

A Roman Cat Skeleton from Quseir on the Red Sea Coast^a

Angela von den Driesch and Joachim Boessneck^b

During excavations at Quseir el-Qadim on the Red Sea coast, the body of a Roman cat was recovered. The skeleton is nearly complete and remains of the fur, stomach, and lower intestinal tract are also preserved. This animal was a very large and heavily built male domestic cat. Shortly before his death, the cat had eaten at least six rats (*Rattus rattus*), remains of which were found in the stomach and in the dung balls.

Keywords: CAT MUMMY, MEASUREMENT, RAT BONES IN THE STOMACH, ROMAN PERIOD, QUSEIR.

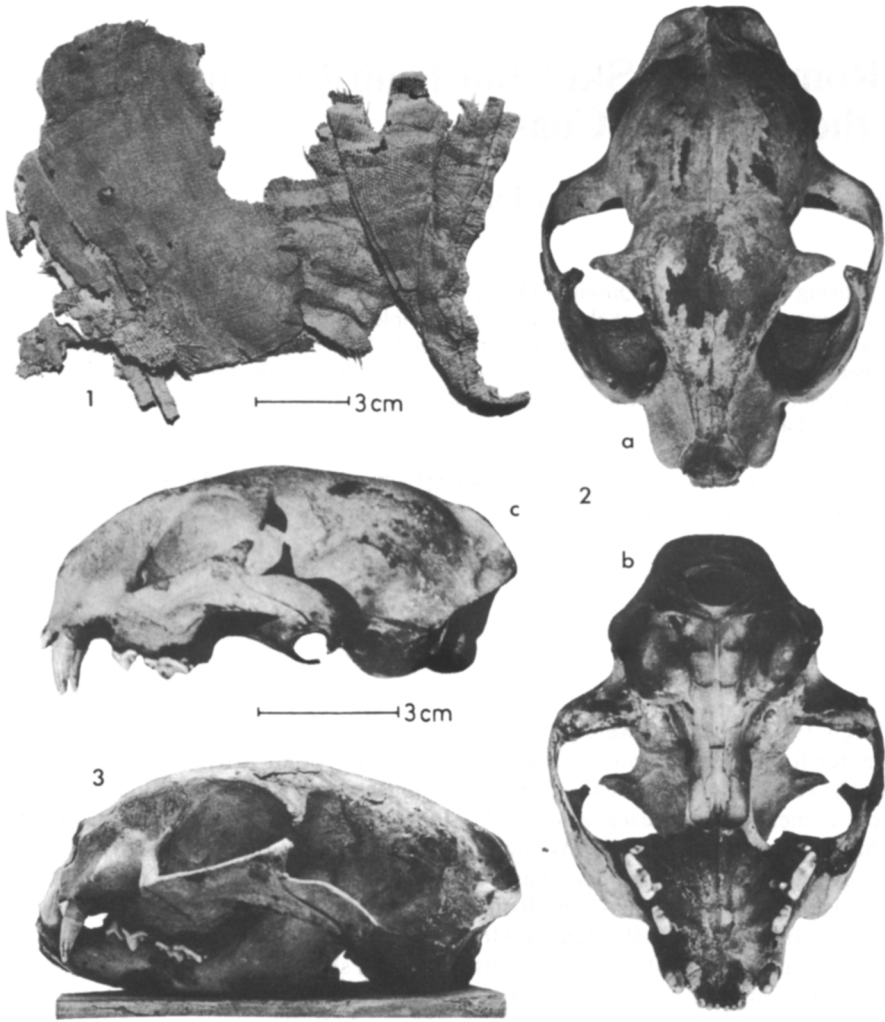
In March 1982, when we were working on faunal materials from Tell el-Maskhuta in the Center for Research and Conservation of the Egyptian Museum in Cairo, we were shown the remains of a cat by the director of the Research Center, Dr Omar E. El-Arini.^c This cat comes from the excavation of Dr Janet Johnson (Oriental Institute, University of Chicago) and Dr Donald Whitcomb (Smithsonian Institution, Washington) at Quseir el-Qadim on the Red Sea coast. This excavation at Quseir has demonstrated the importance of the town during the Roman and the Mamlūk Period.

The cat comes from a Roman building. It had been buried in a niche (south face, wall A) measuring 95 × 50 × 30 cm (Locus F 8d–37a, sketch 1). Dr Whitcomb gave us the following information by letter: "The building was a central administrative/storage structure of the Roman period (1st–2nd centuries AD). The contents of the room and the cloth of the cat burial are Roman of this date. The meaning of this burial is, however, puzzling and will require further research. The cloth covering the cat consisted of 6 fragments. The cat was placed on and covered by pieces of woollen tabby one of which had bands of green and purple on a beige (natural) ground. The cat was then wrapped with a linen 'shroud' with two selvages 1.2m or ca. 2 cubits apart and two edges of drawn thread work. Both the woollen and linen cloths were in good condition with little evidence of wear. After unwrapping, the cat was removed, skin removed and the bones taken out".

^aThe authors thank Mr R. H. Meadow for assistance with the translation of the German text into English.

^bInstitut für Palaeoanatomie, Domestikationsforschung und Geschichte der Tiermedizin der Universität München, Schellingstrasse 10/2 8000 München 40.

^cWe wish to thank Dr Arini for facilitating our study of the cat skeleton. Permission for publication and stratigraphic information on the finds were given by Dr Whitcomb. The remaining animal bone finds of this excavation were taken for research by Wattenmaker (1982).



Figures 1-3. 1. Remains of the cloths in which the cat had been wrapped. 2-3. Skeletal parts of the cat from Queseir.

A part of one of the wrappings on which it is still possible to see faded stripes of red and green is shown in Figure 1. In addition to the skeleton of the cat, large parts of the fur were also preserved, as well as the stomach and the contents of the lower intestinal faecal material).

It seems, that the cat was beige-yellow or beige-reddish in colour, but "both the cloth and hair were unevenly discoloured red-brown, presumably by blood". In addition the length of the hair corresponds to that found in the common domestic cat.

The skeleton is almost completely preserved, so we are able to say conclusively that the cat is "heavily built". Missing are the distal end of one ulna and half of one fibula, a few carpal and tarsal bones including both tali, and some metapodia and phalanges. The skull is in an excellent state of preservation (Figure 2) and all teeth are present including the smallest incisors. Except for those noted above all long bones are complete and were measured (Table 1).

Table 1. Measurements of the cat skeleton from Quseir. (For measurement definitions and abbreviations see von den Driesch, 1976)

<i>(a) Skull</i>	
Total length: akrokranion – prosthion	107.5
Condylbasal length	97.5
Basal length	89.3
Basicranial axis	32.0
Basifacial axis	58.0
Akrokranion – frontal midpoint	63.0
Basion – frontal midpoint	61.5
Frontal midpoint – prosthion	60.5
Akrokranion – nasion	81.7
Nasion – prosthion	41.2
Basion – staphylion	49.0
Staphylion – prosthion	40.5
GB of the occipital condyles	24.5
Greatest mastoid breadth: otion – otion	46.0
Greatest neurocranium breadth: euryon – euryon	43.5
Zygomatic breadth: zygion – zygion	73.3
Frontal breadth: ectorbitale – ectorbitale	51.5
Breadth of the postorbital constriction	32.5
SB between the orbits: entorbitale – entorbitale	18.5
H of the occipital triangle: akrokranion – basion	28.5
GH of the neurocranium	37.0
GL of the nasal bones	30.0
Greatest inner length of the orbit	27.0
LM ¹ – prosthion (of one side)	41.0
LM ¹ – oral border of the canine alveolus	34.0
LM ¹ – aboral border of the canine alveolus	28.0
L of the cheektooth row	24.5
L/B of the carnassial (P ⁴)	11.5/5.0
GH of the canine	26.0

<i>(b) Mandible</i>	
Total length: condyle process – infradentale	72
L: the angular process – infradentale	69
L: the indentation between these processes – infradentale	67
L: the condyle process – oral border of the canine alveolus	69
L: the condyle process – aboral border of the canine alveolus	64
LM ₁ – infradentale	38
LM ₁ – oral border of the canine alveolus	36
LM ₁ – aboral border of the canine alveolus	30
L of the cheektooth row	21
L/B of the carnassial (M ₁)	8/3
H of the vertical ramus	29
H behind M ₁	12

<i>(c) Atlas</i>	<i>(d) Epistropheus</i>	<i>(e) Sacrum</i>			
GB	41.0	LCDe	29.0	GL	33
GL	23.3	LAPa	29.0	GB	28
BFcr	25.0	BFcr	17.0		
BFcd	18.5	BPacd	17.5		
GLF	20.0	SBV	11.5		

(f) <i>Scapula</i>			(g) <i>Humerus</i>		
	sin.	dext.		sin.	dext.
HS.	79.0	79.5	GL	115.5	115.7
DHA	82.0	82.5	GLC	114.0	114.0
SLC	13.7	13.5	Dp	24.8	24.5
GLP	16.5	16.0	SD	8.8	9.0
LG	15.0	14.5	Bd	20.2	20.3
BG	10.7	10.5			

(h) <i>Radius</i>			(i) <i>Ulna</i>		
	sin.	dext.		sin.	dext.
GL	107.5	105.0	GL	—	125.0
Bp	9.6	9.5	SDO	—	11.7
SD	6.0	6.3	DPA	13.5	13.0
Bd	13.8	14.2	BPC	11.0	10.5

(k) <i>Pelvis</i>			(l) <i>Femur</i>		
	sin.	dext.		sin.	dext.
GL	86.0	86.0	GL=GLC	126.5	125.5
LAR	14.0	14.0	Ll	125.3	125.0
			Bp	23.0	22.8
			SD	11.0	10.5
			Bd	22.0	21.0

(m) <i>Tibia</i>			(n) <i>Fibula</i>		(o) <i>Calcaneus</i>	
	sin.	dext.			sin.	dext.
GL	126.5	127.0	GL 119.7	GL	31.0	31.5
Bp	22.5	22.5		GB	13.3	14.0
SD	9.5	9.5				
Bd	16.0	16.0				

(p) <i>Metacarpus</i>	I	II	III	IV	IV	V
GL	13.0	33.7	38.3	36.7	36.7	31.3
Bd	—	5.3	5.8	5.5	5.5	4.9

(g) <i>Metatarsus</i>	I	II	III	III	IV	V	V
GL	53.3	53.3	58.8	58.8	58.5	56.3	56.7
Bd	5.7	5.8	7.0	7.0	6.2	5.0	5.0

Most striking is the fact that the cat is extremely large for a house cat. Other features which make us sure that we are dealing with a domestic cat include: (1) the relatively short carnassial in relation to the length of the skull, (2) the flattened nature of the tympanic bullae, (3) the weakly developed angular process of the mandible (compare Figure 4 with Kirk, 1935, fig. 3 and Kratochvil, 1973, fig. 13)—a feature which can be used as diagnostic only for adult animals and (4) the heavily built long bones (Figure 5(f)) and especially the relatively short radii and tibiae. Although the penis bone is missing, the large and heavily built nature of the long bones make it clear that we are dealing with a male individual.

Even though the animal was adult, the sphenoid-occipital suture was still in the process of fusing (Figure 2(b)) and the teeth, while all permanent, show no wear. All of the epiphyses, however, are fused with the sole exception of the pubic symphysis of the pelvis. On the basis of this information we can say that the animal was a sexually mature young adult. Why he died so early in life, we cannot say on the basis of the information available to us.



Figures 4-7. 4-6, Skeletal parts of the cat from Quseir. 7, Dung balls of the cat from Quseir.

In comparison with modern house cats (compare e.g. Morrison-Scott, 1952, fig. 1; Kratochvil, 1973, 1976, 1977; Teichert, 1978) and with cat remains from sites of the Middle Ages in Europe (e.g. Müller, 1959, p. 247 ff.; Kocks, 1978, p. 133 ff.; Boessneck & von den Driesch, 1979, p. 176 ff.; Paarmann, in press) this male cat is particularly large and heavily built. Complete documentation of the measurements is, therefore, important for comparative purposes. Since very few measurements for post-cranial bones from any Egyptian cats have been published, these measurements provide an important standard. In the case of some of the previously measured cat skulls and post-cranial bones from Ancient Egypt, the exceptional size of the animals has been noted (Nehring, 1889; Lortet & Gaillard, 1903, p. 19 ff., 1905, p. 25 ff.; Morrison-Scott, 1952; Boessneck, 1977; Boessneck & von den Driesch, 1982, p. 287 f.). These cats, however, were more slenderly built than our specimen as is made clear by comparing a tibia from Elephantine (18. Dyn.; Boessneck, 1977, pl. 5b) with that from the Quseir cat described here (Figure 6(c)). Concerning the problem raised by the wild-cat-like size and proportions of ancient Egyptian domestic cats, see Boessneck & von den Driesch (1982, p. 287 f.).

As for the remainder of the cat's body, the excavators had placed together in a bag an unidentifiable dark mass and a number of small bones including sternebra, ribs, and the rudimentary clavicles. This material must all have come from the chest region of the animal. In the dark mass—the stomach contents—we were able to sort out the remains of at least five nearly adult rats (*Rattus rattus*). This minimum number of five is based on examination of the mandibles. The teeth of the rats are only slightly worn and the long bones are still unfused; but these animals were clearly not so young as to be still in the nest. Rats of this size and age must have weighed more than 100 gs each, and this would be a remarkable quantity of food to have been eaten all at once. There is, however, no doubt following the archaeological situation, that these bones of the rats represent the stomach contents and not the remains of a ritual offering to the dead cat. Confirmation of the fact that the rat bones are stomach contents comes from the discovery of a half mandible and a femur of yet a sixth rat in a dung ball. Five of these dung balls have been identified (Figure 7). Since we did not try to open them we do not know if the others contained additional rat bones. It is an open question whether the cat had eaten at least six house rats completely—as a last meal—or just parts of them.



Figure 8. Bones of rats (*Rattus rattus*) from the stomach of the cat.

There has been much discussion concerning the antiquity of the house rat in the Middle East, in Egypt and in Europe (e.g. Thüry, 1977; Rackham, 1979, both with numerous references). Because of the difficulties of being sure of the cultural associations of rat bones at archaeological sites this question can not yet be solved. Only very seldom are the circumstances of finding date rat bones so well defined, as in the present case. Proof from the Ptolemaic Period come from Lortet & Gaillard (1903, p. 39 f.) who found half digested remains of the house rat in Old-Egyptian mummies of birds of prey. The

authors arrive at the following conclusion: "Si cette espèce de rat n'est pas originaire de l'Afrique, la présence fréquente de ses restes osseux parmi les oiseaux anciens de l'Égypte, indique en tout cas qu'elle était déjà très commune dans la vallée du Nil à l'époque ptolémaïque".

In the linen we found pearl-sized exoskeletons of a kind of beetle (*Gibbium* sp.) which habitually frequents tombs and live in the linen wrappings. We have also found remains of this beetle in coffin draperies from the necropolis of Elephantine (Boessneck, 1981, p. 23 and table 17 b=Boessneck & von den Driesch, 1982, p. 48).

References

- Boessneck, J. (1977). Eine kleine Aufsammlung von Tierknochen aus Elephantine. *Mitteilungen des Deutschen Archäologischen Instituts Kairo* 33, 27–29.
- Boessneck, J. (1981). Gemeinsame Anliegen von Ägyptologie und Zoologie aus der Sicht des Zooarchäologen. *Sitzungsberichte der Bayerischen Akademie der Wissenschaften, Philosophisch-Historische Klasse* 1981, H. 5.
- Boessneck, J. & von den Driesch, A. (1979). *Eketorp—Die Fauna*. Stockholm: Almquist and Wiksell.
- Boessneck, J. & von den Driesch, A. (1982). Studien an subfossilen Tierknochen aus Ägypten. *Münchener Ägyptologische Studien* 40, 1–172.
- Boessneck, J. & von den Driesch, A. (1982). Zoologische Bestimmung der Tiermumien aus einem Grab der 30. Dynastie in Luqsor. *Österreichische Akademie der Wissenschaften, Denkschriften der Gesamtakademie* 7, 285–289.
- Driesch, A., von den (1976). *Das Vermessen von Tierknochen aus vor- und frühgeschichtlichen Siedlungen*. München.—A guide to the measurement of animal bones from archaeological sites. *Peabody Museum Bulletin* 1, Harvard University.
- Kirk, J. C. (1935). Wild and domestic cat compared. *The Scottish Naturalist* 216, 161–169.
- Kocks, B.-M. (1978). Die Tierknochenfunde aus den Burgen auf dem Weinberg in Hitzacker/Elbe und in Dannenberg (Mittelalter). I. Die Nichtwiederkäuer. Dissertation, Institut für Paläoanatomie, München.
- Kratochvil, Z. (1973). Schädelkriterien der Wild- und Hauskatze (*Felis silvestris silvestris* Schreb. 1777 und *F. s. f. catus* L. 1758). *Acta Scientiarum Naturalium Brno* 7, Praha.
- Kratochvil, Z. (1976). Das Postkranialskelett der Wild- und Hauskatze (*Felis silvestris* und *F. lybica f. catus*). *Acta Scientiarum Naturalium Brno* 10 Praha.
- Kratochvil, Z. (1977). Die Unterscheidung postkranialer Merkmalspaare bei *Felis s. silvestris* und *F. lybica f. catus* (Mammalia). *Folia Zoologica* 26, 115–128.
- Lortet, L. & Gaillard, C. (1903). La faune momifiée de l'ancienne Egypte. *Archives de Muséum d'Histoire Naturelle de Lyon* 8.
- Lortet, L. & Gaillard, C. (1905). La faune momifiée de l'ancienne Egypte. *Archives de Muséum d'Histoire Naturelle de Lyon* 9.
- Morrison-Scott, T. C. S. (1952). The mummified cats of ancient Egypt. *Proceedings of the zoological Society London* 121, 861–867.
- Müller, H.-H (1959). Die Tierreste von Alt-Hannover. *Hannoversche Geschichtsblätter* 12, H. 3/4, 181–259.
- Nehring, A. (1889). Über altägyptische Katzen von Bubastis, Beni-Hassan und Siut. *Verhandlungen der Berliner anthropologischen Gesellschaft*, 558–566.
- Paarmann, F. (In press). Die Katze von Haithabu. *Berichte über die Ausgrabungen in Haithabu*, Schleswig.
- Rackham, J. (1979). *Rattus rattus*: the introduction of the black rat into Britain. *Antiquity* 53, 112–120.
- Teichert, M. (1978). Die Katzenknochen aus den urgeschichtlichen Kulthöhlen des Kyffäusergebirges. *Alt-Thüringen* 15, 32–67, Weimar.
- Thüry, G. E. (1977). Zur Infektkette der Pest in hellenistisch-römischer Zeit. *Festschrift 75 Jahre Anthropologische Staatssammlung München 1902–1977*, 275–283, München.
- Wattenmaker, P. (1982). Fauna. In D. S. Whitcomb & J. H. Johnson. Quseir al-Qadim 1980, Preliminary Report. *Malibu*, Undena.