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MAN-ANIMAL RELATIONSHIPS IN THE PRE-POTTERY BURIALS AT SHILLOUROKAMBOS AND KHIROKITIA (CYPRUS, 8th AND 7th MILLENNIA CAL. BC)

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Jean Guilaine,[4] Alain Le Brun[5]

Abstract

On the Cypriot pre-pottery sites of Shillourokambos and Khirokitia, animal burials as well as faunal remains deposited in human burials have been discovered.

At Parekklisha-Shillourokambos, which was occupied from 8300 BC to 7000 BC, a collective burial and three individual burials were brought to light in a vast manmade cavity. In the collective burial, animal remains (trophies [horns and part of the skull] of rams, deer antlers, caprine leg bones, pig bones and skulls) were deposited with the dead. Another part of the site, sector 3, produced seven individual burials as well as an 8-month-old cat, buried next to the grave of an adult human.

At Khirokitia (7th millennium BC), the excavations which began in 1936, uncovered many burials, representing more than 240 individuals. These are primary burials, most of them individual. The graves were dug in the floors of habitations which continued to be occupied. In habitation element S.117 (eastern sector), one of the graves contained not human remains but a caprine of perinatal age. Other caprine burials were identified during the earlier excavations. They are situated in tholoi VII (eastern sector) and X(IV) (western sector) and contain respectively an adult animal and four young individuals. In tholos X(IV), the animal burial is found near an adult human, while in tholos VII, it is situated near the entrance. At Khirokitia, animal parts (ram trophy, fragment of deer antler, caprine horn, deer scapula) were also found in the graves of adult and immature humans.

These discoveries suggest a preferential relationship between humans and certain animals and possibly a specific status for the buried animals.

Keywords: Pre-Pottery Neolithic, Cyprus, burial practices, animal burials, human-animal relations.

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RÉSUMÉ

Sur les sites néolithiques précéramiques chypriotes de Shillourokambos et Khirokitia, des sépultures d'animaux ainsi que des vestiges fauniques déposés dans des sépultures humaines ont été découverts.

À Parekklisha-Shillourokambos, dont l'occupation s'étend de 8300 BC à 7000 BC, une sépulture collective et trois sépultures individuelles ont été mises au jour dans une vaste cavité d'origine anthropique. Dans la sépulture collective, des restes animaux (massacres de bélier et bois de daim, os des membres de caprinés, os et crânes de porc) avaient été déposés avec les défunts. Une autre partie du site, le secteur 3, a livré sept sépultures individuelles ainsi qu'un chat âgé de huit mois, inhumé à proximité immédiate d'une sépulture humaine d'adulte.

À Khirokitia (VII^e millénaire av. J.-C.), les fouilles entreprises depuis 1936, ont permis la découverte de nombreuses inhumations représentant plus de 240 individus. Il s'agit de sépultures primaires, individuelles pour leur très grande majorité. Les fosses sépulcrales sont creusées dans le sol des habitations qui demeurent occupées. Dans l'élément d'habitation S.117 (secteur est), l'une des sépultures contenait non pas des restes humains mais un capriné d'âge périnatal. D'autres sépultures de caprinés avaient été identifiées au cours des fouilles anciennes. Elles sont situées dans les tholos VII (secteur est) et X(IV) (secteur ouest) et contiennent respectivement un animal adulte et quatre individus jeunes. Dans la tholos X(IV), la sépulture animale se trouve à proximité d'une sépulture humaine d'adulte tandis que, dans la tholos VII, elle est située près de l'entrée. À Khirokitia, des parties d'animaux (massacre de bélier, fragment de bois de daim, corne de capriné, scapula de daim) ont également été trouvées dans des sépultures d'adulte ou de sujets non matures.

Ces découvertes suggèrent l'existence d'une relation privilégiée entre l'homme et certains animaux et permettent d'émettre l'hypothèse d'un statut particulier pour les animaux inhumés.

Mots-clés : *Néolithique précéramique, Chypre, pratiques funéraires, inhumations d'animaux, relations homme-animal.*

INTRODUCTION

In the Near East, deposits of animal parts[6] in burials are attested from the middle Palaeolithic onwards. The earliest example is from the site of Skhul (Israel), dated to 119,000 ± 18,000 BP by thermoluminescence (Mercier *et al.* 1993) and to at least 101,000 BP by ESR (Grün, Stringer 1991); in the burial of the Skhul V adult, a pig mandible was associated with a human skeleton (McCown 1937). At Qafzeh (Israel), a half-trophy of a deer was deposited on the body of an adolescent (Qafzeh 11), dating to at least 90,000 years (Vandermeesch 1970; Schwarcz *et al.* 1988; Valladas *et al.* 1988; Yokoyama *et al.* 1997).

For the Natufian, the sites of Mallaha and Hayonim (Israel) have provided much data. On these two sites, it is not only animal parts that can accompany the human remains, but also, in certain cases, whole animals (Valla 1977; Perrot, Ladiray 1988; Valla *et al.* 1991). In the early Natufian levels of Mallaha, a young dog was buried with an old woman (H 104); the two bodies were buried on their right side, the limbs flexed, the left hand of the woman resting on the body of the animal (Valla 1977; Davis, Valla 1978; Bocquentin 2003). On the terrace of Hayonim, a complex burial, belonging to the late Natufian, associates the remains of at least two adult humans with those of two adult canids as well as two turtle shells, a skull and a horncore of a gazelle (Valla *et al.* 1991; Valla 1995). At Mallaha as at Hayonim, the buried canids are domestic dogs, among the oldest known today (Davis, Valla 1978; Tchernov, Valla 1997).

The following period (PPNA) has produced what appears to be the earliest animal burial without any relationship to human remains. The trenches dug at Demirköy Höyük, in eastern Anatolia, have revealed the presence of two human burials (an adult and an immature individual) and the burial of a dog (Rosenberg, Peasnall 1998). The position of the dog burial in relation to the human tombs is not known. According to the photograph published (Rosenberg, Peasnall 1998, p. 207, fig. 9), it could be an adult animal. For the early

6. Ornaments and elements of bone industry will only exceptionally be taken into account in this contribution.

PPNB, the burial of a dog and a wild boar skull were discovered at Çayönü (eastern Anatolia), under the plastered floor of a building belonging to the second part of the "Grill Building" architectural sub-phase, near a human burial (Özdoğan 1999).

In the 8th and 7th millennia, there was a diversification in the manifestations of human-animal relations in the funerary context. The analysis of the data from the two major sites of the Cypriot pre-pottery Neolithic, Shillourokambos and Khirokitia, well illustrate this diversity, as the animals were buried whole, in relation or not with human burials, or as partial remains deposited in human burials.

SHILLOUROKAMBOS

The vast site of Shillourokambos (Parekklisha, Limassol district) (*fig. 1*), excavated between 1992 and 2004 under the responsibility of one of us (J.G.), has produced evidence of a succession of pre-pottery Neolithic domestic occupations and installations dated to between 8300 and 7000 BC (Guilaine 2003). The first of them is also the earliest evidence of a Neolithic presence in Cyprus. The many artefacts, as well as vestiges of constructions, show very strong links with the contemporary cultures of the Levant, especially the end of the early PPNB and the middle PPNB (Guilaine *et al.* 2000). They show that the founders of this Cypriot pre-pottery Neolithic were human groups which came by boat from the nearby continent, bringing with them their culture, particularly their techniques of lithic debitage (Briois 2003), their plants (especially einkorn *Triticum monococcum*, emmer *T. dicoccum*, pea *Pisum sativa*, lentil *Lens* sp., flax *Linum* sp. and possibly barley *Hordeum* sp.) (Willcox 2000, 2003; Peltenburg *et al.* 2001) and their animals (dog *Canis familiaris*, cat *Felis s. lybica*, fox *Vulpes vulpes*, pig *Sus scrofa*, Mesopotamian deer *Dama mesopotamica*, ox *Bos primigenius/taurus*, sheep *Ovis orientalis/aries*, goat *Capra aegragus/hircus* and common mouse *Mus m. domesticus*) (Vigne *et al.* 2000, 2003; Cucchi *et al.* 2002; Vigne, Guilaine 2004). The importation of obsidian from Anatolia as well as the enduring presence of plant and animal species suggests frequent maritime contacts with the continent, over a long duration (Vigne, Cucchi 2005).

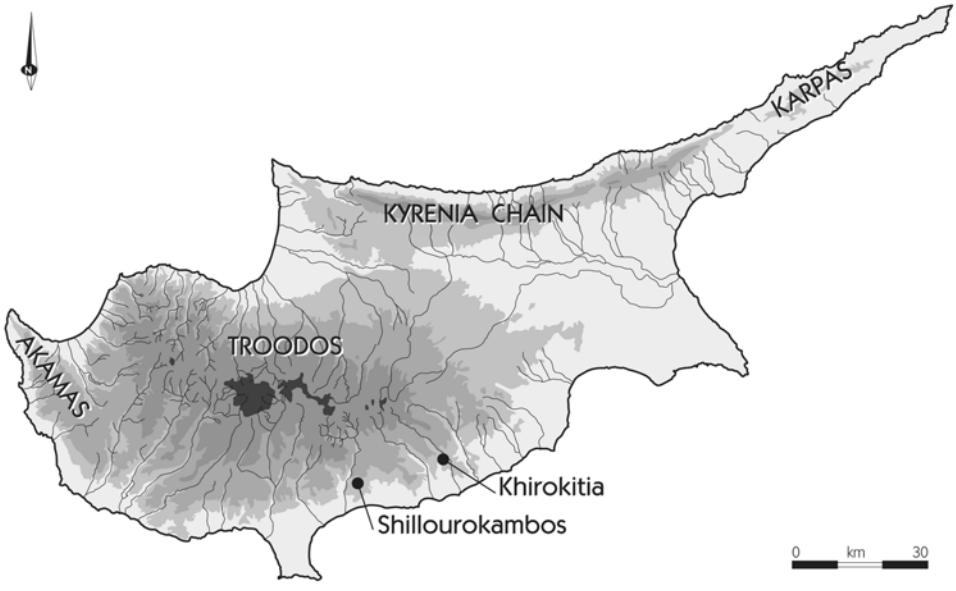

Fig. 1—Location of the sites of Shillourokambos and Khirokitia (map P. Gérard).

A collective burial and eleven individual burials were discovered at Shillourokambos (*fig. 2*). They are divided into two groups. In sector 1, a large cavity (St 23) six meters in diameter and more than six meters deep, initially used as a well and filled in between about 7800 and 7300 BC, produced, in inter-stratification

with different levels of rubbish, three individual burials and a collective burial in which animal remains were associated with the human remains (Crubézy *et al.* 2003). An individual grave containing the remains of a infant of perinatal age had moreover been brought to light in this sector. The less-eroded lower part of the site (sector 3) has produced seven individual human burials, all dated between the middle and the end of the 8th millennium (Guilaine *et al.* 2002). In immediate proximity to one of these (St 283) the skeleton of a cat was found (Vigne *et al.* 2004).

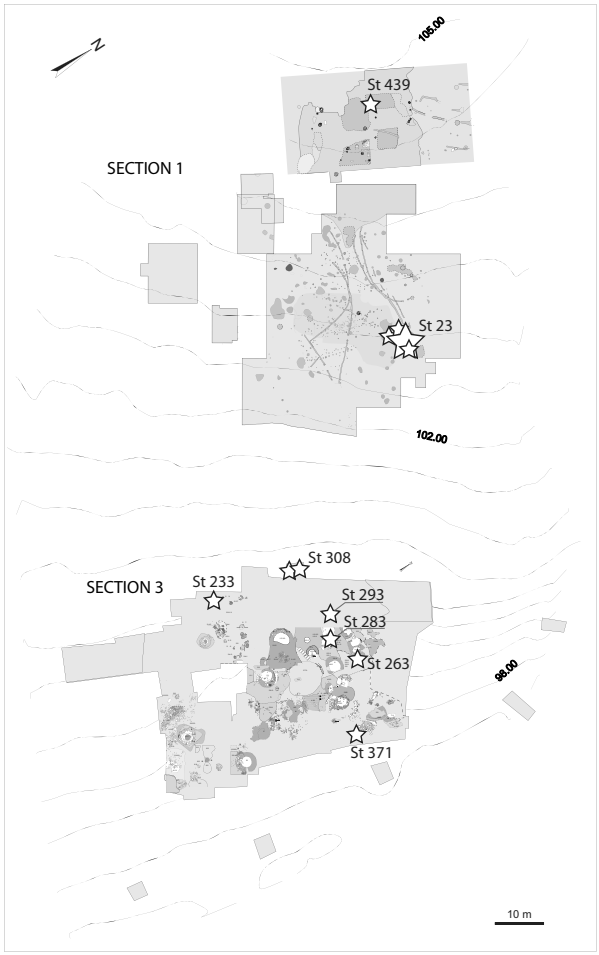

Fig. 2—Shillourokambos. General plan of the site and location of the graves (represented by stars; drawing P. Gérard and J.-D. Vigne).

Cavity St 23

In this cavity, from top to bottom, the human remains are distributed in the following manner (*fig. 3*):

—in the sedimentary complex CB'-CB the individual burial of an adult lying on its left side, in a highly flexed position, in a narrow "gutter" grave of about a meter square and a maximum depth of 15 cm (Guilaine *et al.* 1999; E. Crubézy, pers. comm.);

—in the same sedimentary complex, scattered human bones;

—at a depth of 3 m, over a minimum surface of about 7 m^2, a layer very rich in human remains (layer C), whose maximum thickness was 20 cm. This layer can be subdivided into two sub-groups: the deposits anterior to the collapse of the ceiling in the northern half of the cavity, which contain the largest number of human bones, and the deposits posterior to this collapse. The human remains consist of complete or sub-complete skeletons in connection (with or without the skull), portions of skeletons in connection and disconnected bones; the arrangement of these different elements shows that these deposits were spread over time, implying that the cavity served, for a certain period of time, as a collective grave. The preservation of the unstable connections indicates primary deposits. The position and the organisation of the human remains in the two sub-groups shows that these primary deposits were followed by manipulations of the

the bones, which occurred after partial or total decomposition of the bodies. The burial layer produced the remains of at least 16 individuals (four immature humans and 12 adults). The MNI was estimated based on the frequency of the best represented bone element, then optimised by taking account of the osteological relations of the second order and of the relations of exclusion in evidence, according to the recommendations of Duday (1995, 2005). The age at death of the immature individuals is between 3 and 14 years. This was preferentially estimated based on the degree of dental maturity. The method of Moorees *et al.* (1963a, b), which enables evaluation of the stages of dental formation and resorption, was used each time the teeth necessary to its application were present and observable. When this was not the case, it was the overall method proposed by Ubelaker (1978) which was applied. The adults were separated into two groups: the young adults (less than 30 years) and the mature adults (more than 30 years), according to the method of Owings-Webb and Suchet (1985), which is based on the fusion of the sternal extremity of the clavicule and the iliac crest. When the sacro-pelvic surface is well enough preserved, the method developed by Schmitt (2005) was also applied in order to obtain a more precise estimation. Because of the poor state of preservation of the bones, especially the coxal bones, the age at death could only be estimated on three subjects: one is a young adult less than 30 years old; the age of the two others was between 20 and 49 years. Sex could be determined only in one case, that of a female, using the morphoscopic method of Bruzek (2002), the bones not being well enough preserved to enable the application of non-visual methods. The sex of another individual was estimated in the field as being probably male (Crubézy *et al.* 2003; Le Mort *et al.* forthcoming);

—between 3.35 and 3.5 m deep, 15 to 20 cm below burial level CC, in the upper part of sedimentary complex CD, the individual burial of an adult lying on the right side, in an extended position, upper limbs in flexed retraction in front of the body, the back against the wall;

—also in the upper part of sedimentary complex CD, between -3.70 and -3.84 m, the partially burnt remains of an adult. The distribution and disposition of the bones indicate a skeleton initially in connection, which decomposed in an empty space and would have been subject to modification from natural causes and perhaps also from human causes, early and/or late (Le Mort *et al.* forthcoming).

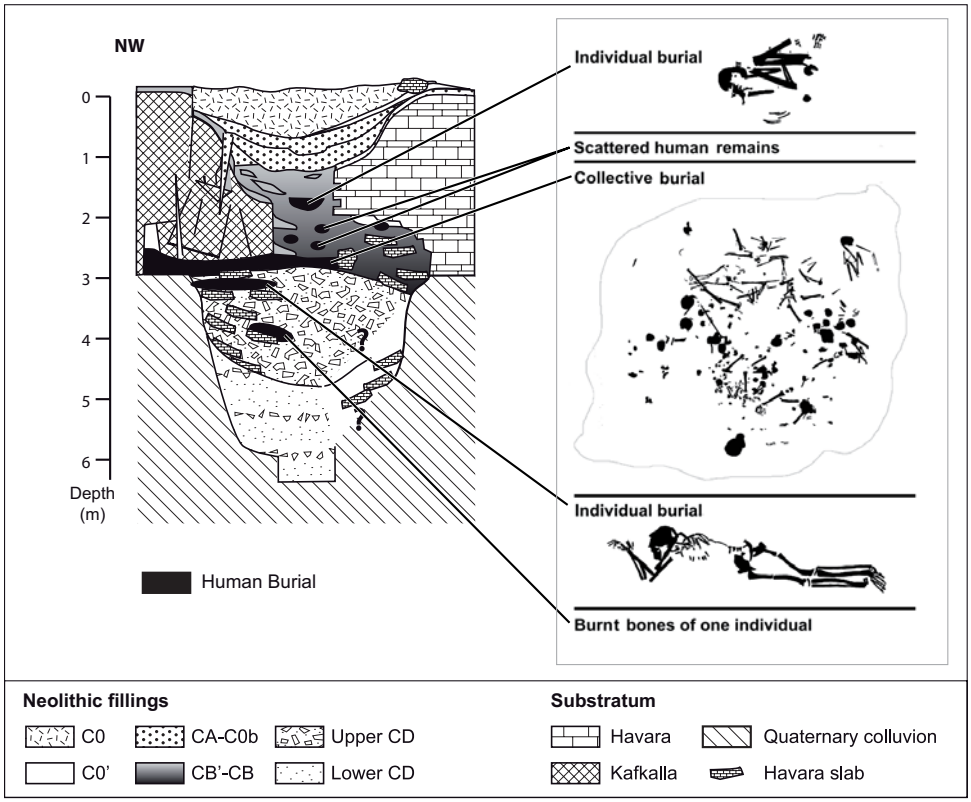

Fig. 3—Shillourokambos. Succession of graves in the stratigraphy of structure 23 (drawing P. Gérard and J.-D. Vigne).

The fill sediment of this large cavity contains many skeletal remains of animals, some from earlier deposits but mostly having fallen or having been thrown into the cavity, which was used as a rubbish pit more or less permanently with varying intensity. Because of this, all the human remains are more or less accompanied by animal remains; on the other hand, except for the collective burial where the remains inherited from the sediment are quite rare, no animal remains appear to be clearly associated with the burials found in the stratigraphic sequence of St 23. To attempt to untangle the archaeozoological elements truly linked to the human burials, we have submitted the faunal material to spatial analyses, quantitative and qualitative intersected, in order to detect the natural anomalies (trophies, whole skulls, frequency of particular skeletal parts) as well as the preservational anomalies (anatomical connections and whole bones, extremely rare in the other rubbish pits of the site) which could support the hypothesis of a burial deposit.

It is in the CB-CB' fill, between the most recent individual burial and the collective burial, that the question of the presence of possible animal funerary deposits is both the most acute and the most difficult to resolve. Between -2.20 m (under the individual burial) and -2.60 m, very few exceptional objects (a worked shell, a bone tool) or connections (two in all) were found, and the faunal remains have a low density (25 to 60 elements per m^2; *fig. 4*). This situation can be considered to be representative of a detrital sedimentary fill without any particular burial deposit. Between -2.60 m and -2.80 m, then between -2.80 m and -3.00 m, the density of the faunal elements increases in certain zones of the excavation (60 to 180 elements

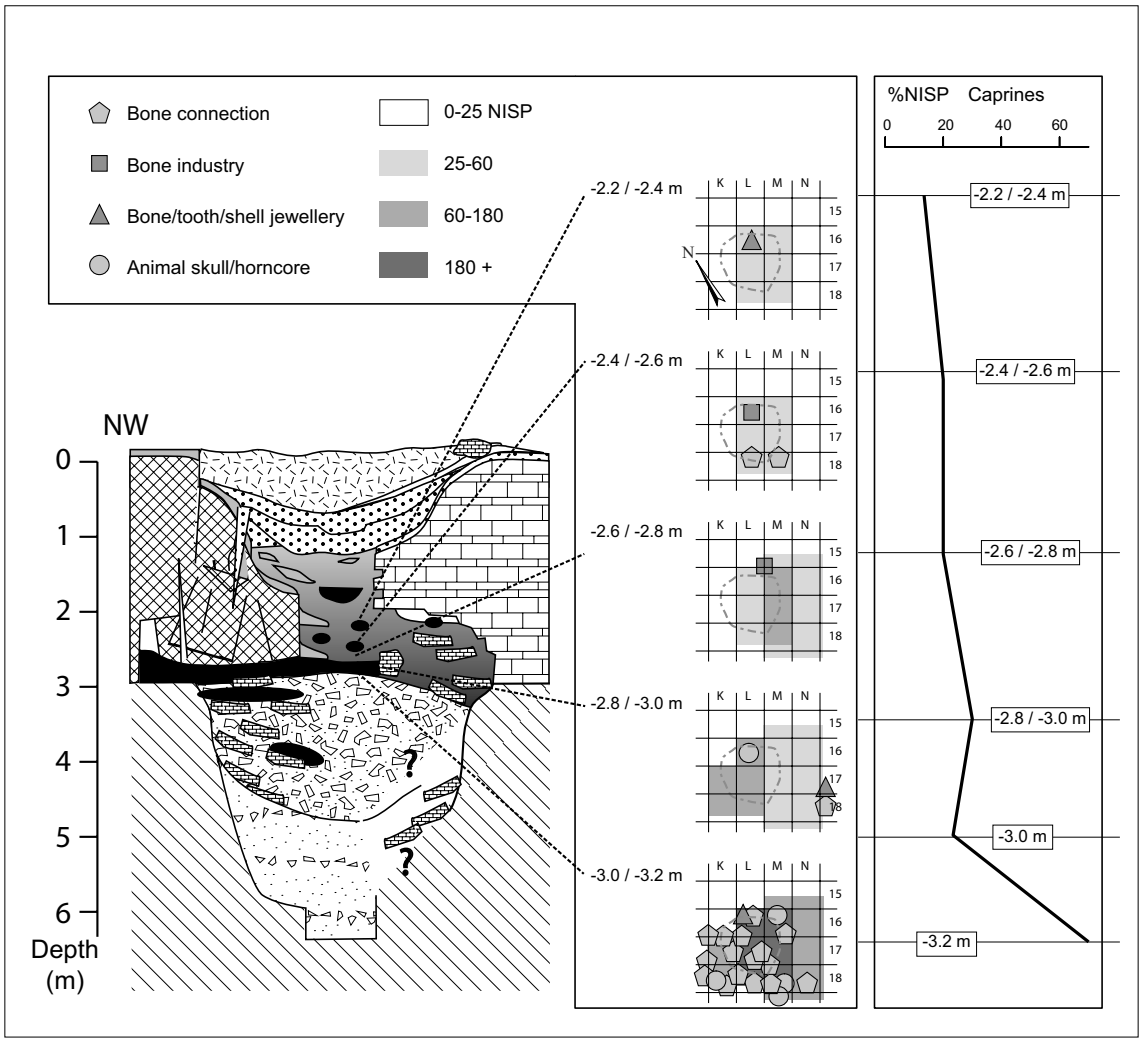

Fig. 4—Shillourokambos. Animal remains in the fill of structure 23, above the collective grave: vertical development in the density of exceptional objects, of faunal remains and of the percentage of caprines (drawing J.-D. Vigne).

per m^2) and the exceptional deposits increase, especially in the case of the trophy of an adult domestic ram placed against the wall (square L16; *fig. 4*). These slight anomalies in relation to the situation found between -2.20 m and -2.60 m could be accounted for by fluctuations in intensity and nature of the detrital deposits, but the location of the principal faunal concentrations in squares M/16-18 between -2.60 m and -2.80 m, then in contact with the burial deposit (K-L/16-18) between -2.80 m and -3.00 m suggests a possible link with the latter. It is however not possible to separate the deposit of the last burial offerings and the result of syn-sedimentary disturbances which led to the migration of some remains upward from the burial deposits.

Indeed, although it contains mostly human remains and very little lithic evidence, the underlying level (-3.00/-3.20 m) contains a significantly higher density of fauna (up to 240 elements for squares M-16/18) and exceptional pieces, in the form of four trophies and 16 strict or loose anatomical connections (*fig. 4*). The anomaly is obvious in relation to the fill at -2.20/-2.60 m, as it is in relation to all the other deposits known on this site, including those of pits or deep graves. Most of the animal remains of this part of the fill are associated with burial deposits.

It is not however to be excluded that some of these animal remains were brought in with the sedimentary fill. To complete the overall approach whose results we have just presented, a critical analysis, vestige by vestige, was carried out in order to attempt to attribute an individual status to them, and to establish an inventory which is as reliable as possible of the animal remains associated with the collective burial. This approach led us to recognize five principal categories of faunal remains which are very probably associated with the burial deposit (*fig. 5*):

—two trophies (*fig. 5C*), two antlers of a trophy and a large portion of the central stem of a Mesopotamian deer antler were laid on the human bones, in a zone limited to a narrow band, along the edge of rows L and M; the ram trophy mentioned previously, although situated at a higher level in the fill, was located at the southern extremity of this band of distribution;

—three skulls of piglets which died between 6 and 12 months, unfortunately in very bad condition, were observed in the excavation at the northern (a skull) and southern (the two others) extremities of this same band of distribution of trophies; the bases of these three skulls lay directly on ordinary flat stones, which in turn lay above, in all three cases, the bones of a human cranial vault (*fig. 5D*). This arrangement does not seem to be fortuitous;

—just next to the skull of the northernmost piglet lay the upper part of an adult pig's forelimb, in hardly disturbed connection (ulna, radius, first and second row of the carpus); two whole scapulae (right and left) of an adult suid of large size lay flat, on their medial face, one at the northern extremity of the band of deposit of the trophies, the other at the eastern extremity of the human deposits, at the foot of a large artificially grooved block which appeared to mark this boundary;

—the rest of the remains which are probably associated with the burial deposit are composed of fifty caprine bones whose lack of fragmentation contrasts with the situation usually found in the rubbish pits of the site. They are, moreover, almost all situated in the distribution band of the deer trophies. Particularly noteworthy is the group of eleven extremities of anterior and posterior limbs (carpus or tarsus, whole metapode, phalanges) of sheep and goats, young and adult, male and female, over a very limited surface located at the northern extremity of this deposit, near the skull of the piglet. The relatively mediocre state of preservation of these remains does not allow a detailed traceological analysis. Nevertheless, a probable cutting mark on the diaphysis of a tibia was observed, and in particular, a trace of percussion on fresh bone which broke in two the diaphysis of a sub-adult left femur (*fig. 5E*), the two halves having been deposited in connection after breakage (and possibly extraction of the marrow).

The location of all these deposits in a limited zone of the collective burial and the absence of all significant faunal remains in the western half of the burial chamber can be explained in the following way. No faunal object was associated with the successive burial deposits or with the manipulations of the bodies, before the ceiling of the burial chamber collapsed and sealed this deposit which contains no archaeozoological evidence. It was only after this collapse, during the second phase of deposits of bodies in the south-eastern half of the burial space, that animal remains were associated with human deposits. The location of most of them, both on the human remains and in a north-south band resting against the western face created by the collapse, could indicate that a part at least of these deposits was related to the end of the

first burial phase. No clear association between a particular human individual and an animal deposit could be discovered.

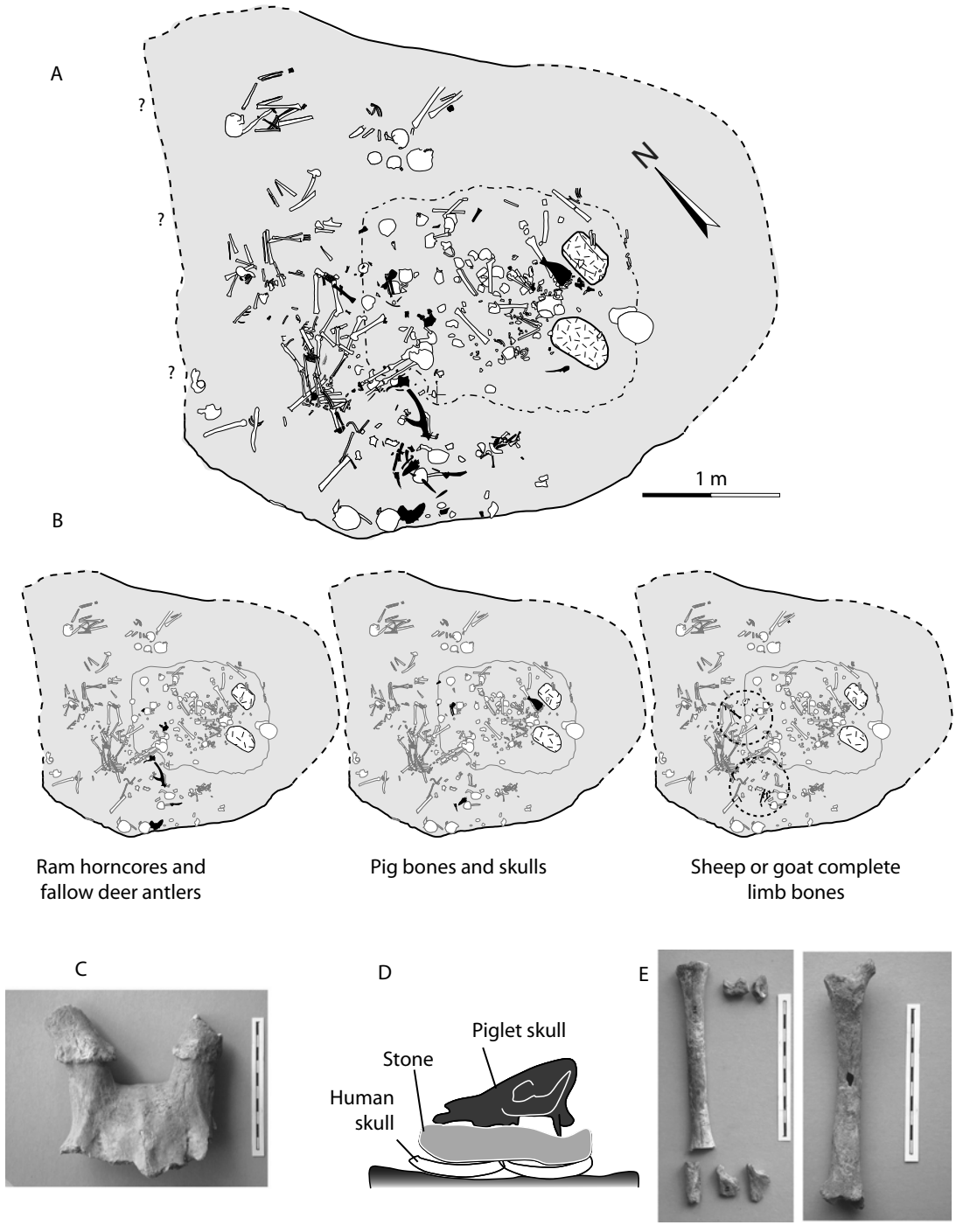

Fig. 5—Shillourokambos. Animal remains in the collective grave of structure 23: A: spatial distribution of faunal remains; B: distribution of three main categories of remains; C: example of deer trophy; D: reconstitution of the disposition of the skulls of young pigs; E: examples of non-fractured caprine bones: at left, metacarpus with phalanges; at right, femur carrying a trace of percussion on fresh bone (drawing and photos J.-D. Vigne).

The skeleton of a cat *(fig. 6)*

One of the human burials brought to light in sector 3 of the site (St 283) was situated in the remains of a small circular earthen construction, in the upper part of the deposit, immediately beneath the arable soil. This is a primary burial in a grave.[7] The deceased, an adult male, aged at least 25 years,[8] lay on the right side in a highly flexed position. This burial produced some ten objects: small polished axes, pendant in black stone, shells, an unusual discoid end-scraper, rough blades and bladelets in flint, sharpened flint blade, pumice stone, fragment of ochre (Guilaine *et al.* 2002; Vigne, Guilaine 2004; Vigne *et al.* 2004).

At the same topographical level, at less than 40 cm from the human skeleton, a small circular depression (diameter: 8 cm), no more than a few centimetres deep, was found, containing 24 shells of small marine gastropods (*Nassarius, Columbella* and *Cerithium*) grouped around a rough fragment of picrolith (Guilaine *et al.* 2002; Vigne, Guilaine 2004; Vigne *et al.* 2004).

Another grave, oval (43 x 25 cm), no more than 15 cm deep and situated 20 cm from the edge of the human grave, contained a cat (Guilaine *et al.* 2002; Vigne, Guilaine 2004; Vigne *et al.* 2004). The skeleton is in a poor state and incomplete: the hind part (last lumbar vertebra, sacrum and pelvis, tail) and a few terminal elements of the feet, which lay on the highest edges of the grave, had been removed by ploughing. The animal lay on its left side, the head towards the west and the back to the south. The head was hyper-extended, and the forelimbs and hind limbs were gathered under the belly, tending towards the back and the front respectively. After a preliminary clearing in the field, the block was removed in plaster and the excavation continued in the laboratory, in order to gather a maximum amount of information and to make a latex mould of this exceptional deposit.[9]

The examinations made in the laboratory revealed a roll of sediment on the northern edge of the grave, which probably corresponds to that which was removed when the grave was dug, and indicates that this was voluntary. The size is such that it is clear that this grave was dug with the intention of burying the body of the cat. The analysis of the anatomical connections revealed no anomaly in the anatomical organisation, other than the usual slight displacement of the joints due to the effects of gravity and subsidence during the decomposition. A thorough microscopic examination of the bone surfaces revealed no burn or cut mark, and nothing indicated the cause of death. The almost complete absence of sediment between the right and left quarters indicated that the thorax was not opened before burial. It thus appears that the body was deposited intact and quickly covered with earth.

As the pelvis and the possible *bacculum* are missing, it was not possible to determine the sex of the animal, but the large size indicates a male. The state of the teeth, all definitive with little wear, and the absence of fusion of the distal epiphyses of the femur and the tibia indicate that the cat died at about 8 months, at which point adult size is reached.

From these observations, we can conclude that the intact body of a sub-adult cat of large size was voluntarily buried in a small grave dug for this purpose, a few centimetres from and in the topographical level of a human grave which is particularly remarkable for the quantity of its associated offerings. The disposition of the cat's body, parallel to and almost symmetrical to that of the human, reinforces the close association between the two bodies, and dismisses the idea that the cat's role in this burial group could have been sacrificial or religious. It must be emphasized that this complete skeleton of a cat is the only animal in connection ever found in eleven years of excavation at Shillourokambos. Animal bones have been found in association with the collective burial of structure 23 (*fig. 5*), but these were intended as symbolic representations of the animal species, not a particular individual. As for a human, the inhumation of an intact animal preserves the integrity of the form of the body after death, and retains for the animal an individualized status among all others of its species, which personifies it. The status of this large cat was

7. 55 x 60 cm.

8. Sex was determined by the morphoscopic method of Bruzek (2002) and age estimated according to the criteria defined by Owings-Webb and Suchet (1985), as the state of preservation of the coxal bones did not permit the use of more precise methods.

9. This work was carried out by K. Debue, CNRS.

certainly different from that of other cats, for which we have found broken mandibles, cut up and cooked in domestic deposits.

The association between this human grave and the voluntary burial of a cat can thus be understood as evidence, through association in death and after death, of a strong relationship between two individuals, human and cat. This association is all the stronger in that we can imagine that the cat would have been killed in order to be buried during the same ceremony as the man. This situation is reminiscent of dogs buried in Natufian graves (Davis, Valla 1978; Tchernov, Valla 1997). It seems reasonable to see here proof of a certain form of familiarity between the man and the animal, which does not necessarily indicate domestication, but at least appropriation of the animal by the human.

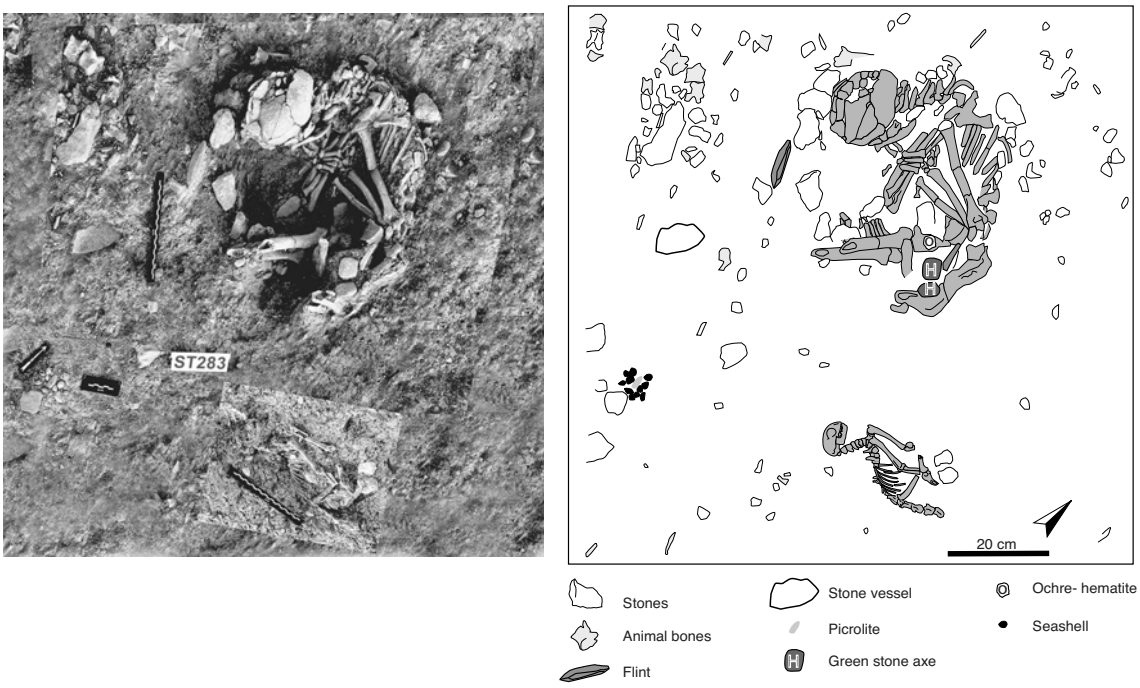

Fig. 6—Shillourokambos. Photograph (left) and drawing of the human grave St 283, with its offerings, the skeleton of a young cat and a deposit of shells (illustration by P. Gérard and J.-D. Vigne).

KHIROKITIA

The site of Khirokitia (*fig. 1*) illustrates the late phase of the Cypriot pre-pottery Neolithic, 7000-5500 cal. BC. It was found and partially explored between 1936 and 1946 by P. Dikaios (Dikaios 1953); the exploration of the site was resumed in 1977 by the Mission to Khirokitia of the CNRS—Ministry of Foreign Affairs (Le Brun 1984a, 1989a, 1994a). Covering a surface which can be estimated at about 3 hectares, of which only a part has been investigated, the site has produced a large series of burials, with more than 240 individuals.[10] These are for the most part individual primary burials, the graves having been dug within habitations. All categories of age and sex are present. The deposit of material accompanying

10. This is the minimum number of individuals whose bones could be studied. This number does not include either the burials mentioned in the publication of Dikaios (1953), of which the human remains have not been found, or the two recently discovered burials.

the deceased,—usually a stone, rough or shaped, which covered the body, and one or several stone vessels intentionaly broken (Le Brun 1994b)—, is not a general practice, but was used indiscriminately for babies of perinatal age, children and adults, men and women.

Although numerous, these burials provide very little evidence to clarify human-animal relations in the light of funerary practices. However, there appear to be two different types of behaviour, which concern only caprines and deer, to the exclusion of pigs, dogs, cats and foxes, which are nevertheless present in the faunal inventory. In one, the animal, a caprine in the examples known, is treated as a subject, as a human; in the other the animal, or rather a part of the animal, caprine but also deer, is represented only by a bone part, and treated as an object, just like a stone, a stone vessel or an ornament.

The first type of behaviour, that in which the animal, a caprine, is treated as a subject, is illustrated by three examples:

Tholos VII *(fig. 7)*

Burial of an adult caprine. The grave is sealed by a step made of construction pisé, allowing access to the threshold of the tholos (Dikaios 1953, p. 67, fig. 32, pl. XVII: f; King 1953, p. 435).

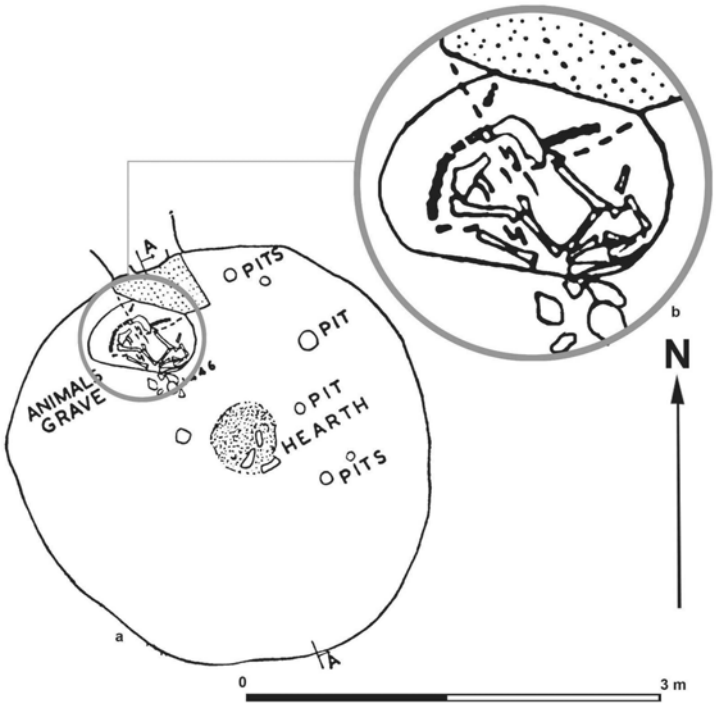

Fig 7—Khirokitia. Grave of an adult caprine, tholos VII,eastern sector (after Dikaios 1953):
a) original plan published by Dikaios (p. 67, fig. 32);
b) detail of the position of the animal.

Tholos X(IV) *(fig. 8)*

Burial containing the remains of four young caprines (Dikaios 1953, p.75-77, fig. 37, pl. XVIII: b; King 1953, p. 435). The data available indicate that the orientation of the bodies is variable but provide no information as to the simultaneous nature of the burials. The graves of a very young infant (“grave XII”) and an adult (“grave XI”) were dug in the same floor. The corresponding skeletons were not to be found in

the Museum of Nicosia. Dikaios (1953) refers to the young one as an "infant", which indicates an age less than two years (Scheuer, Black 2002); the size of the skeleton represented in the published sketch (Dikaios 1953, p. 76, fig. 37) indicates that death took place at birth or a few months at most. The adult, for which neither the age nor sex are known, lay in a flexed position presenting ¾ of the back. The position of the infant was not identifiable.

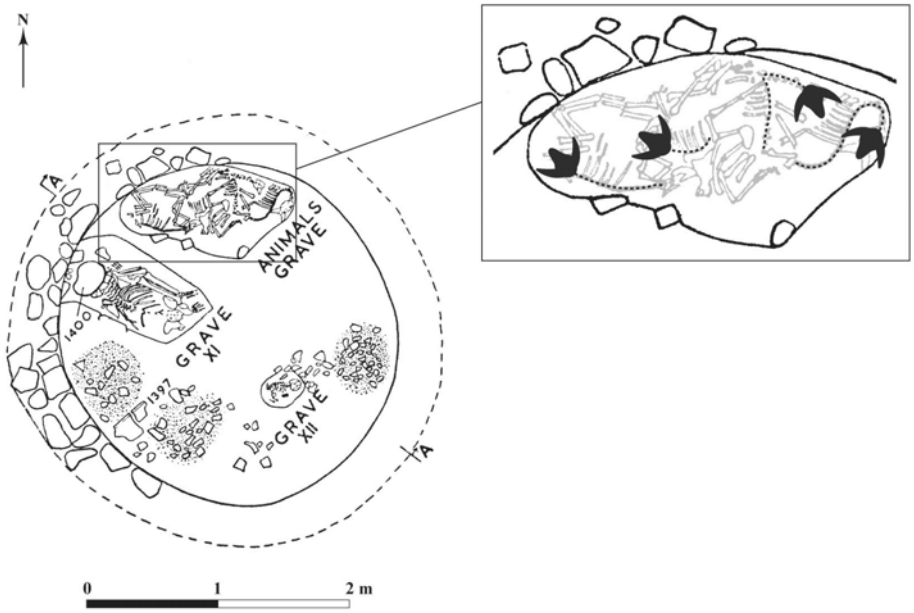

Fig. 8—Khirokitia. Grave containing four young caprines, in proximity to the grave of an adult human, tholos X(IV), western sector (after Dikaios 1953): original plan published by Dikaios (p. 76, fig. 37); and reconstitution of the position of the animals (right).

Grave 499** (fig. 9) **in habitation element S.117, sealed by the reconstructed wall of S.117, level B

Grave[11] of a caprine of perinatal age (Le Brun 1989b, p. 66, fig. 38[12]). The body, placed with the head to the north, was covered by an unworked stone.

Neither their character, their location nor their treatment distinguished these graves from the human graves.

Just as for the humans, these are dug graves. The grave was also dug within a habitation element. The particular position of grave no.1 (tholos VII), which is sealed by a step in pisé, is reminiscent of another grave which is a human grave.[13] These are also individual graves. Certainly, grave no.2 [tholos X(IV)], contains the remains of four caprines, but, although rare, multiple human graves have also been found (Le Mort 2003, p. 315, note 25). Concerning the treatment of the "deceased", many human graves are, like nos. 1 and 2, without any associated material; as for the deposit of a stone on the body of a caprine in grave 499, many graves, including graves 207 and 380, show that this practice was widely used for human burials.

11. Dimensions of the grave: about 0.42 x 0.20 m, depth: 0.20 m (Le Brun 1989b).

12. Where it is published erroneously as the burial of a newborn.

13. "Grave XVIII" in tholos XV(II) (Dikaios 1953, p. 90-91, fig. 43, pl. XXI: d).

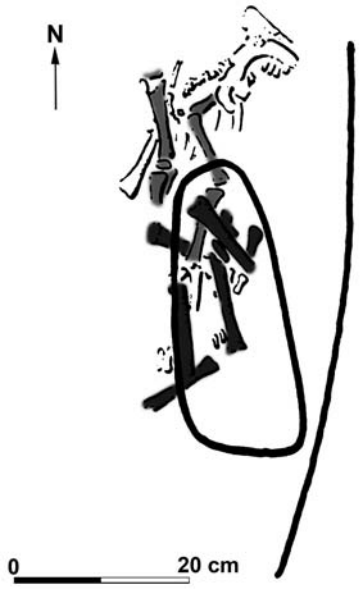

Fig. 9—Khirokitia. Grave (499) of a caprine of perinatal age, habitation element S.117, level B, eastern sector (after Le Brun 1989b). The forelimbs are in light gray, the hind limbs in dark grey.

The second type of behaviour, where the animal is represented by one of its parts, is hardly any better illustrated:

Grave 207** (fig. 10) **in habitation element S.84, level B

Grave[14] of a infant whose age, according to the degree of dental maturity (Ubelaker 1984), was between 4 and 8 years. The north/north-west edge of the grave is distinguished by a ram trophy (Davis 1984, pl. XXXII: 1). The body lay on its right side in a flexed position. A stone of convex-concave section, with two lateral lugs created by hammering and worked on the two faces, covered the skull (Le Brun 1984b, p. 77, fig. 42: 5, 43, pl. XV: 4). It is interesting to observe that there is a phenomenon of *serpens endocrania symmetrica* on the frontal, parietal and occipital bones of this subject of which the right orbital roof was

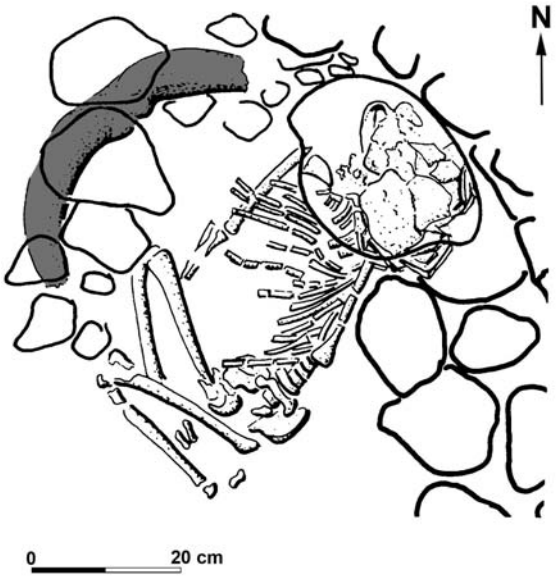

Fig. 10—Khirokitia. Grave of a infant (207), habitation element S.84, level Ib, western sector (after Le Brun 1984b). A ram trophy marks the north/north-west edge of the grave.

14. The grave is of sub-circular form. Its diameter is 0.50-0.60 m and its depth is 0.35 m (Le Brun 1984b).

affected by *cribia orbitalia*. The phenomena of *serpens endocrania symmetrica* are usually related, in young subjects, to infections of the upper or lower respiratory systems (Hershkovitz *et al.* 2002). The presence of *cribia orbitalia* can be related to a ferriprivous or hereditary anaemia but could also have other causes —rickets, inflammation, etc. (Wapler *et al.* 2004).

Is there a link between the pathologies suffered by this infant and the presence of the ram trophy which marked the edge of the grave? The unique character of this association at Khirokitia and the fact that this individual represents the only case of *serpens endocrania symmetrica* found here would seem to confirm this.

Grave 380** (fig. 11)**, in habitation element S.97, sealed by floor 308, level II

Grave[15] of an adult female.[16] The body is in a contracted position, presenting ¾ of the back. The thorax was crushed under a stone. A fragment of deer antler was deposited in the grave, found on the medial face of the right hip (Le Brun 1984b, p. 75, fig. 38: 5, pl. XIV: 5).

Grave 380 is one of the six graves sealed by floor 308. The other graves are those of a infant of perinatal age and four adults of which three are male and one of undetermined sex.

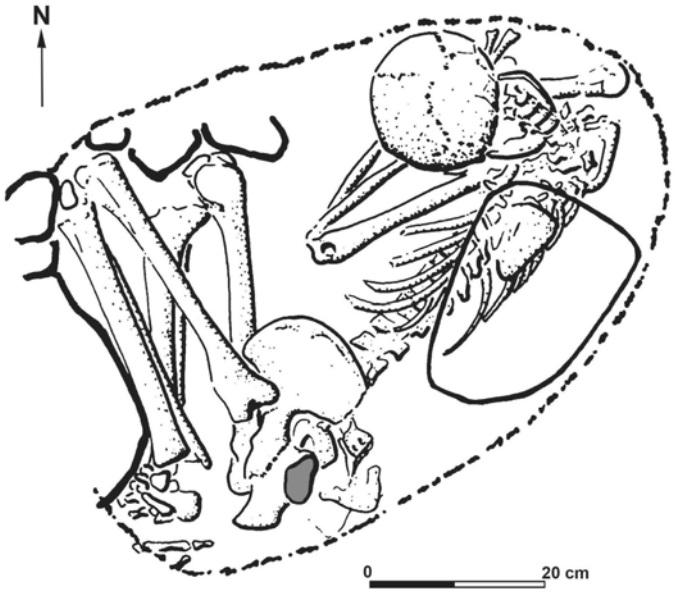

Fig. 11—Khirokitia. Grave of an adult (380), habitation element S.97, level II, western sector (after Le Brun 1984b). A fragment of deer antler is present in the grave.

Grave 382** (fig. 12)**, in habitation element S.89, sealed by floor 319, level Ic

Grave of a infant of perinatal age.[17] At the level of the lower limbs, a caprine horncore marks the edge of the grave (Le Brun 1984b, p. 76-77, fig. 40: 7).

Floor 319 seals six other burials, all of babies which died in the perinatal period.

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15. The grave is oval and measures 0.75 x 0.55 m; its depth reaches 0.75 m (Le Brun 1984b).

16. Sex was determined by the morphoscopic method of Bruzek (2002).

17. Age estimation based on the length of the long bones (Fazekas, Kosa 1978).

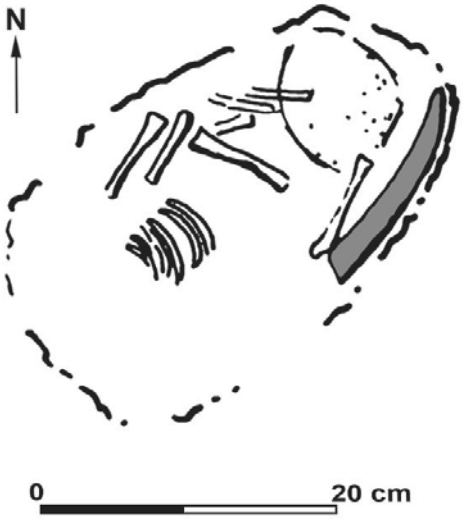

Fig. 12—Khirokitia. Grave of a infant of perinatal age (382), habitation element S.89, level Ic, western sector (after Le Brun 1984b). A caprine horn was deposited in the grave.

Grave 538** (fig. 13)**, in habitation element S.123, sealed by floor 585, level A

Grave of a infant of perinatal age.[18] The body lay in a partially contracted position, presenting ¾ of the back and the skull was covered by a deer scapula (Le Brun 1989b, p. 68, fig. 40, pl. XII; Le Mort 1994).

Three other burials, of an adult female, a infant of about 5 years and a infant of perinatal age, were also sealed by floor 585.

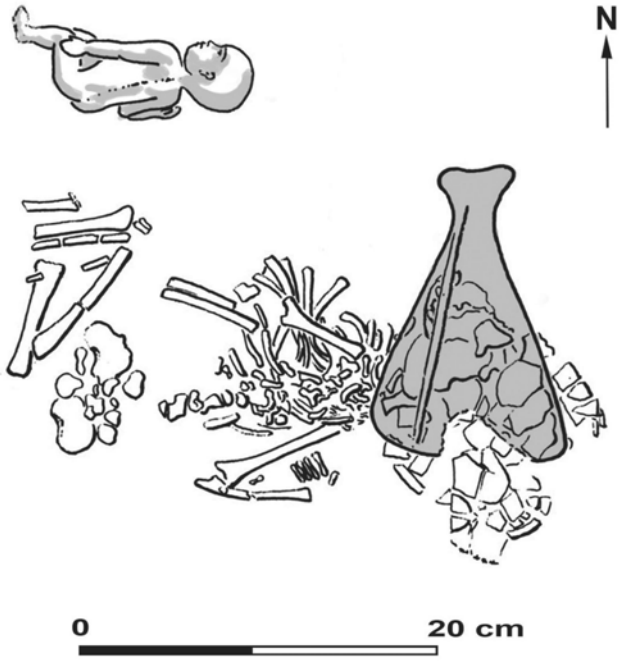

Fig. 13—Khirokitia. Grave of a infant of perinatal age (538) and reconstruction of the burial position, habitation element S.123, level A,eastern sector (after Le Brun 1989b). A deer scapula was placed on the head of the child.

18. Age estimation based on the degree of dental calcification (Moorrees *et al.* 1963a).

Even if deer are present along with the caprines, animal had lost the eminent place which it previously had, as the funerary ritual was no longer performed for it. From the role of a central figure it passed to that of an accessory, although probably charged with symbolic value as it marks the edge of the grave or covers the skull of a infant which died in the perinatal period. Moreover, parts of its skeleton were used alone: antlers, horn or scapula. The interchangeability between a stone and a deer scapula which is obvious in grave 538, clearly indicates this passage to the rank of an element in the funerary vocabulary.

It is thus natural that animals or parts of animals were involved to mark the death not of a human being, but that of a habitation, as part of the funerary vocabulary to indicate its abandonment, as is the case for habitation element S.148, level A, a construction remarkable for its size and its interior arrangement (Le Brun 2003). The floor (*fig. 14*), which preceded the abandonment of the construction (caused by the collapse of a wall section), produced, unlike other floors which usually contain no materials, several objects disposed in three groups all of which belong to this vocabulary: next to the stone vessels, concretely or symbolically put out of use, and a stone with lugs, they are deer and caprine scapulas, and a deer antler.

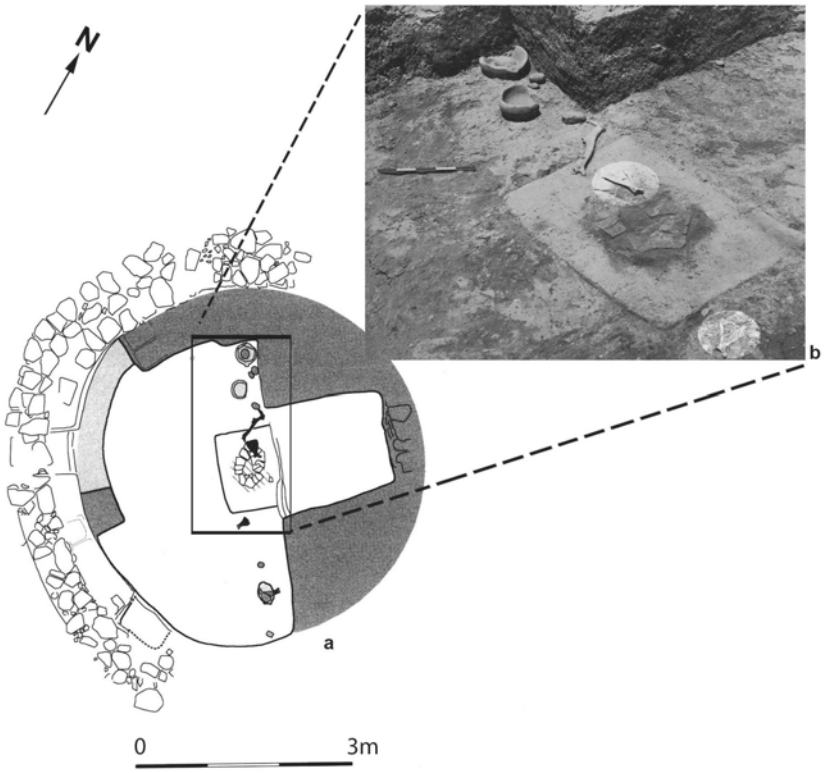

Fig. 14—Khirokitia. Habitation element S.148, level A, eastern sector: a) floor 1020 (drawing O. Le Brun); b) detail of floor 1020.

These convergences lead to questioning whether this treatment of the building as a human being, and whether these objects, which in human burials mark the abandonment of the deceased and the end of his/her world, indicate the abandonment of a construction and the end of what these architectural vestiges could have represented or what had occurred within them. If this parallelism is real between the death of a human being and the abandonment of a building, what of these burials in which a caprine takes the place of a human?

Based on the particularities of the two pieces of evidence which he had, P. Dikaios proposed two interpretations.

The proximity of the grave containing the four caprines and that of an adult human, “grave XI” (Dikaios 1953, p. 77, pl. XX: d), suggested to him that the buried animals represented a sacrifice intended to

honour the deceased. But aside from the fact that the two graves, very close to each other but clearly distinct one from the other, lie within the same floor, nothing supports such an interpretation.

A sacrifice is also suggested to him by the burial of a caprine in tholos VII which is sealed by a step of pisé, but a sacrifice carried out as part of a foundation ritual, and by grave XVIII in tholos XV(II) as well, in which the place of the caprine is occupied by two human beings.

Although it appears evident that grave XVIII is directly related to the construction of tholos XV(II), as grave 499 is to the reconstruction of the wall of S.117 and the caprine grave is to the construction or refurbishment of tholos VII,[19] as could be also the multiple burial of caprines in relation to tholos X(III),[20] we can only wonder at the rarity of such a practice which only concerns a few buildings, which have nothing to distinguish them from other buidings found on the site.

Dikaios noted, besides, an evolution over time of this ritual, with the animal being substituted for the human, as tholos XV (II), which produced the human burial, was constructed before tholos VII.

Recent research conducted at Khirokitia does not support such an evolution. It has been established that the eastern sector of the hill, where tholos VII is located, was occupied before the western sector where tholos XV(II) was built (Le Brun, Daune-Le Brun 1984, 1989). The construction of tholos VII would thus not be posterior to that of tholos XV(II), at best it would be contemporary, tholos VII being a late construction in the eastern sector.

Moreover, if we place the other evidence in the sequence, it also appears that it is later in date. Thus, for a more or less equal number of burials from each of the two sectors, 42 for the east, levels E to B,[21] 45 for the west, levels III to I, we observe a clear imbalance between the eastern sector, the earliest occupied, which produced only grave 499, level B, and the western sector with three graves, 380, level II, and 382 and 207, respectively levels Ic and Ib. The two examples assignable to level A, grave 538 and habitation element S.148, accentuate this imbalance, as level A corresponds to a reoccupation of the eastern sector which occurs at the same time as the occupation of the western sector, at a time which can be situated at the end of level III/beginning of level II.

In spite of the low amount of evidence, another observation can be made concerning the age of the deceased with which the animal fragments are associated. If we set aside the burial of an adult, 380, for which the association is less evident, the three others are burials of children, either babies which died in the perinatal period, 538 and 382, or older, 207, whose youth parallels that of the goats of tholos X(IV) and grave 499.

COMPARISONS AND CONCLUSIONS

The comparison between the two sites causes convergences to appear, as well as specificities for each of them (*table 1*). At Shillourokambos, as at Khirokitia, animal parts are in certain cases deposited in human burials, whether collective (Shillourokambos) or individual (Khirokitia); the species concerned are wild (deer) or domestic (caprines, pigs). At Shillourokambos as at Khirokitia, burials of young tamed (cat) or domestic (caprines, pigs) animals were discovered in immediate proximity to burials of adult humans.

At Khirokitia, only a caprine and the deer occupy a place in the funeral practices; at Shillourokambos, the range is wider as it includes pigs and a cat. Although the pig remains are only associated with the collective burial, a type of burial which does not exist at Khirokitia, the cat is associated with an individual human burial which possesses features common to those of Khirokitia (a dug grave, very contracted position) and belong to a late phase of the occupation of the site.

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19. As the base of the wall has not yet been attained, it is impossible to know, cf. section, Dikaios 1953, fig. 31.

20. Contrary to the indication of P. Dikaios, this grave does not belong to floor XII, but is dug into it. It is thus to be related either to a floor, which has disappeared, of tholos X(IV), or to the moment of the construction of tholos X(III), cf. section, Dikaios 1953, fig. 36.

21. The two burials recently discovered in the earliest levels, G to J, were are not taken in consideration.

On the island of Cyprus, the only comparative data available come from Kissonerga-Mylouthkia (8th millennium BC) where the animal remains were found associated with human remains in the fill of pit 133 (Croft 2003). Nine whole sheep of which eight were immature individuals, and 14 whole goats of which 12 were immature individuals, were identified. The human remains, however, are incomplete and represent a minimum of five subjects of which two are not mature.

The data from the Cypriot pre-pottery Neolithic show a preference for caprines, in relation to other species, in funerary practices. These animals could also be, in certain cases, treated as humans.

The behaviours observed in Cyprus (inhumations of animals without apparent relation to the human burials, complete animals more or less associated with human burials) have parallels on the continent, in the sites of the 8th and 7th millennia (*table 2*). For the period under consideration, animal burials having no link to human burials are rare, the only example coming from Canhasan 1 in which the skeletons of two dogs were found under the threshold of a construction (French 1998). The associations of animals with human burials can take various forms: mixed burial containing an adult male human and a lamb at Çatalhöyük (Russel, Düring 2006), proximity between a human burial (of an adult or immature subject) and the skeleton of an animal (cow or pig) which had suffered manipulations at Basta (Becker 2002) and Tell ‘Ain el-Kerkh (Tsuneki 2002), proximity of a plastered skull and a gazelle skeleton without a skull at Kfar Hahoresh (Kolska Horwitz, Goring-Morris 2004).

It is with Çatalhöyük that the convergences are the most evident. It is the only site of the continent, for the period under consideration, on which a caprine was the object of a particular treatment distinguishing it from the animals intended for consumption. It is difficult to understand the nature of the relations of a symbolic order which united the pre-pottery societies of the 7th millennium with domestic caprines. A very strong relation must have existed, as was the case beginning in the Natufian for the dog and beginning in the 8th millennium for the cat.

Acknowledgments

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Animals	Animal grave	Complete animal skeleton in the proximity to a human burial	Parts of animals in human burials
Fallow deer	Khirokitia ?		Shillourokambos
Pig			Shillourokambos
Cat		Shillourokambos	
Caprines	Khirokitia	Khirokitia	Shillourokambos Khirokitia

Table 1—Man-animal relationships in the burials at Shillourokambos and Khirokitia: involved species and types of associations.

Site	Period (BC)	Culture	Animal	Age	Relation to a human burial	Type of deposit	References
Kfar Hahoresh (Israel)	8th mill.	PPNB	Gazella	Unkown	Proximity of a plastered human skull and portions of skeletons	Skeleton without a skull	Kolska Horwitz, Goring-Morris 2004
Basta (Jordan)	7th mill.	Late PPNB	Pregnant cow	Adult and foetus	Near adult male (?) burial	Defleshed bones Reconstruction of the skeleton	Becker 2002
Çatalhöyük (Central Anatolia)	7th mill.	Pottery Neolithic	Sheep	About 1 year	Man-animal burial	Man and animal complete skeletons in connection	Russell, Düring 2006
Tell Ain el-Kerkh (Syria)	7th mill.	Pottery Neolithic	Pig	6 months	Near infant burial	Primary human burial Pile of animal bones	Tsuneki 2002
Canhasan 1 (Central Anatolia)	7th-6th mill.	Pottery Neolithic	2 dogs	Unkown	None	Skeletons in connection	French 1998

Table 2—Animal graves in the Near East (8th and 7th millennia BC).

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