

Greek medicine from Asclepius to Hippocrates

JV Luce

Asclepius is described by Homer as a ‘blameless physician’, and his sons Machaon and Podaleirios, who figure on the arms of the Royal College of Physicians in London, are described in action in the Trojan War — the first recorded instance of something like an RAMC. They render quite sophisticated first aid by extracting arrow heads, washing wounds, and applying ‘soothing drugs’, including a ‘pain-killing root’, possibly aconite. When Machaon himself is wounded, special care is taken to rush him back to base for, as Homer remarks, “one doctor is worth a multitude of the rank and file”.

We see here the original nucleus of the ‘Asclepiads’ in action, a family name that came to dominate Greek medicine. At this early stage, there is no suggestion that Asclepius himself is ‘divine’, but like some other ‘heroes’, such as Hercules, Achilles and Aeneas, he has one divine parent, in his case the healer god Apollo. His success as a healer was said to have encouraged him (for a large fee) to raise a man from the dead, at which point Zeus killed him with a thunderbolt. Greek mythology does tend to underline the basics of the human condition!

The name of Asclepius continued to be closely associated with the art of healing, and the semi-divine hero became the ‘patron saint’ of a number of healing centres, of which Epidauros, in the north-east corner of the Peloponnese, was the most famous in the high classical period (500-400BC). At this point we can see that Asclepius has become a ‘god’, with temples raised and sacrifices performed in his honour. Socrates’ last words were: “We owe a cock to Asclepius; see that is paid.” Perhaps a thank-you offering for the recovery from illness of his friend Plato.

In Greek iconography Asclepius appears as a kindly bearded figure (as on the pediment of Dublin’s College of Surgeons) holding a staff around which a snake coils. In this Dublin group he is flanked by Athena (wisdom) and by his daughter Hygieia (health). His myth-image as a humane healer who even aspired to conquer death made him seem more accessible to mortals than the great and awesome Olympians. His cult, which originated in Thessaly, was actively promulgated by enthusiasts to other famous centres like Cos and Pergamum, and to Rome as early as 293BC.

The ‘temple medicine’ associated with Asclepius was basically ‘faith healing’. The patients often travelled long distances to the shrine, which was normally located in a healthy and secluded location, like a modern spa or mountain sanatorium. There, as the excavated remains show, they enjoyed the use of a stadium, a gymnasium, a library and a theatre. The surroundings encouraged sensible self-therapy through exercise, mental stimulus, relaxation and rest. But there was

one very distinctive feature common to all the shrines, the practice of *incubatio* or ‘temple sleep’. A similar ritual is still practiced at the shrine of the Virgin on the Greek island of Tinos. As instructed by the priests pilgrims at an Asclepius shrine underwent ritual purification, prayed and sacrificed to the god, and then settled down to sleep overnight in a special dormitory within the sacred precinct. They slept in the expectation that the god would appear to them and either perform a cure, or give directions (doubtless on occasions through the mouth of his priests) as to how it could be achieved.

This ritual seems to have worked. Numerous inscriptions recorded by grateful patients, and recovered at the sites by modern excavators, provide detailed and fascinating information about the cures effected. Here is an instructive example from Epidauros:

“A man whose fingers were paralysed, all but one, came as a suppliant to the god. When he looked at the votive tablets in the precinct, he expressed disbelief in the cures recorded and scoffed at the inscriptions. But when he fell asleep he saw a vision. He thought he was playing dice in front of the temple, and just as he was about to throw the dice the god came and jumped on his hand stretching the fingers out. As the god went away he thought he clenched his hand and then straightened out the fingers one by one. When he had straightened them all, the god appeared again and asked him whether he still doubted the inscriptions. He said: No. Then said the god: Because you withheld belief before, let Apistos [Doubter] be your name in the future. And when day broke he went out cured.”

Drastic osteopathy, or a nervous disorder cured by sudden conversion — take your pick!

The rise of scientific Greek medicine was in no way dependent on these rituals. Its origins should rather, I think, be sought in the systematic practice of ‘gymnastic’, athletic exercises and physical education which the Greeks invented and bequeathed as one of their most important legacies to the modern world.

The extant Hippocratic Medical Corpus shows that Greek medicine was always at its best in dealing with the needs and typical injuries of the athlete (sprains, dislocations, fractures and appropriate schedules of exercise and dieting). The *paidotribes* (trainer/masseur) was a key figure in the gymnasium, and the practical experience inherent in his fingertips was absorbed and codified by doctors from the 6th Century BC on, and so passed into the libraries and textbooks of the various schools of medicine.

We see this influence at work in Herodotus’s story (bk.3. 129-138) of how a Greek doctor Democedes was called in

about 500BC to treat Darius, the Great King of Persia. The king had sustained a badly dislocated ankle while hunting, and his own Egyptian physicians were making his condition worse. Democedes used 'gentle remedies', cured the monarch, and was richly rewarded. His intervention also saved the Egyptians from execution by impalement.

Herodotus's account of Democedes's career shows that medicine had recognisably become a profession in the Greek city states at the time. He trained in the medical school of his native Croton, a Dorian city in southern Italy famous for its healthy citizens and Olympic athletes. From there, he emigrated to practise in Athens as official state physician with an annual salary of a 1.66 talents (one ancient talent was equivalent to 20 times the annual salary of a workman). Democedes had been lured away by a higher salary (2 talents) to a similar post on the island of Samos close to the western edge of the Persian empire, when recruited by Darius.

Inscriptional evidence proves that the school of Dorian Cos was especially noted for training doctors for such city state medical appointments, and this brings us to Hippocrates of Cos who flourished between 450 and 400BC. Plato speaks of him as 'the Asclepiad of Cos to whom one might apprentice oneself to learn the Art, just as one might train as a sculptor under Phidias'. He was believed to be a direct descendant of Asclepius in the 19th generation — a typical Greek emphasis on medicine as a 'father and son' profession. In addition to tuition from his father, he is said by Plato to have been taught by a certain Herodikos of Selymbria who was a famous trainer of athletes. The comic dramatist Aristophanes, also his contemporary, makes a stage allusion to the 'School of Hippocrates' as a famous organisation bound by oath to give succour by 'all the means at their disposal' to suffering humanity.

In view of these testimonies, there can be no doubt that Hippocrates was a real person and the head of a great school, but fuller information about his life is lacking, and further precision about his attainments must be based on a reading of the early treatises in the surviving Hippocratic Corpus. This vast compilation of treatises originated as the Library of the Cos school in the 5th century BC, and was greatly augmented over many subsequent centuries. Some of the texts are contemporary with Hippocrates, but unfortunately none can be definitively attributed to him. But one in particular, the treatise *On the Sacred Disease* (Epilepsy), clearly shows the imprint of a great original mind, and, in company with many scholars, I would be happy to attribute it to the master himself.

A key quotation will emphasise its quality:

'I am about to discuss the disease called 'sacred'. It is not in my opinion any more divine or sacred than other diseases, but has a natural cause, and its supposed divine origin is due to man's inexperience, and to the wonder generated by its peculiar character. Such things are divine, or not, as you will, for the distinction is meaningless. There is no call to make such a division anywhere in nature for all alike are divine or all alike are human. **All have their antecedent causes which can be found by those who seek them.**'

The scientific basis of Hippocratic medicine shines out from the emboldened sentence. The advance it represents is clearly a sub-development of the great movement of rational thought about the cosmos that began in Greek Ionia soon after 600BC.

Three main features in the school's practice exhibit Greek medicine as recognisably 'modern':

1. Its total rejection of superstitious views of disease as super-

naturally caused, whether as a punishment for sin or due to possession by evil spirits. This enabled a prognosis, especially in the case of acute fevers like malaria, to be given on a rational basis, namely the physician's knowledge of similar cases, and a sensible regime of rest and liquid nourishment to be prescribed for the reassured sufferers.

2. Its refusal to rest content with traditional empirical practice, and its sustained attempt to find a scientific basis for understanding disease. (The early Hippocratics emphasised the significance of 'airs and waters' as the cause of epidemics, and espoused a general view of health as 'balance', and disease as 'imbalance' in the bodily constituents. This was later systematised in the doctrine of the 'four humours'.)

3. The great value it attached to written records and case histories, with consequent improvement in diagnosis.

In the Hellenistic period (323-31BC) the main focus of Greek medicine shifted to Alexandria, where considerable progress was made in anatomy thanks to the dissection of human cadavers. Diagnosis by taking the pulse also became a regular part of medical practice. But then the Art of Medicine suffered from the arrested development common to all Greek science.

If we look, for instance, at the history of astronomy, we see that by 350 BC. Plato and Aristotle were well aware that the Earth like the Moon was a sphere, and they understood the principle of how eclipses were caused. In the following century astronomical research became centred in the Ptolemaic Institute at Alexandria, and Aristarchus published a treatise in which he proposed that the Earth rotates on its axis and moves in a circle round the sun. But there the matter rested, and this intuitive leap of a great mind was not strong enough to overcome the authority of the Aristotelian geocentric view, which prevailed down to Copernicus.

Greek science was always stronger on the theoretical rather than the experimental side. One must also remember that the numbers engaged in scientific work were very small by modern standards, and the communication of ideas slow and laborious. We know, for example, that Archimedes in Syracuse sent a mathematical treatise to Eratosthenes in Alexandria in which he outlined a theory of the calculus more advanced than that of Newton. But nothing came of it. So genius, always a rare commodity tended to remain isolated, and hence less productive and influential than its work merited.

The rudimentary nature of ancient technology was another factor militating against scientific advance. For example, the expansive force of steam was known to the scientists at Alexandria, and they constructed miniature turbines and other devices powered by it, but in the absence of cast-iron boilers the energy could not be widely harnessed.

Similar factors inhibited the further advance of the art of medicine. Good Schools remained small and comparatively isolated. Improvements in modern practice tend to derive from widely circulating journals and laboratories for testing new drugs, but there was no such back-up in antiquity. On the technological front, the absence of microscopes prevented all knowledge of diseases caused by invading pathogens. The non-development of anaesthesia severely limited the type of operations that could be performed.

The Hippocratic Corpus, and similar later treatises, show that the Art remained strong on general hygiene, and physicians could provide sensible advice about diet and exercise for all ages and conditions. However, in general practice it remained stuck in traditional modes under the sanction of authority figures.

In Renaissance Europe the re-discovery of the Corpus, together with the Works of Galen (who practised at Pergamum in the 2nd century AD), provided a significant psychological stimulus to the medical schools of the time. The spirit of rational enquiry that shines from the work of Hippocrates and his school was also a major guiding light. But apart from the pervasive Greco-Latinity of medical terminology, subsequent medical development in the West, it must be admitted, owes little in detail to the ancients.

(The above is a summary of a lecture given to the History of Medicine Section of the RAMI in the College of Physicians of Ireland on 25 April 2001.)

Suggestions for further reading

For Asclepius and his cult: EJ and L Edelstein: *Asclepius: A Collection and Interpretation of the Testimonies*, (2nd edition) 1997.

For Hippocrates: The treatises *Prognostic*, *Regimen in Acute Diseases*, *Epidemiae I and III*, *The Sacred Disease*, in any available edition (e.g. the Loeb series) of the Hippocratic Corpus.