In an appeal for better health services in South Africa made some two to three years ago by an overseas visitor, the warning note was sounded that if our country did not do much more in the field of public health, it was sure to suffer the same fate as the Roman Empire which, he said, had come to a fall because of inadequate health services. Although the latter part of the admonition may at first sight seem somewhat far-fetched, it does link up with a view expressed some years ago by W.H. McNeill. In his book, Plagues and Peoples, he discusses the so-called "plague of Justinian" which ravaged the Empire during the 6th century for some 52 years, and then observes that Justinian's subsequent failure to restore imperial unity to the Mediterranean region might be attributed in good part to the diminution of imperial resources stemming from the plague. And this calamity, according to McNeill, played an important part in precipitating the advent of the Dark Ages. The question thus arises whether the demise of the Roman Empire could not perhaps have been prevented or at least postponed if health services had been better. This touches upon an extensive subject which can be viewed from many perspectives. In this article only one aspect will be treated, namely the attitude of the Roman government in general to public health services, as reflected by a few of the most important legal measures taken in this regard.

1. The Lex Regia regarding Caesarian sections

Although the authorities in Rome apparently did not feel any express obligation to develop public health services, laws were passed and official measures taken from the earliest times when necessary. A good example is the Lex Regia, the earliest known Roman law concerning health matters, dating from the 8th century B.C. This law, ascribed to the legendary Sabine king, Numa Pompilius, prescribed that Caesarian sections should be performed on women dying in labour. This concern about the life of an as yet
unborn Roman citizen at this very early stage in Rome’s history was prob­ably aimed at the increase of the population of the newly founded town of Rome.

2. Laws regarding hygiene in the city

Another very early injunction forbade the burning or burial of corpses within the walls of Rome. This law was followed by many others regarding hygiene in the city, as for instance the measures taken during the great plague in Rome in the year 293 B.C. Tradition has it that the Sibylline oracle’s recommendation in this crisis was that the senate should import the cult of Asklepios, the Greek god of medicine, from its chief centre in Epidaurus. The poet Ovid relates (Met. 15. 669ff) that a serpent (the symbol of the god) boarded the ship at Epidaurus of its own accord, and swam ashore to a small island in the Tiber when the mission arrived in Rome. After the plague had subsided, the grateful Romans built a temple on the island in honour of the god whom they named Aesculapius in Latin. This tale has been ‘demythologized’ and explained in simple terms: Roman health services were still in a very primitive state in the 3rd century B.C. and thus the state had to seek outside assistance against the plague. The priests in Epidaurus advised that it would be more hygienic to have ill people outside the built-up area of the city. Therefore the senate ordered that the temple to Aesculapius to which the sick would flock in order to seek healing should be built outside the city precincts on an island in the Tiber.

3. The appointment of state physicians

From the earliest times the Greek city states followed the practice of hiring a physician to care for the public health of their community—during the 4th century B.C. Athens for instance had six public physicians! In the Roman world, however, it was only during the time of the Empire that cities in general started to follow the example set by the Greeks nearly six centuries earlier. Since the 2nd century A.D. most cities had one or more municipal doctors who attended the common people. These doctors (or ‘archiatri’/‘medici publici’) had many privileges (they did not have to pay taxes, need not give lodging to soldiers, could not be put into prison, had front seats at the local games etc.), and besides their state salaries (probably instituted in the early Empire), they were also paid well by prosperous private patients. Besides the office of public doctor there was the honourable position of court physician, and at the bottom of the scale, the slaves’ doctor and the gladiators’ doctor. There was at this stage already some specialization in medical practice—we hear for instance of a ‘medicus clinicus’, a ‘chirurgus’, an ‘ocularius’ and an ‘auricularius’.
4. State control of physicians

The Romans did, however, not only see to it that there were doctors, but also tried to ensure that the standard of treatment was high. The first known law specifying the liability of medical practitioners was the Lex Aquileia (Ulpian Dig. 9.2.7.8) which imposed severe penalties on any doctor who caused death by negligence. But this was still not enough to guard the public against charlatans and quacks, of whom there were many. One of Martial’s fundamental criticisms in his epigrams (cf.1.47) was the ease with which a man could establish himself as a doctor. A legal form of licensure was the obvious solution, but unlike states such as Assyria, Babylonia, Persia and Egypt, the Greco-Roman world did not impose any craft restrictions or legal regulations on practitioners. The first step in the direction of some form of licensure was not taken until the 2nd century A.D. During the reign of Antoninus Pius, the considerable privileges extended to physicians in the Empire were, for financial reasons, restricted to a limited number of doctors which varied according to the size of the communities; the burden of taxation was falling increasingly hard on citizens less able to afford them. Thenceforth physicians had to apply for privileges and present their credentials. Those who were then elected as community doctors or ‘archiatri’ could be trusted to be real doctors who had satisfied the authorities as to their knowledge and skill. In private, however, anyone could still practise medicine.

5. Laws granting privileges to physicians

There were, of course, also good doctors in antiquity, as is proved by the numerous laws granting privileges to physicians in gratitude for services rendered. There had been enormous antagonism against all Greek physicians in the 3rd and 2nd centuries B.C. and humiliation by the snobbery of the ruling class even down to the 1st century B.C., but their position in Rome was definitely established when in 46 B.C. Julius Caesar granted citizenship to all physicians practising in Rome (both literary and epigraphic sources concur that even in the 1st century A.D. medicine in Rome was still practised largely by Greeks). In the Imperial period the status of physicians greatly improved as the ruling class evolved into an aristocracy of merit. According to Pliny (HN 29.7–8) the royal physicians at the courts of Augustus and Tiberius received handsome salaries. Augustus further improved their position when, in gratitude to his freedman Antinuous Musa who cured him of a disease, he gave to him and all his fellow practitioners freedom from public taxes then and forever.

6. Free medical services for the poor

Free medical services for the poor were not instituted until the 4th century
A.D. In a law passed in 386 (Codex Theodosianus 13.3.8), the emperor Valentinian II decreed that public doctors were expected to render their services free of charge to the poor.

7. Laws regarding abortion

An age-old issue which is still being hotly debated today, but which apparently attracted the minimum attention in antiquity until the advent of Christianity, is abortion. For the Greeks and Romans child exposure was a relatively common practice, and infanticide was still practised by the rich during the highly civilized Roman Imperial period. In excavations infant skeletons were often found under floors and even in rubbish pits—one must remember that the ‘paterfamilias’ had the power of life and death over his whole household. It is therefore hardly surprising that Greek and Roman law did not protect the unborn child, and that the act of aborting the foetus—provided the mother was not harmed—tended to be viewed as morally permissible. Since then in pagan Roman law there was no prohibition on abortion, it was practised without embarrassment by the upper class Romans to limit their families (although contraceptives were also widely known and commonly used in antiquity).

In the Principate, due to Hellenistic influence, a new tendency developed, namely that the state becomes socially involved. The first legislation directly pertaining to abortion was, however, only introduced at the beginning of the 3rd century. But abortion itself was still not considered punishable, only the action linked with it, namely, defrauding a man of his child, procuring an abortifacient, or causing the death of the woman. Although one can trace an increasingly negative attitude towards abortion, especially with the advent of Christianity, it was only in the post-classical period of Roman law (284–527 A.D) that legislation was introduced punishing abortion as such. Now for the first time was abortion considered to be the murder of the foetus.

8. Facilities provided by the Roman government as infrastructure for public health care

Besides all the above-mentioned laws, there were many practical measures by means of which the Roman government strove to maintain and promote good health among the citizens, of which a few will be mentioned briefly. The innumerable aqueducts which the Romans built wherever they set foot, provided enough pure water for public and private use—even though the poor did not have running water in their houses but had to fetch it from street fountains or basins, water was available and of reasonably good quality. Furthermore sanitary measures were a source of
great civic pride to the Romans. Apart from the Cloaca Maxima (which is still used as a sewer today after 2500 years!) there was a network of sewers under the city. Unfortunately the masses were not able to share in all the available hygienic facilities—only the houses of the really rich in Rome were connected with the public sewers, and most of the population still used the public latrines in the streets. The famous public baths are a further illustration of the appreciation the Romans had for public and personal hygiene. But the most important contribution of the Romans to organized medical care is the development of public hospitals for individuals. Hospitals as a feature of public health services are taken for granted today, but they only came into being in late antiquity. Hospitals for soldiers and slaves ("valetudinaria") can be traced back to the 1st century A.D., but hospitals for sick civilians only evolved much later under the influence of Christianity from the hospices ("xenodochia") initially built to shelter pilgrims and messengers between bishops.

9. Deficiencies in the Romans’ public health services

And yet, despite all these valuable and lasting contributions to public health care, there was still much to be done. In an informative article by Alex Scobie the probable causes for the very low average life expectancy of the inhabitants of Rome at birth of 25 years is investigated. Scobie comes to the conclusion that the squalid conditions in which many of the poorer people lived, as well as deficiencies in the disposal of human and animal waste were two of the main reasons for the low life expectancy. Although there was "a remarkable level of standardization in the provision of certain basic facilities such as public latrines and baths", there was e.g. no legal obligation for home owners to connect their dwellings to a public street sewer, and there were no specifications where the domestic latrines were to be situated or how they were to be constructed. It hardly needs mentioning that this led to extremely unhygienic practices.

Another hazard in public health care was the unhygienic condition of Rome’s streets which would have been fouled by human and animal waste, and even at times by corpses of slaves and unwanted infants. The cleanliness of the streets was the responsibility of the aediles as part of their ‘cura urbis’, but there was no official street cleaning service at Rome (cf. however n.22). Since the overflow of the public basins would only have washed away part of the filth in some of the streets, those who occupied properties with adjoining street fronts were ultimately responsible for keeping the streets clean—a duty which, especially in the poorer quarters, was neglected more often than not. Dogs and carrion birds such as vultures must have played an important role in the disposal of street refuse, but these animals would also have been carriers of diseases. By way of summary, Scobie leaves us with a bleak picture of the state of public health in
Rome at least: 'It is clear that in Rome there was a very high risk of food and water contamination through direct or indirect contact with human or fecal matter which was inadequately dealt with by city authorities. Open cesspits in kitchens, a general lack of washing facilities in latrines, defecation and urination in the streets, the pollution of water basins with carrion and filth, lack of efficient fly control, and inadequate street cleaning, do not provide a basis for health in an urban community, but do help to explain a very high mortality rate'.

10. Conclusion

Despite all the laws regulating health matters and all the practical measures by means of which the Romans tried to promote good health among the citizens, it cannot be denied that the citizens of Rome at least lived in a very unsanitary environment. One should, however, not criticize the Roman government overmuch, since the situation in Rome was in many respects similar to that in large European cities till shortly after 1842, when Edwin Chadwick’s ‘Sanitary Report’ was published in London, drawing attention for the first time to ‘the appalling consequences of inadequate waste disposal in large cities’. Then only was a series of laws passed in England to improve sanitation, living conditions among the poor, and public health services in general. This example was in due course followed by a few pioneers in Europe and the United States.

In conclusion the question still has to be answered whether the demise of the Roman empire could not have been prevented or at least postponed if health services had been better. The answer is unequivocally ‘yes’. We must however keep in mind that laws and practical measures alone could not achieve much—the main problem with health services in Rome and in the rest of the world up to the 19th century was a lack of knowledge. Only after the discoveries of people like Louis Pasteur with his germ theory of infection and Joseph Lister with his invention of an antiseptic reducing post-operative mortality drastically, could there be a real improvement in public health services.

NOTES

* This article is an adaptation of the Chairperson’s Address, delivered at the 20th Biennial Conference of the Classical Association of South Africa in January 1993.
2. The Twelve Tables laid down: ‘Hominem mortuum in urbe ne sepelito neve urito’ (cf. R. Düll, Das Zwölftafelgezet. Texte, Übersetzungen und Erläuterungen, München 1971, 56, as well as Cic. Leg. 2.23.58 and the Lex Ursonensis cc. 73–74 for regulations elsewhere than at Rome (FIRA 1.21)). The aediles were the magistrates
dealing with burial rights, the supervision of graveyards and of decency at funerals (cf. Ovid Fast. 6.663–4).

3. The association of a serpent with the art of healing is of ancient origin. It also occurs in early Jewish religion: in the Wilderness Moses held up the brass serpent for the Israelites to look at in order to be healed (Numbers 21. 4–9). The serpent was also a familiar animal in Greek mythology, and the regular accompaniment of heroes and of some (especially chthonian) deities. From the earliest times the Greeks believed that divinity might be incarnated and that it had magic powers. J.S. Elliott (Outlines of Greek and Roman Medicine, Longwood Press, 1978 (repr.), 14) asserts that it was thought that a creature which could produce poison and disease might be capable of curing as well as killing. Non-poisonous serpents were always kept in the temples of Asklepios and were thus associated with prophecy, dreams and healing. The god is usually represented as holding a staff around which a serpent is entwined.

4. R.W. Davies, ‘Medicine in Ancient Rome’, History Today 21 (1971) 771. In Suet. Claud. 25 and Dig. 40.8.2 we find confirmation of the fact that the sick went there to be healed: according to an edict of the emperor Claudius sick slaves who were abandoned on this island by their masters had to be freed. This should, however, not be regarded as the first hospital in the modern sense of the word, since the sick went to the temples of Aesculapius basically for dreams in which they believed the god revealed to them the treatment they ought to follow. Hospitals where the general public could receive regular treatment for diseases only came into being in the late Empire under the influence of Christianity. Cf. in this regard two penetrating articles by G. Harig, ‘Zum Problem ‘Krankenhaus’ in der Antike’, Klio 53 (1971) 179–195, and G.E. Gask & J. Todd, ‘The Origin of Hospitals’, in Science, Medicine and History. Essays in Honour of C. Singer, E.A. Underwood (ed.), Oxford, 1975, 122–130.

5. H.M. Koelbing (Arzt und Patient in der antiken Welt, Zürich und München 1977, 210 and 233 n.27) draws our attention to the fact that the honorarium which doctors initially received in gratitude for services rendered, but to which they were not entitled (cf. Cic. ad Fam. 16.14.1 and 2) was only in the 6th century established as a right by the laws of Justinian (Codex Theodosianus 13.3.8). A medical practice was, however, seldom the means to a fortune. The public doctors could maintain a comfortable standard of living, but R. Jackson (Doctors and Diseases in the Roman Empire, London 1988, 57 and 189 n. 8 and 9) shows that despite popular opinion at the time (cf. Pliny HN 29. 1.2; 8.17.22) those who really became rich were the exception rather than the rule in a society in which landownership was the measure of real wealth.

6. Dig.27.1.6.2; Inst.1.25.15; Codex Theodosianus 13.3.10. It was not until Valentini ans’s law of A.D. 386 that the numerus clausus system prevailing elsewhere, was also enacted at Rome. The ‘archiatri’ then recognized as state physicians in Rome formed a ‘collegium’ with certain privileges beyond those of the ‘medici’. Although this body played a role in the selection and approbation of physicians for public practice, it was no General Medical Council, nor did it have an oversight over the medical practitioners in Rome. According to V. Nutton (‘Archiatri and the Medical Profession. IV. The West’, PBSR 45 [1977] 208) it remained an elite body concerned with the status, privileges and occasionally obligations of a select few.

7. Cf. the elder Cato’s strong reaction against Greek medicine and the influx of its practitioners into Italy. He forbids his son, Marcus, to have any dealings whatsoever with that ‘utterly vile and unruly race’ who took an oath among themselves ‘to kill all barbarians (i.e. Romans) by their medicine’ (quoted by Pliny HN 29.14).
F. Kudlien (‘Medical Ethics and Popular Ethics in Greece and Rome’, *Clio Medica* 5 [1970] 98) rightly remarks that this is ‘a striking example of pure prejudice, uttered by a grim old nationalist and lacking any factual basis’. Cato’s attitude can, however, be understood to some extent: along with competent doctors from abroad came charlatans and many who were ill-trained, greedy of gain and little troubled by conscientious scruples, who traded upon the credulity of the Romans. Pliny (*HN* 29.16) furthermore draws our attention to a decree published some time after Cato’s death ordering the banishment of all Greeks from Italy, but expressly directed against the Greek physicians. If, however, there ever was such a decree, its effectiveness was certainly questionable.

8. Cf. Cicero’s condescending view of professional men (despite his own middleclass origin): ‘Society derives much benefit from medicine, architecture and higher education, but these occupations are only honorable for those men to whose special position such professions are appropriate’ (*Off.* 1.151). For further denigrations of physicians cf. Pliny *HN* 29.5.11; Petr. 42.5; *Gr. Anth.* 4.129; Mart. 1.47.

9. According to Suetonius *Caes.* 42 this measure was due to Caesar’s desire to attract physicians to Rome. Koelbing (above, n.5, 190) is of the opinion that Caesar probably also had the medical care of the army in mind with this measure, since the army existed solely of civilians at this stage.

10. Suet. *Aug.* 59 and Dio Cassius 53.30. Nutton (above, n.6, 208) questions the usefulness of the privilege, since as Roman citizens the doctors were in any case free from most taxes, and Rome’s public liturgies were in no way compulsory.

11. Cf. Juvenal 5.602–609, and P.A. Brunt, *Italian Man Power* 225 B.C.–A.D. 14, London 1971, 148–154. P. Carrick (*Medical Ethics in Antiquity. Philosophical Perspectives on Abortion and Euthanasia*, Dordrecht/Boston/Lancaster 1984, 101) refers to Athens during the Golden Age when both custom and law provided that on or before the 10th day of its life, the infant was formally accepted into its new family during a religious ritual around the hearth, receiving presents from well-wishers and also its name. Parents who thereafter exposed their children to die were punished by the state.


14. Cf. too Cic. *Clu.* 11.32. The Stoic doctrine that the foetus only received its soul at the moment of birth (cf. Plut. *De Placitis Philosophorum* 5.13.3 and 4) also had an influence on Roman law: as late as the 1st century B.C. the Lex Cornelia de sicariis et veneficis (81 B.C.) and the Lex Pompeia de parricidiis (85 B.C.) repressing homicide still did not apply to abortion (Hawthorne, above n.13,8–11).


16. The content of this law is recorded by Marcianus in *Dig.*47.11.4: ‘Divus Severus et Antonius rescripserunt eam, quae data opera abegit, a praeside in temporale exilium dandam: indignus enim videri potest impune eam maritum liberis fraudasse’.


18. The Church Fathers were the first to introduce a penalty against the pregnant
woman herself. Although there was not unanimity amongst them as to the exact
time when the foetus could be considered a 'homo', they denounced abortion with
asperity and considered it a crime analogous to homicide. Tertullian, the Roman
lawyer converted to Christianity, could, because of his legal training, provide a
scientific foundation for the prohibition of abortion. According to him the embryo
has a soul and thus its own life: 'Homicidii festinatio est prohibere nasci, nec refert
natam quis eripiat animam an nascentem disturbet. Homo est et qui est futurus;
etiam fructus omnis iam in semine est' (Apol. 9.8). Therefore the abortion of a
human being is murder.

19. Justinian's legislators took over classical texts pertaining to abortion unaltered
(Dig.11.8.2; 1.5.18; 47.11.4 etc). Yet a notable exception is Dig.48.8.8: 'Si mulierem
visceribus suis vim inlulisse e quo partum abigeret, constiterit, eam in exilium prae­
ses province exiget'. This is the first text which punishes abortion as such, without
any qualifications.

20. In c. A.D. 100 10 aqueducts supplied Rome with water. One half went to the
public baths and street fountains, and there remained c. 50 gallons/225 litres per
person per day for a population of c. 1,5 million. This compares well with modern
conditions: the city of Bloemfontein with c. 263 000 inhabitants has a water supply
of 101 000 000 liters per day, i.e. 384 liters per person per day.

attention was paid to the purity of the water brought by the aqueducts: at specified
points there were settling basins ('piscinae') in which sediment might be deposited.
It is, however, impossible to vouch for the purity of the water once it reached
the city's apartment buildings, since there were pollution risks not only at the
open basins due to sewer connections and casual refuse disposal, but also from
contaminated containers used by the water carriers (A. Scobie, 'Slums, Sanitation
and Mortality Rate in the Roman World', Klio 68 [1986] 424). As regards the
problem of lead poisoning (because of its relative cheapness and malleability, lead
pipes were frequently used for domestic water supply, despite Vitruvius' warning
[8.6.10–11]). A.T. Hodge ('Vitruvius, Lead Pipes and Lead Poisoning', AJA 85
[1981] 488) points out that it is impossible to determine the likely toxicity of lead­
conducted water when it is not known whether the water was soft or hard. Finley
(quoted by Scobie above, n.21,424) however reveals that the Romans were definitely
exposed to lead poisoning from sources apparently unsuspected by Vitruvius: he
states that the Roman wine additive ‘sapa/defrutum’ was 'prepared by simmering
must over a slow fire in a leaden vessel ... the result, about 20 mg. of lead per
litre of wine, means that the Romans were systematically giving themselves lead
poisoning for centuries, with a consequent increase in mortality and decrease in
fertility'. And when this wine was reheated by the shopkeeper in bronze or lead
cauldrons, there would be the risk of a double dose of lead poisoning.

22. Cf. Ulpian's reference to a praetor's edict which states that sewers were to be kept
clean and in a good state of repair (Dig. 43.23.1–2; cf. also 43.11.1.1). The actual
cleaning and maintenance work seems to have been out to tender, although Pliny
also speaks of penal slaves cleaning baths and sewers as well as maintaining streets
and highways (Ep.10.32).

23. Scobie (above, n.21, 409). For those not connected with public sewers, there were
night-carts removing all kinds of refuse (FIRA 1.13).

24. In the poorer quarters of the city the contents of the chamberpots were simply
emptied out of the top storeys of the apartment blocks (Petr.27; Mart.6.89; FIRA
3.185). Passers-by could count themselves lucky if it was only the contents and not
the vessels themselves that fell on their heads! According to Ulpian this did really
happen, and on one occasion the victim died from the blow received from such a ‘missile’!

25. According to the census of M. Agrippa in 33 B.C. there were 170 public and private baths in Rome; in the 4th century they approached 1000, according to the list of the Regionaries (J. Carcopino, Daily Life in Ancient Rome. The People and the City at the Height of the Empire, London 1975, 285–287). In the smaller towns one finds the same munificence, but on a smaller scale. Although the ancients themselves associated the baths with health (cf. the statues of Aesculapius and Hygieia in the establishments), it does not seem as if the Romans were aware that diseases such as cholera and dysentery were contagious and could also be transmitted by water. Scobie (above, n.21, 425) thus points out that the risks of becoming infected with a wide range of contagious and infectious diseases in the baths would have been great.

26. One must however not idealize the concept of the hospital in antiquity. Before the invention and use of antiseptics in hospitals, septicaemia was a major hazard and must often have been the cause of amputation or death following gangrene. In fact, Jackson (above, n.5, 113) indicates that up to the 19th century the death rate of those operated on in hospitals, was higher than one in two.

27. Scobie (above, n.21, 400).

28. Scobie (above, n.21, 411–413) points out that the reasons why so few property-owners connected their dwellings to public ‘cloacae’ were firstly that Roman drains lacked traps to prevent gases escaping from sewers and thus causing not only an odor nuisance but also the danger of explosions; a second problem was that when the level of the Tiber rose, sewage and waste water which normally flowed into the river via the Cloaca Maxima would be forced back into the network and up any house connections attached to the main collectors. Furthermore, vermin in the sewers would be able to enter houses via any sewer connections. Aelian (HA 13.6) illustrates this danger with the spectacular story of an octopus swimming up a house drain each night from the sea to eat pickled fish stored in the house by Iberian merchants (reference in Scobie above, n.21,413n.111).

29. Cf. Scobie (above, n.21) 419 and n.150.

30. Dig. 43.11.1.1. Street cleaning is here included in the duty of repairing the streets. Cf. too the story told by Suetonius (Vesp. 5) how the emperor Caligula ordered his soldiers to stuff mud down Vespasian’s toga when the latter was aedile and the streets were clearly dirty.

31. Scobie (above, n.21) 421.

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