

The transforming influence of the Greeks on Roman medical practice

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When Rome conquered Greece in the second century BC, she had no equivalent to Greek rational medicine as established by Hippocrates and the Alexandrians. Roman medicine was of a quasi-religious nature, with a strong element of folk traditions and herbal medicine; the *paterfamilias* would treat any sickness in the family (including slaves and even animals) with his array of folk remedies. Greek rational medicine was initially received with great skepticism by the Roman elite, in particular, but it gradually transformed the scene, replacing superstition and magic with a reliance on rational science as it was understood at the time. However, the belief in herbal remedies and the Asclepian cult of temple medicine remained strong. Rome also made its own unique contributions in the fields of hygiene (effective water supplies, sewage and drainage) and military medicine (including the introduction of the first hospitals). Roman doctors gradually replaced their Greek colleagues, and by the fifth century Latin had established itself as a significant medical language. In practice Roman folk medicine was not necessarily much inferior to Greek rational medicine, because the latter was based on ill-understood and largely erroneous concepts of medical science.

Die transformerende invloed van die Grieke op Romeinse geneeskunde

Toe Rome Griekeland in die tweede eeu vC verower, was daar geen Romeinse ekwivalent van Griekse rasionele geneeskunde soos daargestel deur Hippokrates en die Aleksandryne nie. Romeinse geneeskunde was van kwasi-religieuse aard, deurdrenk met volkstradisies en kruie-medikamente; die *paterfamilias* het binne familieverband siekes (familieledes, slawe, selfs diere) met 'n verskeidenheid volksgeneesmiddels behandel. Griekse rasionele geneeskunde, aanvanklik deur veral die Romeinse elite baie skepties ontvang, het egter stelselmatig die Romeinse toneel getransformeer. Die impak van bygeloof en magiese kragte is verplaas deur vertroue in die natuurwetenskap soos destyds verstaan. Kruie-geneeskunde en die Asklepios-kultus se tempel-geneeskunde het egter invloedryk gebly, en Rome het ook 'n eie unieke bydrae gelewer in die veld van higiëne (veral deur voorsiening van water, dreinerings- en rioleerings) en militêre geneeskunde (daarstelling van die eerste hospitale). Griekse geneesheres is mettertyd deur Romeinse kollegas vervang, en teen die vyfde eeu het Latyn 'n beduidende mediese skryftaal geword. Weens 'n grotendeel foutiewe begrip van basiese mediese wetenskappe was Griekse rasionele geneeskunde in die praktyk nie noodwendig meer effektief as Romeinse volksgeneeskunde nie.

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At the time of Rome's invasion of Greece, the Roman medical system was very different from that of the Greek world. For centuries there had been some contact, mainly via the Greek colonies in Southern Italy. However, the two countries retained heterogeneous health care systems with uniquely characteristic health practitioner groupings (Nijhuis 1995: 49-66).

1. Early Greek and Roman medicine

1.1 Greek medicine

Greek rational medicine was based on the Hippocratic Corpus, and had its origin in the earlier Pre-Socratic philosophers and even Homeric medicine. The emphasis was on the physician as a gentleman with standing in the community (Pleket 1995: 33). The Hippocratic physician normally underwent an apprenticeship on the "true art of medicine" (*technê iatrikê*) with a qualified doctor, and was governed by a code of ethics. His learning comprised an understanding of the human body based on the principles of natural science as understood at the time. This excluded magic and superstition (Cilliers & Retief 2006: 35). Centres of excellence existed at Croton (Italy), Acragas (Sicily), Cyrene (North Africa), Pergamon, Cos and Cnidos (Asia Minor) (Longrigg 1998: 29, 61-4). There were three main treatment modalities: drugs, diet and healthy lifestyle (regimen), and surgery (as a last resort) (Scribonius Largus *Compositiones*, Preface par 6, in Sconocchia 1983). The founding of the medical centre at Alexandria (late fourth century BC) led to remarkable advances in the understanding of anatomy, physiology and pharmacotherapy in particular, heralding the onset of Hellenistic medicine as an extension of Hippocratic medicine (Major 1954: 141-51). It was also responsible for the genesis of medical sects such as the Dogmatists and Empirics (third century BC), Methodists (first century BC) and later the Pneumatists (first century AD), which constantly questioned the roots of rational medicine (Gourevitch 1998: 104-38).

By 300 BC Hippocratic doctors — and veterinarians — were well accepted (although untrained charlatans masquerading as physicians were also to be found). These doctors were mostly itinerant physicians who moved from town to town in search of optimal professional opportunities (Edelstein 1987: 87-90). The first salaried city doctor

employed was probably Democedes at Aegina (530 BC), but civic doctors only became common (in Southern Italy) a century later. From the second century BC onwards they were called *archiatri* (Cilliers & Retief 2006: 36-7). Although physicians in the service of rulers and kings (perhaps the Seleucid kings in particular) (Mastrocinque 1995: 143-53) commonly had high social status, other physicians were usually classed with craftsmen, physical trainers, heavily armed foot-soldiers and archery trainers (Pleket 1995: 29-30). In Athens during Hellenistic times (third/second century BC), no more than 5% of physicians were considered elite, but perhaps 80% were in the upper middle class. Slaves could not train as physicians (Pleket 1995: 30-1).

Healing was also performed by the popular Asclepian cult, which originated in the late fifth century BC. Based on religious cures during sleep in *Asclepieia* (Asclepian temples) of which there were more than 200 in Greece, this therapy was probably utilised by most Greeks and existed in harmony with Hippocratic medicine. It was abolished as a pagan rite in the fourth century AD (Major 1954: 103-10). There were also other forms of temple medicine — such as the lesser-known chthonic cult of Amphiarius (Longrigg 1998: 11).

Additional categories of healers included large numbers of folk medicine practitioners, diviners, exorcists and drug dealers such as herbalists and root-cutters (Gordon 1995: 363-76). In Hellenistic times physicians often depended on drug dealers for their medicines. Medical helpers/assistants of various kinds also existed — often slaves trained for specific health purposes (Scarborough 1969: 27-30).

1.2 Early Roman medicine

At the time of the conquest of Greece (second century BC) Rome had no equivalent of Greek rational medicine. In fact, Pliny the Elder declared that the Romans were a healthy nation despite the fact that they had had no doctors for the previous 600 years (Pliny 1963: xxix.5). The Roman system of medicine which had evolved in Italy since the traditional birth of Rome in the eighth century BC had been influenced by Etruscan traditions, which in their turn had been influenced by the Greek colonists in Southern Italy (Scarborough 1969: 21-3). The extent of this impact is very difficult to determine, but we have archaeological evidence of Etruscan temple medicine, votive tablets, remains

of excellent dental prostheses, and a bronze liver (probably used in teaching *haruspexion* [divination by inspection of entrails]). The Greek scientist Theophrastus later praised Etruscan drug therapy. Roman hydraulic engineering, which facilitated adequate water supplies, almost certainly had its origin in Etruscan models (Major 1954: 151-8).

Roman medicine had a prominent rural agricultural base with a marked religious influence arising from a tradition of folk myths and a hierarchy of gods. Disease was seen as a visitation of divine displeasure on mankind, and there were gods and goddesses for different illnesses, childbirth, and so on. Treatment consisted of appeasement of the gods, with incantations, prayers, offerings and amulets. Divination and augury (possibly of Etruscan origin) played an important role. There was a tradition that Numa Pompilius (the second king of Rome) passed a law, later known as the *Lex Regia*, making a Caesarian section compulsory when a woman died in childbirth (Cilliers 1993: 1-2). The *Lex Aquilia*, passed in the fourth century BC, proclaimed heavy penalties for negligent medical treatment (Cilliers 1993: 3). In the sixth century BC the concept of *numina* appeared — vague forces which controlled certain human activities according to divine decisions. If identified, these forces could be manipulated for health purposes. Medicine was thus of a popular, quasi-religious nature, with an abundance of folk traditions and virtually devoid of theoretical science. Family medicine, run by the *paterfamilias*, was ingrained and very strongly advocated by writers like Cato. The *paterfamilias* would have his list of medicines (for the family, slaves and even farm animals) including simple therapeutic substances like wool, honey, oil, fat and vinegar. Cato also used cabbage and wine as a cure-all for diseases (Scarborough 1969: 16-20).

Other health practitioners included an array of diviners and herb dealers. In the latter category were the *Marsi*, an ancient profession of root-cutters also known as snake charmers and magicians, and held in awe by the populace. Their medical treatments differed considerably from those of the typical *paterfamilias*. Priests also acted as religious healers and in 433 BC the cult of Apollo the Healer came into being (Nutton 2004: 159, Gordon 1995: 363-74).

The Asclepian cult of temple medicine was introduced into Rome in 293 BC in a desperate attempt by the Senate to abort a protracted epidemic. Located on an island in the Tiber, the temple became very

popular and soon *Asclepieia* appeared all over Italy (Cilliers 1993: 19). This represented Greece's first significant impact on Roman health care.

By the third century BC there were thus three levels of Roman medical services: the *paterfamilias* operating in a limited system of family medicine; a large heterogeneous group of practitioners including root-cutters, herbal healers and the *Marsi*; and religious healers, who amalgamated with the Asclepians.

Roman engineering expertise enabled them to introduce hygienic measures largely unknown to the Greeks, such as aqueducts, which brought water to cities (the first being constructed in 312 BC), and adequate sewage and draining systems, beginning with Etruscan Rome's *Cloaca Maxima*, constructed in the sixth century BC (Cilliers 1993: 18).

2. Greek impact and Roman response

As part of early commercial interchange between the Greek world and emerging Rome (from the fourth century BC) Greek medicine gradually became known to the Romans. By the third century BC its influence was substantial enough to be mentioned by Plautus in his comedies (Nutton 2004: 158). With the fall of Greece in the next century, Greek physicians emigrated to the new capital of the known world. The influx increased when Emperor Augustus (first century AD) granted physicians tax exemption (Nutton 2004: 158-67). There is evidence that among these early physicians were also cunning adventurers who abused the trust of the Romans (Major 1954: 163).

The first Greek physician in Rome known to us was Archagathus, who arrived in 219 BC. Initially very popular, he gradually acquired a bad reputation for brutal treatment. According to Cassius Hemina (150 BC) he soon acquired the nickname *carnifex* (butcher) and was eventually obliged to leave Rome under a cloud. Pliny the Elder claimed that Roman distrust of Greek medicine commenced with Archagathus (Pliny 1963: xxix.6). Asclepiades of Prusa (early first century BC), the next eminent early Greek physician in Rome, was controversial but evidently an excellent healer with the therapeutic motto of "treat safely, rapidly and pleasantly". His students and successors included prominent doctors like Themison and Musa (an ex-slave) (Gourevitch 1998: 111-2).

The Roman reaction to Greek rational medicine was mixed and included strong opposition from influential people. The soldier and statesman Cato (234-149 BC), who lived before the Roman conquest of Greece and ardently admired the traditional Roman way of life, was highly critical of Greek customs and medicine, which he believed would undermine Roman morals. He advocated the *paterfamilias* system of health care and in his book *On agriculture* described cures and lists of remedies for human beings and animals. He felt that healing should remain a personalised action within the family circle and not become a mass profession, which would lead to profiteering. It is nevertheless interesting to note that he used many Greek-based medical terms (Scarborough 1969: 52-3, 110, Nutton 2004: 158-62). Two centuries later, the encyclopaedist Pliny the Elder (AD 23-79) also conducted a vendetta against Greek medicine, which he associated with ill-gained luxury and saw as in opposition to Roman “domestic medicine”. He accepted pharmacotherapy but condemned the expanded Greek healing concepts which included diet, a healthy way of life, and surgery. In spite of his anti-Hellenistic convictions (he referred to doctors as *plebs media*) he gradually came to accept selected Greek healing methods (Nijhuis 1995: 60-2). Roman opposition to Greek medicine was largely based on “non-medical” considerations such as hostility to Hellenistic culture, or even political strife among the nobility and the “mercenary” aspects of Greek medicine (Marasco 1995: 35-49). However, Nijhuis (1995: 50-1) points out that “medical” reasons — based on fundamental medical anthropological differences between the two nations — probably also played a role. According to Nutton (2004: 57) it is extremely difficult to determine the precise relationship between ancient societies and their medical beliefs.

However, opposition to Greek medicine was not uniform and various elements in the evolution of the Roman state favoured the new concepts. Rapid urbanisation weakened the traditional Roman *domestica medicina* and increased the need for more professional medical care. Rome’s rapid population expansion and the concomitant change in the pattern of disease necessitated a new health care system with greater professional differentiation (Nijhuis 1995: 62-3, Nutton 2004: 163). In spite of Cato and Pliny the Elder’s warnings that the Greek way of life would destroy Roman virtues, wealthy Romans progressively ac-

cepted Greek culture, including its medicine. Influential citizens started supporting the new physicians and their trade (Nutton 2004: 163-4). Cicero (106-43 BC) approved of Greek medicine and complimented his doctors, while warning against superstition and reliance on the gods in illness; in a letter he even mourned the death of his freedman doctor, Asclepon (Cicero 2001: xiii.20). The encyclopaedist Celsus (first century AD), writing in Latin, praised Hippocratic medicine but also supported traditional Roman health care and virtues, while warning that Greek culture could undermine these principles (Celsus 1935: Preface 8-11). Scribonius Largus (AD 1-50), also writing in Latin, denounced traditional Roman medicine, but acknowledged that it was still practised by many (Sconnochia 1983: c.xvii). Serenus Sammonicus (third century AD) castigated outdated medical concepts, but nevertheless included elements of popular medicine in his empiric medicine (Scarborough 1969: 23).

Opposition to Greek medicine was thus specifically aimed at its systems of rational medicine and not at religious temple medicine, folk healers or drug dealers.

3. The new Graeco-Roman medicine

By the second century AD the “new” medicine in the Roman Empire, flowing from a fusion of traditional Roman medicine with Greek rational medicine, had taken shape. The profuse writings of the Greek Galen (129-199 AD), the greatest physician of his era, summarised the science of rational medicine as understood at the time: the impact of Greek medicine had indeed been specifically in the field of rational medicine. After Galen medical authors of antiquity did not contribute significant new knowledge (Horstmanshoff 1995: 83-96). Although the Asclepian cult of religious temple medicine was also of Greek origin, neither this component of medical care nor the role of other religious healers, herbalists and root-cutters (of undoubted importance in the total health care picture) will be further discussed. There is evidence that drug-dealers in particular flourished, and these practices changed little during the transitional period. It is furthermore important to realise that these healers almost certainly treated many more patients than the rational physicians (Jackson 1995: 189-91, Gordon 1995: 363-7). Nutton (2004: 159) states that by the second century AD some

traditional healers were holders of civic offices such as that of *sevir* (a minor religious official); few, if any, were from the urban elite.

The training of physicians still resembled the Hippocratic model of individual apprenticeship. Medical centres of excellence existed at Alexandria (although not as actively as in Hellenistic times), Ephesus and for a short while at Men Karou in Asia Minor (Scarborough 1969: 125). Training programmes were not standardised or controlled; they thus produced markedly varying levels of expertise. Slaves were now allowed to become physicians. Trainees were still taught the contents of the Hippocratic Corpus as updated by the Alexandrians and Galen (who, interestingly enough, commented that most doctors of his day were illiterate) (Jackson 1995: 190).

The majority of physicians remained Greek, although the Roman component did increase slowly: in the first century more than 90% were Greek, in the second century 75%, and in the third century 65% (Nutton 1988: 37). During the early Roman Empire at least one quarter of the doctors in Rome were freedmen or slaves — many brought from Greece and elsewhere as prisoners of war (Scarborough 1969: 111). The non-Greek component consisted predominantly of slaves or ex-slaves; their fees were prescribed by the Roman law code. Doctors were thus predominantly of the lower social strata. In the eastern (Greek) part of the Empire they were held in higher esteem than in Rome but even there very few doctors, including civic doctors (*archiatri*), were from the elite. Galen did his best to raise the medical image (with limited success); in spite of their low social standing, Greek physicians gained in popularity (Pleket 1995: 27-32, Nutton 2004: 164-5).

Little is known about practice procedures, but these were probably very similar to the preceding Greek model of predominately itinerant physicians (Cilliers & Retief 2006: 37). Jackson (1988: 65) suggests that there were probably areas in the standard market place in towns and cities where physicians had rooms and possibly even met with folk practitioners and drug-dealers. In Galen's time patients were normally visited and treated in their homes. A range of physicians were recognised: the independent doctor (*iatros*), civic (salaried) doctors (*archiateros*), doctors at court, those appointed in wealthy homes, military physicians, and slave doctors. In many traditional Roman homes *paterfamilias* medicine probably continued to play a major role (Jackson 1995: 189-92).

Rome's unique contributions to medicine were in the field of hygiene and military medicine. Vitruvius (early first century AD) was interested in the potential impact of climatic conditions and health considerations on the situation and planning of cities (Vitruvius 1931: 1.4.6; 1.7.1-2; 2.8). Varro (i.12) warned that swamps breed fever (Scarborough 1969: 81). The Greeks were not known for their hydraulic engineering, and Roman expertise in this field greatly facilitated the provision of adequate water supplies to cities and the installation of efficient sewers for drainage. The *Pax Romana* further advanced the construction of impressive aqueducts transferring water from afar for personal household use and also for public amenities like baths, latrines and fountains. The extensive Roman water supply system was efficiently run as a public amenity at minimal, if any, profit. There is evidence that the early Greeks were lax about the disposal of sewage and waste. The Romans introduced improved drainage systems for the removal of excess water, detritus and human excreta. The rich installed latrines in their houses which flushed excrement into city cesspits, but large numbers of water-flushed public latrines (*forica*) were also built. Human waste collected in central receptacles at large building complexes was subsequently deposited in cesspits or on dung heaps (Carcopino 2004: 44-55). Public health legislation also included improved burial procedures (Cilliers & Retief 2002: 27-37).

Augustus Caesar introduced an organised system of military medicine with ranks for military physicians (*milites medici*) and assistants (*capsarii*). Eventually physicians specialised as *medici chirurgi* and *medici clinici*. There were also veterinarians, who cared for horses in particular. Military hospitals (*valetudinaria*) antedated hospitals for the civic population. Through Roman military conquests Graeco-Roman medicine was spread to less civilised parts of Europe and the East (Wilmans 1995: 171-89).

During the first century AD the new Christian religion co-existed in harmony with rational medicine, built on the Hippocratic ethos. It was believed that God gave doctors the wisdom to cure disease, but that He could cure without doctors. During the late second century, an emphasis on miraculous cures, demonic possession and the power of exorcism appeared. This may have been due, *inter alia*, to the hardships caused by the Antonine epidemic. In the fourth century, state persecu-

tion was ended by Constantine's legitimatisation of Christianity, which became the state religion at the end of the century. The increasingly powerful state church now introduced theological dogma which progressively supported the supposed healing powers of medical saints, shrines, relics and images of saints — thus bringing superstition and religious considerations back into previously empirical medicine. At the same time the creation of monasteries led to the development of hospitals as we know them today (Retief & Cilliers 2001: 64-8).

4. Discussion and conclusion

Roman domestic medicine underwent many changes over the centuries. Its transformation during the Graeco-Roman era led to a radically new system, which was inherently Greek, deriving from Hippocratic and Alexandrian rational medical principles. It was founded on natural science as understood at the time, and excluded superstition and magic. Horace (Horace *Epistles* 1995: 2.1.156) rightly stated the paradox that “captured Greece took the wild victor captive and introduced the arts to rural Latium”. For the average Roman citizen Hippocratic rational medicine was an unknown entity. Rome typically concentrated on practice rather than theory, but showed the pragmatic ability to adapt and absorb new concepts (Nijhuis 1995: 50) — as indeed occurred with the new medicine. But for centuries the physicians remained mainly Greek and Greek continued to be the language of medicine. The new physicians in Rome never acquired the social acceptability which existed in the Greek East, and traditional Roman folk medicine remained popular for centuries. Nijhuis (1995:64-5) points out that in practice traditional Roman health care was not necessarily less effective than rational Greek medicine, which was based on concepts of physiology and pathology which we know today to have been largely erroneous. Jackson (1995: 189) states that during the transitional Graeco-Roman phase the majority of patients were probably treated by folk healers and temple priests rather than Hippocratic physicians (*medici*). It is indeed difficult to quantify the actual impact of Greek rational medicine on health during the early Roman Empire. As mentioned above, opposition was initially vociferous in certain quarters, but written records reveal little about the reactions of rank-and-file citizens.

Rome's own contribution was her engineering ability, which brought about significant public health improvements by way of better water supplies, sewage and drainage. Military medicine took enlightened health concepts into conquered areas of Europe and the East, as well as establishing the first hospitals.

Latin only gradually replaced Greek as the medical *lingua franca* (although Latin medical jokes appeared in plays by Plautus as early as the third century BC). Despite his opposition to everything Greek, even Cato used Greek-based medical terms; his *On agriculture* was the earliest Latin work to contain medical information (Nutton 2004: 158). Celsus and Scribonius Largus wrote in Latin, but the majority of great physicians during the early Roman Empire (for example Galen, Aretaeus, Rufus and Soranus) wrote in Greek. However, the nations conquered by Rome progressively used Latinised versions of Greek medical terms, and in late antiquity physicians like Vindicianus (fourth century), Cassius Felix and Caelius Aurelianus (fifth century), all from North Africa, wrote in Latin (Gourevitch 1998: 136). At this time the works of Galen and Hippocrates also began to appear in Latin translations, and it was eventually through the medium of Latin that emerging Europe learnt about Greek medicine after the Renaissance (Nutton 2004: 157).

The end of the Western Roman Empire (fifth century) also spelled the beginning of the decline of Greek rational medicine, with superstition and magic again coming to the fore — in part due to developments within the early Christian church. It would be more than 1 000 years before the Hippocratic ethos of medicine based purely on natural science would again triumph — this time in the bright light of modern science.

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