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# **A coin of Kos: Asklepios and the serpent metaphor of medicine, an enduring witness of Hippocratic healthcare**

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This paper describes a silver coin, of medical heritage, from the late Hellenistic era. A tetrobol or lightweight drachm, it was minted on the island of Kos in the period 145 – 88 BC, and buried in a hoard within decades of its issue. This coin is one of 215 known surviving specimens of this weight (average 2.05g) comprising a series depicting Asklepios, the god of medicine, on the obverse. On the reverse, set within a depressed or incuse square, is portrayed the coiled serpent of healing, the iconographic synecdoche for the serpent-entwined staff of Asklepios, in turn the metaphor for Asklepios' healing skills.

Kos was settled by the Dorians from Epidauros in mainland Greece. They brought with them the worship and traditions of Asklepios. By 400 BC, the influence of Hippokrates (460 – 377 BC) and the fame of the healing institution, the Koan Asklepieion, had spread throughout the literate world.

The many settlements on Kos amalgamated c366 BC, through a process called synoecism. The synoecistic town of Kos, with its Asklepieion, became one of the most beautiful cities in the eastern

Mediterranean. The influence of its medical science and education was to endure for two thousand years and to form the philosophical basis of western medicine.

Nations portray on their coinage themes of distinctive pride, themes of collegiate or physical identity, and unifying images such as rulers or gods. The moneyers on Kos, who authorised the striking of coins from the sixth century BC onwards, featured gods such as Zeus, Aphrodite and Asklepios, and heroes including Herakles. On the reverse the common theme included a club and crab (relating to the labours of Herakles) and the Asklepiian serpent of healing.

It is possible that the surviving Koan tetrobols (or light drachms) featuring Asklepios and the serpent of healing were all or part of a single savings' hoard. It is probable that the coinage was much more extensive than these few surviving specimens would indicate. Their study forms an important historiographic tool in the broader context of research in the history of medicine.

Medicine, as the profession is understood today, traces its most



Figure 1. Silver tetrobol of Kos, 145 – 88 BC, 1.66 g, 14.5 mm (author's collection).

Obverse. Head of Asklepios, facing right.

Reverse. Incuse strike showing a coiled Asklepiian serpent, the metonymic symbol of curative medicine. The inscription ΚΩ beneath it is a contraction of ΚΩΙΩΝ, 'of the Koans'. Beneath is a delta Δ, a mint mark of uncertain meaning. The two magistrates' names have been abbreviated by the die-engraver. It is suggested that these refer to ΠΑΡΜ ("Parm") for Parmeniskos; and ΑΓΗΣΙ, for Hagesias.

significant origins to the life and works of Hippokrates (460 – 377 BC).<sup>1</sup> From the era of Classical Greece, schools of medicine at centres such as those established at Epidauros (in Argolis in the Peloponnese) were staffed by the Asklepiadai, families of hereditary healers.<sup>2</sup> Their name derived from Asklepios, the god of medicine, referred to as the "blameless physician" in Homer's *Iliad*. Passed on in oral tradition from c850 BC, but referring to events surrounding the Trojan War of c1200 BC, Homeric references to Asklepios portrayed him as the god of curative medicine, accompanied by his later-appearing wife Epione and his daughter Hygieia, the goddess of health.

In or about the sixth century BC,

a school of medicine was established on the island of Kos in the Aegean Sea.<sup>3</sup> Today one of the thirteen islands (sometimes referred to as "Twelve Islands") of the Dodecanese, the settlements on this Greek island colony originally formed part of the Karian region under the Persian empire.

The Dorians had brought Greek culture to Kos, with both Knidos and Epidaurian influences. From the fifth century, Kos became an epicentre for both clinical healing and medical teaching. Kos also became famous for its wine and seafood, and for four centuries the crab was an iconographic symbol of the Koan polis or city-state.

Families of hereditary healers, the Asklepiadai, lived and practised on Kos

by the sixth century BC. From one of these families emerged Hippokrates (460 – 377 BC), born on Kos, whose teachings and writings established medicine as a science as well as an art. There exist but two contemporary references to Hippokrates the physician, as one who bore an otherwise common name in ancient Greece. Plato, in *Protagoras*, wrote of “Hippokrates of Kos, the Asklepiad”.<sup>4</sup>

From this passage it was obvious that Hippokrates of Kos was such a well-known physician “that you could refer to him as you referred to the sculptors, Polyclitus [Polykleitos] and Phidias [Pheidias], and be sure that everyone knew whom you meant”.<sup>5</sup>

Sokrates also had Plato speak of Hippokrates of Kos. In *Phaidros*, Sokrates says that one must know the nature of the human body to be a physician and that:

*If we may trust Hippokrates the Asklepiad, it is impossible without this method to have any knowledge of the human body...<sup>6</sup>*

Hippokrates achieved three things. He separated medicine from superstition and theology, he synthesized the loose knowledge of the Kos and Knidos schools of medicine into systematic science, and he advocated a high moral and ethical code in which he believed medicine should be practised, thus giving an inspirational focus to the necessary pragmatic clinical *centrum* underlying medical practice.

Hippokrates was but one,

admittedly the most famous, of many Koan physicians who were responsible for the medical fame of Kos as a centre for healing and medical teaching.<sup>7</sup> The collected works attributed to Hippokrates and other writings by his contemporaries comprise the *Corpus Hippocraticum*. They dealt with history-taking, the elucidation and interpretation of physical signs, diagnosis, treatment, prognosis and preventive medicine. They included the Hippocratic Oath, which is the foundation of modern day medical ethics. These teachings were to be referents for all medical education over the ensuing two thousand years.

By the fourth century BC, Kos had become a great international centre for medical therapy and teaching. Its famous architectural features were its Asklepieion and its temples to Asklepios and Aphrodite.

Coinage first appeared in 620 – 600 BC in Lydia, some 200 kilometres north-east of Kos, the first now part of Turkey, and the second in Greece. The new invention spread quickly. Moneyers on Kos struck coins of silver on the Persian standard in the fifth century BC, and coins of silver and bronze after 366 BC.<sup>8</sup> The coins of Kos typically carry images of a crab and club, and a few portray the metaphors (see below) of medicine. Koan artists and sculptors were especially skilled. One Koan coin, a silver tridrachm (struck in 480 – 450 BC), is described as one of the finest examples of the die-engraver’s art. It depicted the energy

and motion of a discus thrower at the moment of his pre-release “wind-up”.<sup>9</sup> Over a period of three centuries, Koan coins also portrayed Zeus, Herakles or occasionally other gods of Dorian tradition.

### **The Tetrobols of Kos (145 – 88 BC)**

Kos, like all cities of ancient Greece, was subject to cultural, political and military change. From 333 BC, after the capture of Halikarnassos (the Bodrum of today, on the Turkish mainland across the water from Kos) all the Karian coastal towns and islands submitted to the rule of Alexander the Great and his generals. Later, Kos was ruled by the Ptolemaic Kings of Egypt and, in 309 BC, Ptolemy Soter wintered on Kos. In the second Macedonian War (200 – 196 BC), Kos was a loyal ally of Rome and, for more than a century, relative social peace and security existed. Between 145 and 88 BC, a distinctive series of small silver coins was minted in which the older Dorian Herakles head was replaced by that of Asklepios on the obverse. The medical reputation of the island was also highlighted on the reverse of the coins by the Asklepiian serpent.<sup>10</sup>

Professor John Kroll of the American Numismatic Society undertook a study of 97 of the Koan silver coins in this series, almost half the total number of 215 known to have survived in public and private collections.<sup>11</sup> The modal weight of these tetrobols is 2.00g of silver (average

2.05g). According to Kroll, although these coins are sometimes called lightweight drachms, the fact that Koan second-century drachms weighted 3.05g meant that these coins weighed four obols and were tetrobols of the Rhodian standard used at Kos. The individual coin featured in this paper (Fig. 1) has some wear, weighs 1.66g, is 14.5 mm in diameter and is similar but not identical with “Coan 14” of Kroll’s reference plates.<sup>12</sup>

The obverse of the coin portrays Asklepios as a bearded profile face, facing right. The reverse of the coin shows the coiled Asklepiian serpent of healing in an incuse stamp with the serpent’s head facing right. Lettering around the serpent varies, and it is this variation which allowed Professor Kroll to deduce that the coins were struck in 34 separate issues. The ethnic designator Kos is indicated by various contractions of the Greek word for the island:

ΚΩ, ΚΩΣ, ΚΩΝ, ΚΩΙΟΝ, ΚΩΙΩΝ

The silver tetrobols of Kos also carry on the reverse the names of men who authorised or paid for the issue. The individual coin described in this paper features two names (the die-engraver has abbreviated these). It is thought that they are:

ΠΑΡΜ (Parm, for Parmeniskos)  
ΑΓΗΣΙ (for Hagesias)<sup>13</sup>



Research has suggested that these individuals were not minting officials but rather, as in other Greek cities at this time, rich altruistic citizens who helped pay for the minting costs out of their own pockets.<sup>14</sup> Such philanthropy for the public good, contributed to by Koan citizens, is known in the case of war support, for the construction of a library, for the building of an Aphrodision (a shrine to Aphrodite), and as contributions from a group of individuals towards the Koan Asklepieia.<sup>15</sup> The names of these citizens are preserved in the enduring silver numismatic record for the ensuing millennia.

*Like the Koans who contributed to the emergency war fund, the navy, the library and other such civic purposes, the men whose names appear on our coins were citizens who contributed to the cost of minting and who received in recognition of this service the honour of having their names inscribed on the coins' reverses.*<sup>16</sup>

The names of Koan magistrates are also known from other archaeological and epigraphic sources. On many islands in the Aegean, and especially on Kos, hundreds of well-dated ceramic amphora stamps bear magistrates' names. The name of Parmeniskos is known from such stamps.<sup>17</sup>

The thirty-four different issues of Kos tetrobols identified by Kroll also each portray a mintmark, one of five patterns (A, Δ, E, H, and ΔP). These

perplexing symbols were cut into the reverse dies themselves and were not struck with a separate punch. It has been suggested that they represent different minting workshops or officinae,<sup>18</sup> or that they represent alphabetic numerals of a minting sequence.<sup>19</sup> To date, "these letters simply defy any straightforward, convincing interpretation".<sup>20</sup> The letters "ΔP" are interesting because they could stand for "drachma", and these would support the suggestion that they were overvalued.<sup>21</sup>

The numismatic (almost forensic) research on this series of coins suggests that all the known examples probably came from a single hoard, buried as a personal savings depository rather than one secreted in the face of conflict or war. Such coins comprise one type of objective evidence of what was important to the community for which they were minted. As matters of health were, and remain, of great importance to all communities, it is not surprising that health and medical themes, and the deities who bestowed health, featured on many coins of ancient Greece and Rome.

The concept of Asklepios as the god of curative medicine was well established in oral tradition by the ninth century BC. This coin shows that by the second century BC, the concept of medicine could be portrayed not only by the wandering healing deity with his snake-entwined staff but, if one looks at the reverse of the coin, as an entity in itself (Fig. 1 reverse), simply by the

metaphor of the healing serpent alone. In the twenty-first century, the serpent of healing is still used in countless forms as an iconographic symbol of curative medicine. When one sees this emblem or badge on ambulances, on hospitals, on uniforms of both civilian and military medical institutions, on letterheads and as the feature design on badges and medals, there can be evoked a satisfying continuity from its origin on Kos some two thousand years ago.

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### Notes

1. For a general introduction to Hippocrates and Kos, see <http://en.wikipedia.org/wiki/Hippocrates>.
2. For a general introduction to Greek medicine, see [http://en.wikipedia.org/wiki/Ancient\\_Greek\\_medicine](http://en.wikipedia.org/wiki/Ancient_Greek_medicine).
3. For a general introduction to Kos and the Dodecanese, see <http://en.wikipedia.org/wiki/Dodecanese>.
4. Plato. *Protagoras*, 311b.
5. Sigerist, H. E. (1961) 'Hippocrates and the Collection'. In: *A History of Medicine. Volume II*. Oxford, Oxford University Press: 261.

6. Plato, *Phaedrus*, v12, 270c.
7. Sigerist, H. E., *Op. cit.* Ref 2: 264.
8. Kraay, C. M. (1975) *Archaic and Classical Greek Coins*, London: 245-6, 256-7.
9. *Ibid.*, p.245.
10. Head, B. V. (1897) *A Catalogue of The Greek Coins in The British Museum*, Vol 18, Caria, Cos, Rhodes etc. Reprinted, Bologna, Arnaldo Forni – Editore, 1964: xciv – x cviii, 206-210; Kroll, J. (1964) 'The Late Hellenistic Tetrobols of Kos', *American Numismatic Society Museum Notes*, 11: 81-117; Sear, D. R. (1975) 'Classical and Hellenistic Periods: Carian Islands. [Kos *et seq*]'. In: *Greek Coins and Their Values. Volume II. Asia and North Africa*. 2<sup>nd</sup> Edition. London, Seaby: 453-456.
11. Kroll, J. (1964) 'The Late Hellenistic Tetrobols of Kos', *ANSMN*, 11: 81-117.
12. *Ibid.*: no. 14.
13. *Ibid.*: Ref 8: 96.
14. *Ibid.*
15. *Ibid.*: 96-97.
16. *Ibid.*: 97 and Notes 34-37.
17. Papadopoulos, J. K. and S.A. Paspalas (1999) 'Mendaian as Chalkidian wine' *Hesperia*, 68(2): 161-188.
18. Head, B. V., *Op. cit.*: Ref. 7: xcvi.
19. Kroll, J. *Op. cit.*: Ref. 8: 91.
20. *Ibid.*
21. Melville-Jones, J. Classics and Ancient History, University of Western Australia. Personal communication, December 2010.

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