horizon

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The Amarna Project and Amarna Trust newsletter

The current cemetery excavations: taking stock of findings

Five seasons of work at the South Tombs Cemetery at Amarna have now taken place. More are planned, the next scheduled to begin towards the end of February, 2011. Snapshots of findings have been regularly included in previous issues of *Horizon*. This issue contains more general reflections, on spiritual belief and on physical wellbeing.

The cemetery offers a new angle from which to view the Amarna period. What did people, caught up in Akhenaten's rush to clear away the clutter of conventional beliefs, make of his ideas? How did they fare in the new city that was built, not for their benefit, but as a place of adoration of desert sunrise?

The simplest of grave markers: a flake of limestone on which a triangle has been scratched on a roughly smoothed surface, perhaps another version of a mountain peak. Object 39425 (photo by G. Owen).

The subdued peaks of the eastern horizon, as seen from the cemetery.

contents

The people's view of eternity

Barry Kemp

The people of Amarna were subjects of an unintended social experiment. Transported to a new home in a harsher setting than they were probably used to, and starting a new life in the changed spiritual environment created by Akhenaten, it is to be expected that they would begin to show signs of adaptations. Akhenaten seems not to have dictated a creed for people to follow. This left scope for different environments to draw out from people different ways of satisfying their spiritual and psychological needs. The isolated Workmen's Village, with its culture of family chapels that were separate from house and tomb and honoured traditional divinities, illustrates one set of responses (seemingly lukewarm). Now the South Tombs Cemetery is providing another. Away from their senior officials, the people of the city were beginning to develop their own perception of a landscape of death.

As yet the evidence is fragmentary, and objects from the excavation are not plentiful. It seems timely, none the less, to start to sketch an outline of explanation.

Stela 39938

Discovered in 2010, at the Lower Site, this limestone memorial stone, set into a larger limestone frame given a pointed top, looks to have been made by a trained sculptor, able to carve delicate low sunk relief (weathering of the surface later coarsened the effect). The subject matter is conventional. A couple sit before offerings, and are served by a standing figure that faces them. The bereaved person who commissioned the piece, or selected it from the sculptor's stock, has chosen the style of informal, intimate and affectionate portrayal of the family that is one of the hallmarks of court art of the Amarna period, the figures appearing languid and, if they are seated, slumping into their seats. On our stela, the man turns to face the woman, extending his right arm so that it passes behind her shoulders. She, in turn, passes her left arm behind the man's back. The couple are, in effect, embracing. Several small scenes exist in which a king and queen (from Amenhotep III and Tiy to Tutankhamun and Ankhsenamun) relax in mutual intimacy of this kind, as in the example shown on p.4. Stela 39938 offers a private counterpart.

The pointed upper part of the limestone frame is a shape that was not infrequently used in the later New Kingdom. Its triangular space, that evoked a pyramid outline, was often used for solar symbolism. Despite the weathering of this part, our stela seems to have followed this scheme. But not with an Aten disc, of which non-royal examples at Amarna are very rare. Instead, our stela used symbols often found on the tops of stelae: the eyes of Horus and zigzag lines.

Stela 39938, from the South Tombs Cemetery (photo by G. Owen).

The example shown here for comparison (of the Eighteenth Dynasty and close in time to the Amarna period) has a threefold division. At the top is a set of symbols similar to the ones on our stela. Below is a panel in which the deceased man and his wife present themselves before Osiris. Below that comes a panel in which the couple are seated and are waited on by their son and daughter. The couple sit fairly formally, though signs of affection are present, for the wife places her left hand on her husband's shoulder and, with her other hand, touches his other arm. Amarna allowed affection and informality to proceed further.

The comparison also brings out another Amarna characteristic: the banishment of Osiris. One of Akhenaten's aims seems to have been (not altogether systematically and consistently) to reject imagined spiritual worlds that, with their metaphors and symbols, are the normal stuff of religion. The sun, the Aten, moved as itself and not by voyaging in a boat, and the mystery of its night-time absence was not to be explored. There was no realm of Osiris, and so no Osiris (or Anubis or Four Sons of Horus). To judge from the evidence that has survived throughout Egypt, the denial of Osiris was more thorough than the rejection of Amun, but was not accomplished by defacement. At Abydos itself, existing reliefs that showed Osiris were not attacked; nor was the name and image on that most sacred relic, the Osiris 'bed' that lay within the supposed tomb of Osiris (although at an unknown time the name of the king who had made it was erased).

British Museum stela 301, Eighteenth Dynasty. I.E.S. Edwards, *Hieroglyphic Texts from Egyptian Stelae, etc*., vol. VIII (London, British Museum 1939) 42, Pl. XXXVI.

Stela 39446, from the South Tombs Cemetery (photo by G. Owen).

Stela 39446

The pointed shape of the top occurs on several of the stelae from the cemetery, in one case (37581) marked with a simple incised circle. Stela 39446, discovered in 2009 and also at the Lower Site, replaces the single pointed top with a double point. Each is slightly rounded and they are separated by a gap. In the rectangular space below, a double recess has been carved. On the parallel of stela 39938, we might surmise that a separately made stela or panel was originally inserted here, or in its place came a painted design, and is now lost. But this would still have sat within a sharply defined outer recess. The overall effect can be read as a portrayal of the deceased present within a chamber or doorway beneath or within a mountain marked either with twin peaks or with the rounded hills that framed sunrise on the eastern desert horizon. This was how sunrise was shown in a scene in the Royal Tomb (illustrated on p.4).

The stela would represent a wish for communion with the sun, but without the specific imagery introduced by Akhenaten. An even more generic depiction of the desert horizon was given to stela 37640 (from the 2006 season at the Upper Site), where the top was carved with three peaks, resembling the hieroglyph for 'desert land'.

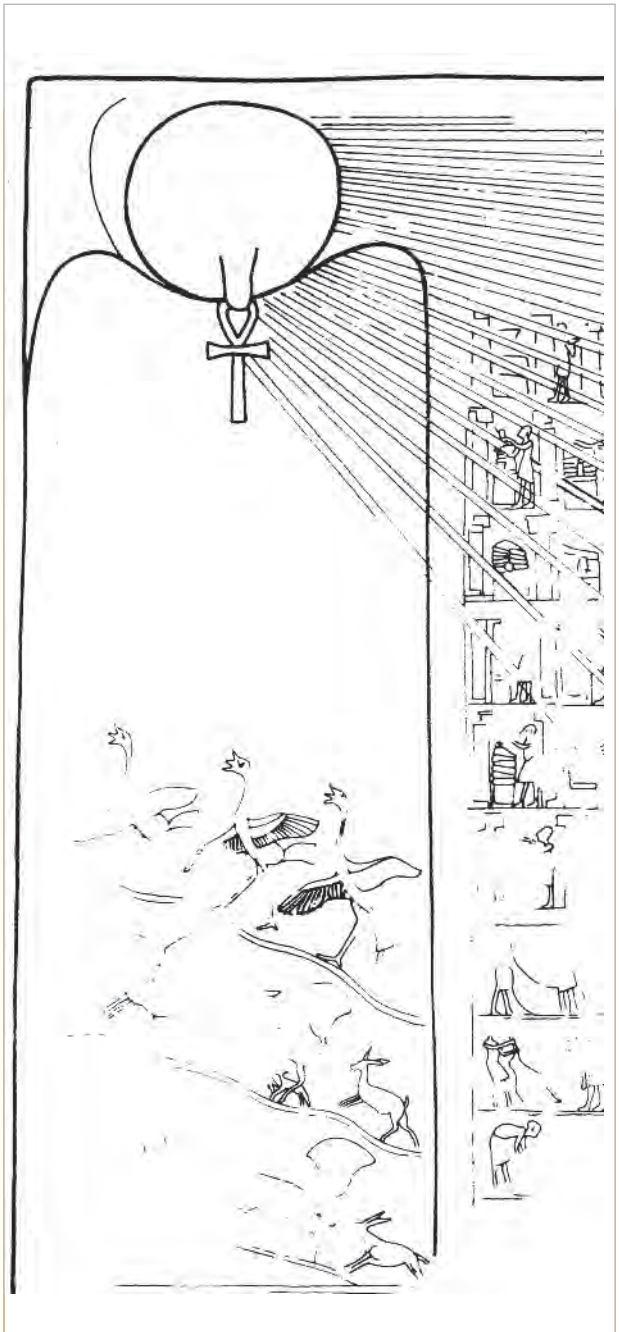
Because Akhenaten's drive for reform failed, there is a general modern view that he won no hearts or minds. We should not be so sure of this, however. To his courtiers, as expressed in their tombs, Akhenaten was a teacher of righteousness. His choice of Akhetaten, a place of harsh desert sunlight, perhaps in itself signified a path of purification. Perhaps – but this is only speculation – his message was that an adherence to truth and righteous conduct was an absolute that should be followed daily for itself rather than as

a means of providing a language of escape on a day of judgement after death. The expectation of eternal life was unconditional. The human spirit could manage on its own, without divine aid though with guidance from the king (and with ancient symbols of power on tiny amulets to clutch on to in moments of uncertainty).

Akhenaten offered a path of deliverance from fanciful and complicated ideas about the hidden forces that were supposed to rule the universe. As long as the message was reinforced by his presence amongst them, it might have seemed attractive. The people of the South Tombs Cemetery seem to have felt sufficiently at ease to develop, in the variations on the stelae, individual ways of expressing the new pristine landscape of eternity.

Affectionate royals. Berlin stela 17813, of Pay. The group of three unfilled cartouches probably refer to the royal couple. As to who they were, there is more than one suggestion. The most straightforward is that (despite the crown) Nefertiti is on the left, and Akhenaten is on the right.

For the landscape aspect of the stelae, see A. Stevens, 'The lower site', in B. Kemp, 'Tell el-Amarna, 2008–9.' *Journal of Egyptian Archaeology* 95 (2001), 18–21.



Sunrise at Amarna, as depicted in the Royal Tomb at Amarna, chamber alpha in the Meketaten annexe. After G.T. Martin, *The Royal Tomb at El-'Amarna*, II (London, EES, 1989), Pl. 34, room alpha, wall A.

Bioarchaeological Findings from the Amarna South Tombs Cemetery

Melissa Zabecki and Jerry Rose

Introduction: ample sample size

The large and diverse team of excavators working at the Amarna South Tombs Cemetery has expertly exhumed skeletal material that is both plentiful and interesting. After five excavation seasons (2006–10), the skeletal sample has become large enough for us to begin making observations about life for the majority of people living and dying at Akhetaten which have some claim to reliability. The condition of the remains varies from very well preserved, intact individuals, to partial individuals, to scattered well-preserved bones, to salt-encrusted bones; finally to poorly preserved and crumbly material that has been sun-bleached after having been thrown to the surface by ancient robbers (Figure 1). Although many skeletons were found complete and correctly arranged in their graves, others were, for example, only lower legs and feet, the rest of the body and skull having been scattered across the nearby surface. Thus the bones in a grave might be excavated and studied during one season, while the scattered body parts might not be located until one or two years later. Sometimes we might never know to which numbered individual they belonged.

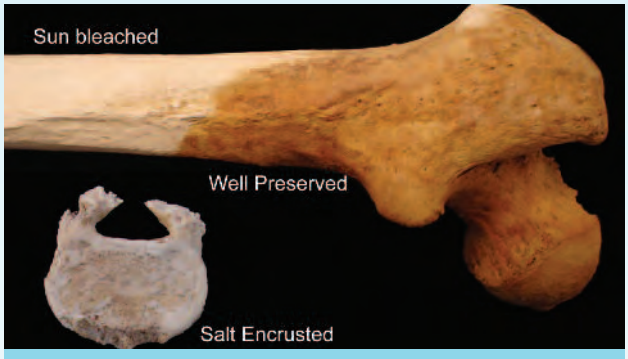


Fig. 1. The different conditions of the bones.

In order to register the effects of robbery, we have found the following terminology to be useful: individuals, cluster individuals, isolated skulls, isolated mandibles and isolated bone clusters. 'Individuals' are generally skeletons identified during excavation that are over 50% complete, and more often than not mostly articulated (major bones together in the correct order). 'Cluster individuals' are bone clusters that represent 50% or more of an individual, but whose bones were found jumbled up, presumably robbed, and not in their original grave. These can be identified both in the field by the archaeologists or in the lab by the osteologists. 'Isolated skulls' are skulls found without bodies or with only very few bones that cannot be definitely associated with any individual. 'Isolated mandibles' are lower jaw bones that have neither skulls nor other postcranial material of definite affiliation (Figures 2.1–2.4). While almost half of the individuals and cluster individuals excavated did not have skulls (due to the robbed nature of the burials — not by foul play), and while the isolated skulls most likely 'go' with the headless individuals, we can never be certain which skull matches which body. Therefore, we must work with what we can be sure of: 204 individuals, 28 cluster individuals, 75 isolated skulls, and 28 isolated mandibles. This is essentially a sample size of 232 individuals.

Fig. 2.1. A complete individual lying within its grave pit (Ind. 191).

Fig. 2.2. A cluster individual cropped by grave robbers (13035).

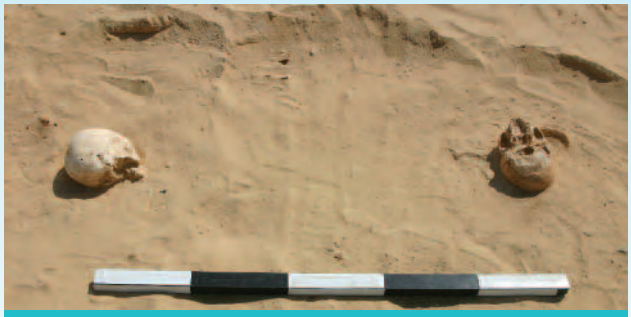


Fig. 2.3. Two isolated skulls, skulls 115, 116, of children.

Fig. 2.4. Isolated mandible (later connected to Ind. 128).

Basic information such as age, sex, stature, and pathology, as well as more specialized information regarding growth rates, activity patterns, dental disease, and biological affinity, have rounded out the large amount of data now available. While the findings are generally interesting, three recurring themes make the Amarna South Tombs Cemetery population stand out: the unfortunate conditions of the young people, the high degree of spinal problems for the majority of teenagers and adults, and an unusual trauma pattern that has only recently begun to surface.

Too many unfortunate young individuals

The first year of excavation provided a sample with a marked characteristic: more dead children and teenagers than was to be expected. We assumed that it was due to the small sample size and that maybe the excavations just happened to be placed in a part of the cemetery that randomly contained more individuals that died young rather than grew old. The second and third years of excavation, however, yielded the same demographic profile. During the fourth and fifth years, the excavators opened up new areas in very different parts of the cemetery, to see if the demographic profile persisted. In two of the three areas, this proved to be the case.

The three sections of the cemetery are entitled: 'Upper Site', 'Lower Site' and 'Wadi Mouth Site' (see *Horizon* 7, 2010, page 2, for a map). When the individuals are organized by section and then by age group, the Upper Site and Lower Site individuals retain the distinctive demographic profile, while the Wadi Mouth sample has a more normal age distribution, though as yet the sample size is small (**Figure 3**). The age groupings are as follows: <birth (measured in foetal months), 0–2.9 years, 3–6.9 years, 7–14.9 years, 15–24.9 years, 25–34.9 years, 35-49.9 years, and 50+ years. Under the most common circumstances, individuals between seven and 20 years should represent the fewest number of

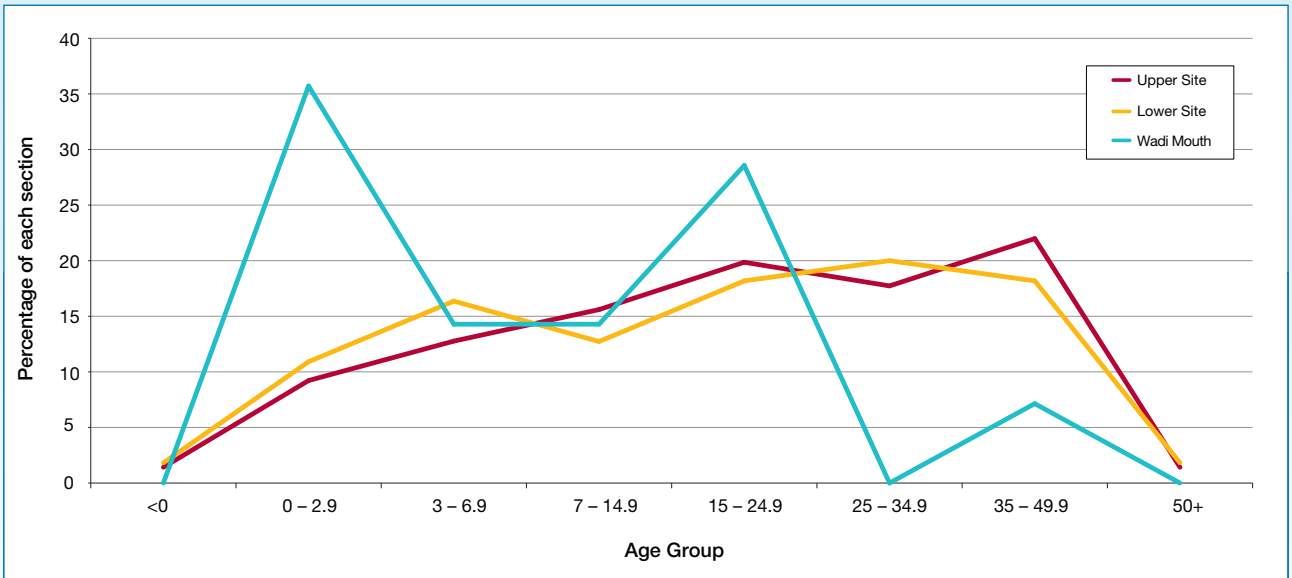


Fig. 3. Demography for the three sections of the cemetery.

individuals in a cemetery (Margerison and Knusel 2002). In the view of archaeologists and demographic modelers who have considered age profiles from cemeteries (e.g. Castex 2008; Gowland and Chamberlain 2005; Magerison and Knusel 2002), such a demographic anomaly may indicate a catastrophic death assemblage — meaning that the individuals at Amarna may have succumbed to a disease spreading through the area — affecting everyone almost equally, not just killing the most frail individuals who are usually the very young and the old. The identification, through DNA study, of a virulent form of malaria during the 18th Dynasty (Hawass et al. 2010) raises the hope that identification of the cause might one day be possible.

We know from historical texts from the Hittite court (Singer 2002) and from Alashia (probably Cyprus) (Moran 1992) that a deadly epidemic was present at a time that overlaps with the Amarna period, and that the Hittites blamed its presence on Egyptian prisoners of war. Might the abnormal distribution of deaths at Amarna provide evidence that Egypt was incubating or harboring an infectious disease that eventually would strike out into foreign lands? Testing this hypothesis has become central to our research. It involves examining the historic literature and archaeological evidence from known epidemics to develop epidemiological models that we can then use to determine if the distribution of deaths at Amarna is compatible with the hypothesized presence of a highly infectious and fatal disease.

The individuals from the Wadi Mouth Site, meanwhile, display a more 'normal' demographic profile. Given that there are only 21 of them, however, it is too soon to conclude that they represent a population separated from the rest by time or circumstances.

Back-breaking labour at almost every age

As with many other ancient populations, the general quality of health for everyone in Akhetaten was not especially high. This is apparent from frequent trauma (healed bone fractures), dental problems (decay, cavities and heavy wear) and infection. One skeletal condition that does stand out is spinal arthritis. The high frequency of spinal trauma spans not only adults but also the youngest adults and even late teenagers. General arthritis is evidenced by osteophytic growth (bony spicules) around the edges of the vertebral body (Figure 4.1). Schmorl's nodes are depressions on the top or bottom of the vertebral body and indicate a traumatic compression of the disc between the vertebrae during accidents such as falls or catching a falling heavy object (Figure 4.2). Compressed and collapsed vertebrae is a major spinal injury resulting from an even more serious accident (Figure 4.3). Ankylosis is the bony fusion of damaged vertebrae, due either to general arthritis or to compression fractures, the body reacting thus to stabilize (and immobilize) the joint to avoid further bone destruction (Figure 4.4). Spondylolysis is the permanent separation of a vertebral arch (the back of the vertebrae) from a vertebral body caused by trauma, especially early in life before the spinal elements are completely developed (Figure 4.5). All of these conditions have been seen in every season of study and affect both males and females of most ages.

Fig. 4.1. An example of spinal arthritis.

Fig. 4.2. An example of Schmorl's nodes on a vertebra.

Fig. 4.3. An example of collapsed vertebrae.

Fig. 4.4. An example of ankylosis on damaged vertebrae.

Fig. 4.5. An example of spondylolysis.

The most surprising aspect is how these problems affected even the young adults, where spinal arthritis is rarely seen in other populations. Whereas general arthritis and ankylosis requires a longer time to develop, compression, collapse, Schmorl's nodes, and spondylolysis can result from single accidents. They are observed in many individuals in the 15–24.9 year age group, indicating a hard work-life for even the young. Aside from general building tasks, watering and keeping up gardens, preparing food and carrying goods and materials back and forth to boats moored along the river, the new construction technique of using *talatat*-blocks for stone buildings must have changed working practices. While *talatat*-blocks were still heavy (150 pounds, almost 70 kg), they were small enough to be handled by one person, opening up greater opportunities for back injury. While no one dies of spinal trauma, stressors in a population tend to weaken immune systems and shorten life spans, so this, too, could have contributed to the mortality pattern.

Persecution of people, too?

In 2007, Individual 39, a 25–29 year old male, was observed as having unusual healed fracture patterns on his scapula (i.e. shoulder blade, Figure 5.1). A similar case appeared in 2008, Individual 56, an unaged adult male (Figure 5.2), arousing the suspicion of a common cause, with a third case noted in 2010, Individual 142, a 35–50 year old male (Figure 5.3). Animal-bone expert Tony Legge had previously identified similar injuries on scapulae of pigs from Amarna, seeing the injuries as deliberately inflicted on animals that were afterwards cared for (see *Horizon* 7, 6–7). When the pig and human scapulae in question were placed side by side, the resemblance was uncanny: the same lesions, complete with healing, were present on all.

Fig. 5.1. Damaged scapulae belonging to Individual 39.

Fig. 5.2. Damaged scapulae belonging to Individual 56.

Clinically speaking, these wounds were not life-threatening, as they all show signs of healing. However, the injuries probably left open wounds that would not have been easy to dress and keep clean by the affected individuals. As with the pigs, these people were taken care of after the injuries were inflicted.

Punishment for wrongdoing could, in the New Kingdom, extend to the infliction of 'open wounds' (it is a penalty invoked in the decree of Horemheb). Physical evidence in skeletal remains is, however, unprecedented. Three human individuals from a sample of over 200 is a small number, although the flat thin shape of the scapula does not preserve well in disturbed burials. None the less, the whole sample now deserves to be re-examined in case other examples have been missed.

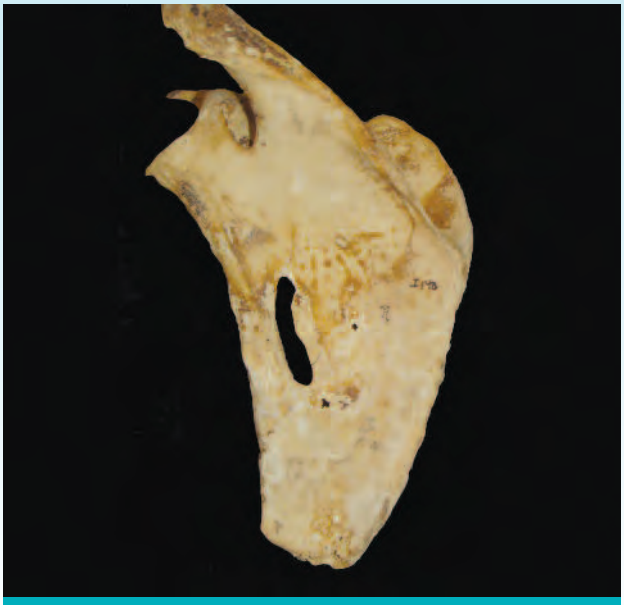


Fig. 5.3. Damaged scapula belonging to Individual 42.

What lies ahead for the bones?

Most ancient cemeteries were used for many decades, if not centuries, whereas all the dead from the South Tombs Cemetery were most likely buried during a period of only 15 years. The short time span offers a unique opportunity for study. We intend to keep exploring the data for more evidence that might bear on the proposed epidemic and on the adverse effects of injurious working methods. We want to interpret the spatial data to see if different sections of the cemetery hold people who experienced different life histories and whether this is a function of status or time.

None of the skeletal data can be interpreted in isolation. All health, demographic, and social information must be considered together in order to paint a complete picture of what life was like for the majority of the population of Akhetaten. We are well on our way to working it all out.

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Summer and autumn outreach

Lecture Tour

The USA chapters of the American Research Center in Egypt combined to invite Barry Kemp to lecture to them on an extended tour that ran between October 17th and November 11th. Organised by Robin Young of the Orange County (California) chapter, the tour began in Washington DC and ended in Boston, taking in cities across the continent. The welcome and enthusiasm were everywhere remarkable. It proved to be a fine opportunity to promote the work of the Amarna Trust, for which the trustees are most appreciative. It also provided an opportunity to meet the Amarna Research Foundation in Denver, an important regular source of support.

Study Tour of Middle Egypt

Between November 26th and December 6th the Amarna Trust acted as host for a study tour of Middle Egypt to a group from the Thames Valley Ancient Egypt Society, organized by John Billman. With permission from the SCA to visit a number of sites not normally open to the public, a busy itinerary was followed, that began at Abu Rawash. Two full days were spent at Amarna. The visit ended with an extended tour of the archaeology of Abydos, as far south as the early pyramid at Senki. Our guide was Dr Rawia Ismail. The Trust is grateful to TVAES for entrusting their tour to us and for its magnificent donation.

Map of places visited (from Abu Rawash to Abydos).

Barry Kemp also responded to invitations to lecture at Chesterfield, Manchester and Leicester (UK), Imola, Parma and Rome (Italy) and Cairo. Anna Stevens (the project's assistant director) lectured in Cairo.

Barry Kemp has been made a Commander of the British Empire (CBE) in the 2011 New Year's List of Honours bestowed by Her Majesty, Queen Elizabeth II, for services to archaeology, education and international relations (Egypt).

Heavy rains in January soaked the Amarna desert, the effects visible here on the road to the Royal Tomb.

The Amarna Trust

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The Amarna Trust submits an annual set of accounts to the UK Charities Commission. None of its income is used in the furtherance of raising funds. Its overheads are modest.

The objectives of the Trust are:

To advance public education and to promote the conservation, protection and improvement of the ancient city of Tell el-Amarna, Egypt and the surrounding area for the benefit of the public in particular but not exclusively by:

i) creating a permanent facility for study (the research base – The Amarna Centre);

ii) undertaking and supporting field research (and publishing the useful results of such research);

iii) promoting training in archaeological field skills;

iv) providing, and assisting in the provision of, lectures and publications in furtherance of the stated objects;

v) developing displays and exhibitions at a site museum for the benefit of the public and an educational outreach programme for the benefit of pupils at schools; and

vi) working in partnership with the Supreme Council of Antiquities of Egypt to maintain the ancient city for the benefit of the public.

Rescue and repair: a call for help

We are trying to raise the tempo of the repair and cleaning of the exposed parts of Amarna. To this end we are asking for further contributions to our appeal to enable us to complete, in 2011, the current phase of repairs at the North Palace. It is easy to donate: go to www.justgiving.com/Amarna-Project.

Beyond that? Our plan is to tackle the Great Aten Temple – the 'House of the Aten' – which once was Amarna's most significant building.

Barry Kemp

The Trust invites donations from individuals or from corporations. Donations can be earmarked for particular purposes or they can be allocated by the Trust in pursuit of the stated objects of the Trust. The Trust is able to benefit from the present UK tax legislation by reclaiming tax on donations from UK tax-payers under the Gift Aid scheme, which increases the value of the gift by nearly a third. For this it is necessary to accompany each donation with a Gift Aid declaration form or a similar letter. There are further tax advantages for donors who pay at higher rates.

For residents of the USA, donations can be made either to the Amarna Research Foundation or to the Cambridge in America Foundation (both 501(c)(3) tax-exempt organisations) with the request that the donation be made into a grant for The Amarna Trust.

Further information, including downloadable forms, are available at **www.amarnatrust.com** where you can also donate on-line. Donations can also be made via www.justgiving.com/amarnatrust

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All work done at Amarna relies upon the support and agreement of the Supreme Council of Antiquities of the Arab Republic of Egypt. We are indebted to its personnel, both local and in Cairo, and in particular to its General Secretary, Dr Zahi Hawass.

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