

# PLAGUE PRAYERS OF KING MURSILI II

## NO. 8 MURSILI'S HYMN AND PRAYER TO THE SUN-GODDESS OF ARINNA (CTH 376.A)

### *Invocation*

§1 (E i 1-10; A i 1'-5') [0 Sun-goddess of Arinna! A mighty and honored goddess are] you! Mursili, [the king, your servant,] sent me [(?)<sup>2</sup>] saying: "Go and say to my [lady, the Sun-goddess] of Arinna: "I shall invoke the Sun-goddess of [Arinna], my personal [goddess] (lit. of my head). [Whether] you, [0 honored] Sun-goddess of Arinna, are above in heaven [among the gods], or in the sea, or gone to the mountains [...] to roam, or if you have gone to an enemy land [for battle], now let the sweet odor, the cedar and the oil summon you. Return to your] temple! [I am here-with invoking you] by means of offering bread [and libation]. [So] be pacified and listen [to what I say to you]!

### *Hymn*

§2 (A i 6'-20') [You, 0 Sun-goddess of Arinna, are an honored] goddess. [To you, my goddess,] there are revered temples in Hatti, but in no other land are there [any] such for you. [Only in Hatti they] provide for [pure and holy] festivals and rituals for you, [but in no other land] do they provide any such [for you. Lofty temples adorned] with silver and gold [you have only in Hatti, and in no other land] is there anything for you. [Cups and rhyta of silver,] gold, and precious stones you have only in Hatti.

Only in Hatti they celebrate festivals for you—the festival of the month], festivals throughout the course of the year, [autumn, winter] and spring, and the festivals of the sacrificial rituals. In no other land do they perform anything for you.

§3 (A i 21'-28') Your divinity, 0 Sun-goddess of Arinna, is honored only in Hatti. Only in Hatti is Mursili, the king, your servant, respectful to you. They perform fully substitute rites, rituals, and festivals for you, 0 Sun-goddess of Arinna. Everything they present to you is pure. Furthermore, the silver and gold in your temples is treated with reverence, and no one approaches it.

§4 (A i 29' - ii 2') You, 0 Sun-goddess of Arinna, are an honored goddess. Your name is honored among names, and your divinity is honored among gods. Furthermore, among the gods you are the most honored and the greatest. There is no other god more honored or greater than you. You are the lord (*sic*) of just judgment. You control the kingship of heaven and earth. You set the borders of the lands. You listen to prayers. You, 0 Sun-goddess of Arinna, are a merciful goddess and you have pity. The divinely guided person is dear to you, 0 Sun-goddess of Arinna, and you, 0 Sun-goddess of Arinna, exalt him. Within the circumference of heaven and earth you, 0 Sun-goddess of Arinna, are the source of light. Throughout the lands you are a favored deity, and you are father and mother to all the lands. You are the divinely guided lord (*sic*) of judgment, and in the place of judgment there is no tiring of you. Also among the primeval gods you are favored. You, 0 Sun-goddess of Arinna, allot the sacrifices to the gods, and the share of the primeval gods you allot as well. They open up the door of heaven for you, and you cross the gate of heaven, 0 favored [Sun-goddess of Arinna]. The gods of heaven [and earth bow down to you], 0 Sun-goddess of Arinna. Whatever you say, 0 Sun-goddess of Arinna, [the gods] fall down before you, 0 Sun-goddess of Arinna.

*Few lines missing to the end of col. i. The beginning of col. ii is completed by 544/u (Güterbock 1980). The line numeration of Lebrun 1980 is indicated in brackets.*

§5 (A ii 1-9 [1'-2']) The person at whom the gods are angry and whom they reject, you, 0 Sun-goddess of Arinna, have pity on him! And now, sustain Mursili, the king, [your servant], and [take] Mursili, the king, your servant, by the hand! And to [the words] which Mursili, the king, keeps telling you, hold [your ear] and listen to them!

*Pleading*

§6 (A ii 10–17 [3'-10']) 0 gods, What is this that you have done? You have allowed a plague into Hatti, and the whole of Hatti is dying. No one prepares for you the offering bread and the libation anymore. The plowmen who used to work the fallow fields of the gods have died, so they do not work or reap the fields of the gods. The grinding women who used to make the offering bread for the gods have died, so they do not [make] the god's offering bread any longer.

§7 (A ii 18–44 [11'-37']) The cowherds and shepherds of the corrals and sheepfolds from which they used to select sacrificial cattle and sheep are dead, so that the corrals and sheepfolds are neglected. So it has come to pass that the offering bread, the libations, and the offering of animals have stopped. And you, 0 gods, proceed to hold the sin against us in that matter. To mankind, our] wisdom has been lost, and whatever we do right comes to nothing. 0 gods, whatever sin you perceive, either let a man of god come [and declare it], or let the old women, [the diviners, or the augurs establish it], or let ordinary persons see it in a dream. We shall stroke(?) by means of the thorns(?)/pins(?) of a sarpa. 0 gods, [again] have pity on the land of Hatti. On the one hand it is oppressed with the plague, [and on the other] it is oppressed by hostility. The protectorates which are round about, Mittanni and [Arzawa], are all in conflict, and they do not respect [the gods]. They have transgressed the oath of the gods, and they wish to despoil the temples of the gods. May this become an additional (reason) for the gods' vengeance. Turn the plague, the hostility, the famine, and the severe fever towards Mittanni and Arzawa. Rested are the belligerent lands, but Hatti is a weary land. Unhitch the weary one, and hitch up the rested one.

§8 (A ii 45–55 [38'-48']) Moreover, those lands which belong to Hatti, the Kaska land—they were swineherds and weavers—Arawanna, Kalasma, Lukka, and Pitassa, have declared themselves free from the Sun-goddess of Arinna. They discontinue (the payment of) their tributes and began to attack Hatti. In the past, Hatti, with the help of the Sun-goddess of Arinna, used to maul the surrounding lands like a lion. Moreover, Aleppo and Babylon which they destroyed, they took their goods—silver, gold, and gods—of all the lands, and they deposited it before the Sun-goddess of Arinna.

§9 (A ii 56–60 [49'-53']) But now, all the surrounding lands have begun to attack Hatti. Let this become a further reason for vengeance for the Sun-goddess of Arinna. Goddess, do not degrade your own name!

§10 (A ii 61–67 [54'-60']) Whoever is a cause of rage and anger to the gods, and whoever is not respectful to the gods, let not the good ones perish with the evil ones. Whether it is a single town, a single house, or a single person, 0 gods, destroy only that one! [Look upon] Hatti [with pity, and give the evil plague to other lands.]

*Some ten lines to the end of col. ii are missing. They may be completed from the parallel prayer to Telipinu (no. 9, §§ 10–13).*

§11' (A iii 1–44) [Some] wish [to burn down your temples]; others wish to take away your rhyta, [cups], and objects of [silver and gold]; others wish to lay waste your fields, your gardens, and your groves; others wish to capture your plowmen, gardeners, and grinding-women. To those enemy lands give severe fever, plague, and famine, 0 Sun-goddess of Arinna, my lady! And you yourself, 0 Sun-goddess of Arinna, let yourself be invoked! [... let] the oppressed become fit [again]. To Mursili, the king, and to the land of Hatti turn [with favour]! Grant to Mursili [and to the land of Hatti] life, health. [vigor, brightness of] spirit forever, and longevity!

*Five destroyed lines which may be completed from the parallel prayer, no. 9, § 14.*

Grant forever growth of grain, [vines, fruit-trees(?), cattle], sheep, horses [ ... ].

*Six destroyed lines which may partly be restored from no. 9, §11:*

[Give them a man's valiant,] battle-ready, divine weapon! Put beneath their feet the enemy lands, and [may they destroy them].

0 Sun-goddess of Arinna, [have] pity on Hatti. [ ... ]. [ ... ] winds [ ... ]. May the winds of prosperity come, [and may the land of Hatti grow and] prosper. And to you, 0 gods, your offering bread and your libations will be presented. And the congregation cries out: "[So be it]!"

### *Colophon*

(A iv 1'-8') *Few lines missing ...* ] to invoke [the Sun-goddess of Arinna ... ] I then recorded the words of the tablet. I have invoked the Sun-goddess of Arinna in Hattusa for seven days, and I have also invoked her for seven days in Arinna, and I spoke these words. There is in addition a separate tablet of the invocation.

(E iv 2'-7') [ ... ] "When [the people] of Hatti [ ... ] are dying [ ... ]"; Copy [tablet]: "When they invoke the Sun-goddess of Arinna [ ... ], they speak [these words]."

NO. 9 MURSILI'S HYMN AND PRAYER TO THE GOD  
TELIPINU (CTH 377)

*Invocation*

§1 (i 1–2) [This] tablet the scribe shall read out daily [to the god and shall praise the god saying: §2 (i 3–7) 0 Telipinu, a mighty and honored god are you! Mursili the king, your servant, sent me and your maid-servant the queen, they sent me, saying: "Go, invoke Telipinu, our lord, our personal god (lit. of our head) saying:"

§3 (i 8–10) Whether you, 0 honored Telipinu, are above in heaven among the gods, or in the sea, or gone to the mountains to roam, or if you have gone to an enemy land for battle,

§4 (i 11–17) now let the sweet odor, the cedar and the oil summon you. Return to your temple! I am herewith invoking you by means of offering bread and libation. So be pacified and let your ear be turned to what I say to you, 0 god, and listen to it!

*Hymn*

§5 (i 18–24) You, Telipinu, are an honored god. To you, my god, there are revered temples only in Hatti, but in no other land are there any such for you. Only in Hatti they provide for pure and holy festivals and rituals for you, but in no other land do they provide any such for you.

§6 (i 25-ii 2) Lofty temples adorned with silver and gold you have only in Hatti, and in no other land are there any such for you. [Cups] and rhyta of silver, gold, and precious stones you have only in Hatti.

§7 (ii 3–8) Only in Hatti they celebrate(!) festivals for you—the festival of the month, festivals throughout the course of the year, winter, spring and fall, and the festivals of the sacrificial rituals. In no other land do they perform anything for you.

§8 (ii 9–19) Your divinity, Telipinu, is honored [only in Hatti]. It is in the land of Hatti that Mursili, the king, your servant, the queen, your maid-servant, and the princes, your servants, are respectful to you. They perform fully your substitute rites, rituals, and festivals for you, 0 Telipinu. Everything they present to you is holy and pure. Furthermore, your rhyta, your cups and your objects in your temples are treated with reverence. [They are] counted over and no one approaches the objects.

§9 (ii 20–22) [You,] Telipinu, are an honored god. [Your] name is honored among names, [and your divinity] is honored among gods.

*The rest of col. ii is broken off It was probably similar, though shorter, than the parallel passage in the prayer to the Sun-goddess of Arinna (no. 8, §4-5).*

*Pleading*

§10 (iii 2'-8') [ ... Turn] with benevolence toward [ ... ]. 0 Telipinu, mighty god, keep alive the king, the queen and the princes, and give them life forever, health, longevity and vigor! [Give] them in their soul [gentleness(?)], radiance and joy!

§ 11 (iii 9'-15') Give them sons and daughters, grandchildren and great-grandchildren! Give them contentment(?) and obedience(?). Give them the growth of grain, vines, cattle, sheep and mankind. Give them a man's valiant, battle-ready, divine weapon! Put beneath their feet the enemy lands, and [may they destroy them].

§12 (iii 6-17) But from Hatti [drive out] the evil fever, plague, famine, and locusts.

§13 (iii 18-iv 8) The enemy lands which are quarrelling and at odds, some are not respectful to you, 0 Telipinu, or to the gods of Hatti; others wish to burn down your temples; others wish to take away your rhyta, cups, and objects of silver and gold; others wish to by waste your fallow lands, vineyards, gardens and groves; others wish to capture your plowmen, vinedressers. gardeners and grinding-women. To those enemy lands give severe fever, plague, famine and locusts.

§14 (iv 9-18) Grant to the king, the queen, the princes and the land of Haiti life, health, vigor, longevity, and brightness of spirit forever! Grant forever growth of grain, vines, fruit-trees(?), cattle, sheep, goats, pigs, mules, asses (var.: horses), together with the beasts of the field, and mankind. May they grow! The rains [ ... ]. May the winds of prosperity come, and in the land of Hatti may everything grow and prosper! And the congregation cries out: "So be it!"

*Colophon*

(iv 19-21) One tablet. Complete. When the scribe presents daily a plea on behalf of the king before Telipinu.

NO. 10 MURSILI'S "THIRD" PLAGUE PRAYER TO THE SUN-GODDESS OF ARINNA (CTH 378.111)

§1 (obv. 1-6) 0 Sun-goddess of Arinna, my lady! 0 gods, my lords! What is this [you have done]? You have allowed a plague into Hatti, so that Hatti has been badly oppressed [by the plague. People kept dying] at the time of

my father, at the time of my brother, and now since I have become priest of the gods, they keep on dying [in my time]. For twenty years now people have been dying [in great numbers] in Hatti. Hatti [has been very badly damaged] by the plague.

§2 (obv. 7–13) Hatti has been very much oppressed by the plague. [If someone] produces a child, [the ... ] of the plague [snatches (?)] it from him. Should he reach adulthood, he will not attain old age. [And even if old age(?)] will be left for someone, he [will be oppressed(?) by] the plague. He will not [return] to his previous condition. When he reaches old age, [he will ... ], but he will not keep warm.

*The rest of the obverse and a large portion of the reverse are lost.*

§3' (rev. 2'-14') I, Mursili. [your priest, your servant,] hereby plead my case. Hear] me 0 gods, my lords! [Send away] the worry from my heart, [take away the anguish from my soul?] Let the plague [be removed] from Hatti, and send it to the enemy lands. In Hatti [ ... ]. But if the gods, my lords, [do not remove] the plague [from Hatti], the makers of offering bread and the libation pourers will keep on dying. And if they too die, [the offering bread] and the libation will be cut off from the gods, my lords. Then you, 0 gods, [my lords], will proceed to hold the sin against me, saying: "Why [don't you give us] offering bread and libation?" May the gods, my lords, again have pity on Hatti, and send the plague away. [May the plague subside] in Hatti. May it thrive and grow and [return to] its previous condition.

## NO. 11 MURSILI'S "SECOND" PLAGUE PRAYER TO THE STORM-GOD OF HATTI (CTH 378.11)

§1 (C i 1–18) 0 Storm-god of Hatti, my lord! [0 gods], my lords! Mursili, your servant, has sent me saying: "Go speak to the Storm-god of Hatti, my lord, and to the gods, my lords": What is this that you have done? You have allowed a plague into Hatti, so that Hatti has been very badly oppressed by the plague. People kept dying in the time of my father, in the time of my brother, and since I have become priest of the gods, they keep on dying in my time. For twenty years now people have been dying in Hatti. Will the plague never be removed from Hatti? I cannot control the worry of my heart, I can no longer control the anguish of my soul.

§2 (C i 19–28; A obv. 1'-5') When I celebrated the festivals, I busied myself for all the gods. I did not pick out any single temple. I have repeatedly pled to all the gods concerning the plague, and I have repeatedly made vows [to them] saying: "Listen [to me 0 gods], my [lords, and send away] the plague from Hatti. Hatti can [no longer bear this plague. Let the

matter on account of which] it has been decimated [either be established through an oracle], or [let me see] it [in a dream, or let a man of god] declare [it]. "But the gods [did not listen] to me, [and] the plague has not subsided in Hatti. [Hatti has been severely oppressed by the plague].

§3 (A obv. 6'-12') [The few] makers of offering bread [and libation pourers] of the gods who still remained died off. [The matter of the plague] continued to trouble [me, and I inquired about it] to the god [through an oracle]. [I found] two old tablets: one tablet dealt with [the ritual of the Mala River]. Earlier kings performed the ritual of the Mala River, but because [people have been dying] in Hatti since the days of my father, we never performed [the ritual] of the Mala River.

§4 (obv. 13'-24') The second tablet dealt with the town of Kurustamma: how the Storm-god of Hatti carried the men of Kurustamma to Egyptian territory and how the Storm-god of Hatti made a treaty between them and the men of Hatti, so that they were put under oath by the Storm-god of Hatti. Since the men of Hatti and the men of Egypt were bound by the oath of the Storm-god of Hatti, and the men of Hatti proceeded to get the upper hand, the men of Hatti thereby suddenly transgressed the oath of the gods. My father sent infantry and chariotry, and they attacked the borderland of Egypt, the land of Amqa. And again he sent, and again they attacked. When the men of Egypt became afraid, they came and asked my father outright for his son for kingship. But when my father gave them his son, as they led him off, they murdered him. My father was appalled and he went to Egyptian territory, attacked the Egyptians, and destroyed the Egyptian infantry and chariotry.

§5 (obv. 25'-34') At that time too the Storm-god of Hatti, my lord, by his verdict caused my father to prevail, and he defeated the infantry and the chariotry of Egypt and beat them. But when the prisoners of war who had been captured were led back to Hatti, a plague broke out among the prisoners of war, and [they began] to die. When the prisoners of war were carried off to Hatti, the prisoners of war brought the plague into Hatti. From that day on people have been dying in Hatti. When I found the aforementioned tablet dealing with Egypt, I inquired about it to the god through an oracle saying: "Has this matter been brought about by the Storm-god of Hatti because the men of Egypt and the men of Hatti had been put under oath by the Storm-god of Hatti?"

§6 (A obv. 35'-46'—C iii 3'-7') "And because the *damnassara*-deities were in the temple of the Storm-god, my lord, whereupon the men of Hatti themselves suddenly transgressed the word (of the oath), did this become

the cause for the anger of the Storm-god of Hatti, my lord?" And it was confirmed by the oracle. Because of the plague I also asked the oracle about the ritual of the [Mala] River. And then too it was confirmed that I should appear before the Storm-god of Hatti, my lord. I have [just] confessed [the sin before the Storm-god of Hatti]. It is so. We have done [it. But the sin did not] take place in my time. [It took place] in the time of my father [ ... ]. [ ... that] I know for certain [ ... ]. [ ... ] the matter. [But since] the Storm-god [of Hatti, my lord], is angry about [that matter, and] since people are dying in Hatti, [ ... ] I will keep making [a plea] about it [to] the Storm-god of Hatti, my lord. I kneel down to you and cry for mercy. Hear me, 0 Storm-god of Hatti, my lord! May the plague be removed from Hatti.

§7 (C iii 8'-19'-B iii 16'-24') I will keep removing the causes of the plague which have been established through oracle, and I will keep making restitution for them. With regard to the problem of the oath of the gods which was established as a cause for the plague, I have offered the ritual of the oath for the Storm-god of Hatti, [my lord]. I have also offered [to the gods, my lords]. [I have offered ... ] to you, Storm-god of Hatti [ ... ], a ritual for you, [0 gods ... ]. As for the [ritual] of the Mala River, which was established for me as a cause for the plague, since I am herewith on my way [to] the Mala River, forgive me, 0 Storm-god of Hatti, my lord, and 0 gods, my lords, for (neglecting) the ritual of the Mala River. I am going to perform the ritual of the Mala River, and I will carry it out. And as for the reason for which I am performing it, namely, because of the plague, have pity on me, 0 gods, my lords, and may the plague subside in Hatti.

§8 (A rev. 10'-19') 0 Storm-god of Hatti, my lord! 0 gods, my lords! So it happens that people always sin. My father sinned as well and he transgressed the word of the Storm-god of Hatti, my lord. But I did not sin in any way. Nevertheless, it so happens that the father's sin comes upon his son, and so the sin of my father came upon me too. I have just confessed it to the Storm-god of Hatti, my lord, and to the gods, my lords. It is so. We have done it. But because I have confessed the sin of my father, may the soul of the Storm-god of Hatti, my lord, and of the gods, my lords, be appeased again. May you again have pity on me, and send the plague away from Hatti. Let those few makers of offering bread and libation pourers who still remain not die on me.

§9 (rev. 20'-36') I am now continuing to make my plea to the Storm-god, my lord, concerning the plague. Hear me, 0 Storm-god, my lord, and save my life! [I say] to you [as follows]: The bird takes refuge in the cage, and the cage preserves its life. Or if something bothers some servant and he makes a plea to his lord, his lord listens to him, [has pity] on him, and

he sets right what was bothering him. Or if some servant has committed a sin, but he confesses the sin before his lord, his lord may do with him whatever he wishes: but since he has confessed his sin before his lord, his lord's soul is appeased, and the lord will not call that servant to account. I have confessed the sin of my father. It is so. I have done it. If there is some restitution (to be made), then there has already [been paid (?)] much for this plague [caused by (?)] the prisoners of war who were brought back from Egyptian territory and by the civilian captives who were brought back. [And] since Hatti has made restitution through the plague, it [has made restitution] for it twenty-fold. Indeed, it has already become that much. And yet the soul of the Storm-god of Hatti, my lord, and of all the gods, my lords, is not at all appeased. Or if you want to require from me some additional restitution, specify it to me in a dream, and I shall give it to you.

§10 (rev. 37'-40') I am now continuing to plead to the Storm-god of Hatti, my lord. Save my life! [And if] perhaps people have been dying for this reason, then during the time that I set it right, let there be no more deaths among those makers of offering bread and libation pourers to the gods who are still left.

§11 (A rev. 41'-44'-C iv 14'-22') [Or] if people have been dying because of some other reason, then let me either see it in a dream, or let it be established through an oracle, or let a man of god declare it, or, according to what I instructed all the priests, they shall regularly sleep holy. 0 Storm-god of Hatti, save my life! Let the gods, my lords, show me their divine power! Let someone see it in a dream. Let the reason for which people have been dying be discovered. We shall stroke(?) by means of the pins(?) of a *sarpa*. 0 Storm-god of Hatti, my lord, save my life, and may the plague be removed from Hatti.

### *Colophon*

(C iv 23-25) One tablet, complete. [How] Mursili made [a plea] because of the plague [ ... ].

## NO. 12 MURSILI'S "FIRST" PLAGUE PRAYER TO THE ASSEMBLY OF GODS AND GODDESSES (CTH 378.1)

§1 (obv. 1-7) [All] you male [gods], all female gods [of heaven(?)], all male gods [of the oath], all female gods of the oath, [all] male primeval [gods], all female (primeval) gods, you gods who have been summoned

to assembly for bearing witness to the oath on this [matter], mountains, rivers, springs, and underground watercourses. I, Mursili, [great king(?)], your priest, your servant, herewith plead with you. [Listen] to me 0 gods, my lords, in the matter in which I am making a plea to you!

§2 (obv. 8–15) 0 gods, [my] lords! A plague broke out in Hatti, and Hatti has been severely damaged by the plague. And since for twenty years now in Hatti people have been dying, the affair of Tudhaliya the Younger, son of Tudhaliya, started to weigh on [me]. I inquired about it to the god through an oracle, and the affair of Tudhaliya was confirmed by the deity. Since Tudhaliya the Younger was their lord in Hatti, the princes, the noblemen, the commanders of the thousands, the officers, [the corporals(?)] of Hatti and all [the infantry] and chariotry of Hatti swore an oath to him. My father also swore an oath to him.

§3 (obv. 16–22) [But when my father] wronged Tudhaliya, all [the princes, the noblemen], the commanders of the thousands, and the officers of Hatti [went over] to my father. The deities by whom the oath was sworn [seized] Tudhaliya and they killed [Tudhaliya]. Furthermore, they killed those of his brothers [who stood by] him. [ ... they sent to Alasiya (Cyprus) and [ ... ]. And [since Tudhaliya the Younger] was their [lord], they [ ... ] to him [ ... ] [ ... ] and the lords transgressed the oath [ ... ].

§4 (obv. 23–40) [But, you, 0 gods], my [lords], protected my father. [ ... ]. And because Hatti [was attacked(?)] by the [enemy, and the enemy] had taken [borderlands] of Hatti, [my father kept attacking the enemy lands] and kept defeating them. He took back the borderlands of Hatti, which [the enemy had taken] and [resettled] them. Furthermore, [he conquered] still other foreign lands [during his] kingship. He sustained Hatti and [secured] its borders on each side. During his reign the entire land of Hatti did well. [Men(?)], cattle and sheep became numerous in his days, and the civilian prisoners who [were brought] from the land of the enemy survived as well. Nothing perished. But now you, 0 gods, [my lords], have eventually taken vengeance on my father for this affair of Tudhaliya the Younger. My father [died(?)] because of the blood of Tudhaliya, and the princes, the noblemen, the commanders of the thousands, and the officers who went over [to my father], they also died because of [that] affair. This same affair also came upon the land of Hatti, and the population of the land of [Hatti] began to perish because of [this] affair. Until now Hatti [ ... ], but now the plague [has become] even [worse]. Hatti has been [severely] damaged by the plague, and it has been decimated. I, Mursili, [your servant], cannot [overcome] the worry [of my heart], I can no longer [overcome] the anguish of my soul.

§5 (obv. 41–47) *Very fragmentary passage in which Mursili apparently con-tinues to plead with the oath-deities concerning their vengeance of Tudhaliya's blood. About five more lines, which open a new paragraph, are missing from the end of the obverse. The first seven lines of the reverse, which may belong to the same paragraph, are also very fragmentary.*

§6 (rev. 8'-12') [Now,] I have confessed [it to you, 0 gods(?). Because] my father [killed (?)] Tudhaliya [and ... ], my father therefore [performed] a ritual (for the expiation) of blood. But [the land of] Hatti did not [perform.] anything for itself. I performed [the ritual of the blood], but the land did not perform anything. They did nothing on behalf [of] the land.

§7 (rev. 13'-20') Now, because Hatti has been severely oppressed by the plague, and the population of Hatti continues to die, the affair of Tudhaliya has troubled the land. It has been confirmed for me by [the god], and I have further investigated [it] by oracle. They are performing before you, [0 gods], my lords, the ritual of the oath which was confirmed for you, [0 gods], my lords, and for your temples, with regard to the plague of the land and they are clearing [it (i.e. the oath obligation) before] you. And I am making restitution to you, 0 gods, my lords, with reparation and a propitiatory gift on behalf of the land.

§8 (rev. 21'-40') Because you, 0 gods, my lords, [have] taken vengeance for the blood of Tudhaliya, those who killed Tudhaliya [have made] restitution for the blood. But this bloodshed is finished in Hatti again: Hatti too has already made restitution for it. Since it has now come upon me as well, I will also make restitution for it from my household, with restitution and a propitiatory gift. So may the soul of the gods, my lords, again be appeased. May the gods, my lords, again be well disposed toward me, and let me elicit your pity. May you listen to me, to what I plead before you. I have [not] done any evil. Of those who sinned and did the evil, no one of that day is still here. They have already died off. But because the affair of my father has come upon me, I am giving you, 0 gods, my lords, a propitiatory gift on account of the plague of the land, and I am making restitution. I am making restitution to you with a propitiatory gift and reparation. May you gods, my lord, again [have] mercy on me, and let me elicit your pity. Because Hatti has been oppressed by the plague, it has been reduced in size. [And those makers of offering bread and libation pourers who used to prepare] the offering bread and the libation for the gods, my lords, [since Hatti] has been severely oppressed by [the plague], [they have died] from the plague. [The plague] does not subside at all,

and they continue to die, [even those] few [makers of offering bread] and libation pourers [who still remain will die, and nobody will prepare] for you offering bread and libation any longer.

§9 (rev. 41'-51') May [you gods, my lords], have mercy on [me again] because of the offering bread and the libation which [they prepare for you], and let me elicit your pity. Send the plague [away from Hatti]. Let those few makers of offering bread [and pourers of libation] who [still remain] with you not be harmed, and let them not go on dying, Let them prepare [the offering bread] and the libation for you. 0 gods, my lords, turn the plague [away, and send] whatever is evil to the enemy land. Whatever has happened in Hatti because of Tudhaliya, send it [away] 0 gods, [my lords]. Send [it] to the enemy land. May you again have mercy on Hatti, and let [the plague] subside. Furthermore, [because] I, your priest, your servant, elicit your pity, may you have mercy on me. Send away the worry from my heart, take away the anguish from my soul!

*Colophon*

(rev. 52'-53') [One tablet], complete. When Mursili made a plea [because of the plague ... ].

NO. 13 MURSILI'S "FOURTH" PLAGUE PRAYER  
TO THE ASSEMBLY OF GODS (ARRANGED BY LOCALITIES)  
(CTLH 378.IV)

§1 (i I-16) 0 gods, my lords: Noble Storm-god, the two lords of Landa, Iyarri, gods of Hatti, gods of Arinna, gods of Zippalanda, gods of Tuwanuwa, gods of Hupisna, gods of Durmitta, gods of Ankuwa, gods of Samuha, gods of Sarissa, gods of Hurma, gods of Hanhana, gods of Karahna, gods of Illaya, Kamrusepa of Taniwanda, gods of Zarruwisa, Storm-god of Lihzina, Protective-god of the Army Camp of His Majesty's father which is in Marassantiya, Uliliyassi of Parmanna, gods of Kattila, Storm-god of Hasuna, gods of Muwani, gods of Zazzisa, the Telipinugods [whose] temples in the land have been destroyed, gods of Salpa, Storm-god of Ar[ziya (?)].

§2 (i 17-20) 0 gods, my lords! I, Mursili, [your servant], your priest, herewith bow down to you. Lend me your ear and hear me in the matter in which I have bowed down to you.

§3 (i 21-35) 0 gods, my lords! Since ages past you have been inclined towards [men] and have [not] abandoned mankind. And mankind

[became] populous and your divine servants [were] numerous. They always set up for the gods, [my] lords, offering bread and libation. 0 gods, my lords, you have turned your back on mankind. All of a sudden, in the time of my grandfather Hatti was oppressed, [and it] became [devastated] by the enemy. Mankind was [reduced in number] by plague, and your [servants] were reduced in number. And among you, [gods], my lords, [one had no] temple, and [the temple] of another [fell into ruin]. Whoever [served] before a god perished, and [your] rites [were neglected]. [No] one performed [them] for you.

§4 (i 36–46) [But] when my [father] became king, [you], 0 gods, my lords, stood behind him. He resettled the [depopulated] lands. [And for you], 0 gods, my lords, in whatever temple there were no [objects], or whatever image of god had been destroyed, my father restored what he could, though what he could not, he did not restore. 0 gods, my lords, you never before oppressed my father, and you never before oppressed me. But now you have oppressed me.

§5 (i 47–55) When my father went to Egyptian territory; since that day of Egypt, death has persisted in [Hatti], and from that time Hatti has been dying. My father repeatedly inquired through the oracles, but he did not find you, 0 gods, my lords, through the oracles. I have also repeatedly inquired of you through oracle, but I have not found you, 0 gods, my lords, through oracle.

§6 *In this section the scribe (of manuscript A) left an empty space of about six lines, indicating through the single word "destroyed" that the corresponding passage in the manuscript from which he was copying was damaged.*

§7 (ii 1–3) *Only a few words are preserved from this paragraph (in both copies). It probably dealt with the rites (hazziwita) that Mursili intended to restore.*

§8 (B ii 3'-16') *The first three lines are very fragmentary.* For whatever [god] there is [a temple], but he has no [objects], I will restore [them for him]. And for whatever god [there is no temple], I will build a temple for him. And whichever [gods] have been destroyed, I will restore for them a statue [ ... and] its [ ... ] as before. *The rest of col. ii and all of col. iii, except the beginnings of lines, are lost.*

§9' (A iv 1–5) Or should I have restored it for [the gods], my lords, from my land, or from my infantry and chariotry? If I should indeed reestablish the gods, since now the members of my household, land, infantry and chariotry keep dying, by what means should I reestablish you, 0 gods?

§10' *As in §6, the scribe (of manuscript A) left an empty space of about ten lines, indicating that the corresponding passage in the 'manuscript from which he was copying was damaged.*

§11' (iv 16–28) And it dies, by what means should I reestablish [you]? 0 gods, have mercy on me again because of this [reason]! Turn(!) towards me! Send the plague away from the land! Let it subside in the towns where people are dying, and let the plague not return to the towns in which it has subsided! I have [said] to myself thus: "If the aforementioned word of the god is true, [and] my father [could not discover them] through an oracle, nor could I discover them [through an oracle], should the land of Hatti [inquire by oracle] and [will it discover] them through an oracle?" And I have pled my case. [ ... ] *The remaining fifteen lines or so are almost entirely lost.*

NO. 14 MURSILI'S "FIFTH" PLAGUE PRAYER  
TO THE ASSEMBLY OF GODS (ARRANGED TYPOLOGICALLY)  
(CTH 379)

§1 (i' 1–4) [Sun-god of Heaven], Storm-god [of ... , Sun-goddess of] Arinna, Mezzulla, [Hulla(?)/Zintuhi(?)], Storm-god of Hatti, [Storm-god of] Zippalanta;

§2 (i 5–6) [ ... ], Seri, Hurri, [Storm-god *pihaimi*(?)], all the Storm-gods;

§3 (i 7–8) [ ... ]. Hebat of Kummanni, all [the Hebat], Halki;

§4 (i 9–10) All [the Sarrumas(?)], [ ... ], all the Hebat-Sarrumas;

§5 (i 11–15) Protective-god (LAMMA), [Protective-god of] Hatti, all the Protective-gods, Ishtar, [Ishtar of the Field of] His Majesty, Ishtar of Samuha, [all the] Ishtars, Telipinu, all the Telipinus, War-god (ZABABA), all the War-gods;

§6 (i 16–22) Sun-goddess of the Netherworld, Lelwani, Pirwa, Marduk, Iyarri, Hasammeli, Fate-goddesses, Mother-goddesses, all the male gods of the assembly(!), all the female gods of the assembly(!). the place of assembly, the place in which the gods assemble for judgment.

*The rest of the column, about thirty lines, is almost entirely lost. The verbal endings at the end of lines 6"-8" in col. i(!) probably belong to second person plural imperatives, which may be addressed to the "male gods (and) female gods" mentioned in l. 5."*

§7' (ii' 6') [ ... ] [ ... the tablet of/about] Egypt.

§8' (ii 7'-17') To this tablet I did not add any word, nor did I remove [any]. 0 gods, my lords, take notice? I do not know whether any of those

who were kings before me added [any word] to it or removed any. I do not know anything, and I have not heard a word of it since.

§9' (ii 18'-24') I did not concern myself with those borders which were set for us by the Storm-god. Those borders that my father left me, those borders [I kept]. I did [not] desire from him [anything]. Neither [did I take anything] from his borderland.

§10' (ii 25') [ ... ] this matter [ ... ]. *Gap of about two lines between KBo 31.121 and KBo 31.121a, followed by three fragmentary lines.*

§11' (KUB 31.121a ii 6"-9") [ ... infantry and] chariotry of Hatti [ ... ]. [ ... ] He (i.e. Suppiluliuma) sent out Lupakki and Tarhunta-zalma, and they attacked those Lands.

§12' (ii 10"-15") The king of Egypt died in those very [days]. I was still a child, so I did not know whether the king of Egypt lodged [a protest(?)] to my father about those lands, or whether he [did] nothing.

§13' (ii 16"-20") And since the wife of the king of Egypt was a widow, she wrote to my father. [ ... ] to talk with women [ ... ]. I, in those [ ... ] I was not seen(?) [ ... ]. *Some eight lines missing at the end of col. ii. All of the reverse is broken off. From the colophon on the edge of KUB 48.111 only "not complete" is preserved.*

## ABOUT THE AUTHOR

Dr. Philip Norrie MBBS, MA, MSc, MSocSc[Hons], PhD, MD  
Conjoint Senior Lecturer, Faculty of Medicine, University of New  
South Wales, Sydney

Vice Chairman, Medical Advisory Committee, Northern Cancer  
Institute, Sydney

Faculty Affiliate, School of Public and Community Health Sciences,  
College of Health Professions and Biomedical Sciences, University of  
Montana, USA

Dr. Philip Norrie is a family physician and medical historian from Palm  
Beach in Sydney, Australia, who believes that disease has not been given its  
due recognition as a major contributing factor to the history of mankind,  
a situation he wishes to correct.

Born in 1953 and educated at Knox Grammar School, where he was  
awarded the History and Geography Prizes each year plus the Sports and  
Studies Prize for being the best all-rounder in his final year in 1970, Dr.  
Norrie gained his medical degree [MBBS—Bachelor of Medicine and  
Bachelor of Surgery] from the University of New South Wales in 1977.  
This was followed by being the first graduate from the newly formed  
History and Philosophy of Science Department at Australia's oldest uni-  
versity—the University of Sydney, in 1993 with a thesis on Australian wine  
history [Macleay family].

In 1998 Dr. Norrie received his Master of Social Science degree with  
honours with a thesis on Australian wine history [Leo Buring], from



Australia's largest wine science school at Charles Sturt University. His PhD followed in 2006 from the University of Western Sydney, with a thesis on the history of wine as a medicine for the past 5,000 years, showing that wine is our oldest medicine, most documented medicine and best preventative medicine.

2007 saw Dr. Norrie gain a Master of Arts degree from the University of Sydney with a thesis analyzing the causes of death in Australia's oldest prison at Darlinghurst Gaol in Sydney and showing that Charles Dickens was wrong—the death rate in gaol during the Victorian era was much better than in the general population.

In 2014 Dr. Norrie gained his Doctor of Medicine degree from the University of New South Wales, with a thesis on the role of disease during the end of the Bronze Age in the Near East and its role in the demise of the Hittite Empire.

Dr. Norrie has also published 17 books about wine and medical history.

After completing his PhD Dr. Norrie decided to take the topic of wine and health one step further by making wine even healthier by inventing the world's first full strength Resveratrol Enhanced Wine [REW—arguably the world's healthiest beverage]. Resveratrol is the anti-oxidant in wine, derived from the grape skin, that makes wine so healthy and is also the only substance to stimulate Sirtuin production, which makes cells live longer. Normal white wine contains 1–2 mg/l of resveratrol and normal red wine contains 3–6 mg/l of resveratrol; while Dr. Norrie's REW contains 100 mg/l in it; thus making it much more therapeutic.

Dr. Norrie's current research is into the role of disease in the demise of the Sumerian and Indus Valley Civilizations—a topic so far ignored by ancient historians and archaeologists.

Dr. Norrie married his physiotherapist wife Belinda whilst still in Medical School. They have two sons—Andrew, who is a barrister and Alexander, who is a lawyer; plus their Borzoi dog Sasha. Dr. Norrie's interests include wine, wine and medical history plus collecting the autographs of famous doctors, medals, toy trains, Meccano, Dinky toys and slot cars—all the fun of his youth!

Website—[www.drnorrie.info](http://www.drnorrie.info)



# BIBLIOGRAPHY

## (A) BOOKS

### (1) *General Ancient History Reference Books*

- Bachhuber, C., & Roberts, R. G. (Eds.). (2009). *Forces of transformation – The end of the Bronze Age in the Mediterranean*. Oxford: Oxbow Books.
- Barnard, L. (Ed.). (2010). *Historical atlas*. Sydney: Millenium House.
- Black, G. (Ed.). (2002). *Encyclopedia of world history*. Bath: Parragon Publishing.
- Blainey, G. (2001). *A short history of the world*. Camberwell/Victoria: Viking/Penguin Group (Australia).
- Brothwell, D. R., & Chiarelli, B. A. (Eds.). (1973). *Population biology of the ancient Egyptians*. London: Academic Press.
- Burenhult, G. (Ed.). (2004). *Great civilizations*. San Francisco: Fog City Press.
- Cline, E. H. (Ed.). (2010). *The Oxford handbook of the Bronze Age Aegean (ca. 3000–1000 BC)*. Oxford: Oxford University Press. Chapter 36 titled ‘The Collapse at the end of the Bronze Age’ by Durham University’s Oliver Dickinson gave a very useful summary of current thinking about the causes of the collapse including noting the abandonment of sites. Plague is mentioned but the conclusion is that it was most likely multifactorial.
- Cockburn, A., & Cockburn, E. (Eds.). (1998). *Mummies, disease and ancient cultures*. Cambridge: Cambridge University Press.
- Cunliffe, B. (Ed.). (1994). *The Oxford illustrated prehistory of Europe*. Oxford: Oxford University Press.
- Daniels, P. (2003). *Almanac of world history*. Washington, DC: National Geographic.
- Danzer, G. (2002). *Atlas of world history*. Rochester: Grange Books.
- Desborough, V. R. A. (1972). *The Greek Dark Ages*. London: Ernest Benn.

- Diamond, J. (1997). *Guns germs and steel*. London: Viking for Random House.
- Dickinson, O. (2006). *The Aegean from Bronze Age to Iron Age*. Abingdon: Routledge. Chapter 2 titled 'The Collapse of the Bronze Age Civilization' gave a good overview of the subject similar to what he wrote in chapter 36 above.
- Dupuy, R. E., & Dupuy, T. N. (1993). *The Harper encyclopedia of military history*. New York: Harper Collins Publishers.
- Farrington, K. (2002). *Historical atlas of empires*. London: Mercury Books.
- Finlay, M. I. (1981). *Early Greece: The Bronze and Archaic Ages* (New and Rev. ed.). London: W.W.Norton & Co.
- Gardiner, A. (2005). *The Egyptians*. London: The Folio Society, in Conjunction with Oxford University Press.
- Goetz, P. W. (Ed.). (1989). *The New Encyclopedia Britannica*. Chicago: University of Chicago.
- Grant, M. (1969). *The ancient Mediterranean*. New York: Charles Scriber's Sons.
- Hendel, R. (2005). *Remembering Abraham—Culture, memory, and history in the Hebrew Bible*. Oxford: Oxford University Press.
- Isaacs, A. (2000). *Oxford dictionary of world history*. Oxford: Oxford University Press.
- Kozloff, A. P. (1992). *Egypt's dazzling sun: Amenhotep III and his world*. Cleveland: Cleveland Museum of Art. Kozloff provides an in depth look at the reign of Amenhotep III and shows, through examination of artifacts from this period of Egyptian history, that some major destructive force adversely affected his reign. This force was most likely bubonic plague. It is a very thorough work and is used in this book.
- Kuhr, A. (1995). *The ancient Near East c. 3000–330 BC volume one*. London: Routledge.
- Lemche, N. P. (1998). *The Israelites in history and tradition*. London: SPCK.
- Pernicka, E., et al. (2003). Early Bronze Age metallurgy in Northeast Aegean. In G. A. Wagner et al. (Eds.), *Troia and Troad: Scientific approaches*. London: Springer, Natural Science in Archaeology.
- Roberts, J. M. (2002). *Ancient history*. London: Duncan Baird Publishers.
- Roberts, J. M. (2003). *The new history of the world*. Oxford: Oxford University Press.
- Ruffer, M. A. (1921). *Studies in the paleopathology of Egypt*. Chicago: University of Chicago Press. Ruffer examined many mummies and other Egyptian material, thus founding the science of Paleopathology, in this book. He showed that Egyptian mummies showed evidence of smallpox, tuberculosis, schistosomiasis and polio for example. It is a very thorough work and is a major resource for this book.
- Scarre, C. (1993). *Timelines of the ancient world*. London: Dorling Kindersley.
- Stiebing, W. H. (2009). *Ancient Near Eastern history and culture*. New York: Pearson Longman. This book provided some material about the Plague of the Philistines and some general background information about the early Israelite nation.

- Van De Mieroop, M. (2008). *A history of the ancient Near East ca. 3000–323 BC*. Oxford: Blackwell Publishing.
- Wagner, G. A. et al. (Eds). (2003). *Troia and Troad: Scientific approaches*. London: Springer, Natural Science in Archaeology.
- Waldbaum, J. C. (1978). *From bronze to iron. Studies in Mediterranean archaeology*. Goteburg: Paul Astroms Forlag.
- Yasur-Landau, A. (2010). *The Philistines and Aegean migration at the end of the late Bronze Age*. Cambridge: Cambridge University Press.
- (2) *Medical History Books*
- Ackerknecht, E. H. (1982). *A short history of medicine*. Baltimore: The Johns Hopkins University Press.
- Barnard, B. (2005). *Outbreak—Plagues that changed history*. New York: Crown.
- Barnes, E. (2006). *Diseases and human evolution*. Albuquerque: University of New Mexico Press.
- Beck, R. W. (2000). *A chronology of microbiology in historical context*. Washington: American Society of Microbiology Press.
- Bollet, A. J. (2004). *Plagues and poxes – The impact of human history on epidemic disease*. New York: Demos.
- Burke, R. M. (1938). *A historical chronology of tuberculosis*. Springfield: Charles C. Thomas Publishers. This book described tuberculosis in ancient Egypt, hence was used in this book.
- Bynum, W. F., & Porter, R. (1993). *Companion encyclopedia of the history of medicine—Volume 1 and 2*. London: Routledge Reference.
- Cartwright, F. F., & Biddiss, M. (2004). *Disease and history*. Stroud: Sutton Publishing.
- Clendening, L. (1960). *Source book of medical history*. New York: Dover Publications.
- Davies, G. (Ed.). (2000). *Timetables of medicine*. New York: Black Dog and Leventhal.
- Davis, L. (2008). *Natural disasters*. Facts on File Science Library. Checkmark Books.
- Desowitz, R. (1997). *Tropical diseases from 50,000BC to 2,500AD*. London: Flamingo.
- Dobson, M. (2007). *Disease*. London: Quercus.
- Duffin, J. (2006). *History of medicine*. Toronto: University of Toronto Press.
- Farnell, J. (1998). *Invisible enemies—Stories of infectious disease*. New York: Farrar Straus Giroux.
- Gregg, C. T. (1985). *Plague*. Albuquerque: University of New Mexico Press.
- Grmek, M. D. (1989). *Diseases in ancient Greek world*. Baltimore: The Johns Hopkins University Press.
- Haeger, K. (2000). *History of surgery*. London: Harold Starke Publishers.
- Hare, R. (1954). *Pomp and pestilence—Infectious disease, its origins and conquest*. London: Gollancz Publishers. In this book Hare continued Wynn's possibility that the 1322 BCE Hittite Empire epidemic was due to smallpox, imported

- into the Hittite Empire by Egyptian prisoners of war. This assumption is challenged by this book.
- Hays, J. N. (2003). *The burdens of disease*. New Brunswick: Rutgers University Press.
- Hoff, B. (2000). *Mapping epidemics—A historical atlas of disease*. New York: Franklin Watts for Grolier.
- Hopkins, D. R. (2002). *The greatest killer—Smallpox in history*. Chicago: The University of Chicago Press. This book confirmed that Ramesses V had smallpox, as the author was allowed to view the mummy of Ramesses V in person, with the permission of Anwar Sadat, the President of Egypt at the time. This book also says that the 1322 BCE Hittite Epidemic was most likely due to smallpox—a view that this book disputes. A very thorough and well-presented history, written by one of the world's authorities on the subject.
- Karlen, A. (1995). *Man and microbes—Disease and plague in history and modern times*. New York: Simon and Schuster.
- Kennedy, M. T. (2004). *A brief history of disease*. Mission Viejo: Science and Medicine, Asklepiad Press.
- King, H. (Ed.). (2005). *Health in antiquity*. Abingdon: Routledge. Chapter 1 titled 'Disease and the Prehistory of the Aegean' by medical Historian Robert Arnott from Oxford University was a very thorough and useful overview of the subject but Arnott does not make the connection that disease may have been a cause of the end of the Bronze Age in the Near East.
- Kiple, K. F. (1999). *The Cambridge world of human disease*. Cambridge: Cambridge University Press.
- Kiple, K. F. (Ed.). (2003). *The Cambridge historical dictionary of disease* (2003rd ed.). Cambridge: Cambridge University Press.
- Kohn, G. C. (Ed.). (2001). *Encyclopedia of plagues and pestilence*. New York: Checkmark Books.
- Loudon, I. (Ed.). (1997). *Western medicine*. Oxford: Oxford University Press.
- Lyons, A. S., & Petrucelli, R. J. (1979). *Medicine—An illustrated history*. South Melbourne: The Macmillan Company of Australia.
- Major, R. H. (1945). *Classic descriptions of disease*. Springfield: Charles C. Thomas Publisher.
- McNeill, W. H. (1998). *Plagues and peoples*. New York: Anchor Books for Random House.
- Oldstone, M. B. (2000). *Viruses, plagues and history*. Oxford: Oxford University Press.
- Porter, R. (1999). *The greatest benefit to mankind—A medical history of humanity*. New York: W.W.Norton and Co.
- Porter, R. (Ed.). (2001). *Cambridge illustrated history of medicine*. Cambridge: Cambridge University Press.
- Porter, R. (2004). *Blood and guts—A short history of medicine*. New York: W.W.Norton and Co.
- Snodgrass, M. E. (2003). *World epidemics*. London: McFarland and Co. This book provided some brief descriptions of early epidemics and diseases around the

- time period of this book such as polio, smallpox on the face of Ramesses V and the plague of the Philistines.
- Watts, S. (1999). *Epidemics and history*. New Haven: Yale University Press.
- Watts, S. (2003). *Disease and medicine in world history*. New York: Routledge.
- Wills, C. (1996a). *Plagues—Their origin, history and future*. London: Harper Collins.
- Wills, C. (1996b). *Yellow fever black goddess—The coevolution of people and plagues*. London: Basic Books.
- Zimmerman, B. E., & Zimmerman, D. J. (2003). *Killer germs*. Chicago: Contemporary Books.
- (3) *Books About the Hittites and the Sea Peoples*
- Brown John, J. J. (1977). *The Hittites—People of a thousand gods*. London: Collins.
- Bryce, T. (2004). *Life and society in the Hittite world*. Oxford: Oxford University Press.
- Bryce, T. (2008). *Hittite warrior*. Oxford: Osprey Publishing.
- Bryce, T. (2010). *The kingdom of the Hittites*. Oxford: Oxford University Press.
- Trevor Bryce, from the University of Queensland, is the current World expert on the Hittite Empire. This is his latest and most comprehensive book which incorporates all his knowledge and is a good summary of the latest information and current state of knowledge about the Hittite Empire. This he does very well. He devotes a few pages to the 1322 BCE Hittite Empire epidemic, but does not say it was due to bubonic plague as this book advocates. He incorporates the latest theory about Hattusa suggesting that it was simply abandoned over several months, but does not say why, let alone state that it was due to disease. This book was used extensively for latest background information about the Hittites.
- Canby, J. V. et al. (Eds). (1986). *Ancient Anatolia—Aspects of change and cultural development* (Essays in Honor of Machteld J. Mellink). The University of Wisconsin Press.
- Carruba, O. (1995). *Atti Del II Congresso Internazionale Di Hittitologia*. Pavia: Gianni Luculano Editore.
- Ceram, C. W. (2001). *The secret of the Hittites*. London: Phoenix Press.
- Cilingiroglu, A. (1994). *The proceedings of the third Anatolian Iron Ages colloquium held at Van, 6–12 August 1990*. Ankara: The British Institute of Archaeology.
- Gurney, O. R. (2005). *The Hittites*. London: The Folio Society.
- Klengel, H. (1999). *Geschichte des Hethitischen Reiches*. Leiden: Brill. This book provides a German archaeological insight into the world of the Hittites. Klengel mentioned that plagues were often mentioned in late Bronze Age Syrian documents, but did not specify which ones unfortunately.
- Lloyd, S. (1989). *Ancient Turkey—A traveler's history of Anatolia*. Berkeley: University of California Press.
- Macqueen, J. G. (2001). *The Hittites*. London: Thames and Hudson.
- Ozguç, T. *The Hittites*. Donmez Offset, Ankara for The Museum of Anatolian Civilizations.

- Peiser, B. J. (1998). *Natural catastrophes during Bronze Age civilizations—Archaeological, geological, astronomical and cultural perspectives*. Oxford: Archaeopress. This book summarized all the papers presented at the conference and was most useful for discussing alternative causes for the end of the Bronze Age such as volcanic activity, comets and earthquakes, but disease was not mentioned at all—hence the need for this book to present yet another possible cause.
- Sandars, N. K. (1978). *The sea peoples—Warriors of the ancient Mediterranean 1250–1150 BC*. London: Thames and Hudson.
- Van Den Hout, T. P. J. (Ed.). (2006). *The life and times of Hattusili III and Tuthaliya IV*. Leiden: Nederland's Institute Voor Het Nabije Oosten.
- Velikovskiy, I. (1977). *Peoples of the sea*. London: Sidgwick and Jackson.
- Versuch, E. (1984). *Griechische Frühgeschichte*. Wien: Osterreichischen Akademie Der Wissenschaften.
- Ward, W. A. (Ed.). (1992). *The crisis years: The 12th century B.C. – From beyond the Danube to the Tigris*. Dubuque: Kendall Hunt Publishing Company. Even this detailed summary of conference papers did not mention disease at all.
- Yakar, J. (2000). *Ethnoarchaeology of Anatolia—Rural socio-economy in the Bronze and Iron Ages*. Tel Aviv: Emery and Claire Yass Publications in Archaeology, Institute of Archaeology, Tel Aviv University.
- (4) *Books About the End of the Bronze Age*
- Cline, E. H. (2014). *1177 B.C.—The year civilization collapsed*. Princeton/Oxford: Princeton University Press. This book provides a very good summary of current conventional thinking about how the Near Eastern Bronze Age ended, but it does not factor in the potential role of infectious disease unfortunately.
- Drews, R. (1993). *The end of the Bronze Age*. Princeton: Princeton University Press. In this book Drews argues that changes in warfare from the large palatial chariot based armies to the new better equipped foot soldier based forces with iron body protective armor and iron swords and spears; meant the end of the palatial empires. Drews does not mention disease at all in his book.
- Slattery, T. (2000). *The tragic end of the Bronze Age*. San Jose: Writers Club Press. This is the only work which puts forward the hypothesis that disease contributed to the end of the Bronze Age. Unfortunately Slattery only mentions smallpox and no other diseases, whereas this book will suggest another nine diseases as possible causes for the end of the Bronze Age and Hittite Empire. In the book Slattery uses many Biblical references and tends to wander off the subject a lot.

## (B) ARTICLES

- (1) *Articles About the Ancient Near East*
- History of Ancient Europe, <http://www.essentialhumanities.net/his1.php>, “History of Ancient Europe”. Accessed 15 Oct 2011.
- Late Bronze Age, <http://cuttingedgeminitures.com/Late-Bronze-Age>. Accessed 9 May 2012.

- Lehmann, G. A. (1985). *Vortage*, Rheinisch-Westfälische Akademie der Wissenschaften: Geisteswissenschaften; G276, Westdeutscher Verlag.
- The Mycenaean civilizations, <http://www.aroundgreece.com/ancient-greece-history/mycenaean-civilization-greece.php>. Accessed 3 Dec 2013.
- (2) *Articles About Ancient Egypt*
- Akhenaten, <http://www.ancientegyptonline.co.uk/Akhenaten.html>. Accessed 3 Dec 2013.
- Amenhotep III, <http://euler.slu.edu/~bart/egyptianhtml/kings%20and%20Queens/amanhotepiii.htm>. Accessed 7 Dec 2012.
- Ancient Armana, <http://heritage-key.com/egypt/ancient-amarna-black-death-london-ancient-history-plague>. Accessed 21 Jan 2012. This article again discussed infectious disease at the time of the Amarna letters, thus supporting the other Amarna letter articles.
- Ancient Egyptian medicine, <http://www.reshafim.org.il/ad/egypt/timelines/topics/medicine.htm>. Accessed 10 Oct 2011.
- Amarna, [http://www.kchanson/Amarna\\_tablet\\_35](http://www.kchanson/Amarna_tablet_35). Accessed 3 Dec 2013. This article provided more evidence, through Amarna letters, of the presence of infectious disease in various places around the Near East in the time frame of this book.
- Armitage, P. L. (1994). Unwelcome companions: Ancient rats reviewed. *Antiquity*, 68, 231–240. This article examined the remains of rats from ancient Egypt and showed that bubonic plague carrying rats existed then.
- Battle of Kadesh, <http://www.allaboutturkey.com/kades.htm>. This article discussed the first recorded major battle in the ancient world which was the Battle of Kadesh between the armies of the Hittite Empire and ancient Egyptian Empire. The battle occurred where these great power's borders met—in Syria near the town of Kadesh and was inconclusive as to who actually won, as both sides claimed victory. It raises the question that if the Hittite Empire had more soldiers, instead of losing so many in the 1322 BCE Hittite epidemic, could they have had a major victory and then been able to go on and invade Egypt itself and not just occupy some land in one of its far off provinces to the north. Accessed 3 Dec 2013.
- BBC-History-Ancient history in depth: The end of the Amarna Period* (pp. 1–6). Accessed 3 Dec 2013.
- Costantini, L. (1975). Typology and socioeconomic implications of entomological finds from some ancient Near Eastern sites. *Paleorient*, 3, 247–258.
- Egypt's new kingdom and final decline (1778–525 BC), <http://www.flowofhistory.com/units/pre/2/fc11b>. Accessed 3 Dec 2013.
- Egyptian Hittite correspondence, [http://www.reshafim.org.il/ad/egypt/egyptian-hittite\\_correspondence.htm](http://www.reshafim.org.il/ad/egypt/egyptian-hittite_correspondence.htm). Accessed 24 Sept 2011.
- Egyptian Hittite Peace Treaty, <http://www.milestonedocuments.com/documents/view/Egyptian-hittite-peace-treaty>. Accessed 3 Dec 2013.
- Kozloff, A. P. (2006). Bubonic plague during the Reign of Amenhotep III? *KMT A Modern Journal of Ancient Egypt*, 17(3), 36–46 and 83–84. This article is an excel-

- lent resource for this book and was quoted extensively. In it Kozloff argues, very thoughtfully and thoroughly with great examples, that after examining the quality of the tombs and artifacts from the reign of Amenhotep III it is apparent that some major disaster adversely affected Egypt during the years 12 to 20 of his reign. Later on in the article Kozloff suggests that the adverse event was not a war or invasion by another country or a famine but an infectious disease epidemic—most likely bubonic plague. This article shows that there was a reservoir for the bubonic plague in Egypt which later infected the Hittite Empire as the 1322 BCE Hittite epidemic and later still as a possible cause for the end of the Bronze Age and Hittite Empire. Malkata Palace, <http://www.ancientegyptonline.co.uk/malkatapalace.html>. Accessed 3 Dec 2013.
- Mummies: Mummies and disease in Egypt, [http://www.uic.edu/classes/osci/osci590/6\\_2Mummies%20Mummies%20and%20Disease%20in%20Egypt.htm](http://www.uic.edu/classes/osci/osci590/6_2Mummies%20Mummies%20and%20Disease%20in%20Egypt.htm) this article discussed various diseases seen in ancient Egyptian mummies and thus supports Ruffer's work by showing that smallpox, tuberculosis and polio for example existed in ancient Egypt. Accessed 10 Oct 2011.
- Panagiotakopulu, E. (2001a). Fleas from Pharaonic Amarna. *Antiquity*, 75, 499–500. This article, written by an expert in the new field of Paleontomology, showed that it is possible to find the remains of fleas in the archaeological sites of Egypt and to be able to identify these fleas as bubonic plague carrying fleas. Thus it is possible to conclude that bubonic plague existed in Egypt at that time, which helps to support Kozloff's ideas.
- Panagiotakopulu, E. (2001b) Ramesses II and the tobacco beetle. *Antiquity*, 75, 549–556.
- Panagiotakopulu, E. (2003). Insect remains from the collections in the Egyptian Museum of Turin. *Archaeometry* 45(Part 3), 355–362.
- Panagiotakopulu, E. (2004). Pharaonic Egypt and the origins of plague. *Journal of Biogeography*, 31, 269–275. This article uses Paleontomology to examine the archaeological evidence to show that bubonic plague may have entered ancient Egypt from trading vessels from India and a lot earlier than had been thought previously. The article also shows that bubonic plague may have started in India and not China as previously believed.
- Panagiotakopulu, E. (2009). Environment, insects and the archaeology of Egypt. In S. Ikram & A. Dodson (Eds.), *Beyond the horizon: Studies in Egyptian art, archaeology and history in honor of Barry J. Kemp* (pp. 347–361). Cairo: American University of Cairo Press.
- Panagiotakopulu, E. (2010). Underneath Ranefer's floors—Urban environments on the desert edge. *Journal of Archaeological Science*, 37, 474–481. This article examined the remains of rats and other creatures found under the floor of a house in the workers camp at Amarna. It proved that bubonic plague carrying fleas and rats existed there; again more evidence to support Kozloff.
- Ramesses the Great—The Pharaoh who made peace with his enemies, <http://www.arabworldbooks.com/rameses.htm>. Accessed 24 Sept 2011.

- Sed, <http://www.digitalegypt.ucl.ac.uk/ideology/sed/index.html>. Accessed 3 Dec 2013.
- Sekhmet, <http://ancientegyptonline.co.uk/Sekhmet.html>. Accessed 3 Dec 2013.
- Sekhmet, <http://www.egyptianmyths.net/sekhmet.htm>. Accessed 9 Dec 2012.
- Sakhmet, <http://www.pantheon.org/articles/s/sakhmet.html>. Accessed 3 Dec 2013.
- The Pharaoh who made peace with his enemies and the first peace treaty in history, <http://www.touregypt.net/featurestories/treaty.htm>. Accessed 3 Dec 2013.
- The rise and fall of civilizations, <http://www.gold-eagle.com/article/rise-and-fall-civilizations-0>. Accessed 3 Dec 2013.
- Treaty of Kadesh, [http://www.istanbularkeoloji.gov.tr/web/30-125-1-1/muze\\_en/collections/ancient\\_orient\\_museum\\_artifacts/treaty\\_of\\_kadesh](http://www.istanbularkeoloji.gov.tr/web/30-125-1-1/muze_en/collections/ancient_orient_museum_artifacts/treaty_of_kadesh)
- (3) *Articles About the Hittites*.
- Arda, B. (2009). Anatolia; The cradle of modern medicine. *Ankara Universitesi Tip Fakultesi Mecmuasi*, 62(1), 9–10.
- Forrer, E. O. (1937). The Hittites in Palestine. *Palestine Exploration Quarterly*, 69, 100–115. Forrer was a prominent early Hittitologist and in this article he examines the then known translated Hittite tablets and mentions the 1322 BCE Hittite epidemic and states that it was brought into the Hittite Empire by Egyptian prisoners of war. One must remember that when this article was written the Hittite tablets had only been discovered a decade or so earlier and only some had been translated, so this article was a very early reference about the 1322 BCE Hittite epidemic.
- Hattusa, <http://creationwiki.org/Hattusa>. Accessed 3 Dec 2013.
- Hattusa, <http://heritage-key.com/site/hattusa>. Accessed 9 Apr 2012.
- History of the Hittites, <http://www.ancient.eu.com/article/169/>. Accessed 3 Dec 2013.
- History of the Hittites, <http://www.historyworld.net/wrldhis/PlainTextHistories.asp?historyid=ab66>. Accessed 3 Dec 2013.
- Hittites, <http://danwagner.homestead.com/files/hittites.htm>. Accessed 3 Dec 2013.
- Hittites, <http://history-world.org/hittites.htm>. Accessed 3 Dec 2013.
- Hittites, <http://i-cias.com/e.o/hittites.htm>. Accessed 3 Dec 2013.
- Hittites, <http://oxfordbibliographiesonline.com/view/document/obo-9780195393361/obo-9780195393361-0075.html>. Accessed 1 Jan 2012.
- Hittites, <http://timelines.ws/countries/hittites.html>. Accessed 3 Dec 2013.
- Hittites, <http://www.hittites.info/history.aspx?text=history%2FEarly+Late+Empire.htm>. Accessed 30 Oct 2011.
- Hittites, [http://www.jewishvirtuallibrary.org/jsourc/judaica/ejud\\_0002\\_0009\\_0\\_09061.html](http://www.jewishvirtuallibrary.org/jsourc/judaica/ejud_0002_0009_0_09061.html). Accessed 17 Sept 2011.
- The Hittite Empire, <http://www.specialtyinterests.net/hittites.html>. Accessed 18 Sept 2011.
- Plague prayers of the Hittite King Mursili, <http://mroberts-robert.suite101.com/the-plague-prayers-of-mursili-ii-a139219>. Accessed 3 Dec 2013.

- Taracha, P. (2009). Hittitology in Warsaw: Past, present and future. *Rocznik Orientalistyczny*, T.LXII(Z. 1.), 213–221.
- The Hittites, [http://www.michaelmaxwolf.de/antike/alter\\_orient/hethiter.htm](http://www.michaelmaxwolf.de/antike/alter_orient/hethiter.htm) in this German article the author talks about the Hittite Empire in general and more importantly about the 1322 BCE Hittite epidemic and states that it was caused specifically by bubonic plague. This is contrary to the current belief that this epidemic was caused by smallpox. This book also supports the hypothesis that the 1322 BCE Hittite epidemic was caused by bubonic plague. Accessed 3 Dec 2013.
- The Hittites in history, <http://starways.net/lisa/essays/hittites.html>. Accessed 3 Dec 2013.
- The Hittites of Anatolia, <http://www.saudiaramcoworld.com/issue/199405/in.search.of.the.past-the.hittites.of.anatolia.htm>. Accessed 3 Dec 2013.
- The Zannanza affair, [http://realhistoryww.com/world\\_history/ancient/Misc/Egypt/a\\_The\\_Zannanza\\_Affair.htm](http://realhistoryww.com/world_history/ancient/Misc/Egypt/a_The_Zannanza_Affair.htm) Accessed 30 October 2011. This short article discussed the Plague Prayers of the Hittite King Mursili in general terms and did not actually have any of the prayers included, unlike Singer's book which contained all the prayers in their entirety. This article provided a good background read. Accessed 3 Dec 2013.
- (4) *Articles About the Sea Peoples*  
 The Sea Peoples, <http://www.sjsu.edu/faculty/watkins/seapeoples.htm>. Accessed 3 Dec 2013.
- The Sea People and their migration, <http://www.american-buddha.com/bible.seapeopleshellpeczynski2.htm>. Accessed 1 Jan 2012.
- (5) *Articles About the Current Theories as to the Causes of the End of The Bronze Age*  
 Aegean Bronze Age, <http://www.therafoundation.org/articles/history/aegean-bronzeage>. This one page article mentioned that famines and pestilence existed at the time of the Minoan collapse, which is just before the time frame of this book. It also put a lot of emphasis on the breakdown of trade routes as a cause for the collapse. Accessed 30 Oct 2011.
- Anatolian tree rings and a new chronology for the East Mediterranean Bronze—Iron Ages, <http://www.sciencemag.org/294/5551/2532.abstract>. Expert evidence from Kuniholm. Accessed 25 Apr 2012.
- Anatolian tree rings and the absolute chronology of the Mediterranean, 2220–718 BC, <http://www.nature.com/nature/journal/v381/n6585/abs/381780a0.html> this article by Kuniholm provided excellent primary evidence of a drought at the beginning of the end of the Bronze Age. He gathered this evidence by examining the tree rings of ancient trees from all over Anatolia. He and his Aegean Dendrochronology Project at the Department of the History of Art and Archaeology at Cornell University are now famous as a reliable resource about dating various events around the Aegean. This article was used in this book. Accessed 3 Dec 2013.

- Archaeological evidence and non-evidence for climate change, <http://rsta.royal-societypublishing.org/content/330/1615/645.short>. Accessed 3 Dec 2013.
- Bronze Age Aegean, <http://web.ics.purdue.edu/~rauhtopicn/BAaegeantext.htm> this article was from the Purdue University history course on the Bronze Age collapse and the comments are the same as above. Accessed 3 Dec 2013.
- Bronze Age collapse, [http://www.enotes.com/topic/Bronze\\_Age\\_collapse](http://www.enotes.com/topic/Bronze_Age_collapse) this three page article listed seven causes for the end of the Bronze Age, whereas this book lists sixteen possible causes. It did not mention disease at all and but it was a good general background read which was used in the book. Accessed 30 Oct 2011.
- Contribution of drought to the collapse of the Hittite Empire, [http://ie499.yerlan.org/index.php?option=com\\_content&view=article&id=322:hititler&catid=53:projects&Itemid=61](http://ie499.yerlan.org/index.php?option=com_content&view=article&id=322:hititler&catid=53:projects&Itemid=61). Accessed 18 Sept 2011.
- Donald Hopkins, [http://www.cartercenter.org/news/experts/donald\\_hopkins.html](http://www.cartercenter.org/news/experts/donald_hopkins.html). Accessed 3 Dec 2013.
- Herodotus 1.94, The drought ca.1200 BC, and the origin of the Etruscans, <http://www.jstor.org/pss/4436222>. This article also states that the Sea Peoples may have been ‘pushed’ out of their homelands by drought and resultant famine. Accessed 2 Oct 2011.
- Kuniholm, P. I. et al. *Dendrochronological dating in Anatolia: The second millennium BC* (pp. 41–46). The Malcolm and Carolyn Wiener Laboratory for Aegean and Near Eastern Dendrochronology, Cornell University. This article is similar to the one below by Kuniholm and was also used in this book.
- Lesson 28: The collapse of the Mycenaean palatial civilization, [http://projectsx.dartmouth.edu/history/bronze\\_age/lessons/les/28.html](http://projectsx.dartmouth.edu/history/bronze_age/lessons/les/28.html). This article is part of the prestigious Dartmouth University’s History course. It is along sixteen page article which has in the conclusion section five possible causes for the collapse of the Mycenaean Palatial Civilizations, they being economic factors, climate change, internal social upheaval, invasion by the Sea Peoples and finally changes in warfare. There was no mention of disease at all. By contrast this book lists sixteen possible causes for the end of the Bronze Age. Accessed 25 Sept 2011.
- Results of climate change circa 1200 BC, <http://2012forum.com/forum/view-topic.php?f=48&t=17630> this article backs up the findings of Kuniholm above by showing that drought occurred at the beginning of the end of the Bronze Age around 1200 BCE. Accessed 3 Dec 2013.
- Scientist links killer quakes to Bronze Age’s end, <http://www.trussel.com/pre-hist/news46.htm> this press release is about Nur, from the Geophysics Department at Stanford University, who said that the end of the Bronze Age was due to storms of killer earthquakes which destroyed the palatial cities and their empires. It does not mention disease at all. Accessed 3 Dec 2013.
- The catastrophe—Part 2: What the end of Bronze Age civilization means for modern times, <http://www.brusselsjournal.com/node/4106>. Accessed 3 Dec 2013.
- The collapse of the Bronze Age, <http://teachingcompany.fr.yuku.com/topic/2466#.Up-qGigcg04> this seven page article mentions disease and a pos-

- sible pandemic but then states that this is not supported by the evidence. It also states that any deaths by famine or disease were the result of war rather than famine and disease being the actual cause of the collapse of the Bronze Age. This book refutes all these claims. Accessed 3 Dec 2013.
- The crisis or the end of the Bronze Age Part I, <http://makinapacalatxilbalba.blogspot.com/2009/01/crisis-or-end-of-bronze-age-part-i-end.html>. Accessed 3 Dec 2013.
- The influence of climate change on the Late Bronze Age collapse and the Greek Dark Ages, [http://academia.edu/1411970/The\\_Influence\\_of\\_Climate\\_Change\\_on\\_the\\_Late\\_Bronze\\_Age\\_Collapse\\_and\\_the\\_Greek\\_Dark\\_Ages](http://academia.edu/1411970/The_Influence_of_Climate_Change_on_the_Late_Bronze_Age_Collapse_and_the_Greek_Dark_Ages) this article provides good scientific evidence that the Late Bronze Age was subjected to drought, which may have helped precipitate the Collapse. Accessed 3 Dec 2013.
- Thera, Tin, and the Aryan invasion, [http://ancienthistroy.about.com/library/bl/uc-slattery\\_tin.htm](http://ancienthistroy.about.com/library/bl/uc-slattery_tin.htm). Accessed 3 Dec 2013.
- What caused the end of the Bronze Age? <http://www.exampleessays.com/view-paper/1587.html> this one page article argues that a shortage of tin, resulting in a shortage of bronze, was the reason for the end of the Bronze Age. It states that tin was scarce and had to come from as far away as Cornwall to supply demand. If these tin trade routes were adversely affected then the supply of tin would dry up thus ending the Bronze Age and people would have to look for an alternative metal—iron. Accessed 3 Dec 2013.
- (6) *Articles About Diseases That Could Have Caused the End of The Bronze Age* Archaeology and the conquest of the land, [http://www.testimonymagazine.org/back/Special\\_Issues/Oct90/art5.htm](http://www.testimonymagazine.org/back/Special_Issues/Oct90/art5.htm). Accessed 3 Dec 2013.
- Arnott, R. (1996). Healing and medicine in the Aegean Bronze Age. *Journal of the Royal Society of Medicine*, 89, 265–270.
- Bubonic plague originated in China, <http://news.discovery.com/human/black-death-plague-china.html>. Accessed 3 Dec 2013.
- Conrad, L. (1984). The biblical tradition for the plague of the Philistines. *Journal of the American Oriental Society*, 104(2), 281–287. This article argues that the Plague of the Philistines was due to bubonic plague.
- Cooray, M. P. M. (1965). Epidemics in history. *Ceylon Medical Journal*, June–Sept, 88–96.
- Diffusions from Mesopotamia to Egypt, <http://www.fsmitha.com/hl/ch03-hyk.html>. Accessed 24 Sept 2011.
- Hittites used germ warfare, <http://www.telegraph.co.uk/news/world-news/1571927/Hittites-used-germ-warfare-3500-years-ago> this newspaper article states that the Hittites used tularemia infected sheep as the first form of germ warfare 3,200 years ago based on the research of Trevisanato. Accessed 24 Sept 2011.
- Horwitz, L. K. (2000). The contribution of animal domestication to the spread of zoonoses: A case study from the Southern Levant. *Ibex Journal of Mountain Ecology*, 5(2000), 77–84.

- Infectious diseases in history, <http://urbanrim.org.uk/diseases.html>. Accessed 20 Nov 2011.
- Middleton, G. D. (2008). *The collapse of the palatial society in LBA Greece and the postpalatial period*. Ph.D. thesis, Durham University. <http://theses.dur.ac.uk/2900/> this was a very thorough and useful examination of the topic. Plagues were discussed in chapter 3 ‘Theories of Mycenaean Collapse’ but were dismissed for lack of evidence, which this book will supply. Accessed 3 Dec 2013.
- On the origin of smallpox: Correlating variola phylogenics with historical smallpox records, <http://www.pnas.org/content/104/40/15787.full>. Accessed 3 Dec 2013.
- Origin of bubonic plague, <http://creation.com/the-origin-of-bubonic-plague>. Accessed 3 Dec 2013.
- Origins of smallpox, <http://ruleof6ix.fieldofscience.com/2011/03/on-origins-of-smallpox-where-and-when.html>. Accessed 3 Dec 2013.
- Ramesses, V. <http://famouspharaohs.blogspot.com/2009/02/ramesses-v-c-1148-1144-bc.html>. Accessed 8 Oct 2011.
- Sabbatani, S. (2010). The plague of the Philistines and other pestilences in the Ancient World: exploring relations between the religious-literary tradition, artistic evidences and scientific proofs. *Le Infezioni in Medicina*, 3, 199–207. In this article Sabbatani argues that the plague of the Philistines was due to bubonic plague.
- Shrewsbury, J. F. D. (1949). The plague of the Philistines. *London: Journal of Hygiene*, 47(3), 244–252. This is an excellent article in which Shrewsbury gives several possible diseases as the cause for the end of the Bronze Age from bubonic plague to dysentery and including hemorrhoids. This article was quoted several times during the book.
- Smallpox, [http://www.gorydetails.net/demo\\_sites/SmallpoxSite/smpx\\_history01.html](http://www.gorydetails.net/demo_sites/SmallpoxSite/smpx_history01.html). Accessed 3 Dec 2013.
- Smallpox, <http://www.infoplease.com/cig/dangerous-diseases-epidemics/smallpox-1200-years-terror.html>. Accessed 10 Oct 2011.
- The Philistines 1, <http://www.bga.nl/en/articles/filist1.html>. Accessed 3 Dec 2013.
- The Philistines, <http://www.sacred-texts.com/anc/phc/phc05.htm>. Accessed 21 Mar 2012.
- Trevisanato, S. I. (2004). Did an epidemic of Tularemia in Ancient Egypt affect the course of world history? *Medical Hypotheses*, 63, 905–910. In this article Trevisanato, an Italian molecular biologist, discusses how a disease entered the main harbor of ancient Egypt called Avaris and killed many people except the Hebrew population. This disease resistance gave Trevisanato the idea that it may have been tularemia.
- Trevisanato, S. I. (2007a). The ‘Hittite plague’, an epidemic of tularemia and the first record of biological warfare. *Medical Hypotheses*, 69, 1371–1374. In his third and final article Trevisanato argues that the Hittite epidemic of 1322 BCE was also due to tularemia and not smallpox as had been previously thought.

- Trevisanato, S. I. (2007b). The biblical plague of the Philistines now has a name, tularemia. *Medical Hypotheses*, 69, 1144–1146. In the second of Trevisanato's trilogy of articles on the infectious disease tularemia he argues that tularemia was the disease described in the Plague of the Philistine's and not anthrax as had been previously thought.
- Tuberculosis, <http://www.essortment.com/diseases-illnesses-history-tuberculosis-21066.html>. Accessed 3 Oct 2011.
- Tularemia, <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001859/>. Accessed 3 Dec 2013.
- Walloe, L. (1999). Was the disruption of the Mycenaean world caused by repeated epidemics of bubonic plague? *Opuscula Atheniensia*, 24, 121–126. This was an excellent article and was used in the book. It focused only on bubonic plague and predated the research of Panagiotakopulu so was unable to provide any hard evidence to support his theory.
- Watson-Williams, E. (1962). The end of an epoch. *Greece and Rome*, 9(2), 109–125. Comments are the same as made above.
- Yersinia pestis* genome sequencing identifies patterns of global phylogenetic diversity, <http://www.nature.com/ng/journal/v42/n12/full/ng.705.html>. Accessed 22 Apr 2012.

## (C) SPECIAL CORRESPONDENCE

- Trevor Bryce—Hittitologist at University of Queensland—[t.bryce@uq.edu.au](mailto:t.bryce@uq.edu.au)
- Liz Rouse—Head Librarian at the Medical History Library at The Royal Australasian College of Physicians—[racplib@racp.edu.au](mailto:racplib@racp.edu.au)
- Martin Killeen—Rare Books Librarian, Cadbury Research Library, Special Collections, Academic Services, University of Birmingham and the Barnes Library at the Medical School, University of Birmingham—for information about the W. H. Wynn collection of his notes—[M.Killeen@bham.ac.uk](mailto:M.Killeen@bham.ac.uk)
- Peter Basham—Historical Collections, Royal College of Physicians—[Historical.Services@rcplondon.ac.uk](mailto:Historical.Services@rcplondon.ac.uk)
- Edward Bishop at Wellcome Library—[e.bishop@wellcome.ac.uk](mailto:e.bishop@wellcome.ac.uk)

# INDEX<sup>1</sup>

## A

- abandonment of cities, 9–10, 66, 111  
in Egypt, 33–4  
in Hittite Empire, 43–4, 112  
and plagues, 33–4, 79–82
- Achtman, Mark, 82–3
- Aegean Dendrochronology Project,  
75, 83
- Akhenaten (Amenhotep IV)  
image of, **26**  
incestuous marriages of, 30  
letter to, 22  
reign of, 20  
religious revolution of, 28, 31  
relocation to Amarna, 27, 31, 33–4
- Akhetaten (Amarna), 27, 33–4
- Akkadian or Agade Empire, 7
- Aldred, C., 27
- Alexander the Great, 8–9
- Amarna (Akhetaten), 27, 33–4
- Amarna letters, 22, 25, 33, 90
- Amenhotep III, 20–31  
documentation of reign of, 20, 29  
incestuous marriages of, 29–30  
relocation of, 25, 31  
statues of, 20, **21**, 22
- Amenhotep IV. *See* Akhenaten  
(Amenhotep IV)
- Ammurapi, 72
- Anatolia. *See also* Hittite Empire;  
Hittite epidemic (1322 BCE)  
location of Hittite Empire in, 37  
metalworking in, 64–6, 74–5  
as origin of Sea Peoples, 73
- Ancient Near East  
periods of, 61–3  
region of, 61
- Ancient Near Eastern History and  
Culture* (Stiebing), 79
- Angel, J. Lawrence, 80
- anthrax, 11, 94–96
- archaeological digs, 113
- Ark of the Covenant, 84, 87, 91–2
- Arnott, Robert, 80–1

<sup>1</sup> Page numbers in bold refers images and tables

artistic output/artisan  
 effects of plagues on, 24, 27–9,  
 31, 93  
 Arzawa, 39, 53, 63, 90  
 Assyrian Empire, 7–8, 37, 40  
 Avaris, 89

**B**

Babylon (city), 8, 38  
 Babylonian Empire, 8, 63  
 Baillie, Mike, 68  
 Battle of Kadesh (c. 1275 BCE), 39,  
 42, 49  
 Betancourt, P. P., 78  
 Bietak, Manfred, 89  
 biological warfare, 88–9, 90, 96  
 Black Death, 22, 25, 76  
 Blainey, Geoffrey, 4, 105  
 Boessneck, J., 32  
 Bronze Age, 9–10, 66–96  
   diseases possibly contributing to end  
   of, 10–15, 82–96, 112  
   non-disease causes for end of, 66–79  
   periods of, 62–3, 64–5  
 brucellosis, 11–12  
 Bryce, Trevor, 44–5  
 bubonic plague, 11  
   and biological warfare, 96  
   as cause for end of Bronze Age, 9,  
   11, 81–5, 95  
   and depleted populations, 24–25  
   effects of on culture of survivors,  
   22, 24–31  
   and Egyptian empire, 20, 24–25,  
   32–4  
   and Hittite Empire, 34, 50–8  
   and international trade, 24, 82–83  
 “Bubonic Plague During the Reign of  
 Amenhotep III?” (Kozloff), 20  
 burial methods, 24, 27–8, 31, 81  
*Byzantium: The Early Centuries*  
 (Norwich), 22

**C**

Canaanite illness, 32–3. *See also*  
 bubonic plague  
*Carthage must be Destroyed—The Rise  
 and Fall of an Ancient  
 Civilization* (Miles), 108  
 Carthaginian Empire, 9, 103–10  
 chariots, 76–7  
 cholera, 11  
 Cline, Eric, 2  
*Collapse of Complex Societies, The*  
 (Tainter), 78  
 comets, 68  
 Cooray, M.P.M., 41–2, 48–9, 112  
 Copper Age, 64  
 Cyprus, 33, 90

**D**

Davis, Lee Allyn, 84  
 dendrochronology, 10, 67–68,  
 75, 83  
 dense populations, devastation of,  
 24–5  
 Dickinson, Oliver, 79–80  
 disease  
   as cause for end of Bronze Age,  
   79–81  
 Drake, Brandon, 76  
 Drews, Robert, 67, 69, 76–77  
 drought  
   as cause for end of Bronze Age, 10,  
   67, 75–6, 79–1  
*Drought, Famine, Plague and  
 Pestilence Ancient Israel’s  
 Understandings of and Responses  
 to Natural Catastrophes*  
 (Robertson), 111  
 dysentery  
   and biological warfare, 96  
   as cause for end of Bronze Age, 15,  
   85–7, 95  
   and Persian Empire, 8

**E**

- earthquakes, 68–70  
 Ebers Papyrus, 18, 32  
*E. coli*, 11–12  
 economic factors, 10, 78  
 Egyptian Empire, 7, 17–34  
   under Amenhotep III, 20–31  
   bubonic plague in, 20  
   Hittite Empire's rivalry with, 39,  
     49, 51, 55–56  
   invasions of, 63  
   maps of, **19**  
   medical practices in, 17–18  
   periods of, 17  
   plague's effects on survivors in, 22,  
     24–31  
   and smallpox, 92–3  
   and trade with India, 31–2  
   and tuberculosis, 93  
 Ehrlich, Carl, 83  
 encephalitis, 11  
*Encyclopedia Britannica*, 4  
 “End of an Epoch” (Watson-  
   Williams), 81  
 “End of the Bronze Age by Large  
   Earthquakes?” (Nur), 69  
*End of the Bronze Age, The* (Drews),  
   67, 69  
 “Epidemics in the Course of History”  
   (Cooray), 48–9

**F**

- famine  
   and end of Bronze Age, 10, 76  
   and end of Hittite Empire, 42  
   as result of Hittite epidemic, 51, 54  
 Finley, Moses I., 74  
 Fitzpatrick Lectures, 47–48  
 Fitzpatrick, Thomas, 47  
 fleas  
   and bubonic plague, 32, 82, 113

- Forrer, E.O., 51  
*Francisella tularensis* (see tularemia)  
 French, Elizabeth B., 70

**G**

- general systems collapse, 10, 77–8  
 Goedicke, Hans, 33  
 Goetze, Albrecht, 51  
 Grant, Michael, 73–4  
*Greatest Killer, Smallpox in History*  
   (Hopkins), 49, 107  
 Greek Empire, 8–9  
 Gregg, Charles T., 84  
 Guterbock, Hans Gustav, 52

**H**

- Hannibal, 106  
 Hare, Ronald, 41, 45–6, 112  
 Hattusa  
   abandonment of, 9, 43–4, 112  
   food shortages in, 42  
   invasions of, 10, 39  
   location of, 37  
 Hattusili I, 38  
 Hattusili III, 40  
*Health in Antiquity* (King), 80  
 Hearst Papyrus, 18, 32, 89  
 hemorrhoids (piles), 86–7  
 Herodotus, 73, 75  
 Hippocrates, 13  
 history, medical, 4  
*History of the Ancient Near East, A*  
   (Van De Microop), 79  
 Hittite Empire, 8, 37–58  
   abandonment of Hattusa, 43–4, 112  
   and bubonic plague, 34  
   Egyptian Empire's rivalry with, 39,  
     51, 55–56  
   and famine, 42, 51, 54  
   internal instability of, 4

Hittite Empire (*cont.*)

- invasion of, 43
- Iron Age in, 65–6
- location of, 37
- periods of, 38–40
- and plague prayers of Mursili II, 51–7
- reasons for end of, 9, 42–4, 112
- and rivalry for the throne, 43, 55
- Hittite epidemic (1322 BCE), 41–58, 81
- and Mursili II's reign, 39
- and plague prayers of Mursili II, 51–7
- smallpox as cause of, 93
- theories on, 45–7, 48–50, 112
- tularemia as cause of, 88–9, 89–91
- typhus as cause of, 95
- Hittite Prayers* (Singer), 52–53
- “Hittites in Palestine, II” (Forrer), 51
- Hopkins, Donald R., 49–50, 92–93, 107

## I

- incest, 29–31
- influenza
  - and Carthaginian Empire, 9
  - and end of Bronze Age, 14, 94–95
- international trade
  - and Carthage, 103–5
  - and end of Bronze Age, 78
  - in Hittite Empire, 39
  - and transmission of plagues, 24, 82–83, 89–90
- invasions, 10
  - of Ancient Near East, 63, 66–7
  - as cause for end of Bronze Age, 71–4
  - of Hittite Empire, 42–43
- Iron Age, 65–6
- ironworking, 74
- Israelites
  - Exodus of, 7
  - and Philistines, 83–84, 87–8

## J

- Johnson, Samuel, 4–5
- Josephus, Titus Flavius, 85

## K

- Karnak, 25, 31
- Kaska people, 42–43, 117
- Kingdom of the Hittites, The* (Bryce), 44–5
- Kozloff, Arielle P., 20, 22–4, 83
- Kuniholm, Peter Ian, 75–6, 83

## L

- Lakovides, Spyridon, 78
- Lancet*, 46
- leprosy, 9, 12
- London Papyrus, 18, 33
- Lydians, 73

## M

- malaria
  - and end of Bronze Age, 14, 80, 95–6
  - and Greece, 8
  - and Punic Wars, 106
  - and Roman Empire, 9
  - transmission of, 11
- Malkata, 25, 31
- Man and Society in Calamity* (Sorokin), 111–12
- marriages
  - effects of plagues on, 24, 29–31
- mass burials, 24, 27–8, 31
- mass migrations
  - and end of Bronze Age, 9–10, 66–7, 71, 82, 111–12
  - as result of famine, 76
  - of Sea Peoples, 72–3
- McNeill, William H., 105, 112
- measles
  - and Carthaginian Empire, 9, 106

and end of Bronze Age, 14, 94–95  
 Meiss, Millard, 22  
 meningitis, 13  
 Merneptah, 42, 71  
 Mesopotamia  
   development of ancient civilizations  
     in, 7–8  
 mice  
   as source of Plague of the  
     Philistines, 91–2  
 Middleton, Guy, 80  
 Miles, Richard, 108–9  
 Minoan civilization, 7, 63, 72–3  
 Mitanni kingdom, 39, 63  
 Moody, Jennifer, 76  
 Mt. Hekla eruption, 67  
 Mursili I, 38  
 Mursili II, 39  
   plague prayers of, 51–7, 115–30  
 Mycenaean civilization, 63, 67, 70,  
   72–73

## N

*Natural Disasters* (Davis), 84  
 naval design, 108  
 Norwich, John Julius, 22  
 Nur, Amos, 68–9

## O

Osterley, William Oscar Emil, 87–88

## P

*Painting in Florence and Siena after  
 the Black Death* (Meiss), 22  
 paleoentomology, 113  
 paleoparasitology, 113  
 Palestine, 7, 72, 88  
 Panagiotakopulu, Eva, 31–2, 33–4, 83  
 Persian Empire, 8  
 Philistines, 72, 83–4

piles (hemorrhoids), 86–7  
*Plague an Ancient Disease in the  
 Twentieth Century* (Gregg), 84  
*Plague and Pestilence Infectious  
 Disease. Its Origins and Conquest*  
 (Hare), 45  
 “Plague in Ancient World: A Study  
 from Thucydides to Justinian”  
 (Smith), 22  
 Plague of Athens (c. 430 BCE), 9, 15,  
   22, 107  
 Plague of Justinian (531 CE), 82  
 Plague of the Philistines (c. 1190  
 BCE), 83–7, 88–9, 91–2  
*Plague of the Philistines, and other  
 Medical-Historical Essays*  
 (Shrewsbury), 85–86  
 plague prayers of Mursili II, 51–7,  
   115–30  
 plagues. *See also* bubonic plague  
   meaning of term, 3  
 plagues, in Egypt  
   effects of on culture of survivors,  
     22, 24–31  
   in Egyptian papyri, 32–3  
   fleeing of (relocation due to), 24–7,  
     31  
 poliomyelitis, 14, 94–95  
 Porter, Roy, 3–4  
 Pott’s disease (tuberculosis), 12–13,  
   93  
 puerperal fever, 2  
 Punic Wars, 105–107

## R

rabbit fever. *See* tularemia  
 rabies, 11–12  
 Ramesses II, 20, 39–40, 49  
 Ramesses III, 71  
 Ramesses V, 92–93  
 religion  
   effects of plagues on, 24, 28, 31

- relocation due to fleeing plagues,  
24–7, 31, 33–4
- Riemschneider, M., 83
- Rind, A.H., 27
- Roberts, John Morris, 65, 105
- Robertson, Warren, 111
- Robinson, T. H., 87–88
- Roman Empire, 9  
and Carthage, 105–8, 110
- royal families, internal fighting  
within, 10  
as cause for end of Bronze Age, 79  
in Hittite Empire, 39, 43, 55
- Ruffer, Marc Armand, 92–3
- S**
- Sallares, Robert, 80
- salmonellosis, 11
- Säve-Söderbergh, T., 24–5
- Schachermeyr, Fritz, 70
- Schaeffer, Claude Frederic-Armand, 70
- “Scientific Activities of Alexander  
Fleming, other than the Discovery  
of Penicillin, The” (Hare), 46
- scrofula, 13
- Sea Peoples  
as cause for end of Bronze Age,  
71–4, 78  
and end of Hittite Empire, 40  
hypotheses about origins of, 72–4  
invasions by, 10, 66–7, 71–4  
mass migration of, 9
- Seeher, Jürgen, 43–4
- Sekhmet (Egyptian goddess of war and  
pestilence), 22, 23, 28, 31, 35n7
- Semmelweis, Ignaz, 2
- sheep, 90
- Short History of the World*,  
A (Blainey), 4
- Shrewsbury, John Findlay Drew,  
85–87
- Sicily, 103–5, 105–6, 107–108
- Simpson, W.J., 85
- Singer, Itamar, 43, 52, 53, 95
- Slattery, Tom, 9, 45, 93
- smallpox, 13  
and biological warfare, 96  
and Carthage, 107  
deaths from, 4  
and end of Bronze Age, 9, 12,  
92–3, 95, 112  
in Hittite Empire, 45–7, 48–9  
and Roman Empire, 9
- Smith, A.A., 22
- Sorokin, Pitirim, 111–12
- Stiebing, William H., 79
- Studies in the Paleo pathology of Egypt*  
(Ruffer), 9
- Suppiluliuma I, 39, 49, 51, 55
- Suppiluliuma II, 38, 40, 42–43
- Syracuse, 103–5, 106–107
- T**
- Tainter, Joseph, 78
- “Theories of Mycenaean Collapse”  
(Middleton), 80
- 1177 B.C.—The Year Civilization  
Collapsed* (Cline), 2
- Thucydides, 22, 107
- tin, lack of, 74–5, 93
- Topley, W.W.C., 85
- Tragic End of the Bronze Age, The —A  
Virus Makes History* (Slattery), 9,  
45, 93
- Treaty of Kadesh (c. 1258 BCE), 40
- Trevisanato, Siro, 88–9, 90–1
- Troy, 73
- tsunamis, 71
- tuberculosis  
and biological warfare, 96  
and end of Bronze Age, 12–13,  
93, 95
- Tudhaliya I, 38–39
- Tudhaliya III, 55

Tudhaliya IV, 40, 43  
 tularemia, 11, 88–92, 95, 112  
 typhoid fever, 15  
 typhus  
   and Carthaginian Empire, 9, 108–9  
   and end of Bronze Age, 95  
   as zoonosis, 11

**V**

Van De Mieroop, Marc, 79  
 Vermeule, Cornelius C., 78  
 volcanoes, 67–8

**W**

Walloe, Lars, 9, 34, 45, 81, 85  
 warfare, changes in, 10, 76–7

Watson-Williams, Eric, 9, 34, 45,  
   81, 85  
 weaponry, 63–65, 74, 77  
 West Nile virus, 9, 11–12  
 Whiston, W., 85  
 Wilson, G.S., 85  
 Wynn, William Henry, 41, 46–8, 112

**Y**

*Yersinia pestis*. *See* bubonic plague

**Z**

Zanger, Eberhard, 73  
 Zinsser, Hans, 107  
 zoonoses, 11–12. *See also* specific  
   diseases