DOI: http://dx.doi.org/10.5334/ai.0509

Investigating ancient cemeteries on the island of Astypalaia, Greece

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As first mentioned in last year's issue (AI 2000–2001, p. 4), the Institute has joined the 22nd Ephorate of the Greek archaeological service in a three-year study of human remains from two recently discovered cemeteries on the island of Astypalaia, which date back to the first millennium BC. The member of staff of the Institute who collaborates on the project with Greek colleagues describes the work undertaken during the first field season and the research potential of the finds.[1]

Astypalaia is the westernmost of the Dodecanese Islands. It lies northeast of Crete and northwest of Rhodes at the southern limit of the Aegean Sea, some 280 km southeast of Athens (Fig. 1), from which it can be reached in about an hour's flight by small plane. Until recently, little has been known archaeologically about Astypalaia, but in Classical times and up to the first century AD it was an independent state. Its capital was on the site of the present-day small town of Chora, centred on a rocky hill that is now occupied by a Venetian citadel. Archaeological responsibility for the island rests with the 22nd Ephorate of Prehistoric and Classical Antiquities, based in Rhodes. In 1996 they carried out the first excavations of two newly discovered large cemeteries associated with the ancient city, Southwest Kylindra, which is on the slopes directly below the citadel, and Katsalos, which is on a neighbouring hill (Fig. 2). Southwest Kylindra dates to Late Archaic–Hellenistic times (600–300 BC) and Katsalos was used for a longer period, from Late Geometric (around 750 BC) to Roman times. So far, nearly 600 human burials have been found at the two sites and it is estimated that the final total is likely to reach several thousand.

The project

Excavation of the cemeteries by archaeologists of the 22nd Ephorate is planned to continue for several years.[2] The role of the team from the Institute is to help recover the remains on site, to record an initial set of information about them, to build the archive of material, and to carry out a study of the growth and development of children in this Classical Greek population.

The overall assemblage of human remains from the sites is unique because the two cemeteries together appear to represent an entire death assemblage (one that includes all age cohorts of the population). Katsalos includes individuals ranging from babies to elderly adults, whereas Kylindra consists entirely of newborn babies and young children, all buried in large pottery vessels. It is very unusual for ancient cemeteries in the Mediterranean, or anywhere else, to contain many burials of young children, despite the fact that demographic studies of recent populations show clearly that young children would normally be the largest age cohort in the death assemblage. This may be explained by the widespread practice of burying them elsewhere. On Astypalaia, the use of large pots to contain the Kylindra burials has both protected the very delicate remains of babies and acted as a marker that has facilitated their discovery, whereas in other cemeteries they may have been missed. Truly representative assemblages of ancient human remains are so rare that these finds have an importance for archaeology and anthropology that extends far beyond the study of Classical Greece.

Figure 1 *The southern Aegean, showing the location of the island of Astypalaia. The dashed line represents the international boundary between Greece and Turkey.*

Fieldwork in 2001

The Southwest Kylindra site was the focus of attention during the 2001 excavation season. The Institute sent a team of seven, led by myself and including conservators and specialists in the study of human remains. With our Greek colleagues, we set up a laboratory in a disused restaurant that was rented by the 22nd Ephorate. The pots containing the babies were excavated by the Greek archaeological team and, although we helped in the final stages of lifting the finds, most of our work was carried out in the laboratory.

Large amphorae (pottery vessels for trade) of varied forms were used for the baby burials. They were laid on their sides, in small pits dug into the hard bedrock (Fig. 3). The bodies of the babies had been placed inside each pot through an opening cut in the uppermost side, which had then been closed by replacing the piece that had been cut out. The neck of the pot was blocked with a stone stopper, mortar, or sometimes a piece of pottery. Finally, the pit was infilled and the whole cemetery site covered with an accumulation of soil, rubbish and other debris. In most cases, the opening in the uppermost side of the pot had collapsed, allowing soil and rubble to fall inside, on top of the baby's remains (Fig. 4). Over many centuries, the fill in the pots had built up into large masses shaped like rugby footballs, solidly cemented together. Many were very heavy, so we had reason to be grateful to our Greek colleagues, who brought them up the hill to the laboratory.

Once pots were securely placed in the laboratory, we had to develop a method for recovering the delicate remains they contained, together with any other finds in the

Figure 2 *The citadel of Chora seen from the neighbouring hill of Katsalos, where work is in progress on some of the burials. The Southwest Kylindra site is located just below the houses of the town.*

Figure 3 *One of the pottery vessels in its burial pit at the Southwest Kylindra site. The oval opening is visible through which the body of the baby was placed in the pot. The stone stopper is still in place in the neck of the pot, which has not collapsed under the weight of sediment above it.*

pot fill. The main difficulty was that the sediment in the fill was often cemented hard and difficult to remove. However, most of the pots had cracked in antiquity, so that the pot-sherds could be lifted away and set aside. That left the ball-shape mass of fill, which could then be rolled over to expose the baby skeleton embedded in its underside (Fig. 5). With care, the fill could be removed from around the skeleton, using wooden points and dental tools. The bones, pot-sherds and other finds were drawn and photographed *in situ*, before being removed, conserved and packed. The rest of the fill was then gradually broken up, sorted and sieved to make sure that no other finds were present. In the great majority of pots, only one baby had been buried, but three had two babies lying side by side. As they lay close together, partly overlapping, it was a challenge to excavate them separately. It seems likely that they were twins, but whether they were can be resolved only by further research.

The pots that had not broken were even more difficult to deal with. Instead of containing a ball-shape mass of fill, they were almost empty, with just a thin layer of clay covering the baby's skeleton. This had dried hard and had cracked, so that it looked rather like a dried-up lake bed. In such cases, we drew the pattern of cracks, which divided the clay layer into several slab-like fragments. Each of these was lifted out through the opening in the side of the pot, inverted, and then the bones were exposed as before.

For most pots, these methods allowed us to recover a relatively complete set of bones and teeth for each child. During the 2001 season, 125 baby burials were investigated, which represent 130 individuals. From the state of development of the teeth (Fig. 6), it could be determined that almost all were newborn babies, although their stage of development did vary considerably. Only one pot contained the remains of an older child, whose stage of development suggested that it would have been about three years old at the time of death.

Future research

When we have completed the three-year project, we expect that it will have provided the largest archaeological collection of well preserved remains of babies in the world. They will constitute a scientifically valuable reference collection, and one of the aims of the project is to make the images and measurements available on a website, as a reference source. The main research interest of the collection is to study growth and development in ancient children, at a level of detail that has not previously been possible. The large numbers of individuals will allow investigation of variation in development of the

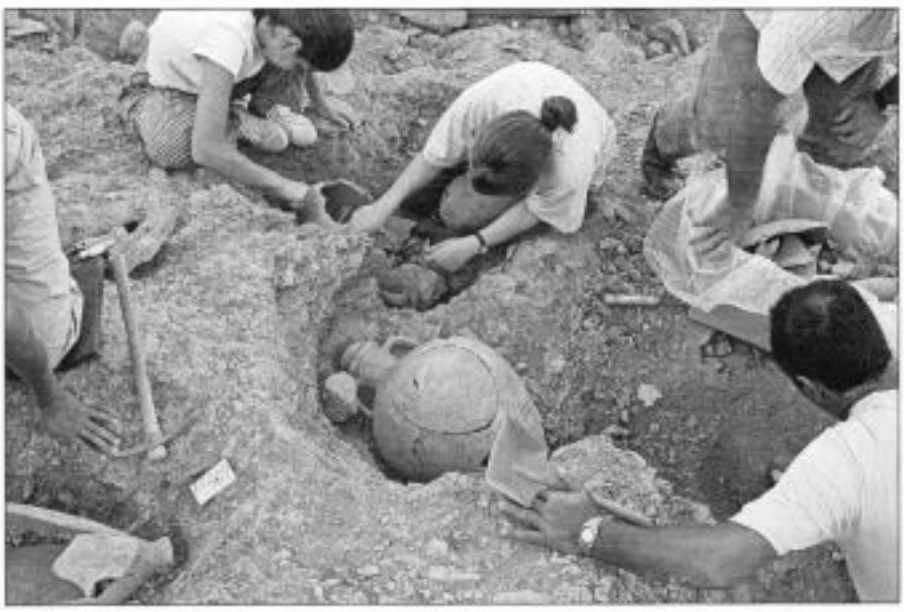

Figure 4 *Work in progress at the Southwest Kylindra site. The amphora shown in Figure 3 is now ready for lifting and removal to the laboratory.*

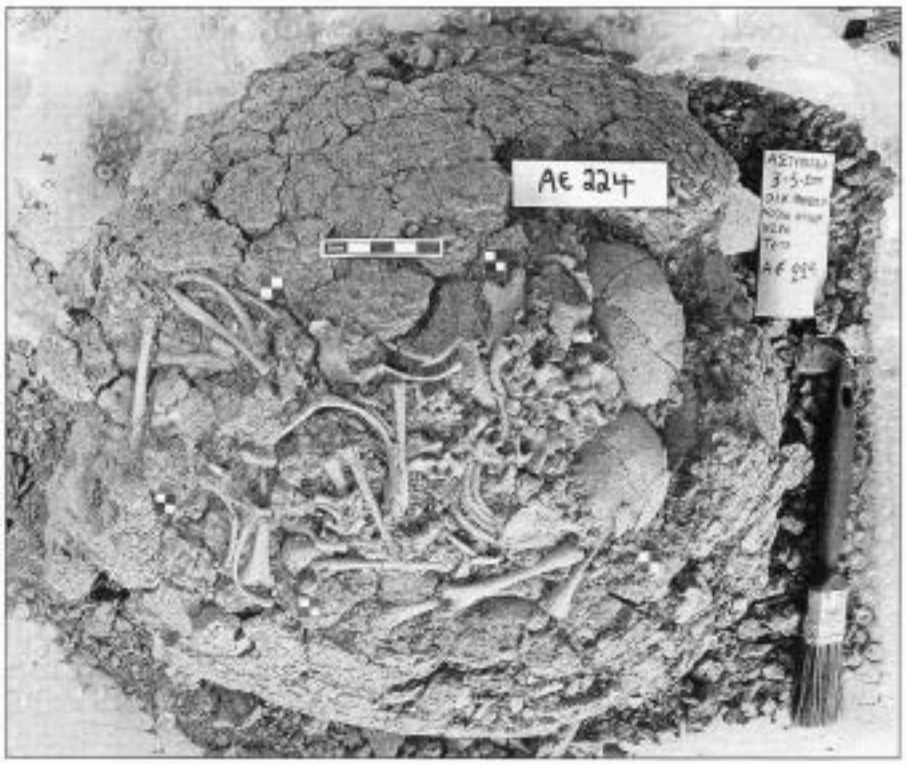

Figure 5 *The exposed skeleton of the baby buried in amphora AE 224. The head is at the right, towards where the neck of the pot had been. There has been some movement of the other bones as sediment collapsed into the pot, but most of them have survived intact.*

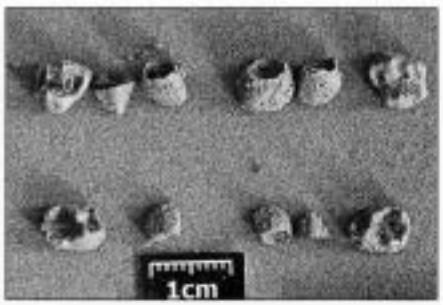

Figure 6 *Developing teeth from burial AE 224. They are extremely small and delicate, and they illustrate the excellent preservation of most of the remains. The state of development of the teeth is about what would be expected in a modern baby at the time of birth.*

bones in the skeleton relative to the development of the teeth. We hope that a detailed examination of the teeth will enable us to distinguish those who died at birth, so that variation in development at birth can be established. The large collection will also enable us to study variation in those features, such as the shape of the sciatic notch in the ilium (a bone in the pelvis), which are thought by some specialists to differentiate the skeletons of boys and girls. When further excavations have taken place at the Katsalos site, it will be possible to extend these studies over a longer period of growth, by combining the South Kylindra babies with the older children and adults from Katsalos. Growth in childhood is one of the most sensitive indicators of the health and nutrition of human populations, and it is a privilege to have such an exceptional opportunity to study it.

Notes

1. The excavation is supported by the 22nd Ephorate and we have received grants from the British Academy and the UK Arts and Humanities Research Board for our work on the human remains. I would like to thank our Greek colleagues from the Ephorate and the island of Astypalaia for making the collaboration possible. Members of the team from the Institute are also very grateful to the people of the island for their generous help in providing accommodation.
2. For an account (in Greek) of this work, see E. Farmakidou, "Cremations in Astypalaia" in *Cremations in the Bronze and Early Iron Age* [in Greece], N. Stambolidis (ed.), 321–31 (Athens: 22nd Ephorate of Prehistoric and Classical Antiquities, Rhodes, 2001).