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Whose Past?

Archaeology and the Public

This book is concerned with the way that archaeologists investigate the past, with the questions we can ask and our means of answering them. But the time has come to address much wider questions: Why, beyond reasons of scientific curiosity, do we want to know about the past? What does the past mean to us? What does it mean to others who have different viewpoints? And whose past is it anyway?

These issues very soon lead us to questions of responsibility, public as well as private. For surely a national monument, such as Great Zimbabwe or the Athenian Acropolis, means something special to the modern descendants of its builders? Does it not also mean something to all humankind? If so, should it not be protected from destruction, in the same way as endangered plant and animal species? If the looting of ancient sites is to be deplored, should it not be stopped, even if the sites are on privately owned land? Who owns, or should own, the past?

These very soon become ethical questions – of right and wrong, of appropriate action and reprehensible action. The archaeologist has a special responsibility because, as we saw in Chapter 3, excavation itself

entails destruction. Future workers' understanding of a site can never be much more than our own, because we will have destroyed the evidence and recorded only those parts of it we considered important and had the energy to publish properly.

Destruction on a much larger scale comes from another quarter, far exceeding anything suffered in earlier centuries. The earth's surface is now being exploited more exhaustively than ever before, for commercial, industrial, and agricultural purposes, and any fragile vestiges of earlier human activity are liable to be swept away if they hinder that exploitation. Moreover, the very interest that archaeology has generated in our past has created new destructive forces: not only looters and illicit excavators – whose plunder finds its way into private collections and public museums – but also tourists, who by their numbers threaten the sites they seek to enjoy.

The past is big business – in tourism and in the auction rooms. The past is politically highly charged, ideologically powerful, and significant. And the past, or what remains of it, is subject to increasing destruction. What can we do about these problems?

THE MEANING OF THE PAST: THE ARCHAEOLOGY OF IDENTITY

When we ask what the past means, it is implicit in the question that we are asking what the past means for *us*, for clearly it means different things to different people. An Indian, looking at the great monuments of Moghul rule, may see things differently according to whether he or she is a Hindu or a Muslim, and a European tourist will look at one of these buildings with different eyes again. In the same way, an Australian Aborigine may attach a very different significance to fossil human remains from an early site like Lake Mungo or to paintings in the Kakadu National Park, than a white Australian. Different communities have very different conceptions about the past which often draw on sources well beyond archaeology.

At this point we go beyond the question of what actually happened in the past, and of the explanation of why it happened, to issues of meaning, significance, and interpretation. And it is at this point, therefore, that many of the concerns which have become explicit in archaeology over the past couple of decades become entirely relevant. How we interpret the past, how we present it (for instance in museum displays), and what lessons we choose to draw from it, are to a considerable extent matters for subjective decision, often involving ideological and political issues, as the advocates of Critical Theory have argued.

For in a very broad sense, as well outlined by David Lowenthal in *The Past is a Foreign Country* (1985), the

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past is where we came from. Individually we each have our personal, genealogical past – our parents, grandparents, and earlier kinsfolk from whom we are descended. Increasingly in the western world there is an interest in this personal past, reflected in the enthusiasm for family trees and for “roots” generally. Our personal identity, and generally our name, are in part defined for us in the relatively recent past, even though those elements with which we choose to identify are largely a matter of personal choice. Nor is this inheritance purely a spiritual one. Most land tenure in the world is determined by inheritance, and much other wealth is inherited: the material world in this sense comes to us from the past, and is certainly, when the times comes, relinquished by us to the future.

Nationalism and its Symbols

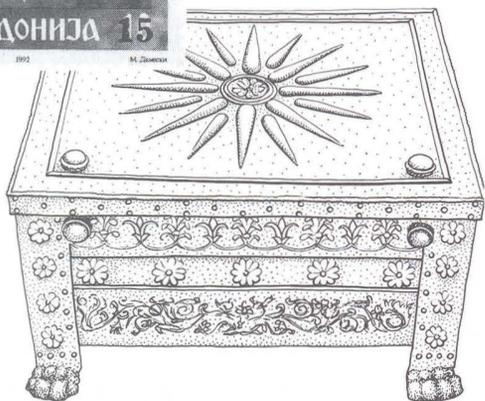
Collectively our cultural inheritance is rooted in a deeper past, where lie the origins of our language, our faith, our customs. Increasingly archaeology plays an important role in the definition of national identity, and this is particularly the case for those nations which do not have a very long written history, though many consider oral histories of equal value to written ones. The national emblems of many recently emerged nations are taken from artifacts seen as typical of some special and early local golden age: even the name of the state of Zimbabwe comes from the eponymous archaeological site.

Yet the same is true for Egypt or for Greece, for Mexico or Peru, where the ancient past is used in some ways to legitimate the present and is drawn upon to reinforce a sense of national greatness and identity. A major recent crisis related to the name and national emblems adopted by the newly independent Former Yugoslav Republic of Macedonia. For Greece, the name Macedonia refers not only to contemporary provinces (nomes) within Greece, but to the kingdom of that famous Greek leader, Alexander the Great, so that appropriation of the name by a state whose national language is not even Greek was seen as an affront. This was compounded by the use by the FYR Macedonia of a star as a national symbol, drawing on a version from the tomb of Philip of Macedon (father of Alexander), found among the splendid objects from his tomb at Vergina, well within modern Greek territory. Resentment at the appropriation of this image stirred up a great wave of nationalistic feeling within Greece to the extent of disturbing relations between Greece and other member states of the European Union, until an accommodation was reached.

In Israel, too, archaeology is used to serve the cause of national ideology. The excavation by Yigael Yadin in the 1960s of the fortress of Masada resurrected the stirring story of the last stand of the Jewish Zealots against the besieging Romans in AD 73, and how they chose mass suicide instead of surrender. It has become a symbol of Israeli defiance and pride, as well as an important place of tourism. Israel employs archaeology



(Left and below) Philip II of Macedon, father of Alexander the Great, was buried in a gold casket decorated with an impressive star. This was adopted as the national symbol of the former Yugoslav republic of Macedonia, as seen on their stamp. (Below right) Appropriating the past as propaganda in the present: a mural depicts Saddam Hussein as Nebuchadnezzar, the 6th-century BC king of Babylon (the site is in modern Iraq), surrounded by modern weaponry.



THE POLITICS OF DESTRUCTION 1: THE BRIDGE AT MOSTAR



On 9 November 1993, the Old Bridge of Mostar, a fine architectural work constructed in 1566 by order of Sultan Suleyman the Magnificent, of great significance to the (mainly Muslim) inhabitants of that city, finally collapsed after months of shelling by Croatian guns. It symbolizes the deliberate destruction of the cultural heritage by the warring ethnic factions of the former state of Yugoslavia.

As John Chapman (1994, 122) remarks:

"In a cultural war, the conquest of territories and the 'ethnic cleansing' of settlements is insufficient. Nothing less than the destruction of past historical identities is needed. If the identities between past nations and their landscapes are best symbolized by their monuments, it is these monuments which have been prime targets in this cultural war. Mosques for Serbs and Croats, Orthodox churches for Muslims and Croats, Catholic monasteries for Serbs and Muslims – each monumental symbol fatally attracts the cultural warriors. Designation of a building for UNESCO Protection marks out buildings for special destruction... the term genocide must now be extended from forced migration to include the disappearance of cultural markers from a territory."

The deliberate destruction of historical and cultural monuments was a notable feature of this war, although the practice has its antecedents in the so-called "Baedeker raids" (named after the excellent series of guidebooks published before the war in Germany) upon historic British cities by the German airforce during World War II.

Indeed even the pharaohs of Egypt practiced the systematic destruction of the monuments (or at least the erasure of the names) of predecessor rulers of whom they disapproved. For instance, monuments of the heretic king, Akhenaten, were completely dismantled and their blocks used to construct new buildings.

But the scale of destruction in Bosnia was notable: over 50 percent of known mosques were damaged or

destroyed. Yet even if Serbian forces caused the bulk of the damage, it is said that 146 Serbian Orthodox churches were also destroyed and 111 badly damaged, with the church of the Dormition at Derventa destroyed by explosives on 4 June 1992.

As J.M. Halpern (1993, 50) ironically puts it, we may now anticipate an "ethno-archaeology of architectural destruction."



The beautiful bridge at Mostar, dating from the 16th century, before its destruction. Such important cultural symbols are often targeted in wars.

	destroyed	damaged	total
mosques	300	162	462
communal-buildings*	250	46	296
cemeteries	33	2	35

**Includes buildings such as the mesjid (small mosque or place of prayer), the medrese (school), the mekteb (place of work), the Imam's house etc.*

Destruction of the Bosnian Islamic cultural heritage up to April 1993 (after Chapman).

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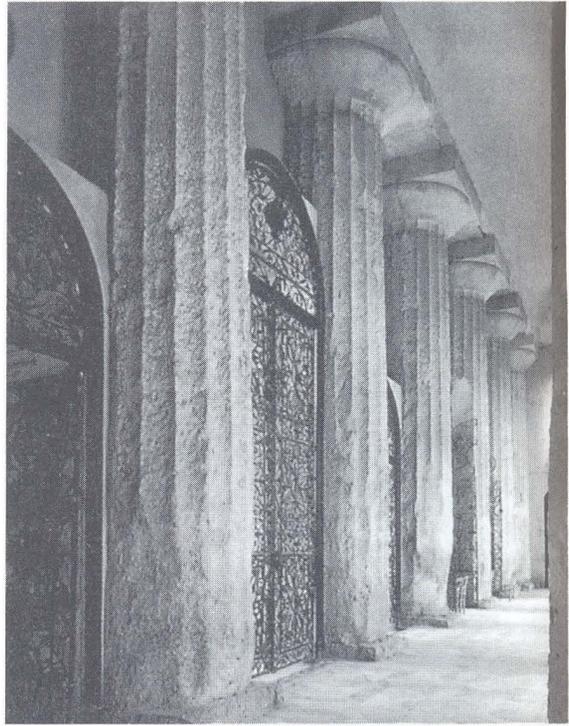
as a means of underlining historical continuity and hence of justifying her existence. Indeed, while it might have been hoped and expected that the sort of crude ethnic and nationalist concepts which inspired Adolf Hitler's National Socialists in Germany during World War II might have disappeared by the end of the century, the converse seems to be the case. Kosovo has followed Bosnia in the former Yugoslavia as a battleground of "ethnic cleansing" (a concept of the 1990s), and in the states of the former Soviet Union different groups vie with each other for legitimacy by claiming to be the inheritors of a historic past, often misusing archaeological data in the process.

These feelings of "us" and "them" at a national level are often expressions of ethnic identity (see box, *Ancient Ethnicity and Language*, p. 189). Ethnicity today is a living force, just as strongly as it may have been in earlier times, and it relies upon the past, and upon past material culture, for its (supposed) legitimation, sometimes with sad and destructive results (see boxes, p. 535 and opposite).

Archaeology and Ideology

The legacy of the past extends beyond sentiments of nationalism and ethnicity. Sectarian sentiments often find expression in major monuments, and many Christian churches were built on the site of deliberately destroyed "pagan" temples. In just a few cases they actually utilized such temples – the Parthenon in Athens is one example – and one of the best preserved Greek temples is now the Cathedral in Syracuse. Unfortunately the destruction of ancient monuments for purely sectarian reasons is not entirely a thing of the past, as the case of the Ayodhya mosque shows.

The past, moreover, has ideological roles even beyond the sphere of sectarian religion. In China Chairman Mao used to urge that the past should serve the present, and excavation of ancient sites in China certainly continued even at the height of the Cultural Revolution of the 1960s. Today there is widespread



The Cathedral of St. Lucy in Syracuse, Sicily, preserves the former Doric temple to Athena.

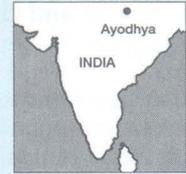
popular concern in that country for its ancient cultural relics. Great emphasis is placed on artistic treasures as products of skilled workers rather than as the property of rulers; they are seen as reflections of the class struggle, while the palaces and tombs of the aristocracy underline the ruthless exploitation of the laboring masses. The Communist message is also conveyed through humbler artifacts. The museum at the Lower Paleolithic site of Zhoukoudian, for example, proclaims that labor, as represented by the making and using of tools, was the decisive factor in our transition from apes to humans.

WHO OWNS THE PAST?

Until recent decades, archaeologists gave little thought to the question of the ownership of past sites and antiquities. Most archaeologists themselves came from western, industrialized societies whose economic and political domination seemed to impart an almost automatic right to acquire antiquities and excavate sites around the world. Since World War II, however, former colonies have grown into indepen-

dent nation states eager to uncover their own past and assert control over their own heritage. Difficult questions have therefore arisen. Should antiquities acquired for western museums during the colonial era be returned to their lands of origin? And should archaeologists be free to excavate the burials of groups whose modern descendants may object on religious or other grounds?

THE POLITICS OF DESTRUCTION 2: THE MOSQUE AT AYODHYA



Religious extremism is responsible for many acts of destruction. The important mosque, the Babri Masjid, at Ayodhya in Uttar Pradesh, northern India, constructed by the Moghul prince Babur in the 16th century AD, was torn down by Hindu fundamentalists on 6 December 1992. The mosque was situated at a location which has at times been equated with the Ayodhya of the Hindu epic, the *Ramayana*, where it is identified as the birthplace of the Hindu deity/hero Rama.

Excavations had been carried out at the site by B.B. Lal in 1975 and 1976, and did not report medieval finds of any special interest. But in June 1992 stone carvings were allegedly uncovered 3.6 m (12 ft) underground at the site and a group of archaeologists published a booklet, *Ramajamna Bhumi: Ayodhya: New Archaeological Discoveries*, in which it was claimed that Babur's mosque was built over the ruins of a Hindu temple of 11th-century date, a temple which Babur had destroyed. Encouraged by politicians of the influential Bharatiya Janata Party, Hindu fundamentalists proceeded to raze the mosque to the ground.

This act naturally angered the Muslim population of India, although remarkably not all Indian archaeologists condemned so significant a destruction of part of the nation's cultural heritage. Indeed much of the argument has centered less on the morality of destroying a major monument of the 16th century, than on the quality of the archaeological evidence – apparently weak – for the alleged 11th-century temple to Rama.

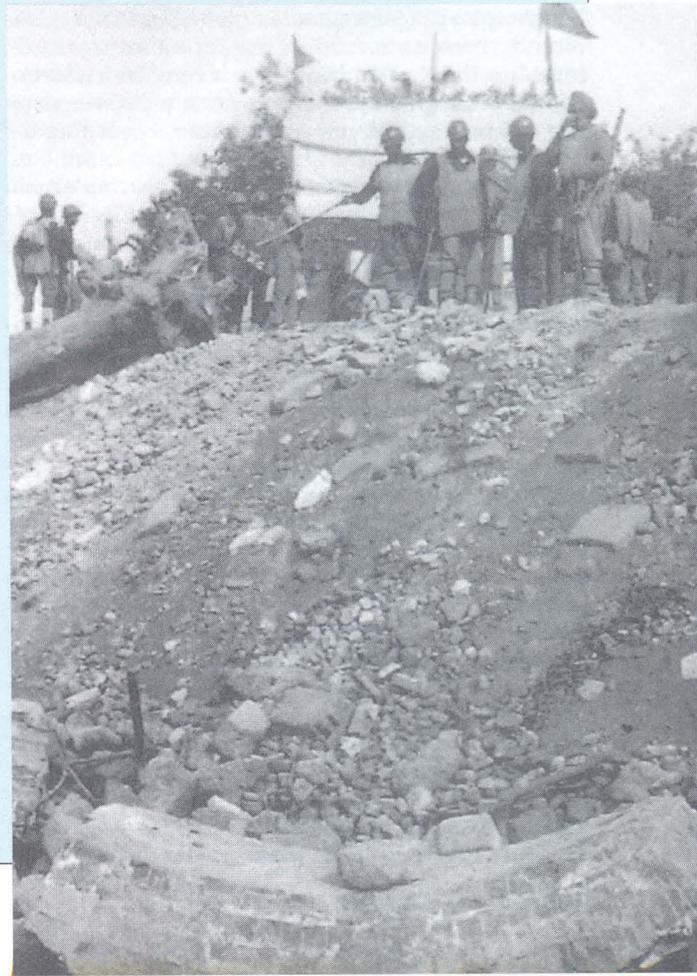
At the request of the Indian hosts, and to the dissatisfaction of many participants, the subject of the

destruction of the Ayodhya mosque was excluded from discussion at the third meeting of the World Archaeological Congress in New Delhi in 1994 by a resolution of the International Executive Committee of the Congress.

By a process of displacement the argument became centered on the claims (supported by the Hindu fundamentalist faction) that the "Aryans" depicted in the Hymns of the *Rigveda*, the earliest texts at the root of the Hindu tradition, were

indigenous to India. The contrary and indeed conventional view, that of an Aryan invasion which took place at the end of the Indus Valley civilization around 1800 BC, was also reiterated with warmth.

To the uncommitted observer it seemed remarkable that hypothetical events of nearly 4000 years ago were being used to fuel a debate surrounding the recent destruction of a notable historical monument, an action which itself resulted in riots and the loss of many lives.



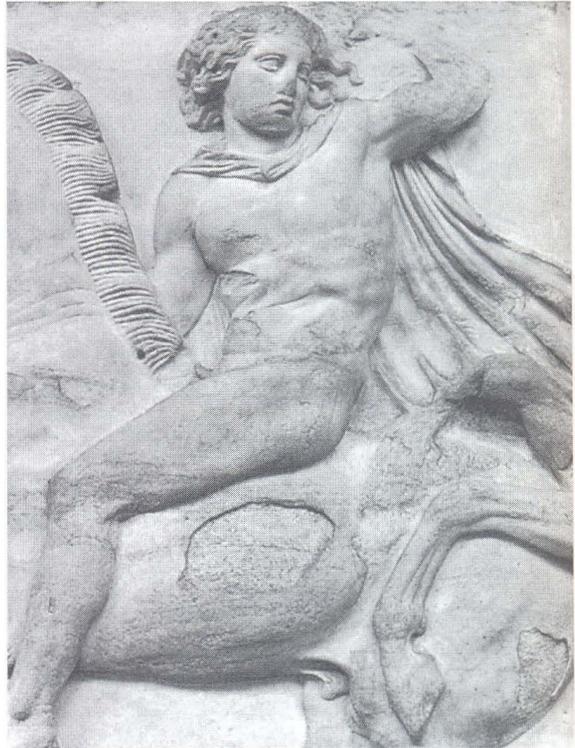
A fragment of the destroyed 16th-century Babri mosque, Ayodhya, India, lies at the foot of a mound of rubble. This Moghul building was a victim of religious fundamentalism which also claimed the lives of many people.

Museums and the Return of Cultural Property

At the beginning of the 19th century Lord Elgin, a Scottish diplomat, removed some of the marble sculptures from the façade of the Parthenon, the great 5th-century BC temple that crowns the Acropolis in Athens. Elgin did so with the permission of the then Turkish overlords of Greece, and later sold the sculptures to the British Museum, where they still reside, finely displayed. The Greeks now want the “Elgin Marbles” back. That in essence is the story so far of perhaps the best-known case where an internationally famous museum is under pressure to return cultural property to the country of origin. But there are numerous other claims directed at European and North American museums. The Berlin Museum, for example, holds the famous bust of the Egyptian queen Nefertiti, which was shipped out of Egypt illegally. The Greek government has officially asked France for the return of the Venus de Milo, the *pièce de résistance* of the Louvre, bought from Greece’s Ottoman rulers. And Turkey has recently been successful in recovering art treasures, including the “Lydian Hoard,” from New York’s Metropolitan Museum, and may now pursue Turkish statuary and objects in European countries, including the British Museum.

The issues are complex. The British Museum’s main argument against returning objects is that its trustees are expressly forbidden by British law to dispose of the objects in their charge. But there are ways round this – a fragment of the beard of the great Sphinx of Giza, for example, may perhaps be returned by the museum to Egypt as a reciprocal loan, in exchange for the body of a stone jackal whose head is in London. Furthermore, modern materials and techniques make it feasible to produce virtually perfect casts and replicas. The question then is: should the original or the copy be presented to the country making the request? A crucial factor here is whether the original will be adequately protected and conserved once returned. Many fragile antiquities survive today only because they have been housed in western museums. The Elgin Marbles in the British Museum, despite an unfortunate episode of over-cleaning in 1937–38, are in much better condition than those sections of the Parthenon frieze that were left in place on the Acropolis, exposed to the pollution of Athens. On the other hand, the Greeks plan to build a special museum to safeguard the sculptures if they are returned.

Quite apart from the legal issues, there is certainly a good moral case to be made for the restitution of



Part of the “Elgin Marbles”: a horseman from the frieze of the Parthenon in Athens, c. 440 BC.

objects of special religious or cultural significance, such as the kachinas (dolls representing spirits) of the North American Hopi Indians. Artifacts of this kind are not museum pieces but “living” and powerful things within their culture. It might also make sense to reassemble material from particular sites that is now scattered throughout the world’s museums, and to repatriate at least a sample of objects that may be over-represented in foreign collections but rare or absent in museums of the country of origin.

At the same time, one can set up the problem in a different way, and ask whether the interest of the great products of human endeavor does not in fact transcend the geographical boundaries of modern-day nationalism. Does it make sense that all the Paleolithic hand-axes and other artifacts from Olduvai Gorge or Olorgesailie in East Africa should remain confined within the bounds of the modern nations where they have been found? Should we not all be able to benefit from the insights they offer? And is it not a profound and important experience to be able, in the course of one day in one of the world’s great museums, to be able to walk from room to room, from civilization to

civilization, and see unfolded a sample of the whole variety of human experience? Would it not be a greater service, in response to requests to repatriate one nation's antiquities, to offer instead great works belonging to a *different* cultural tradition?

Even if one is willing to operate within a framework of modern national chauvinism, it may be more appropriate for the works of one nation to be seen and appreciated overseas. Nearly all the important products of Minoan civilization remain in Crete, in the Herakleion Museum. In consequence, they are little known other than from glossy picture books and to Hellenic travelers. Are the nationalistic ends of Greek culture better served by the confining of Minoan works of art to Herakleion, or by the dispersal of Classical Greek art throughout the western world? Certainly the Mexican government has recently chosen the path of propagating its cultural image abroad in relation to monuments held in the British Museum, such as the richly carved lintels taken by Alfred Maudslay from the Maya site of Yaxchilán in the 1880s. These are now displayed in a new gallery largely sponsored by the Mexicans.

There are difficult issues to unravel here, as much to do with national and international politics as with modern archaeology.

Excavating Burials: Should We Disturb the Dead? The question of excavating burials can be equally complex. For prehistoric burials the problem is not so great, because we have no direct written knowledge of the relevant culture's beliefs and wishes. For burials dating from historic times, however, religious beliefs are known to us in detail. We know, for example, that the ancient Egyptians and Chinese, the Greeks, Etruscans, and Romans, and the early Christians all feared disturbance of the dead. Yet it has to be recognized that tombs were falling prey to the activities of robbers long before archaeology began. Egyptian pharaohs in the 12th century BC had to appoint a commission to inquire into the wholesale plundering of tombs at Thebes. Not a single Egyptian royal tomb, including that of Tutankhamun, escaped the robbers completely. Similarly, Roman carved gravestones became building material in cities and forts; and at Ostia, the port of ancient Rome, tomb inscriptions have even been found serving as seats in a public latrine!

However, disturbance and plunder by the ignorant and greedy cannot alone justify archaeological investigation, although the scholar certainly benefits more people than the robber. Can archaeology reconcile a respect for the people of the past with deliberate disturbance of their remains, destruction of their tombs, and removal of their bodies and grave-goods against

the wishes of modern groups who for religious or other reasons see themselves as the living representatives of the deceased? In Egypt, the mummies of the pharaohs were removed from public view some years ago, in accordance with Islamic respect for the dead; but economic necessity, caused by the drop in tourist revenues because of terrorism, led to their being put back on show recently. Clearly archaeologists must show sensitivity on this issue. Where the modern descendants have a legitimate case, the only way forward lies in negotiation and compromise. In the longer term, archaeology should be made more relevant for, and open to, all sectors of the community.

Archaeology and Judaism. One religion which takes an intense and often hostile interest in archaeology is Judaism. In 1981 the issue erupted when thousands of militant, ultra-orthodox Jews held a demonstration in Jerusalem against the alleged desecration of graves at a major archaeological site in the city. The demonstration led to a heated debate over whether religious or secular law should apply in this case. Similarly, in August 1986, an important archaeological project at Tel Haror in the Negev Desert was vandalized, most probably by members of Atra Kadisha, an ultra-orthodox group dedicated to preserving the sanctity of Jewish cemeteries and which patrols excavation sites and intimidates archaeologists. So far there appears to be no meeting of minds, or satisfactory compromise, between the opposed camps. Indeed recently the study of human evolution has been brought to a virtual halt by an Israeli government ruling (under pressure from ultra-orthodox Jews) stating that no archaeological or scientific examination may henceforth be carried out on human remains, and all such remains, of whatever age or religion, must be handed over to religious Jews for reburial. Truckloads of bones have been removed from Jerusalem's Rockefeller Museum for burial.

The burial issue has also become a political and legal problem in several other countries, including Australia, New Zealand, and the United States.

The Australian Aborigines. In Australia, the present climate of Aboriginal emancipation and increased political power has focused attention on wrongdoings during the colonial period, when anthropologists had little respect for Aboriginal feelings and beliefs. Sacred sites were investigated and published, burial sites desecrated, and cultural and skeletal material exhumed, to be stored or displayed in museums. The Aborigines were thus, by implication, seen as laboratory specimens. Inevitably, the fate of all this material, and particularly of the bones, has assumed great symbolic

significance. Unfortunately, here as in other countries, archaeologists are being blamed for the misdemeanors of the non-archaeologists who obtained most of the human remains in question.

Broadly, the view of Aborigines in some parts of Australia is that all human skeletal material (and occasionally cultural material too) must be returned to them, and then its fate will be decided. Since the Aborigines have an unassailable moral case, the Australian Archaeological Association (AAA) is willing to return remains which are either quite modern or of "known individuals where specific descendants can be traced," and for these to be reburied. However, such remains are somewhat the exception. The University of Melbourne's Murray Black Collection consists of skeletal remains from over 800 Aborigines ranging in date from several hundred years to at least 14,000 years old. They were dug up in the 1940s without any consultation with local Aborigines. Owing to a lack of specialists the collection has still by no means been exhaustively studied – but nevertheless it has been returned to the relevant Aboriginal communities. In 1990 the unique series of burials from Kow Swamp, 9000 to 13,000 years old, were handed back to the Aboriginal community and reburied; more recently the first skeleton found at Lake Mungo, the world's oldest known cremation (26,000 years BP), was returned to the custody of the Aborigines of the Mungo area; and Aboriginal elders have announced they may rebury all the skeletal material (up to 30,000 years old) from Mungo.

Archaeologists are understandably alarmed at the prospect of having to hand over material many thousands of years old. Some also point out that the Aborigines – like indigenous peoples elsewhere – tend to forget that not all of their recent forebears took pious care of the dead. But in view of Aboriginal sufferings at European hands, one must certainly look on their claims with sympathy.

This is particularly true of the Australian state of Tasmania, where the government ordered the Crowther Collection of skeletal material from known historical people to be returned to the Aboriginal community to dispose of as it saw fit. The way in which the material had been collected was so appalling that the AAA took the view that any potential scientific value was far outweighed by ethical considerations, and actually urged the Tasmanian government to hand over the material. The Crowther Collection underwent traditional cremation in 1985. Tasmanian Aborigines, backed by a cultural heritage law, have now demanded the return of everything Australian archaeologists have found in recent excavations at sites in the region with

occupation dating back 35,000 years; the demand is not only for artifacts but even for animal bones, and it is feared that the as yet unstudied material would simply be thrown in a lake, like some artifacts returned in 1994.

In 1991 a code of ethics was adopted by the AAA that acknowledges members' obligations to respect and consult with the living people whose ancestors' lives are being studied. The future lies in negotiation, compromise, and involvement of Aborigines in archaeological work. Many Aborigines object to displays of skeletal material in museums, and these have now been replaced by casts, or removed altogether. They also demand to be consulted and are prepared to discuss each case on its merits. In parts of Australia, the employment and training of Aborigines as museum curators is underway. Aborigines will thus develop an informed appreciation of their heritage, as the North American Indians have done. This is surely more worthwhile than destruction of material or reburial with no access.

Remarkable progress is being made. In 1982 an indigenous community at Robinvale, on the Murray river, requested that a prehistoric burial site endangered by erosion of the riverbank should undergo a rescue excavation. The dig was carried out with Aboriginal assistance and constant consultation with the local community who were most interested in the data from the site. When excavation revealed a major burial ground, the community halted the work, had the site saved and stabilized by soil conservation experts, and skeletal material reburied after being documented in the field.

New Zealand. In New Zealand, no display of skeletal material now occurs. As elsewhere, there is no single, standard indigenous viewpoint about these problems, but certainly many Maori (the indigenous New Zealanders) dislike the past being examined. The history they pass down among themselves is secret, sacred information, not for public discussion. Where burials are concerned, they often prefer to see them destroyed by nature or even by the impersonal bulldozer than to have them dug up and preserved. Currently, archaeologists in New Zealand (who include a young Maori lecturer) maintain close consultation with local Maori, and as a result there is a great deal of cooperation between the two sides, though, as yet, there is little direct involvement on the part of the indigenous community.

The American Indians. The Indians of North America have expressed their grievances strongly in recent

years, and as a result have been able to exert political influence resulting in legal mechanisms to prevent archaeological excavations or calling for the return of collections now in museums to Indian peoples. Archaeology has become a focal point for complaints about wrongdoings of the past. Apart from the question of returning and/or reburying material, sometimes there have been vehement objections to new excavations. The Chumash Indians, for example, refused permission for scientists to remove what may be the oldest human remains in California, even though an offer was made to return and rebury the bones after a year's study. The bones, thought to be about 9000 years old, were eroding out of a cliff on Santa Rosa Island, 100 km (62 miles) west of Los Angeles. Under California's Antiquities Act the fate of the bones lay with their most likely descendants – and the Chumash were angry about past treatment of their ancestors' skeletons, with hundreds of remains scattered in various universities and museums. Like many Maori, they preferred to see the bones destroyed "in accordance with nature's law" than to have other people interfere with them.

As in Australia and New Zealand, there is no single, unified indigenous tradition. American Indians have wide-ranging attitudes toward the dead and the soul. The solution to the problem has been found to lie in acquiescence, compromise, and collaboration. Quite often archaeologists have acquiesced in the return of very recent remains from known individuals or from fairly close ancestors of living objectors. Much material has also been returned that had no archaeological context and was thus of minimal value to science. Reburial of more important material is a difficult issue. Despite resolutions passed by the Society for American Archaeology and other anthropological associations in North America opposing such reburial except where lineal descendants can be traced, there is now a clear trend in favor of negotiated reburial on a large scale. In 1990, the Native American Graves Protection and Repatriation Act (NAGPRA) was passed, requiring some 5000 federally funded institutions and government agencies to return Native American skeletons, funerary and sacred objects, and items of profound cultural importance to American Indian tribes and Native Hawaiians. By 1995 they had to provide detailed inventories of all skeletal remains and funerary goods in their collections, and the next step will be to determine exactly what will be returned. The most difficult problems – apart from defining what key terms in the law, such as "items of profound cultural importance," actually mean – will arise over prehistoric material, as opposed to remains of known individuals, although for some Native Americans – as for some Aborigines – the age is

immaterial and everything is considered ancestral. Indeed, the law explicitly recognizes the validity of oral traditions, so a tribe can claim prehistoric remains if its oral traditions say that its people were created in the same region where the remains were found.

Controversy and a legal battle still dog the bones of "Kennewick Man," found a few years ago in Washington State, and radiocarbon dated to 9300 BP. Eight prominent anthropologists have sued the Army Corps of Engineers, which has jurisdiction over the site, for permission to study the bones, but the Corps wants to hand the skeleton to the local Native American Umatilla Tribe for reburial, in accordance with NAGPRA. The scientists are extremely anxious to run tests, since preliminary examination had suggested that Kennewick Man was a 19th-century white settler, so that its early date raises complex, important and fascinating questions about the peopling of the Americas. The Umatilla, on the other hand, are adamantly against any investigation, insisting that their oral tradition says their tribe has been part of this land since the beginning of time, and so all bones recovered from here are necessarily their ancestors – and must not be damaged for dating or genetic analysis.

Some tribes are taking matters to such extremes that even naturally shed strands of human hair, now being recovered from archaeological sites, are considered as human remains (and hence sacred) and their return has been demanded. Tribal representatives have worked out agreements to reinter extensive collections from several museums, including Stanford University and the American Museum of Natural History. Chicago's Field Museum has given back 62 of its 2000 remains, and expects to return the rest. The Smithsonian Institution has returned 2000 skeletons for reburial, with the remaining 14,000 to follow. And at Wounded Knee, South Dakota, Seminole Indian bones from Florida were reburied by archaeologists and American Indians in 1989 to mark the establishment of a national cemetery for American Indians (see p. 542).

To the relief of researchers, however, who stress the new techniques that can extract hitherto unimagined information from human bone (see Chapter 11), not all tribes want human material returned or are planning to rebury it once it is returned; many have opened or are planning museums of their own, some with small research centers which are staffed with Native American scientists and open to academic researchers willing to work with tribal councils. Moreover, some tribes are willing to let the bones be laser-scanned before reburial – this stores digital data from the specimens, enabling electronic copies or even 3-D facsimiles to be available for study.



Seminole Indian bones from Florida are reburied in 1989 by archaeologists and American Indians at Wounded Knee.

Now that archaeologists have come to recognize Native American rights, working relations have improved, and there are growing numbers of American Indian representatives who appreciate the contribution that archaeology is making to their history and, indeed, to their ethnic identity. But there are still tensions – some archaeologists have had their lives threatened as grave-robbers – so it is important for excavators to be sensitive to the wishes of the local community. One excellent example is the archaeological program at the Zuni Pueblo, New Mexico, begun in 1975, which involved consultation with the local community every step of the way, and which trained some of the Zuni people in archaeology. Although the Zuni abhor the exposure of human remains, let alone the handling of bones, they allowed the archaeologists to take photographs and record data, and in one instance to remove and rebury an eroding burial. Influence was felt in both directions, in that the Zuni acknowledged the importance of new information about their mortuary customs, while some archaeologists experienced a qualitative change in their values and beliefs concerning excavation of such burials. Since then, however, there has been a change at Zuni, and no permits for archaeological excavation are being approved by the tribal council, showing the volatility of such situations.

THE USES OF THE PAST

The uses of the past, and the problems surrounding them, go beyond the specific question of who owns what. They concern ideological and economic issues. The ideological ones are perhaps the more important, ultimately, and they were reviewed above in “The Meaning of the Past: The Archaeology of Identity.” But the past has its economic uses, both for tourism and in making available the medical, agricultural and technological experiences of past societies, some of which are relevant to the present.

Making the Past Pay

Tourism now represents a significant part of the economic turnover of many countries of the world, and in many of these the “heritage industry,” as it has come to be called, is a highly significant part of the touristic opportunity. Of course the presentation of major sites to the public has for a long time been seen as part of the responsibility of governments, along with the proper conservation of monuments. And particularly in Mexico, Egypt, Greece, and Italy, the ancient monuments have attracted a large tourist trade for over a

century. But increasingly the display of archaeological sites in many lands is being commercialized. Heritage has become big business, and at times it becomes part of the entertainment industry. The success of the Jorvik Viking Centre (see Chapter 13), for instance, has stimulated the development of other “time capsule” experiences, not all of them so carefully researched or so authentically based.

And if the innovative display of the past at Jorvik has had its followers, so has the “recreation” of the past, at projects like Butser Ancient Farm in southern England (see box, pp. 274–75). That project had a serious research objective, within the framework of experimental archaeology, but others have been constructed with the principal objective of attracting a paying public. Increasingly, volunteer participants are used, who dress in appropriate ancient costume, live (at any rate in daylight hours) in reconstructed ancient houses, and sometimes carry out the craft occupations (often with considerable skill) of their early predecessors.

Of course, public awareness and enjoyment of archaeology are crucial to the discipline’s survival and development when government money available is

often restricted. Peru's new antiquities laws now allow the granting of private concessions to develop and run archaeological monuments as tourist attractions. However, despite the possible financial advantages, many archaeologists and preservationists are worried, since there is already a huge conflict between tourist-driven "reconstruction" and the integrity of archaeological sites – many sites have been "reconstructed" so extensively that it is increasingly difficult to study them. And, as we discuss below, increasing tourism has an inevitable effect on preservation problems at sites like Machu Picchu which attracts 300,000 visitors per year and is in serious risk of permanent damage.

Another potential danger is that the sites, and even the tourists themselves, become targets for terrorism, which can have a major impact on a country's economy. For example, by 1995 attacks by Islamic fundamentalists had cost the Egyptian government at least \$2 billion in lost tourist revenues, one of the main sources of hard currency for the country's ailing economy, while the massacre of 58 tourists in Luxor in 1997 has already lost Egypt a further \$700 million.

The presentation of the past to the public is now adopting techniques at the cutting edge of modern technology, such as holograms of artifacts. For example, thanks to the massive database of computerized information on Pompeii, visitors to recent exhibitions about the city could take electronic walks through rich houses, moving from room to room, calling up images and a mass of information on their frescoes, mosaics, and artifacts. The French abbey of Cluny, once the greatest church in Christendom, was demolished in 1793 after the French Revolution, but has been "brought back to life" with computer technology. It has been reconstructed inside a computer's memory, and by wearing a virtual reality helmet one can walk electronically through its interior. Already other sites – including existing ones which the public can no longer see (such as Lascaux Cave or the interior of Stonehenge) – have been developed for virtual reality. Eventually, an Internet archive will exist, allowing anyone connected to download a file via a modem and print out a perfect 3-D replica of a fossil or artifact.

There is also a less attractive side to the notion of making the past pay, and that is the looting of archaeological sites so that their contents may be sold to collectors. That issue is discussed below and in the box "Collectors are the Real Looters" (pp. 556–57).

Economic Lessons from the Past

The economic uses of archaeology are not, however, restricted to tourism and collecting. Archaeology

shows that in many areas where today the soil is barren agriculture once flourished. Are there lessons to be learnt here for modern farmers?

Nabataeans in the Negev Desert. Israel's Negev Desert is one of the world's most inhospitable places, with temperatures rising above 38°C (100°F), and it receives less than 2 cm (0.79 in) rainfall each year. Yet about 2000 years ago the Nabataeans lived there in cities, growing grapes, wheat, and olives. How did they do it?

It used to be assumed that the climate was lush and much wetter, but we now know that it remained unaltered since well before these settlements. Aerial photographs reveal a complex pattern of ditches, terraces, and barriers crisscrossing the hills. Evidently the Nabataeans took advantage of the region's rare, violent cloudbursts and flash-floods to utilize the rainwater, which was collected in ditches and then channeled by a system of low walls into terraced fields. The system also supplied drinking water, which was collected in large cisterns dug into limestone ridges. Thousands of such cisterns are known in the Middle East.

Scientists of the Ben-Gurion University of the Negev have used exactly the same methods, without irrigation or new technology, to reconstruct ancient farms such as that near the ruins of the Nabataean town of Avdat, which was an important stopping place for caravans between 300 BC and AD 600. Here they are able to grow a variety of cereals (with very high yields), fruits, vegetables, and nuts, even in years of drought. They have learnt that the runoff technique requires hilly regions from which the water can flow down and where the soil is sufficiently firm to support the drainage channels. The rain-collection area also needs to be 30 times larger than the growing area.

The ancients therefore show that by adapting intelligently to one's environment and natural resources, it should be possible to make fertile land once dismissed as worthless – perhaps 5 percent of all arid land. The techniques are being taught to agriculturalists from developing nations.

Agriculture in the Andes. A similar lesson from the past has emerged in Peru, where the Cusichaca Trust, directed by Ann Kendall, is applying archaeology to the revival of agriculture. The ancient town of Patalacta, located between Cuzco and Machu Picchu on an Inca highway, stands on artificial terraces above the confluence of the Cusichaca and Urubamba rivers. In its heyday it had 115 dwellings and a fortress nearby, and farmland in the area may have supported 5000 people. Until recently most of this land was barren, supporting only 15 families.

PART III The World of Archaeology

The Incas and their predecessors had built stone canals which carried water down from glacier-fed streams to the lower slopes by a winding route which prevented it overflowing or bursting the stonework. The canals were always kept free of rubble and silt – until they were abandoned at the Spanish Conquest. Working with the local community, the Cusichaca Trust has cleared and restored two of these canals. Around 60 ha (150 acres) are now flourishing again under irrigation and the Trust is pursuing similar work in the nearby Patacancha valley.

A similar project around Lake Titicaca has also proved a great success (see box). The latest work of American archaeologist Alan Kolata and his colleagues in Bolivia involves 52 communities in the altiplano, numbering several thousand people, and has 200 ha (495 acres) under raised-field cultivation. Crop yields are about seven times as high as on traditional dry-farmed fields. Development agencies are now supporting various field projects in Peru and Bolivia.

From Building Lessons to the History of Disease. There are other lessons to be learnt from archaeological remains. It is unwise, for example, to build modern settlements or dams in areas known to have been repeatedly damaged in the past by torrents, earthquakes, or volcanic eruptions. All over China, there are ancient stelae and documents that record past earthquakes, and “seismic archaeology” is considered of great importance here. In the Near East, information on ancient earthquakes can be obtained from historical, biblical, and archaeological evidence extending back 10,000 years, including 30 major quakes in the past 2000 years alone.

Human remains can likewise, as was discussed in Chapter 11, yield important information on the history of specific diseases and pathologies, some of which are still a problem today. For example, medical specialists claim that the high incidence of ear-canal pathologies in the skeletons of ancient Australian Aborigines could help to pinpoint the causes of the high rate of chronic middle-ear infections found among modern Aborigine children.

To sum up, the past can serve the present in a variety of ways – ideological, touristic, agricultural, constructional, and medical. Archaeologists could do worse than to lay more emphasis on the practical benefits of their discipline, thereby helping to justify their claim on public and private funds.

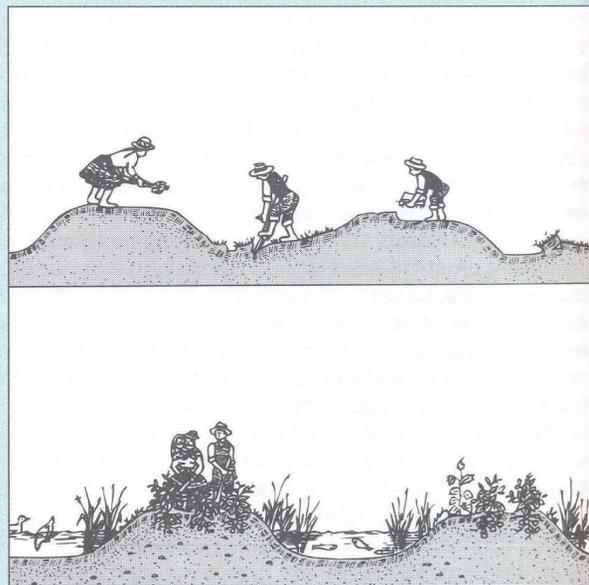
There will, however, be little archaeology for future generations to pursue unless the great tide of destruction of our heritage is stemmed and adequate conservation measures are introduced.



APPLIED ARCHAEOLOGY: FARMING IN PERU

In 1980, American archaeologist Clark Erickson, Peruvian agronomist Ignacio Garaycochea and their colleagues set up PACE (Proyecto Agrícola de los Campos Elevados, or Raised Field Agricultural Project). The multidisciplinary team's aim was to reintroduce ancient agricultural practices around Lake Titicaca, in Peru and Bolivia.

As in many other parts of tropical Latin America, the ancient cultures constructed raised fields (known locally as *camellones* or *waru-waru*). These elevated planting surfaces are up to 1 m (3 ft) high, 4–10 m (13–33 ft) wide, and up to 100 m (325 ft) long, and made of



The two stages of construction: drawings used in booklets produced by the Raised Fields project to teach the technique and its advantages to local communities.

the soil dug from the canals in between. They combine good drainage and moisture control with excellent soil and growth conditions, and remarkable resistance to night frosts because the canal water stores heat during the day and releases it slowly at night. The canals can be manipulated either to drain excessive water during periods of heavy rainfall or to retain water during periods of drought.

Aerial photography and excavation revealed that the high, flat pampas around Lake Titicaca had at least 82,000 ha (202,620 acres) devoted to this system; it seems to have begun around 1000 BC, and was abandoned after the Inca Conquest about 500 years ago: the Spanish chroniclers make no mention of it at all.

On this altiplano (high plain), at an altitude of nearly 4000 m (13,000 ft), the soils are poor, rainfall is irregular, wet and dry seasons vary unpredictably, and frost and drought are constant threats. At the marshy lake edge fluctuating water levels can cause widespread inundations. Modern

agricultural methods have been introduced, involving heavy machinery, chemical fertilizers, irrigation, and imported crops, in the mistaken belief that the plain was being under-utilized. They have proved unsuccessful, falling prey to the adverse climatic conditions. Consequently, much of the area filled with relic raised fields is classed as of low agricultural potential and used as pasture.

The PACE team cleared and refurbished about 10 ha (25 acres) of abandoned but well-preserved raised fields at Huatta, near Puno (Peru), using only traditional tools, and planted them with potatoes and other traditional tuber crops. The yields were excellent even in dry years. In the 1984/85 season alone potato production was increased by over two-and-a-half to four times.

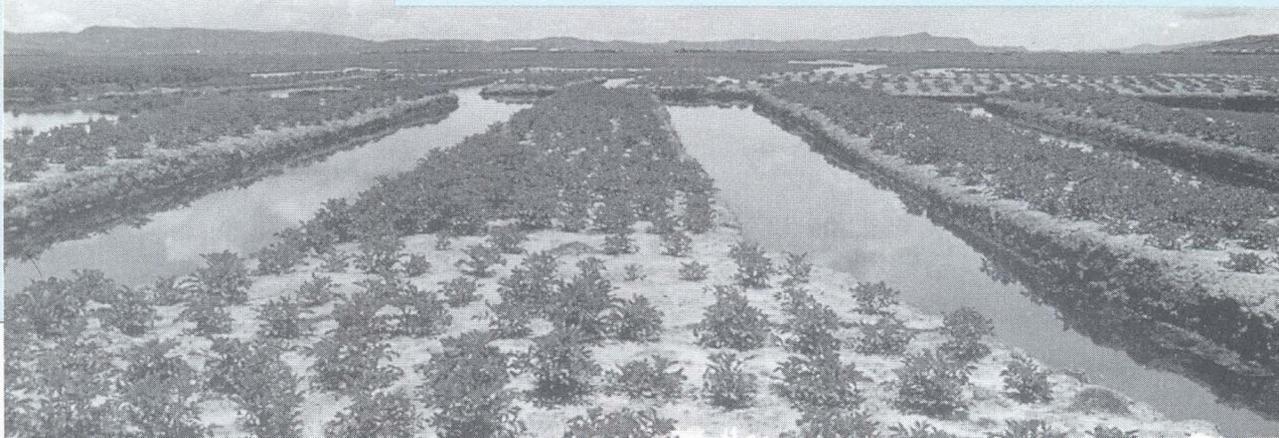
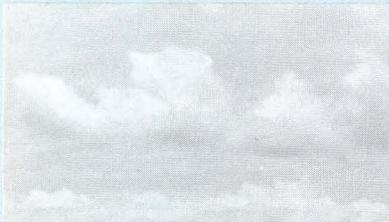
In addition, the raised fields were unharmed by the severe drought of 1982/83 and by the massive flooding of the 1983/84 and 1985/86 growing seasons, which destroyed crops on land farmed with modern methods.

Likewise, frosts severely damaged nearby fields, but had minimal effect on the raised fields.

It now seems clear that the prehistoric field technologies are an excellent solution to the development of agriculture in this kind of environment. They are perfectly adapted to its climatic factors; the rich organic muck that accumulates in the canals provides the fertilizer for the next growing season, and the only requirements are local labor, and traditional crops, tools, and skills. Initial high labor costs are soon offset by high production yields and low maintenance costs.

The local populace is taking a keen interest, as is the government, and the project has produced well-illustrated booklets, some of them in Quechua (the native language), aimed specifically at teaching the techniques to the local farmers. A videotape in Quechua is also used in the training program.

Peruvian villagers (right) use footplows (chakitaqlla), hoes (rawkana), and carrying cloths (manta) for moving soil to create raised fields. The result of their endeavors are fields like those below, planted with potatoes.



CONSERVATION AND DESTRUCTION

Most nations of the world now recognize that it is the public duty of a government to have some policy with regards to conservation. That policy will apply to natural resources and wildlife, but it will also apply to archaeological remains. So most nations now have some protective legislation – which is not all equally effective – for their ancient sites, minor as well as major, and government programs. In the United States these are organized under the rubric of Cultural Resource Management (CRM; see box opposite), and in other countries under Archaeological Heritage Management.

There are two principal stages in archaeological conservation everywhere. The first is the gathering of information, so that relevant sites and areas may be recognized and properly recorded. The second is the conservation of those sites and areas that can be effectively protected. Sometimes damage or destruction cannot be prevented, in which case one adopts a policy of salvage or rescue archaeology, partially excavating or at least recording the site before it vanishes for good.

There are two main agencies of destruction, both of them human. One is construction of roads, quarries, dams, office blocks, etc. These are conspicuous and the threat is at least easily recognizable. A different kind of destruction – agricultural intensification – is slower but much wider in its extent, thus in the long term much more destructive. Ever increasing areas of the earth, once uncultivated or cultivated by traditional non-intensive methods, are being opened up to mechanized farming. The tractor and the deep plow have replaced the digging stick and the ard. In other areas, forest plantations now cover what was formerly open land, and tree roots are destroying settlement sites and field monuments.

Elsewhere, reclamation schemes are transforming the nature of the environment, so that arid lands are being flooded, and the wetlands of say Florida or the Somerset Levels are being reclaimed through drainage. In each case the result is destruction of remarkable archaeological evidence. More ancient remains have been lost in the last two decades than ever before in the history of the world.

There are two further human agencies of destruction, which should not be overlooked. The first is tourism, which, while economically having important effects on archaeology (see p. 544), makes the effective conservation of archaeological sites more difficult. The second is not new, but has grown dramatically in scale: the looting of archaeological sites by those who dig for mone-

itary gain, seeking only saleable objects and destroying everything else in their search.

Legislative Basis of Conservation

The legislation for the ancient heritage varies considerably from nation to nation.

The Rise of CRM in the United States. Over the past two decades the whole pace and direction of American archaeology has been transformed by the development of public archaeology – archaeology funded primarily from federal or state resources and known, as we have seen, as Cultural Resource Management. The history of the legislation for public archaeology is very relevant to how CRM is practiced today.

The Antiquities Act of 1906 stated the responsibilities of the federal government for “antiquities” and extended these responsibilities to include lands controlled by, as well as owned by, the government. Then in 1935 the Historic Sites Act gave the National Park Service responsibility for identifying and protecting outstanding historic sites. The National Historic Preservation Act of 1966 (amended in 1976 and 1980) was an important milestone. It established a National Register of Historic Places, and provided for grants to state preservation programs. The National Environmental Policy Act of 1969 established the basis for CRM by laying down a firm policy for government land use, requiring federal agencies to consider environmental, historical, and cultural values whenever federally owned land is modified, or federal funds used on private land. The act required the preparation of an Environmental Impact Statement (EIS) for any federal works – thus bringing in archaeologists at an earlier stage – but it did not in itself provide funding for salvage archaeology to mitigate their effects.

In 1971, Executive Order 11593 was issued by President Nixon to unite existing legislation into a more coherent federal policy. This set the framework for the great upsurge of archaeological survey work funded by federal agencies such as the Forest Service, the National Parks Service, and the Army Corps of Engineers in the 1970s. It was, however, the Archaeological and Historic Preservation Act of 1974 that authorized federal agencies to provide funds for the preservation and recovery of archaeological or historic resources when endangered by federal projects. These funds were to be provided by contract – giving rise to the term *contract archaeology* – specifying that up to 1 percent of the cost

THE PRACTICE OF CRM IN THE UNITED STATES

Federal construction projects in the United States – those on federal land, or on private land but federally funded – are legally required to consider environmental, cultural, and historical resources that may be adversely affected. Cultural Resource Management (CRM) has grown out of this requirement. Projects on state land, or funded by the states, are in general similarly protected.

Most projects develop in two phases: assessment, and mitigation. During assessment, the affected land is surveyed and an Environmental Impact Statement prepared. The decision is then made as to what steps need to be taken in “mitigation.” Can project plans be altered? What salvage work should be carried out?

One good example is the vast Tennessee-Tombigbee Waterway project. Of the 682 sites revealed by survey, it was determined that 27

would be affected by waterway construction. Of these, 17 had good research potential, and another 24 sites were selected for data recovery. Twelve sites could be preserved by altering the construction program.

Excavation was designed to investigate the evolution of cultures in the area, with emphasis on sampling a good range of sites. The largest site was Lubbub Creek, the only major settlement in the threatened area belonging to the Mississippian culture (AD 900–1450). It includes a major ceremonial mound surrounded by a fortified village. The work undertaken in mitigation of environmental impact gave an excellent opportunity for systematic excavation of both settlement and cemeteries.

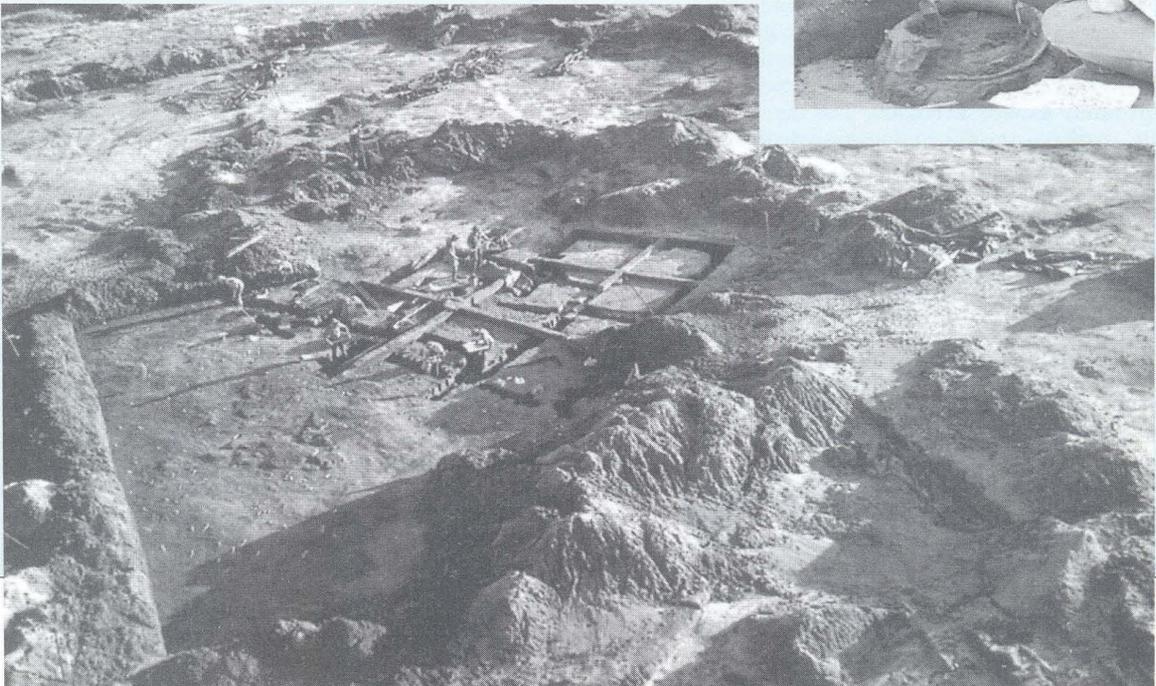
Several institutions have established outstanding reputations for salvage archaeology. Among them are the Arkansas Survey and the University of South Carolina. These



reputations are based on the quality of their published reports – reflecting coherent project designs – and on efficient data recovery and clear-minded interpretation.

Not all contract archaeology is of this standard. “Cowboy” operators can be attracted by the large sums of money involved. But the Society of Professional Archaeologists (SOPA) and the American Society for Conservation Archaeology have considered standards of professional qualifications, training, and ethical guidelines. What has been termed “a crisis of quality” may in due course result in a more uniform and higher standard of work.

An aerial view of the Lubbub Creek site on the Tombigbee River, Alabama. The smaller photograph shows two of the salvage archaeologists carefully cleaning a large urn.



of the project might be expended in this way. The legislation thus provided funds for excavation, analysis of finds, and publication of the results (but with no legal obligation to publish fully). Finally, the Archaeological Resources Protection Act of 1979 gave better protection to sites located on federal and Native American lands. This protection of Native American lands was enhanced by the passage of the Native American Graves Protection and Repatriation Act (NAGPRA) in 1990 – see above. Following the federal legislation there have been laws passed at the state and, in some places, city level to protect archaeological and historic resources (these are generally called State (or City) Environmental Quality Review laws). The federal laws are administered for the most part through State Historic Preservation Offices.

Unfortunately, the 1990, 1979, and earlier acts suffer from the great defect of all American heritage legislation: they offer no protection to sites located on privately owned land. Archaeologists Mark Michel and Steven LeBlanc have set up the independent Archaeological Conservancy precisely in order to purchase and protect such vulnerable sites, but the task is a huge one, at present beyond the means of a single private organization. Furthermore, current legislation is completely inadequate to protect the thousands of shipwrecks in American waters. Occasionally there are success stories, such as the World War II battleship USS *Arizona*, sunk in Pearl Harbor in 1941 and now preserved on the sea bed as a National Memorial. All too often, however, historic wrecks have been looted before archaeologists could reach them.

The scale of CRM funding is considerable. A major project may cost in the order of \$1 million, whereas a research grant from the National Science Foundation will rarely exceed \$100,000. The concern underlying this expenditure is with conservation rather than research. The result, however, has been to fund some very ambitious archaeological projects, where it has proved possible to formulate valid research aims and to advance our knowledge of the past. CRM archaeology is on such a large scale that, not surprisingly, some projects have been less well conducted, and less well published. This has led to tensions between academic and CRM archaeologists. Yet, although some academic criticisms may be justified, there is ample evidence that CRM archaeology can meet the highest scholarly standards (see box, p. 547).

Britain and Denmark. Few other countries in the world have the comprehensive US-style legal provisions that bind the government to consider environmental and cultural factors in the course of government-funded

work, and to pay for salvage archaeology where appropriate. On the other hand, many countries do have legislation that prevents the private developer from destroying important archaeological sites on private land.

In Britain, for instance, the official agency English Heritage advises the relevant government department on sites worthy of protection, whether or not these are on private land. If they are regarded as of national importance they are placed on a Schedule of Ancient Monuments. The Schedule includes not simply major sites – often in the care of English Heritage and open to the public – but minor ones as well. There are currently about 13,000 scheduled sites in England alone. When the private owner of a listed site wishes to develop it or the land around it, he or she has to apply for Scheduled Monument Consent. In cases where it is judged that the development should go ahead, English Heritage will usually pay part of the costs of excavation so that the site can be recorded.

In Denmark some 28,000 monuments are included in a “first category.” Each of these is fully protected by law against destruction and is surrounded by a 100-m (328-ft) protection zone. All other fixed monuments fall within the “second category” of protection, which is only a legal one: there are over 100,000 of these.

Australia and New Zealand. In both Australia and New Zealand considerable steps have been taken in recent years toward the recording and safeguarding of archaeological sites of all kinds. Only 20 years ago not one Australian state provided statutory protection for any Aboriginal relics or sites, but by 1981 all of them did so. Analogous legislation to protect the European cultural inheritance – material remains of 200 years of European settlement in Australia – lagged behind, but great progress has been made on this issue as well.

The Australian Heritage Commission was established in 1976 and has provided a national focus for the natural and cultural environment. Its first priority was a Register of the National Estate, published in 1981, which listed over 6600 places including many of archaeological importance. The register helps to protect sites from development projects. Preservation of the national heritage is one of the primary functions of the Commission, which also plays a vital role in the identification and documentation of sites, in serving as a planning tool for the government and developers, and in stimulating public consciousness of Australia's rich cultural background.

In New Zealand, the Historic Places Act of 1980 set out to preserve and protect places of historic significance, including archaeological sites associated with

human activity over 100 years old, both Maori and European. The 100-year rule, however, does not preclude the Historic Places Trust being involved with much younger sites. Thanks to the 1980 Act, no site can be modified or damaged in any way without the permission of the Trust, and this applies not only to known sites but also to places where there is reasonable cause to suspect the existence of a site.

Increasingly today archaeologists think in terms of entire landscapes rather than simply of single sites. In this respect, the legal systems of protection of many nations are proving inadequate, based as they are on the now rather old-fashioned notion of the single site. In some countries, however, it is proving possible to establish “conservation areas,” where monuments are considered in relation to each other and to the landscape of which they form a part.

Recording of New Archaeological Sites

The first task in any program of Cultural Resource Management is that of locating sites and recording them systematically. The appropriate recording techniques are those of remote sensing and surface survey, discussed in Chapter 3. Here the issue is rather one of organization.

Although, as we have seen, most nations have registers of their more important known archaeological sites, few organize comprehensive survey programs in which new sites are methodically sought and recorded. Denmark is one of the most advanced in this field and Canada, too, has been a pioneer, with an early, computerized national archaeological survey.

In Britain, since the beginning of this century, the Royal Commissions on Historical Monuments have been carrying out surveys for each county – each administrative division of the country – publishing the principal sites in handsome inventories. In the early 1900s the national mapping agency, the Ordnance Survey, also set up its own archaeological section to provide information for the national survey of maps. This section produced a remarkable series of maps that treated the archaeology of Britain on a period-by-period basis. Over the past 30 years, most counties have also set up their own County Sites and Monuments Record, to provide a full database for the County Planning Office, so that when some development is proposed, information on known sites within the development area is readily available.

Gradually these various enterprises are being brought together so that there is a unified national database of archaeological remains. In England, for exam-

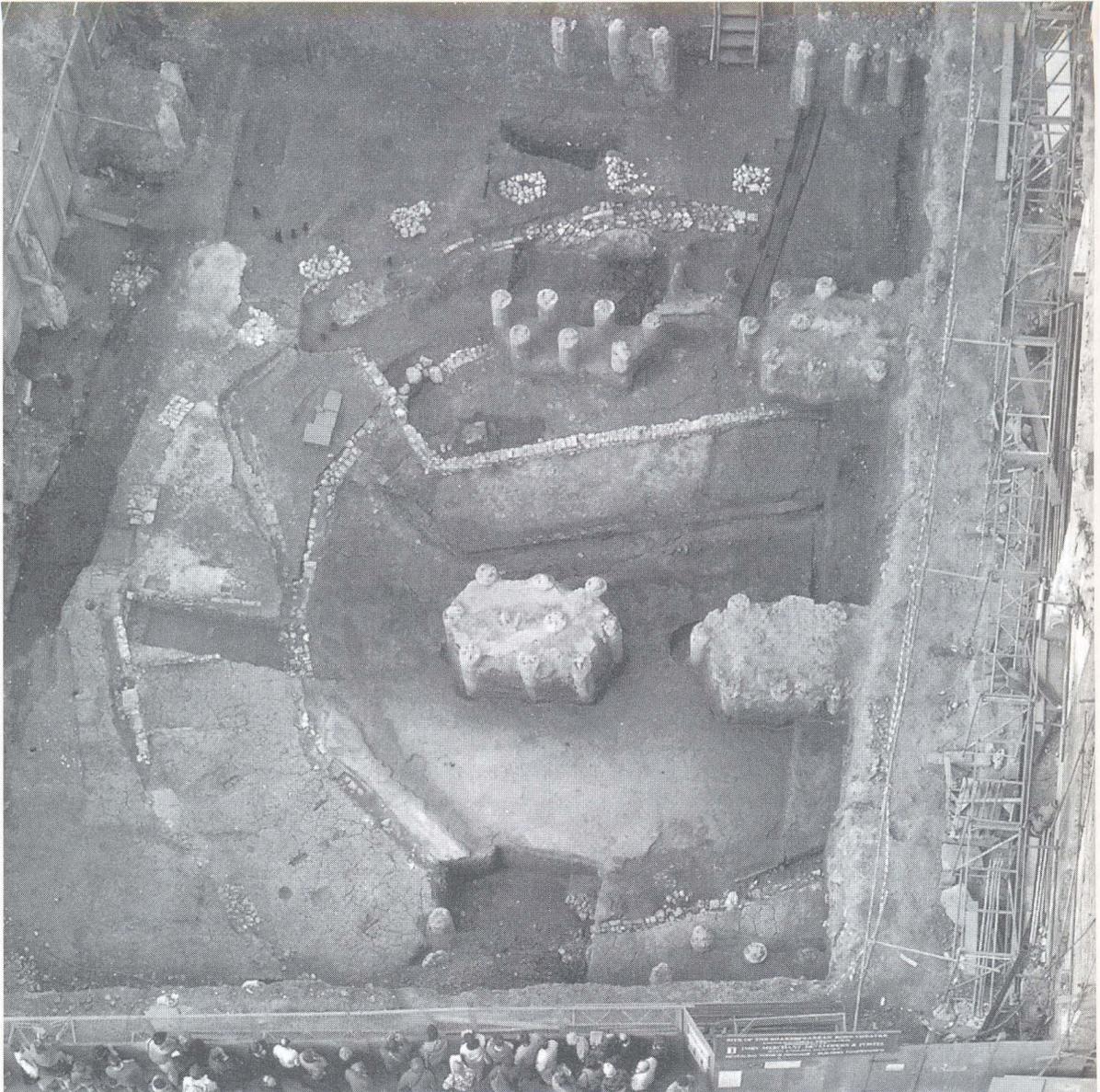
ple, this is the responsibility of the Royal Commission on Historical Monuments, which maintains a computerized “National Archaeological Record.” Many archaeological agencies have now begun to make use of Geographic Information Systems (see Chapter 3) such as the ARC/INFO system for recording site data. In the United States, GIS have been used extensively within Cultural Resource Management for some years, most notably to generate and test predictive models of archaeological resources (Chapter 3). GRASS (the Geographic Resources Analysis Support System, written by the United States Corps of Engineers), is a GIS system used by the National Park Service, which offers access to information on the environment. These systems offer a number of advantages over existing text-based databases, particularly in that they allow the complete storage and subsequent querying of data about archaeological monuments which have a large spatial extent. GIS also allow planners to store and manipulate archaeological data within the same computer system as other data about the landscape such as landuse, topography, or plant and animal habitats. For this reason, GIS are widely seen as an appropriate means of integrating archaeological planning within a large environmental planning framework.

In one sense a national archaeological record can never be complete, because new sites are being discovered all the time. For this reason, when any major development is proposed, it is necessary that the area in question be surveyed, or re-surveyed, intensively. In the terminology of CRM, it is necessary to produce an Environmental Impact Statement (EIS) – the impact being that of the development on the local archaeological remains. It is then possible to assess what damage will be done.

Threats to Archaeological Sites: Partial Solutions and Unresolved Problems

Damage by Developers. The ideal administrative arrangement, from an archaeological point of view, is that each developer should have to apply for planning and development permission. During the procedures leading to the granting of that permission, the drafting of an Environmental Impact Statement should be mandatory, paid for by the developer. If the EIS indicates that archaeological sites are likely to be damaged, alternative schemes should be devised.

If there is no clear alternative available, some judgment has to be taken as to whether the value of the threatened site or sites outweighs the importance of the proposed development. If it is deemed necessary that the development has to go ahead, then



Threats to our heritage: concrete piles – foundations for a modern office block – have been driven into the ground around the archaeological remains of the Rose theater, where some of Shakespeare’s plays were first performed in the 1590s.

archaeological survey, including excavation, should take place in advance of any unavoidable destruction. Such work, and its full publication, should be paid for by the developer.

In reality the situation and the specific threats vary from country to country. In *England*, developer-funding is now the norm, developers paying either for

rescue excavation (“preservation by record”) or for special foundations which minimize the damage to archaeological deposits. Things can still go wrong, as in the case of the Rose theater in London – where some of Shakespeare’s plays were performed in the 1590s – the remains of which were encountered during construction work in 1989. Although the theater’s position

was approximately known, the actual walls were unearthed only after planning permission had been given and construction was under way; the development had to be halted and a redesign undertaken – a major expense which was largely met by the developer. It was plain that the archaeological profession needed to improve its ability to predict the value of sites before planning permission was given, and a special project was initiated by English Heritage (the state agency) and undertaken by the University of York with Ove Arup, consulting engineers, intended to design a procedure for the management of archaeological resources in towns (see pp. 523–24). The new protocol requires that, for each historic urban area, a research agenda is composed and a deposit model of the buried resource made, the data being entered on a GIS. The potential impact of any development can then be immediately assessed, and this is followed by a detailed on-site evaluation. The planners, in collaboration with the archaeological community and the developer, can then decide the mitigation strategy: to design special “benign” foundations; to make the site available for research; or to allow its destruction. Some of these principles have since been enshrined in the Department of the Environment’s Planning Policy Guidance note 16. In the countryside, the chief means of protection is “scheduling,” that is, placing the site on a list, or schedule of protected monuments (see above).

In the *United States*, annual expenditure on salvage or contract archaeology is some 10 times greater than in England but, as we saw above, full protection is granted only to federally funded projects, or those on federal lands. There is, furthermore, no legislative provision for full publication of the work undertaken. The results can be notified to the State Historic Preservation Officer simply in the form of a “letter report,” which is filed but often never published.

Problems of keeping up with the rate of development are particularly acute in *Japan*. In 1980 alone, more than 6200 sites were recorded as having been destroyed or exposed to destruction by developers. This is why the great majority of archaeological work in Japan has to be devoted to rapid salvage excavations. Processing of the voluminous data cannot keep pace with its extraction from the ground, so there is a mountainous backlog of material to be published. The country now has a critical shortage of storage space, exacerbated by a five-fold increase in (mostly salvage) excavations, during the past 15–20 years (there were 8200 in 1991, which cost 98 billion yen – about \$1 billion).

In *Australia*, threats posed by development were made all too clear by the case of the proposed dam on the Franklin river, southwest Tasmania. This would



Salvage excavations in Japan: work in progress at a site in Tama New Town, 1986. The conveyor belts are used to transport spoil from the site.

have destroyed one of the last great natural temperate wilderness areas on earth, as well as some of the richest and most important early inhabited cave sites in Australia. Only an international outcry prevented the hydro-electric scheme from going ahead. The region has now been added to the UNESCO (United Nations) list of World Heritage Areas. Dams all over the world have drowned innumerable archaeological sites, and new ones are constantly being built. It recently proved possible to save the rock art of Portugal’s Côa Valley from a major dam (see above, p. 158), and the valley has also been added to UNESCO’s World Heritage List; but the huge dam being built on China’s Yangzi River is going to destroy countless archaeological sites.

Nevertheless, given that development is an inevitable feature of the world economy, archaeologists have in most cases to learn to cooperate with developers. The fruits of such a policy can be seen in those towns and cities where archaeology is now accorded some importance in urban planning, often involving salvage work and subsequent preservation of important remains. A good example is Mexico City, where the discovery in 1978 of the *Templo Mayor* or Great Temple of the Aztecs led to the initiation of an impressive salvage and preservation project (see box overleaf). Other examples of successful preservation of archaeological remains in towns include the Roman

CONSERVATION: THE GREAT TEMPLE OF THE AZTECS IN MEXICO CITY



When the Spanish Conquistadors under Hernán Cortés occupied the Aztec capital, Tenochtitlan, in 1521, they destroyed its buildings and established their own capital, Mexico City, on the same site.

In 1790 the now-famous statue of the Aztec mother goddess Coatlicue was found, and also the great Calendar Stone, but it was not until the 20th century that more systematic archaeological work took place.

Various relatively small-scale excavations were carried out on remains within the city as they came to light in the course of building work. But in 1975 a more coherent initiative was taken: the institution by the Department of Pre-Hispanic Monuments of the Basin of Mexico Project. Its aim is to halt the destruction of archaeological remains during the continuing growth of the city. In 1977, a Museum of Tenochtitlan Project was begun, with the aim of excavating the area where remains of what appeared to be the Great Temple of the Aztecs had been found in 1948. The project was radically transformed early in 1978 when electricity workers discovered a large stone carved with a series of reliefs.

The Department of Salvage Archaeology of the National Institute of Anthropology and History took charge. Within days, a huge monolith, 3.25 m (10 ft 7 in) in diameter, was revealed depicting the dismembered body of the Aztec goddess Coyolxauhqui who, according to myth, had been killed by her brother, the war god Huitzilopochtli.

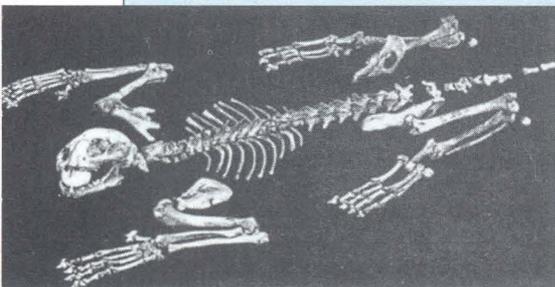
The Museum of Tenochtitlan Project, under the direction of Eduardo Matos Moctezuma, became the Great Temple Project, which over the next few years brought to light one of the most remarkable archaeological sites in Mexico.

No one had realized how much would be preserved of the Great Temple. Although the Spaniards had razed the standing structure to the ground in

1521, this pyramid was the last of a series of re-buildings. Beneath the ruins of the last temple the excavations revealed those of earlier temples.

In addition to these architectural remains was a wonderful series of offerings to the temple's two gods, Huitzilopochtli and the rain god Tlaloc – objects of obsidian and jade, terracotta and stone sculptures, and other special dedications, including rare coral and the remains of a jaguar buried with a ball of turquoise in its mouth.

A major area of Mexico City has now been turned into a permanent museum and national monument. Mexico has regained one of its greatest pre-Columbian buildings, and the Great Temple of the Aztecs is once again one of the marvels of Tenochtitlan.



The skeleton of a jaguar from a chamber in the fourth of seven building stages of the Great Temple. The jade ball in its mouth may have been placed there as a substitute for the spirit of the deceased.





The Great Temple excavation site, with stairways visible of successive phases of the monument. The building was originally pyramidal in form, surmounted by twin temples to the war god Huitzilopochtli and the rain god Tlaloc. Conservation work is in progress here on the Coyolxauhqui stone, visible under scaffolding (left of center).



The Great Stone, found in 1978, provided the catalyst for the Great Temple excavations. The goddess Coyolxauhqui is shown decapitated (left, a detail of her head) and dismembered – killed by her brother, the war god Huitzilopochtli.

mosaic in Cologne, Germany; Viking Age timber buildings at York (see Chapter 13); the Roman and medieval foundations in front of Notre Dame in Paris; and the Lower Paleolithic camp of Terra Amata preserved in a museum under an apartment block in Nice, on the French Mediterranean coast.

Agricultural Damage. Although most countries keep some control over the activities of developers and builders, the damage to archaeological sites from farming is much more difficult to assess. The few published studies make sober reading. One of the best, *The Past Under the Plough* (ed. J. Hinchliffe and R.T. Schadla-Hall, 1980), shows that in Britain even those sites that are notionally protected – by being listed on the national Schedule of Ancient Monuments – are not, in reality, altogether safe. The position may be much better in Denmark and in certain other countries, but elsewhere only the most conspicuous sites are protected. The more modest field monuments and open settlements are not, and these are the sites that are suffering from mechanized agriculture.

Damage from Looting and the Market in Illicit Antiquities. The saddest kind of damage is that by clandestine excavators, concerned only to find objects of high saleable value, and quite untroubled by the loss of information when the finds are divorced from their original context. Many of these looters use metal detectors, even on legally protected sites.

One such *clandestino*, Luigi Perticarari, a robber in Tarquinia, published his memoirs in 1986 (*I Segreti di un Tombarolo*) and makes no apology for his trade. He has more first-hand knowledge of Etruscan tombs than any archaeologist, but his activity destroys the chance of anyone sharing that knowledge. He claims to have emptied some 4000 tombs dating from the 8th to the 3rd centuries BC in the past 30 years. So it is that, while the world's store of Etruscan antiquities in museums and private collections grows larger, our knowledge of Etruscan burial customs and social organization does not.

The same is true for the remarkable marble sculptures of the Cycladic islands of Greece, dating to around 2500 BC. We admire the breathtaking elegance of these works in the world's museums, but we have little idea of how they were produced or of the social and religious life of the Cycladic communities that made them. Again, the contexts have been lost.

In the American Southwest, 90 percent of the Classic Mimbres sites (c. AD 1000) have now been looted or destroyed (see box, overleaf). In southwestern Colorado, 60 percent of prehistoric Anasazi sites have been

DESTRUCTION AND RESPONSE: MIMBRES



One of the most melancholy stories in recent archaeology is that of Mimbres. The Mimbres potters of the American Southwest created a unique art tradition in the prehistoric period, painting the inside of hemispherical bowls with vigorous animal and human forms. These bowls are now much prized by archaeologists and art lovers. But this fascination has led to the systematic looting of Mimbres sites on a scale unequalled in the United States, or indeed anywhere in the world.

The Mimbres people lived along a small river, the Rio Mimbres, in mud-built villages, similar in some respects to those of the later Pueblo Indians. Painted pottery began, as we now know, around AD 550, and reached its apogee in the Classic Mimbres period, from about AD 1000 to 1130.

Systematic archaeological work on Mimbres sites began in the 1920s, but it was not in general well

published. Looters soon found, however, that with pick and shovel they could unearth Mimbres pots to sell on the market for primitive art. Nor was this activity necessarily illegal. In United States law there is nothing to prevent excavation of any kind by the owner on private land,



A masked coyote dancer is the subject of this fine Mimbres bowl, dating from AD 1100–1250.

and nothing to prevent the owner permitting others to destroy archaeological sites in this way.

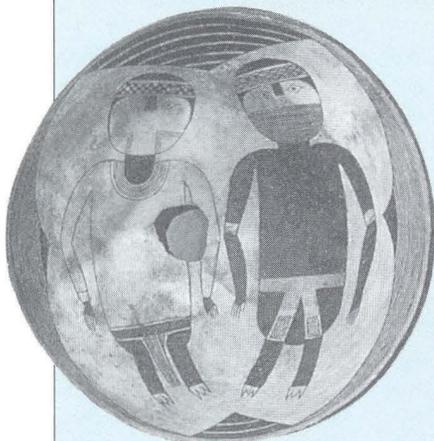
In the early 1960s, a method of bulldozing Mimbres sites was developed which did not destroy all the pottery. The operators found that by controlled bulldozing they could remove a relatively small depth of soil at a time and extract many of the pots unbroken. In the process sites were of course completely destroyed, and all hope of establishing an archaeological context for the material was lost.

Since 1973 there has at last been a concerted archaeological response. The Mimbres Foundation, under the direction of Steven LeBlanc, was able to secure funding from private sources to undertake excavations in the remains of some of the looted

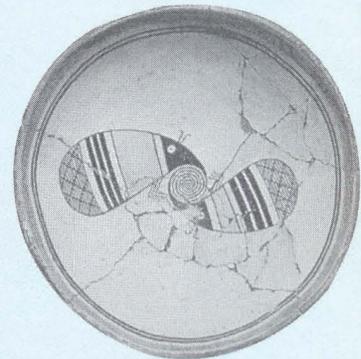
sites. They also made good progress in explaining to the owners of those sites how destructive this looting process was to any hope of learning about the Mimbres past. From 1975 to 1978 a series of field seasons at several partially looted sites succeeded in establishing at least the outlines of Mimbres archaeology, and in putting the chronology upon a sure footing.

The Mimbres Foundation also reached the conclusion that archaeological excavation is an expensive form of conservation, and decided to purchase a number of surviving (or partially surviving) Mimbres sites in order to protect them. Moreover, this is a lesson that has been learned more widely. Members of the Mimbres Foundation have joined forces with other archaeologists and benefactors to form a national organization, the Archaeological Conservancy. Several sites in the United States have now been purchased and conserved in this way. The story thus has, in some sense, a happy ending. But nothing can bring back the possibility of really understanding Mimbres culture and Mimbres art, a possibility which did exist at the beginning of this century before the wholesale and devastating looting.

Unfortunately, in other parts of the world there are similar stories to tell.



Funerary bowl of the 10th century AD. The figures may be male and female, or life and death. The "kill" hole at the base allowed the object's spirit to be released.



Animalian forms were a popular Mimbres subject, as in this bowl with its depiction of geometric-patterned insects.

vandalized. Pothunters work at night, equipped with two-way radios, scanners, and lookouts. They can be prosecuted under the present legislation only if caught red-handed, which is almost impossible.

The *huaqueros* of Central and South America, too, are interested only in the richest finds, in this case gold – whole cemeteries are turned into fields of craters, with bones, potsherds, mummy wrappings, and other objects smashed and scattered. The remarkable tombs excavated between 1987 and 1990 at Sipán, northwest Peru, of the Moche civilization, were rescued from the plunderers only by the persistence and courage of the local Peruvian archaeologist, Walter Alva.

England, too, has its well-organized gangs of professional treasure hunters. At least three gangs are said to exist in the region of East Anglia alone, feeding the demand from international collectors for antiquities. Nor are the depredations of looters restricted to unpublished sites and unknown finds. Famous Etruscan wall paintings from tombs excavated and published long ago are hacked off and sold in fragments, and the same is true of many Egyptian reliefs. The destruction to Maya stelae is notorious: they are cut into pieces using power saws so as to be more easily transportable. Reliefs in French megalithic tombs have been damaged in this way. Nor are the museums themselves free from such predation. In 1985, the National Museum of Anthropology in Mexico City was raided and some of its most precious smaller objects stolen – thankfully nearly all have been recovered. Many other museums have been raided in recent years, objects often being apparently stolen to order rather than for open sale. Naples Museum has even had to close for a while, because thousands of coins and other objects have disappeared from its storerooms where less than half the stock is catalogued.

The antiquities market in Europe and North America must ultimately take a good deal of the blame for this state of affairs, since antiquities bought without reliable provenience may well have been looted (see box, overleaf). The widespread looting of archaeological sites to provide saleable goods for the antiquities trade is as old as archaeology itself. It certainly flourished in Renaissance Italy, and grew there with the discovery of Pompeii and Herculaneum and of the tombs of the Etruscans, with their abundant Greek painted vases.

In the 20th century, antiquities were seized as the booty of war, and Hitler and Goering, when they plundered the museums of Italy, were only repeating what Napoleon had done more than a century earlier in transporting antique statues to the Louvre. The gold of Troy, which Schliemann had given to the Berlin Museum, was looted by the Russians at the end of

World War II and came to light in Moscow (where it still remains) in 1994.

There is abundant evidence that looting is continuing not only in the homelands of the ancient civilizations – Greece, Turkey, Italy, Iraq, China, etc. – but also in many other parts of the world. Police and heritage experts all over the world now consider the theft and smuggling of artworks and antiquities to be second in scale only to the drugs trade in the world of international crime. Despite the threat of execution for offenders, thieves ransacked 40,000 ancient tombs in China in 1989 and 1990 alone. In 1997, Chinese customs seized more than 11,200 smuggled antiquities; conversely, in 1998, 3000 antiquities discovered by British Customs in 1994 were returned to China. In Mesoamerica and South America armed gangs are involved, in Southeast Asia, notably Cambodia, there are links with drug dealing and gun-running. Sadly, looting has now become rampant in West Africa, for instance in Mali, where terracotta figures of the Djenné culture have been looted from many sites, while hardly any have been properly recovered in systematic archaeological excavations.

Public and national morality in these matters has changed significantly, and many nations now recognize the UNESCO Convention of 1970 prohibiting the illicit import and export of antiquities and works of art. For instance, the United States has ratified the Convention, and looted antiquities have been returned to the Mexican and Peruvian governments under its provisions. Britain has not yet ratified the Convention but has passed legislation initiated by the European Community which conforms with some of its provisions. As a result, some of the major auction houses continue to sell antiquities which have been illicitly excavated and exported in those circumstances when to do so is not against British law. On recent occasions they have, despite the protests of the Greek government, publicly sold Cycladic figurines from Keros, a site looted after World War II. (As already noted, it is a melancholy fact that nearly all the larger Cycladic sculptures in existence are from illicit excavations, and as a result almost nothing is known about their original use or significance.) But there is progress. After a television exposé and an ensuing scandal in 1997, the auction house Sotheby's conducted an internal investigation and decided to end their antiquities sales in London.

Also in 1970, the University Museum in Philadelphia, shortly after acquiring artifacts in doubtful circumstances, pronounced the "Philadelphia Declaration." This stated that it would no longer acquire or accept antiquities without a reliable and honest provenience. In Britain, the British Museum and other

“COLLECTORS ARE THE REAL LOOTERS”

So far as illicit antiquities are concerned, the spotlight has turned upon museums and private collectors. Many of the world's great museums, following the lead of the University Museum of Philadelphia in 1970, now decline to purchase or receive by gift any antiquities which cannot be shown to have been exported legally from their country of origin. But others, such as the Metropolitan Museum of New York, have in the past had no such scruples: Karl Meyer in his disquieting survey *The Plundered Past* (1974) quotes Thomas Hoving, at that time Director of the museum: “We are no more illegal in anything we have done than Napoleon was when he brought all the treasures to the Louvre.” The Getty Museum, with its great wealth, has a heavy responsibility in this, and at present its policies are not entirely clear.

Museums like the Metropolitan Museum of Art, which in 1990 put on display the collection of Shelby White and Leon Levy, and the J. Paul Getty Museum which in 1994 exhibited (and then acquired) that of Barbara Fleischman and the late Lawrence Fleischman – both collections with a high proportion of antiquities of unknown provenience – must share some responsibility for the prevalence of collecting in circumstances where much of the money paid inevitably goes

to reward dealers who are part of the ongoing cycles of destruction, and thus ultimately the looters. And the responsibility borne by collectors who, in buying such works, indirectly fund the looting process, is now being recognized. Ricardo Elia has argued that “Collectors are the real looters.”

The exhibition of the George Ortiz collection of antiquities at the Royal Academy in London in 1994 excited controversy and was felt by many archaeologists to have brought no credit to the Royal Academy. The art critic Robert Hughes has correctly observed that “Part of the story is the renewed cult of the collector as celebrity and of the museum as spectacle, as much concerned with show business as with scholarship.”

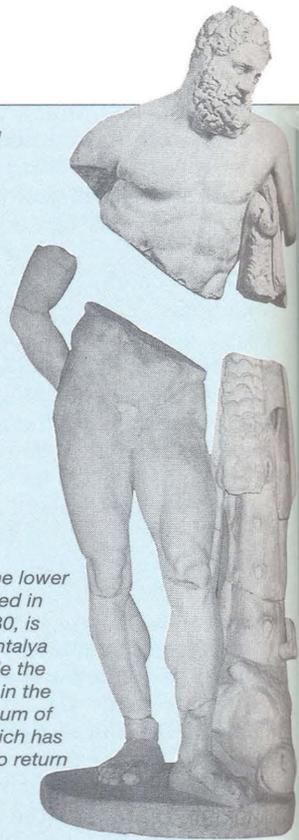
It remains a real paradox that collectors, who often have a real feeling for the antiquities which they amass, are ultimately funding the looting which is the main threat to the world's archaeological heritage.

Recent cases include: The “Weary Herakles” Two parts of a Roman marble statue of the 2nd century AD are now separate. The lower part was excavated at Perge in Turkey in 1980 and is in the Antalya Museum, while the joining upper part was purchased by Leon Levy shortly

The “Weary Herakles”: the lower part, excavated in Turkey in 1980, is now in the Antalya Museum while the upper part is in the Boston Museum of Fine Arts, which has so far failed to return it to Turkey.

afterwards, and is currently on view at the Boston Museum of Fine Arts, to which Levy has given a half share. The Museum and Levy decline to return the piece to Turkey.

The Getty Kouros The Archaic Greek statue of the 6th century BC was purchased by the J. Paul Getty



A splendid silver dish (left) from the looted Sevso Treasure, one of the major scandals in the recent story of illicit antiquities. (Above) Miniature bronze shields recovered (and now in the British Museum) from the Salisbury Hoard, a massive treasure looted by metal detectorists in 1985.

Museum in 1983 with dubious documentation. Its authenticity is also now widely questioned.

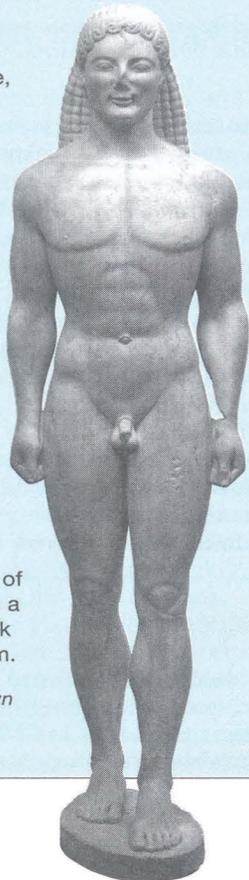
The Lydian Treasure Illicitly excavated in Turkey, and bought privately by the Metropolitan Museum of Art, New York, between 1966 and 1970, but not exhibited publicly until 1984, this important burial group of silver vessels from the 6th century BC was recovered by the Republic of Turkey in 1990, after action in the New York court.

The Sevso Treasure A splendid late Roman assemblage of silver vessels was acquired as an investment by the Marquess of Northampton, but was subsequently claimed in a New York court action by Hungary, Croatia, and Lebanon. Possession was awarded to Lord Northampton, who then found the treasure unsaleable and sued his former legal advisors in London for their advice at the time of purchase; an out-of-court settlement, reportedly in excess of £15 million, was agreed on confidential terms in 1999.

The Aidonia Treasure The treasure, an important collection of Mycenaean antiquities illicitly excavated from tombs in Greece and illegally exported to the USA, was advertised for sale by the New York dealer Michael Ward for \$1.5 million in 1993, but was returned to Greece following Greek government action in the New York court.

The Salisbury Hoard A hoard of bronze axes, daggers, and other tools forming a massive assemblage of Bronze Age metalwork was illegally excavated by “nighthawks” (clandestine metal detectorists working at night) near Salisbury in southwest England in 1985. Much of the material was later recovered in a police raid following detective work by Ian Stead of the British Museum.

The Getty kouros, a statue of unknown provenience bought by the Getty Museum in 1985.



members of the Museums’ Association now refuse to buy objects without a reliable pedigree. But it has to be said that establishing such a pedigree for certain is no easy matter.

Developers, farmers, and looters are by no means the only threats to archaeological sites. Participants in wars have wrought untold damage over the centuries, and continue to do so. The great Roman site of Baalbek, Lebanon, was the base of the Hizbollah, one of the warring factions in the region; since hostilities ceased, archaeologists have been taking stock of the mass looting of that country’s antiquities. Thousands of tons of artifacts were stolen and secretly shipped out by militiamen and unscrupulous dealers; many have turned up on open sale around the world. Angkor Wat in Cambodia deteriorated rapidly during the conflicts that took place in that country, thanks to the prolonged interruption of maintenance, as well as massive looting during Pol Pot’s regime. A similar phenomenon has been observed in both Afghanistan and adjoining areas in Pakistan, where Buddhist sculptures and associated artifacts dating to the Kushan period (first half of the 1st millennium AD) have been looted from both archaeological sites and the Kabul Museum, following the withdrawal of the Russians and the subsequent civil war.

Care of Protected Sites

Even though many archaeological sites now receive protection of one sort or another in many countries, the problems do not end there.

In Egypt, for example, many monuments are crumbling through a combination of salt in the building stone and moisture from the ground and air. At Thebes the tomb of Queen Nefertari – the wife of Ramesses II, who lived about 3200 years ago – has magnificent wall paintings that have been pushed off the walls by the build up of salt behind the plaster. A group of tourists in a tomb for an hour can significantly raise the humidity, and such fluctuations encourage more crystallization of salt. By 1950, Nefertari’s tomb had deteriorated so much that only dignitaries were allowed in, and by 1983 it was fully closed. Restored at a cost of \$2 million by the Getty Conservation Institute, it reopened in 1992, though only to specialists; however, many other famous Egyptian tombs are cracking or in danger of collapse, while in 1994 devastating floods inundated many, including that of Tutankhamun.

Egypt’s open-air sites are just as vulnerable. The Nile Valley’s climatic extremes make dew condense on the stones on cold nights, which dissolves the salts near the surface. The dew evaporates during the day and the

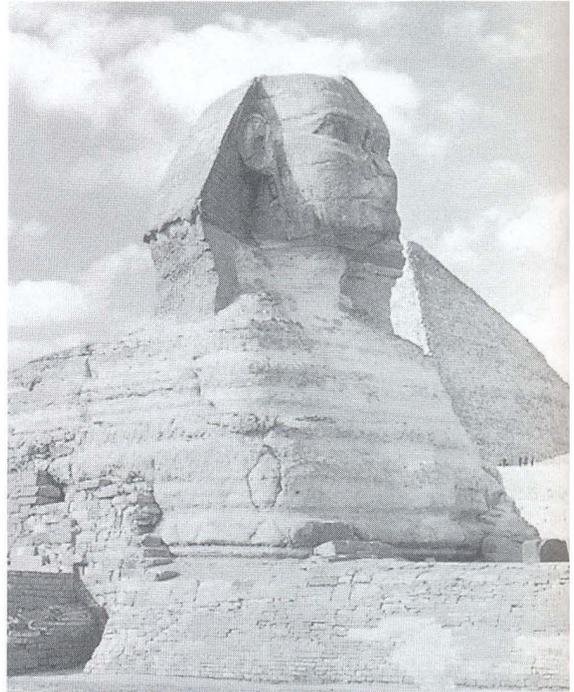
PART III The World of Archaeology

re-forming salt crystals result in crumbling and flaking. The Sphinx at Giza, 4600 years old, is crumbling for this reason and because sewage water from a Cairo slum is seeping into the monument's structure. A fragment recently fell from the Sphinx's right shoulder. The world's best restorers were summoned, but not one of their 16 conservation reports claims the deterioration is reversible. An important program of conservation, however, was completed in 1999.

The rescue and resiting of the temples of Abu Simbel and Philae, which would have been drowned due to the building of the Aswan Dam in 1970, is still a great international triumph of conservation. The annual flooding of certain temples by the Nile was halted; but the permanent availability of water allowed increased irrigation, which has raised the water table. There is thus a constant supply of moisture containing destructive impurities that can seep into the monuments.

There are several remedies for these problems in Egypt. Visitors to the tombs must be banned or strictly controlled, as in the tomb of Nefertari or the Paleolithic decorated caves in western Europe. Air-conditioning should be installed in the tombs to control the temperature and humidity, and a plastic barrier placed between the walls and the plaster. Open-air monuments require pumps to lower the underground water level, and trenches filled with gravel around the bases of walls to stop water seeping into the stone. Finally, silicone compounds can be applied to the stone – these penetrate deeply and bond its molecules together. But all of this will cost a great deal of money.

Egypt is not alone in experiencing difficulties in the care of its ancient monuments. Mohenjodaro, the great early city in Pakistan, is under threat from both a rising water table and corrosion by salts, as well as from erosion by the Indus river. Since 1922 the water table has risen from 8 m (26 ft) below the surface to 4–1.5 m (13–5 ft), depending on the season. Pumping and draining are needed to lower it again, and the walls need cleaning to leach out the accumulated salts. An international conservation campaign is being run by UNESCO, but again the task is a costly one. In Tanzania, after 13 years of neglect, the unique trail of hominid footprints at Laetoli (p. 433) was recently discovered to be under threat from erosion, torrential



The Sphinx at Giza: one of the many monuments in Egypt under threat from encroaching moisture and corrosive salts.

rain and tree roots – half of the reburied 70 footprints were destroyed or damaged – but the Getty Institute has managed to stabilize and preserve the remainder, reburying the trail under geotextiles to prevent root penetration and erosion. In Europe, car pollution, harsh weather and swift droppings have combined to erode and crack the Roman aqueduct in Segovia, Spain, while the marble of the Acropolis in Athens is under attack not only from pollution but also from climatic change which causes a black fungus to grow deep within the stone.

The management of protected sites, therefore, in such a way that natural forces and tourism do not inflict damage, and yet that the public is allowed some sort of access, is now a complex and increasingly specialized field in its own right.

WHO INTERPRETS AND PRESENTS THE PAST?

Some of the ideological questions raised by the public “presentation” of the past were noted earlier: nationalist aims, sectarian objectives, and political agendas are often served by the partisan interpretation and presen-

tation of what is alleged to be the cultural heritage. But there are other issues here beside nationalistic or religious sentiments. In Chapter 1, some of the concerns of feminist archaeology were touched on. And of course

one of the reasons that male bias leads to androcentric views in so much archaeological writing is that the majority of the writers, and indeed the majority of professional archaeologists, are men. In the academic world today, while women students in general do have the opportunities which they were formerly denied, it remains the case that there are far fewer women than men among the teaching staff. Up till now – and this is broadly true for the museum profession also – the past has generally been interpreted by men.

Victorian views and interpretations, or at least 19th-century ones, persist in many areas of interpretation and display. This is true in the West and, as noted earlier, most archaeological displays in China are still based almost directly upon the writings of Marx and Engels a century ago.

And while some colonialist and racist preconceptions have been rooted out, more subtle assumptions remain. Minoan Crete, for instance, is still often presented as it appeared to its great discoverer Sir Arthur Evans nearly a century ago. As John Bintliff observes (1984, 35): “Evans’s revitalization of a wondrous world of peaceful prosperity, stable divine autocrats and a benevolent aristocracy, owes a great deal to the

general political, social and emotional ‘Angst’ in Europe of his time.”

In museum displays, moreover, it is aesthetic concerns that often predominate. This can easily lead to an approach where ancient artifacts are displayed in a situation where they are divorced from all historical context, as “works of art” – thus encouraging a somewhat sanitized quest for beauty (“In Pursuit of the Absolute” was the title of a 1994 public exhibition of the Ortiz collection of largely unprovenanced antiquities). This outlook, where the archaeological context is disregarded, can easily lead on to the ruthless acquisition of “works of art” and to a disregard of ethical standards in archaeology (see box, pp. 556–57).

Museum Studies has, over the past two decades, very properly become a well-established discipline in which the great complexity of the task of interpreting and displaying the past is now being recognized. A few years ago it was estimated that there are now 13,500 museums in Europe, 7000 in North America, 2800 in Australia and Asia, and perhaps 2000 in the rest of the world. But who visits these museums, and at whom are the displays targeted? These are questions which are now systematically being addressed.

ARCHAEOLOGY AND PUBLIC UNDERSTANDING

Archaeologists have a duty, both to colleagues and to the general public, to explain what they are doing and why. Fundamentally this means publishing and disseminating discoveries so that the results are available to other scholars, and can be enjoyed and understood by that wider public which has usually paid the bill for the work, however indirectly. In some cases, such as the successful *Earthwatch* scheme, amateur enthusiasts provide the willing hands and financial support without which many projects could not survive.

Publish or Be Damned

We have already remarked several times in this book that all excavation is to a certain extent destruction – and we make no apology for repeating the point in our closing pages. All excavators have an obligation to record their findings fully and publish them quickly. In practice few do so, or at any rate did so in the past.

Estimates vary, but it has been claimed by the British archaeologist Peter Addyman that up to 60 percent of modern excavations remain unpublished after 10 years, and it is reckoned that only 27 percent of the digs funded by America’s National Science Foundation since 1950 have ever reached print. In Israel, for

example, it is reckoned that about 39 percent of excavations carried out in the 1960s, 75 percent of those in the 1970s, and an amazing 87 percent of those in the 1980s have yet to produce a site report. There are many reasons for this appalling record. Archaeologists can be lazy or incompetent like people everywhere. They often prefer to dig new sites rather than devote time to laborious post-excavation analysis and publication. They also often fail to allocate a large enough proportion of a project’s budget for post-excavation work. Work in the field may sometimes represent only 10 percent of the project’s total expenditure. Underwater teams, for example, need to be aware that for every month of diving, about two years need to be spent on conserving, recording, and publishing.

Whatever the reason, deliberate non-publication is a form of theft – in fact a double theft, involving the misuse of other people’s money and the withholding of unique information. Some archaeologists compound the felony by hoarding finds, which they consider to be their scientific property, deliberately preventing colleagues from gaining access to the material or from publishing research connected with the site.

One major scandal concerned the Dead Sea Scrolls, the oldest known Hebrew books, written about 2000

ARCHAEOLOGY AND THE INTERNET

The frenetic expansion of the Internet, especially in the guise of the WorldWideWeb (WWW) and e-mail, is changing the way archaeological information is disseminated and the way archaeologists communicate with each other and with the public. This has implications for the future of archaeology – its practice and study, and the control of information.

The WorldWideWeb

Traditionally, archaeological information has been delivered in printed formats. But inevitably such publications, produced for a small, specialized market are often expensive and difficult to obtain. The material in them – text, photographs, plans, drawings, and databases (more often than not already gathered and stored in digital formats) – is ideally suited for electronic publication, particularly on the WWW, the area of the Internet which supports graphics and audio. There it can be presented to a worldwide audience, by anyone with the basic skills and equipment necessary, free from many of the restrictions and costs associated with traditional printing.

A daunting and ever-increasing amount of archaeological material is now available on the WWW, generally free of charge for those who have the equipment to access it. Ranging from site reports to virtual museums, interactive educational resources to digital database archives, this electronic library now constitutes an essential research facility. However, the WWW has developed so rapidly, and in such an unrestricted way, that scholars in particular have voiced concerns about the quality and transient nature of much of the material available.

Feeding an archaeological key-word into a WWW search engine can produce hundreds of thousands of potential information sources to check, so a better place to start is at a **Virtual Library**, which lists and provides access to relevant resources (including news groups and mail lists).

Although many archaeological virtual libraries have been created, the official one for archaeology worldwide is *ArchNet* (archnet.uconn.edu). Maintained by the University of Connecticut, it catalogues thousands of links, according to geographical region and subject. Academic electronic journals and publishers, academic departments, and museums are also listed. The other virtual library for European archaeology, *ARGE* (Archaeological Resource Guide to Europe), divides information by country, subject, or period, and visits and evaluates Web sites before including them. Both facilities offer multilingual access and search facilities.

The Websites of major archaeological institutes – the Archaeological Institute of America or the Council for British Archaeology, for instance – or academic departments, are also excellent places to begin, since they usually offer extensive lists of links to other sites of interest.

A number of established journals have a Web presence, which may range from basic subscription or contact details to whole issues on-line. Many provide indexes of printed volumes, useful for references and often accompanied by tasters and illustrations from selected articles. In recent years electronic archaeological journals, like *Internet Archaeology*, and virtual conference arenas have been launched which aim to provide scholarly information, while making the most of the technical possibilities and sense of immediacy of the WWW.

As yet there seems no danger of pixels totally replacing print. Far from making traditional archaeological publications obsolete, the Web has made it easier, and cheaper, to find and to buy printed works from all over the world, since it hosts gigantic “virtual” bookshops. These stock millions of titles, both popular and academic, which may be otherwise very difficult to get hold of. Ordered over the Internet, the books are delivered to your door.

E-mail

Another aspect of the Internet, e-mail, has made a big impact on archaeology. Instant, cheap, and reliable, it enables archaeologists to communicate anything they might use paper mail or the telephone for: ideas, gossip, data, references, requests, papers. Ease of communication means collaborations are easier, new projects possible, and international barriers are dissolved. Many academic institutions list staff e-mail addresses on their WWW pages, which presents students in particular the opportunity to approach, in a very immediate way, scholars they may never have the chance to meet.

It is also possible to subscribe to a growing number of archaeological e-mail communities – known as “discussion groups” (or “mailing lists”) and “newsgroups.” Discussion groups have their own e-mail address: anything that someone sends to that address is distributed to all the people on the list, sometimes via a “moderator” (or editor). This creates a conversational environment where hot topics can be discussed, ideas floated, contacts chased, jobs advertised, references exchanged, and bibliographies created. There are specific lists for virtually all aspects of archaeology, in a number of languages. Archives of previous contributions and discussion “threads” are usually available to search through on the WWW. These discussion forums are generally populated by educated and well-informed contributors, both amateur and professional, from around the world. They are immensely useful to the archaeological community.

Newsgroups, operated through Usenet news servers, are another way to have running e-mail conversations. Contributed “articles” are stored at a single location, and grouped according to topic “threads” to be retrieved at the user’s wish. Archaeological newsgroups are a good place to track discussions both serious and popular, and sometimes cover more “fringe” issues than the mailing lists.

The Democratization of Knowledge
 As Ian Hodder has pointed out (*Internet Archaeology*, Issue 6), the speed, range, and low cost of the Internet have created new possibilities for dissemination and participation in knowledge construction and acquisition. He states that the website for Çatalhöyük (see box pp. 44–45) has rapidly become the most important way of publishing the archaeological site, because it is widely read and can be frequently edited and renewed. Electronic provision of site archives provides interested parties access to raw data from which to form their own conclusions. The website also places the views of specialists and the public side by side, opening up real possibilities for “democratization, participation and erosion of boundaries between specialist and popular archaeology.” This could be seen as part of the overall process of a shift from a hierarchical to a networked structure of archaeological knowledge, although there is clearly a danger of excluding the un-networked.

For the growing constituency with access to the Internet, however, there

exists a vast new world of electronic archaeology there to be explored.

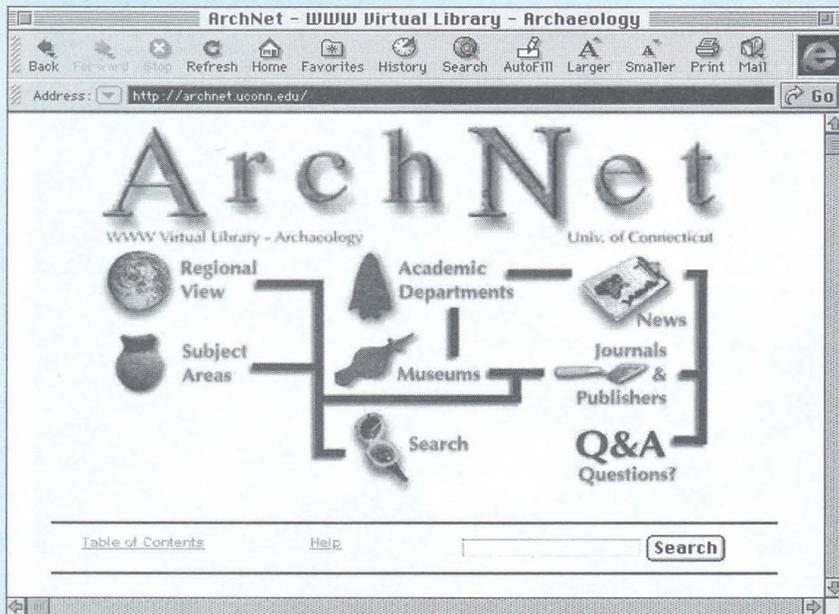
Archaeological Websites

The number of sites is huge and increasing. There is a danger that some disappear or change address, but this list may provide some useful sites:

- Archaeology on the Net**
www.serve.com/archaeology
- Yahoo! Anthropology and Archaeology**
dir.yahoo.com/Social_Science/Anthropology_and_Archaeology/Archaeology/
- European Megalithic Monuments**
www.stonepages.com/
- Underwater Archaeology**
www.pophaus.com/underwater/
- Mediterranean Archaeology**
rome.classics.lsa.umich.edu/
- Zooarchaeology**
borealis.lib.uconn.edu/
- World Wide Ancient Egypt**
www.geocities.com/~amenhotep/wwael/
- Egyptology Links**
guardians.net/egypt
www.newton.cam.ac.uk/egypt
- Mesoamerican Archaeology**
copan.bioz.unibas.ch/meso.html
- Aboriginal Studies**
www.ciolek.com/WWWWVL-Aboriginal.html

Journals:

- Andean Past**
kramer.ume.maine.edu/~anthrop/AndeanP.html
- Historical Archaeology**
sha.org/sha_ha.htm
- Radiocarbon**
www.radiocarbon.org/
- Journal of Near Eastern Studies**
www.journals.uchicago.edu/JNES/home.html
- Bulletin of the Asia Institute**
bulletinasiainstitute.org/
- Athena Review**
www.athenapub.com/
- Biblical Archaeology**
www.asor.org/
- Archaeology Ireland**
www.kerna.ie/archaeology/
- Discover Archaeology**
www.discoveringarchaeology.com/
- Anistorian**
users.hol.gr/~dilos/anistor/cover.htm
- American Journal of Archaeology**
classics.lsa.umich.edu/AJA.html
- Bulletin of the American Schools of Oriental Research**
www.asor.org/
- Organizations and Societies:**
- Canadian Archaeological Association**
www.canadianarchaeology.com/
- Center for American Archeology**
www.caa-archeology.org/
- American Oriental Society**
www.umich.edu/~aos/
- American Schools of Oriental Research**
www.asor.org
- Other:**
- Underwater Archaeology**
www.adp.fsu.edu/uwarch.html
- Virtual Museum of Nautical Archaeology**
nautarch.tamu.edu/ina/vm.htm
- Voyage into Archaeology**
ted.educ.sfu.ca/people/staff/jmd/archaeology/voyage1.htm
- Archaeological Sampling Strategies**
archnet.uconn.edu/archnet/topical/theory/sampling/sampling.html
- Collapse: Why do civilisations fall?**
www.learner.org/exhibits/collapse/
- Dating Techniques**
emuseum.mankato.msus.edu/archaeology/dating/index.shtml/shtml
- Archaeological Fieldwork Server**
www.sscnet.ucla.edu/iaof/afs/testpit.html
- Satellite Remote Sensing and Archaeology**
ourworld.compuserve.com/homepages/mjff/homepage.htm
- The Center for Archaeoastronomy**
www.wam.umd.edu/~tlaloc/archastro/index.html
- Arctic Circle**
arcticcircle.uconn.edu/



The home page of the ArchNet website.

ARCHAEOLOGY AT THE FRINGE

In the later years of the 20th century “Other Archaeologies” grew up at the fringe of the discipline, offering alternative interpretations of the past to those generally formulated in academic discourse. To the scientist these seem fanciful and extravagant – manifestations of a post-modern age in which horoscopes are widely read, New Age prophets preach alternative life styles, and when many members of the public are willing to believe that “corn circles” and megalithic monuments are alike the work of aliens. Many archaeologists label such populist approaches as “Pseudoarchaeology,” and place them on a par with archaeological frauds such as Piltdown Man or Glouzel, where deliberate deception can be demonstrated or inferred.

But how does an archaeologist persuade the self-styled Druids who perform their rituals at Stonehenge at the summer solstice (if the governing authority, English Heritage, allows them access) that their beliefs are not supported by archaeological evidence? This issue troubles postprocessual archaeologists, with their relativist position, and brings us back to the central question of this chapter: “Whose Past?” It is not clear that one should question the reality of the Dreamtime of the Australian Aborigines, even if aspects of their belief effectively clash with current scientific interpretations. Where does one distinguish between respect for deeply held beliefs and the role of the archaeologist to inform the public and to dismiss credulous nonsense?

One of the most popular and durable myths concerns a “lost Atlantis,” a story narrated by the Greek philosopher Plato in the 5th century BC, and attributed by him to the Greek sage Solon, who had visited Egypt and consulted with priests, the heirs to a long religious and historical tradition. They told him of a legend of the lost continent

beyond the Pillars of Hercules (the modern Straits of Gibraltar), hence in the Atlantic Ocean, with its advanced civilization, which vanished centuries earlier “in a night and a day.” In 1882 Ignatius Donnelly published *Atlantis, the Antediluvian World*, elaborating this legend. His work was one of the first to seek a simple explanation of all ancient civilizations of the world by a single marvellous means. Such theories often share characteristics:

1 They celebrate a remarkable lost world whose people possessed many skills surpassing those of the present.

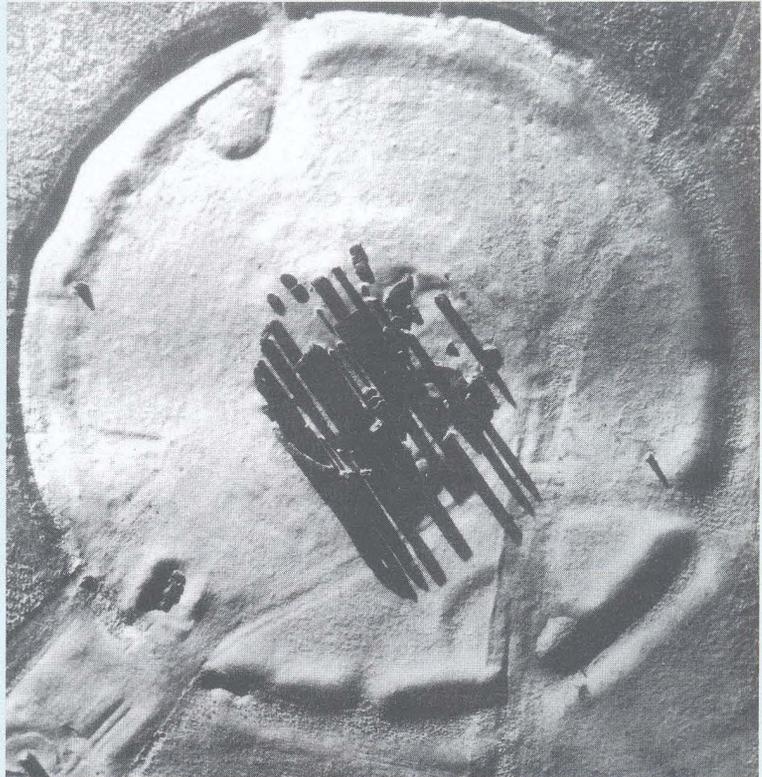
2 They account for most of the early accomplishments of prehistoric and early state societies with a single

explanation: all were the work of the skilled inhabitants of that lost world.

3 That world vanished in a catastrophe of cosmic proportions.

4 Nothing of that original homeland is available for scientific examination, nor are any artifacts surviving.

The basic structure of Donnelly’s argument was repeated with variants by Immanuel Velikovsky (meteors and astronomical events) and recently by Graham Hancock (who sites his lost continent in Antarctica). A popular alternative, elaborated with great financial profit by von Däniken, is that the source of progress is outer space, and that the advances of early civilizations are the work of aliens visiting earth. Ultimately, however, all such theories trivialize the much more remarkable story which archaeology reveals – the history of humankind.



Stonehenge has generated innumerable theories about its origins and meaning. Several groups, including Druids and New Agers claim it as a monument central to their beliefs.

years ago. The first scrolls were discovered in Qumran, Palestine, in 1947, but most of the thousands of fragments found still remained unpublished (by the editorial team appointed in 1953 to decipher and edit the material) in 1991, when the monopoly they exercised over the material was breached. In that year microfilm of all texts, published or unpublished, was made available to all bona fide scholars by an American library which had obtained a full set of negatives. It was generally felt that a “scholarly closed shop,” denying others legitimate access to important material for an excessive length of time, could no longer be tolerated.

In a controversial comment after the death of the Romano-British specialist Ian Richmond, Mortimer Wheeler lamented that “not more than a quarter of his productive fieldwork can now ever see the light of day ... in spite of the constant entreaties of his colleagues he obstinately declined to keep pace with his digging by the normal method of the interim report.” A deceased scholar’s disciples can attempt to put something together from the notes and finds left behind – should either survive – but this is a poor substitute for a considered account by the original excavator.

What can be done? It has been suggested that each country should issue a list of those sites whose publication is long overdue, together with the identity of the excavators. In Britain, English Heritage has devoted a high proportion of its archaeological budget to the analysis and publication of old as well as new excavations. However, measures are required to ensure better conduct in the future. Professional bodies such as the Society of Professional Archaeologists in the United States and the Institute of Field Archaeologists in Britain now require their members to abide by a Code of Conduct, which stipulates that continuing membership depends among other things on publication of excavations within a reasonable time.

In addition, the archaeological community ought to establish a fixed period (perhaps 5 to 20 years, depending on the scale of the project) when excavators might be allowed control over finds and results, after which these would become available to all, even if unpublished. Many students would find it more profitable as a research topic to retrieve and write up such material than to embark on digs at sites not under threat.

Finally, all directors of excavations should act as if they expected to die before the project reaches completion. In Italy, for example, a copy of the excavation fieldnotes has to be left with the local authority to guard against such an eventuality. Excavators should ensure that their notes are fully comprehensible to others, that each season’s finds are processed before starting the next, and that at least a manuscript report on each season’s work is produced. Leaving all the analysis till the end is a recipe for disaster.

The Wider Audience

Although the immediate aim of most research is to answer specific questions, the fundamental purpose of archaeology must be to provide people with a better understanding of the human past. Skillful popularization – site and museum exhibits, books, television, and increasingly the Internet (box, pp. 560–61) – is therefore required, but not all archaeologists are prepared to devote time to it, and few are capable of doing it well.

Excavators often regard members of the public as a hindrance to work on-site. More enlightened archaeologists, however, realize the financial and other support to be gained from encouraging public interest, and they organize information sheets, open days, and on long-term projects even fee-paying daily tours, as at the Bronze Age site of Flag Fen in eastern England. In Japan, on-the-spot presentations of excavation results are given as soon as a dig is completed. Details are released to the press the previous day, so that the public can obtain information from the morning edition of the local paper before coming to the site itself.

We have already seen how archaeologists at York, northern England, not only encouraged visits from the public during excavations, but also presented the results in a hugely successful new museum that paid for itself within five years (see Chapter 13).

Clearly, there is an avid popular appetite for archaeology. In a sense, the past has been a form of entertainment since the early digging of burial mounds and the public unwrapping of mummies in the 19th century. The entertainment may now take a more scientific and educational form, but it still needs to compete with rival popular attractions if archaeology is to thrive.

SUMMARY

World Archaeology and the Human Past

Archaeology can be made to serve many masters. We have seen how it can be used for economic ends, to

make arid lands fertile once again. Or it can be popularized and sold to a willing public, curious to know more of vanished cities and lost civilizations. Or again it can be used for national ends, to provide a sense of

national identity by tracing back a link from an uncertain present to a past whose achievements are seen as significant and admirable.

But the ultimate value of archaeology goes beyond these specific and in a certain sense limited concerns. For world archaeology is something in which we can all share. The human origins revealed in Africa are the origins of us all. Archaeology can document the trajectory of growth of the population of every country on earth. Our concern need not be restricted to our own personal line of descent. The archaeology of every land has its own contribution to make to the understanding of human diversity and hence of the human condition. So it is that skeletal remains of the Australian Aborigines of earlier millennia, or of the Native Americas, ought to matter as much to Europeans or white Americans as skeletal remains found in Europe. Modern-day Aborigines and Native Americans should also recognize that their contribution to the human story merits a significant place in the history of the world. Although earlier generations of scholars did indeed behave with flagrant disregard for the feelings and beliefs of native peoples, and some may continue to do so, the interest in these matters today is not some neocolonial attempt further to appropriate the native past. It is, rather, an assertion that this past has a legitimate wider significance, in which others may properly be interested than those who inhabit the areas in question. That is not a negative message, nor a disparaging one.

If we are to have an adequate perception of our place as human beings in the modern world, the past matters. It is where we have come from, and it has determined what we are. For that reason, it is necessary for

us to set our faces against the lunatics and the fringe archaeologists who seek (sometimes for their own gain, but sometimes simply from a misguided inability to think straight) to confuse or corrupt our view of the past. Writers such as Erich von Däniken, author of *Chariots of the Gods?*, have written highly readable books purporting to give new insights into the past that differ markedly from those of modern archaeology. In von Däniken's case, the argument is that most of the developments of human civilization are due to the influence of alien beings arriving on earth in flying saucers. The matter would be comic if such views had not been so widely believed (box, p. 562).

The objection to this kind of nonsense is not simply that it differs from the conventional archaeological wisdom. No one has a monopoly of the truth – not even the archaeologist. The objection is that such works gloss over the difficulties, and fail to submit their evidence to the kind of scientific scrutiny that we have been advocating in this volume. Anyone who has read this book, and who understands how archaeology proceeds, will already see why such writings, and others that propose ancient (and undocumented) catastrophes, or lost continents, or long-range migrations by the Lost Tribes of Israel, or the forces of “earth magic” at such sites as Stonehenge, are a snare and a delusion. These misconceptions have been well discussed by Jeremy Sabloff in his *Archaeology, Myth and Reality* (1982). The real antidote is a kind of healthy skepticism: to ask “where is the evidence?” Knowledge advances by asking questions – that is the central theme of the present book, and there is no better way to disperse the lunatic fringe than by asking difficult questions, and looking skeptically at the answers.

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