

In search of Hippocrates: a visit to Kos¹

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Prior to the recent outbreak of typhoid in the island of Kos, the name Kos, to the man in the street, betokened a type of lettuce. To the physician, however, mention of Kos has always conjured up the image of the Aegean island where Hippocrates, the 'Father of modern medicine', was born and where he practised and taught medicine 25 centuries ago.

Kos

Kos is the second largest island in the Dodecanese, next in size to Rhodes. It lies close to the coast of modern Turkey, 20 km (12 miles) from Bodrum (Halicarnassus) and 16 km (10 miles) from Knidos (Cnidos) (Figure 1). The island is tadpole-shaped, 40 km (25 miles) long and 8 km (5 miles) wide, the northern area low-lying and fertile while the south is mountainous. Its present population is around 20 000, one-half of the Greek Orthodox faith and the other half Moslem. At the northern end of the island lies the capital city of Kos (its population approximately 8000), which was founded in 366 BC; prior to this, the capital was Astypalaia, situated near present-day Kefalu, in the south of the island. Astypalaia was destroyed during the Peloponnesian war.

The island has a chequered history. In mythological times, Hercules, returning from his labours at Troy, sojourned in Kos and established a dynasty. By the 7th century BC, under the Dorian hegemony, Kos was one of the six cities which constituted the Hexapolis, and Plutarch testifies that Kos became an important maritime centre in the Aegean. In the 6th century BC, Kos was governed by Darius of Persia and remained under Persian domination until the Persian fleet was defeated at Salamis in 480 BC. During the Peloponnesian war (431–404 BC), Kos was an ally of the Athenians. In the 4th century BC she fell for a time under the power of Mausolus, prince of Halicarnassus. In 336 BC Alexander the Great occupied the island and after his death in 323 BC Kos established an alliance with the Ptolemies of Egypt, who used it as a naval outpost. Later, under Roman rule, Kos prospered, especially during the rule of the Emperor Tiberius.

The island was later absorbed into the Byzantine empire. In the 4th century AD it was

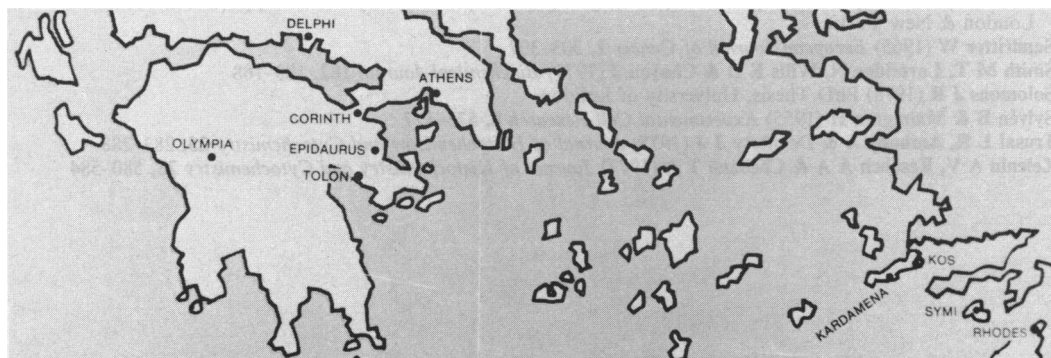


Figure 1. Map of Aegean showing location of island of Kos

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ravaged by the Vandals, later by the Saracens and subsequently by the Normans. The Crusaders occupied the island and in AD 1204 Kos was for a time ruled by the Venetian Leon Gavalas, the 'Despot of Rhodes and Kos'. In AD 1315 the Knights of St John, based on nearby Rhodes, took the island and built the great castle, the walls of which still stand. Kos was attacked repeatedly and ferociously by the Turks until finally, in 1523, the Knights were ousted after a long siege by the Sultan Suleiman. Four centuries of rigorous Turkish domination ensued, during which time the Koans fought to retain their Greek culture. Turkish rule ended in 1912 when Italy took the island during the Tripoli war, full sovereignty being ceded to Italy by the Treaty of Lausanne in 1924. In the Second World War, following the fall of Italy in 1943, Kos was occupied by the Germans until their defeat in 1945. The British then held the island briefly and finally, in 1948, Kos was at last reunited with Greece.

The island has suffered frequently from earthquakes; the most serious in ancient times was in AD 554, and in recent times in 1933.

Asklepios

In ancient times, Kos was famous for its Asklepon, the sanctuary of Asklepios. Who was Asklepios? Legends tell that he was a Hero, the son of Apollo and a mortal woman Koronis, who gave birth to him above Epidaurus. The infant Asklepios was saved by Apollo from the fire on which Koronis met her death and was taken to Mount Pelion, where he was cared for by the centaur Chiron, who taught Asklepios the secrets of the healing herbs which grew so profusely in that region. Asklepios developed such remarkable powers of healing that he was reputed to be able to restore the dead to life, which led to complaints from Hades so that Apollo was forced to strike Asklepios dead with a thunderbolt. Two of Asklepios' daughters were Hygieia (Health) and Panacea (All Heal).

Following his death, Asklepios became a divinity. He was usually represented as holding a staff, accompanied by a snake or a hound. The snake curling around the staff was the origin of the caduceus. Asklepios' fame spread throughout the ancient world. The followers of his cult were a hereditary closed order known as Asklepiades and their sanctuaries as Asklepia. The first of these was situated in Trikkala but the three most important Asklepia were at Epidaurus, Pergamum and Kos. Homer relates in the Iliad how, after the conquest of Troy, the Asklepiad Podalirios was shipwrecked in Kos and established the Asklepon there. Eventually there were some three hundred Asklepia in Graecia Magna, their sites being chosen with care, usually near a natural spring, with the hills, woods and sea providing a beautiful setting for the sanctuary. In 291 BC the Asklepien cult spread to Rome where the name of the god was latinized to Aesculapius.

Asklepian cult

The ancient Greek Asklepon has been compared to the modern spa, sanatorium or 'health farm'. But the Asklepian cult was primarily religious in character, its activities being conducted by priests. The sanctuary was considered to be a holy place and no births or deaths were allowed to take place within its precinct. The emphasis in treatment was on ritual purification and suggestion, using magic and sorcery.

Patients and their families had often travelled long distances by foot or on donkey to reach the Asklepon. On arrival, sick people received ritual purification, drinking and bathing in the waters of the sacred spring and then putting on clean clothing. After being conducted to the altar to offer sacrifice and pay homage to the god Asklepios, they underwent 'incubation', which consisted of spending the night in the temple, lying on the skins of sacrificed animals, and receiving a sleep-producing potion. During the night, the priests spoke into their ears the details of their regimen (fasting, diet, exercise, etc.) and the names of the plants for their medicines. On waking, the patients possessed the illusion that the god Asklepios himself had appeared to them in their dream and instructed them concerning their cure. The use of snakes no doubt contributed to the atmosphere of suggestion. Conditions which we now label 'psychosomatic' may well have benefited by these measures.

Asklepion of Kos

The Asklepion of Kos was built in the middle of the 4th century BC on the site of an earlier grove, sacred to Apollo Kyparessios. For the next 900 years it functioned as a centre of healing, until AD 554 when it was destroyed during the terrible earthquake of that year. The marble and stone ruins were later used as a quarry by the Knights of St John to build their fortress in Kos. The ruins of the Asklepion became virtually unrecognizable until, at the beginning of the 20th century, a Koan historian and antiquarian Iakovos Zeraftis rediscovered the site. He brought it to the attention of the German archaeologist, Rudolf Herzog, who was at first extremely doubtful and needed to be strongly persuaded by Zeraftis to excavate the site. In 1902, the Turkish Government allowed Herzog to commence digging and by 1904 the main work had been completed. The work was resumed in 1928 by the Italian archaeologist, Luciano Lorenzi, who completed the excavation, despite the severe earthquake of 1933 in which Zeraftis lost his life.

The Asklepion is situated 4 km (2½ miles) southwest of the city of Kos. It is built on three terraces, extending in a north-south direction (Figure 2). From the entrance to the site, where there are remains of Roman baths of the first century AD, a flight of 24 steps leads to the Lower Terrace.

The Lower Terrace was originally bordered on three sides by a portico, in the Doric style. None of this remains, but on the fourth side of the terrace there is a massive retaining wall with blank niches. In the centre of this wall, a flight of 30 steps leads up to the Middle Terrace. To the east of the central steps is the mineral water sacred spring, unchanged from ancient times, although the water now spouts from under the feet of a tiny Roman sculpture of Pan. To the west of the central steps are other mineral springs (said to be ferruginous and

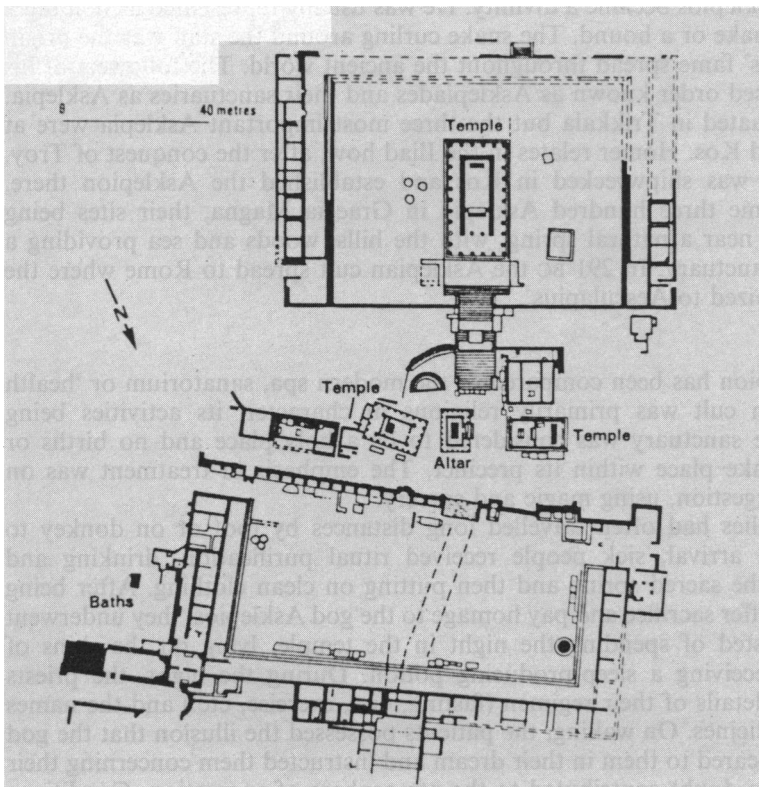


Figure 2. Plan of Asklepion at Kos

sulphurous) and there is also a small temple, with the pedestal of a statue of Nero as Asklepios, dedicated by the physician Xenophon, who was a great benefactor of the Asklepios but was also notorious for having administered poison to the Emperor Claudius in Rome. It was on this Lower Terrace that the main hospital work took place and the school of medicine was situated. Some of the rooms contained tablets carrying descriptions of cured patients. Two underground chambers, along the external walls, are the site of a Temple of Venus, which was embellished by a statue by Praxiteles; it is thought that venereal diseases were treated here. The Asklepiian festivals of sport were probably held on the Lower Terrace.

The Middle Terrace was the province of the priests (Figure 3). In the centre of the terrace was the great sacrificial Altar, which contained statues of Asklepios and his daughter Hygieia. Little now remains of the Altar, but it is thought that it was similar to the great Altar of Pergamum (now to be seen in the East Berlin Museum). To the east of the Altar stood the Temple of Apollo, which has been partially restored; a mere seven pillars, in the Corinthian order, serve to remind one of its former glory. To the west of the Altar was the Temple of Asklepios, the oldest building in the sanctuary. Originally this contained Apelles' painting of Aphrodite Anodymene, but this was removed to Rome by the Emperor Augustus. Apart from its base and a couple of columns, in Ionic order, little remains of this temple. To the east of the central steps to the Upper Terrace is a curved Exedra, previously ornamented by statues.

The Upper Terrace, approached by the Monumental Staircase (60 steps, divided into two flights), housed the largest Temple of Asklepios. This measured 34×18 metres, was built in Doric style, and was erected in the second century BC to serve the needs of the increasing numbers of the sick visiting the Asklepios as its fame spread far and wide. The temple originally contained 104 columns, but through the centuries this temple, like the others, has been grossly vandalized. Among the remaining stones there is a Byzantine capital (placed on a Doric drum), serving to remind one that a Christian chapel was later built on the site.

Above the Upper Terrace, one may still wander into the Sacred Wood of pine trees



Figure 3. Asklepieion at Kos. Middle Terrace showing ruins of Temple of Asklepios (left), Great Altar (centre) and Temple of Apollo (right)

among which patients of the Askleion used to stroll and breathe the scented air to complete their cure. From these woods there is, to the north, a spectacular view of the sea, and on a clear day one may see the nearby island of Kalymnos and beyond to the Turkish peninsulas on which Halicarnassus (now Bodrum) and Knidos (famous for its ancient school of medicine) are situated.

Hippocrates

The Askleion of Kos was not built until after the death of Hippocrates. What do we know of the life of Hippocrates? He is mentioned by Homer in the *Iliad* and later by Plato and Aristotle, and his life was written by Soranus in the second century AD, but, rather disappointingly, we still know little of the man. Hippocrates was born in Astypalaia, the ancient capital of Kos, in the first year of the 80th Olympiad, in 460 bc. His father Heraclides was an Asklepiad, his mother Phaenarete claimed to be descended from Hercules. Hippocrates was taught the rudiments of medicine by his father and he then continued his learning by travelling to Samos (the birthplace of Pythagoras, whose mathematics he studied), and to Ionia, where he visited Ephesus and Miletus. His journeys also took him to Egypt where, in Memphis, he may well have acquired some of its ancient medical lore. During the Peloponnesian war he was in Delos. His reputation as a healer spread and when the city of Athens was threatened by a major epidemic of plague and its streets and temples filled with corpses, Pericles invited Hippocrates to take charge of the crisis. Hippocrates accepted and took up abode in Athens in the Temple of Apollo. The epidemic abated and Hippocrates was credited with the success of his methods. For this he was made a citizen of Athens, was rewarded with a golden wreath, and the children of his native Kos were thereafter given the special privilege of education in Athens. Artaxerxes, King of Persia, on hearing of Hippocrates' medical prowess, invited him to be his personal physician, an offer which Hippocrates refused. On his return to Kos, a special coinage carrying the head of Hippocrates was minted.

In Kos, Hippocrates accepted students on payment of fees. He is reputed to have practised and taught medicine and written many of his books in the shade of the great plane tree, the descendant of which may still be seen in Kos today (Figure 4). Experts maintain that the Hippocratic plane tree (*Platanus orientalis Hippocratis*) cannot be the original tree dating back 2500 years. However, even if the tree is merely a descendant of the original, it is still around 500 years old and is probably the most ancient tree in Europe. It has a diameter of 15 metres (45 feet) and its heavy spreading branches require to be supported by ancient marble pillars. The tree in Platanou Square in Kos was close to the ancient agora, the remains of which may be seen today. In the 18th century, during the Turkish occupation, the mosque of Gazi Hassan Pasha was erected near to the tree, alongside which there is a Turkish fountain, while on the opposite side of the tree is placed an ancient sarcophagus.

Hippocrates died in Larissa, Thessaly, in 356 bc at the great age of 104. In 1826, during the Turkish occupation, a plaque was discovered in Larissa at the site of the grave, leaving little doubt that it was authentic. A beehive above the tomb was reputed to produce honey which possessed curative properties.

The Museum of Kos contains a fine statue of Hippocrates (Figure 5).

Hippocratic medicine

The great contribution of Hippocrates was his forthright rejection of the magic and sorcery of the priest-healers of the Askleian cult, with which he had been introduced to medical practice. His views brought him into conflict with the orthodox priesthood and this may have been the reason why for a large part of his life he was an itinerant healer elsewhere in Greece. In advance of his contemporaries, he emphasized the importance of careful observation of the phenomena of disease, attempting a rational approach to diagnosis, while his treatment relied on the healing power of nature and was directed at the patient as a whole – physical, mental and spiritual. He may be said to have introduced the scientific approach to clinical medicine.



Figure 4. Great plane tree of Kos, in the shade of which Hippocrates taught. In foreground, Turkish fountain (18th century)

Hippocrates was a generalist and his writings covered all branches of medicine (which included surgery and obstetrics). How much of the Hippocratic writings are genuine and how much was written later by his disciples is a matter for conjecture. The Hippocratic Collection (or Corpus) comprises some 70 books, the most famous being 'Of the Epidemics', 'The Book of Prognostics', 'On the Sacred Disease' (epilepsy), and 'On Airs, Waters and Places'. The 'Aphorisms' is a collection of brief generalizations which summarize Hippocrates' teaching, and it is from the initial phrase of the first aphorism that is derived the famous quotation '*Vita breva, ars uero longa*'. In full, the first aphorism reads as follows:

'Life is short, and the art long; the occasion fleeting; experience fallacious and judgment difficult. The Physician must not only be prepared to do what is right himself, but also to make the patient, the attendants and externals cooperate'.

Some 600 years after Hippocrates, the Hippocratic writings were further systematized by Galen, and later still by Avicenna and others, and their version of the Corpus Hippocraticum was to influence European medical thought and practice for the next thousand years.

As important as Hippocrates' contribution to clinical practice were his teachings on the moral and ethical requirements of the ideal physician, epitomized in the 'Oath of Hippocrates', which solemnly commences: 'I swear by Apollo the physician and Asklepios, and Hygieia and Panacea, and all the Gods and Goddesses, that according to my ability and judgment, I will keep this oath...' With appropriate amendments demanded by the requirements of the 20th century, the spirit of this declaration of the ideals of the good physician still provides a basis for medical ethics at the present time.

International Hippocratic Foundation of Cos

It was to perpetuate the memory of Hippocrates as the greatest physician of all time, and to revive the Hippocratic tradition and ethic in medical thought and practice, that the International Hippocratic Foundation of Cos (IHFC) was founded in 1960 – the brainchild of the Athenian surgeon and urologist, the late Professor Spyridiou Oeconomos. The funds of the Foundation, a non-profit making body, derive largely from the Greek government.



Figure 5. Statue of Hippocrates in Museum of Kos

Although primarily scheduled for members of the medical profession, the IHFC is open to all scholars and scientists motivated by the humanistic aims of the Foundation. The main fields of activity of the IHFC were conceived as follows:

- (1) The building in Kos of an International Medical Centre for meetings, teaching and research, especially on the human problems of medicine.
- (2) The stimulation of studies on the Hippocratic writings.
- (3) The creation of an international prize, the Hippocratic Prize, for a major contribution in the field of medicine.
- (4) The furthering of the campaign to plant around the world trees derived from the Hippocratic plane tree of Kos, to symbolize the continuity of the Hippocratic tradition through the ages to the present time.
- (5) The contribution to the better understanding and closer friendship between nations by strengthening the spiritual links among physicians and other scientists of the constituent countries.

The site of the Foundation in Kos consists of 20 acres, situated 2 km from the Asklepeion. Part of the International Medical Centre is already built, comprising administrative offices and three conference chambers (150 seats each) which since April 1979 have functioned for scientific meetings. The remaining parts to be built include a large auditorium (1200 seats), an open-air amphitheatre, a museum of ancient Greek medicine, a library specializing in the literature concerning the Hippocratic writings, a restaurant and a pavilion with boarding facilities for visitors.