

THE ILLNESSES OF HEROD THE GREAT

ABSTRACT

Herod the Great, Idumean by birth, was king of the Jews from 40BC to AD 4. An able statesman, builder and warrior, he ruthlessly stamped out all perceived opposition to his rule. His last decade was characterised by vicious strife within his family and progressive ill health. We review the nature of his illnesses and suggest that he had meningoencephalitis in 59 BC, and that he died primarily of uraemia and hypertensive heart failure, but accept diabetes mellitus as a possible underlying etiological factor. The possibility that Josephus's classical description of Herod's disease could be biased by "topos" biography (popular at the time), is discussed. The latter consideration is particularly relevant in determining the significance of the king's reputed worm-infested genital lesions.

1. INTRODUCTION

Herod the Great, king of the Jews at the onset of the Christian era, had no Jewish blood in his veins. Infamous in Christian tradition for the massacre of the newborn in Bethlehem, he was nevertheless a vigorous and able ruler, a prolific builder, friend and ally of Rome and founder of an extensive Herodian dynasty which significantly influenced the history of Palestine. His miserable death at the age of 69 years was seen by the Jewish religious fraternity as Jahweh's just retribution for his violation of Judaic traditions (Ferguson 1987:328-330; Sizoo 1950:6-9). The nature and cause of his illness and death is the subject of this study.

2. SOURCES OF INFORMATION

With the exception of fragmentary contributions from Rabbinic traditions, Christian records in the New Testament and evidence from contemporary coins, Herod's biography comes to us predominantly through the writings of Flavius Josephus, a Jewish priest of aristocratic descent, military commander in a revolt against Rome, but subsequent recipient of Roman citizenship. His *Jewish War*¹ (75-79 AD) and *Jewish Antiquities*² (93-94 AD) relate Herod's life history — the latter more complete but also more hostile towards the king.

1 *Bellum Judaicum*, BJ hereafter.

2 *Antiquitates Judaicae*, AJ hereafter.

Josephus's sources include the Maccabean books and minor contributions from one Ptolemy and Justus of Tiberias, but his works were mainly based on the writings of Nicolaus of Damascus, Greek writer and scholar who was court historian, close friend and counsellor of Herod. Josephus realised that Nicolaus's writings were partial to Herod, and also refers to Herod's personal commentaries or memoirs, but it is unlikely that he had direct access to them. In his later works he drew from a source unknown to us, which was quite hostile to Herod (Otto 1913:1-15; Merkel *et al.* 1988:816-817).



Figure 40: Herod the Great.

3. LIFE HISTORY

Herod was born (73 BC) into an aristocratic Idumean (Edomite) family. His father was Antipater, vizier to the king of Judea, and his mother Cyprus, was the daughter of an Arabian sheik. Reared in the Judaic tradition, he was never enthusiastic about Judaism, showing greater adherence to Greek paganism and Hellenic culture. He was a born leader, great soldier and excelled in outdoor activities like hunting. Josephus (*AJ* 14.377, 455-462; 17.192) states that through life he had good fortune on his side — he survived a storm at sea, at least five assassination attempts, serious injury in war and once even the collapse of a roof.

He soon gained (and maintained) the respect of Rome, and acquired Roman citizenship at the age of 16 years. In 40 BC the Roman senate appointed him king of the Jews in Palestine, but it took 3 years of hard fighting to depose Aristobulus, installed by the Parthians as king in Jerusalem. Josephus makes reference to a brief illness in 43 BC (*AJ* 14.295) and during the above campaign Herod was wounded (*AJ* 14.465; *BJ* 1.332). After an epidemic (approximately 28 BC) he was seriously ill (*AJ* 15.246). These episodes are discussed below.

The period from 37 to 14 BC marked the high tide of Herod's achievements. He showed himself a stern but efficient ruler who broached no opposition. Economically the country flourished, while he maintained the balance of power with Rome who gave him a free hand and promised that he would be allowed to nominate his own successor. He proved a prolific builder of magnificent structures — including a new palace, many fortifications and the Herodium complex 8 miles south of Jerusalem (23 BC); Caesarea (22-12 BC) and a new temple in Jerusalem (20-12 BC); theatres and hippodromes for sporting events (including matches between man and animal) and the rebuilding of Samaria, as Sebaste (27 BC).

He was a very passionate man and revelled in party life. In addition to his favourite eunuchs, boy lovers and concubines, he had 10 wives and at least 15 children. Initially he showed great consideration for his children, but because of his dominating and suspicious nature, and jealousy and scheming among the children of different wives, progressive family strife ensued. According to Schürer (1998:454) the last nine years of his life were domestic misery. He aged markedly and in an attempt to look younger at 63 years, he dyed his hair black (Josephus

AJ 16.233). Josephus states that Herod's second (and favourite) wife, Mariamne (of aristocratic Jewish Hasmonean descent) was mainly responsible for initiating the feud in order to promote her own sons (*BJ* 1.431-435). A vicious cycle of accusation, counter-accusations and plotting gradually brought out the worst in Herod and eventually led to the execution of Mariamne's grandfather, Hyrcanus II (30 BC), her brother, Aristobolus (35 BC), Mariamne herself (20 BC) and her mother, Alexandria (28 BC), Herod's brother-in-law, Costobarus (25 BC), and three of his sons: Alexander (7 BC), Aristobulus (7 BC) and Antipater (4 BC) — in addition to many of his friends, lovers and others. Religious protests in 6 BC also led to the execution of prominent Pharisees, and a year later two rabbis and a large number of youths were killed.

Smallwood (1976:3-4) suggests that Herod was firm and stern, but not really a bloodthirsty tyrant until he was driven to it by his scheming family who sought his throne. Progressive illness towards the end of his life (described below) could also have contributed. However, Sizoo (1950:6-9) and Sandison (1967:382) maintain that he was innately cruel, merciless and power hungry as shown by the execution of relatives, friends and others even in earlier years. Caesar Augustus reputedly commented that it was better to be Herod's pig than Herod's son (Macrobius, *Saturnalia* 2.4.11; Kokkinos 2002:30). However, posterity did honour him with the epithet, "the Great" in recognition of his undoubted administrative, diplomatic, economic and architectural achievements which ensured a relatively peaceful and prosperous Palestine during his reign (40 BC-AD 4).

The exact year of his death is disputed in some quarters, but Josephus (*AJ* 17.161) recorded that it was preceded by a lunar eclipse, and according to most calculations, this must have occurred on 13/14 March, 4 BC (Schürer 1998:465; Kokkinos 1998:305-8, 372-375). There is also evidence that he died before the Passover that year (Schürer 1998:465), which would have taken place before full moon on 11 April (Kokkinos 1998:305-8, 372-5). He died in Jericho having left Jerusalem shortly before.

Herod nominated his three younger sons to succeed him: Archelaus as king of Judea, Antipas as tetrarch of Galilee and Perea, and Philip as tetrarch of the regions east of Galilee (Trachonitis, Batanaea and Paneas). Rome endorsed his decision.

4. HEROD AND THE CHRISTIAN TRADITION

According to Mathew 1:18-24 and 2:1-12, Jesus was born in Bethlehem during the reign of Herod the Great. Magi then came from the East to honour the newborn “king of the Jews”, and enquired from Herod in Jerusalem where this infant could be found. When informed by the rabbis that according to Scriptures the Messiah would be born in Bethlehem (Micah 5:1-2), Herod pretended not to be disturbed by the news and requested the magi to locate and honour the newborn king, and then to inform him of their findings. When the magi returned home directly, having been warned in a dream not to communicate with Herod, the king ordered the massacre of all infants in Bethlehem, two years old and younger. However, Jesus was saved when his parents fled to Egypt after a heavenly warning — and only returned after Herod had died (Mathew 2:13-18). Even then Joseph dreamt that he was not to trust Herod’s successor, Archelaus, and the family returned to Nazareth in Galilee instead of Bethlehem in Judea (Mathew 2:22, 23). The Gospel of Mathew was written during the late 1st century.

There is little contemporary historical confirmation outside the Gospels of the visit of the magi, the massacre of the infants and the flight to Egypt. Church historians like Eusebius (260-340 AD) believed the Gospels while also trusting Josephus’s rendering of Herod’s biography (*Ecclesiastical History* 1.8-9). Macrobius (5th century, with no Christian affiliation) mentions the massacre in his *Saturnalia* (in Smallwood 1976:103-4). Smallwood (1976:103-4) and others view the massacre as a typical legend designed to discredit an unpopular tyrant, but other authors (e.g. Sizoo 1950:6-9) find the Gospel history quite acceptable and state that a massacre of infants would be in keeping with Herod’s conduct towards the end of his life. However, they point out that the death of a score, perhaps 20, children (Bethlehem was an insignificant village at the time) would hardly have been an important event for historians recording Herod’s reign (Ferguson 1987:328-330; Sizoo 1950:6-9). In later centuries this tragedy was certainly exaggerated in Christian writings and iconography (Merkel *et al.* 1988:840-845).

According to Mathew 2:1, 13-15, Jesus was born shortly before the death of Herod the Great. The magi visited Herod while he was still in Jerusalem, thus before his final visit to Jericho where he died in late

March or early April, 4 BC. Luke 2:8 recounts that Jesus' birth was revealed to shepherds spending the night in the open — presumably not in winter. The Gospel tradition thus suggests that Jesus was born not later than 4 BC, and earlier than March that year, when Herod was already ill and only weeks away from death. At the earliest Jesus could theoretically have been born in 5 BC, or even 6 BC (perhaps accounting for Herod's decision to kill children less than 2 years old), but in that case the magi only arrived years after the event.

Joseph's return from Egypt to Galilea instead of Judea (in the territory of Archelaus), quite possibly relates to the latter's massacre of the Jews in Jerusalem following on riots during Passover (early April, 4 BC) (Josephus *AJ* 17.213-218).

5. HEROD'S ILLNESSES

According to Josephus's *Jewish War* and *Jewish Antiquities*, Herod was ill at various times in his life:

1. In 43 BC (age 30) he was prevented by illness (*nosos*) from assisting his brother Phasael in subduing a Judean uprising. No further details are known (*AJ* 14.295).
2. In 37 BC (age 36) during his army's assault on Antigonus in Jericho, Herod was struck "in the side" by a javelin. This must have been a superficial injury because he went on fighting. "Side" is a translation of the Greek word *lapara* in the *Antiquities* (*AJ* 14.456) meaning "the flank between the ribs and the hips", and *pleura* in the *Jewish Wars* (*BJ* 1.332) meaning "the side of the chest".
3. At an unknown date Herod fell from his horse (probably during a hunt) and was impaled on his own spears. We know no more about this accident, incidentally referred to in *Antiquities* (*AJ* 16.315).
4. In 29 BC (age 44) after executing his favourite and beautiful wife, Mariamne, following 13 years of married life, Herod went into a prolonged phase of sincere mourning. According to Josephus (*AJ* 15.240-252; *BJ* 1.435-436), his love of her had been a growing divine madness (although she was haughty and did not necessarily reciprocate his passion) and he now exhibited signs of unseemly lament, often loudly calling out for her or ordering his servant to summon

her. He put aside his administrative duties and when a serious epidemic (*loimôdes*) struck the city he went off into the wilderness on the pretext of hunting. Within days he developed a serious illness, characterised by “inflammation” (*phlogosis*), an “affliction” (*peisis*) of the “back of his skull” (*inion*: the occipital region). He was taken to Samaria and developed temporary “loss of reason” (*dianoias parallage*). In spite of multiple remedies from many physicians, he remained critically ill for a long time and then recovered very slowly. During this period he was irrational, quick to find fault with and punish all around him, and *inter alia* executed his mother-in-law (after an attempted uprising against him), brother-in-law (Costobarus) and two close friends.

Josephus (*AJ* 15.299) also reports a severe epidemic (its nature not described) in 25-23 BC, which might perhaps have been part of the epidemic mentioned above. This episode did not affect Herod.

5. Probably during early 5 BC (age 68), with his domestic problems at a peak, he found it necessary to ban his younger brother, Pheroras, to his own tetrarchy. Herod then developed a serious illness, and when the physicians despaired of his life, Pheroras was asked to visit his brother in order to receive confidential instructions — but refused. Herod then recovered from this illness of which we have no further details, and subsequently visited and supported Pheroras when he fell seriously ill and died (*AJ* 17.58-60).

Herod had now entered the last two years of his life.

6. Some time after the previous incident (late 5 BC or early 4 BC) Herod again fell seriously ill when he was on the point of punishing his eldest son, Antipater for plotting his death. For this event Antipater was accused before Caesar Augustus in Rome. The symptoms of Herod’s disease are not recorded, but it was serious enough for him to revise his will and declare his younger son, Antipas, successor to his throne. Having given up hope of recovery he now became quite savage and treated all with irrational harshness and anger (*AJ* 17.146-8).

A rumour spread that he was dying. This encouraged two rabbis, Judas and Matthias, to rouse the youth into rash actions against the king, *inter alia* the removal of his great golden eagle placed over

the temple gate. This action had been seen as blasphemy against Jahweh. Herod had the perpetrators arrested, then tried them in Jericho, and in great anger deposed the high priest and killed many of the guilty by burning them at the stake. On that same night there was a lunar eclipse (*AJ* 17.161-167), which, according to modern calculations, fixes the date as 13/14 March, 4 BC (Schürer 1998:465; Kokkinos 1998:305-8, 372-5). Herod was 69 years old.

7. Josephus (*AJ* 17.168-194; *BJ* 1.656-665) now gives a detailed description of Herod's further, and fatal illness, which he saw as God's punishment for his lawless deeds. The descriptions in the *Jewish Wars* and *Antiquities* (essentially complementary) are combined:

A disease of his whole body evolved, characterised by a fever which affected his internal organs. He had "ulceration of his intestines", pain over the colon, inflammation in the lower abdomen and a "destructive affliction" (*kakosis*) of the abdominal organs. There was "transparent swelling" of the feet which exuded a watery substance, and putrefaction of his genital organs, which produced worms. He was short of breath (*dusпноia*), had "loathsome breath" (perhaps halitosis) and breathed easier in the upright position (*orthopноia*). Expiration was more difficult than inspiration, and he had episodes of gasping and severe coughing. There were "convulsions" of his limbs. According to the *Jewish Wars* he had uncontrollable itching (*kenêsmos*) of the skin, but in the corresponding passage in *Antiquities* the original text referred to an insatiable need to "receive (*dexasthai*) something". Certain modern translations considered this a corruption of the text, and changed *dexasthai* to *adaxasthai* — "a need to scratch". This suggestion would then bring the two Josephus works in line (Kokkinos 2002:35).
8. Herod was subsequently taken across the Jordan to the warm springs at Callirrhoe at the northerly end of the Dead Sea. Here doctors decided that his body should be warmed, and immersed him in a tub of warm oil. He immediately collapsed, and rolled his eyes over backwards as if he was dying. The subsequent laments and crying of his servants raised him from the stupor. He now assumed that he was dying and distributed gifts of money to his soldiers and friends, before being taken back to Jericho (*AJ* 17.173; *BJ* 1.658, 659).

9. Herod arrived there in severe melancholy, feeling bitter towards all. He then devised a diabolical scheme to ensure that his death would be associated with nation-wide mourning (based on the assumption that the Jewish people would not spontaneously mourn his death). Notable Jews from all over the country were brought to Jericho and enclosed in the hippodrome. He then requested his sister, Salome, to see to it that they all be killed as soon as he died (*AJ* 17.178, 179; *BJ* 1.659).

At this stage a letter arrived from Caesar Augustus, giving him permission to deal with his rebellious son, Antipater, as he deemed fit. This news temporarily improved his state of mind, but when his misery returned he unsuccessfully attempted suicide with a fruit knife. A rumour now spread through the palace that Herod was dead, and from his captivity Antipater planned renewed insurrection against his father. When this was reported to Herod he exclaimed in anger and immediately had Antipater executed. He then drew up his final will (*AJ* 17.183-193; *BJ* 1.661-665).

Herod died in Jericho five days later, and was ceremoniously buried at Herodium, although his grave has never been located (Kokkinos 2002:33). Salome, his sister, contrary to instructions, then released the captive Jews from the hippodrome (*AJ* 17.192, 193).

6. DIAGNOSIS

We have no records of the disease of 43 BC (age 30) (Josephus *AJ* 14.295). It was evidently not of a serious nature.

The war injury of 37 BC (age 36) entailed a javelin wound in the side — *pleura* and *lapara* referring to the lower chest or flank. It must have been quite superficial as Herod continued fighting (Josephus *AJ* 14.456; *BJ* 1.332). There is no evidence that his kidney was damaged as suggested by Kokkinos (2002:34). Similarly the hunting accident when he fell on his own spear, apparently left no sequel (*AJ* 16:315).

In 29 BC (age 44) after the execution of his favourite wife, Mariamne, Herod experienced a period of intense bereavement and obvious remorse. His deep sorrow, even inappropriate lament (as described by Josephus) and seemingly irrational conduct of summoning the wife

he had just executed, as well as his wild excesses (Josephus *AJ* 15.240-243; *BJ* 1.435-436) may be explained as the desperate reactions of a tyrant, realising that he had killed the one person whom he loved with an extreme passion.

The cause of the epidemic which followed Mariamne's death (Josephus *AJ* 17.243) is unknown. It is even uncertain if this was part of the same epidemic which, according to Josephus, hit Jerusalem between 25-23 BC (*AJ* 15.299). Herod left the city on a hunting expedition, possibly to avoid the disease, fell ill and was then treated in Samaria. His deterioration to a state of mental incoherence was followed by a protracted recovery, during which he exhibited cruel and irrational behaviour (*AJ* 15.245, 246). We suggest that Josephus's mention of an "affliction" (*peisis*) of the area where the neck meets the head (*inion*), might reflect neck stiffness, a sign of meningitis. This illness would also explain his irrational behaviour and transitory loss of reason, particularly so if the meningitis was associated with encephalitis, which commonly occurs in viral meningitis (Harter *et al.* 1991: 2023-2038). It is not postulated that the associated epidemic was of similar etiology.

Herod's final illness probably manifested early in 5 BC (age 68) with Pheroras's exile, and 1½ years before his death (*AJ* 17.58-60). Later that year or early 4 BC, a further serious illness kindled rumours of his impending death and precipitated the uprising when his golden eagle was removed from the temple gate (*AJ* 17.155-167; *BJ* 1.656-657). His vengeful and cruel retribution in Jericho on 13 March 4 BC might well have been conditioned by his deteriorating state of health, but then Herod had done similar things in times of apparent health. We have no details of these illnesses.

The final phase (*AJ* 17.168-194; *BJ* 1.656-665) which probably lasted only weeks has been extensively reviewed, and authors have come up with a variety of diagnoses (Kokkinos 2002:34, 35; Ladonceanu 1981: 25-34). We agree with Sandison (1967:381-387), Kokkinos (2002:34, 35) and others (e.g., Merrins 1904:558-560; Kottek 1994:186-190) that the likeliest diagnosis is that of chronic renal failure (uraemia) and secondary hypertensive cardiac failure. The previous history reveals no clues as to the cause of renal failure, unless the abdominal pain (and

hypogastric pain in particular) points at cystitis as part of chronic cysto-pyelonephritis. There is no history suggestive of renal calculi.

- i) Terminal chronic renal failure (uraemia) would explain Herod's progressive weakness, the intractable itching of the skin and his depressed (even deranged) state of mind (Davison *et al.* 1995:631-636). Uraemia characteristically causes muscle spasms which would explain the "convulsions" of his limbs. Reference to "ulceration of the bowels" could refer to uraemic diarrhoea, while mild pyrexia is common. Malodorous breath would have been typical uraemic halitosis.
- ii) Hypertension (with accelerated atherosclerosis) caused by chronic renal disease, and hypertensive heart failure fit in with Herod's shortness of breath (*dyspnoia*) and comfort in the upright position (*orthopnoia*). Difficulty with expiration points at bronchospasm, a common manifestation of left heart failure. The transparent swelling of the feet exuding a watery substance, probably indicates dependent oedema, which may also extend to the rest of the lower extremities and back, depending on the position of the body. Constant abdominal pain may have resulted from liver congestion secondary to heart failure. "Colonic" pain may actually have been painful hepatic congestion (Boon *et al.* 1995:224, 225). We find no good evidence for abdominal cancer (Jones 1938:47) — the word *kakôsis* refers merely to serious destructive disease for which malignancy is only one (unlikely) possibility. Cancer would hardly explain the rest of the syndrome. The syncope during a hot oil bath at Callirrhoe probably represented cerebral anoxaemia caused by sudden vasodilation in a person with a compromised cardio-vascular system (Boon *et al.* 1995:225).
- iii) As suggested by various authors (Kokkinos 2002:34, 35; Sandison 1967:384), the putrefying, worm-infested lesion of the genitalia could have been a fly maggot infestation (myiasis), perhaps based on bacterial or fungal intertrigo, common in oedematous (or obese) persons. Lack of hygiene and uraemia would have aggravated the condition (Kokkinos 2002:34, 35; Marshall 1960:181). At his age venereal ulceration is less likely. The possibility that this was a so-called "topos" description (Ladonceur 1981:25-34) is discussed below.

Other diagnoses mentioned in literature:

- a) Diabetes mellitus suggested by McSherry (1997:167-169), Litchfield (1998:283-284) and others, could be slotted into Herod's disease complex at various levels — by causing a nephrotic syndrome associated with severe oedema and ultimate chronic renal failure; by accelerating atherosclerosis and thus ischaemic heart disease; by predisposing to infection, and monilial intertrigo (infection of the groin area) in particular (Foster 1991:1739-1759). As a comprehensive aetiology it thus merits serious consideration, although pancreatic cancer (Meysan 1957:154-156) as cause of the diabetes can probably be excluded. However, Kokkinos (2002: 35) points out that the grounds for a diagnosis of diabetes is based partly on the doubtful assumption that Herod had an increased appetite. This arose from the possible corruption of the *Antiquities* text (mentioned above) where the word *dexasthai*, meaning a “need to receive”, was translated to mean a “need to receive food”, indicating polyphagia, typical of diabetes mellitus.
- b) Poisoning was suggested by Renan (1886:65) as early as 1886, but although part of the symptom complex (e.g., the abdominal symptoms) could possibly have been due to poisoning, it would hardly account for the rest of the clinical picture. Similarly Patrick's suggestion of chronic amoebic dysentery as cause of the “bowel ulceration”, can at best explain only part of the syndrome (in Sandison 1967:385-386).
- c) Cirrhosis of the liver which could have resulted from Herod's dissolute way of life (Neuburger 191:58) does cause oedema and even jaundice-associated pruritis. However, in that case jaundice is usually severe, and jaundice was not noticed in Herod. Cirrhosis does not cause cardiac or pulmonary failure (Podolsky *et al.* 1991:1340-1352).

7. DISCUSSION

This discussion of Herod's illness is based on the assumption that Josephus described actual symptoms and signs observed. Classicists like Ladonceur (1981:27-29) warn that ancient historians did not necessarily report factual observations but often wrote metaphorically in the

mode of the time. Illnesses of infamous rulers in particular were dramatised in a stereotypical fashion. He sees the final illness of Herod the Great as a case in point — the death of a hated despot is described as a horrifying incident. Like Africa (1982:1-17), Ladonceanur points out that “worms in putrefying tissues” associated with a slow agonising death, was a repetitive theme in the death sagas of many prominent but cruel individuals of antiquity. Africa (1982:1-3) perpetuates the discredited concept of phthyriasis, a condition in which “vermin” (specifically mites of animal origin) are supposed to penetrate the body and gradually destroy internal organs from within. Mommsen was right when, as early as 1908 he dismissed phthyriasis as a disease which only exists in the world of fantasy (1908:376).

The suggestion of Ladonceanur (1981:28-30) and others that Josephus’s description of Herod’s illness was modelled on Thucydides’s classical account of the Athens epidemic of 430–426 BC (demonstrated by way of a few quite selective quotations from the two works) is not convincing. With Josephus’s upbringing as Jewish priest it is perhaps to be expected that religious influences might have crept into his histories, but to see his description of Herod’s dropsy and genital ulceration as an expression of Talmudic bias regarding sin and sexual offences (1981:32) is probably going too far. It is nevertheless accepted that Josephus’s writings were quite probably influenced by his moral judgement of the Herodian family, and Fenn’s analysis (1992:182-191) of the disturbed Palestinian society at the time shows that community discord almost certainly influenced all facets of contemporary historiography.

REFERENCES

AFRICA T

1982. Worms and the death of kings. *Classical Antiquity* 1:1-17.

BOON N A & FOX K A A

1995. Diseases of the cardiovascular system. In: C.R.W. Edwards, A.D. Bouchier, C. Haslett & E.R. Chilvers (eds.), *Davidson's principles and practice of medicine*. New York: Churchill Livingstone.

DAVISON A M, CUMMING A D & SWAINSON C P

1995. Diseases of the kidneys and genito-urinary system. In: C.R.W. Edwards, A.D. Bouchier, C. Haslett & E.R. Chilvers (eds.), *Davidson's principles and practice of medicine*. New York: Churchill Livingstone.

EUSEBIUS

1959. *The Ecclesiastical History* (transl. K. Lake). London: Heinemann. Loeb Classical Library.

FENN R

1992. *The death of Herod*. Cambridge: University Press.

FERGUSON E

1987. *Backgrounds of early Christianity*. Grand Rapids, Mich.: Eerdmans.

FOSTER D W

1991. Diabetes mellitus. In: J.D. Wilson, E. Braunwald, K.J. Isselbacher *et al.* (eds.), *Harrison's principles of internal medicine* (12th ed.). New York: McGraw-Hill.

HARTER D H & PETERSDORFF R G

1991. In: J.D. Wilson *et al.* (eds.), *Harrison's principles of internal medicine*. New York: McGraw-Hill.

JONES A H M

1938. *The Herods of Judaea*. Oxford: Clarendon Press.

JOSEPHUS

1956. *The Jewish War* (transl. H. S. J. Thackeray). London: W. Heinemann. Loeb Classical Library.

1980. *Jewish Antiquities* (transl. R. Marcus). London: W. Heinemann. Loeb Classical Library.

KOKKINOS N

1998. *The Herodian dynasty. Origin, role in society and eclipse*. Sheffield: Academic Press.

2002. Herod's horrid death. *Biblical Archaeology Review* 43:28-62.

KOTTEK S S

1994. *Medicine and hygiene in the works of Flavius Josephus*. Leiden: Brill.

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LADONCEUR D J

1981. The death of Herod the Great. *Classical Philology* 76(1):25-34.

LITCHFIELD W R

1998. The bittersweet demise of Herod the Great. *Journal of the Royal Society of Medicine* 91:283-284.

MARSHALL J

1960. *Diseases of the skin*. Edinburgh: E. & S Livingstone.

McSHERRY J

1997. Worms, diabetes and king Herod the Great. *Journal of Medical Biography* 5:167-169.

MERKEL H & KOROL D

1988. Herodes der Grosse. In: E. Dassmann (Hrsg.), *Reallexikon für Antike und Christentum*, Stuttgart: Anton Hiersemann, pp. 815-849.

MERRINS E M

1904. The deaths of Antiochus IV, Herod the Great and Herod Agrippa I. *Bibliotheca Sacra* 61:558-560.

MEYSHAN J

1957. The disease of Herod the Great, King of Judaea. *Journal of the Medical Association of Israel* 53:154-156.

MOMMSEN T

1908. *Römische Geschichte*. Vol. II. Berlin: Weidmann.

NEUBURGER M

1919. *Die Medizin in Flavius Josephus*. Bad Reichenhall: Bachkunst.

OTTO W

1913. Herodes. In: G. Wissowa & W. Kroll (Hrsg.), *Paulys Realencyclopädie der classischen Altertumswissenschaft*. Suppl. II. Stuttgart: Metzlersche Verlagsbuchhandlung, pp. 1-200.

PODOLSKY D K & ISSELBACHER K J

1991. Cirrhosis of the liver. In: J.D. Wilson *et al.* (eds.), *Harrison's principles of internal medicine* (12th ed.) New York: McGraw-Hill.

RENAN E

1886. *Les Apôtres*. Paris: M. Levy.

SANDISON A T

1967. The last illness of Herod the Great, King of Judaea. *Med. Hist.* 11:381-387.

SCHALIT O A

1969. *König Herodus: Der Mann und sein Werk*. Berlin: W. de Gruyter.

SCHÜRER E

1998. *A history of the Jewish people in the time of Jesus Christ*. Vol. I (transl. J. McPerson). Edinburgh: Hendrickson.

SIZOO A

1950. *Uit de wereld van het Nieuwe Testament*. Kampen: I.H. Kok N.V.

SMALLWOOD E M

1976. *The Jews under Roman law*. Leiden: E.J. Brill.