

On the Egyptian origin of the domestic cat*

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Original English Abstract. — This study is based on two populations of ancient Egyptian mummified cats. One of them is from a grave of the Bubasteion cliff of Saqqarah, and the other one is from Balat, in the Dakhleh oasis in Upper Egypt. Both are dated from the Later Epoch. Their average cranial index fits between that of the Recent domestic cat, *F. catus*, and that of the wild Libyan desert cat, *F. libyca*, which appears to be the ancestor of this lineage. The Turkestan steppe cat, *F. ornata*, the cranial index of which is closer to that of *F. catus* than that of other species, cannot be the ancestor of the Egyptian domestic cat.

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All specialists admit (ZEUNER, 1963; SCHAUBENBERG, 1972; PETTER, 1973) that our domestic cat, *Felis catus*, originated in Egypt, from which it was imported to Europe during the Greco-Roman period. The presence of domestic cats in Egypt is attested to by Herodotus, who visited this country at the end of the 6th century B.C., and by numerous frescoes that ornament the private Theban tombs of the New Kingdom. Among these we cite two very significant examples here. In the tomb of the scribe Nakht, which dates from the reign of Thoutmosis IV, around 1425 B.C., an admirable fresco shows a banquet scene. Some offerings are deposited before the couple Nakht and his spouse Tawy. Under their seat a striped cat eats a fish. It does not seem questionable that this is a familiar animal, nourished by its masters. Another tomb is that of May, which like the preceding one dates from the 18th dynasty. A striped cat is found in the same placement under the seat of the noble woman, but here it is attached to a foot of the seat by a leash attached to a collar that it wears on its neck. It has an angry air, turns its head, opens its mouth as if to meow in rage or spit, and tries to remove the leash with its left paw. Earlier in time, a nominal designation implies the domestication of the cat: at the beginning of the 11th dynasty, around 2100 B.C., the mother of a functionary of Mentouhotep I is called "the cat" (POSENER *et al.*, 1959).

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SCHAUENBERG'S HYPOTHESIS

The traditional opinion is that the cat was domesticated in place in Egypt from wild local stock. SCHAUENBERG (1972) contradicted this hypothesis by showing that the cranial index ($ic = \text{cranium length/volume of encephalic cavity}$) of the modern domestic cat was closer to that of the steppe cat (*Felis ornata*) of Iran, Afghanistan and Pakistan than that of the wild Libyan desert cat (*Felis libyca*). According to him, the cat would have arrived in Egypt from Iran already domesticated or on the way to domestication. In favor of this hypothesis is found the fact that *Felis ornata* remains very easily approached by humans, and tames very rapidly (PETTER, pers. comm.), which would show a natural capacity for domestication. In addition, the remains of cats were recovered in human habitats outside of Egypt in ancient times. A portion of the cranium and a humerus discovered at Harappa, a village of the Mohenjo-Daro civilization in the Indus Valley (Pakistan), were described by PRASHAD (1936) under the designation *Felis ocreata* race *domestica* (= *Felis catus*). The site is dated at around 2000 B.C.

On the other hand, the excavations made in Tell Jericho (Israel), a pre-pottery site estimated at around 6700 B.C., produced a lower carnassial (M_1) and a humerus from a cat. The size of the humerus corresponds to an animal of large size, and ZEUNER (1958), who studied it, estimated it as too large to have belonged to a domestic animal and considered it as belonging to a "wild visitor". In contrast, the molar is smaller and belonged to a cat that, according to PETTER (*op. cit.*), could perhaps have been domesticated.

NEW DATA

The study of two populations of cats found in the tombs of ancient Egypt leads to a review of this problem.

1 — At Saqqarah, among the tombs excavated from the Bubasteion cliffs, A. ZIVIE (1982), as of the first excavations in the tomb of vizier Aper-El, discovered close to 200 cat mummies in one of the upper chambers. C^{14} study on the bony remains at the Low Radioactivity Laboratory of Gif-sur-Yvette gave an age of 2290 ± 80 YPB that, recalibrated with dendrochronological data (program of PAZDUR *et al.*, 1988, using data from STUIVER and PEARSON, 1986), gives an age of about 730-160 B.C. (with 95% confidence). Of 34 cats already studied, 27 had the cranium well enough preserved for the cranial index to be calculated.

2 — At Balat, in the Dakhlel oasis (Upper Egypt), a tomb of very small size forming part of the north cemetery contiguous with Mastaba II, which dates to the end of the Old Kingdom, produced the remains of 23 cats for A. MINAUT-GOUT (1983). Some remains of tissue scattered or stuck on the crania indicate that these animals were mummified. The dating established at Tandétron on the tissue fragments gave an age of 2270 ± 90 YPB, a result that, once recalibrated with dendrochronological data, gives an age of about 723-117 B.C. (with 95% confidence). Of 23 cats, only 8 had the cranium well enough preserved that the cranial index could be established.

The results appear on the opposing graph (fig. 4). It will be noticed initially that:
1— Although found in an Old Kingdom cemetery, the Balat cats date to the Lower Epoch. The ages given by C^{14} , as well as the time intervals obtained after recalibration, are almost identical to those of the Saqqarah cats. The Roman period is eliminated, and our two cat populations date from an epoch uniting the Saït, Persian, and Ptolemaic periods.

2 — The cranial indices seem to indicate a slight difference of age between our two cat populations. If these differences have a value, the Balat populations would have been slightly older, Saït or Persian, whereas that of Saqqarah would have been Ptolemaic. But this interpretation needs to be confirmed.

3 — The index values of the Saqqarah population are much more spread out than those of all other cat populations studied by SCHAUENBERG. This population does not have to be homogeneous. But note a hiatus between the four lowest indices (to the left on the graph) and the rest of the population. These low indices are exactly the same as the mean value of *Felis libyca*. Thus, among the mummified cats of Saqqarah there are domestic and wild cats. The attached, angry cat in the tomb of May could well correspond to one of these newly tamed wild cats.

This fact need not be surprising. It is known that *Felis libyca* remains easy to tame. Cases are known where, doubtless arising from hunger, *Felis libyca* approach human habitations and gradually become familiar animals (DORST, pers. comm.), or they spontaneously and docilely follow the humans that have brought their prey to them (WILSON, 1981). And the Zandeas of Sudan are known to normally domesticate *Felis libyca* (SÉGUY, 1968).

The graph shows also that two Balat cats and four more from Saqqarah are quite clearly separated from the rest of the more domesticated population by their weaker indices. These cats could also be forms that were tamed fairly recently, although longer ago than the four extreme cases of Saqqarah. We have left them with the more domesticated populations because the calculated mean in the two cases shows only a very slight shift from the mean values of the index, without repercussion for the conclusions.

INTERPRETATION

To corroborate SCHAUENBERG's hypothesis, it was necessary for the Balat and Saqqarah cats to have had cranial indices intermediate between those of the Turkestan steppe cat *Felis ornata* and those of the modern domestic cat. But this is the opposite of what is observed. Moreover, the cranial indices of ancient Egyptian cats are intermediate between those of the wild Libyan desert cat *Felis libyca* and those of the domestic cat. The traditional thesis is thus found confirmed.

What may be thought of the discoveries of Jericho and Harappa now? According to ZEUNER (1958, 1963), the molar from Jericho, by its weak size (M_1 length = 7.3 mm), indicates an animal small enough to have been admitted by humans in their entourage, but it refuses to make the domestication of the cat date back to so ancient a period, and he sees in him a destroyer of vermin (in particular small rodents) accepted by humans in the same manner as mongooses and ferrets. And he thinks that the Harappa cat can be interpreted in the same sense. We will add that in the ruins of this last village, the remains

of mongooses have also been specifically recovered, and in larger number than those of cats (PRASHAD, *op. cit.*).

With regard to the Turkestan steppe cat, it seems to us that it could logically be issued from the already domesticated cats of ancient Egypt. Its cranial index is in effect intermediate between those of the mummified Egyptian cats and those of *F. catus*. It could be an ancient feral cat. Finally we underscore that the mummified cats of Balat and Saqqarah had not yet attained the cranial index of the modern domestic cat.

CONCLUSIONS

Thus, from the Second Intermediate Period the ancient Egyptians had domesticated the Libyan desert wild cat, *Felis libyca*. They must have done this even throughout the New Kingdom and until in the Ptolemaic period, admitting them close by and taming the wild cats that they had made, then mummifying them like those domesticated for a long time.

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FIGURE CAPTIONS

FIG. 1. — Tomb of Nakht (Valley of the Nobles, Thebes). Servant presenting offerings to Nakht and Tawy (broken) and cat eating a fish (after Nina DAVIES).

FIG. 2. — Tomb of Nakht: cat eating a fish.

FIG. 3. — Tomb of May (Valley of the Nobles, Thebes). Cat attached to a foot of the seat (after Nina DAVIES).

FIG. 4. — Table of cranial indices (ic) of different cats (after SCHAUENBERG, augmented with the Balat and Saqqarah populations). Point = individual index; circle = mean.