

Medical practice applied in the ancient Asclepeion in Kos island

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Abstract

Asclepius was called "a great doctor for every disease". Asclepius was born in Trikala, Thessaly, in the middle of Greece, where the first Asclepeion was established. Patients coming to the Asclepeia were first taking cleaning baths and then entered the main Asclepeion, where they were examined by priests-therapists and were accommodated in certain areas-rooms of the Asclepeion. Inscriptions found in marble plaques describe treatment of some diseases and the sum of money paid for every treatment. These were the first medical records and fees in ancient Greece. Patients were considered as a unique psychosomatic entity. Patients followed many instructions in order to relax and rest, submitted daily baths, exercises, massages, entertainment attending theatrical or poetic or athletic races, reading special books, promenades, special diets or were kept fasting and were instructed to take many kinds of medicine per os, suppositories, ointments, eye drops etc. The main diseases treated in the Asclepeia were: chronic neuropsychological disorders, skin diseases and chronic lung diseases. Other diseases gynaecological, ophthalmic and surgical were also treated. Today, like in the ancient Asclepeia, the psychology of patients is important and certain preparatory drugs are administered before the actual main treatment of surgery or of some psychic disorders. In Aalborg, Denmark, a large prototype medical university hospital, is scheduled to be built in an area of 350 acres within the next 15 years. The psychosomatic dogma and principals of a "green building" will be well respected. The Asclepeion of the island of Kos, where as we know Hippocrates was born, was built on the 5th century B.C. and functioned till the 4th century A.D. and had three floors. The Asclepeion had many dedications, of which many parts of the human body in marble: an ear, a damaged penis and two breasts. Surgical tools were also found and are now exhibited in the Dion Museum. After the 4th century A.D. the Asclepeion was destructed and/or destroyed by religious groups, more earthquakes, conflagrations, the Saint John's Knights of Jerusalem and the Turks. Recent excavations in the area in order to find and restore the old Asclepeion started in 1902. Now Asclepeion is partly restored. *In conclusion*, it is suggested that Hippocratic medicine, as practiced in the Asclepeion of the island of Kos, using psychosomatic means of treatment in a green natural environment was effective for many diseases at that time but also inspired modern medicine and as an example a large university institution is now under constructions based on the above ideals.

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Introduction

During the labour for the birth of Asclepius his mother, Koronida died. His father, Apollo, confined Asclepius to a famous at his time practical botanist and therapist, Heiron, living in the mountain Pelion, near the city of Volos. There Asclepius was dully introduced to medicine and was called "a great doctor for every disease", treating through payers to Gods and through medicine or surgery [1].

Asclepius family was: his wife Ippioni, his sons Makaon, Podalirius, Telesforos and Alexinor and his daughters Panakeia, Akeso, Aigli and Ygeia, all offering treatment of various diseases and psychic disorders of men [2]. Makaon and Podalirius were the famous physician and surgeon during the Troian war, as Homer describes.

Asclepius was born in Trikala, Thessaly, in the middle of Greece, where the first Asclepeion was established [3-6]. About 500 Asclepeia were established in ancient Greece and the Asclepeion of the island of Kos was one of the most famous. Asclepeia were a kind of clinics for hygienic treatment and for medical treatment to follow. They were built in very beautiful places with natural springs, away from cities.

Patients coming to the Asclepeia were first taking cleaning baths and then entered the main Asclepeion, where they were examined by priests-therapists and were accommodated in certain areas-rooms of the Asclepeion. Inscriptions found in marble plaques describe treatment of some diseases and the sum of money paid for every treatment. These were the first medical records and fees in ancient Greece. The priests-therapists were: the Great Priest, the Assistants and the Hieromnemones for the reception of the patients. There were also Special Therapists, who were considered as

direct descendants of Asclepius. Women were acting as vergers [7].

In certain rooms sacred snakes and dogs were kept, trained to participate in certain therapeutic procedures.

Patients were considered as a unique psychosomatic entity. After they had their first bath, patients were accommodated to a kind of hotel (kataklintyrion), a long building where they had their private room [8]. Patients received many instructions in order to relax and rest, submitted daily baths, exercises, massages, entertainment attending theatrical or poetic or athletic races, reading special books, promenades, special diets or were kept fasting and were instructed to take many kinds of medicine per os, suppositories, ointments, eye drops etc. Animals were used in order to treat by licking traumatized areas [9]. Patients participated in the sacrifice of animals and in mystic performances in honor of Asclepius. Patients were finally relaxed and convinced that they will be certainly treated by the aid of Asclepius.

In the middle of the whole infirmary there was a dome, a special building, the main part of which was not free to everyone to visit, where were performed the main medical treatment procedures. In this place, the patient was kept under a condition of sleep or narcosis. Soon the principal Priest-Therapist appeared from a crypt and exercised a surgical or another main treatment procedure. Patients who were not considered suitable for the above procedure were treated by other means.

The main diseases treated in the Asclepeia were: chronic neuropsychological disorders, skin diseases and chronic lung diseases. Other diseases gynaecological, ophthalmic and surgical were also treated. Grave diseases and parturient women were not accepted in the Asclepeia.

Important citizens, like the poet Aristarhos, the comedian Theopombos, the philosopher Krantor, the herodian Aristides and others visited Asclepeia seeking for treatment.

Today, like in the ancient Asclepeia, the psychology of patients is important and certain preparatory drugs are administered before the actual main treatment of surgery or of some psychic disorders. In Aalborg, Denmark, a large prototype medical university hospital, is scheduled to be built in an area of 350 acres within the next 15 years. The psychosomatic dogma and principals of a "green building" will be well respected (Fig. 1) [10].

The Asclepeion of the island Kos

Besides the first Asclepeion in Trikala, other famous Asclepeia were those in Epidaurus and in Kos. The Asclepeion of the island of Kos, where as we know Hippocrates was born, was built 3.5Km southwest of the city of Kos, 90-100m above the sea level, surrounded by a small forest of cypress trees and close to water springs, some of them forming therapeutic spas (Fig. 2). The Asclepeion was built on the 5th century B.C. and functioned till the 4th century A.D. (Fig. 3). The Asclepeion of the island of Kos had three floors and it was built well adjusted to the landscape of the area (Fig. 4, 5) [11]. Findings from the 3rd floor indicated that it was first built during the Mycenaic period (Fig. 6). A very strong earthquake destroyed much of the Asclepeion on 413-412 B.C. (Fig. 7, 8) [12]. The

Asclepeion had many dedications, which expressed the gratitude of the patients who were treated [13].

The most important findings rescued from the Asclepeion of Kos are [14]: a) Seventeen inscriptions on marble columns presenting important historical information, b) Twenty four surgical tools that belong to the so called "Hippocratic collection", some of them now in private collections. A dagger and surgical metallic tool to indicate the free passage of tubular organs were also found (Fig. 9). c) Dedicated parts of the human body in marble: an ear, a damaged penis and two



Figure 1. Digital representation of "Aalborg Hospital".



Figure 2. Contemporary panoramic view of the Asclepeion of Kos.

breasts (Fig. 10) and d) A collection of valuable coins from the 4th century B.C. indicating the time Asclepeion of Kos was functioning.

After the 4th century A.D. conflicts between religious groups, more earthquakes, conflagrations and lutting by western conquerors destroyed the Asclepeion. A small Christian church was built later in this area, of which now only a few ruins remain [15]. On the 14th century A.D. the Saint John's Knights of Jerusalem removed stones from the



Figure 3. Spas at the lower level of the Asclepeion of Kos.

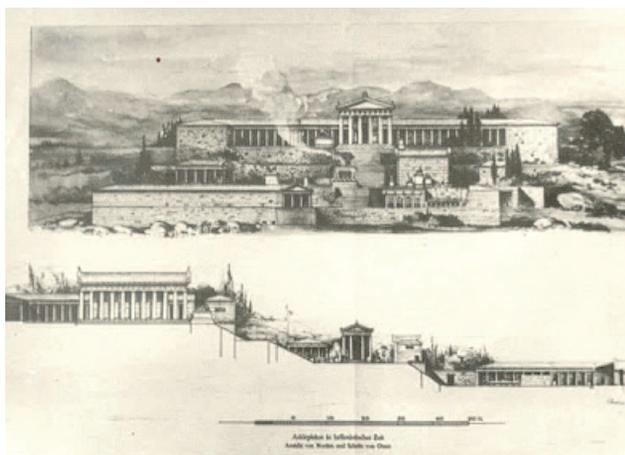


Figure 4. Frontage and incision of the Asclepeion of Kos. Graphics by P. Schazmann, from the book of R. Herzog "Kos. Band 1-Askliepeion", Berlin, 1932.

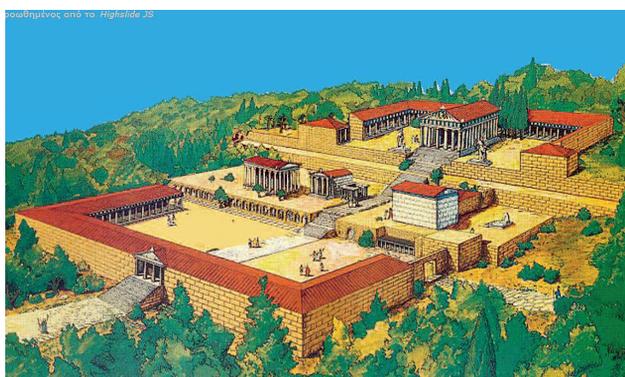


Figure 5. Digital representation of the Asclepeion of Kos, as it was in the ancient years.

ruins of the Asclepeion and other materials like marbles in order to build the castle of the island of Kos. The same happened later by the Turks, who removed and used stones and marbles from the ruins of the Asclepeion in order to build two Turkish mosques in the city of Kos. On the 18th century, the Turks destroyed the holy grove with the cypress trees by the Asclepeion and transformed the whole area into gardens, which later were deserted till the end of the 19th century [16].



Figure 6. Temple of Asclepius (Ionian style) on the 2nd terrace of the Asclepeion of Kos.



Figure 7. Ruins of the altar of Asclepius and of the temple of Apollo (Corinthian style) on the 2nd terrace.



Figure 8. Altar and podium of Asclepius on the 2nd terrace of the Asclepeion of Kos.



Figure 9. Surgical tools from the private collection of Professor Meyer-Steinig from the Asclepeion of Kos. More surgical tools are now exposed in the Museum of Dion near Mount Olympus.



Figure 10. Marble parts of human body dedicated to the Asclepeion of Kos.



Διεθνές Ιπποκράτειο Ίδρυμα Κω
International Hippocratic Foundation of Kos
κάλλιον τό προλαμβάνειν, παρά τό θεραπεύειν

Figure 11. Logo of the International Hippocratic Foundation of Kos. Better to prevent than to treat.

Recent excavations in the area in order to find and restore the old Asclepeion started in 1902 and continued till 1938, where the monument was reconstructed in its present form. Archaeologists Rudolf Herzog, Iakovos Zarraftis, Luciano Laurenzi and Luigi Morricone were leading these archaeological works. It is unfortunate that many important archaeological findings were luted and are now in foreign cities, like Rome and Constantinople. Since 1947 more archaeological findings were discovered, more constructions took place and the adjacent grove was enriched with cypress trees.

Today there is an international Hippocratic Institute under the presidency of Professor Stefanos Geroulanos (Fig. 11) [17] and also the International Medical Olympicus Association under the presidency of Professor Philip Grammaticos [18], who both contribute for an international cooperation

to promote Hippocratic ideals for treatment of various diseases. Not to forget what Hippocrates said 25 centuries ago: "Dealing with diseases, we must remember two things to be of help and not to harm the patients". We may also remember what is written in Homer [19]: "Always be best and try to be better than others".

In conclusion, it is suggested that Hippocratic medicine, as practiced in the Asclepeion of the island of Kos, using psychosomatic means of treatment in a green natural environment was effective for many diseases at that time but also inspired modern medicine and as an example a large university institution is now under constructions based on the above ideals.

Bibliography

1. Marketos S. Greek Medicine during the centuries. *Seven days. Supplement of the newspaper Kathimerini*, 1997, October 12. [in greek]
2. Rigatos G. *History of Nursing. From charity art to modern science*. BETA editions, Athens 2006; p. 11, 12, 20-22. [in greek]
3. Eusebius III.14.6 "I am the god Asclepius from the holy Triki" translation from the ancient greek text "Εγώ ο Ασκληπιός εξ Ιερής Τρίκκης ήκω θεός"
4. Stravon ΓΕΩΡΡΧΙΥ. 647: "There is another river which is called Lithaios near Triki, it is said that Asklipeios was born there"
5. Ziakas G. *Asclepius and Aslepeion of Trikala*. Version of the Cultural Organization of the Municipality of Trikala. Trikala, 1992. [in greek]
6. Stravon. Geography. In: *Collected works of ancient Greek writers. Papyrus*. Editions Enalios, Athens, 1975. [in greek]
7. Asclepius and Asclepia. *Historika. Supplement of newspaper Eleftherotypia*; vol. 129 Athens 2003; p 123. [in greek]
8. Margotta R. *History of Medicine*. Translation in Greek: G.N. Antonakopoulos, Parisianos editions, Athens, 1996; p. 22-26.
9. Rigatos G.A. *Ancient Medicine*. Archive library of history and civilization of Argos [on line]. Available from [http://argolikivivliothiki.gr/2011/07/page 3/](http://argolikivivliothiki.gr/2011/07/page%203/) [Sept. 2014]. [in greek]
10. Kolkas A. *Fron hospitals to Asclepeias*. Protagon.gr. 2/01/2013 [on line]. Available from <http://www.protagon.gr/?i=protagon.el.article&id=21083> [Sept 2014]. [in greek]
11. Chatzivasileiou V. *The Asclepeion of Kos. Monument of International Culture*. Athens, 2008. [in greek]
12. Chatzivasileiou V. *History of the island of Kos (Ancient-Medieval-Modern)*, translated by Dr. Nicholas G. Itsines, Publication of the Municipality of Kos, Kos 2013.
13. Aravantinos P.A. *Asclepius and Asclepeia*. Edition Leon, Leipzig 1907; p. 31-35, 181-198. [in greek]
14. Chatzivasileiou V. *Medical instruments in the Asclepion of Kos*. Koaka, annual newspaper of Spiritual Group of Kos "The Filitas", volume 6B, Kos 1998 p.173-186. Available from <http://filitas.blogspot.gr/> [Oct. 2014]. [in greek]
15. *Ancient History of Kos*. Prefectural Administration of Dodecanese Editions, Eparchy of Kos 1998. [in greek]
16. Bosnakis D, Skerlou E. *The Asclepeion of Kos*. From the website of the Ministry of Culture [on line]. Available from http://odysseus.culture.gr/h/3/gh351.jsp?obj_id=2395 [Sept 2014]. [in greek]
17. International Hippocratic Foundation of Kos. *Aims of the foundation* [on line]. Available from <http://hippocraticfoundation.org> [Sept. 2014].
18. Medical Olympicus Association. Website: www.medolympicus.gr, Facebook: www.facebook.com/MedOlympicusInternational.
19. Homer. *Iliad*. Rhapsody Z' 208. "Always be first and senior to all and not to embarrass the generation of your ancestors".