

## Porcupines in ancient Egypt? A prickly problem re-assessed

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# Porcupines in ancient Egypt? A prickly problem re-assessed

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## ABSTRACT

Only one unambiguous representation of a porcupine has been identified in ancient Egyptian art. Scholars agree that the image, which is found on a relief fragment from the Old Kingdom tomb of Pehenuka, depicts a North African crested porcupine (*Hystrix cristata* Linnaeus, 1758), a species that is no longer extant in Egypt. Other Egyptian images, which pre-date this example, have also been initially viewed as porcupines but then subsequently re-interpreted as mythical hybrid animals, based on what appears at first glance to be an unusual combination of their morphological characteristics. When both the principles of Egyptian graphic representation and the natural behaviour of porcupines are considered, however, greater support is found for their identification as crested porcupines. This finding highlights the importance of applying Egyptian graphic rules when analysing art from all periods, and suggests that North African crested porcupines are more common in early Egyptian art than has hitherto been appreciated.

## KEY WORDS

Egyptian art,  
*Hystrix cristata*,  
composite images,  
hybrid animals.

## RÉSUMÉ

*Les porcs-épics dans l'Égypte ancienne ? Un problème épineux réévalué.*

Une seule représentation sans ambiguïté d'un porc-épic a été identifiée dans l'art égyptien ancien. Les chercheurs s'accordent à dire que l'image, trouvée sur un fragment de relief de la tombe de Pehenuka, dans l'Ancien Empire, représente un porc-épic à crête d'Afrique du Nord (*Hystrix cristata* Linnaeus, 1758), une espèce qui n'existe plus en Égypte. D'autres images égyptiennes, antérieures à cet exemple ont également été initialement considérées comme des porcs-épics, mais ensuite réinterprétées comme des animaux hybrides mythiques, sur la base de ce qui semble à première vue être une combinaison inhabituelle de leurs caractéristiques morphologiques. Cependant, si l'on considère à la fois les principes de la représentation graphique égyptienne et le comportement naturel des porcs-épics, leur identification en tant que porcs-épics à crête est confortée. Cette découverte souligne l'importance d'appliquer les règles graphiques égyptiennes lors de l'analyse de l'art de toutes les périodes et suggère que les porcs-épics à crête d'Afrique du Nord sont plus courants dans l'art égyptien ancien qu'on ne l'a estimé jusqu'à présent.

## MOTS CLÉS

Art égyptien,  
*Hystrix cristata*,  
images composites,  
animaux hybrides.

## INTRODUCTION

Among the many animal species depicted in ancient Egyptian art are some that occur very infrequently but whose intermittent presence in the cultural record nonetheless provides insights into Egyptian knowledge of their environment. One such animal is the porcupine (family Hystricidae), a large rodent renowned for its dense coat of sharp quills. In contrast to the hedgehog (family Erinaceidae) with which it is sometimes confused (e.g., Sherbiny & Bassir 2014: 185; see also von Droste zu Hülshoff 1980; Hamilton 2022), ancient Egyptian pictorial evidence for porcupines is both limited and sporadic (Störk 1984: cols. 1232, 1233; Osborn & Osbornová 1998: 53, 54; Vernus 2005: 183). In particular, evaluation of the surviving visual data is complicated by claims that late Predynastic images initially identified as porcupines instead depict composite creatures that combine the features of fish with those of other animals. Hybrid animal imagery occurred early in Egypt's history, providing support for this interpretation; however, analyses to date have failed to appreciate that the depictions in question equally share many physical characteristics with the only accepted representation of a porcupine from the Old Kingdom period (c. 2686-2160 BCE).

To bring some clarity to this prickly problem, the small corpus of images purported to depict porcupines in Egyptian art has been re-examined, as well as a zoomorphic palette currently identified as a hybrid animal that exhibits similar morphological features. In each case, a formal analysis has been conducted in which the principles of Egyptian graphic representation have been applied, to ensure that first impressions are suspended and each artefact is "read" objectively. To achieve this, the physical features of the depicted animals were compared systematically with those of North African crested porcupines (*Hystrix cristata* Linnaeus, 1758) but through the lens of Egyptian graphic rules. Furthermore, the natural behaviour of crested porcupines – especially their threat displays – was also considered when evaluating the contexts in which some of the depicted creatures appear, as this aspect of animal life often affected how animals were displayed in Egyptian art (Evans 2010).

The results of this combined analysis, which are presented below, more strongly support the identification of the early representations as porcupines than composite creatures.

### ABBREVIATIONS

Eb. Papyrus Ebers;  
Wb III *Wörterbuch der Aegyptischen Sprache* Vol. 3.

## NORTH AFRICAN CRESTED PORCUPINES

An assessment of the animals with which the ancient Egyptians interacted must always begin with a detailed understanding of both their appearance and species-specific habits.

### DISTRIBUTION

Old World porcupines belong to the Hystricidae family. Three species are identified in Africa today (Haltcnorth & Diller 1980: 151-153; see also Angelici *et al.* 2021: 7): the African brush-tailed porcupine (*Atherurus africanus* Gray, 1842), the Cape

porcupine (*Hystrix africae australis* Peters, 1852), and the North African crested porcupine. The latter species is found across central Africa, from Tanzania to Senegal, north to Sudan, and across North Africa (Hoath 2003: 212, 213; Mohamed 2011). *H. cristata* is also found in Sicily and on the Italian mainland, where it was likely introduced historically from Africa (Masetti *et al.* 2010; see also Pigozzi 1992: 34, 35; Riquelme Cantal & Morales Muñoz 1997; Minniti 2005: 489). The species is now believed to be extinct in Egypt, however (Osborn & Helmy 1980: 358; Hoath 2003: 213). Indian crested porcupines (*Hystrix indica* Kerr, 1792), which are visually and behaviourally similar to *H. cristata* (although slightly larger), are found throughout southwest and central Asia, as well as parts of the Middle East, but they are not reported in Egypt.

### APPEARANCE

Crested porcupines are the largest rodents in Africa (Fig. 1). *H. cristata* are stocky animals that weigh c. 15-27 kg, with a body length up to 85 cm long, a short, broad tail between 12-17 cm long, and a standing height of approximately 25 cm. Their rounded head is characterised by a blunt muzzle, long, dark whiskers, small eyes, and fleshy ears with well-developed pinnae. Their legs are short but sturdy, and their feet are fitted with large pads and strong claws. Wiry brown and white hairs on their head and neck (c. 45 cm long) form a long nuchal crest (giving rise to the animals' name), which is raised when they are alarmed. Their upper body is covered in dark brown short bristles and coarse hair, with a white band at the throat, but their most distinctive physical feature is the array of long spines with alternating bands of black and white (up to c. 40 cm long) that extend from their mid-back, along their hind flanks, and on the upper side of their tail. The quills usually lay across their body, but like their nuchal crest, are erected when the animal feels threatened. Short, hollow bristles situated on the end of the tail can also produce a rattling sound when shaken (Haltcnorth & Diller 1980: 153; Hoath 2003: 312; Hapold 2013: 678).

### BEHAVIOUR

North African crested porcupines are highly adaptable creatures, able to survive in a range of habitats and climates, from semi-desert and coastal scrub to rainforests and mountain grasslands (Hoath 2003: 213; Hapold 2013: 679). They are largely nocturnal, resting in holes or the burrows of other animals during the day before emerging at dusk. They feed primarily on roots, tubers, bulbs, bark, and fruits but will also collect and chew bones for calcium (Haltcnorth & Diller 1980: 153; Hoath 2003: 213; Hapold 2013: 679); they are especially attracted to irrigated farmland, where they cause considerable damage to crops (Fiedler 1994: 34, 35; Hapold 2013: 679). Despite the porcupine's formidable spines, lions (*Panthera leo* Linnaeus, 1758) are reported to attack and prey upon *H. cristata* (Peterhans *et al.* 2019), as well as foxes (*Vulpes vulpes* Linnaeus, 1758), wolves (*Canis lupus* Linnaeus, 1758), spotted hyenas (*Crocuta crocuta* (Erxleben, 1777)), African wild dogs (*Lycan pictus* (Temminck, 1820)), and domestic dogs (*Canis familiaris* Linnaeus, 1758) (Mori *et al.* 2014: 230).



Fig. 1. — North African crested porcupine (*Hystrix cristata* Linnaeus, 1758). Note the raised nuchal crest and paddle-shaped tail. Photo credit: [iStock.com, wrangel](https://www.iStock.com/wrangel).

When threatened, crested porcupines will defend themselves by engaging in a series of escalating aggressive behaviours. Their first response is to raise their nuchal crest and body quills to increase their apparent size, and to issue a warning sound by shaking and rattling the spines on their tail. This display is often enough to repel a potential predator; however, if it fails to retreat, the porcupine will growl and stamp its hind feet, turning its body so that the tips of its quills face the threat. It may then attack by running backwards or sideways to impale its sharp spines into its aggressor (Haltenorth & Diller 1980: 153; Hoath 2003: 213; Mori *et al.* 2014). If chased by a predator, crested porcupines have also been reported to stop suddenly, causing their pursuer to run into their quills (Peterhans *et al.* 2019: 10, 11). As their quills often become dislodged during their vigorous defensive behaviour, this has given rise to the mistaken ancient (and persistent) belief that crested porcupines discharge them intentionally at predators, including humans (Masseti *et al.* 2010: 34).

#### ANCIENT EGYPTIAN PORCUPINES

The proposed evidence for porcupines in ancient Egypt consists of a small number of artistic representations and references in medical texts. The latter includes the Ebers Papyrus (Ebbell 1937; Ghalioungui 1987; Popko *et al.* 2021) in which prescriptions for hair loss (*nssk*-disease) call for the *šnj*, “hair” of a *hntz*

(66.12 = Eb. 466) (*Wb* III, 122 [7]) or the *srt*, “spines” of a *hnty* (92.7 = Eb. 771) (*Wb* III, 121 [15]). The *hntz/hnty* are believed to be hedgehogs and/or porcupines (Ebbell 1937: 79; Ghalioungui 1987: 130, no. 466; Hannig 1995: 581; Pommerening 2017: 521, fig. 2; Popko *et al.* 2021: 166, 218) due to their thick, spiky coats, the epitome of healthy hair (Vernus 2005: 183). The two terms are often assigned to the animals interchangeably by translators; Louis Keimer (1949: 411) also proposed that the Egyptians confused hedgehogs and porcupines with one another due to their distinctive coats (yet despite their otherwise substantial morphological differences?). Alternatively, the two terms mentioned in the Ebers Papyrus remedies may refer to different species, with the *srt* of a *hnty* perhaps emphasising the porcupine’s particularly prominent quills (see also Hamilton 2022: 17). In Case 40 of the *Edwin Smith Surgical Papyrus* (Breasted 1930), which describes the treatment of a wound to the “manubrium”, the gloss states that this part of the sternum resembles a *hntz*-animal. James Breasted (1930: 372, *passim*) translated *hntz* here as “porcupine”, likening the sternum’s fanning ribs to the rodent’s arrangement of quills, an interpretation that has subsequently received tentative acceptance (“wahrscheinlich das Stachelschwein” [probably the porcupine], von Deines & Grapow 1959: 354, 355; “Stachelschwein (?)”, von Deines & Westendorf 1962: 611; “porcupine (?)”, Faulkner 1991: 173; “porc-épic (?)”, Vernus 2005: 183). Herman Grapow (1954: 58, 59) disagreed with Breasted’s interpretation, however, proposing that the *hntz* in Case 40 more logically describes a spider.

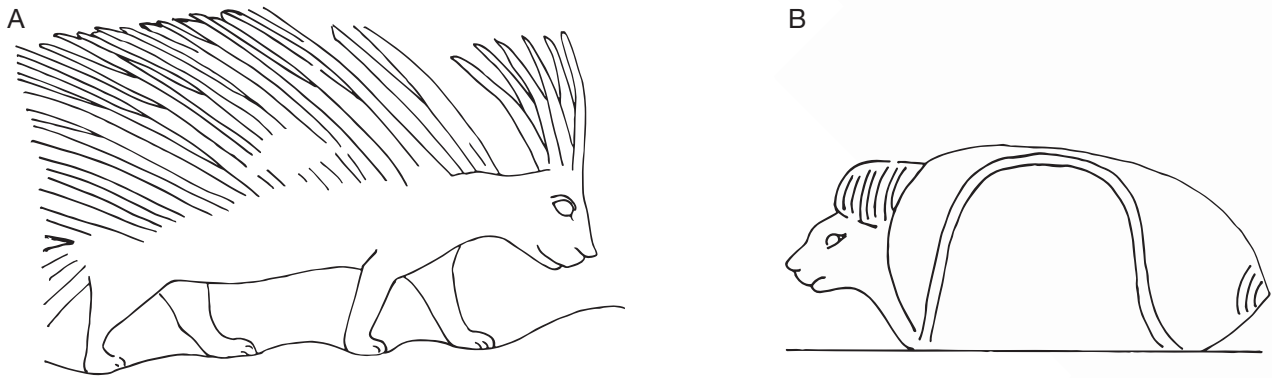


FIG. 2. — Wall scenes. **A**, Relief fragment, tomb of Pehenuka, Saqqara. Berlin Museum (ÄM 1132). Credit: Mary Hartley, drawn from a photograph by Osama Shukir Muhammed Amin FRCP (Glasg) (CC BY-SA 4.0): <https://urlz.fr/romy>, last consultation on 15 July 2024; **B**, wall scene, Amun temple of Hibis. Credit: Mary Hartley, re-drawn from Lippert 2012: fig. 1.

The textual evidence for the porcupine's presence in Egypt is thus limited and somewhat ambiguous, but more convincing support is found in the visual record, namely in wall scenes and representations on artefacts.

#### WALL SCENES

A relief fragment from the mid-5th Dynasty Saqqara tomb of Pehenuka (D 70 = LS 15), now held in the Berlin Egyptian Museum (ÄM 1132), displays the image of an animal (Fig. 2A) that is widely accepted as a crested porcupine (Hartmann 1864: 21; Schäfer *in* Wreszinski 1936: pl. 103; Keimer 1949: 397-403; Houlihan 1996: 42, fig. 33; Osborn & Osbornová 1998: 54; Vernus 2005: 183; Manlius 2010: 55). The rodent confronts a stocky feline that stands nearby and faces it. Its blunt muzzle is lowered, highlighting its raised nuchal crest, which has been represented as six vertical, spear-like projections atop its head. Its eye is large and prominent, but its ear is not visible due to damage. The paws on its short legs are clearly depicted, apart from damaged digits on one hind limb. The lower half of its torso is smooth (thus lacking the porcupine's coarse coat), but above the midline and extending across its back and hindquarters is a dense array of long, closely aligned quills that extend up and outward. Finally, although the posterior portion is missing, the porcupine's tail is revealed by a set of spines that fan out from its rump, clearly separated from those upon its back.

The porcupine's erect quills and nuchal crest indicate that it is displaying anti-predator behaviour, which is directed towards the feline in front of it. The cat is only slightly larger than the porcupine but this is not necessarily a species indicator, as the size of figures could be adjusted for emphasis or symbolic purposes in Egyptian art (Schäfer *et al.* 1986: 230-234). Consequently, some scholars have identified the feline as a leopard (*Panthera pardus* Linnaeus, 1758) (see Schäfer *in* Wreszinski 1936: 229), while others have suggested that it is a smaller marsh cat (*Felis chaus* Schreber, 1775), based on the short length of its tail (Keimer 1949: 404; Osborn & Osbornová 1998: 54, 110). The latter is also a characteristic of lion cubs however, and indeed juvenile male lions are known to pursue porcupines until they learn the painful consequences of this activity (Peterhans

*et al.* 2019: 11). Furthermore, the Pehenuka feline's pointed tail tip more closely resembles a cub's tail, which lacks the lion's distinctive tuft until adulthood (Haltenorth & Diller 1980: 221). Regardless of the species, the depicted interaction between a crested porcupine and a feline animal, which appears to take place in a savannah-like landscape, reflects the natural behaviour of the animals.

No further Egyptian representations of porcupines are recorded in wall decorations until the Late Period. A pair of curious figures carved upon the north and south walls of the 27th Dynasty Amun temple of Hibis in Kharga Oasis have been tentatively identified as either mummified hedgehogs (North wall: Davies 1953: 7; Cruz-Uribe 1988: 14; Lippert 2012: 789. South wall: Davies 1953: 12; Cruz-Uribe 1988: 33) or porcupines (North wall: Leitz 2002b: cols. 422c-423b. South wall: Leitz 2002a: col. 154b; Lippert 2012: 789). Only the animals' heads are depicted, each of which emerges from an oval-shaped bundle (for interpretation, see Lippert 2012: 783-788); however, the blunt snouts of the two creatures depicted on the south wall indicate that they are probably porcupines (Fig. 2B), while the image on the north wall, which has a more defined muzzle, is possibly a hedgehog. One of the two proposed porcupines also appears to display a pointed nuchal crest (Fig. 2B). Both hedgehogs and porcupines may have been associated with Amun due to their nocturnal habits and other pertinent behaviours that aligned with aspects of the sun god's character (see Lippert 2012: 790-792; also Fernández Pichel 2017: 40-44).

#### SERRATED BLADE

Parts of an ivory blade recovered by James Quibell from the Main Deposit at the site of Hierakonpolis are carved with the figures of many animals, including that of a proposed porcupine. Although a definitive date for the object has not been established, Quibell (1900: 7) placed it in Dynasty 0. Two curved fragments survive. Fragment A is held in the Petrie Museum of Egyptian Archaeology (UC 14864) and Fragment B is in the Egyptian Museum in Cairo (CG 14706 = JE 32170; Fig. 3) (see Quibell 1900: 7, pl. xvi [1, 2]); Quibell & Green 1902: 43, pl. xxxii [5, 6]; Capart 1905: 136, fig. 108; Vandier

1952: 552, fig. 370; Adams 1974: 60 [no. 324], pls. 38, 39; Passanante 2008: 171-174, fig. 10.2; Bussmann 2010: vol. 1, 245; vol. 2, 90, fig. 5.76). The smaller fragment (A) has a carved tang to attach the blade to a handle, while serrations along the inner edge of each part may indicate that the object originally had a ritual function. A single file of birds and mammals walk away from the missing handle on one side, while on the other, a similar variety of species crowd towards the handle, among which two human figures each grapple with a pair of mythical “serpopards” (leopard-snake composites).

The species on the blade are largely identifiable, but in the space above a small oryx on Fragment B one creature displays ambiguous features. The figure has a large head with a square muzzle, and a stocky body with proportionally long legs ending in large feet (Fig. 3). Significantly, its torso is decorated with cross-hatching, while broad, striated tufts protrude from both its rump and lower back. Marie Passanante has suggested that the latter characteristics may indicate that the animal is a porcupine, but she subsequently decided that it represents an imaginary lion-fish hybrid (Passanante 2008: 174, 175), with dorsal and tail fins, and cross-hatched scales. The presence of the serpopards on the same artefact appeared to support her conclusion. Similarly, Richard Bussmann has described the figure as a mythical, finned creature with a bird’s tail (Bussmann 2010: vol. 1, 245).

Passanante observes correctly that the animal lacks the porcupine’s nuchal crest, but her assertion that porcupines have “a crest of spines down the entire length of (their) back” and “a much smaller head” than the depicted creature (Passanante 2008: 174) is not accurate. In fact, the cross-hatching on the figure’s torso successfully mimics the porcupine’s coarse coat, which in life covers most of its forequarters and lower body (Fig. 1), while the depicted tufts align with the location of the porcupine’s quills, which are found primarily on its hind-quarters and broad tail. Although highly stylised, the figure thus shares features in common with crested porcupines. Furthermore, its fin-like quills and tail correspond closely with images found on knife handles that possibly predate the blade (see below).

#### KNIFE HANDLES

Representations of porcupines have been reported on three Predynastic, decorated knife handles, but these identifications have not been universally accepted.

The first example, which is held in the Berlin Egyptian Museum (ÄM 15 137), dates to the Naqada IID/IIIA period. The ivory handle is badly damaged, but on one side the carved figure of a large, open-mouthed feline can be seen striding towards the now missing flint blade, beneath which is depicted a second creature. The stocky body and long, tufted tail of the feline indicate that it is most likely a lion or lioness, rather than a slender leopard or cheetah (*Acinonyx jubatus* (Schreber, 1775)). The second animal, which also faces the knife blade, has a short snout, almond-shaped eye, and a rounded ear with interior detail (Fig. 4A). Three short whiskers project upwards from its muzzle, while three longer, spear-shaped structures curve up and back from the top of its

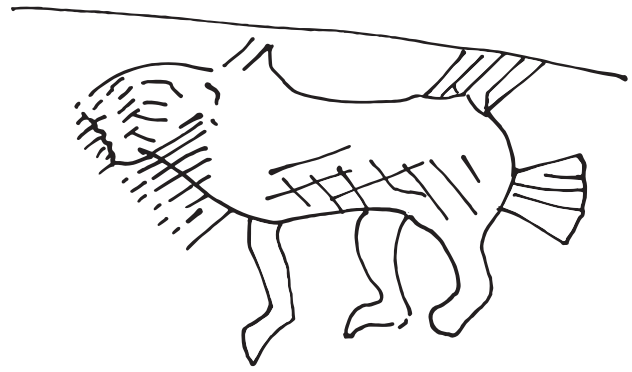


FIG. 3. — Serrated blade. Cairo Museum (CG 14 706 = JE 32 170). Credit: Mary Hartley, re-drawn from Quibell 1900: pl. 16, fig. 2.

head to converge at the tips. A further series of short, aligned projections emerge from the animal’s back, peaking midway, and the surviving upper part of its tail reveals that this originally fanned outward from its rump (see Scharff 1929: 82 (111), pl. 22; Kuhn 2015: 63, fig. 69b-c).

The second example, which also dates to the Naqada III period, is housed in the Petrie Museum of Egyptian Archaeology, London (UC 16 294). The arrangement of carved figures on both sides of the handle is very similar to that on ÄM 15 137 (although its authenticity has been questioned; see Miller 2023: 5, fn. 19). On one side, two heavy-set felines advance in a line towards the flint knife blade, which is *in situ*. A third animal is positioned directly beneath the feet of the last cat (Fig. 4B). Like ÄM 15 137, it has a blunt muzzle, almond-shaped eye, and a visible ear. Its head is also crowned by a curved and pointed structure, and its back is adorned with a fan-shaped array of short projecting lines. A tail is not visible, nor are the animal’s limbs, but modelling for the upper thigh and foreleg can be seen.

The third and most detailed knife is located in the Brooklyn Museum (no. 09.889.118; also known as the Abu Raidan knife) and is dated to the Naqada IIIA2 period (Needler 1984: 124, 125; Hendrickx 2011a: 74-78). Each side of the ivory handle (side A and side B) displays ten rows of minutely carved animals (Churcher 1984), all of which face in the direction of the missing blade. The most complete arrangement of the animals is seen in de Morgan (1909: fig. 139), which reproduces the handle before it was subsequently damaged and reconstructed (cf. Churcher 1984: 155, fig. 34). Each row largely depicts a line of mammals (single species) or birds (multiple species). These represent identifiable domesticated and wild species for the most part, but the features displayed by ten creatures on the seventh row of Side A have challenged identification (Fig. 4C). Each figure has a short snout and almond-shaped eye; the ear is also apparent in some. A curved and pointed structure emerges from each animal’s head and their stocky bodies are adorned with a striated frill that runs the length of their backs, sometimes peaking midway. A striped, paddle-shaped tail extends outward from their rumps. Each animal has short limbs with the upper musculature indicated, and rounded paws.

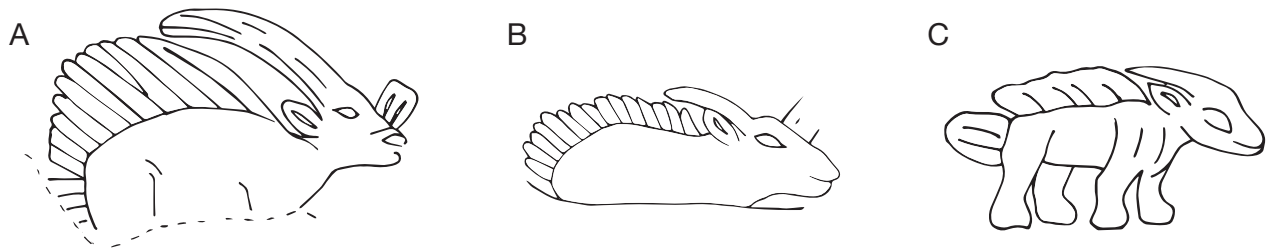


FIG. 4. — Knife handles: **A**, Berlin Egyptian Museum (ÄM 15 137); **B**, Petrie Museum of Egyptian Archaeology (UC 16 294); **C**, Brooklyn Museum (inv. 09.889.118). Credits: Mary Hartley, re-drawn from a photograph of ÄM 15 137 supplied by the Berlin Egyptian Museum and reproduced with permission (A); traced from a photograph of UC 16 294 supplied by the Petrie Museum of Egyptian Archaeology and reproduced with permission (B); re-drawn from Churcher 1984: fig. 34 (C).

The facial features, projecting head and back adornments, and fan-shaped tails of each of the animals depicted on the decorated knife handles thus closely resemble one another (Fig. 4). These characteristics also correspond to the defining features of crested porcupines and, importantly, are very similar to those displayed by the undisputed porcupine on the Pehenuka relief – namely, they possess a raised nuchal crest, erect body quills, and a short, broad tail. In addition, the Berlin animal displays the crested porcupine’s long vibrissae; to my knowledge, this feature has been overlooked by previous scholars.

Flinders Petrie (1920: 12, pl. xlvi, no. 3) identified the animals on ÄM 15 137 and UC 16 294 as porcupines, despite initially labelling the latter as a hedgehog (Petrie 1902: 161, pl. L). Alexander Scharff (1929: 82, no. 111, fig. 57, pl. 22), Louis Keimer (1949: 407, fig. 8; 408, fig. 9), and Lothar Störk (1984: col. 1232) concurred, as did zoologist Dale Osborn (Osborn & Osbornová 1998: 54), although he suggested that *H. indica* may be represented rather than *H. cristata*, due to Mesopotamian elements carved on the handles’ reverse sides (entwined snakes). Jacques de Morgan (1921: 227, fig. 124) eventually listed the creatures on the Brooklyn handle as porcupines, and following his detailed analysis of the animal imagery, Charles Churcher (1984: 159) also accepted the creatures as *H. cristata*, as did Krzysztof Ciałowicz (1992: 249), Patrick Houlihan (1996: 42, fig. 131), and Nicolas Manlius (2010: 55). In addition, Pascal Vernus (2005: 183) states that porcupines are among the repertoire of animals represented on Predynastic ceremonial objects.

Alternative interpretations have been proposed for the animals, however. Jean Capart (1905: 71, fig. 37) believed, for unspecified reasons, that the Berlin and Petrie motifs display a type of antelope, which Louis Keimer surmised was due to the stylised rendering of the porcupines’ nuchal crests. Harry Smith (1992: 243) later concluded that the image on UC 16 294 does not depict an animal at all but rather a pteroceras seashell (also now described as such in the Petrie Museum of Egyptian Archaeology’s online database: <https://collections.ucl.ac.uk/Details/collect/29612>, last consultation on 15 July 2024). Jacques de Morgan (1909: 275) originally reported that the Brooklyn animals are striped hyenas (*Hyaena hyaena* (Linnaeus, 1758)), an identification supplied to him by Claude Gaillard based on the animals’ “accentuated mane”.

Louis Keimer (1949: 411) agreed, citing the manner in which the striped hyena’s dorsal mane is erected when irritated, the animals’ depicted tails (which he felt corresponded to nature despite being considerably shorter than those of living striped hyenas), and viewing the long projection on their heads as the hyena’s large, pointed ears (overlooking the presence of smaller ears on each animal image). He also observed that the Brooklyn animals’ heavy-set torsos were reminiscent of spotted hyenas. Other identifications have been more tentative, however, with Georges Bénédite (1918: 229) describing the creatures as undetermined quadrupeds with bowl-shaped tails, while Jacques Vandier (1952: 544) simply labelled them as “animals with horns (?)”.

More recently, the late Dirk Huyge (2004: 825) dismissed the proposal that the Brooklyn animals are porcupines, stating that their legs are too long, the shape of their ears is incorrect, and “the horns and dorsal frill do not at all resemble the backward-curved bristles on the head, and the spiny covering with long quills on the rump and back that characterize this large rodent”. He also emphasised that the porcupine’s tail is usually hidden beneath its quills, and thus “does not jut out from the rear like the podgy tails on the animals on the handle” (Huyge 2004: 825). Instead, he has argued that all of the animal images in question do not depict living species but instead represent hybrid creatures that combine the body and curved horns of a Nubian ibex (*Capra nubiana* F. Cuvier, 1825) with the dorsal and tail fins of a tilapia fish (*Tilapia* sp., now *Oreochromis niloticus* (Linnaeus, 1758)) (Fig. 5). As the tilapia and ibex are associated with rebirth and rejuvenation later in Egyptian cultural history, the resulting composite creature is thus explained by Huyge (2004: 830) as a “double-powerful” symbol, despite such a combination being “unparalleled”.

Huyge’s interpretation of the animal motif and its proposed symbolic meaning has been accepted by subsequent scholars (e.g., Hendrickx & Eyckerman 2012: 40; Kuhn 2015: 64, fig. 69c; Miller 2023: 5). However, when artistic, behavioural, and compositional features of the figures are considered, I suggest that the evidence more strongly supports their identification as crested porcupines. First, Huyge has interpreted the fan-shaped, striated tails of the depicted animals as fish tails. However, this literal reading of the images fails to consider the Egyptian principles of two-dimensional art, in which flat and horizontal objects could be depicted in a vertical position



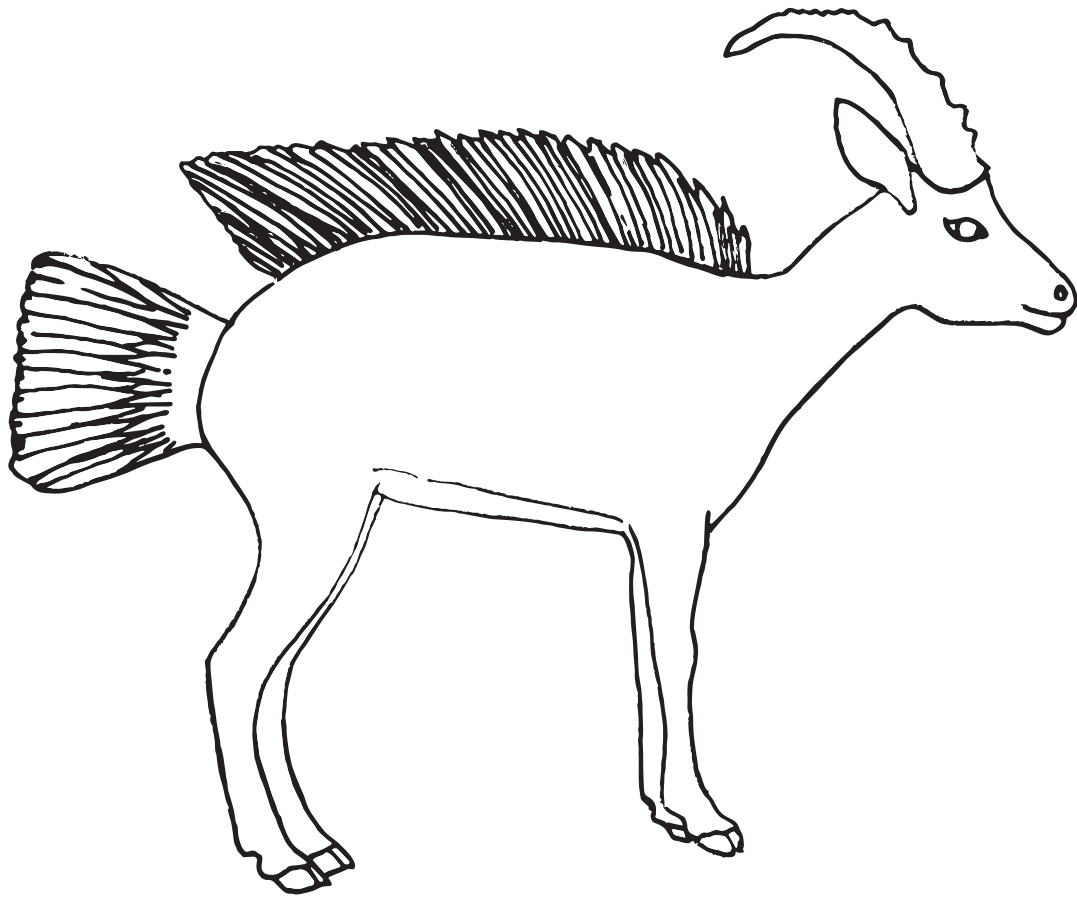


FIG. 5. — Naturalistic reconstruction of a fish-ibex composite figure proposed by Dirk Huyge. Credit: Mary Hartley, re-drawn from Huyge 2004: fig. 6.

to aid visual understanding (Schäfer *et al.* 1986: 167-169, *passim*). When this rule is applied to the animal profiles in question, their paddle-shaped tails can instead be understood as outstretched horizontally but turned on their side graphically (i.e. tilted upward).

Furthermore, the tails of crested porcupines are not usually hidden from view, as Huyge's description states (see Fig. 1), especially when the animals' quills are raised during anti-predator behaviour, which reveals the tail while it is being shaken. Indeed, the figural compositions on ÄM 15 137 and UC 16 294, in which lions are shown adjacent to the animals in question, echoes that found in the Pehenuka relief – namely, an interaction that in nature would result in the porcupine engaging in a vigorous defensive display. Similarly, the Brooklyn animals face the (now missing) blade – i.e. the most dangerous and threatening part of the implement and thus capable of triggering the same anti-predator reaction by crested porcupines when in the hands of a human hunter.

It might be argued that the principles of graphic representation were not yet established in the Predynastic period, but a number of standard elements were undoubtedly emerging at this time, such as the implementation of registers and baselines (Davis 1976: 404-418), the relationship between figure size and importance, and, importantly, the application

of plane views, in which horizontal objects are depicted from above (e.g., the wings of griffins; wheel-traps; short-limbed animals, such as crocodiles, lizards, and turtles). A desire to convey relevant information unambiguously is apparent in these early graphic conventions and so it would seem feasible that the porcupine's most salient characteristics – its prickly head, body, and tail – were all emphasised in representations so that it could be easily recognised, even if this required the latter feature to be re-oriented spatially.

The animal on the Pehenuka relief fragment is universally accepted as a crested porcupine; however, the representation of its nuchal crest is actually less accurate than those found on the Predynastic examples. Although the Pehenuka image correctly shows long, individual hairs projecting upright from the animal's crown, in nature these frequently converge to form a white, pointed plume that flows backward across its back (Fig. 1). The figures found on the Predynastic knife handles thus outline the crest of hair as a long horn-shape, precisely as it appears in nature (cf. Masseti *et al.* 2010: fig. 3).

It must also be noted that Huyge (2004) overlooked the lack of hooves on the proposed ibex-fish composite. The hooves of all the other ungulates on the Brooklyn knife (Barbary sheep [*Ammotragus lervie* (Pallas, 1777)], Nubian ass [*Equus africanus africanus* (von Heuglin & Fitzinger, 1866)], scimitar oryx [*Oryx dammah* (Cretzschmar, 1827)], and cattle) are reliably

TABLE 1. — Arrangement of hooved and non-hooved animals on Side A and Side B of the Egyptian ritual knife handle, c. 3300–3100 B.C.E. (Brooklyn Museum, Charles Edwin Wilbour Fund, inv. 09.889.118).

Row	Side A	Side B
1	Non-hooved (elephants) + snakes	Birds + snakes
2	Birds + hooved giraffe	Hooved (Nubian ibex: <i>Capra nubiana</i> F. Cuvier, 1825)
3	Non-hooved (lions: <i>Panthera leo</i> (Linnaeus, 1758))	Non-hooved (lions)
4	Hooved (Barbary sheep: <i>Ammotragus lervia</i> (Pallas, 1777))	Hooved (Barbary sheep)
5	Hooved (Nubian asses: <i>Equus africanus africanus</i> (von Heuglin & Fitzinger, 1866))	Hooved (Nubian asses)
6	Hooved (scimitar oryx: <i>Oryx dammah</i> (Cretzschmar, 1827) + dog: <i>Canis familiaris</i> Linnaeus, 1758)	Hooved (scimitar oryx)
7	Non-hooved (porcupines: <i>Hystrix cristata</i> Linnaeus, 1758)	Non-hooved (Egyptian wolves: <i>Canis aureus lupaster</i> Hemprich & Ehrenberg, 1833)
8	Hooved (cattle) + dog	Hooved (cattle)
9	Non-hooved (honey badgers: <i>Mellivora capensis</i> (Schreber, 1776)) + star	Non-hooved (honey badgers)
10	Hooved (scimitar oryx) + fish	Hooved (cattle)

indicated, while non-hooved animals (lions, canids, honey badgers [*Mellivora capensis* Schreber, 1776]) are represented with rounded paws. This small point turns out to be highly significant. To date, the animals represented on the object have been analysed both at a species level and in consideration of their wild or domesticated status (Churcher 1984: 165-168). However, a further level of differentiation is apparent that, to my knowledge, has not previously been detected – namely, an identical pattern of hooved and non-hooved animals is represented between rows 3 and 10 on each side of the handle (see Table 1; contra Raffaele 2010: 265). Similarly, two rows of animals are inscribed around the raised boss on Side B, the lower line depicting non-hooved honey badgers and the upper, hooved Nubian ass (Churcher 1984: 165, fig. 35). Row 7 on Side B displays a line of non-hooved canids (possibly Egyptian wolves: *Canis aureus lupaster* Hemprich & Ehrenberg, 1833; see Churcher 1984: 163). The embedded pattern between rows 3-10 therefore suggests that row 7 on Side A must represent a *non-hooved* animal, thus supporting the proposal that a line of porcupines may be depicted and not a hooved ibex-fish composite.

PALETTE

Based on the comparable features of the animals on the Predynastic artefacts described above, I propose that an ambiguous zoomorphic palette (OIM E11 470; see Hendrickx 2011b: 200, 201) held by the Institute for the Study of Ancient Cultures Museum in Chicago (formerly the Oriental Institute Museum) may also represent a porcupine. The unprovenanced greywacke palette, which has been dated to Dynasty 1, represents the large head and rotund body of a creature (Fig. 6). The expansive torso is flat and unmodelled, but a sinuous line has been carved on both sides of the animal’s face, running from behind and below its drilled, almond-shaped eyes and then down the length of its snout to the nostrils; the outer edge of the snout also shows evidence of a now missing projection between the eyes and nostrils. A small incision delineates the mouth. No ears are visible, but further damage at the top of the head indicates that a structure once emerged from the crown. Similarly, the animal lacks legs but eroded areas along

the lower edge of the body suggest that these were originally present in some form. The most striking morphological elements, however, are three broad structures that extend from the torso: at the shoulder, lower back, and from the rump. Although the first two are incomplete, it can nonetheless be seen that each is carved with a series of parallel channels, giving them a striated appearance.

Hendrickx *et al.* (2016: 520-523, fig. 8) have proposed that the palette represents a hybrid creature, in which the head and body of a bull have been combined with the dorsal and tail fins of a tilapia fish. Their bovine identification is based on the presence of the animal’s facial veins, a feature they have documented on a number of carved, Predynastic representations of animals, primarily bulls but also gazelle, hartebeest (*Alcelaphus buselaphus* (Pallas, 1766)), oryx, ibex (*Capra nubiana* F. Cuvier, 1825), and barbary sheep. Consequently, they have reconstructed the palette to show bovid horns extending from the animal’s damaged crown (see Hendrickx *et al.* 2016: fig. 9). However, facial veins are also found in images of African wild dogs and Cape hares (*Lepus capensis* Linnaeus, 1758), indicating that non-ungulate species could also be depicted with this feature (Hendrickx *et al.* 2016: table 2). The reconstructed figure also displays a “fin” on its snout. The authors provide no explanation for this abnormality, which matches the morphology of neither bulls nor fish; however, as was noted regarding the Berlin knife handle (ÄM 15 137), this feature does align with the whiskers of crested porcupines. Furthermore, the location of the three lined projections on the animal’s back and rump correspond in a stylised manner to the arrangement of quills on crested porcupines, and also representations of the animals on Predynastic ivory artefacts, especially on the serrated blade, where the proposed porcupine displays a distinct tuft on both its lower back and hindquarters. Finally, the porcupine’s spiky, paddle-shaped tail can again be viewed as oriented into a vertical position on the palette to aid visual understanding of this distinctive feature, while the damaged section at the top of the animal’s head may indicate where a representation of the porcupine’s nuchal crest once extended, rather than bovid horns.

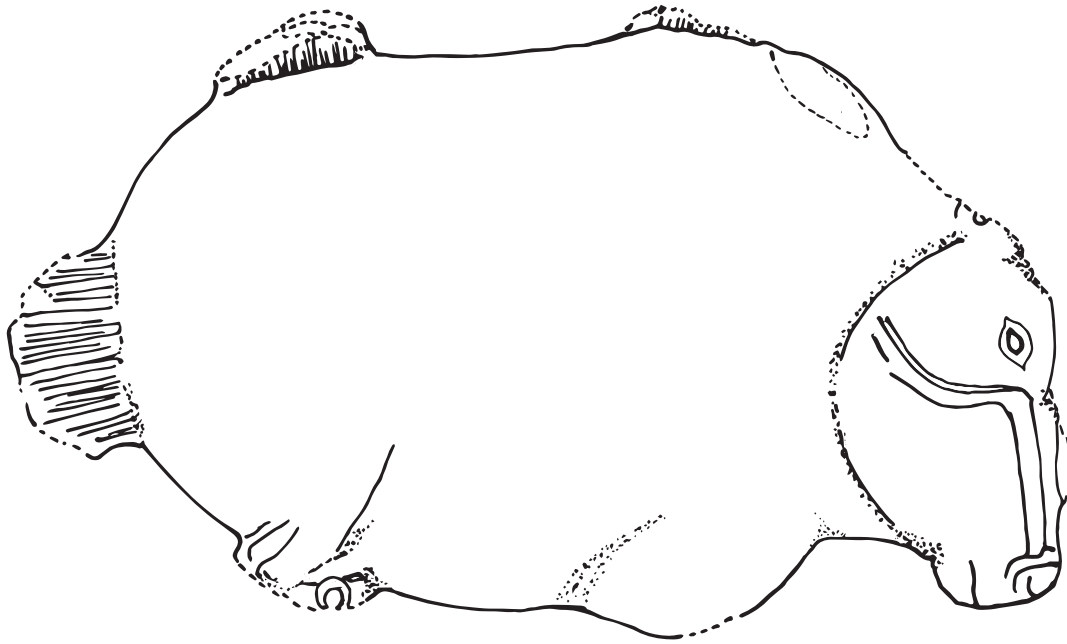


FIG. 6. —Palette. Institute for the Study of Ancient Cultures Museum, Chicago (inv. OIM E11470). Credit: Mary Hartley, re-drawn from Hendrickx *et al.* 2016: fig. 8 (upper).

## CONCLUSION

This review has shown that the diagnostic features of North African crested porcupine morphology are reproduced in each of the images considered here, namely: the animal's pointed nuchal crest, its arrangement of quills, and its spiked, paddle-shaped tail. Its long whiskers may also be depicted in two examples (ÄM 15 137 and OIM E11 470). These details are stylised, presented as striped frills or tufts, but they nonetheless convey the bristled appearance of each body part, which is especially visible when the animal's quills and crest are raised in a defensive posture. To differentiate animal types and avoid ambiguity, Egyptian draftsmen consistently highlighted species-specific physical characteristics, such as the delicate s-shaped horns of Dorcas gazelle (*Gazella dorcas* Linnaeus, 1758), the strongly curved horns and beard of the ibex, or the lyre-shaped horns of the hartebeest. Thus, in accordance with this artistic rule, the defining elements of crested porcupines – their spiky body parts – have also been standardised and emphasised in every example.

The images in question have nonetheless been accepted previously as a fish-ibex, a lion-fish, and a bull-fish. Hybrid creatures are undoubtedly represented in early Egyptian two-dimensional imagery (Wengrow 2014: 50-59; Pizzato 2019: 29-38; also, for monstrous netherworld composites, see Lucarelli 2023). Serpopards and griffins occur regularly on carved palettes, and although the motifs probably originated in the Near East, they reveal a readiness during Egypt's Predynastic period to accept such imagery. Similarly, a small number of zoomorphic palettes blend or unite parts of animals into a single figure, such as a pair of turtles or birds that share the same body (Smolik 2019: 179-193). The intended meaning of such "fantastic creatures"

is unclear, but later in Egypt's history, composite figures often combine the features of functionally or behaviourally similar animals. For example, the Seth creature blends the defensive weapons of dangerous animals (see McDonald 2000: 75-81; also Evans 2008). The amalgamated animals are thus affiliated in some manner. The motivation for creating fish-ibex, lion-fish, and bull-fish composites, on the other hand, is unclear, with modern interpretations based primarily on the assumption that the combined symbolic value of the animals was viewed as doubly potent. If so, however, it is perhaps odd that the tilapia was not combined with other animals more frequently during the Predynastic period and thereafter. In light of this, I suggest that the more pragmatic interpretation of the imagery is that it depicts a crested porcupine.

If this identification is correct, why is the evidence for crested porcupines so limited in the Egyptian cultural record? Like other species, such as elephants, rhinoceros, and giraffes, the animals may have disappeared from the region up to and during the Old Kingdom period following substantial changes to the climate and subsequent environmental conditions (Lobban & De Liedekerke 2000: 234; Bunbury 2019: 14). Despite the crested porcupine's documented ability to adapt to different types of habitats, increased desertification in the region at this time may nonetheless have forced the species further south. It should also be noted that porcupine quills are made of keratin (like hair and hooves), and so, having a high level of organic compounds, they are unlikely to survive at archaeological sites. More importantly, as this review has revealed, it is possible that more examples do survive in Egypt's early visual record but they have not been recognised to date as porcupines. The approach undertaken here indicates that first impressions of Egyptian animal imagery

may be misleading. Instead, to achieve an objective and accurate evaluation, it is essential that the Egyptian rules of graphic representation are applied to animal figures in conjunction with scientific knowledge of their appearance and species-specific habits, no matter how ambiguous they may first appear nor how early they were generated during Egypt's cultural development.

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