**9. The sting of the scorpion**

**Mark Collier**

Two notable aspects of Rosalie David’s Egyptological work are her sustained engagement with the life sciences over a number of decades and her outreach, particularly in the north-west of England. As an Egyptologist born and based in the north-west, I would like to offer Rosalie the following study which I have tried to write up with such a wider audience in mind and I will strive to avoid an over-presumption of familiarity with the material I discuss.

I will look here at the occurrence and treatment of scorpion stings amongst the community of workmen from Deir el-Medina, the workmen who constructed the royal tombs in the Valley of the Kings and the Valley of the Queens during the New Kingdom (*c.*1550–1069 BC).[[1]](#footnote-1) The Deir el-Medina community provides us with the largest body of original textual material which has survived from a single site and period from pharaonic Egypt and is particularly rich from the second half of the 19th Dynasty through to the end of the 20th Dynasty (the Ramesside period), a period of about 170 years from very roughly 1240 BC to 1070 BC.[[2]](#footnote-2) This material allows us to look in unprecedented detail into the micro-history and life-world context of ancient Egypt.

In terms of occurrence of scorpion stings I will present evidence for the incidence of scorpion stings among the workmen and the period of time they took off work as a consequence. In terms of treatment, although I will utilise the type of ‘magical’ texts which contain spells against scorpion stings, my main interest will be in the conception of the antagonistic relationship with the venom introduced into the body.

**Incidence of scorpion stings among the workmen and absence from work**

I will focus in on specific examples drawn from records of absence from the work on the royal tombs. I restrict myself to examples where the incidence of scorpion sting is presented in context with an indication of the length of absence of the workman who has suffered the sting.

The first example comes from O. BM EA 5634, which carries the comparatively high date of regnal year 40 (and thus can only be regnal year 40 of Ramesses II during this period). The reign of Ramesses II is currently usually dated to *c.*1279–1213 BC and so his year 40 falls at approximately 1240 BC.

O. BM EA 5634 is a large limestone ostracon, 38.5 cm in height and 33 cm wide, and was acquired by the British Museum in 1823 as part of the Salt collection.[[3]](#footnote-3) The work gang itself (tA ist) was divided throughout its recorded history into two sides, the right (*wnmy*) side and the left (*smHy*) side.[[4]](#footnote-4) This division is reflected in the organisation of the text on the ostracon, which is written on both sides. On the recto is an ordered listing of the names of the workmen of the right side of the gang written in black ink; on the verso is an ordered listing of the names of the workmen of the left side of the gang again written in black.[[5]](#footnote-5) Following the names of each workman on both sides of the ostracon is the relevant list of dates of their absence, written in black ink. Above these dates are entries in red ink which give a brief label for their absence.

In total there are thirty-nine workmen named (twenty on the right side of the gang and nineteen on the left side).[[6]](#footnote-6) The labels for reasons for absence differ in their level of specificity and those on the verso are similar to but not exactly the same as those on the recto. However, with a limited amount of consolidation, the following picture of absence can be drawn up.[[7]](#footnote-7) In Table 9.1 the numbers refer to the individual day items listed for relevant workmen:

[Insert Table 9.1 here]

A grand total of 284 absences for 39 workmen, of which but 1 is due to a workman being stung by a scorpion.

The two standout categories in terms of numbers of absence are the rather undifferentiated category of being sick (*mr*), including significant sequences of multi-day sickness, and being with the boss (one of the two chief workman, here referred to as *Hry* ‘boss, superior’). The two sides of the gang show slightly different profiles, but at least part of the difference in total is due to R20 Paherypedjet, who served as the village doctor. He has thirty-nine recorded absences, by some margin the largest number for a single individual, of which fourteen are for preparing remedies (*pXrt*) and eighteen are for attending workmen (R4 Horemwia and R11 Aapehty) during periods of prolonged illness.[[8]](#footnote-8)

Some of the reasons for absence are less well understood, particularly in detail, or require further contextualisation. For example, the entries for absence for brewing show a distinct centring on the *Peret* season, rather than being spread evenly through the year. Similarly, there are specific entries covering menstruation periods of female family members, but at first sight these seem rather selective.[[9]](#footnote-9)

It is the entry for Seba (L7)[[10]](#footnote-10) which records him as being absent from work on IV *Akhet* 17 because ‘the scorpion stung him’ (*psH sw tA wHa(t)*). His full list of absences, with labels, are:

O. BM EA 5634, vso 7:

(L7) Seba:

IV *Akhet* 17 the scorpion stung him

I *Peret* 25 ill

IV *Peret* 8 his daughter menstruating

I *Shemu* 25 ill

26 likewise

27 ditto

II *Shemu* 2 ill

3 ill

4 ill

5 ill

6 ill

7 ill

Just one recorded scorpion sting in a year of work is hardly a high incidence rate, although by this time in the reign of Ramesses II work on the royal tomb itself (KV 7) would have been at an advanced stage.[[11]](#footnote-11) It is of interest that this is an item isolated out specifically. The importance of this piece of evidence is increased in that it allows us to infer that Seba is recorded as being absent for just one day (IV *Akhet* 17) from this episode.[[12]](#footnote-12)

Of course, the incidence of scorpion stings is contingent on circumstance. So, in other bodies of evidence, a higher rate of incidence can be found. A particularly rich body of evidence comes from the absentee records from the reign of the late 19th Dynasty pharaoh Siptah (*c*.1194-1188 BC), during early work on his tomb (KV 47), nearly fifty years later than O. BM EA 5634. The surviving records (O. Cairo CG 25517δ-vso, O. Cairo CG 25519, and O. Cairo CG 25521)[[13]](#footnote-13) provide us with a continuous (if occasionally damaged and thus incomplete) record of absences from work for the period from II *Akhet* 12 late in the first regnal year of Siptah to the end of I *Peret*, the first full month of his second regnal year, a period of slightly over three and a half months.

The first incidence in this body of material of a workmen being stung by a scorpion is provided by O. Cairo 25519, vso 13 in the entry for II *Akhet* 25, where the workman Roma is listed as being absent with the comment *psH n wHa(t)* ‘sting of a scorpion’. The following day, II *Akhet* 26, Roma is not listed among the workmen absent and so can be inferred to have returned to work. A few days later, O. Cairo 25517, vso 19 records in the entry for II *Akhet* 28 that the workman Hornefer was absent because of being stung by a scorpion. Days 29 and 30 were weekend days (as days 9 and 10 of the 10-day Ancient Egyptian week) and were regular days off for the workmen and so are not recorded on the ostracon. O. Cairo CG 25519 picks up the record with III *Akhet* 1. The entry is damaged with the possible addition of a further name to the eight names of workmen listed as being absent on this day. The name of Hornefer does not appear among these eight and so the likelihood is that he too recovered quickly from being stung.

O. Cairo CG 25519 is damaged and, in its current state, is incomplete. It records absences during III *Akhet* 1-3 on the recto and IV *Akhet* 6-14 on the verso. The surviving nine days of the verso entries record two incidences of absence from scorpion sting. O. Cairo CG 25519, vso 7 records, in an entry the date of which is not preserved (but may be IV *Akhet* 7), Pamerihu as being absent from a scorpion sting. O. Cairo CG 25519, vso 8 lists the entry for IV *Akhet* 8 and on that date Nebnefer is absent following a scorpion sting. Pamerihu’s name is not listed as being absent and the inference would be that he has returned to work. The following two days IV *Akhet* 9 and 10 are the decanal weekend days of the ancient Egyptian week and not recorded. The register resumes in O. Cairo CG 25519, vso 8 with IV *Akhet* 11. Nebnefer is not recorded as being absent (nor is he recorded as being absent in the remaining surviving entries), whereas Pamerihu is recorded as being absent ‘ill’ (*mr*) on IV *Akhet* 11 and continues to be recorded as being absent day by day until the last fully dated entry on IV *Akhet* 14. Fortunately, the absence record is picked up in the more complete O. Cairo CG 25521, which records absences from IV *Akhet* 15 through to the end of I *Peret*. Pamerihu is consistently recorded as being ill through to I *Peret* 22, after which the record is more damaged. Assuming that the entries for early II *Peret* are reasonably complete, he has returned to work by the start of the next month.

O. Cairo CG 25521, being more complete, allows us to compare the full set of stated reasons for absence during the period IV *Akhet* 23 to I *Peret* 11, a fifteen day period during which eight days were working days:

[Insert Table 9.2 here]

The scorpion-sting entries during this period are both from members of the right side of the gang. O. Cairo CG 25521, vso 2 records that on IV *Akhet* 23 the workman Meryre was absent, having been stung by a scorpion. Meryre is not recorded as being absent on the following day, IV *Akhet* 24, the inference being that he had returned to work.

The entry recorded on O. Cairo CG 25521, vso 3 for IV *Akhet* 27 is more difficult to interpret. On IV *Akhet* 27 Ipuy and Khonsu are recorded as being absent and then Nebnefer (who is recorded as being ill). Above the name Khonsu an additional interlinear note has been added ‘stung by a scorpion’ and so this presumably applies to Khonsu. The entry for the next day is damaged, but the name of Khonsu is not preserved, although the names of both Nebnefer (still ill) and Ipuy (now recorded as being ill) are. Assuming the scorpion sting incident refers to Khonsu, then this would be another example of a workman returning to work after one day of recorded absence due to a scorpion sting.

**The scorpion and its sting**

The scorpion remains a hazard to human health in Modern Egypt. For a recent study on scorpion venom in Egypt,[[14]](#footnote-14) eight species of scorpions were collected from five localities in Egypt (Aswan, Sinai, Baltim, Borg el-Arab and Marsa-Matrouh). The recorded species encountered were *Androctonus bicolor, Androctonus australis*, *Androctonus amoreuxi*, *Androctonus crassicauda*, *Leiurus quinquestriatus*, *Buthacus arenicola*, *Orthochirus innesi*, and *Scorpio maurus palmatus*. The sting of the scorpion lies in the last articulated segment (the *telson*) of its tail, which ends in a sharp spine (the *aculeus*) with a pore on either side through which the venom is secreted by two glands.[[15]](#footnote-15) The venom is composed of multiple neurotoxin proteins,[[16]](#footnote-16) mucus, salts and various organic compounds.

Keenan distinguishes two categories for the effects of a scorpion sting beyond the immediate, sharp pain at the site of venom injection.[[17]](#footnote-17) In the first, symptoms are local and usually transitory and persist for a few minutes through to a day or so. The second category includes cases showing the systemic impact of severe envenomation. Keenan tabulates characteristics of severe envenomation by old world scorpions of Africa and the Middle East and includes (amongst others): excessive salivation, excessive perspiration, vomiting, diarrhoea, irregular pulse, unstable temperature, respiratory problems, convulsions, blurred vision.[[18]](#footnote-18) On occasion the severity of the envenomation can lead to death (particularly with more vulnerable groups such as children), usually through respiratory or cardio-vascular complications. The effects are thus systemic, pervading the body and resulting in overt symptoms at numerous locations, including the head (including psychological as well as physical effects) and torso, regardless of the site of the sting.

**Body protection texts**

As might be expected the ancient Egyptians were quite familiar with the symptoms displayed by victims of scorpion sting. In the textual sources descriptions of symptoms usually occur within the body protection texts, often labelled (sometimes with unfortunate pejorative overtones not appropriate to the original text) as ‘magical texts’ dealing with scorpion stings. In these texts, and indeed in the absence records from Deir el-Medina, the Ancient Egyptian term for the scorpion is *wHat*. The action of the sting is referred to with the verb *psH*. This word is also used for the bite of a snake, or indeed biting in general including human biting, as for example in eating. The venom itself is usually termed *mtwt*.

In these body protection texts,[[19]](#footnote-19) there is often a component projecting the predicament of the victim onto similar problems suffered by the gods (and thus invoking the creative power available to the gods to be deployed for the benefit of the victim) and thus the symptoms are ascribed directly to the suffering god. I will focus particularly on P. Chester Beatty VII, which comes from Deir el-Medina:[[20]](#footnote-20)

From Spell 3 (P. Chester Beatty VII, rto 2.5-2.7):

(Isis is speaking) ‘Ra my lord, Ra my lord, what are you suffering from? Is your face slack (*nn*)? […] between your eyebrows (*inH*) is sweat (*fdt*).’

(Ra answers) ‘You are Isis, my sister. [Something] has stung me, when I was in the dark(?). [It] is hotter [than] fire, it blazes more than a flame, it is sharper [than a th]orn.’

From Spell 10 (P. Chester Beatty VII, rto 5,2-5.3)

(Ra is speaking) ‘I have trodden on something which has a hot [sting]. The heart (*ib*) is shocked (*nr*) and my body (*Ha*) is shivering (*Ddf*). The most useful part in me (*tA Axt im=i*), it will not listen to me.

Externally, the site of the injection of the venom can itself be engaged with (as part of the overall magical rite):

From Spell 11 (P. Chester Beatty VII, 6.1-6.2)

The spell is to be said over the pith of a rush soaked in fermented gruel. To be twisted leftwards, made with seven knots and applied to the mouth of the puncture (*dmw*). This spell is to be said every [….]

From Spell 13 (P. Chester Beatty VII, 6.6)

To be recited (over) barley-bread crumb, onions and ochre, heated and placed at the site of the sting (*st psH*). It can’t spread (*xnt*).

As the second example shows, part of the intention behind this would seem to be that application of a magically infused poultice might prevent the spread of the venom through the body.

The venom was conceived of as an entity which passes through the body due to its own agentive force, settling in and affecting the body’s constituent parts along its way in order to be able to deliver its systemic impact reflected in the observable symptoms. It can be communicated with through the power of the spell, the aim being to get it to leave the body of the victim, e.g. in a form of purging (e.g. spitting):[[21]](#footnote-21)

P. Deir el-Medina 41:[[22]](#footnote-22)

Evacuate, venom (*mtwt*) (seven times) — Horus has conjured you, he has annihilated you, he has spat you out. You will not rise up, nor trample down. You will be weak, you will not be strong. You will be feeble, you will not be able to fight. You will be blind, you will not be able to see. You will fall, your face will not be lifted. You will be turned back and you will not find your way.

P. Chester Beatty VII, vso 6.1-2 and 6.5-6.6:

I know you, I know your name. Come out from the right, come out from the left.

Come out in [water (*mw*)], come out in vomit (*bS*), come out in urine (*wsS*). Come out at my word, just as I say … Make the venom (*mtwt*) come out which is in the body of A born of B in order to let him leave cured for his mother just as Horus left cured for his mother. The protection of Horus is protection enough.

The venom is thus treated as a force which needs to be combated, ultimately with the aim of forcing its ejection from the body. The actions of the practitioner are thus directed (including the spells and rites deployed) to this end. To engage directly with the venom inside the body he can utilise conjurative power, engaging the power of the gods (the forces of the cosmos) to attempt to weaken the venom and to attempt to compel it to be evacuated through an orifice of the body. The engagements come in various forms, but I would like to look at the following spell from P. Chester Beatty VII, which deals with an attempt to repel the passage of the venom through the various parts of the body and which seeks to bring the power of the gods directly into the human body:[[23]](#footnote-23)

P. Chester Beatty VII, vso 2.3-5.9

Then Isis the divine said, ‘I am a Nubian. I have descended from the sky and I have come to reveal the venom (*mtwt*) which is in the body (*Ha*) of A born of B in order to allow him to emerge healthy for his mother just as Horus emerged healthy for his mother Isis ….

You will not last (*aHa*) in his brow (*dhnt*)[[24]](#footnote-24); [Hekayet? is against you, lady] of the brow,

You will not last in his eyes (*irty*); Horus-[Khent]enirti is against you, lord of the eyes.

You will not last in his ear (*msDr*); Geb is against you, lord of the ear.

You will not last in his nostril (*Srt*); Khenemtjau-foremost-of-Hesret’ is against you, lady of the nostril. Beware in case she extinguishes the north-breeze in the presence of the great ones.

You will not last in his lips (*spty*); Anubis is against you, lord of the lips.

You will not last in his tongue (*nst*), Sefekhabwy is against you, lady of the tongue.

You will not last in his neck (*nHbt*); Wadjet is against you, lady of the neck.

You will not last in his throat (*aSaS*); Meret is against you, lady of the throat. Beware in case her voice is hoarse in the presence of Ra.

You will not last in his breast-bone (*qAbt*); Nut is against you, mistress of the breast-bone, the lady who bore the gods and who gives suck [….]

You will [not] last in his arm (*xpS*); Montu is against you, lord of the two arms.

You will not last in his spine (*iAt*); Ra is against you, lord of the vertebrae.

You will not last in his side (*Drww*); Seth is against you, lord of the side.

You will not last in his liver (mist), in his lungs (*wfA*), in his heart (*HAty*), in his kidneys (*ggt*), in his spleen (*nnSm*), in his intestines (*mXtw*), in his ribs (*spr*) or any of his internal organs (*iwf n Xt*); Imseti, Hapy, Duamutef, Qebehsenuef, the gods in the torso (*imw Xt*), are against you.

You will not last in his pelvic-region (pHwy); Hathor is against you, lady of the pelvic-region.

You will not last in his penis (*Hnn*); Horus is against you, lord of the penis.

You will not last in his testicles (*Ast*); Reshpu is against you, lord of the testicles.

You will not last in his thighs (*mnty*); Horus is against you, lord of the thighs who went over the desert alone.

You will not last in his knee (*pd*); Sia is against you, lord of the knee.

You will not last in his shin (*sDH*); Nefertem is against you, lord of the shins.

You will not last in his feet (*Tbty*); Nebet-debwet is against you, lady of the feet.

You will not last in his toenails (*ant*); Anuqe is against you, lady of the toenails.

You will not last in the sting (*psH*); Selqet is against you, lady of the sting.

You will not last, you will not get cool there, there is no place (*st*) to stay.

Come out down onto the ground. Look, I have charmed (*Snt.n=i*), I have spat out (*psg.n=i*) and I have drunk (*swr.n=i*) you. As Horus belongs to his mother, so A born of B belongs to his mother. As Horus lives, so does he live.

This antagonistic relationship can be analysed using the framework of force dynamics,[[25]](#footnote-25) the conceptual organisation (often by metaphorical transfer) of various forms of interaction as between an agonist (the focal force entity) and an antagonist (a resisting force). In this spell the ancient Egyptian conception of the venom (*mtwt*) lends itself to being considered as an agonist, here an agentive force whose presence within the body needs resisting and which needs to be overcome and repelled. It is not the body itself which is conceived of here as directly resisting (as antagonist) the venom; indeed the body, depicted through its constituent parts, plays a passive or locative role (a site, as a series of containers, for the contest). Nor is the magical practitioner in this passage the direct antagonist (though he is indirectly as the person conducting the rite). Rather the antagonist force here comes from the divine invoked by the magical rites performed by the practitioner to engage the force of the venom with the power at their disposal (as the stronger force) on the side of the victim within the various parts of the victim’s body. In the context of the spell, with no place to go the venom is then forced out from the body.

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**Online resources:**

The British Museum Collection Online < <http://www.britishmuseum.org/research/collection_online/search.aspx> >

The Deir el-Medina Database < <http://www.leidenuniv.nl/nino/dmd/dmd.html> >

1. Some of the material here was included in a presentation for Egyptology Scotland in August 2002 and the University of Liverpool day school ‘Ritual and magic in ancient Egypt’ in March 2010. [↑](#footnote-ref-1)
2. The particular dates I take, for convenience, from Shaw 2000. [↑](#footnote-ref-2)
3. The most recent publication is Demarée 2002: 18 (catalogue entry), pls. 25–8 (greyscale photographs and transcription). Demarée reproduces in greyscale the earlier colour transcription from Černý and Gardiner 1957: pls. lxxxiii–lxxxiv (which displays the entries in red ink to better effect and is reproduced at 1:1). Colour images can be accessed from the *British Museum Collection Online*. No comprehensive English translation has been published in print (but see the *British Museum Collection Online* entry), although Janssen 1980 provides a comprehensive discussion of the contents of the ostracon. Further data on the ostracon and other source material from Deir el-Medina can be accessed from the online *Deir el-Medina Database*. [↑](#footnote-ref-3)
4. Černý 2001/1973 remains a key resource for the organisation of the gang. [↑](#footnote-ref-4)
5. At the time of the research reported in Janssen 1980, the organisation of texts of this sort into ordered listing of workmen had not been recognised and so the comments in Janssen 1980: 127–9 and his use of numbering of workmen on p. 130 and throughout his paper would now be updated; hence my extended comments here. Following my work in Collier 2004 I number the workmen by their side (R for right and L for left) along with the position in the ordered listing. So L7 Seba, for example, indicates the workman Seba, who appears as the seventh name in the listing of the left side of the gang. [↑](#footnote-ref-5)
6. The number is usually stated to be forty (e.g. Janssen 1980: 128), but the name ‘Nakhy’, which appears in Černý and Gardiner’s additional line 9a opposite the entry for line 9 for R8 Hehnakhu, is actually a shortened form of the name R5 Amennakht from line 6. So I do not follow Janssen’s comments on Nakhy (Janssen 1980: 128, 129 n.5) nor on his numbering of him as his number [38] (Janssen 1980: 130). Such additional entries for certain names, dislocated from the original entry also occur, with explicit naming, for R3 Siwadjet (main entry line 4, supplementary entries in lines 7a–b) and R4 Horemwia (main entry line 5, supplementary entry labelled 5b. Treating Amennakht and Nakhy as one and the same individual allows for a more direct comparison between the ordered listings of names on O. BM EA 5634 and the slightly later O. DeM 706 where the name Nakhy appears exactly in the R5 position where the name Amennakht appears on O. BM EA 5634. See Grandet 2000: 2 for the comparison, but note that Grandet does not recognise the equation of Nakht and Amennakht. [↑](#footnote-ref-6)
7. As Janssen discusses in detail (Janssen 1980: 132-4), the ostracon covers the majority of one calendar year and start of the next, but lists absences only for days when the workmen were at work (Janssen 1980: 134 suggests that there may have been no more than seventy working days during this period). The ancient Egyptian calendar year was a solar year of 365 days divided into 360 days + 5 extra days at the end of the year. The 360 days were divided into 12 months each of 30 days, themselves organised into 3 seasons, each comprising 4 months. The seasons are: *Akhet* (inundation), *Peret* (growing), *Shemu* (harvest). In ancient Egyptian texts dates are usually written by the number of the month within the relevant season and then the specific day. In translation this will be rendered here in the following way: IV *Akhet* 17, which means ‘fourth month in the *Akhet* season, day 17’. As Janssen notes, the absence entries on O. BM EA 5634 seem to begin with III *Akhet* and then continue throughout the remainder of the year with absences from the start of the next calendar year in I *Akhet* occurring at the ends of entries. Incidentally, this accords with the equation proposed here of Nakhy and Amennakht. Two absences in I *Akhet* 14 and 15 are recorded for Nakhy on the additional line 9a. The absences of R5 Amennakht stretch from IV *Akhet* 15 though to III *Shemu* 26 and are recorded over the full length of line 6, even requiring the scribe to utilize the edge of the ostracon. Thus an additional line for Amennakht’s I *Akhet* absences is entirely in accord with the practice of the scribe in this early section of the ostracon. [↑](#footnote-ref-7)
8. The entries for Paherypedjet as doctor are discussed in Janssen 1980: 137 and translated in McDowell 1999: 54 (no. 25). [↑](#footnote-ref-8)
9. For this reason Janssen 1980: 141-143 interpreted *Hsmn* as purification following childbirth. However, Wilfong 1999 has provided a convincing defence of *Hsmn* as referring to menstruation here, including a reconstruction of the cycles for the relevant women over the period covered by the ostracon, which, interestingly, points to evidence for synchronisation of cycles. [↑](#footnote-ref-9)
10. Seba (iii) in Davies 1999: 10-11 with chart 6. [↑](#footnote-ref-10)
11. Cf. Janssen 1980: 134 and Černý 2001/1973: 105-6. [↑](#footnote-ref-11)
12. Many of the other reasons for absence involve more than 1-day periods of absence and each day is recorded separately, as can be seen from the remainder of Seba’s entry provided above [↑](#footnote-ref-12)
13. O. Cairo CG 25517, 25519 and 25521 are published in Černý 1935: 15\*-17\*, 18\*-19 and 22\*-25 respectively. Further comments in e.g. Collier 2004: 34-7 and the *Deir el-Medina Database* entries for the individual ostraca. [↑](#footnote-ref-13)
14. Salama and Sharshar 2013: 77 (see also images on 79-81). Cf. Keenan 1998/1980: 18 who lists *Androctonus australis*, *Androctonus amoreuxi* and *Leiurus quinquestriatus* in his list of dangerously venomous scorpions in Egypt. [↑](#footnote-ref-14)
15. Keenan 1998/1980: 3. Since I am not an expert in this field, I condense but stick closely to Keenan’s text here and in the discussion of symptoms. [↑](#footnote-ref-15)
16. Salama and Sharshar 2013: 83 refer to there being an estimated 100,000 distinct peptides in scorpion venom, with only a limited number having been described to date. [↑](#footnote-ref-16)
17. Keenan 1998/1980: 25. [↑](#footnote-ref-17)
18. See Keenan 1980: 30-1 for the full listing. [↑](#footnote-ref-18)
19. For a useful collection of scorpion spells in English translation, see Borghouts 1978: 51-85 (nos. 84-123). [↑](#footnote-ref-19)
20. P. Chester Beatty VII, now in the British Museum as P. BM EA 10687, was published in Gardiner 1935: 55-65 (full translation), pls. 33–8 (full transcription, partial photographic record). Further images are available from the *British Museum Collection Online*, but a full published photographic record remains lacking. For the Chester Beatty papyri as coming originally from Deir el-Medina, see conveniently Pestman 1982. The text is a compendium of spells against scorpion stings. [↑](#footnote-ref-20)
21. This requires a concept of body in which the venom can move through the body from the site of injection, affecting various parts, through to being ejected from various orifices including the mouth. Because this body image is mostly taken for granted in these texts, with the focus being on ejecting the venom, I will not discuss this here. Compare Nyord 2009 for a discussion of the ancient Egyptian conception of the body which is commensurate with my work here. [↑](#footnote-ref-21)
22. An example of a prophylactic charm or amulet aimed at warding off the venom (*mtwt*). The text occurs in a number of variants. See Koenig 1982. [↑](#footnote-ref-22)
23. This type of text, associating the parts of the body with protective deities is not restricted to such ‘magical’ texts. Similar listings can also be found in mortuary texts ranging from the Pyramid Texts through to the Book of the Dead. In these lists the primary focus is an association of the deity with each of the body parts of the deceased, rather than deployment of their antagonistic role. Chapter 42 of the Book of the Dead ends with a rubric which provides an overview of the notion at play here of the relationship between the body and protective divinity: ‘There is no body-part of mine devoid of a god’. [↑](#footnote-ref-23)
24. Whilst quite a few Ancient Egyptian anatomical terms are well understood there are others which are not quite so secure. I follow here the presentation in Walker 1996: 265–79. Jim Walker was a practicing GP who also gained a PhD in Egyptology. Walker 1996 is the posthumous publication of his PhD work. [↑](#footnote-ref-24)
25. More broadly I am presuming here a cognitive approach to ‘magic’, as for example in Sørensen 2007 (see e.g. Sørensen 2007: 42-3 on the utility of the framework of force dynamics). The framework of ‘force dynamics’ derives from the linguistic work of Leonard Talmy; see conveniently Talmy 2000. [↑](#footnote-ref-25)