a given stratum, much earlier objects in the level do not affect the chronology except to give a possible indication of length of time. In most cases objects considerably earlier than the latest objects in a deposit are considered simply to have been old before they were buried and are known as “heirlooms.” This mixing of old and new material is not all that unusual, but when the earlier objects are in abundance there is always the possibility that the later objects may be intrusions from a higher level, perhaps brought in by unrecognized disturbances into the lower levels, as can certainly happen in an area with complicated stratigraphy (as an example, Figure 1) or even by burrowing animals, who are sometimes the culprits in these cases, as has been mentioned.

Conversely, objects found above or even on the hypothetical floor would have the floor as a *terminus post quem*, meaning that they have to have been deposited after the floor was constructed, although many of them could in fact have been made before the floor was laid. Finding a dated object, such as a coin, within a floor would provide a relative date for that floor (any time after the coin was minted, the date of the coin then being the *terminus post quem* for the floor). Although these Latin expressions are commonly used in archaeological reports, they are clumsy

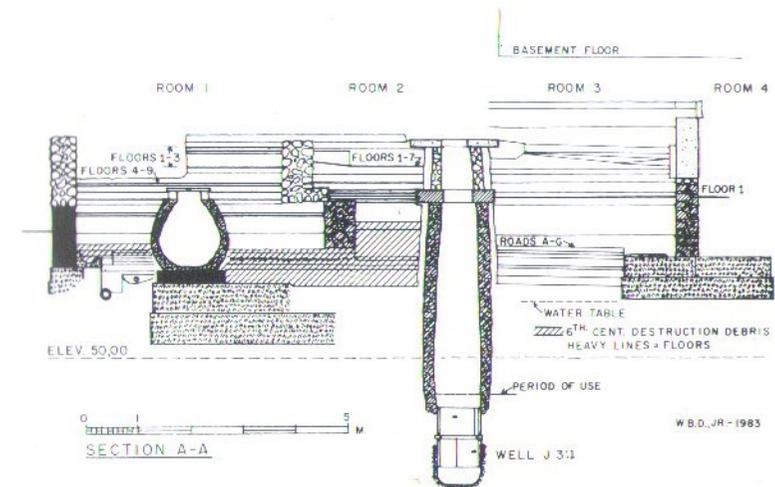


Figure 1 Athenian Agora. Vertical cross section of medieval levels

and often open to confusion, especially for the non-expert reader. However, they have become an accepted shorthand method of expressing relative chronological relationships.

The complicated nature of the stratigraphy encountered in an urban site, such as Athens, is shown in Figure 1, which is a section drawing through the medieval levels (approximately the ninth to the eleventh centuries) in an area of the Athenian Agora.⁴ Drawings of vertical sections of a site, together with horizontal ground plans of remains at various levels, are a common method to show how various levels and features are related to one another. In section drawings, the view is a vertical one, almost like a slice of cake, with the different floors, levels, architectural features, and intrusions shown in relationship to each other. This particular drawing clearly illustrates the problems of reuse of an area by successive generations of inhabitants who continually rebuilt and reordered their living spaces. What is illustrated is a section looking east through several rooms of medieval houses that were found below modern levels, indicated by the basement floor of a modern (probably nineteenth-century) building at the upper right, and above the remains of the ancient city in this portion of the Agora. Their hard clay floors were renewed, and their walls were rebuilt, changed, and reoriented during three major architectural phases representing some 200 years of continuous occupation. Different rooms show different sequences of levels, and their

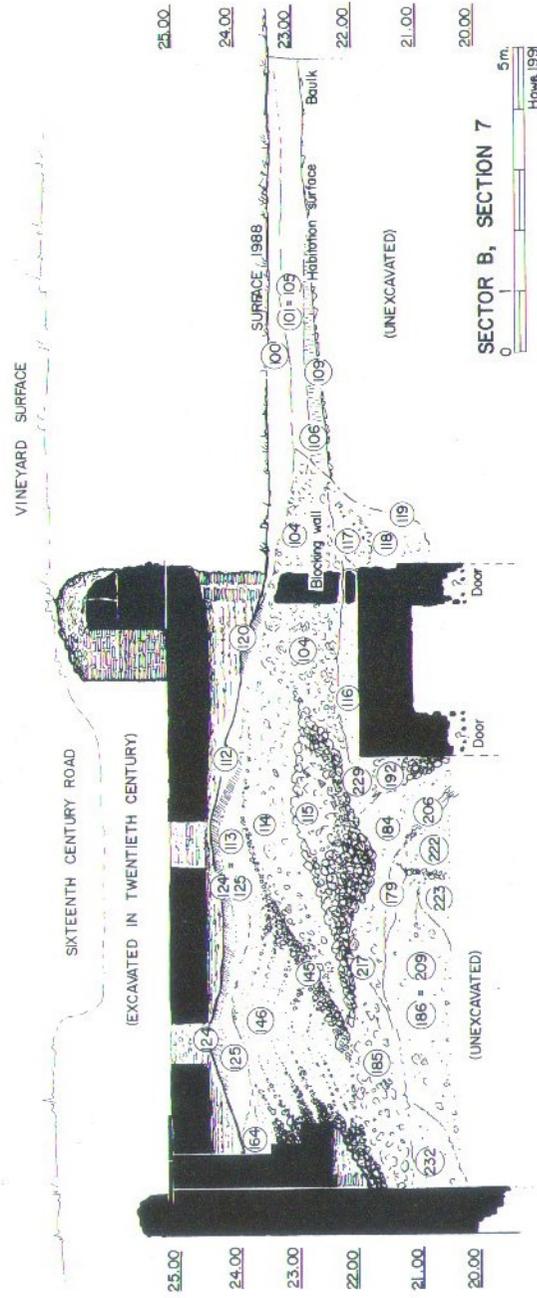


Figure 2 Rome, Palatine Hill excavations. Section through standing Roman vault and associated levels, drawn by Thomas Howe

relationship to one another is not always clear. Buildings of the Greek period, in this area well below the ground level of the houses, were pillaged by the inhabitants of medieval Athens for building material and even as foundations for their own constructions: note the large storage pot, or pithos, used from an upper level, which was set down on a pre-existing step of a fifth-century BC building, and later walls using the large rectangular blocks of ancient Greek buildings as foundations. As the ground level rose, and new floors were laid, the pithos had to be provided with a raised collar so that it could still be used. A well in the courtyard of a house penetrates far into earlier levels and shows two periods, the original shaft having been filled up after some possible damage and rebuilding to the structure. After some time there was another reconstruction, and the well was cleaned out and put back into use. Its well-head now was almost a meter above its old setting and was in fact raised in the reconstruction from its original location. This drawing is simplified for publication, working sections used in the excavation would show more distinctly the various different floor levels in greater detail and larger scale, but it clearly indicates the complex and difficult stratigraphy that confronts an excavator in an area such as this. The constant activity over the centuries and the large number of intrusions into earlier strata with the possibilities of contamination that they provide make analysis of the area quite difficult. Since chronology depends on the relationship of the finds from the various strata, understanding the stratigraphy and how the various features, levels, and fills relate to one another is a major goal.

Figure 2 shows a section from an excavation currently (1991) in progress at the foot of the north-east corner of the Palatine Hill in Rome. It illustrates the problems involved in excavating a great depth of accumulated earth and debris around and within the standing remains of an ancient building.⁵ The view is to the west with the north to the right, and shows a standing Roman masonry vault that is probably part of the substructure of a hall belonging to a third-century building complex. It is deeply buried by erosion and grading from the hill and was completely covered by the sixteenth century, when it was under a road and a vineyard. The whole area was dug away at various times from the 1930s through the 1960s, re-exposing the Roman building down to the level of the "1988 surface" on the exterior to the north. As can be seen from the section, excavation has not yet reached the ancient ground surface that went with the building on the exterior, nor the floor of the room under the vault. Here the excavators have just come upon the lintels of two doors and conjecture that the floor may lie another 2

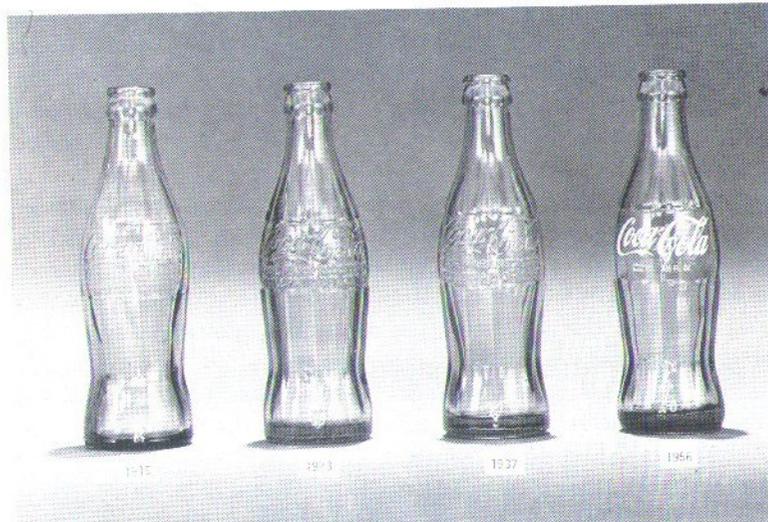
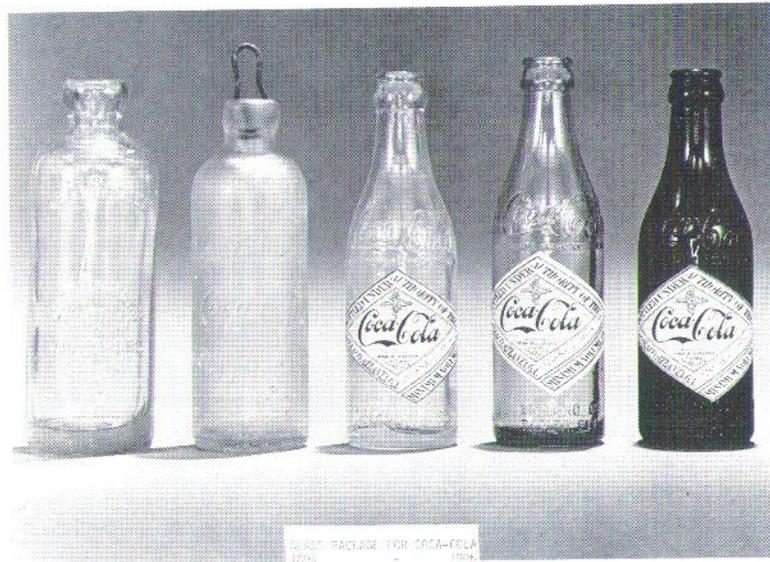


Figure 3 Development of the Coca-Cola bottle, 1894–1956

meters below. The complicated layers of debris within the structure indicate that some of the filling was deposited in the room through holes in the vault, probably when the building was buried at the time the hill was graded for the vineyard. Other strata may belong to a late reuse of the building that is indicated by the discovery of a rough blocking wall, largely built of reused material, in the north opening of the vault, but further study of these layers and the material found in them should clarify the archaeological history of the room. This area was also not immune to intrusions from above, as can be seen in the robbing cut, labelled “119,” on the outside of the building.

Vertical sections, such as this one, made as the digging proceeds, provide a record of the various levels and features as they are dug through. In a sense, archaeology is destruction, for upper levels must be removed to expose earlier remains, and careful recording during this process can help the archaeologist to comprehend the area. Often an excavator does not recognize what is being found as work proceeds, and full understanding only comes later, after careful study of the finds and the excavation records.

Excavation uncovers things as well as structural features and disturbances in the strata, and objects made by humans, both those that can be considered “art” and those that are not, tend to change over time. This change can be in shape, type, or method of decoration, technique of manufacture, or combinations of these traits. The particularly characteristic or distinctive way an object appears to the eye can be said to be its *style*. A change in its appearance, or details of its appearance, or attributes, is seen to be a stylistic change or development. Stylistic change can be related to time, but is not necessarily always caused by the passage of time, and can be slow or almost nonexistent, depending on a variety of factors. Objects of everyday use, such as common tools, change their shape slowly, for once a tool can do a job there is little reason to alter the shape, and many useful objects, such as hand-farming implements or fish-hooks, have remained the same shape today as they were in antiquity. Roman dice are identical in shape to those rolled today.

Although the concept of stylistic change may seem odd, it is something with which we live and which we recognize daily without being aware of what we are doing. Whenever we can tell the difference in appearance between two objects of the same type, we are observing stylistic change, whether it be between automobiles made several years apart or between styles of clothing. When we say something looks “old fashioned,” we are recognizing stylistic change over time. These changes can happen for a

variety of reasons; changes of taste or fashion, technical improvements or inventions that allow changes not possible in the past, a change in population, evolving societal needs, or even the genius of an individual inventor or artist. A stylistic change can be rapid or not, obvious or subtle, but it is a fact of life that styles change.

Objects can be placed in sequence or ordered on the basis of their changes in style, providing what appears to be an evolutionary development. This is true even in modern times when as common an object as a soft drink bottle has recognizable changes in shape and decoration over approximately 100 years (Figure 3). Analysis of the sequence of bottles shows that such things as shape and proportion of the bottle, color of the glass, method of decoration, and its composition all changed throughout time from the earliest example, made in 1894, to the bottle type that appeared in 1956, and which is still familiar today.

An evolutionary way of viewing stylistic development is common for ancient art, and is perhaps an influence from the natural world in which biological principles of birth, growth, and death can be observed. Change of style in objects, however, does not always show evolution in a biological sense, for it can be influenced by many factors, as has been mentioned above. If a given object looks different from other objects of its type, it might not necessarily be because it is younger or older. Often objects of the same type made at the same time but in different parts of the ancient world differ considerably from one another. This can be for a variety of reasons, including intentional copying or local adaptation of imported objects, provincialism, lack of ability, or even the desire to produce an object whose shape is readily identifiable as coming from a particular place or perhaps containing a specific substance. The varied shapes of contemporary clay transport amphorae provide an example of this last reason. These large pots were the shipping containers of their day, being carried throughout the ancient world, holding a variety of contents. Those shown in Figure 4 were all found in destruction debris datable to the sack of Athens by the Roman general Sulla in 86 BC. Each example comes from a different place in the Mediterranean world of the Late Hellenistic period (from the left, Rhodes, Knidos, and Chios; the amphora on the right is a Roman shape), and they clearly differ from one another in proportion, placement and shape of handles, treatment of lip, etc. These differences in shape would clearly announce their origins to contemporary consumers, in much the same way that a modern Bordeaux bottle differs in shape from a Burgundy bottle. In this case shape difference is not a function of the passage of time.

Change and development of style in sculpture, for instance, can also



Figure 4 Hellenistic amphorae from the Sullan destruction levels in the Athenian Agora. The fifth-century BC Temple of Hephaistos is in the background

be affected by what might be called the “problem of generations.” Artists of different ages and levels of artistic quality are usually active at the same time. Thus, very differing styles may be encountered that are not different from one another because of date, but because they are the work of older, less competent, or less active artists. Quality also has something to do with the analysis of style, especially when it comes to art, but there are dangers when it comes to assessing quality in relationship to chronology. Poorly made statues, for instance, might wrongly be thought closer to the beginning of a stylistic series, for their relatively undeveloped nature can be mistaken for early stages of a style’s development.

An example of great stylistic divergences in art created at approxi-

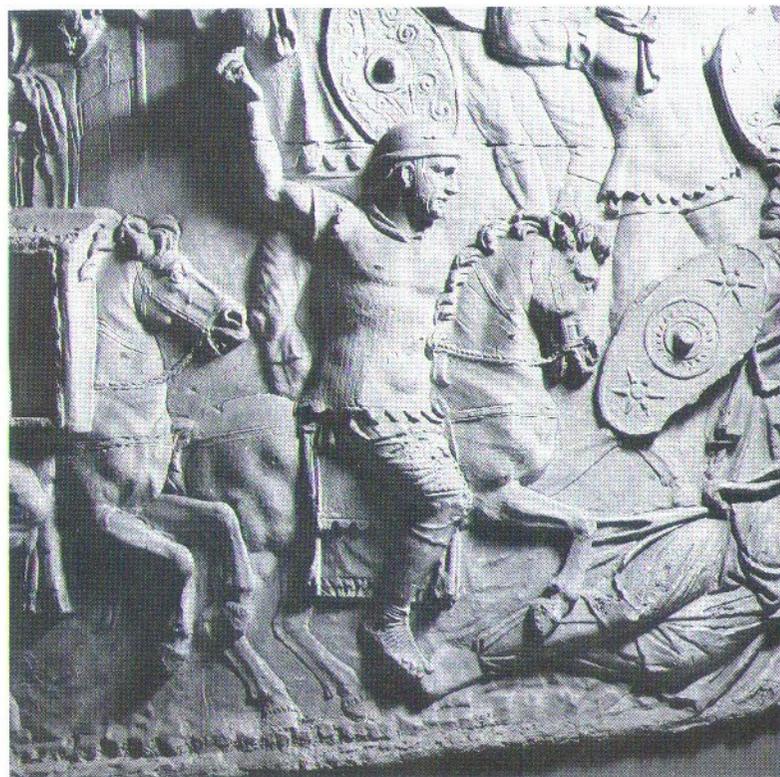


Figure 5 Detail from the fourth spiral of Trajan's Column showing a charging Roman cavalryman

mately the same time but widely separated in space and quality can be seen in Figures 5 and 6. Historical relief is a typically Roman art form, and one of the prime examples of this genre is to be found on the famous Trajan's Column, dedicated by the emperor in Rome in AD 117. Carved on this monumental triumphal monument are scenes representing Trajan's campaigns in Dacia, that part of Europe that today corresponds, more or less, to modern Rumania. The scenes are rendered in a continuing spiral from bottom to top and illustrate, in an almost documentary style, actions and incidents that apparently actually occurred in the course of the campaign. Figure 5 shows an excerpt from the fourth spiral where the sculptural quality and wealth of detail can be appreciated in a scene that records Roman cavalry riding to the attack. Although the

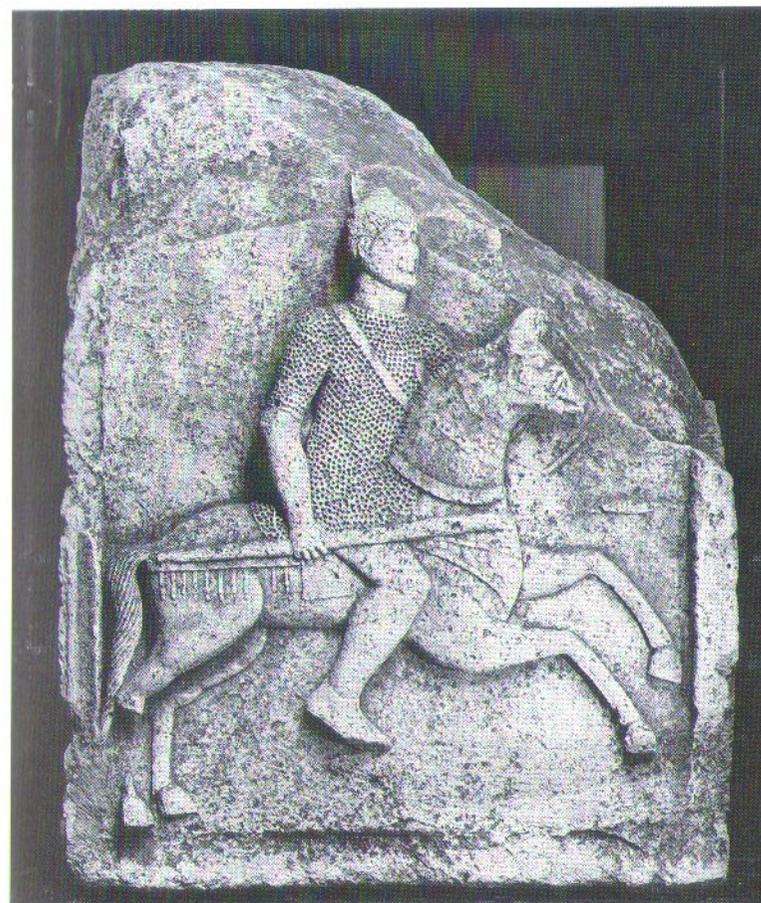


Figure 6 Carved slab with a charging horseman in relief from the Tropaeum Traiani, Adamklissi, Rumania

proportions of the rider and the horse are not true to life, the modeling of the horse's musculature and the treatment of the rider's body and clothing show a masterful handling of the subject of a charging horseman. The sculpture on the column, as an official monument, shows the quality of work that could be produced in the capital.

Figure 6 illustrates a carved slab that originally decorated a great trophy monument set up in Dacia itself, the Tropaeum Traiani ("Trajan's Trophy") at Adamklissi in Rumania. The monument was built in the

form of a circular drum supporting an hexagonal tower that served as a base for a trophy in the form of tree trunk on which was hung a cuirass and other military equipment. The tower bore an inscription which gave the name of the Emperor Trajan. Fifty-four slabs, approximately 5 feet by 4 feet (1.52 meters by 1.22 meters) in size, decorated the drum, and most scholars connect the scenes of war depicted on them with the Dacian campaigns. The scene illustrated here is of another charging horseman, probably a Roman auxiliary wearing chain-mail, and should be compared to the equestrian figure from the monument in Rome. Here the proportions, flatness of carving, lack of detail, and crudity of rendering clearly indicate a provincial work, far removed from a major monument erected in the imperial capital by artists of greater ability. There is a similar lack of proportion between horse and rider, but the attention to detail and the sculptural quality of the example from Rome emphasizes the difference between the two similar scenes.⁶

The two monuments, Trajan's Column and the Tropaeum Traiani can be characterized as "Trajanic Monuments," thus implying that they were erected during that emperor's reign (AD 98-117), and therefore their clear stylistic differences cannot be accounted for by chronological reasons. Without archaeological evidence, including the inscription, and using stylistic criteria alone, the sculpture from the trophy might be considered later in date and an example of declining stylistic quality that some scholars see in late imperial art.

These are a few of the many drawbacks that must be considered in the establishment of stylistic sequences for artefacts and works of art. Once such a sequence has been established, new finds have to be integrated into it and placed in the correct chronological position on the basis of parallels and similarities to other objects of the same type already known, allowances being made for such things as the problems of geography, generations, and quality, as outlined above. The subjective factor comes into play here in judging parallels, and one may have to rely on the eye and judgment of the individual scholar to arrange objects in the correct order within the series.

Although the general rules of development for classical art and artefacts are now generally accepted, agreement is not always universal, particularly when dealing with purely stylistic judgments without any clear chronological markers or obvious, dated parallels to help. The amount of stylistic change and the significance of any observed variations in a range of art objects of the same type may cause disagreement between scholars. The degree of movement, expressiveness, definition, and the overall treatment of a form are some of the qualities art historians

use to arrange art into chronological sequences. The necessary judgments for making decisions in this area are based on training, experience, and often subjective feelings, and so can be controversial. Observable differences between works of art can be caused by circumstances other than time, as has been shown above in the case of Trajanic relief sculpture. In that case, however, the monuments were securely dated. Dating by style alone can be very difficult, particularly when dealing with some of the minor arts, which were mass-produced and often reflect many different influences. Factors such as preservation, technique, workshop practices, possible use of pattern books, or even workmens' individual initiatives or idiosyncrasies can be factors in any chronological judgments.⁷

In the ancient Greek and Roman world, stylistic sequences have been developed for numerous classes of objects by many scholars over the years. Once the objects can be arranged in succession based on changes in attributes, such as shape, decoration, method of manufacture, etc., one then has a relative sequence that shows the objects ranked before or after one another in the line of development. It will also show the relationships between objects within the line, and it may be possible to see how certain characteristics evolve and perhaps to understand the reasons for any changes. Since in a stylistic sequence some objects lie relatively near the beginning of the sequence, and others relatively near the end, the convention of using the relative terms "early" and "late" is used, with those lying stylistically between the two extremes characterized as "middle." It is important to understand that the terms "early," "middle," and "late" reflect no value judgments and are not synonymous with "crude," "developed," and "in decline." Thus an early Hellenistic figurine may show better workmanship than a middle Hellenistic one that is dated later. This example introduces the subject of dates, which is inherent in stylistic sequences. The sequence provides a relative date for an individual object and does not give a specific absolute date related to our own time. How absolute, numerical dates are arrived at and how they relate to stylistic, relative dating is outlined in Chapter 4.

Specific examples from the fields of architecture, sculpture, pottery, and the minor arts illustrate stylistic development in the Greek and Roman world.

The Doric Order is one of the three major orders of architecture developed by the Greeks within the tradition of post and lintel construction, which is basically a system of building that uses vertical uprights that support horizontal members. The three orders are the Doric, the Ionic, and the Corinthian, which vary from each other in proportion

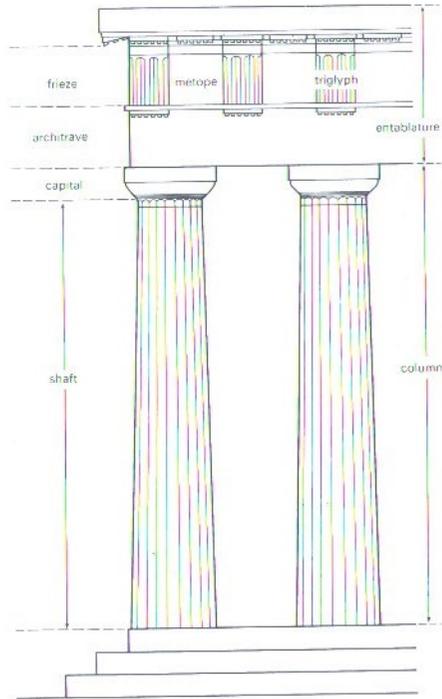


Figure 7 Corner of a building of the Doric Order. From Susan Woodford, *The Parthenon*, Cambridge, Cambridge University Press, 1981, fig. 2.14; drawn by Susan Bird

and architectural details, such as the shape of the capitals and the absence or presence of bases. The Romans adopted all three orders, often using them for decoration and scale, rather than as basic supports in the construction system. Variations and details of the orders have come down to today and are even used in contemporary architecture, in which some aspects of classical architecture, particularly in ornament, seem to be making a comeback.⁸

The Doric Order is illustrated in Figure 7 in its developed form. Two major characteristics set it apart from the Ionic and the Corinthian Orders. One is the triglyph and metope frieze composed of alternating vertically-grooved slabs (triglyphs – made up of two complete and two half grooves, the “glyphs”) and flat, open spaces (metopes), which are sometimes decorated with sculpture or painting. The other diagnostic

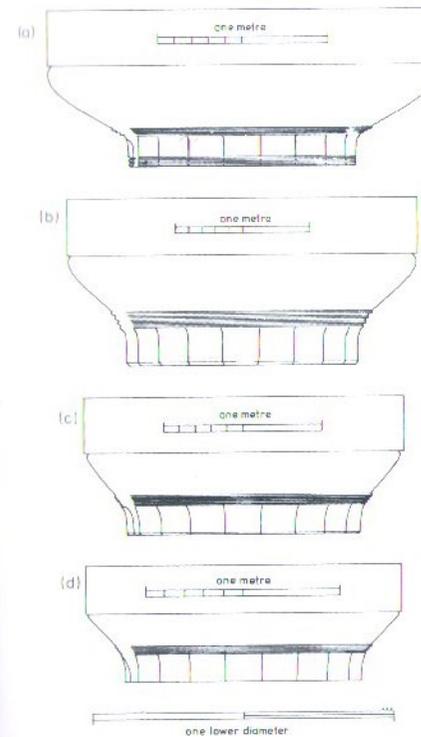


Figure 8 Development of the Doric Capital. From J. J. Coulton, *Ancient Greek Architects at Work: Problems of Structure and Design*, p. 103, fig. 41. Copyright © 1977 by J. J. Coulton

characteristic of the Doric Order is the shape of the column, which is relatively short and squat compared to the Ionic and Corinthian columns. It is ornamented with twenty vertical channels or flutes separated by pointed-ridges (Ionic columns have twenty-four flutes separated by flattened ridges), has no base (as do the Ionic and Corinthian columns), and is topped by a simple capital consisting of a swelling, cushion-like member, known as the echinus, topped by a rectangular slab, the abacus. The echinus serves as a transition from the vertical column to the horizontal upper portions of the entablature.

In the course of time, differences are observable in the shape of the forms employed to make up the Doric Order, and these cause a progressive change in the overall aspect of the building employing the order.

The general movement is away from heavy, squat proportions to slimmer and more elongated ones. A clear illustration of this can be seen in Figure 8, which shows how the profiles of Doric capitals developed in the space of about 200 years. What is significant is the change in shape of the bulging echinus and the proportions of the different elements of the capital to one another in these profiles that are scaled to one uniform lower diameter. The echinus, for example, is wide and spreading in the upper example from the Temple of Apollo at Corinth of about the middle of the sixth century BC. There is a definite angle where the curve of the echinus meets the lower surface of the abacus. At the Temple of Athena Alca at Tegea, approximately 200 years later, around the middle of the fourth century BC, the curve of the echinus has become more upright, and a sharper angle separates the echinus and the abacus. One of the fascinations with the study of Greek architecture is that within relatively rigid rules, such as those that apply to the shape and placement of the various parts of the orders, there is always change and development to be observed and accounted for. Modifications in detail often have chronological significance, and relative dates can be obtained by analysis of the change in the forms, such as the alteration in the configuration of the Doric capital. These broad transformations in the shape of the capital, as illustrated here, can generally provide dates only within about a half century, as long as the examples one is trying to fit into the scheme clearly belong to a single, obvious line of development, and there are no problems of geography, quality, material, etc., that might affect the evolution of the form. Dating on the basis of proportions is far from a precise method, must be used with caution, and even then yields only approximate dates. Differences in proportion between individual examples may result from other factors than date, and even capitals from a single building that were carved at the same time may differ in proportions, perhaps as a result of their placement, or variations introduced in the course of building by workmen, or even modifications established by the architect to fit his own sense of what was appropriate. There seems to have been no continuous, uniform evolution in the development of the Doric capital, but rather a number of major steps that can be seen in distinct groups of capitals that generally share similar proportions and yet are clearly different from one another; each capital in Figure 8 belongs to one of these groups. It is thought that this supports the idea that the Doric capital was designed using certain rules of proportion, and that specific changes in one or more of those rules are detectable in the differences in proportion that can be documented between the groups.⁹

Technical considerations can occasionally aid the dating of stone architecture and sculpture. Often different kinds of tools or alternate methods of working were used at distinctly different periods, and their traces on works in stone can be used to establish chronological indicators. An example of a change in technique in sculpture is the practice of indicating the pupil of the eye by a drilled hole, which is introduced in the reign of the Roman emperor Hadrian (AD 117–138). Prior to this technical innovation the eyeball in sculpture was simply painted. Such a specific change can be used for dating, but it must be recognized that a specific technical change might not be introduced everywhere at the same time, and, even when adopted, can often be used simultaneously with older techniques.

For sculpture, once again a general outline of stylistic development is understood, and there is a wealth of evidence in the form of actual sculptural works. However, the very existence of so much material, the long timespan involved when considering the whole of classical antiquity, its geographical distribution, and especially the relationship between Greek sculpture and Roman sculpture, make the subject an extremely complicated, if fascinating, one. Although a detailed discussion of Greek and Roman sculptural styles is beyond the scope of this book, a greatly simplified line of development within the single category of the standing male nude can be appreciated from Figures 9–14.¹⁰

At the beginning of the sixth century BC a series of nude, standing male figures was somewhat suddenly begun in Greek lands, and one of the earliest is illustrated in Figure 9. The statue, known as the “New York Kouros” after its present home in the Metropolitan Museum of Art in that city, originally came from Attica, from a site not far from Athens. These figures, known generically as *kouroi* (singular *kouros*, the Greek word for young man) are often rendered life-size or larger and were evidently used as dedications in sanctuaries, as funeral monuments, and even on occasion represented the gods. The New York Kouros stands squarely, facing forward, with abnormal proportions. The natural divisions of the body are indicated by bumps and grooves, reducing some anatomical details to pure pattern. The large, flat eyes, rendered without tear ducts and the schematic representation of the muscles and surfaces of the body are typical of this early stage of the representation of the human body in Greek sculpture. The stance, with the arms hanging straight down to the sides with the hands attached to the thighs by webs of stone, reproduces a common Egyptian pose. Most authorities therefore trace the general pose to Egypt, where similar statues had been produced for thousands of years. The Greeks, however, took this general form and,

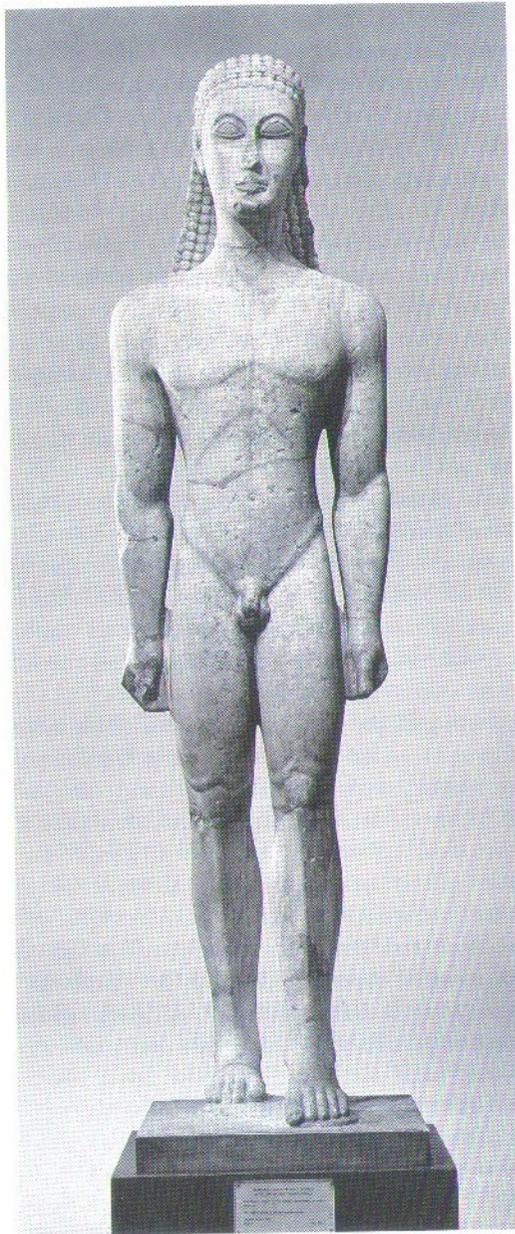


Figure 9 New York Kouros. The Metropolitan Museum of Art, Fletcher Fund, 1932 (32.11.1)

as they did with so many borrowings from the older civilizations of the Near East, quickly adapted it to their own uses. What is Greek is the nudity, unthinkable in any formal Egyptian context, the distribution of weight, evenly distributed rather than down the rear leg, and particularly the relatively crude rendering of the anatomy, which indicates the beginning stages of carving large-scale figures in hard stone.

In the course of the sixth century BC, a rapid change can be seen in the representation of the body, as is apparent from the statue in Figure 10, the Anavysos Kouros, dated to the third quarter of the century (i.e., about 550–525 BC) and also found outside Athens. A comparison of the two statues reveals that the later figure is less spare and exhibits more swelling forms than the earlier. Although the rigid, frontal pose is similar, with the one advanced leg and stiffly hanging arms (the break away from this stance is still in the future), the anatomy is no longer rendered in flat, sharply-defined planes, but more swelling, less patterned forms are used. The face too, shows these same changes with more volume and with rounded eyes taking the place of the flat, arched eye of the early example. It is clear that a development in shape has taken place, and the change to our eyes is one towards a more natural rendition of the forms of the human body, i.e., a development towards a more realistic depiction. The history of Greek sculpture from the sixth century through the Hellenistic Age can and has been discussed within the framework of this movement towards and sometimes even beyond (in some Hellenistic sculpture) the realistic rendering of forms observable in everyday life, whether of the human body or even of the drapery that sometimes clothes it. Whether this is correct for the whole period or not, as far as the intentions, perceptions, and abilities of the ancient Greeks is concerned, is seldom explored, for this type of approach allows modern scholars to set up usable stylistic sequences that are easily taught and perceived and that also train the eye. It seems obvious that the statue in Figure 10 is more developed in terms of the depiction of human anatomy than the *kouros* in Figure 9, and whatever the reasons for the change, it is clearly visible. After the sixth century, things become more difficult, and such a clear development is often not easily found.

Figure 11 illustrates one of the large bronze figures found in the sea off Riace, Italy in 1972. Two standing male figures were recovered, and their identity and origin are still debated. Most scholars, however, would date the statue in Figure 11, Riace A, *on stylistic grounds* to the middle of the fifth century BC or slightly earlier. The question of date is complicated in this case by our lack of much original full-scale comparative material in bronze for this era, the High Classical period of Polykleitos and

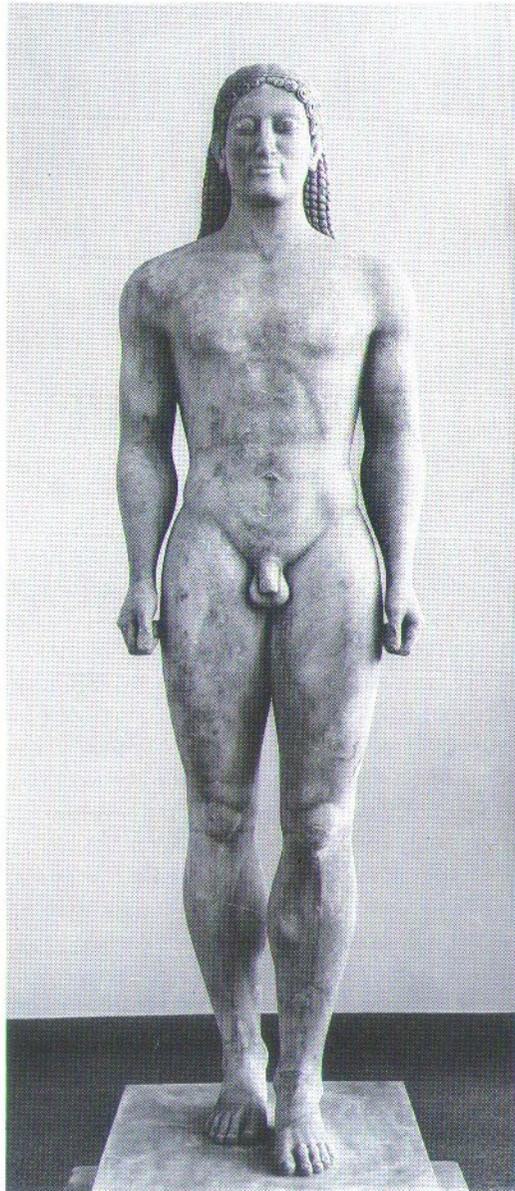


Figure 10 Anavysos Kouros. National Museum, Athens

Pheidias. Bronze is much too easy to melt down and reuse, and this is of course a problem that concerns all of antiquity, not just the fifth century BC. Accordingly, these major sculptors' works are known only indirectly through what are thought to be Roman copies and other even more indirect evidence, such as scanty literary references and small copies or adaptations of later times. Only a very few other life-size bronzes of the Classical period exist, and thus comparisons from what is known (always desirable and devoutly looked for by the art historian) are difficult at best. Several features of these new figures, especially the very modeled treatment of natural forms, is surprising and does not completely fit with what many scholars thought they knew of fifth-century BC style. A comparison of the anatomy and stance of this figure with the two previous ones indicates that again a change has occurred. The position is no longer the frontal stance of the kouros type, and the weight has now shifted to one leg, setting up a movement within the body not present in the earlier examples. This is emphasized by the head turned towards the supporting leg. Attributes have been added: for Riace A, a shield on his left arm (the internal shield strap is still preserved) and probably a spear in the right hand, both now missing, that may have helped to identify him, at least for the ancient viewer if not for us. The anatomy is massive in comparison with that of the Anavysos Kouros, and its swelling forms and the overall heroic impression of the figure shows clearly how far the sculptural style has developed in a relatively short span of time. The Riace figure, with its perfectly developed body, is seen by some writers as a representative of the idealizing tendency in the sculpture of the fifth century BC. The representation of the human body in an ideal form reached a peak of popularity in Athens in the third quarter of the fifth century, and this style of representation was very influential, reappearing throughout antiquity with greater or lesser influence on contemporary tastes in sculpture.

The nude, male form became a standard method of representing heroic figures, and the massive, bronze "Hellenistic Ruler" of the second century BC illustrates the model as used in the Hellenistic period to exalt a ruler (Figure 12). It may find the origin of its form in a portrait statue of Alexander the Great, whose general aspect, with one arm elevated and holding a lance, is preserved for us in a small Roman statuette. Which ruler the large Hellenistic bronze portrayed is debated, and although identifications have been made on the basis of coin portraits, no certainty has been attained. The over-life-size figure shows a mixture of stylistic traits, a common phenomenon in Hellenistic sculpture that adds to the difficulty often encountered in ordering Hellenistic art in a



Figure 11 Riace Figure A. Reggio Calabria

reasonable chronological framework. The thick body with its projecting muscles and veins owes much to the classical tradition of the fifth century BC (compare Riace A, Figure 11), but goes beyond it in overall modeling. Also, the proportions, especially the small head and the position of the arms, are seen by some scholars as reflecting fourth-century styles. The head with its distinctive features and expression seems to be a portrait, and the general impression of the statue is that of a powerful ruler, conveyed as much by the stance as by the size and heroic nudity. These kinds of dramatic characteristics become important in the later periods of Greek art, and assessments of their appearance, force, and relative value are often part of the evidence used by art historians when establishing relative dates.

Hadrian's reign (AD 117–138) marked a period of revival and interest in Greek art, a phenomenon that occurs quite often in the history of art in the western world. This can appear in differing forms, varying from outright copies of Greek works to a full range of adaptations and interpretations that relate to a specific Greek style to a greater or lesser extent. An example of an interpretation of classical style is the statue of Hadrian's favorite Antinous, who drowned in the Nile in AD 130 (Figure 13). Here the pose is probably based on a classical prototype, and ideal nudity is once again employed, but the technique is Roman, even specifically Hadrianic. The musculature is softened and highly polished, which contrasts with the deeply cut hair and the individualized, if perhaps somewhat idealized, features. Untangling the different stylistic influences and quotations in a sculpture such as this Antinous can be complicated in this case by the fact that this particular statue was dedicated in Delphi, in Greece, and such a location in a famous Greek sanctuary could affect the style. Moreover, one might also have to consider the individual taste of the patron who commissioned the statue, in this case the emperor himself, and his particular interest and love for things Greek. Having a specific date for the death of Antinous from literary sources also obviously helps from a chronological point of view, but the unique nature of the circumstances that led to the creation of the images of Antinous must also be taken into account in any attempt to fit this statue into any general relative sequence of Roman sculpture.

The type of the heroized male nude continues throughout the Roman period and is illustrated by the over-life-size bronze in New York, thought by some to represent the soldier-emperor Trebonianus Gallus, who ruled briefly during the troubled third century AD (251–254) (Figure 14). Standing just under 8 feet in height (2.43 meters), the massive, ill-proportioned statue must have been intended to impress and overwhelm

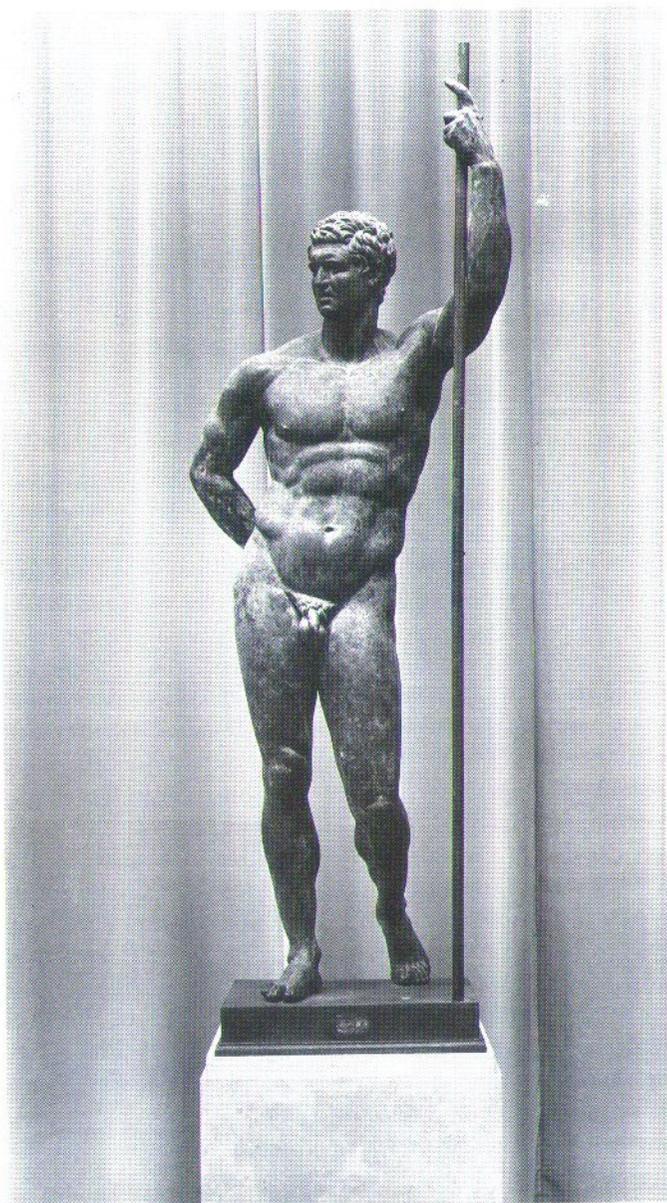


Figure 12 Hellenistic Ruler. Museo Nazionale dell Terme, Rome

in a manner appropriate for a work that conveys imperial authority. A comparison with the Hellenistic Ruler (Figure 12) indicates how much change can occur over time within a specific type that originated in the Greek world and then was continued and developed by the Romans. Both figures show similarities in stance and position; both, for instance, are shown in heroic nudity and held lances, though in opposite hands. However, the Roman work with its static stance and odd proportions indicates a clearly different style than that of the Hellenistic work. Its differences from the earlier model on which it is largely based can of course be explained in a number of ways beyond that of the taste of a later time. Provincialism or even an incompetent artist may bear some responsibility for this statue, which appears artistically inferior to most modern observers within the context of third-century Roman art.

One final example of the continued life of Greek sculptural subjects and styles can be seen in Figures 15 and 16. A comparison of the two reliefs indicates that Figure 16, made about 100 BC, was clearly copied from the relief that is pictured in Figure 15, a slab from the parapet of the Nike Temple in Athens of about 420 BC, showing two Nikes, or Victories, leading a bull to sacrifice. A close examination of the two sculptures shows that the later one does not attempt to copy its model completely, as some think many Roman copies of famous Greek sculpture may have done, but alters the model in such fundamental ways that it represents a style in itself. This relief is one of a large number of reliefs and other sculptural works that were produced in the Late Hellenistic period and into imperial times that copied, with more or less adaptation, works of the Greek past. This adaptation of the Nike parapet frieze belongs to this tradition, and the style it represents has been called "Neo-Attic." The earliest workshops appear to have been set up in Athens, and the whole genre was apparently developed to feed the huge Roman art market that was hungry for Greek sculpture. In the examples here, it is sculpture of the late fifth century BC that has been adapted to form a more decorative presentation for contemporary Roman taste. The flat folds of the swirling drapery should be compared to the fifth-century BC original. Note that the wings of the Victories on the original relief have been omitted by the Neo-Attic sculptor, and the position of the Nike on the left has been changed so that her restraint of the lunging bull has been turned into an unstable, affected gesture. Later use of earlier stylistic details and even compositions, as here, is not an uncommon occurrence in the history of Greek and Roman sculpture and can usually be fairly easily identified by students familiar with the earlier periods whose art was adopted or adapted.



Figure 13 Antinous, Delphi



Figure 14 Trebonianus Gallus. The Metropolitan Museum of Art, Rogers Fund, 1905 (05.30)

As has been demonstrated, relative chronology as applied to the sculpture of the Greeks and the Romans is a complicated undertaking, depending on analysis of stylistic change in the light of many varying factors, often including changes in detail. The few examples presented above indicate that in matters of style it is the eye of the scholar that has to make the determinations of relationships and produce a stylistic sequence. In a two-dimensional art such as painting, it is also often details as well as overall stylistic change that tell the story.¹¹

A distinctive manner of decorating pottery was developed in the Greek city of Corinth in the seventh and sixth centuries BC. The decoration typically consists of rows of animals, both mythological and real, often arranged in symmetrical groupings, and this animal style is divided by scholars into two chronological phases – the Protocorinthian Style of the seventh century and the Corinthian Style, which evolves from it towards the end of that century. The rise and dissolution of this animal style has been documented by scholars, and two chronologically separate examples of it are illustrated in Figures 17 and 18. Figure 17 is a detail from one of the figured panels of a vase from the second half of the seventh century BC by a painter given the modern name of the Painter of Vatican 73, and the whole vase is shown on the left in Figure 19.¹² The detail shows two panthers looking out at the viewer, together with a slim sphinx who looks straight ahead. The figures are painted in the black-figure technique, a method invented at Corinth. In this technique figures are painted in solid, black silhouette on the light background of the clay body of the vase. Details are added by cutting thin lines down through the silhouette, into the surface of the vase, producing incised lines that are used for details and definition of musculature as well as the outlines of the figures, as can be seen in Figure 17. Added colors, usually purple and white, are used to enliven the black forms, but these are often worn away, leaving only a discoloration on the black where the added color has been applied. In the second half of the sixth century BC black-figure is superseded by red-figure, which in a sense is a reverse of the earlier technique, for the figures are red and the background is painted black. The figures are left, or reserved, in the reddish, clay color of the surface of the vase, and details are produced by thick, black lines in relief and also by diluted black in a variety of tones. Added colors are restricted to purple, at least at first, and the use of incision dies out.¹³

Figure 18 is a detail from another animal frieze, dating from approximately the first half of the following century, and it was painted by a painter known as the Ampersand Painter because of the distinctive way in which he depicts the tail of his sphinx.¹⁴ Here two panthers frame that



Figure 15 Two Nikes and bull from the parapet of the Nike Temple on the Acropolis. Acropolis Museum, Athens



Figure 16 Neo-Attic adaptation of the relief in Figure 15, Uffizi, Florence

mythological creature. Although the two groups are composed basically of sphinxes and side-facing panthers and appear at first glance to be very similar, there are distinct differences between the paintings, some of which are the result of the individuality of each artist, such as the tail on the Ampersand Painter's sphinx and the way each artist handles the incision. However, other differences are more general and indicate stylistic development that has chronological significance. One of these changes can be seen in a comparison of the animals, which are more elongated in the later painting. This is a general tendency in Corinthian painting as time goes on and has been explained as a device to fill greater amounts of space more quickly as mass production of this popular pottery develops. Presumably fewer, longer animals take less time to paint than a larger number of shorter, more compact ones. Possibly also the extended wings of the sphinx are an indication of this stimulus. The filling ornaments also change, from a single, central dot connected by spokes to an outer circle of dots (the "dot rosette") of the seventh century to incised rosettes and simple blobs, which are easier and quicker to draw. A specialist, then, observing these differences can tell, even from a single fragment of a painted scene, approximately where it would fall chronologically within the general stylistic development of Corinthian painting.

Once a specific style has been recognized and its internal development understood, it is useful to be able to assign a length of time to it and if possible to each of its phases. Two problems are involved at this point. The first is judging when a particular style, for instance the Protocorinthian Style of Corinthian vase-painting of the seventh century BC, is sufficiently changed so that it can be designated as the succeeding Early Corinthian. The second problem is to decide how many years the Protocorinthian Style lasted before it took on the characteristics and hence changed into Early Corinthian. The first problem is a matter of definitions. An obvious example concerns filling ornaments; dot rosettes are characteristic of Protocorinthian and incised rosettes of Corinthian. These kinds of distinctions are, of course, not always so clear, and occasionally transitional styles are recognized that combine features of two other styles and act as a bridge between them. The *olpe* of the Painter of Vatican 73 (Figures 17 and 19) in fact belongs to the Transitional Style of Corinthian vase-painting, which comes chronologically between Protocorinthian and Early Corinthian.

Scholars use all available evidence to try and judge the length of time a particular style of painting existed. (This exercise has been called "stylometrics.") Number of examples is clearly an important criterion that might indicate the length of time a specific style of painting was



Figure 17 Detail of panthers and sphinx from Corinthian olpe by the Painter of Vatican 73, Museum of Art and Archaeology, University of Missouri, Columbia, Missouri

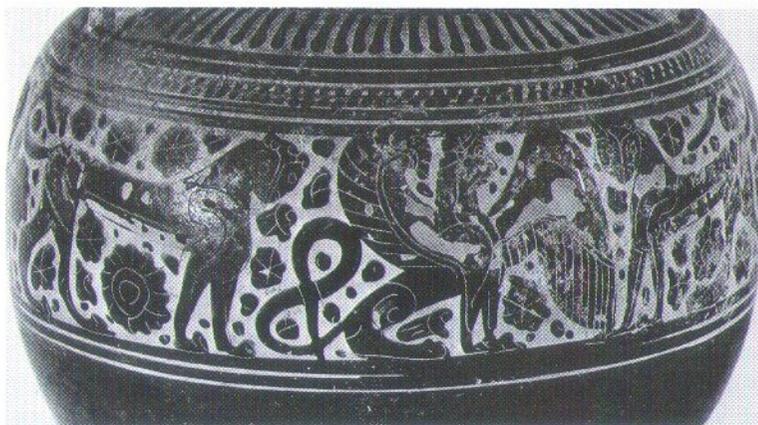


Figure 18 Detail of panthers and sphinx from a Corinthian pyxis by the Ampersand Painter, Greek, first quarter sixth century BC, c. 580 BC, 17.8 x 15 cm, Museum Purchase Fund, 1905.343. © 1990 The Art Institute of Chicago, All Rights Reserved.

produced. Historical evidence, archaeological evidence, such as comparisons with other schools of painting, comparative anthropological evidence, reasonable theories, and even guesswork can all be used. In the case of Corinthian painting styles, the time spans assigned for the development of the different stages are ultimately based on historical references, tied to archaeological evidence, and combined with some generalized speculation. See Chapter 4 for how the chronology of Corinthian pottery has been developed.

There is another problem, however, that the ancient art historian or archaeologist often has to face that does not arise in many later fields of art history, and that is the problem of preservation. The animals in both our examples are well enough preserved to be able to distinguish style, and even details. This is not usually the case, and archaeologists often have to try and date their strata on a handful of badly-preserved sherds, which in many cases do not come from decorated pottery but from the coarse household ware that is ubiquitous in excavations. Where fragments or sherds of painted, fine pottery do exist, their decoration may not only be almost completely destroyed but possibly not even diagnostic. It must be emphasized that the stylistic sequences that have been established for relative dating are only useful for the field archaeologist if a recognizable example of a given type shows up in the trenches in a significantly stratified context and in sufficient numbers. These problems of preservation and discovery of course also affect architecture and sculpture; fragments of sculpture are much more common in excavations than whole statues!

Often, dates can be derived from the observation of the typology of a particular pottery shape. Typology can be defined in this context as the study of changes that take place over time to the shapes of pots. These changes can affect the whole vase or its profile or its proportions, or even only small details, such as the contour of feet or handles. Once these changes are recognized and understood as far as their development is concerned, the shape of a handle or the curve of a body fragment can give a clue to the relative date of the object from which it came.¹⁵

Similarity of shape does not, however, guarantee similarity of date. Figure 19 shows the vase painted by the Painter of Vatican 73, whose animal frieze has been discussed above (p. 46), and a smaller version of the same shape. The smaller *olpe* (the technical name for this vase shape) dates later than the Corinthian example and was in fact made in Etruria by the Etruscans, who in the sixth century copied or adapted imported Corinthian pottery.¹⁶ The Etruscan painter decorated his version of the Corinthian *olpe* with a different kind of animal style, employing only one band and much larger



Figure 19 Protocorinthian and Etruscan olpai, Museum of Art and Archaeology, University of Missouri, Columbia, Missouri



Figure 20 Black-glazed kantharoi from the Athenian Agora

be traced over time within a single, well-known area with enough examples to provide a meaningful sample. Four black-glazed Attic drinking-cups, known as kantharoi, from the Athenian Agora are shown in Figure 20. They represent a particularly numerous category of vessels that were made in Athens and have been found in a number of well-dated contexts. Although they all share the same basic footed, two-handled shape, an obvious development towards taller and slimmer proportions can be seen, especially if one compares the examples at either end of the series. All four kantharoi belong to the fourth century BC, the earliest (on the left) dating to the second quarter of the century and the latest (the last two on the right) to about 300 BC, so a recognizable change at least in this particular shape can occur fairly rapidly. The four kantharoi illustrated here are in fact from the same closed deposit, and its date rests on archaeological evidence that combines datable artefacts

animals painted in a different color scheme. The Etruscan grazing deer, although well drawn, are proportionally different and lack the crisp naturalism of their Corinthian model. The whole decorative scheme as applied to the pot and its technique is clearly not Corinthian. The Etruscan olpai belongs to the early years of the sixth century BC, the Corinthian one to the second half of the seventh. Thus, basically the same shape can be used in two different cultures in chronologically distinct periods.

However, good chronological sequences can be developed that show the development of vase shape when one particular category of pot can

with historical probability (see Chapter 5, p. 82). The dates assigned to the kantharoi have been developed in light of the closing date of the deposit and evidence from other datable deposits in the Agora and elsewhere.¹⁷

Shape change can also be traced in some objects of everyday use. Although most common instruments and implements do not change very much over time or have not been examined closely enough to recognize any such development, close study of some common objects can indicate developments in shape that can be set in believable sequences. An example of this type of study is illustrated in Figure 21, which shows profiles of loom-weights found in excavations in levels of the Greek period in the ancient city of Corinth.

Weaving in ancient times was undertaken on big looms which have not survived since they were made largely of wood. Numerous illustrations on black-figure and red-figure pottery and in wall-paintings, as well as ethnographic parallels, allow us to understand how these looms functioned. Ancient Greek looms belonged to the type known as the warp-weighted vertical loom, in which the vertical or warp threads were held down and kept taut by heavy weights. These weights had different shapes in antiquity and could be pyramidal, round, or discoid and were made of clay, stone, or even lead. Those from Corinth in Figure 21 are conical in shape and made of clay.

Within the time represented by this series of profiles, from the late eighth to early seventh century of number I to the third and second centuries BC of XII–XIV, there is recognizable, if subtle, change in the curve of the sides of each weight, overall size and shape, and in proportions. Other considerations, such as material and finish, are not illustrated by the profiles, but were also taken into consideration in establishing the sequence. Such details as the development of beveling as seen in IV and V and its placement in respect to the overall curve of the side can be seen to be developmental features. Similarities of typology in two groups of profiles in this group of weights, I–III–VI and II–IV–V, suggest two separate lines of development even within this one category of common artefacts.

The arrangement of the clay loom-weights in a chronological sequence is based on their archaeological contexts from the excavations at Corinth, much in the same manner as the chronology of the kantharoi is based on evidence from the excavations in Athens and environs. There is unfortunately less historical evidence for Corinth than is available for Athens, although the date of 146 BC, the sack of Corinth by the Roman general Lucius Mummius, is often used as a known point for dating

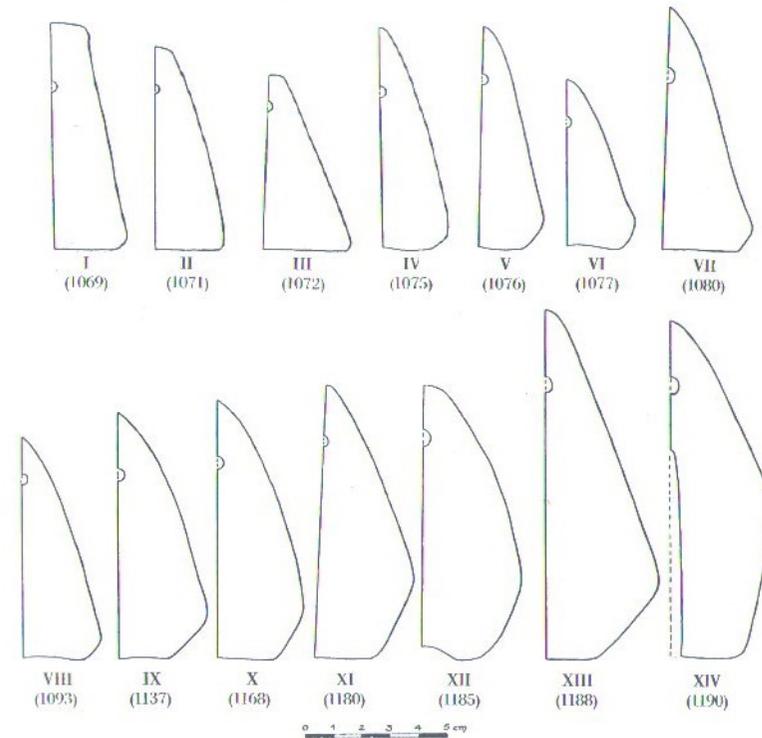


Figure 21 Profiles illustrating the development in shape of the Corinthian conical loom-weight. From *Corinth XII, The Minor Objects*, p. 149, fig. 23

in Corinthian archaeology. The absolute chronology of Corinthian loom-weights is expressed in more or less general terms, for no precision is possible with these common, locally-made objects that may have been in use for long periods. A general designation of within a half century or so for the popularity of a given shape is all that can be expected.¹⁸

Stylistic development or change can be seen in other classes of objects of everyday use as well, such as, for instance, the clay oil lamp (Figures 22–4) which can perhaps be classed as a “minor art,” in comparison to the solid, plain loom-weight. Excavations in the Agora in ancient Athens have uncovered an uninterrupted sequence of lamps extending for more

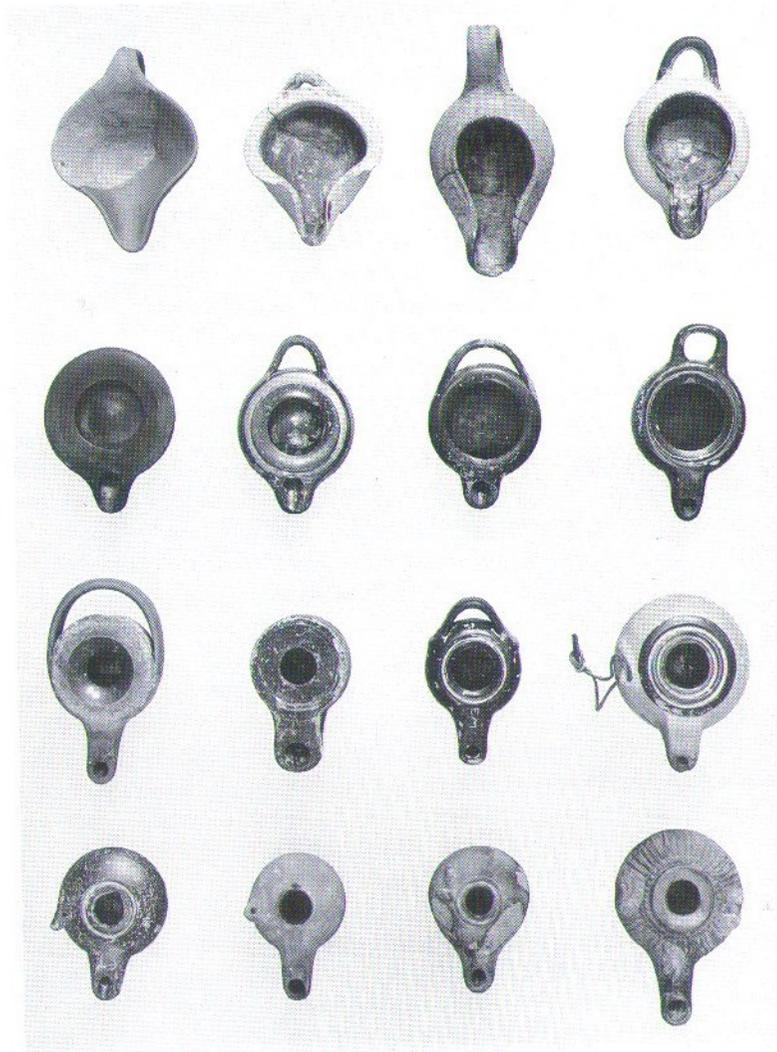


Figure 22 Development of lamps from the Athenian Agora, 700–200 BC

than 1,000 years from the beginning of the seventh century BC to the sixth century AD and later. Terracotta lamps made for burning olive oil provided a common method of lighting in antiquity, and recognizable fragments of oil lamps are usually found in excavations. Lamps needed

certain basic requirements, such as a container for the reserves of oil (which was usually the hollow body of the lamp itself), a handle of some type or some other provision for carrying, and a holder for the wick, which would allow one end to be immersed in the oil. A glance at the lamps in Figures 22–4 shows the variety in shape and decoration that existed over the years while still meeting the necessary three requirements. Within this sequence, there is also a technical progression of manufacture. The oldest lamps were handmade, followed by examples made on the wheel, and these were later superseded by those made in molds. These divisions are unfortunately only generally useful for chronology, for there was considerable overlap between the different methods of manufacture, with older methods still in use after a new procedure had been introduced into a region. There is, however, a definite progressive change in shape and decoration that is well illustrated when the examples can be seen laid out in sequence as in Figures 22–4. The oldest lamp, of the seventh century BC, is that at the upper left corner of Figure 22. It is handmade, with a completely open oil reservoir. This type is followed by wheel-made examples, with a progressive closing over of the oil container. By the Hellenistic period mold-made lamps become popular, and the space gained by closing over the oil reservoir begins to show some raised decoration. (See the bottom row of Figure 22 and the upper three rows of Figure 23.) Eventually, almost the whole oil reservoir is covered, leaving only a small filling hole, and the resultant disc area is often adorned with decorative designs or even figures and scenes (see Figures 23 and 24).¹⁹

Once a relative sequence has been developed and recognized, such as can be seen from the Athenian Agora, even fragments of similar lamps found elsewhere can be fitted into the sequence. Nozzle and handle shape, style and type of decoration, overall design, and methods of manufacture are all diagnostic features that can be recognized even on tiny fragments.

As has been illustrated above, it is possible, even without dates, to develop stylistic sequences for the different categories of art and artefacts in the Greek and Roman world. Providing a specific or absolute date for the objects is another matter. Various different types of evidence can be used, often together, to establish specific dates. Sometimes one object within a sequence can be dated by its archaeological association in datable contexts or with objects that are themselves datable. Often a single date or two within a stylistic sequence can serve to date, more or less, all the members of the sequence for they are then related stylistically (earlier or later) to the dated object or class. In other cases, a whole site,

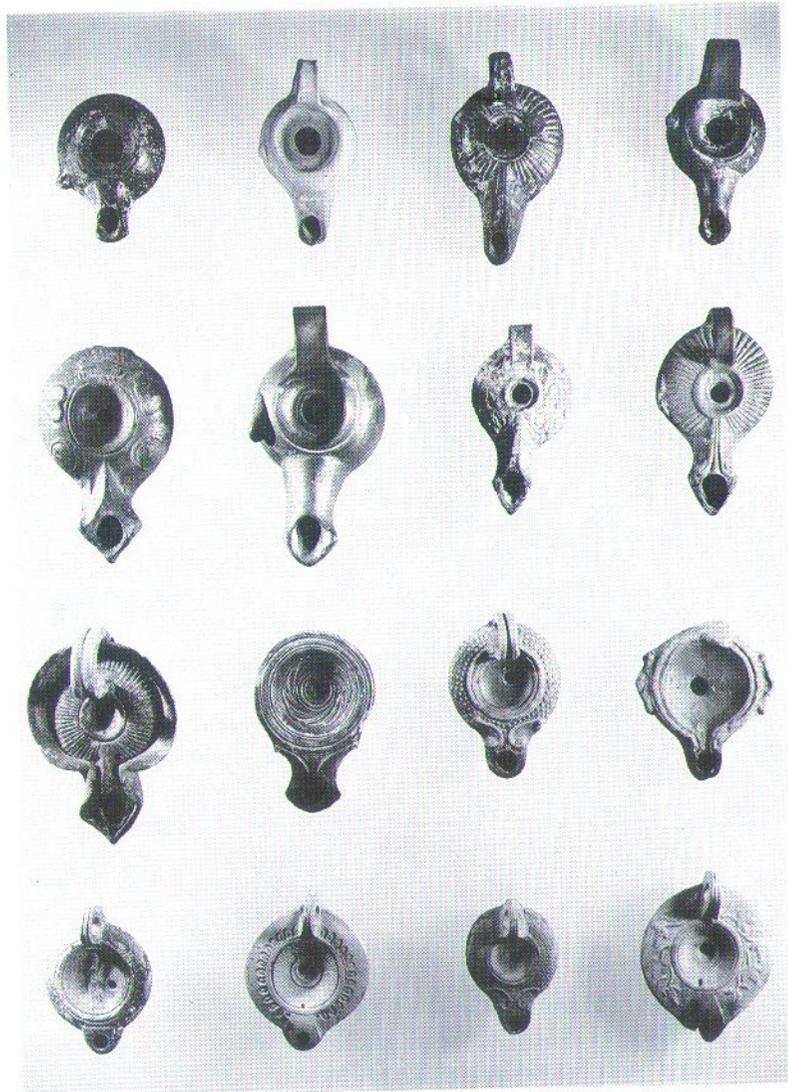


Figure 23 Lamps from the Athenian Agora, 200 BC–AD 200

one part of it, or even one building can be associated with an historical event, perhaps a destruction from natural causes, war, or even from a known building program, thus providing at least a presumed date before

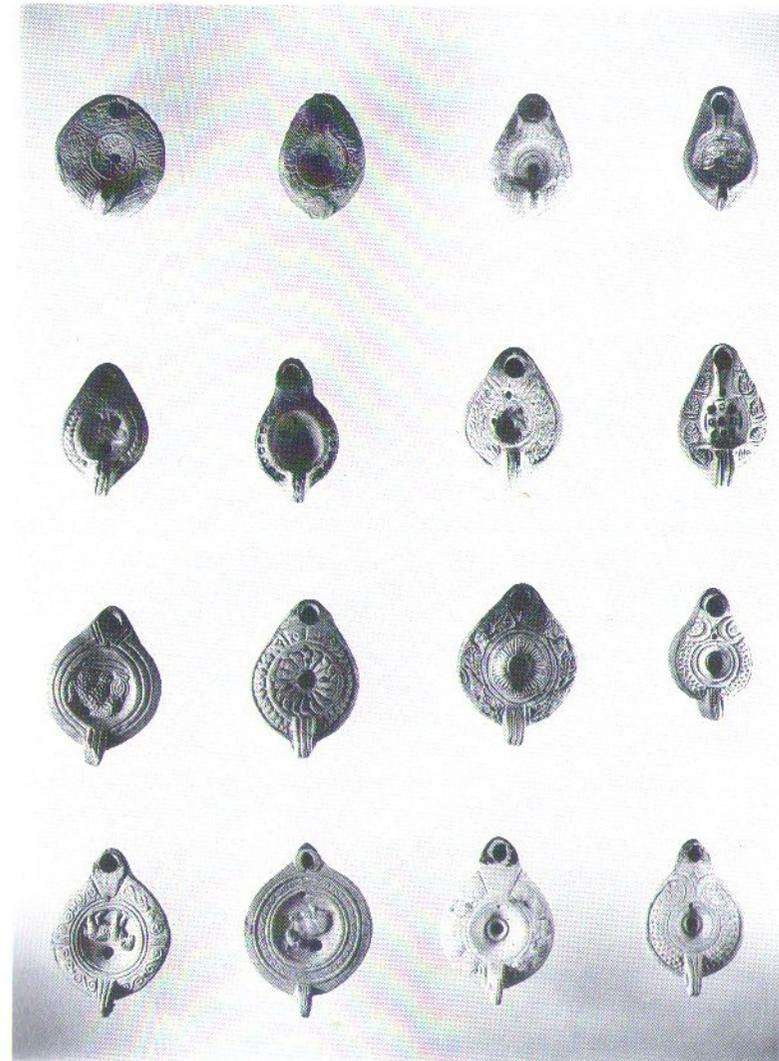


Figure 24 Lamps from the Athenian Agora, AD 200–700

which any objects found would have had to have been made. A single positive date within a sequence or for a site can be referred to as a “fixed” or “set point,” and a chronological sequence can be draped over it like a rope hanging on a series of pegs on a wall. Remove one of the

pegs and the rope will sag and change its position. Exactly the same thing will happen if an archaeological or historical set point is removed for one reason or another. The establishment of set points and their chronological significance is difficult at best, and involves interpretation of the archaeological record in relationship to the written record. The problems involved with interpreting the evidence are outlined in the following chapters.

Absolute dating

Three categories of evidence can be used to determine a specific date for an object: historical, archaeological, and scientific. This chapter will explore these three categories.

A wealth of literary material is available from the Greek and Roman world, and a great deal about the ancient world can be learned and reconstructed from many different sources, ranging from the earliest literature of Greek times to the writings of the early church fathers. A general outline of the history of these ancient civilizations has been recovered from the ancient literature, especially the writings of Greek and Roman historians, by generations of modern historians, and the interpretation of texts continues to this day.

The historian of the ancient world works under several handicaps when it comes to attempting to record and understand the events and characters of that world. There is the major problem of the amount of evidence that is available for civilizations as far away from our own time as those of the Greeks and the Romans. For such remote periods information is uneven and seldom contemporary. Whereas historians dealing with other time-periods often have historical, or even biographical, sources that were written at the same time as the events they record, such a luxury is not common for the historian of the classical world. Texts are often incomplete or unclear, and the investigator is always operating with the handicap of the lack of preservation, since so much that was written in the literate Greek and Roman societies has completely perished. The written evidence that has survived must be carefully examined and its limitations understood. The historian has to be able to judge the relative value of a given writer from the point of view of that author as an historical source. This involves the nature of the work, its subject and scope, and the author's motive for writing it. Since the classical world saw the birth of the discipline of history, as we