THE PRAYING MANTIS IN ANCIENT EGYPT

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Animals of all kinds played a major role in the culture of ancient Egypt, including the smallest yet most prolific members of the animal kingdom: the insects.[1] Locusts, grasshoppers, butterflies, bees, beetles, flies, and numerous biting pests all had an impact on the lives of the Egyptian people, who expressed their awareness of these creatures in their art, writing, religious symbolism, rituals, and medical practices. However, one common insect seems to be largely missing from this evidence: the praying mantis. I report here the earliest and first unequivocal depiction of this invertebrate in Egyptian art.

The profusion of insect-inspired imagery from Egypt seems to reflect the abundance of these animals in nature. Tomb paintings often capture their natural behaviour. In marsh scenes, for example, butterflies (e.g. the African monarch *Danaus chrysippus*) and dragonflies (order Odonata)[2] are frequently depicted fluttering above or within papyrus thickets, while grasshoppers (e.g. the Egyptian grasshopper *Anacridium aegyptium*) hide among pondweeds as the canoe of the deceased glides by, or perch upon shrubs watching men pull clapnets closed. Locusts (*Schistocerca gregaria*) appear occasionally in desert scenes hanging helplessly from the mouths of voracious hedgehogs;[3] and on a wall devoted to fishing activities in the Fifth Dynasty tomb of Nianchkhnum and Khnumhotep at Saqqara is a unique example of flies or wasps buzzing around men gutting fish, clearly attracted to the smell.[4] Insects are also represented frequently in Egyptian jewellery, focusing particularly on aspects of their morphology to produce subtle and exquisite designs.[5] Butterflies, for example, adorn an unusual set of silver bracelets found in the Fourth Dynasty tomb of Queen Hetepheres I, the delicate colours of their wings and bodies reproduced via inlaid pieces of turquoise, lapis lazuli and carnelian. The iridescent elytra (wing-covers) of beetles, particularly Elaterids (click beetles[6]) and Buprestids (jewel beetles[7]), were the inspiration for rows of brightly coloured beads used to create necklaces and distinctive broad collars of gold, faience and semi-precious stones.[8]

Amulets in the form of flies, butterflies, dragonflies and damselflies were also produced in great numbers and in many different media,[9] but the most common amuletic motif was undoubtedly the scarab beetle.[10] The sacred scarab (*Scarabaeus sacer*) had both protective and religious significance for the

Egyptians. It was worshipped as a manifestation of the god Khepri,[11] and deemed sacred to both Re and Atum due to parallels drawn between the beetle's habit of pushing a ball of dung across the ground and the force which compelled the sun to move across the sky.[12] Click beetles were associated with the goddess Neith,[13] but other less well-known beetle species appear also to have had symbolic significance such as the radiant-sun beetle *Prionotheca coronata* during the predynastic period.[14] Insects also featured in symbolism associated with the king.[15] The honey bee (*Apis mellifera*)[16] formed part of the royal titulary, representing the Delta region in the title  *nsw bi.ty* 'King of Upper and Lower Egypt', one of the interpretations of which is 'he who belongs to the sedge *n.y-sw.t* (of Upper Egypt) and the bee *bi.ty* (of Lower Egypt)'. Gold pendants in the shape of broad-winged flies were awarded by the king to soldiers for distinguished service and valour,[17] and locusts, which were capable of destroying crops and wreaking havoc, were a logical symbol of the king's enemies.[18]

Insects and insect by-products also featured in Egyptian medical prescriptions. The Ebers papyrus reports, for example, that fly dung was a crucial ingredient in a prescription to cure children of excessive crying (pEb 782),[19] and both honey and bees wax were prescribed frequently for the treatment of wounds.[20] However, it appears that insects were not always perceived as invariably beneficial, as the Ebers papyrus also prescribes numerous remedies and ointments to protect against the bites of mosquitoes, flies, gnats and fleas. Defensive magic and spells were also used to try and keep these pests at bay. For example, texts in the Book of the Dead threaten insects to keep their distance[21] (for example, Chapter XXXVI: *Spell for repelling a beetle*), while a number of vignettes show large beetles being threatened with knives or pierced with spears.

However, the Egyptians' efforts to control these creatures were not entirely successful as the remains of many insect species have been found in archaeological contexts, such as soil samples, textiles, food offerings from tombs, and the mummified bodies of the people themselves.[22] Beetles found in grain storage and animal-holding facilities (e.g. the grain weevil *Sitophilus granarius* and the lesser mealworm beetle *Alphitobius diaperinus*), and bed bugs (*Cimex lectularius* L.), fleas (*Pulex irritans* L.) and housefly pupae (*Musca domestica* L.) excavated from living areas reveal that these creatures permeated every facet of the lives of the Egyptian people.

The ancient Egyptians were thus undoubtedly aware of the vast range of insect species that inhabited the Nile Valley. It is curious, then, that one insect seems to have been overlooked: the praying mantis.[23] Praying mantids (order

Mantodea) are large, carnivorous insects and masters of camouflage, which they achieve both through their appearance and their behaviour. Approximately 1800 species are found in every continent except Antarctica,[24] ranging in length c. 2.5–18 cm. All mantids have a triangular-shaped head with long, fine antennae, a slender thorax, to which their six legs and wings are attached, and an elongated abdomen (see Plate 1). They are equipped with large compound eyes, set well apart, which give them excellent vision, and strong mouthparts for devouring their prey. The upper part of their thorax is lengthened slightly to create a 'neck', allowing them to rotate their head more freely than other insects (up to 180°). Species tend to be the same colour as the environment they usually inhabit and can thus range from shades of green for those that live upon foliage, through to brown for those that live on bark or on the ground.[25] The wings of some mantids can also take the form of the leaves or flowers they hide among, camouflaging them to such an extent that they virtually melt into their surroundings. Such effective concealment is crucial to their method of hunting. Mantids are 'sit and wait' predators; perched on a branch or leaf, they wait motionless until a possible victim comes within range. They then strike with lightning speed (c. 1/20 of a second[26]) by reaching out with their pincer-like forelegs, which are fitted with sharp spines to capture and hold their prey. When at rest, mantids raise these greatly enlarged forelegs in a manner resembling prayer—a habit that gives rise to their name.[27] They catch and eat a wide variety of insects (moths, crickets, grasshoppers and flies) as well as other small prey such as tree frogs, lizards and small birds.[28] They will also eat one another, and in some species, adult females are known to occasionally eat the male after or even during mating.[29] Species found in Egypt include the following: *Mantis religiosa*, *Sphodromantis viridis*, *Miomantis paykullii*, *Ameles aegyptiaca*, and *Eremiaphila* sp.[30]

The ancient Egyptians were aware of these insects, as their image appears as a hieroglyphic determinative in a small number of texts. In the Book of the Dead (Chapter LXXVI: '*Spell for being transformed into any shape one may wish to take*'[31] and Chapter CIV: '*Spell for sitting among the great gods*'[32]), a creature named *ibꜣy.t* (variants *bꜣby* or *ꜣby.t*) is said to have brought deceased individuals into the Hall of Osiris. The word *ibꜣy.t* can be determined by a bee (Gardiner Sign-list L2), a bird (possibly Gardiner sign-list G1) or the symbol for mammals (Gardiner sign-list F28).[33] The word *ibꜣy.t* has consequently been translated in many different ways such as 'bird',[34] 'wasp',[35] 'grasshopper' and 'dancer'.[36] In the Papyrus of Nebseni (British Museum no. EA 9900), it is clearly determined by an insect which many scholars have taken to be a praying mantis due to the shape of its forelegs. However, this identification has not been accepted fully.[37] More certain is a clear reference to a mantid in the texts associated with the ritual of the Opening of the Mouth. In line 47 of a version

of this text found in the tomb of Seti I is the following statement: "I have seen (my) father in his every form—the form of the [*drawing of a praying mantis*]." This image also occurs on an ostracon in the Cairo Museum (JE 44892) that features the same line from the ritual.[38]

These texts indicate that the praying mantis may have had some religious significance for the Egyptian people. This is also suggested by a curious object unearthed by Bernard Bruyère at Deir el-Medina in 1929 and reported by Louis Keimer in 1933.[39] Inside a tiny casket dating from the New Kingdom—crudely modelled from sun-hardened Nile silt, grey in appearance, and featuring a lid with a schematic nose and eyes so as to resemble an anthropoid coffin—were found the linen-wrapped remains of a praying mantis. Although the insect was in a very fragile state, it was identified as a member of the species *Sphodromantis bioculata*. Other small coffins excavated from this site were found to contain grain, suggesting to Keimer that their purpose, including that of the praying mantis, may have related to the worship of Osiris. Overall, however, he was struck by the dearth of depictions of this insect from Egypt. Apart from a bronze spatula in the stylised shape of a mantid from an unknown provenance (possibly dating from the Late period)[40] and its occurrence in the writing of the texts described above, Keimer believed that the praying mantis was otherwise not represented in ancient Egypt and that no depiction of it showed it as it appears in nature.[41]

In 1999, Naguib Kanawati and Mahmud Abder-Raziq published the Sixth Dynasty tomb of Hesi,[42] a site excavated at Saqqara by the second author in the 1980s. The tomb is decorated with exceptionally interesting scenes that include some entirely unique features. The artist who drafted these images appears to have been acutely aware of nature. He was also extremely creative, for although he undertook to reproduce the standard scenes of early Sixth Dynasty tombs, he subtly manipulated some features and substituted others to produce images that seem to be drawn directly from life. This is particularly obvious in two marsh scenes, both of which are located on the south wall of the tomb's portico, east of the entrance (Scene A)[43] and west of the entrance (Scene B).[44] Both scenes include the core motifs of the marsh theme: an impenetrable papyrus thicket, the deceased hunting from his canoe, a profusion of bird-life, predatory genets and mongooses, hippopotami and crocodiles, fish and insects. However, in the tomb of Hesi, new elements have been introduced. In Scene A, for example, the artist has depicted a mongoose throttling an adult bird rather than a nestling,[45] which is their usual prey in such scenes; and in the waters below the deceased's canoe, we see both a rare example of mating crocodiles[46] and a completely original depiction of mating turtles. In Scene B, another rare depiction occurs: a mongoose is eating a fish, a food item greatly favoured by

these animals in nature, but represented in only one other tomb, namely the tomb of Mereruka at Saqqara.[47]

In marsh scenes of the late Fifth and early Sixth Dynasties, the voids beneath the prow and stern of the deceased's canoe are usually filled with foliage, among which we often see frogs, butterflies and grasshoppers. This is also the case in the tomb of Hesi. However, in Scene B, the artist has again introduced a new element. Instead of representing a grasshopper as identified by Kanawati and Abder-Raziq[48] under the stern of Hesi's canoe, he has produced the unmistakable image of a praying mantis (Figure 1). The insect has been captured precisely as it would appear in nature. Sitting upon leaves of pondweed (*Potamogeton lucens*); it is depicted with its forelegs raised in the characteristic 'prayer' position, its triangular-shaped head cocked to one side and its abdomen tilted upward to mimic the surrounding foliage. The insect image is very difficult to make out; in fact, a naive viewer, when confronted by the bas-relief, might be forgiven for failing to see it at all (Figure 2). Clearly, the artist knew that these animals blend in with their environment to avoid detection and has similarly positioned his mantis image so as obscure it. According to Kanawati and Abder-Raziq, it is unlikely that the reliefs in this tomb were ever painted.[49] However, if there had been an opportunity to do so, I feel sure that the artist would have insisted that the praying mantis be painted in the same colour as the pondweed, to further assist the illusion. Thus, through an ingenious use of shape and pose, the artist has reproduced a scientifically accurate depiction of the appearance and cryptic behaviour of this extraordinary insect.

It is important to note that this image can be clearly distinguished from those of grasshoppers (see Figures 2 and 3). Its head is triangular, while those of grasshoppers are usually represented as spherical. The body of the mantis image is divided into three distinct sections of head, thorax, and abdomen; the bodies of grasshoppers are always depicted as unbroken cigar-shaped tubes. Most striking of all, while the mantis image raises and extends its long forelegs in the characteristic 'prayer' pose, those of grasshoppers are always short and held close to or under their bodies as seen in the examples from the tombs of Mereruka and Ankhmahor (Figures 3 and 4).

Why was a praying mantis reproduced in this tomb? Was it included simply for the sake of variety? Undoubtedly, the artist who produced the wall reliefs in the tomb of Hesi delighted in nature, and so it is highly likely that this insect simply reflects his general interest in animals. However, other explanations may be worth considering.

The praying mantis may have had some religious significance arising from its natural behaviour. Mantids moult many times as they grow. After hanging upside-down from a stick or a branch and tearing a small hole along their thorax, they are able to wriggle out of their old skin, leaving it behind in one piece.[50] Such apparent 'rebirth' may thus have inspired the use of this insect in the tomb as a symbol of regeneration. When eating, mantids raise their prey up to their mouths. It is this behaviour which some have suggested brought about their association with the Opening of the Mouth ritual, in which various objects were held up to the mouth and eyes of a mummy or statue of the deceased.[51] This funerary rite was not performed by non-royal people, however, until the end of the 6th dynasty, well after the construction of Hesi's tomb.[52] Therefore it is unlikely that the image was associated with this ceremony.

One of the most distinctive features of the mantis is its raised forelegs. This characteristic pose intrigued many later cultures.[53] For some, the pose suggested a pointing motion. In France, for example, it was believed that a praying mantis could indicate the way home for lost children, and people in Arabic countries similarly insist that these insects point toward Mecca. In other cultures, mantids were associated with magic and divination because their raised forelegs suggested an attitude of prayer or adoration. In a 9th century BC Sumerian-Akkadian lexicographical dictionary, two Sumerian names appear for mantids, one meaning 'necromancer', the other meaning 'soothsayer of the field'.[54] The word 'mantis' is a Greek term meaning 'prophet', initially applied to human behaviour but eventually used to label these insects due to their reverent appearance.[55]

It is thus interesting to contemplate what the mantids' raised forelegs may have meant for the ancient Egyptians. If they suggested a directional motion, perhaps the mantis image in Hesi's tomb was intended to point him in the right direction, as his canoe glided through the marshes.[56] Or, like the enigmatic creature *ib3y.t*, that guided deceased individuals in the next life, perhaps its function was to lead the soul of Hesi to Osiris. Among the determinatives employed in hieroglyphic script is a human figure which, while kneeling on the ground, raises his arms in a pose of adulation (Gardiner sign-list A4 ). The posture is precisely like that of the raised forelegs of a praying mantis. Not surprisingly, this sign appears as the determinative in the word *dw3* 'adore', but it is also associated with the terms *sdgi* 'conceal, be hidden' and *jmn* 'secret, hidden'.[57] Perhaps, then, the praying mantis is a clever visual pun produced by the artist, in which the image represents both the determinative for the word 'hidden' by its raised forelegs, and the act of being hidden by its cryptic appearance in the bas-relief.[58]

Ultimately, however, the praying mantis may have been included in the tomb of Hesi for a purely practical reason. As described above, mantids are carnivores, preying primarily upon other insects. The artist's careful rendering of this image suggests that he must have studied these insects very closely and would thus have been aware of their predatory habits. The Egyptians undoubtedly knew what harmful effects other insect species could have, particularly on food offerings left in tombs and on the bodies of the deceased. Perhaps this fate was to be averted for Hesi by including among his wall reliefs a praying mantis, which could magically eat any harmful insects that might enter his tomb.

Finally, the question must be asked why there are no other depictions of these insects in Egyptian wall paintings. The answer may lie in their extraordinary cryptic behaviour. Although common, mantids must nonetheless have been largely invisible members of ancient Egyptian life due to their skilful camouflage. Such a claim could also be made about them today, for although many people may know of these insects, few could claim to have actually seen one in nature. Tomb reliefs represented the familiar, recognizable elements of everyday Egyptian life for the spirit of the deceased to use and enjoy. To that end, the unique praying mantis may simply have lain too far outside the norm to be included.[59]

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1 For brief overviews of insects in Egypt see G. Kritsky, "Beetle gods, king bees and other insects of ancient Egypt" in *KMT* 4/1 (1993), pp. 32–39; N.B. Hansen, "Insects" in D.B. Redford. (ed.) *The Oxford Encyclopedia of Ancient Egypt*, vol. 2, (New York, 2001), pp. 161–163.

2 These may not be dragonflies but flying locusts (or possibly crickets). Depictions identified as dragonflies often feature two pairs of narrow wings, long antennae, and long hind-legs. However, in nature, dragonflies have very short antennae and legs. Locusts, on the other hand, have long antennae, long and powerful hind-legs, and two sets of wings (leathery forewings and a pair of delicate hind-wings) that only become apparent when they fly.

3 An example from the late 5th dynasty tomb of Ptahhotep II is well known. However, two further depictions appear to show hedgehogs with insects in their mouths: the mid-late 5th dynasty tomb of Pehenwika (see R. Lepsius, *Denkmäler aus Aegypten und Aethiopien*, Vol. 2 [Geneva, 1972], fig. 46) and a 6th dynasty fragment from Shaft 6 of 'Mastaba of Shaft No. 14' (see S. Hassan, *Excavations at Saqqara*, 1937–1938, Vol. 3: Mastabas of Princess Hemet-Re and others [Cairo, 1975], pl. xiv.C).

4 This depiction occurs on the south wall of the vestibule, see A.M. Moussa, and H. Altenmüller, *Das Grab des Nianchchnum und Chnumhotep* (Mainz, 1977), Abb. 12.

[5] For a detailed discussion of insect-inspired Egyptian jewellery, see works by Louis Keimer: "Pendeloques en forme d'insectes faisant partie de colliers égyptiens" in *Annales du Service des Antiquités de l'Égypte* 31 (1931), pp. 145[1] – 186[42], 7 pls.; *ASAE* 32 (1932), pp. 129[43] – 150[64], 4 pls.; *ASAE* 33 (1933), pp. 193[99] – 200[106] and pp. 97[65] – 130[98], 3 pls.; *ASAE* 34 (1934), pp. 177[107] – 213[143], 2 pls.; *ASAE* 36 (1936), pp. 89[144] – 114[169], 4 pls.; *ASAE* 37 (1937), pp. 143[170] – 172[199], 6 pls.

[6] Keimer believed that the most likely species represented is *Agrypnus notodonta* (*ASAE* 31 [1931] pp. 147[3] – 159[15]).

[7] Keimer identified this species as *Steraspis squamosa* (*ASAE* 31[1931], pp. 159–162). Kritsky (1991) has suggested that this particular species may have had religious significance for the Egyptians, based upon its natural behaviour. During development, the larvae of *S. squamosa* bores into the wood of tamarisk trees where it pupates before emerging in its adult form. Kritsky suggests that carpenters may have revealed these larvae while cutting tamarisk boards to prepare coffins. They may thus have been reminded of the story of Osiris, in which the body of the god-king, sealed in a chest, became engulfed by a tamarisk tree which had grown around it, only to be released once the tree was felled (see G. Kritsky, "Beetle gods of ancient Egypt" in *American Entomologist* 37 no. 2 [1991], pp. 88–89).

[8] See Keimer in *ASAE* 31 (1931), pp. 145-186 and *ASAE* 36 (1936), pp. 89–114.

[9] For examples, see D. Arnold, "An Egyptian bestiary (animal representation in Egyptian art)" in *Bulletin of the Metropolitan Museum of Art* 52, no. 4 (1995), pp. 3–63.

[10] See W.A. Ward, "Beetles in stone: The Egyptian scarab" in *Biblical Archaeologist* 57 no. 4 (1994), pp. 186–202.

[11] R.H. Wilkinson, Reading Egyptian Art: A Hieroglyphic Guide to Ancient Egyptian Painting and Sculpture (London, 1992), p. 113.

[12] G. Kritsky, in *American Entomologist* 37 no. 2 (1991), pp. 8589.

[13] The reason this particular beetle was associated with Neith is unclear (see S. Hendrickx, "Two protodynastic objects in Brussels and the origin of the bilobate cult-sign of Neith" in *Journal of Egyptian Archaeology* 82 [1996], pp. 23-42).

[14] H. Levinson and A. Levinson, "*Prionotheca coronata* Olivier (Pimeliinae, Tenebrionidae) recognized as a new species of venerated beetles in the funerary cult of pre-dynastic and archaic Egypt" in *Journal of Applied Entomology. Zeitschrift für Angewandte Entomologie* 120 no.10 (1996), pp. 577–585. See also W.M.F. Petrie, *Scarabs and Cylinders with Names, illustrated by the Egyptian Collection in University College London* (London, 1917).

[15] R.H. Cherry, "Insects as sacred symbols in ancient Egypt" in *Bulletin of the Entomological Society of America* 31 no. 2 (1985), pp. 14–16.

[16] R. Lobban, "Bees in ancient Egypt" in *Anthrozoos* 7 no.3 (1994), pp. 160–165.

[17] Hansen, in *Oxford Encyclopedia of Ancient Egypt*, vol. 2, p. 162.

[18] See J. Malek, "The locusts on the daggers of Ahmose" in E. Goring, N. Reeves and J. Ruffle (eds.), *Chief of Seers: Egyptian Studies in Memory of Cyril Aldred* (London, 1997), pp. 207–219.

[19] C. Reeves, *Egyptian Medicine*. (Princes Risborough, 1992), pp. 58–59.

[20] Hansen, in *Oxford Encyclopedia of Ancient Egypt*, vol. 2, p. 161.

[21] G. Plehn, "Magic spells to combat pests" in *Max Planck Research* 4 (2002), pp. 58–61.

[22] E. Panagiotakopulu, "New records for ancient pests: Archaeoentomology in Egypt" in *Journal of Archaeological Science* 28 (2001), pp. 1235–1246; E. Panagiotakopulu, "Insect remains from the collections in the Egyptian Museum of Turin" in *Archaeometry* 45 no. 2 (2003), pp. 355–362.

[23] For a brief summary of praying mantids in ancient Egypt, see L. Störk, "Mantis" in *Lexikon der Ägyptologie*, Vol. III, (Wiesbaden, 1975), 1184–1185.

[24] L.E. Hurd, "Mantodea (Praying mantids)" in V.H. Resh and Cardé, R.T. (eds), *Encyclopedia of Insects* (Amsterdam, 2003), pp. 675–677.

[25] R. Roy, "Morphology and taxonomy" in F. R. Prete, H Wells, P. H. Wells and L. E. Hurd (eds.), *The Praying Mantids* (Baltimore, 1999), pp. 33–34.

[26] P. Rietschel, "The walkingsticks, mantids, and cockroaches" in B. Grzimek (ed.), *Grzimek's Animal Life Encyclopedia*, Vol. 2 (New York, 1975), pp. 120–129.

[27] Hurd, *Encyclopedia of Insects*, p. 676.

[28] Rietschel, *Grzimek's Animal Life*, p. 122.

[29] It is widely believed that all mantids engage in sexual cannibalism. However, while some species do exhibit this behaviour in the wild, recent research suggests that it may occur at an unnaturally high frequency in mantids that are kept in captivity.

[30] Störk (*LÄ* III, 1184) suggests that the species *Sphodromantis guttata* and *Eremiaphila turcica* (sic) are found in Egypt. However, *S. guttata* (now renamed *S. gastrica*) is largely found in East Africa, and *E. turica* is more common in Iran, see Reinhard Ehrmann, *Mantodea – Gottesanbeterinnen*, NTV Wissenschaft (Münster, 2002).

[31] Spell 76 – '*Spell for being transformed into any shape one may wish to take*': "I have passed by the Palace, and it was an abyt-bird which brought you to me. Hail to you who flew up to the sky, the white and shining bird which guards the White Crown. I shall be with you and I shall join the Great God; make a way for me that I may pass on it". See C. Andrews (ed.), *The Ancient Egyptian Book of the Dead* (London, 1985), p. 73.

[32] Spell 105 – '*Spell for sitting among the great gods*': "I have passed by the House of the Night-bark; it is the wasp that fetches me to see the great gods who are in the realm of the dead; and I am vindicated in their presence, I am pure". See Andrews (ed.), *Book of the Dead*, p. 101.

[33] For variants see E.A.W. Budge, *An Egyptian Hieroglyphic Dictionary*, Vol. I, (London, 1920), p. 4b and p. 19b.

[34] Andrews, *Book of the Dead*, p. 73.

[35] R.O. Faulkner, *The Ancient Egyptian Coffin Texts,* Vol. 1: *Spells 1–354* (Warminster, 1973–78), p. 227 n. 3.

[36] E. Hornung, *Das Totenbuch der Ägypter* (Zurich, 1990), pp. 156 and 203. Wassell (1991) makes the interesting observation that "*jb3jjt* may be derived from *jb3* 'dance' (…) which could refer to the stately gait of the mantis." I would like to suggest another interpretation. When startled by predators, mantids adopt a dramatic threat posture (known as a deimatic display) in which they rear up, spread their wings and raise their forelegs up to and above their head. Some also lunge forward repeatedly to try to drive the threat away or make a grating noise by rubbing their abdomen against their hind-wings. Wall scenes frequently show dancers raising their arms and stepping forward. Perhaps the Egyptians saw a similarity between the performance of dance and this distinctive display, and so labelled the praying mantis, *ib3.yt* 'the one who dances'? See B.A. Wassell, *Ancient Egyptian Fauna: A Lexicographical Study*, Vol. 1, PhD thesis (Durham, 1991), p. 161; M. Edmunds and D. Brunner, "Ethology of defenses against predators" in F. R. Prete, H Wells, P. H. Wells and L. E. Hurd (eds.), *The Praying Mantids* (Baltimore, 1999), pp. 276–299. For a photograph of a mantid performing a deimatic display, see D.Yager and M. May, "Coming in on a wing and an ear" in *Natural History* 102 no. 1 (1993), figure on p. 29.

[37] E. Lefébure, E.A.W. Budge, T. Hopfner, and A.E. Knight all believed this insect to be a praying mantis, but Keimer (*ASAE* 33 [1933], p. 196[102]) was not convinced.

[38] The transliteration of this phrase is as follows: *m33.n=i it(i)(=i) m ḳd=f nb kd.t m* [drawing of a praying mantis]. Some have interpreted *ḳdt* (or *ḳdm*) as the name of the insect, see W. Helck, "Einige Bemerkungen zum Mundöffnungsritual" in *Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo* 22 (1967), p. 30; also P. Barguet, *Le Livre des Morts des Anciens Egyptiens* (Paris, 1967), p. 113 n. 2.

[39] Keimer, *ASAE* 33 (1933), pp. 193[99] – 194[100], pl. XIV.

[40] See Keimer, *ASAE* 37 (1937), pp. 159[186] – 160[187], pl. XXIV.

[41] "Je ne connais, par contre, aucune représentation égyptienne qui soit parfaitement conforme à la réalité" (Keimer, *ASAE* 31 [1933], p. 198[104]).

[42] N. Kanawati and M. Abder-Raziq, *The Teti Cemetery at Saqqara,* vol. V: *The Tomb of Hesi* (Warminster, 1999).

[43] Kanawati and Abder-Raziq, *Hesi*, pl. 53.

[44] Kanawati and Abder-Raziq, *Hesi*, pl. 54.

[45] To my knowledge there is one other such example: N. Kanawati and M. Abder-Raziq, *The Teti Cemetery at Saqqara,* vol. VI: *The Tomb of Nikauisesi* (Warminster, 2000), pl. 50.

[46] Two depictions of mating crocodiles occur in the tomb of Kagemni (LS10) and one other example can be found in the tomb of Mehu. Both tombs are located at Saqqara.

[47] Some have suggested that the image in the tomb of Mereruka represents an otter, not a mongoose. For a discussion of the evidence see P.F Houlihan, "On

Herodotus (II, 72) and the question of the evidence of the otter (*Lutra* sp.) in ancient Egypt" in *Göttinger Miszellen* 153 (1996), pp. 45–53.

[48] Kanawati and Abder-Raziq, *Hesi*, p. 28.

[49] Kanawati and Abder-Raziq, *Hesi*, p. 20.

[50] Personal communication Cynthia Mazer, Cleveland Botanical Garden, Cleveland / Ohio.

[51] Kritsky, *KMT* 4/1 (1993), p. 36; G. Kritsky and R. Cherry, *Insect Mythology* (San Jose, 2000), p. 57.

[52] At the end of the Sixth Dynasty (approximately 150 years after the first occurrence of the Pyramid Texts), the identical sequence of objects and gestures (but not the spells) of the Opening of the Mouth ritual began to be added to offering lists inscribed in private tombs, indicating that a ceremony similar to that revealed in the Pyramid Texts was now also being performed for the benefit of ordinary people.

[53] For intriguing parallels between the Osiris myth and the religious beliefs of the San people of the Kalahari desert, see H.C. Jelgersma, "The ancient Egyptians and the Bushmen." *Jaarbericht van het Vooraziatisch-egyptisch Genootschap Ex Oriente Lux* 23 (1973–74), pp. 365–367. For more information on the role of the praying mantis in San religion see L. van der Post, *The Heart of the Hunter* (London, 1961).

[54] F.R. Prete, H. Wells and P.H. Wells, "The predatory behavior of mantids: Historical attitudes and contemporary questions" in F. R. Prete, H Wells, P. H. Wells and L. E. Hurd (eds.), *The Praying Mantids* (Baltimore, 1999), pp. 3–18.

[55] Prete et al., *The Praying Mantids*, p. 5.

[56] I am grateful to Professor Kanawati for suggesting this possible interpretation.

[57] See A. Gardiner, *Egyptian Grammar* (Oxford, 3rd edition 1957), p. 442; also R.O. Faulkner, *A Concise Dictionary of Middle Egyptian* (Oxford, 1976), p. 21 and p. 257.

[58] On the hieroglyphic character of Egyptian art, see H. te Velde, "Egyptian hieroglyphs as linguistic signs and metalinguistic informants" in *Visible Religion: Annual for Religious Iconography* 6 (1988), pp.169–179.

[59] I would like to thank Dr Marie Herberstein, Greg Holwell and Kate Barry (Department of Biology, Macquarie University), and Cynthia Mazer (Cleveland Botanical Garden, Cleveland / Ohio) for their help and advice regarding the behaviour of praying mantids.

Figure 1. Praying Mantis
Tomb of Hesi at Saqqara
(shading: this author)

Figure 2. Praying Mantis
Tomb of Hesi at Saqqara

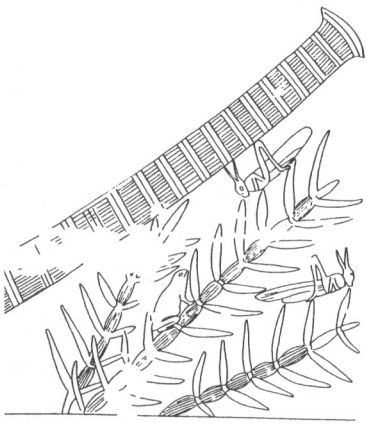
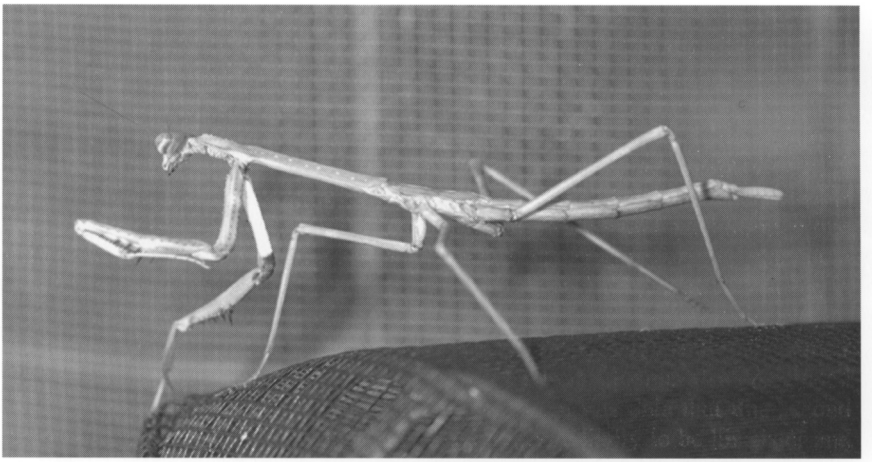
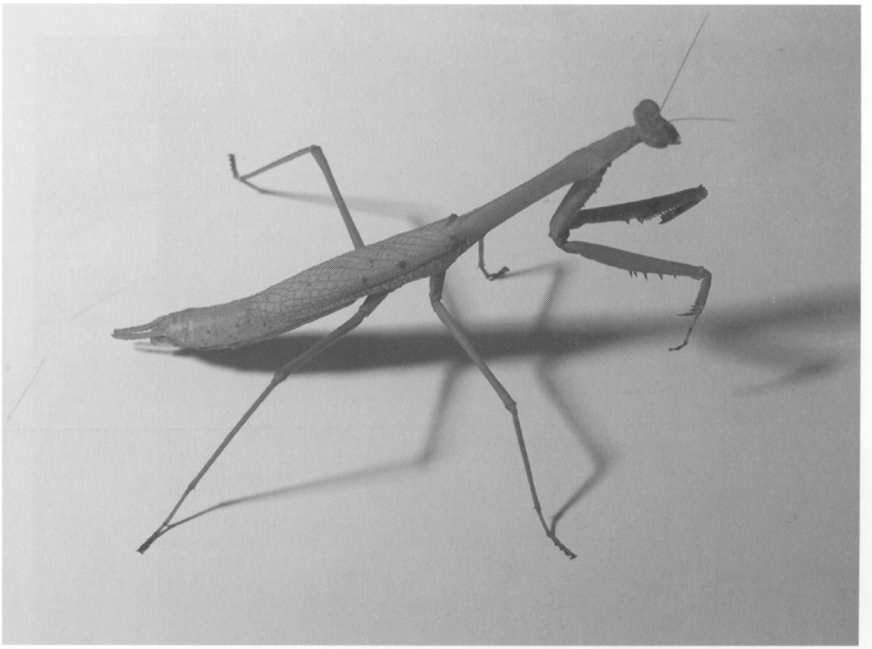


Figure 3. Grasshopper
Tomb of Mereruka at Saqqara

Figure 4. Grasshopper
Tomb of Ankhmahor at Saqqara



a. Large Brown Mantid (*Archimantis latistylus*)
(Dr. Phil Taylor, courtesy Dr. Marie Herberstein, Macquarie University)



b. Australian Mantid
(Elizabeth Eyre, courtesy of Macquarie University Museum)

PLATE 1