

Dealing with the unexpected

Unusual animals in an Early Roman cistern fill in the Sanctuary of Poseidon at Kalaureia, Poros

Abstract*

The excavation of the Early Roman fill of an Archaic cistern in the Sanctuary of Poseidon at Kalaureia on Poros produced the remains of a range of animals that are not usually found together in closed contexts. Consideration of taphonomic parameters and of the specific features of the assemblage indicates that it represents the remains of ritual activities. This paper aims to explore the possibilities of using the material remains (in this case the bones and shells) to detect ritual activities of a type not referred to in the written sources. Such an exploration brings forward issues of definition and interpretation of what can be seen as sacred or profane in the context of a cult place such as a sanctuary.

Introduction

This paper discusses an assemblage of animal remains recovered from the Sanctuary of Poseidon at Kalaureia, on the island of Poros. The assemblage, which dates to the Early Roman period, is unusual in many respects and poses various challenges. After detailed recording and analysis of the zooarchaeological material, an attempt is made to contextualize these remains both within the specific sanctuary but also within the belief system of ancient Greece as we know it through the literary sources. This process does not lead to any specific interpretation but points instead to possible alternative ways of thinking about this type of evidence and about material remains from sanctuaries in general. At the heart of this paper lies the much-discussed relationship between the written sources and the material record in the investigation

of past societies.¹ Considerations of this issue are crucial in the study of ancient Greek religion and particularly challenging when applied in a zooarchaeological study.² Within this framework the paper deals with the following questions: is what the ancient texts tell us about cultic practices in a Greek sanctuary all there is to know about the issue? Is archaeology there just to illustrate the written documentation? How do we interpret finds that do not conform with what is known from the written sources? How can we go about redefining a dialogue between the material and written evidence?

The Sanctuary of Poseidon at Kalaureia is situated on the island of Poros, just off the Peloponnesian coast, east of the Argolid. The sanctuary has been known as the seat of an amphictyony of nine city-states probably from as early as the Archaic period and also as an asylum.³ Demosthenes, the Athenian orator, sought refuge in this sanctuary when he was pursued by the Macedonians in 322 BC. According to the literary tradition he met his death by his own hand just in front of the Temple of Poseidon (Strabo 8.6.14). The site was previously briefly excavated on only one occasion, in 1894,⁴ and its architecture was studied again in the 1930s.⁵ Despite these investigations, the sanctuary, and especially its development and functions, were only sketchily understood.

Archaeological investigation was resumed in 1997. After a certain period of background research and site clearance, a systematic exploration of the site was begun in 2003. It aimed to investigate the physical environment and daily life in a large-scale Greek sanctuary using a wide range of mod-

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¹ Leone & Porter 1988; Small 1995; 1999; Andr n 1998; Moreland 2001; Sauer 2004; Snodgrass 2002; Foxhall 2004.

² See Mylona 2008, esp. 24–30; MacKinnon 2007.

³ On the amphictyony, see Kelly 1966; Mylonopoulos 2006, 129–136. On the function of the sanctuary as an asylum, see Sinn 2003. More generally on the institution of *asylia* (asylum), see Sinn 1993.

⁴ Wide & Kjellberg 1895; Wells, Penttinen & Billot 2003, 33–35.

⁵ Welter 1941; Wells, Penttinen & Billot 2003, 33–35.



Fig. 1. Site plan of Area D and section of the cistern (Feature 03) in the Sanctuary of Poseidon at Kalaureia (by E. Savini).

ern field techniques and methodologies.⁶ The six-year programme, finished by the end of 2012, expanded the above aims with a particular emphasis on issues of religion, cult and belief.⁷ Archaeological research at the sanctuary focused on the systematic and detailed documentation of the excavation process and of the finds, with emphasis on contextualization.⁸ Systematic soil sampling and water flotation have been considered as integral parts of the fieldwork, followed by the analysis of various categories of bio-archaeological remains along with the analysis of all other types of artefacts. These analyses focus on the remains of mammals, microfauna, birds, molluscs, charcoal, carbonized seeds, lipids as well as organic

and inorganic substances.⁹ In accordance with the research objectives of the investigation at the sanctuary, all these categories of bio-archaeological remains are examined with the aim of exploring all aspects that relate to plants and animals in the sanctuary. This is done not only from an environmental and economic point of view, but also posing broader issues current in studies of ancient religion. Notions such as the “secular” and the “sacred” as well as issues of integration of texts and archaeology set up the framework of the bio-archaeological studies concerning the Sanctuary of Poseidon at Kalaureia.

Archaeological context and stratigraphy

The zooarchaeological assemblage under study was recovered from a cistern (Feature 03) just north of the so-called “Building D” (Fig. 1). The cistern was constructed in the Archaic period, and was probably part of a system of interconnected

⁶ The three years research programme (2003–2005) under the directorship of Berit Wells was entitled *Physical environment and daily life in the Sanctuary of Poseidon at Kalaureia (Poros)* and funded by Riksbankens Jubileumsfond. For the recent investigations, see Wells, Penttinen & Billet 2003; Wells *et al.* 2005; Wells, Penttinen & Hjothlman 2007. For a description of some of the methodologies applied see Wells *et al.* 2005, 129–135. See also relevant entries on www.kalaureia.org.

⁷ The six-year programme (2007–2012) was also funded by Riksbankens Jubileumsfond. It is entitled *The sea, the city and the god* and directed by Arto Penttinen. For the first results of this programme, see Penttinen & Wells 2009.

⁸ Mylona *et al.* forthcoming.

⁹ These remains are studied by a group of specialists that includes Y. Basiakos (technological analysis of organic and inorganic remains), G. Iliopoulos (microfauna), S. Isaksson (pottery chemical analysis), P. Lymberakis (microfauna), D. Mylona (mammal and fish remains), M. Ntinou (wood charcoal), A. Sarpaki (archaeobotany), D. Serjeantson (bird remains), G. Syridis (molluscs) and T. Theodoropoulou (marine molluscs).

cisterns. It fell out of use and in the Early Roman period (some time after 50 BC) became filled up with soil, stones and an unusual collection of items.¹⁰ At the time the sanctuary was still in use (Paus. 2.33.2).¹¹ The cistern, which is over 3 metres deep, was systematically sampled and a large portion of its soil underwent water flotation. Over 13,000 animal remains have been collected, representing donkey, cattle, pigs, sheep, goats, dogs, fish, birds, bird eggs, snakes, frogs, small mammals and large numbers of purple shells.¹² Among the animal bones, the remains of dogs and snakes are the most numerous. In addition to the animal remains a large number of glass vessels, all broken, were retrieved. Pottery sherds were very scarce and eroded. Charcoal and seeds were scarce as well. The animal remains had an uneven vertical distribution through the cistern's fill.¹³

The animal remains: description

The animal remains retrieved from the cistern are presented below in two broad categories: the first is made up of the usual sacrificial animals, those that are expected to be found in a sanctuary as sacrificial victims and edible bodies in the subsequent sacrificial feast, namely cattle, pigs, sheep and to a lesser extent goats;¹⁴ in the second category fall all those animals which are “unexpected”, those that according to the same sources do not form part of the common rituals in a Greek sanctuary, as these are known in the relevant literature.

¹⁰ For the excavation report on the cistern, see Wells, Penttinen & Hjøhlman 2007, 36, 41 and 89–94. The analysis of the glass remains, one of the few datable categories of finds in the cistern, suggests a date that ranges from the 1st to the 3rd centuries AD. The Early Roman date is favoured here on the grounds provided by the few datable pottery sherds.

¹¹ Recent excavations in Area I uncovered a complex building which was in use when the cistern was filled up.

¹² This assemblage will be published in detail by the various specialists in Mylona & Penttinen forthcoming. More specifically the following descriptions are based on Lymberakis & Iliopoulos forthcoming; Mylona forthcoming a; Serjeantson forthcoming; Syrides forthcoming. For details on the distribution of remains within the cistern, see Mylona forthcoming a.

¹³ For a detailed description of this distribution, see the section on taphonomy below.

¹⁴ For the typical sacrificial animals, see Burkert 1985, 55–59; Rosivach 1994. For a systematic treatment of the iconography of animal sacrifice, see van Straten 1995. For the consumption of the sacrificial animals see Durant 1989; Detienne 1989; Ekroth 2007; 2008.

The sacrificial animals: medium and large mammals (equids and dogs excluded)

Cattle, pig and ovicaprid remains are relatively few in comparison to dog and microfaunal remains (*Table 1*). There are at least two individuals of pig deposited in the cistern and they represent both a mature and a very young animal. All parts of the pigs' carcasses appear to be present although no articulated parts have been located. The cattle and ovicaprids are all adults.¹⁵ Several anatomical parts are present, but none is in articulation with others. The cistern contained the remains of at least one individual of cattle and four ovicaprids. No sexing information is available. Burning is extremely scarce and where it occurs it indicates cooking on a spit. The overwhelming predominance of unburned bones indicates that most meat was boiled or stewed. Cut marks are scarce as well. There is a differentiation between the type of cut marks observed for different types of animals. Cattle bones are more heavily chopped, while ovicaprid bones bear only disarticulation knife marks. Chopping marks on non-identifiable bones are found on long bone splinters, obviously associated with breaking the bone into small parts.

Table 1. Animal remains from the cistern (Feature 03).

| <i>Taxa</i> | <i>Number of remains</i> |
|------------------------|--------------------------|
| Equid | 12 |
| Cattle | 11 |
| Pig | 24 |
| Sheep and goats | 79 |
| Sheep | 13 |
| Goats | 4 |
| Dogs | 353 |
| New born dogs | 152 |
| Large size mammals | 9 |
| Medium size mammals | 16 |
| Small size mammals | 95 |
| Fish | 51 |
| Birds | 55 |
| Snakes | 2720 |
| Frogs | 104 |
| Sea shells | 2500 |
| Non-identifiable bones | 13609 |
| Total | 19807 |

¹⁵ Not enough dental and fusion data are available for any trends to appear.

The cattle, pig and ovicaprid bone assemblage from the cistern appears to be quite similar in its basic traits to the bones found in the Early Hellenistic “dining deposit” west of Building D,¹⁶ indicating that they probably represent dining refuse. Unlike the remains of the dining deposit, however, in the cistern almost no remains of cooking or drinking vessels had been deposited. On the contrary, the bones of these domestic, “typical sacrificial animals” have been deposited along with the remains of a variety of “unusual animals”. We suggest that perhaps the cattle, pigs and ovicaprids were consumed in a dining event of a different nature/purpose.

The unexpected animals

Dogs

Among the identifiable bones, the majority (75.03%) belongs to dog (*Table 1*). Of those, two major groups emerge: the adults and the new-borns. Each of these groups includes animals of a variety of sizes. There are remains of at least eight adult dogs. The mature dogs are of various statures as is evident from the different sizes of their bones. All anatomical parts are present: front and hind legs, cranial parts, trunk and thoracic cavity, pelvis and tail, but they do not consist in complete skeletons. We can assume that the mature dog remains had been deposited in the cistern as loose bones. Some of the adult dog bones (metatarsals, phalanges, ribs) are burned (*Fig. 2*). Furthermore, four dog bones bear cut marks which indicate the skinning of the carcass and the breaking of the bones.



Fig. 2. Burned dog bones from the cistern.



Fig. 3. Various bones of newborn dogs from the cistern.

On the basis of the above it appears that various adult dogs were eaten after they had been skinned somewhere near the cistern. Their preparation probably involved the char-grilling of portions of dog meat. After the consumption of the meat and probably the temporary deposition of the bones in a hearth, the dog bones and probably their skins were deposited in the cistern. It is not possible to tell whether the puppies were also cut in pieces or they were deposited whole. They do not seem to have been char-grilled like the adults. They were either cooked in a different manner (boiled, stewed) or left uncooked.

Snakes

The cistern deposits produced a very large number of snake remains. They represent a number of different taxa and different individuals within each taxon, some of them reaching a length of over 1.5 m. The Montpellier snake (*Malpolon* sp.), the Balkan whip snake (*Hierophis gemonensis*), the Four-lined snake (*Elaphe quatuorlineata*), the Grass snake (*Natrix natrix*) and/or the Dice snake (*Natrix tessellata*), and the Nose-

¹⁶ For a brief presentation of the deposit, see Wells, Penttinen & Billot 2003; Wells *et al.* 2005, 164–179; Mylona 2008, 92–97; forthcoming b. For the detailed publication, see Mylona forthcoming a.

horned viper (*Vipera ammodytes*) are the identified taxa. These snakes are from both venomous and non-venomous varieties. A number of their remains, both vertebrae and ribs (but not cranial bones) are burned black or white (Fig. 4). No cut marks were observed. It appears that various snakes were killed, cut in pieces and exposed to fire, with the flesh still on.¹⁷ It is possible that the snake flesh was consumed, but other uses cannot be excluded.

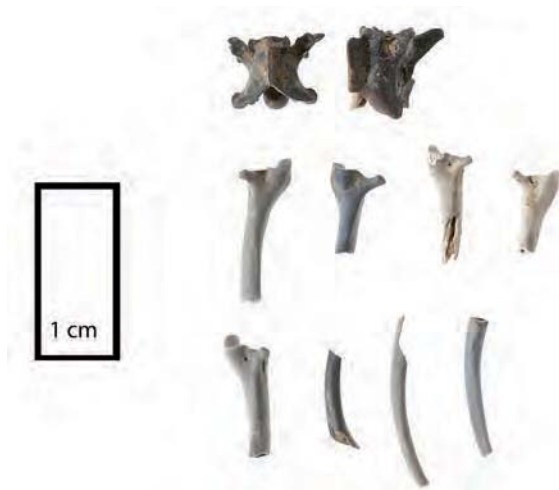


Fig. 4. Burned snake bones from the cistern.

Other microfauna

This category includes frogs (cf. *Pelophylax* sp.), lizards (not of the green variety, *Lacertidae*), house mice (*Mus* sp.) and rats (*Rattus* sp.). One of the frog bones is burned black, indicating the use of the frogs, perhaps in a way similar to snakes. The rest of the microfaunal remains are all unburned.

Birds and bird eggs

Bird remains include the bones of a whole crow (*Corvus* sp.), bones of a cockerel and at least one or two chickens (*Gallus gallus*). They also include an assortment of bones from a partridge (*Alectoris* sp.), a finch (*Fringillidae*) and a possible quail (cf. *Coturnix*). Egg remains have also been found in most strata and they represent several eggs (Fig. 5).

¹⁷ We assume that the snakes had not been thrown in the fire complete. In that case we would expect their most-exposed bones, i.e. head bones and terminal tail vertebrae, to have been burned. This is not the case, as only a number of vertebrae and ribs are burned.



Fig. 5. Eggshell fragments from the cistern.

Equids

Equids are represented by a metacarpal, a metatarsal and ten teeth, nine of which are maxillary and belong to the same individual, a donkey (*Equus asinus*). The tenth tooth originates from a young equid, probably a horse. The set of donkey maxillary teeth is a strange find, not only because they are burned, but also because they do not correspond to any other equid cranial bones in the assemblage. It appears that the burned teeth of the donkey had been collected and deposited in the cistern in a loose form.

Fish

A total of 48 fish bones (13 identifiable) were recovered, and they represent a quite varied range of taxa, including a large grouper (*Epinephelus* sp.), a medium parrot-fish (*Sparisoma cretense*), sardine (*Clupeidae*), bogue (*Boops boops*), a large pandora (*Pagellus erythrinus*) and various small and large unidentified fish. They were distributed throughout the cistern's fill. Some of the fish bones are burned black.

Purple shells

A vast concentration of seashells was recovered deposited above all the other animal remains. They form an almost homogenous group of 2,355 *Bolinus brandaris* purple shells. A few other gastropod shells which are not usually considered edible were found mixed with them. Almost all the purple shells are complete and were apparently thrown in the cistern all together, forming a thick layer, on top of the animal bones.

Taphonomy: how was the assemblage formed?

It was a common practice in antiquity to use defective cisterns or wells as places where various types of fill were deposited, usually the clearance of destruction debris. Broken or complete vessels often ended up in functioning cisterns or wells as did dead animals. Additionally, such features often functioned as traps for a variety of animals from the nearby areas, which accidentally fell in them. During the excavation of cisterns or wells which had filled in the manners described above, one would expect to find either complete water-carrying vessels and animal skeletons or a variety of remains, such as broken pottery, broken or complete objects, charcoal and animal remains of various types.¹⁸ In the case of Feature 03, the cistern at the Sanctuary of Poseidon, apart from the variety in animal taxa and the abundance of glass fragments, very little else is present. Very few charcoal fragments or carbonized seeds have been found, despite the systematic water flotation of the cistern's soil;¹⁹ small objects and architectural pieces are extremely scarce and surprisingly, even pottery is very scant.²⁰ It is obvious that a different kind of process led to the accumulation of the cistern's animal bone assemblage.

As noted previously the animal remains have an uneven vertical distribution through the cistern's fill. A concentration of remains is observed in strata 5 and 6 (*Fig. 2*).²¹ These are also the strata which produced large amounts of broken glass vessels. The strata below stratum 6 are equally rich in variety but the remains in them are mostly microfauna or small elements of other animals. As the fill below stratum 6 consists of loose stones and soil, it could be assumed that the animal remains found in it have percolated from above over the years through cavities among the stones. The same is probably true for other categories of finds such as the glass, which is found in small fragments throughout the entire fill. The only case where a deliberate deposition appears to be clear is in strata 5 and 6, where we observe the largest concentration and the largest size of remains.

Summing up the above observations we could suggest that an old, apparently dried-up cistern was filled up with soil and stones. When the filling was almost complete a mass

of animal remains was thrown in. These included parts of two horses, a pig and a piglet, a bovine and four sheep and goats. Furthermore, pieces of several dog carcasses of various sizes and a large number of puppies were also thrown in. Snakes, birds, eggs, fish, frogs and a pile of seashells completed the picture. On top of all these a number of complete or broken glass vessels were thrown in the cistern. More soil eventually accumulated over the top.

Although a deliberate deposition or disposal of a range of dead animals, loose animal bones and glass vessels, complete or fragmented, in the half-filled cistern seems certain, the origin of these materials and their initial function is enigmatic. Some of the material, which has been presented above as from the "sacrificial animals" was probably general dining refuse that was lying around the site and was then collected along with the "unexpected" animal remains and deposited in the cistern. For the rest of the remains, however, several alternatives could be considered. One possible explanation is that when the cistern was to be sealed, the animals, especially the dogs and the snakes, were disposed of in it after they had been killed elsewhere, perhaps in a cleaning operation around the sanctuary. The rest of the remains (purple shells, loose bones of mammals, birds, fish and also eggs) might represent clearance debris, from somewhere near the cistern. Dogs and snakes however do not seem to have been simply unwanted or perhaps damaging animals which were killed and thrown in the empty cistern. The adult dog carcasses were already disarticulated, and their bones were probably free of meat before they were deposited. Some of them were burned and cut, which of course implies some processing before their disposal in the cistern. This processing might have involved the skinning and eating of the dogs. The burning traces on several of the snake vertebrae and ribs suggest that they had also been processed in some way before their disposal.

It should be noted that none of the non-domestic animals present in the assemblage could occur naturally in the cistern, with the possible exception of the frogs. The snakes are of many different species, originating from different habitats, including lakes/ponds or rivers. Besides, both the snakes and the lizards could not have survived in the dark interior of the cistern, because their bodies require regular exposure to the sun.²² But even the frogs' origins are dubious. If they had been naturally trapped and died in the cistern dump one might expect to find their complete skeleton. This is not the case however; only loose, non-articulated frog bones have been collected. The presence of the single burned frog bone strengthens the hypothesis that they were deliberately deposited.

¹⁸ For examples, see Poulou-Papadimitriou 2008 (Byzantine: Eleutherna, Crete); MacGillivray, Sackett & Dressen 2007; Wall-Crowther 2007 (LM: Palaikastro); Roberts & Glock 1986 (Archaic: Agora in Athens).

¹⁹ Sarpaki forthcoming; Ntinou forthcoming.

²⁰ Wells, Penttinen & Hjøhlman 2007, 36–37, 41 and 89–94.

²¹ The strata within the cistern are artificial and do not correspond to actual differences in the soil. This method was followed because the restricted space in the cistern did not allow for the accurate recording of changes in soil.

²² Lymberakis & Iliopoulos forthcoming.

As mentioned above, the inclusion of all major finds, animal remains and glass vessels in the same strata (especially strata 5 and 6) probably suggests a contemporaneous deposition, or at least deposition within a short period of time. If, on the basis of our observations, we exclude the possibility that these remains are random refuse or the products of a thorough cleaning of the sanctuary, we could perhaps link them to one or more sets of activities in the sanctuary which took place at the same time. What sort of activities would involve many dogs and puppies, snakes, frogs, sheep and goats, pigs and piglets, horses, fish, birds and eggs and purple shellfish. What would lead to their accumulation in a half-filled cistern?

Discussion

The combination of animal remains in the cistern is very unusual. No other published bone assemblages similar to this one exist so far in the Greek world, although individual taxa, especially dogs and puppies are occasionally reported.²³ A similar case has been reported from Etruscan Italy.²⁴ Because no direct comparative cases are available, we will attempt to gain a measure of understanding of the origin and the function of these animals before their deposition, by exploring common associations between them. This is achieved, by investigating the various uses, meanings and symbolisms that each of these animals had in the ancient Greek world, as these emerge from a variety of sources, mostly literary but also through representational arts and physical remains. The following review is not exhaustive. The cases presented here do not bear any chronological coherence and are treated as examples which reveal possibilities of interpretation rather than interpretations as such. Additionally the texts cited here are of various literary genres, of different degrees of completeness and also of different literary readership. This review mostly aims to define the various domains in which each of these animals participated, or was perceived to participate, by providing specific examples for each case. A distinction should

²³ Day 1984; Luce 2008. Interestingly dog bones with cut and burning marks have been found in a 3rd century fill of a well at Eretria, in association with bones of human infants as well as in a number of other contexts on the same site (Chenal-Velarde 2006). Also similarly cut and burned dog bones have been identified in a 6th–5th century BC well fill in Syracuse (Sicily), possibly related to the cult of Artemis-Hekate (Chilardi 2006).

²⁴ I owe this information to Katie Rask, Ohio State University. An example of such as assemblage originates from a well in Area C at Pyrgi in Latium (modern Santa Severa), which chronologically corresponds to the Archaic period. The assemblage included bones of pig, ox, birds, and frogs (Cardini 1970).

be made, however, between the remains of the “normal” sacrificial animals and those of the other, “unusual” animals. The first group undoubtedly played roles other than that of the sacrificial victim, but those will not be discussed here. As noted above, we consider these as ordinary food refuse, whether related to sacrificial practices or not.

Dogs

Dogs were part of the daily life of ancient Greeks, as pets, hunting companions and herding guards.²⁵ Gnawing marks on animal bones are quite common in zooarchaeological assemblages from almost all excavations, thus indicating that dogs were roaming around settlements and being fed on table leftovers.²⁶ The relationship between dogs and people seems to have changed over the centuries, but certain themes seem to remain constant from at least the 6th century BC to the Roman period.²⁷

Dog flesh was eaten. This is attested archaeologically by numerous cases from a variety of dates and of a wide geographical distribution, where dog bones bear traces of cut marks and burning, both features that are usually related to cooking and consumption.²⁸ Literary sources present the consumption of dog flesh as an activity linked to distant people with strange habits such as the Thracians,²⁹ to restricted specialized diets in a medicinal context,³⁰ or to special religion-determined circumstances, such as the “Hekate’s meals”, which prescribed the dedication to Hekate and the exposure at crossroads of puppies’ meat among other foodstuffs, which were subsequently consumed by the poor.³¹ An early refer-

²⁵ Merlen 1971; Anderson 1985, 32–34, 43–48 and 51–52; Luce 2008; Trantalidou 2006.

²⁶ For the occurrence of gnawing marks on animal bones from various contexts within the Sanctuary of Poseidon, see Mylona forthcoming a. The presence of dogs in sanctuaries was in some cases prohibited, see Scholz 1937, 77; Parker 1983, 357.

²⁷ Luce 2008; Kitchell 2004.

²⁸ Examples and relevant bibliography in Luce 2008, 280–286; see also De Grossi Mazzorin & Minniti 2006; for another example of cut and burned dog bones from a sanctuary at Eretria, Greece (Hellenistic) see Chenal-Velarde 2006.

²⁹ The reference to the Thracian custom of eating dogs is found in the work of Sextus Empiricus, who wrote in the 2nd/3rd centuries AD (*Pyrrhoniae hypotyposes*, 3.225; Pellegrin 1997), discussed by Luce 2008, 281, where other relevant cases are also cited. More generally on dog flesh taboos, see Simoons 1994, 203–249.

³⁰ An example for the consumption of dog flesh in a medicinal context is found in the Hippocratic collection: “Dog’s flesh dries fevers and gives strength, but does not pass through as stool.” (*On Diet [Vict.]* 2.46). For a discussion of food consumption as a healing agent, see Garnsey 1999, 83–84; for more examples about dog eating in a medicinal context, see Luce 2008, 281–283.

³¹ Lucian *Dial. mort.* 1.1 and 2.3; von Rudloff 1999, 85–86; Scholz 1937, 14–22.

ence by the 6th century BC poet Ananios however, places the consumption of dog flesh in the context of ordinary autumnal eating along with the meat of piglets, kids, hare and fox.³² This source, along with the archaeologically identified dog bones with consumption traces on them mentioned earlier, suggests the possibility of a more widespread practice of dog eating.

The connection of dogs with healing however went far beyond the consumption of dog flesh as a restorative food. Dogs, especially puppies, were part of the healing process in sanctuaries of Asklepios. Such cures are described on 4th century BC inscriptions from Epidauros and in several literary texts.³³ The healing involved the licking of the ailing part by a dog or puppy and often the subsequent disposal of the animal in a chasm in the earth.³⁴ Dogs were also used in rituals related to birth, either to purify or to ease the birth.³⁵

Dogs were sacrificed to certain deities, such as Hekate, Ares at Sparta and Eileithyia at Argos,³⁶ but were also sacrificed in an act of purification.³⁷ Dog sacrifices are attested archaeologically from all over the Greek world.³⁸ Pausanias refers to a case of divination by the innards of dog that was practised in the late 5th century BC by the Eleaean Thrasyboulos, a soothsayer (Paus. 6.2.4).

Snakes

As a generic category of animals, snakes were highly symbolic in the ancient world. They were involved in a large number of rituals. Snakes were perceived in connection with the underworld for the obvious reason that the typical snake appears to emerge from the earth and descend there. As such chthonic creatures they probably played a role in the Eleusinian mysteries; according to certain sources they resided in the *megara* and ate the piglets and other items that were thrown in during the Thesmophoria.³⁹

³² Cited in Ath. 7.282a–b. See discussion in Mainoldi 1984, 171.

³³ For the use of dogs in the Asklepion at Epidauros, see LiDonnici 1995, 98–99 and 104–105; for other cases see Farnell 1970, 240.

³⁴ Gourevitch 1968; Gilhus 2006, 109; Scholz 1937, 10–24; Mainoldi 1984, 58.

³⁵ von Rudloff 1999, 121.

³⁶ Scholz 1937, 14–24; Merlen 1971, 86 and Mainoldi 1984, 51–59 for a list of literary references to dog sacrifices. Especially for dogs in connection to the cult of Hekate, see von Rudloff 1999, 120–121.

³⁷ Merlen 1971, 86; Mainoldi 1984, 72–73, and a more general discussion in Luce 2008, 283–284.

³⁸ Day 1984; Luce 2008.

³⁹ Clinton 1998, 69–80. According to a scholiast to Lucian (*Dial. meret.* 2.1, Rabe p. 275.23–276.24) “it is said that there are snakes down below in the chasms which eat most of what is thrown down”. At Eleusis the *megara* are over 7 m deep and epigraphic evidence suggests that piglets were thrown in them once a year. This scenario presented by Lucian’s scholiast is quite unlikely. Snakes cannot live in such dark depths because

Snakes had an association with several deities, mostly on mythological grounds or as symbols.⁴⁰ Apollo at Delphi, for example, succeeded Python, the oracle god who was often represented as a serpent.⁴¹ Figurines of snakes, very often in the form of bracelets, were dedicated in sanctuaries, especially in the Archaic period.⁴² Snakes appear as monsters or in monstrous combinations in mythology (the Lernaian Hydra or Medusa). Snakes were considered as guardians of private houses, tombs and sacred places and they appeared as symbols of the souls of the dead,⁴³ mediating between life and death.⁴⁴ They were also very important in healing, thus becoming the symbol of Asklepios. Pausanias mentions the tame yellowish snakes that were peculiar to Epidauros and considered as sacred to Asklepios (Paus. 2.28.1).⁴⁵ In the context of healing in the Asklepia, at certain occasions snakes affected the cure.⁴⁶

Snakes seem to have been used as a means of divination. Of interest is a story preserved in a strange work, the Orphic *Lithica* (lines 690–715). There, in a discussion of the *liparaios lithos*, the “fat stone”, a sacrifice of snakes for mantic purposes is described. The fat stone is burned, producing a smell that is particularly attractive to snakes. Snakes start moving towards the fire and the first to reach it is seized by three boys and torn into nine pieces.⁴⁷ Finally, serpents conveyed a rich plethora of meanings in the dream world of Artemidoros in the 2nd century AD.⁴⁸

their physiology requires regular exposure to the sun and also because they are not carrion eaters, but rather hunters of their food (Lymberakis & Iliopoulos forthcoming). For snakes at the Thesmophoria, see also Rusculo in this volume. For snakes in chasms, see Bevan 1985, 161–162.

⁴⁰ See Bevan 1986, 261 and 265–267 and references therein.

⁴¹ For the relevant myth, see Chappell 2006; Harrison 1899, 223. For the iconography of Delphic serpent-related myths, see Harrison 1899; Kuster 1913, 85–100 and 104–120.

⁴² Bevan 1986, 268–277.

⁴³ The Greeks believed that the dead might appear in the form of a snake; snakes are illustrated in funerary contexts very often (Burkert 1985, 195).

⁴⁴ For the Roman world, see Turcan 1996, 260–265; Gilhus 2006, 108.

⁴⁵ Burkert 1985, 214. Snakes were regarded as incarnations of Asklepios at Epidauros, Kos and also in Rome. Asklepios is also related to dogs. In many of his shrines we have evidence for the maintenance of sacred dogs (Epidauros, Athens, Lebena, Rome); see Farnell 1970, 240. It should be noted here that chasms and the presence of water (both met at a cistern) were also integral parts of the healing practice.

⁴⁶ Wickkiser 2008. The epigraphic record describes such cases: one man’s toe was healed by a snake that came out of the *abaton*, the building where the patients slept, and licked it (LiDonnici 1995, 96–97), while a viper opened a tumour of a certain Melissa (LiDonnici 1995, 118–119).

⁴⁷ The poem dates to the 4th century AD, probably based on a 2nd century AD treatise by Damigeron (Giannakes 1982). The tearing of the snake and its association with fire (and burning?) would perhaps produce remains similar to the ones found in the cistern.

⁴⁸ Artem. 2.13, 4.67 and 4.79; White 1990.

Equids

Equids, i.e. horses, mules and donkeys, were certainly used around the sanctuary of Kalaureia, as well as in the town and countryside around it, as draught animals (transportation, agricultural tasks etc).⁴⁹ They were also considered as a status symbol and were in certain cases buried along with humans.⁵⁰ Their bones are not found in archaeological strata as often as other domestic animals, probably because their carcasses were often disposed of away from the settlement.⁵¹ Equids held an ambiguous culinary position in ancient Greece. Their flesh was certainly considered edible, but its actual consumption was socially tinted. Only the very poor, or people on the periphery of the Greek world ate it. Eating equid flesh in a medicinal context however was much more acceptable.⁵² Ancient Greeks seem to have perceived certain equids, i.e. donkeys, in connection with drinking and merriment.⁵³ Participation of equids in cult seems to have been a rather unusual phenomenon.⁵⁴ Horses were specially connected to certain gods, especially Poseidon⁵⁵ but also some other deities. They were occasionally sacrificed to Poseidon, sometimes by submersion in a spring (Paus. 8.7.2, Apollod. *Bibl.* 1.7.8).⁵⁶ Other deities also received sacrifices of equids; a young horse was sacrificed to Helios (the Sun) and a donkey to the Wind (Hsch., s.v. ἀνεμώταξ). We find also some references for the use of equid bones in magic. In the *Greek Magical Papyri* we read that a tooth from the upper jaw-bone of a female ass can be used to make a love spell of attraction.⁵⁷

Fish

The role of fish as food is obvious, and such a use is well-attested in the sanctuary.⁵⁸ Their occasional use as offerings or animals of sacrifice is known through a variety of written

sources, epigraphic and literary,⁵⁹ but also archaeologically.⁶⁰ The consumption of fish was often an ideologically and symbolically laden act.⁶¹ This symbolism often went beyond the social arena into religious ritual. The avoidance of fish eating or contrarily, prescription for the consumption of certain fish was in certain contexts strictly regulated by religious rules.⁶² The association of small fish to Hekate is such an example.⁶³ Moreover, the heavily symbolic nature of fish is evident in the fact that they functioned as symbols to be interpreted in dreams.⁶⁴ Although there is no strict relation between fish and a certain god, some deities appear in association to fish more often than others. These are Poseidon, the sea god *par excellence*, Artemis, Hermes, Pan, Hekate and Aphrodite.⁶⁵

Purple shells

The archaeological remains of purple shellfish, either *Bolinus brandaris* or *Hexaplex trunculus*, are usually connected to purple dye industry, especially if found in large amounts.⁶⁶ In smaller quantities they are usually interpreted either as food or as fishing bait.⁶⁷ No clear case of purple shells as offerings has been published so far from excavations of a historical date,⁶⁸ although another kind of shell, which in ancient

⁴⁹ Isager & Skydsgaard 1992, 85–89.

⁵⁰ Reese & Kosmetatou 1995; Camp 1998, 10; Antikas 2006; and various papers in Gardeisen 2005.

⁵¹ Disposing the carcasses of dead donkeys or mules down disused wells or cisterns is still a common practice around the Greek countryside.

⁵² E.g. Gal. *Nat. Fac.* 3.1.9 (Grant 2000, 154–190); Dalby 1996, 60–61; Simoons 1994, 180–183; see also Garnsey 1999, 83–85.

⁵³ For rhyta shaped as donkey heads, see Hoffmann 1962; Lissarrague 1995.

⁵⁴ Georgoudi 2005.

⁵⁵ Malten 1914; Bevan 1986, 195–200 and 204–213; Burkert 1985, 297–299; Simoons 1994, 181–182.

⁵⁶ Burkert 1985, 138; Georgoudi 2005, 139.

⁵⁷ Betz 1986, iv 2891–2942 (p. 92). Also for a discussion of a Roman case, see Gilhus 2006, 231–234.

⁵⁸ Mylona 2008, 92–97; Mylona forthcoming a.

⁵⁹ A Hellenistic epigram by Apollonides, for example, describes how Menis, the fisherman, offered to Artemis a grilled red mullet and a hake, along with some wine and bread in return for a rich catch (*Anth. Pal.* 6.105). For more examples, see Mylona 2008, 97–99.

⁶⁰ Geometric strata from Kommos produced a large number of fish bones, most of which are burned. These fish have been interpreted as offerings or sacrifices (Rose 2000; Lefevre-Novaro 2010). See also Bevan 1996, 133–134, for the offering of fish figurines.

⁶¹ Wilkins 1993; Davidson 1993; 1995; 1996; Mylona 2008.

⁶² E.g. Pythagorians (Plut. *Quaest. conv.* 728c–730f). For a comprehensive discussion of the issue and relevant bibliography, see Mylona 2008, 106–108.

⁶³ See above, n. 40.

⁶⁴ Artem. 2.14. According to Artemidoros, in mid/late 2nd century AD, more than 50 species of fish and marine life had specific meanings in dreams.

⁶⁵ Rose 2000, 520–536; Mylona 2008, 98.

⁶⁶ Reese 2000; Alfaro & Mylona forthcoming. The process of purple dye production requires the use of live shells. It mostly took place on the beach, where fresh materials and plenty of water and water features (e.g. rock cut basins) were readily available. It is unlikely that such a process would take place in a crowded place such as the Sanctuary of Poseidon, far from the sea (approximately 900 m from the sea and 190 m above sea level).

⁶⁷ For the use of purple shells as food see Karali 1999, 14–17; for their use as fishing bait, see Karali 1990, 411.

⁶⁸ The assemblage of purple shells from the cistern in the sanctuary could represent a sackful of shells, or many smaller amounts, that had been brought on site as offerings by purple shell fishermen in the vicinity of Kalaureia. It should be noted here that the Saronic Gulf had a strong tradition of this kind of fishing and the nearby town of Hermione, which had plenty of connections to the sanctuary, was famous in antiquity for its purple cloths (Plut. *Vit. Alex.* 36).

literature is often mentioned along with the purple shells,⁶⁹ had been used in a ritual context on Delos.⁷⁰ In literature, purple shells are referred to in connection with purple dye production or in biological treatises.⁷¹ Other domains where they are treated in some detail are the medicinal and the gastronomic.⁷² In the latter the discussion refers to their taste in relation to other shells or the improvement of their poor taste through elaborate cooking.⁷³ In medicinal literature the purple shells appear to possess several healing properties.⁷⁴

Lizards

Lizards of the kind found in the cistern (not *Lacertidae*) favour rocky, dry environments with minimal shrub cover. They have rarely been reported in archaeological excavations mostly due to the small size of their remains, their fragility and also the application of unsuitable retrieval methods in the field. However, lizards played a role for ancient Greeks. Aristotle, for example, studied their physiology quite extensively (e.g. Arist. *Hist. an.* 488a24, 489b21, 503b12, 509b8 and 558a14). Lizard illustrations are found on coins,⁷⁵ on gems⁷⁶ and on ceramic vessels⁷⁷ of various dates. It seems that lizards were occasionally used in healing. Aelian refers to lizards in relation to the healing of human eyes (Ael. *NA* 5.47). Above all however, lizards were one of the most common ingredients in magic recipes. Although geckos were the most potent type of lizard, other kinds were also used, in

⁶⁹ Bélis 1999, 300–303.

⁷⁰ There are records for the use of silver or silver-coated large shells (cf. *Charonia* sp. or *Tonna galea*) on poles, used in sacred procession (Prêtre 1999, 393).

⁷¹ For a review of these sources, see Alfaro & Mylona forthcoming; see also Moatsos 1932.

⁷² Detailed discussion and references in Bélis 1999.

⁷³ In gastronomic texts, we read that the taste of the flesh from purple shellfish was not very highly appreciated by the gourmets of the 4th century BC onwards, unless it was altered by condiments and special preparation. This however cannot be taken at face value, as it mostly reflects the taste of urban consumers, who had access to this kind of food through the market (Bélis 1999). Ethnographic observations along the Greek coast show that the purple shells had, in older times, been consumed regularly, either as an impromptu snack on the beach, by fishermen, or along with other kinds of seafood in stews. For a discussion on taste around fish and seafood in Classical Greece, see Mylona 2008, 81–84 and 88–90.

⁷⁴ Ground or burned purple shells were used to treat ulcers and tumours, genital diseases, to improve the blood etc. (Bélis 1999).

⁷⁵ See for example a Thasian coin illustrating Tyrian Herakles with a lizard in front of him, see Keller 1909–1913, 270–275.

⁷⁶ E.g. on a gem now kept at the Metropolitan Museum of New York, dated in the second half of the 5th century BC; Richter 1930, 36, pl. 66, fig. 236.

⁷⁷ Hurwit (2006) gives a detailed discussion of the lizard as a theme on Archaic vessels and discusses its symbolism in the Archaic and Classical periods with commentary on the lizard symbolism at later periods.

charms of sexual attraction and personal strength.⁷⁸ Lizards were also perceived as portents (Paus. 6.2.4),⁷⁹ and in one case we find oracles that link Hekate to lizards (Euseb. *Praep. evang.* 5.14.2). Although the lizard symbolism had probably changed over time, its connection with the occult remained.

Frogs

The presence of frogs implies the presence of water and damp vegetation.⁸⁰ We do not find them in Greek art and literature very often,⁸¹ but in the rare cases when we do, the reference to frogs implies the existence of springs and other water bodies.⁸² A frog was illustrated on an Archaic (530–500 BC) silver stater from Seriphos.⁸³ Its choice as a representation on Seriphean coins was probably based on the pun “Seriphian frog”,⁸⁴ a proverb applied in antiquity for those who could not speak or sing well because, according to the legend, the frogs on Seriphos were mute (Plin. *HN* 8.83).⁸⁵ Live frogs were a feature of the Letoon of Xanthos in Asia Minor.⁸⁶ Divination by the entrails of frogs is also mentioned in literature (Juv. 3.44–45), especially of the Roman era, when it was considered a foreign influence.⁸⁷ Frogs were also used in magic.⁸⁸

Mice

House mice and rats such as the ones found in the cistern, are mostly vermin. They are found in houses and storerooms, and among agricultural populations they represent a threat. Their presence in the sanctuary area is not surprising. In the perception of ancient Greeks however, mice had a strong connection with crops. This is probably why we find them illus-

⁷⁸ Nock 1976.

⁷⁹ Hurwit 2006.

⁸⁰ Hence the terms βορβοκοίτης (mudcoucher), λιμνήσιος (laker), λιμνοχαρής (marsh-loving), ὑδρομέδουσα (water ruler), φλοβάτης (mud walker), φιλόμβριος (rain-loving) (*LSJ*, s.v.).

⁸¹ But see Aristophanes’ *Frogs*.

⁸² A dedicatory epigram celebrates the dedication of a bronze frog to the Nymphs (*Anth. Pal.* 6.43).

⁸³ For the attribution of this coin to Seriphos, see Svoronos 1898, 205–211.

⁸⁴ *Suda*, s.v. Βάτραχος ἐκ Σερίφου; *Suda On Line* (www.stoa.org; accessed June 2010).

⁸⁵ According to an etiological myth, Zeus turned the frogs into mutes because their voices interrupted Perseus’ sleep after his encounter with Medusa (Ael. *NA* 3.37).

⁸⁶ Bevan 1986, 151.

⁸⁷ Halliday 1913, 192 considers divination by the innards of frogs as an Etruscan or Babylonian importation.

⁸⁸ Betz 1986, 277 (35, lines 312–320), 104, (5, lines 172–212).

trated on ears of wheat on coins from Metapontum⁸⁹ and also as bronze figurines, which were dedications in sanctuaries.⁹⁰

Crows

Crows are birds whose physiology was well-studied in antiquity.⁹¹ They could be tamed and taught to imitate human speech or animal voices.⁹² The crow was one of the popular characters in fables and stories.⁹³ They were associated with Athena and were part of the wedding ceremonies, symbolizing fidelity.⁹⁴ Perhaps the most characteristic aspect of these birds was the use of their cries, flying patterns and numbers as auguries.⁹⁵

Chicken and cockerels

The date of the introduction of chicken in the Greek world is a matter of scholarly debate⁹⁶ and its use as a source of food (eggs and meat), either for secular consumption or for sacrifice, is still unclear.⁹⁷ Roosters and hens were kept in certain temples, for ritual use.⁹⁸ Cockerels were associated to various gods, especially warlike ones such as Ares and Athena, and also to Dionysos (on the basis of a sexual association).⁹⁹ Additionally the cockerel was consecrated to Maia, mother of Hermes; initiates to her mysteries abstained from eating domestic birds, just as the initiates in Demeter's Eleusinian mysteries did (Porph. *Abst.* 4.16). The cock was the expected sacrificial victim to Asklepios after healing¹⁰⁰ and was also associated with the underworld. In the Graeco-Roman world cockerels were sacrificed to deities of the underworld in the interest of the dead.¹⁰¹ In addition they were commonly illustrated on tombstones.¹⁰² Certain sources preserve reference to the involvement of cocks to certain agricultural rituals¹⁰³ and also, at least in Roman times, to the divinatory

practice of *alektryomancy* (i.e. divination by observing the sacred chicken).¹⁰⁴ In temples ritual cockfighting took place,¹⁰⁵ while in more secular contexts the cocks were an ingredient for magic spells.¹⁰⁶ Furthermore, cockerels have been illustrated on Archaic vases as love gifts.¹⁰⁷

Eggs

References to egg-eating are not very common in sympotic literature and when they occur, their consumption is usually placed in the context of extravagant symposia, where eggs are ingredients in elaborate recipes.¹⁰⁸ Although it is evident that eggs were eaten, their shells are rarely detected archaeologically in domestic contexts, because of their fragility and inappropriate retrieval methods applied in the field.¹⁰⁹ The egg, usually with no determination of species, was a highly symbolic food in antiquity for an obvious reason: the generation of life from within it. Its philosophical and cosmological connotations, reflecting a strong oriental influence, are evident in the Orphic cosmology.¹¹⁰ Egg-eating was in some cases a taboo.¹¹¹ In the sources, there is even a reference to an egg-swallowing ritual.¹¹² Eggs, real or made of clay or stone were deposited in graves.¹¹³ In Rome the egg symbolized life and fertility and was used in connection with deities that were associated with earth and reproduction (e.g. Ceres–agriculture).¹¹⁴ Finally we find eggs as ingredients in magical recipes.¹¹⁵

⁸⁹ Richter 1930, 35 and 79, fig. 184.

⁹⁰ E.g. Waldstein 1905, 384, pl. 76.

⁹¹ For a review of all references, see Arnott 2007, 113–117.

⁹² Arnott 2007, 114.

⁹³ Temple & Temple 1998.

⁹⁴ Temple & Temple 1998, 115.

⁹⁵ E.g. Hor. *Carm.* 3.17.13; Plin. *HN* 18.87. For full references, see Arnott 2007, 114.

⁹⁶ Sergeantson 2009; *eadem* forthcoming; Trantalidou this volume.

⁹⁷ Sergeantson 2009; Sergeantson forthcoming.

⁹⁸ Ael. *NA* 17.46; Thompson 1964, 41.

⁹⁹ Simoons 1996, 154; Bevan 1986, 28 and 41.

¹⁰⁰ Jayne 1962, 296; Kilby 1979.

¹⁰¹ Representations of birds (among which many are cockerels) are common in several sanctuaries (Bevan 1986, 43).

¹⁰² Goodenough 1953–1968, 64–67.

¹⁰³ At Methana a cockerel was sacrificed as a means of ensuring protection from the scorching south-west wind and a good grape harvest (Paus. 2.34.2).

¹⁰⁴ Cic. *Nat. D.* 2.3.7; *Div.* 1.29 and 2.71, discussed in van der Horst 1998.

¹⁰⁵ Lonsdale 1979, 155; Waida 1987. For a late 5th century BC illustration of cock fighting, see Richter 1930, 40, fig. 216.

¹⁰⁶ One goose, three pigeons and three roosters were placed in a pit and burned as part of such a magical preparation (Betz 1986, 161).

¹⁰⁷ Shapiro 1981. For representation of cocks in sculpture, see Richter 1930, 39–40.

¹⁰⁸ Dalby 1996, 112; Dalby & Grainger 1996, 47, 97 and 117.

¹⁰⁹ For eggs from archaeological contexts that were not eaten, see Sergeantson 2009, 178–179.

¹¹⁰ Leisegang 1955.

¹¹¹ Plut. *Quaest. conv.* 635, discussed in Burkert 1983, 40, n. 25.

¹¹² Mart. Cap. 2.140; Burkert 1983, 40, n. 25.

¹¹³ Kurtz & Boardman 1971, 77. See also Aaris-Sørensen 1981, 91–101, and Højlund 1983, 146, on the Maussolleion of Halikarnassos, where 26 hens' eggs were found.

¹¹⁴ Simoons 1994, 156.

¹¹⁵ Betz 1986, 83.

Common trends and associations

In this preceding review of the use and meaning of the various types of “unusual” animals several trends are evident.¹¹⁶

The animals most commonly encountered in the cistern are not “typical” sacrificial animals that were sacrificed on an altar and consumed at sacrificial meals (at least as far as our written sources go).¹¹⁷ Sacrificial function of these animals, however, was not excluded altogether. They are either referred to as sacrificial victims in the geographical or social periphery of the Greek world, or mentioned as curious phenomena. The sacrifice of the cockerel as a means of ensuring protection from the scorching south-west wind and a good grape harvest at Methana is such an example.¹¹⁸ Alternatively, the sacrifice of these “unusual animals” is linked to a specific god only, or to specific circumstances. Horses, for example, were sacrificed to Helios or to Poseidon in specific cases, while puppies were sacrificed to Ares at Sparta.

Most of the “unusual animals”, such as the snakes, the lizards, the frogs and the crow, were not considered edible.¹¹⁹ Even those that were perceived as a possible source of food were often covered by alimentary taboos.¹²⁰ Eggs, for example, were strongly related at the symbolic level to the regeneration of life and their consumption was in some cases prohibited by taboo, while chicken was not eaten by the initiated at the Eleusinian mysteries. Several ancient sources however make it clear that these same animals were eaten by individuals or groups in the social and geographical periphery of the Greek world, or that their status as edible or inedible could change.¹²¹ The edibility or not of dog flesh is a good example of such a case.¹²²

Some deities appear in the textual record to be related to several of these animals more often than others. Poseidon, Hekate and Asklepios are the names that appear more frequently. Puppies, snakes and cockerels, all animals with medicinal properties, were apparently part of the healing process in the Asklepieia and the actual animals were living within their precincts. Hekate was a goddess linked to the women’s world, to child-bearing, to crossroads and to the

darkness. Dogs, snakes, fish and eggs are known to have been connected to her.¹²³ Hekate is also a goddess known from the *Theogony* to be associated to Poseidon, the god of the sea and springs. Together they were prayed to by fishermen.¹²⁴ The example of the shared characteristics (protectors of sea fishing) between deities, which are usually considered by the Classical discourse as unrelated, as in the case of Poseidon and Hekate, is instructive. Given that the ancient Greek pantheon comprises deities each with a wide range of traits,¹²⁵ it should perhaps be more fruitful for our purposes to view the associations of animals not with the deities themselves but with the forces they represent in each case.

Many of the animals in the cistern had a strong association with water and earth. On one hand, we have the aquatic element in the form of purple shells, the fish, the water snakes, the frogs. On the other, we have the chthonic element in the form of snakes, lizards, dogs, puppies and eggs. A joined cult like the one represented in the example of Poseidon and Hekate cited above could explain the combination of the two domains, but would leave out several of the animals that do not fit in any given scheme.

Divination and magic are two domains that account for almost all the categories of animals found in the cistern. Divination had many forms in antiquity, and it was practised both in sanctuaries and in more secular contexts.¹²⁶ It is interesting that almost all the animals in the cistern could have had a divinatory function. The use of the animals in magic appears at first to be a link worth investigating. Magical processes and rites could explain almost all the “unusual” finds in the cistern.¹²⁷

Use of “unusual” animals as food or in ritual could be related to a side of life in a sanctuary that was not reported in public, at least not in written form, that was not commented upon formally or informally. If we investigate each type of animal separately, many are linked to magic, medicine, superstition, or situations that take place in the social periphery.

¹¹⁶ The following discussion is not geographically or temporally specific. Its aim is to reveal possible associations rather than definite interpretations.

¹¹⁷ See n. 16.

¹¹⁸ See n. 104.

¹¹⁹ See *NP*, XIII, 554–558, s.v. snake; VII, 755–756, s.v. lizard; V, 556–562, s.v. frog; III, 959–961, s.v. crow, as well as in reviews of ancient food items (e.g. Soyer 1977; Dalby 1996; Brothwell & Brothwell 1998).

¹²⁰ For a detailed treatise of alimentary taboos covering various types of animals, see Simoons 1994.

¹²¹ Parker 1983, 357–365.

¹²² Luce 2008.

¹²³ von Rudloff 1999, 85–86 and 120–123.

¹²⁴ Hes. *Theog.* 440–443: “to those whose business is in the grey discomfortable sea, and who pray to Hecate and the loud-crashing Earth-Shaker, easily the glorious goddess gives great catch, and easily she takes it away as soon as seen, if so she will.” (Translation by Hugh G. Evelyn-White). Furthermore, there is some tentative evidence for an association between the two at Eleusis, where an Archaic temple of Hekate has been located underneath a Roman temple dedicated to Poseidon and Artemis Propylaia (Clinton 1988, 76).

¹²⁵ Poseidon for example except being worshipped as the ruler of the sea was also worshipped as the Shaker of the Earth, the Protector of the crops etc. For the various epithets and characteristics of Poseidon, see Burkert 1985, 136–139.

¹²⁶ For definitions and more general discussions of magic and divination, see Graf 1997; Giraolo & Seidel 2002; Halliday 1913.

¹²⁷ For an abundance of references to various animals, see Betz 1986.

However we may choose to interpret this find, we are not in position to judge whether it represents a unique phenomenon or whether it was common in sanctuaries. These types of small, seemingly insignificant, remains are very rarely collected in the excavations at sanctuaries.

Conclusions

The animal remains from the Early Roman cistern (Feature 03) in the Sanctuary of Poseidon at Kalaureia appear to be quite an unusual, and so far, unique find. The assemblage consists of thousands of animal bones and shells of a very wide range of taxa, which include seashells and fish, birds and eggs, mice and rats, snakes, frogs and lizards, dogs and puppies as well as cattle, pig, sheep and goats. Stratigraphic and taphonomic considerations suggest that the assemblage was deposited in one episode, or several depositional episodes in a very short period of time. The find spot of this assemblage within the sanctuary and its very unusual composition raises a number of issues that call for interpretation.

The analysis of these remains presents us with challenges, which go beyond what is usually dealt with in a typical zooarchaeological analysis. The first challenge is about the broadening of the interpretative schemes used by zooarchaeology (and also other branches of bio-archaeological research).¹²⁸ Although the economic and archaeo-environmental component of these approaches has been explored in the case of the Sanctuary of Poseidon at Kalaureia,¹²⁹ this study takes zooarchaeological research a step further, into the realm of cult and belief.¹³⁰ In this paper certain notions were repeatedly encountered: magic, divination, death, marginality, earth, medicine. These, along with the much better understood notions of sacrifice, sacrificial animals, sacrificial dining, etc., lead to the realization that the animals did in fact participate in a reality of cult in a Greek sanctuary, that was both complex and multifaceted. In order to understand it better we should explore more widely issues of marginality, of folk beliefs, of local traditions, of individual interests, all which undoubtedly shaped the cultic practices in any given sanctuary in very complex ways.

¹²⁸ For a representative debate on the issue see various papers in Albarella 2001, esp. Hamilakis 2001. For zooarchaeology, see MacKinnon 2007; deFrance 2009.

¹²⁹ Various papers in Mylona & Penttinen forthcoming.

¹³⁰ The potential of zooarchaeology in the study of cult and belief has mostly been explored in relation to issues of sacrifice and to a lesser degree of sacrificial meals (for reviews see Hägg 1998; MacKinnon 2007; Mylona forthcoming b). For a re-examination of basic issues of cult and belief and the use of zooarchaeology in this context, see Pakkanen 2008; forthcoming.

The second challenge is methodological and faces the much-debated problem of the relationship between material remains and texts in the study of the classical past.¹³¹ In this paper animal remains are juxtaposed and compared to literary and epigraphic data about the possible uses of the same animals in the Greek world in a cultic context or otherwise. However, because texts and archaeological materials often reflect different activity domains and timescales in the past, in most cases, including this of the animal remains from the cistern, they cannot be used within a single comprehensive narrative.¹³² Instead, here we used the texts to construct a broad frame of reference where the animal taxa identified in the cistern acquired meaning and importance for the people in Greece of the historical times. This by no means offers a direct interpretation of the archaeological finds. As noted above it points to certain domains where all these animals could function.

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¹³¹ See n. 1.

¹³² Foxhall 2004.

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