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TOMB OF THE DOGS IN GEBEL ASYUT AL-GHARBI
(MIDDLE EGYPT, LATE TO PTOLEMAIC/ROMAN PERIOD):
PRELIMINARY RESULTS ON THE CANID REMAINS

Chiori KITAGAWA

ABSTRACT

This contribution is a preliminary report on the animal remains recovered in 2009 and 2010 during fieldwork in the ancient necropolis of Gebel Asyut al-gharbi on the western outskirts of Asyut, Egypt. The renewed archaeological work, carried out since 2003 by the joint German/Egyptian Asyut Project, re-identified the location and entrance of one of the canid necropoleis; the so-called Tomb of the Dogs. Pottery finds suggest that this tomb was in use mainly from the Late period to the Ptolemaic/Roman periods. The species retrieved from the tomb itself and from its surroundings are briefly described with most attention paid to the canids. These include mainly dogs but a small number of remains from golden jackal and two fox species also occur. In this paper we focus attention on the dogs; in particular their shoulder heights, skull type, age at death, pathologies and possible causes of death.*

KEYWORDS

ancient Egypt, Asyut, animal necropolis, animal mummy, canid

INTRODUCTION

Animals in ancient Egyptian religion have been one of the most fascinating phenomena in antiquity as well as presently. In ancient Egypt the animals themselves were not worshipped but they provided the space for the manifestation of transcendent deities. A number of animals were mummified and buried in order to serve the ancient Egyptians' concept of deity manifestation. Animal necropoleis were one of the characteristics of the Late period onward, especially in the Ptolemaic/Roman periods (c.664 BCE–fourth century CE) (Table 1). One explanation for mummy burials is that they were offerings connected with personal prayers to the god.¹

The joint German/Egyptian fieldwork project in Asyut started in 2003 and is a collaboration between three universities.² The focus of the project³ is the ancient necropolis Gebel

* First of all I would like to extend my gratitude to the organisers of the ASWA conference in Brussels in 2011. Wim Van Neer and Veerle Linseele gave me valuable comments on this paper. Special thanks are due to the directors of our project, Ursula Verhoeven-van Elsbergen, Jochem Kahl and Mahmoud El-Khadragy, for inviting me to study the materials, and to David Elcock for his comments on my English text. The Asyut Project is supported by the Deutsche Forschungsgemeinschaft.

¹ Ikram 2005, pp. 9–10.

² The project directors are Ursula Verhoeven-van Elsbergen from the Johannes Gutenberg-Universität Mainz and Jochem Kahl from the Freie Universität Berlin, and one of the field directors is Mahmoud El-Khadragy from Sohag University.

³ For the project *cf.* Kahl 2007.

Asyut al-gharbi that rises on the western outskirts of the city of Asyut, which is located 375 km to the south of Cairo (Fig. 1). Earlier fieldwork was conducted in the first half of the 20th century; there is, however, no systematic publication of these activities.

The project in Gebel Asyut al-gharbi provides valuable information on the history of the mountain as well as that of the city. Apart from the numerous tombs honeycombed into the rock and dating from the Old Kingdom to the Roman period, Gebel Asyut had different functions such as a quarry, a destination for school excursions, a dwelling place for Christian anchorites, a place of prayer in the Islamic period and a military base (Fig. 2).⁴ One of the other usages of Gebel Asyut was that of animal necropoleis. The written sources tell us that there were different kinds of buried animal species such as ibis, birds of prey, baboons, cattle, cats and canids and that they have different burial grounds in Gebel Asyut.⁵

It is known that the chief deity of Asyut was Wepwawet and the deity for the necropolis was Anubis. Both gods are represented by canid figures. The temple dedicated to Wepwawet was located in the western part of modern Asyut⁶ and that of Anubis was close to Gebel Asyut al-gharbi.⁷ Both are now buried under the city and under the cultivated land respectively. The presence of these two deities leads us to expect that the majority of animal remains from the gebel could be those from canids. Travelogues from the 18th century onwards report on canid burials and mummies, as well as two large dog tombs in Gebel Asyut, one of which (the so-called Tomb of the Dogs) lies between Tomb I and Tomb IV, the other is located near the Salakhana Tomb.⁸ Although there were lots of animal remains scattered on the surface of Gebel Asyut, both of the dog tombs were inaccessible for the renewed research activities because the Tomb of the Dogs was buried under debris caused by heavy rain and the subsequent mudslide in the early 1990's, and the other tomb lies in the area of a military base.

In 2008 a surface survey led to the rediscovery of the aforementioned tomb between Tomb I and IV.⁹ Two concentrations of animal remains, especially canid bones, were observed in the surveyed area. About 5300 fragments of mammalian bones were recorded among the faunal materials from the 2008 surface survey.¹⁰ Canid bones were mostly retrieved from the area near the monastery Deir el-Meitin in stage 5.¹¹ Although the number of retrieved canid remains was less in stage 4 around the (expected) Tomb of the Dogs, a significant number of bones and still-wrapped mummified canid remains were found. In 2009 one of the openings of the tomb was uncovered. A long corridor of about 22 m, running in a north-south direction and with side chambers stretching towards a western direction, was observed inside. The architecture of the galleries may not be the vast subterranean galleries found in Tuna el-Gebel¹² because of other workings already hewn in Gebel that

⁴ Kahl 2007, pp. 59–106.

⁵ Becker 2007, p. 148.

⁶ Kahl 2007, pp. 39–48.

⁷ Edel 1984, p. 48.

⁸ Kahl *et al.* 2009, pp. 117–121.

⁹ *Cf.* Kahl *et al.* 2009, 2010, 2011; Kahl and Kitagawa 2009.

¹⁰ Faunal material from the survey in 2008 (*cf.* Kitagawa in Kahl *et al.* 2009) is not dealt with in this paper.

¹¹ Gebel Asyut al-gharbi can be divided into 11 limestone layers (from stage 1 to 11) (*cf.* Klemm and Klemm 2006; Kahl *et al.* 2006, p. 242).

¹² *Cf.* Kessler 1987, pp. 1–36; Nur Ed-Din and Kessler 1996, Abb. 1; von den Driesch *et al.* 2006, p. 204.

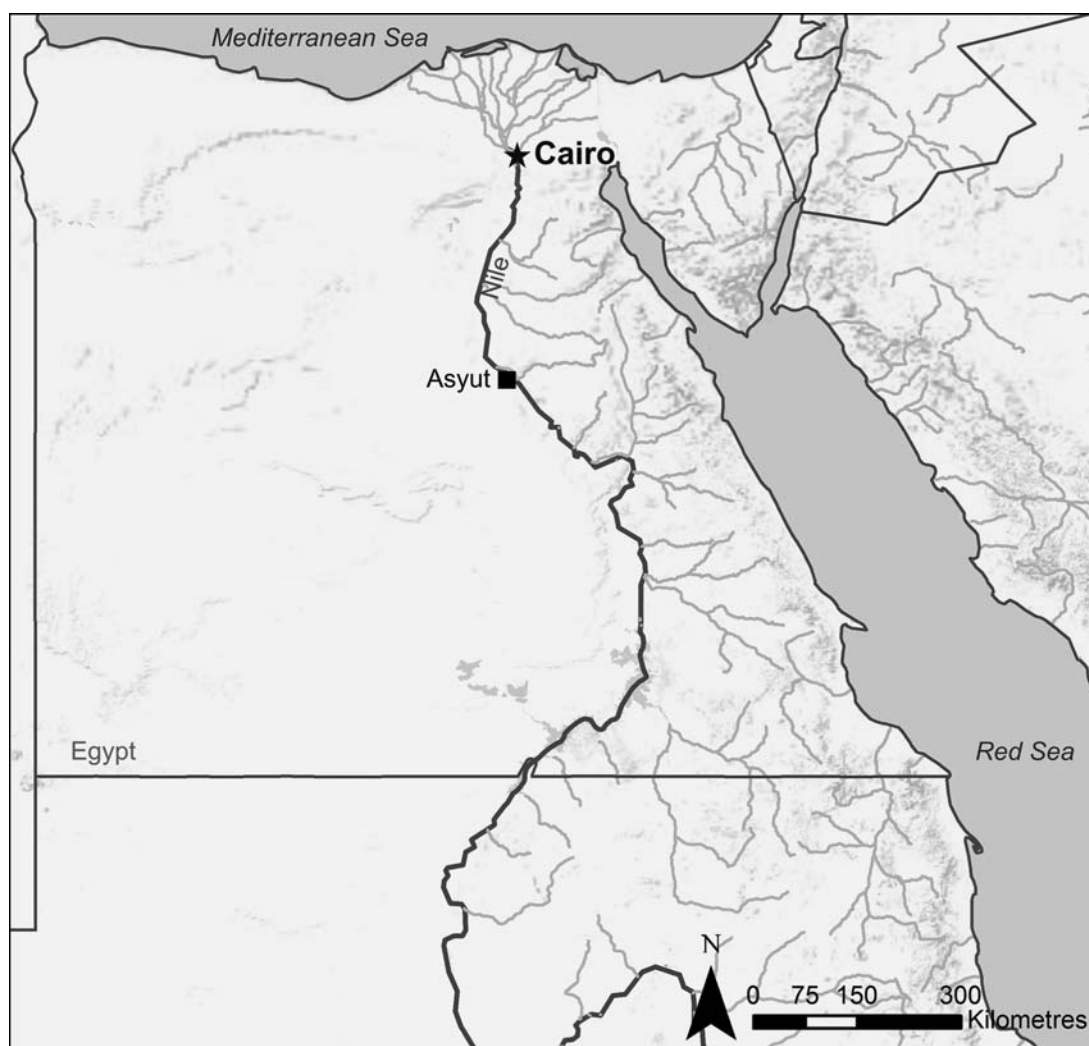


Fig. 1. Map showing location of Asyut.

may have restricted any further extension. The floor surfaces of both the corridor and chambers are filled with animal bones and other artefacts in a disturbed condition.

MATERIAL AND METHODS

Full-scale work in the Tomb of the Dogs has not yet started but sampling on the surface at some spots in the tomb was conducted in 2009 and 2010. This paper outlines the preliminary results on the faunal material, mainly the canid remains retrieved in 2009 and 2010 from the Tomb of the Dogs and from its surroundings.¹³ More detailed analysis is currently in preparation.

¹³ Animal remains retrieved around the Tomb of the Dogs include those which were recovered during removal of the debris in front of the tomb.

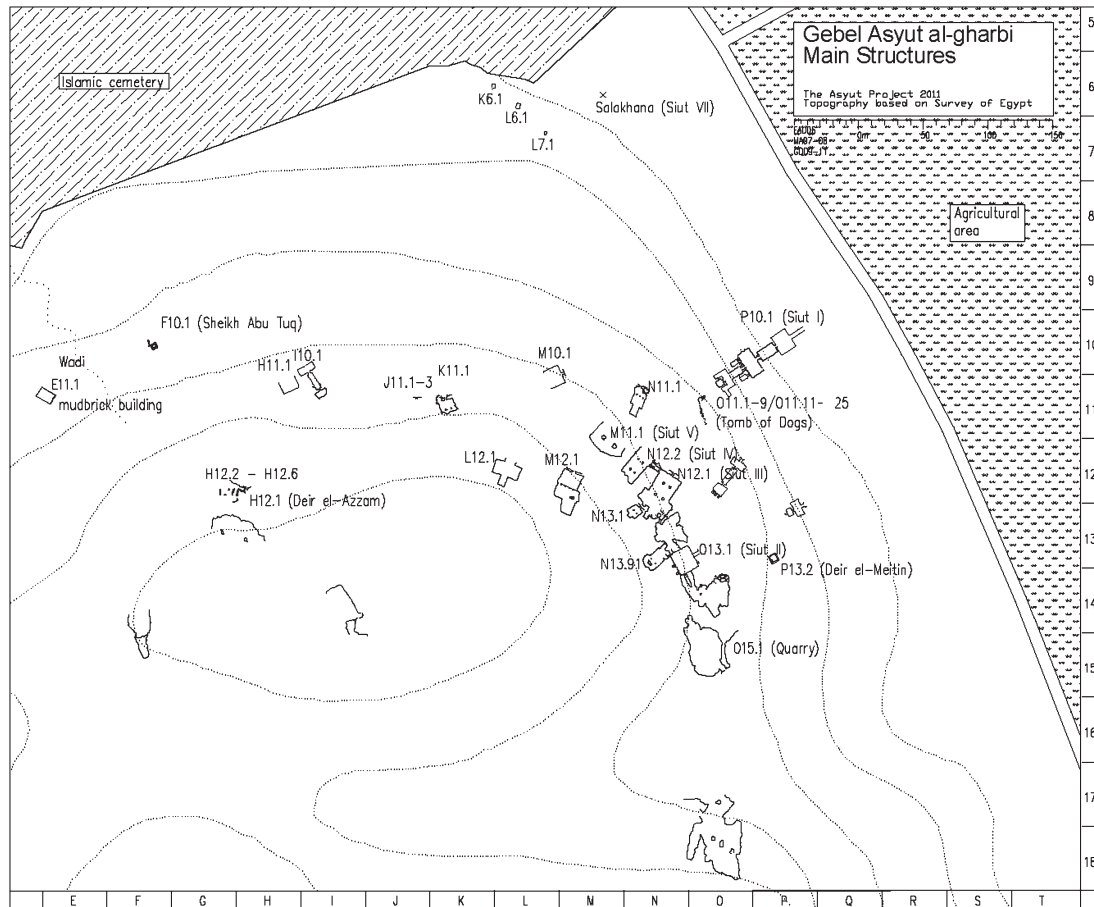


Fig. 2. Gebel Asyut al-gharbi general map (©The Asyut Project) with indication of the Tomb of the Dogs (O11.13).

Early Dynastic period (1–2 Dyn.)	c.3040–2731 BCE
Old Kingdom (3–8 Dyn.)	c.2731–2205 BCE
First Intermediate period (9–11 Dyn.)	c.2205–2020 BCE
Middle Kingdom (11–13 Dyn.)	c.2020–1630 BCE
Second Intermediate period (14–17 Dyn.)	c.1630–1540 BCE
New Kingdom (18–20 Dyn.)	c.1539–1077 BCE
Third Intermediate period (21–25 Dyn.)	c.1076–664 BCE
Late period (26–30 Dyn.)	664–332 BCE
Graeco-Roman period	332 BCE–642 CE

Table 1. Chronological chart of ancient Egypt, based on Kahl (2007, pp. 157–158).

The inside of the tomb is in a very disturbed condition, caused by plundering over the years. Animal remains were piled up in disordered layers and consist of bones as well as remains of soft tissue, most of which were partially or entirely covered by a dark brown/black substance (*i.e.* resin/bitumen). They were sometimes partially wrapped with linen and

string. Apart from animal remains and mummy bandages, which dominate the contents of the tomb, there were wooden coffin fragments, human remains and pottery fragments. The pottery mostly dates from the Late period to the Greco-Roman period, while one pottery fragment dates back to the Middle Kingdom.¹⁴ A few of them have the characteristics of pottery for embalming. Beside pottery fragments, a few ostraca with Demotic inscriptions were collected, some of which are seemingly from the Ptolemaic period.

While bandages of animal mummies were mostly ripped apart in the tomb surface, animal bones were generally well preserved. They represent all parts of the skeleton. The faunal materials were sampled within an area of approximately 1 × 1 m on the surface of the chosen locations, two spots in 2009 and 14 spots in 2010, inside the tomb.

The material was identified and recorded on site. Owing to the very similar morphological features and size overlap between dog (*Canis lupus* f. *familiaris*) and golden jackal (*Canis aureus*),¹⁵ it was generally difficult to separate osteological remains of these two species. To distinguish the cranial bones of these two species, the criteria mentioned in Osborn and Helmy¹⁶ were used. As the criteria for distinguishing postcranial bones of dog and golden jackal are not yet well established, most of them were categorised as “dog/jackal”. For the estimation of the age at death, the data from Habermehl¹⁷ for dentition, Silver¹⁸ for dentition and epiphyseal fusion and Horard-Herbin¹⁹ for dentition were referred to.

For the measurements, the standards of von den Driesch²⁰ were applied, while the shoulder height estimations were based on the formulae of Harcourt.²¹

RESULTS

Among the collected animal remains from the tomb, canid remains accounted for 93 per cent of the entire number of identified specimens (NISP) (Table 2). The most frequently identified species was domestic dog, followed by two fox species (red fox *Vulpes vulpes* and Rüppell's fox *V. rueppellii*) and golden jackal. Cat (*Felis* sp.)²² was the second most frequent group (4 per cent), followed by cattle (*Bos primigenius* f. *taurus*) and sheep (*Ovis orientalis* f. *aries*). Beside mammals, a few remains of mummified birds were found and one shell of the Nile bivalve *Chambardia rubens arcuata* was also present. The dark coloured substance

¹⁴ T. Rzeuska, personal communication.

¹⁵ While the ancient Greek called Asyut Lycopolis (city of wolf) and there have been discussions on *Canis aureus lupaster* subspecies of the golden jackal *Canis aureus* inhabiting Egypt and adjacent countries, as to whether it belongs to jackal or to wolf (cf. Ferguson 1981), the conventional view is to categorise it as a subspecies of *Canis aureus* (cf. Wilson and Reeder 2005, vol. 1, pp. 574–575). Recent genetic studies, however, pointed out that *C. a. lupaster* is not a subspecies of *C. aureus* but a taxon belonging to the grey wolf *Canis lupus* (Rueness *et al.* 2011). The name of the category “dog/jackal” could be subject to change, but it awaits further studies and discussions.

¹⁶ Osborn and Helmy 1980, pp. 360–371.

¹⁷ Habermehl 1975, pp. 152–170.

¹⁸ Silver 1963, pp. 250–268.

¹⁹ Horard-Herbin 2000, pp. 117–119.

²⁰ von den Driesch 1976.

²¹ Harcourt 1974, p. 154.

²² *F. silvestris* f. *catus* and *F. silvestris*.

(resin or bitumen) adhered especially to the canid, felid and bird remains. The quantity of the substance varied from material to material; cattle and sheep contained almost none.

Relative frequency of animal remains retrieved from the debris outside the Tomb of the Dogs (data shown in “Around the Tomb of the Dogs”, Tab. 2) showed a similar tendency, which included around 98 per cent canid remains, and the other ≈ 1.5 per cent consisting of cat, cattle, sheep and unidentifiable mammal remains. The percentage of the canids was slightly higher than that from the Tomb of the Dogs, since more faunal materials of other mammal species, such as cat and cattle, were found inside the tomb. The reason why slightly more percentages of canid bones were found outside is not yet clear. One possible explanation is that canid remains could have been more useful than bones of other taxa as materials for reuse in the gebel, such as for paving materials for tomb floors in later periods, and had been dragged from the tomb.

	Tomb of the Dogs			Around the Tomb of the Dogs		
	NISP	% (NISP)	MNI	NISP	% (NISP)	MNI
Jackal	4		4	1		1
Dog	132	Canidae	74	38	Canidae	19
Dog/Jackal	1116	93.0%	76	768	98.4%	34
Fox	12		2	4		1
Fox?	5		3	1		1
Cat	55	4.0%	10	2	0.2%	1
Cattle	23	1.7%	3	4	0.5%	1
Sheep	1	<0.1%	1	6	0.7%	2
Unidentifiable mammal	16	1.2%	1	1	0.1%	1
Mammal total	1364		174	825		61

Table 2. Number of identified specimens (NISP), relative frequency of NISP, and minimum number of individuals (MNI) in and around the Tomb of the Dogs.

Size and body build variation

From the long bone measurements of the dogs (including samples in “dog/jackal”), 203 shoulder heights have been calculated from humerus, radius, femur and tibia and are presented respectively by these skeletal elements in **Figure 3**. Although the majority of dogs were medium sized, there are considerable size variations, ranging from 27 cm for the smallest individual to 72 cm for the largest. As for small dogs (including brachymel type) with shoulder heights less than 40 cm, seven examples are represented. Six examples represent large and very large dogs above 61 cm shoulder height.

In the early 20th century Gaillard and Daressy²³ reported on dogs from Asyut. Shoulder heights calculated from their report and from another six ancient Egyptian sites, namely

²³ Gaillard and Daressy 1905, pp. 1–8.

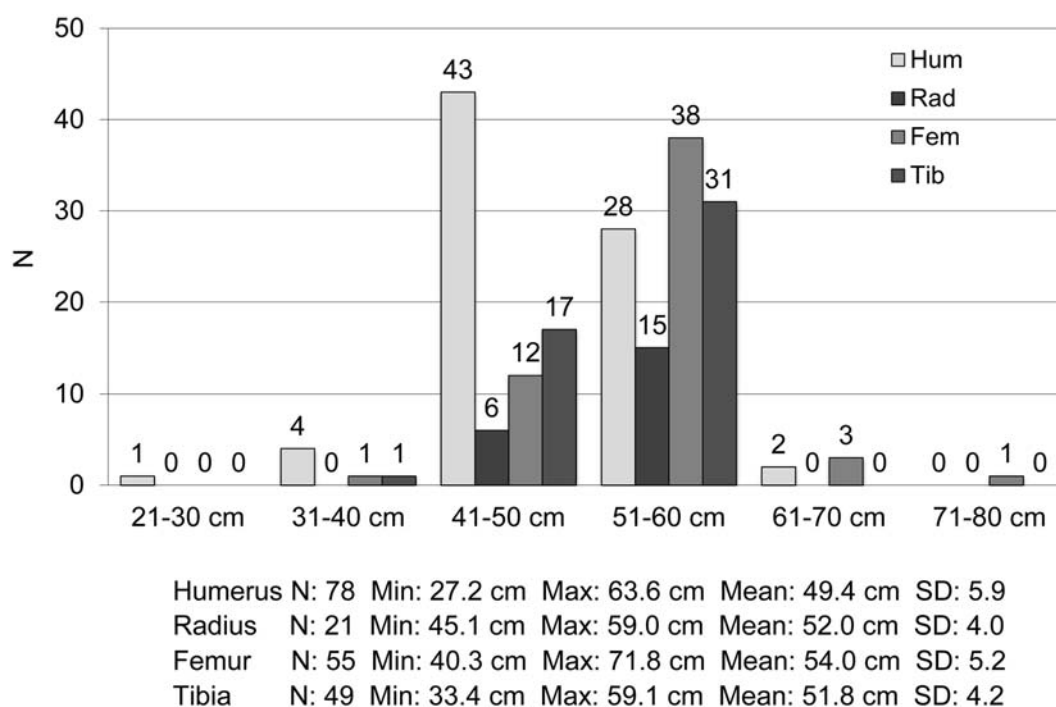


Fig. 3. Shoulder height calculations of dogs (incl. dog/jackal) from Asyut sorted by skeletal elements.

Merimde-Benisalâme,²⁴ Balat,²⁵ Elephantine,²⁶ El-Tarif,²⁷ Tell el-Dab'a²⁸ and Tuna el-Gebel,²⁹ are estimated for comparison (Fig. 4). While the sample size is rather small from both (n=8 from Gaillard and Daressy, n=20 from six other sites), no large or small dogs are included in the assemblages. Most of them fall in the medium-sized dog group. Although data is not included in Figure 4 in this paper, the dogs found in Kerma, northern Sudan, from about 2700 to 1500 BCE are uniformly medium size as well.³⁰

In iconography it is known that different types of dogs were represented in ancient Egypt.³¹ Brachymel dogs were already depicted in the second millennium BCE Middle Kingdom tombs (Fig. 5). On the other hand, osteological remains of such types of dog have not yet been reported, except for a humerus and a femur belonging to a dog 40 cm at the shoulder from the Fifth Dynasty Elephantine.³² It may be attributed to the fact that dog bones were only sporadically reported; however, there are not that many published long bone measurements of dogs from ancient Egyptian sites. One can also consider that variations of dog type increased in the archaeological context in the Roman territory, as was

²⁴ von den Driesch and Boessneck 1985, pp. 30–34.

²⁵ Chaix and Olive 1986, pp. 201–213.

²⁶ Boessneck 1980, pp. 39–41; Boessneck and von den Driesch 1982a, pp. 22–24.

²⁷ Boessneck 1975, pp. 7–13.

²⁸ Boessneck 1976, p. 34; Boessneck and von den Driesch 1992, pp. 30–31, tab. 55.

²⁹ Boessneck and von den Driesch 1987, pp. 187–189.

³⁰ Chaix 1999, pp. 115–117, tab. 10.

³¹ Osborn and Osbornova 1998, pp. 57–68.

³² Boessneck 1988, p. 85, Abb. 90b.

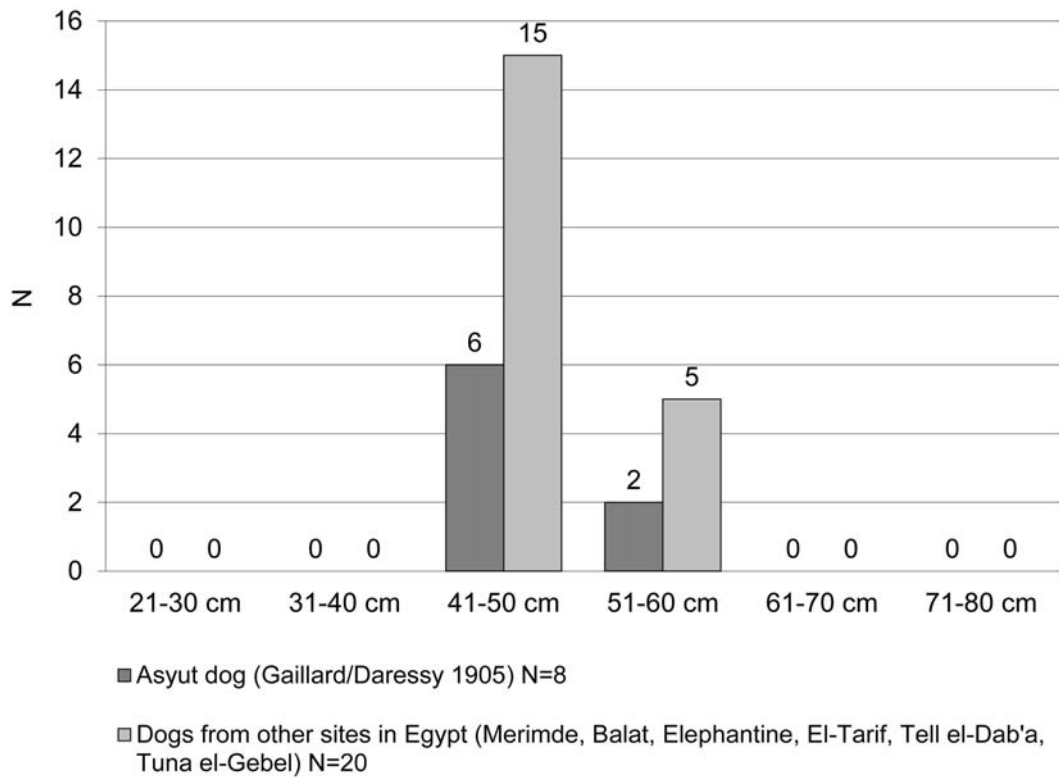


Fig. 4. Shoulder height calculations of dogs from Asyut (after Gaillard and Daressy 1905) and other sites in Egypt (references see text).

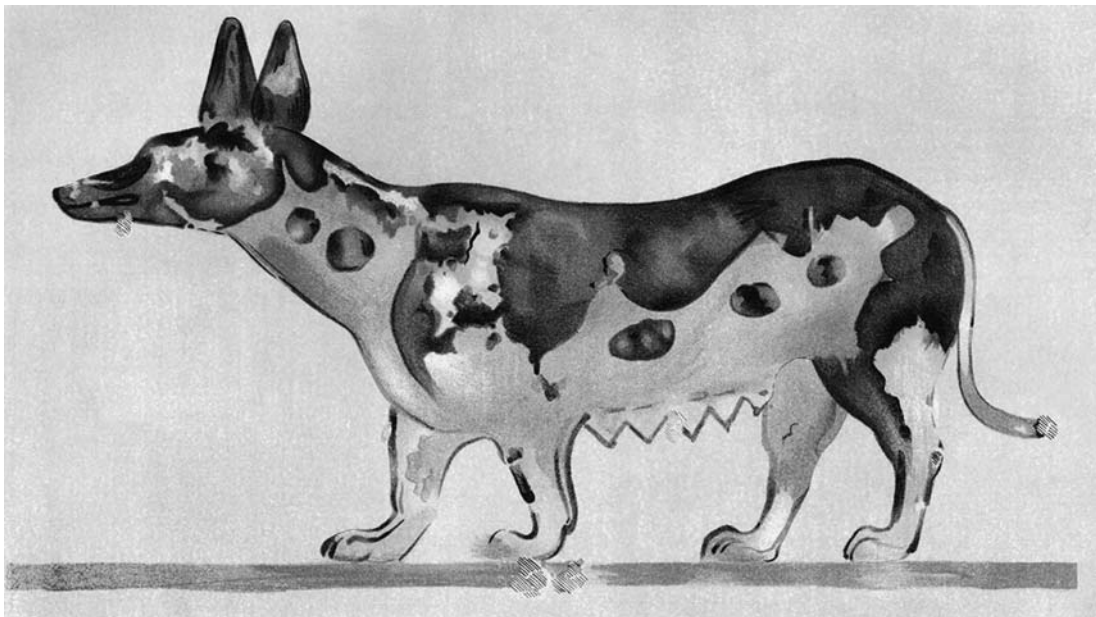


Fig. 5. Representation of a brachymel dog, 12th Dynasty (Griffith 1900, Pl. IV).

reported by several previous researchers.³³ Since the materials from the Tomb of the Dogs could contain those from the Late to the Roman periods, these dwarf dogs may have belonged to the Roman contexts.

Figure 6 shows the relationship between radius index (mid-shaft diameter/greatest length; SD/GL) and shoulder height for the Asyut canids and dogs from three other sites. Except for one brachymel dog from Asyut, the other specimens form a somewhat loose cluster in the lower right part of the graph, which represents medium-sized dogs of normal build.

The width to length proportion of the palate (width \times 100/length) of the Asyut dog/jackal is shown in **Figure 7**. According to the skull typology,³⁴ dolichocephalic skull type is under 74.99, mesocephalic between 75.00 and 99.99 and brachycephalic above 100. Based on this grouping, no short skull dog was observed in the sample. All exhibit the dolichocephalic skull type, as do those from Tuna el-Gebel (68.2),³⁵ Elephantine (60.4)³⁶ and El-Tarif (64.0).³⁷

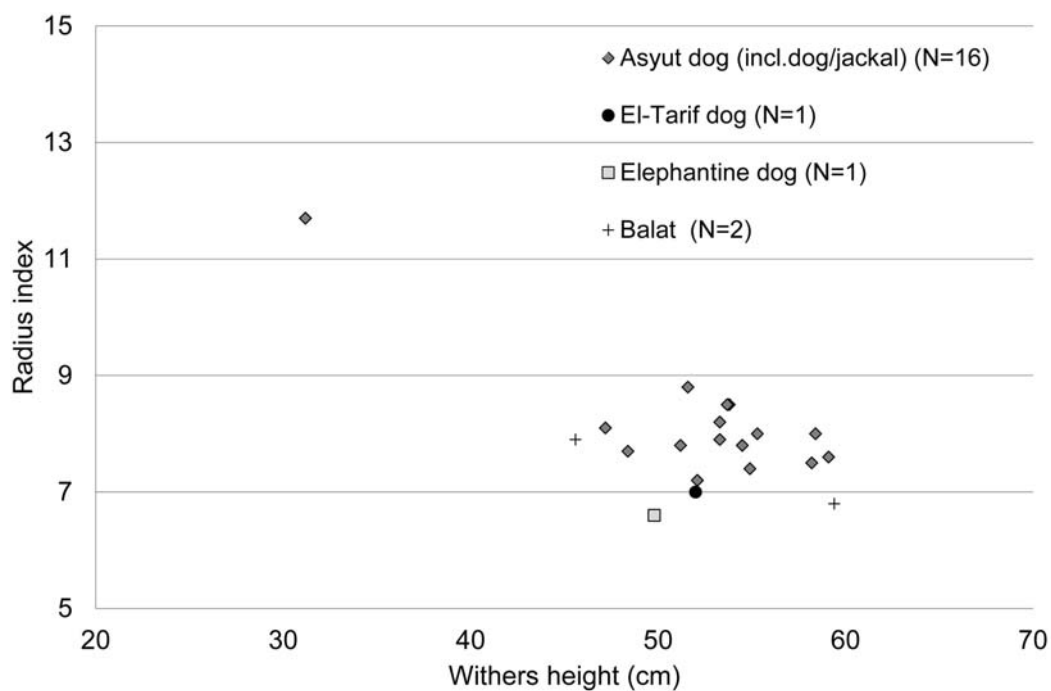


Fig. 6. Relation between shoulder height and radius index (mid-shaft diameter/greatest length; SD/GL) of dogs from Asyut and other ancient Egyptian sites (references see text).

³³ *E.g.* Harcourt 1974; Clark 1995; Peters 1997; De Grossi Mazzorin and Tagliacozzo 2000; Brück 2003.

³⁴ Lignereux *et al.* 1991; Peters 1997, pp. 512–516.

³⁵ Boessneck and von den Driesch 1987, pp. 187–189.

³⁶ Boessneck 1980, pp. 39–41; Boessneck and von den Driesch 1982a, pp. 22–24.

³⁷ Boessneck 1975, pp. 7–13.

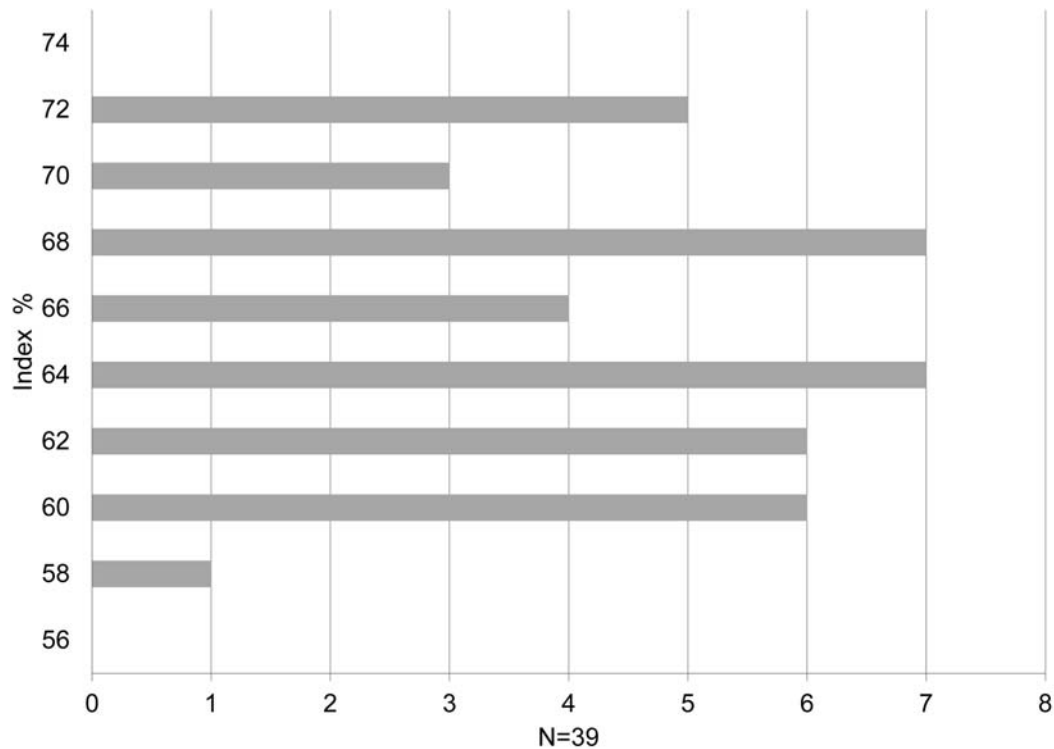


Fig. 7. Palatal index (width \times 100/length) of Asyut dogs.

Age at death, cause of death and pathologies

Age at death varied from new-born to old. Twenty per cent of the sampled canids (including dog/jackal) from the Tomb of the Dogs and 28 per cent from the area around the Tomb of the Dogs belong to the neonatal/infant age group, which corresponds to animals with an age of up to six (/seven) months. All the other specimens had their dentition complete and belonged to the age groups from young to old, meaning that they were over six (/seven) months of age.³⁸ Although we did not systematically record the wear of the permanent dentition,³⁹ we noticed that some individuals had heavily worn teeth.

In most cases it was hard to determine the cause of death. In previous studies some authors mentioned dogs killed by strangulation,⁴⁰ but no strangulation marks have been recognised in our material thus far. Some individuals may have died of natural causes, perhaps due to insufficient care after birth; others might have been killed intentionally. Comparable examples were reported on mummified newborn/infantile dogs from the faunal assemblages of a 30th Dynasty (fourth century BCE, Late period) tomb in Luxor⁴¹ and the

³⁸ Cf. Habermehl 1975, pp. 166–167. Age grouping of young to old dogs based on their epiphysal fusion is in preparation.

³⁹ Cf. method developed by Horard-Herbin 2000.

⁴⁰ Cf. Lortet and Gaillard 1909, p. 283; see also Charron 1990, p. 211; Durisch 1993, p. 219, n. 32; Becker 2007, p. 148.

⁴¹ Boessneck and von den Driesch 1982b, pp. 288–289.

Late period gallery in Tuna el-Gebel.⁴² The same may have held true for old individuals owing to their age and/or insufficient care.

In relation to old individuals, it must be noted that a number of dog maxillae and mandibulae showed closed or closing alveolus/alveoli after the loss of teeth. In most of the cases more than two teeth, in the worst case several teeth, were lost in a maxilla or a mandibula. Causes of tooth loss could have been varied; however most of them would have belonged to old individuals in consideration of the tooth attrition. Dental abnormalities, such as microdontia and hyperdontia, have also been found in one sample each. Such oral abnormalities are probably to be expected in any large dog bone assemblage.⁴³

Canid remains with pathological features have been recognised on 13 occasions around the Tomb of the Dogs, and on 36 specimens in the Tomb of the Dogs itself, which corresponds to two and three per cent respectively of all retrieved dog and dog/jackal remains. They were mainly 1) oral pathology such as those mentioned above, as well as alveolar or periodontal abscess, 2) bone fracture in long bones as well as ribs, 3) a type of degenerative disease in the spine *Spondylosis deformans* and 4) arthritis. In the dog bone assemblage from the surface survey in 2008, metabolic disease such as rickets/osteomalacia was also observed, however there were no such pathological features among those from 2009 and 2010 that are the subject of this paper. These features could be seemingly related to indirect, if not direct, causes of death.

CONCLUDING REMARKS

The majority of the osteological remains retrieved from and around the Tomb of the Dogs in 2009 and 2010 were canid, in particular dog. Golden jackal, red fox and Rüppell's fox were present in small numbers. Most dogs (and dog/jackal) belonged to the medium-sized category. However, small and large individuals were also present in small numbers, which has rarely been attested in osteological remains from ancient Egyptian sites so far. The skull type and body build of the dogs exhibit a high uniformity. The causes of death of the canids could not be clarified from the faunal material. However, dental abnormalities and osteopathological features were observed, some of which might be related directly or indirectly to the causes of death.

Future analysis will also address study questions, such as the mummification technique employed and the animal cult itself. As for the mummification, unlike in Tuna el-Gebel,⁴⁴ possible chronological change in the techniques has not yet been clarified in Asyut, mainly because most of the materials were not retrieved from the stratified layers. It is hoped that continued work in the tomb will reach better preserved strata.

⁴² Boessneck and von den Driesch 1987, p. 187.

⁴³ *E.g.* Iron Age and medieval site Eketorp in Sweden (Boessneck and von den Driesch 1979, pp. 147–148).

⁴⁴ von den Driesch *et al.* 2006.

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