

RETROSPECTION ON THE CONNECTIONS BETWEEN ANCIENT MACEDONIAN MEDICINE AND MEDICINE OF MODERN TIMES

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Abstract: *It is hard to talk about any science without sufficiently knowing its rebirth and knowing even less about its beginnings. Today, when we talk about medicine, without referring to its development and existence in the other social periods of human existence, the first association that comes to our mind is the one of modern medicine.*

It is known that the ancient medicine is a basis to modern one, but little has been researched about what this ancient medicine is and where it originates from. It is also known that in the ancient civilizations there were both medical research and medical practice. Especially in the IV century BC in the Macedonian ancient state, philosophy and medicine were on the highest level in that period. There were several philosophical and medical schools like, for example: Pythagorean, Miletus, Stoics, Epicurean, etc. According to the sources from ancient scripts, Aristotle, Asclepius, Hippocrates, Plato and other Macedonian philosophers from that period succeeded in incorporating medicine and pharmacy into philosophy. So the knowledge of anatomy and treatment were on a high level and in conformity with philosophical and scientific knowledge. Diagnostics, Surgery, pharmacy and medical therapy existed in that period, which is evident by various scripts, medical equipment and accessories. Talking about Macedonia, I do not refer to the present day Republic of Macedonia, but that notion involves all the present-day Balkan states which were part of that empire in the past, with exception of Athens and Sparta who at that time were city states.

Introduction

Aristotle was born in the period when Aminta was in power. Aminta's father, Nicholas, was a royal physician at Pella, and grew up together with Philip II. In those times, Olint, the city of his mother, and Stagira, the city of his father were very insecure due to the frequent ravages by the Athenian pirates. The education of Aristotle (Fig. 1) was in the empire libraries throughout Macedonia and the knowledge in natural science and medicine were passed on to him as they had previously been passed from father to son. He was a descendant from an aristocrat family of doctors, who had, through generations, served the Macedonian kings and introduced him with science, medicine and tradition. At that time, philosophers had royal descent, as was the case with Pythagoras, Heraclites, Democritus, Hippocrates (Fig. 2), and many others, who were presented on the coins and on the statues with royal ribbons on their head, same as Philip II and the other emperors, as well as the gods: Apollo, Asclepius, Artemis, Orpheus, Heracles etc. This proves that Aristotle was in close relations not only with the royals but also with the gods who were of great importance for Macedonia. So he had great support for many scientific and research projects which yielded considerable contribution for the development of world science and medicine. He was directly supported by Phillip II and by Alexander afterwards. The archeological findings prove that the ancient Macedonians used to lay wet ceramic utensils in the ground, and than used the mold as penicillin, they used the bark of the birch tree as aspirin; the opium, obtained from the poppies, was used to soothe pains and as a symbol of the passage from consciousness towards unconscious dying; opium was also used to reduce the pains of childbirth.

Alexander's royal doctors were members of the phalange; thus Macedonian science was spread throughout the world, from Babylon to Tibet. The Macedonian influence in medicine survived all through the 18th century Europe, when science came out of the monasteries and when hospitals were built, similar to the asclepiads in the ancient Macedonian cities. Deceases are identical in all people on all continents, and each new method was accepted quickly. World medicine paid homage to Macedonian medicine by accepting some of its insignia. One of them is the symbol of pharmacy: a snake around Asclepius' cane (Fig. 3), as well as the oath of Hippocrates, that he wrote as a royal doctor on the courts of the Macedonian emperors.

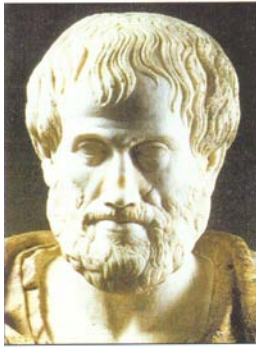


Fig. 1. Aristotle

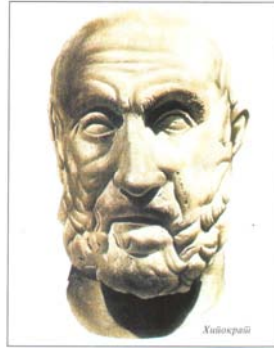


Fig. 2. Hippocrates



Fig. 3. Asclepius

The Hippocrates's oath spread throughout from Hippocrates' family: his son Tezel, and his son-in law Polib, who were all eminent doctors in the phalange. Hippocrates is the author of the age-old oath; in medicine, he is as remarkable as Aristotle in philosophy, as instructor of Philip and of Alexander. All eminent figures succeeded one another to contribute in the development of the scientific achievements. Many important people of that time cooperated with Aristotle and with Hippocrates. Many of them found their place at Alexandria, which was the scientific treasury of the Macedonian culture, under direct support by the Macedonian royal dynasty of Ptolemy over three hundred years. It is known that Hippocrates was born on Kos 460 BC; he lived and worked on the territory of Macedonia and died in Larissa in 370 year BC. His grandfather Hippocrates and his father Heraclites passed on the medical tradition that originated from the royal dynasties of Philip and Alexander, of Cleopatra VII, Ptolemy, Constantine the XIII and other Macedonian royal dynasties, spreading throughout thousands of years. Hippocrates was always surrounded by eminent people as Democritus at Abdera, the sophist and orator Georges at Larissa etc. It is a fact that he spent 10 years in Pella in the times of Perdika, Archeleas and Aminta; there, he wrote the famous oath. His close friends were Euripides and Agathon; he knew Socrates very well too. Thus his personality was built within the family of royal families and the Macedonian intelligence from the end of the V and the first half of the IVth century BC. He was healing royal families and was from a royal family himself; he was allowed to have his face engraved in the coins. During the Peloponnesus wars, Pythagoras, Anaxagoras, Democritus, Heraclitus and all important Macedonian philosophers were far enough from Athens, working on issues which were important not only for Macedonia but for the world in general. At that time, the Macedonian philosophers who went to Athens were either executed or exiled. Such was the case with Fido, Socrates, Protagoras, who were exiled. Many others stayed and worked in Macedonia. (Markus, 2005).

Material and Methods

Hippocrates wonderfully incorporated philosophy into medicine; he wrote 50 books including notes that he classified by individual principles. His medical treatment was according to rational approach and in conformity with the knowledge about the natural laws of that time. The philosophical attitude referring to cosmic interconnections in the world impressed him. On the basis of the four elements he built his medical interpretations. His written works included histories of diseases, drafts on various topics and other written medical material. Some of them have been lost or destroyed in order to conceal their importance; Asclepius hospital was burnt together with the documentation and the medical library of Hippocrates on Kos, as well as the Alexandrian library. One of the more prominent Hippocrates' works refer to the so-called "sacred disease" (epilepsy), and others of his works include references to "air, water and soil", and their importance for people's health. He wrote a book on epidemic diseases, warning about the spreading of cholera and other diseases through the air, water and food. His works among which are: Prognostic, Dietetics, Laconic and Fractures as well as a collection of aphorisms as a breakthrough of the restrained and limited ideas, led to quick development of science and medicine. He introduced symptom observation in order to be able to exactly determine, to estimate and prescribe the right therapy against a certain disease by logical analysis. He observed 42 diseased people on the island of Thasos, examined the psycho-physical constitution of people who had contracted malaria, night blindness, acute fever and other diseases in Macedonia and Thessaly. He was deeply inclined towards science and medicine. Maybe three of his

debates are especially interesting for surgery. They refer to diagnostics, the surgery intervention and the type of fracture or displacement.

His surgery methods of treatment have been finding their application for over 1000 years. His instruments were in use even longer. Today they are exhibited at many museums in the world (Fig. 4).

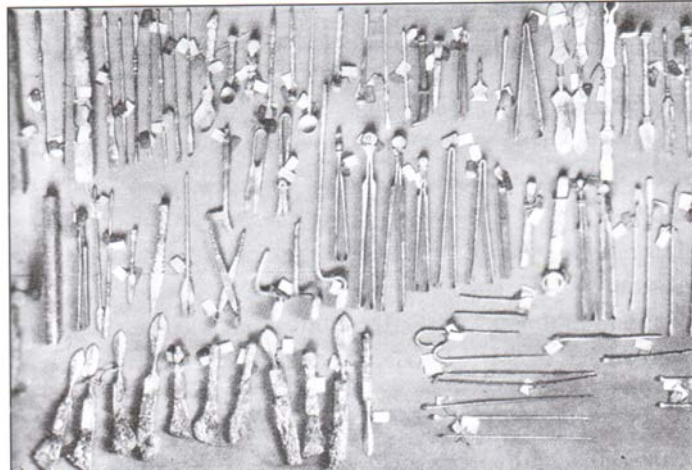


Fig. 4. Medical and surgery instruments from Hippocrates' times

Hippocrates paid more attention to studying of external organs, like the bones and the muscles, which could be treated by surgical interventions in wounded and diseased people with obvious symptoms. He gave good descriptions of the functioning of the heart, the splint, the liver but not of the blood vessels, the nerves and the brain. In his times dissection did not exist, the forecast, as well as the history of the disease, was formed, by observations at hospitals where the hygiene was on a high level of organization. According to him, life is sustained by warmth which resides in human heart. He transcends food into body fluids. Warmth depends on air supply (supply of oxygen) into blood through movements. The centers of thinking, feelings and wishes are located in the brain, whereas the senses and the movement orders are transferred pneumatically. He considered the heart as the center of life. Aristotle's ideas about the heart were similar. Hippocrates explained diseases in conformity with his opinions about the disturbed harmony of the body fluids which stabilize by themselves in a couple of days or recede. The power and the value of Hippocrates' medicine lies in clinical practice. Every disease is estimated by all senses, and the diagnosis is an individual statement and different for each person. There were three main factors in that process: the disease, the patient and the doctor: if they are in the same place at the same time, the disease will be overwhelmed, but only if the patient confronts the disease, and the doctor is here only to help the organism re-establish the previous equilibrium by means of proper medical treatment.

There are lists of diseases encountered in medical practice, as pneumonia, Plevritis, malaria, tetanus, paralysis, apoplexy, rheumatism, cysts, hysteria and other diseases which were present in Macedonia at those times. There are excellent descriptions which help in the recognition of those diseases. Some phenomena still bear the name of Hippocrates: Hippocratic, Digiti Hippocratica, Facies Hippocratica, Neo-Hippocratism as a movement in the twentieth century, dedicated to that medical science.

About 300 medicines are mentioned, although they were used less than in our days. Physical therapy was less prominent. Baths, massage, sun-taking, blood release, weak narcotics, as well as light food consisting of soups, honey, wine, milk and diet were applied as well.

The surgical therapy was excellent. The same methods and techniques of amputation, skull opening, ankle fixing, immobilization and bandaging are preserved to this day. The same holds in dentistry, with its methods of treating and extraction of teeth.

This rich theoretical and practical medicine material, applied at the Asclepius before and after Hippocrates, emphasizes the morality and ethics of the doctors as well.

The Macedonian tradition of imperial doctors, as well as of travelling doctors was preserved and continued in Rome, where there was no previous tradition of medical treatment. There was no important experience in Athens either. The decisions on the life of the weak newborn babies were brought by the City Council, most frequently by throwing them from the highest city walls.

Normally, it was impossible for a city with so many hatters to grow further in population. What is more, they improved poisoning instead of healing. Xenophon and Plato described the killing of Socrates by means of Cucuta. That thick yellow liquid, made of a plant, numbed his legs and his tongue very quickly; he was losing consciousness but nonetheless expressed his attitude that he was not afraid of death when it is brought about by judges and law. Hippocrates' oath obliges the doctor not to give poison to the patient. The Macedonian laws protected the patient, the patient's family and the people. The travelling doctors reached every corner of the country, alone or in company of their helpers. They carried their medicaments and instruments. First, they took care of the hygienic conditions. Warm water, clean towels, aeration, fire to sterilize the instruments, all was ready and available. The principle was the same one, according to which disease spreads through air, is overwhelmed by fire and extinguished and washed away by water. Only delivery was assisted by a midwife, because it was not considered as a disease and no travelling doctors were called to assist. Home visits by nurses after delivery has always existed. Even animals were treated by experienced people, most frequently by shepherds. To become an imperial doctor, one needed to be from a family of doctors, and to be the best and the prominent in medical profession.

The muses, the Nereids, and the common Macedonian mothers are the link between the gods and the people, giving births to heroes and emperors, gifted to perform celestial medicine, music and all kinds of celestial art which was transformed into science within the Macedonian reality. The idea that the emperors were once gods is present in Homer's epic. All tribes on the Aegean shores were led by god-originating kings. Agamemnon, Achilles, Odysseus, Paris-Alexander, Hector fought for ten years to conquer Troy and Helen, sister of the Pleiades, who were stars in the sky near to the gods. Zeus transformed many mortal gods into immortal ones. The most numerous among them were the ones treated by gods, the ones who were doctors themselves and treated their army and were also accompanied by imperial doctors. The Mycenaeans Menelaus and Agamemnon were treated by Machaon and Podalirius, sons of Asclepius. Patroclus was treated by Achilles. Achilles was treated by Machaon.

He had a scar that was healed by the Parnassus imperial doctors. Meiciun itself is interwoven by the connections of the ancient tribes. Different emperors were treated by the same doctors. The Mycenaeans were not Achaeans. They were Achilleans and their common origin is the Macedonian Arg dynasty. The dynasty spread to Peloponnesus and was maintained as a monarchy at Sparta and Thebe.

The Macedonians from Pella outlived both them and Athens at Achaia and in Achillea. Therefore the Iliad kings had the same imperial doctor.

All who came from the foot of the mountain Olympus save the same Macedonian origin: Menelaus, Achilles, Odysseus and Hector.

The longevity of the first Macedonian kings is due to the appropriate application of medicine at the royal courts. The imperial doctors lived even longer. Thus Hippocrates and his family healed the Macedonian kings Perdica II, Archeleas I, Orestes, Europ, Aminta III.

The doctors of Aminta III were also the ancestors of the Aristotle's family: his father Nicolas, his grandfather Machaon, his great-grandfather...

These doctors were the predecessors of Hippocrates' medicine, especially at the royal court of Aege and Pella in the times of Archelleas, back to the first Macedonian kings. The royal continuity of the Macedonian science and medicine goes as far back in time as to the mythological figures. There, among the first doctor deities of Apollo and Asclepius are the roots of the Macedonian medicine. From those times is the tradition of the emperors to have their own doctors, a healing school and medical practice.

In the times of Philip and Alexander, in the Fourth Macedonian century, the development of the philosophy and medical schools reached its peak. A whole guild of expert doctors healed the wounds of Philip II and the doctors that escorted Alexander were even more numerous.

The doctors of the two most famous doctoring families, the ones of Aristotle and Hippocrates, spread the healing of the wounded warriors of the phalange as well as to the states which neighbored Macedonia. It is interesting to mention that Alexander was the first to attempted to heal the wounds of Philip and gave the best forecasts saying: Do not be sorry, Philip, for one wound in the leg, but turn back to remember your successful battles; soon, your horse will soar to new victories." In the phalange as well, Alexander was the first to see the wounds and to recommend the healing later performed by Thessal, Philon and other doctors.

Antipatar and Kassander in Pella succeeded the doctors of Philip and Alexander to Philip V and Perseus.

Macedonian medicine in Alexandria developed as a continuation of Aristotle's knowledge of physics. The Chaldees and the Magi from Babylon and Egypt, than known as Misir, found their place in the Alexandria library, beside Theophrastus and Meno, the disciples of Aristotle. Their knowledge and scripts about the plants, cures, healing as pharmaceutical knowledge, sublimed the medical

knowledge of Macedonia and continued the tradition of schools and imperial doctors. A principal medical school was founded in Alexandria, and doctors from all regions and islands went there. Erasistratus studied the heart and the nerves, Cleombrotus and Mithradates were the doctors of Seleucus I at Antioch.

Ptolemy healed Chrysippus, who had his own school, like Phyllos, Serapion, Heraclitus from Tarent, Apollonius, Ber who worked from Antioch Soter at Babylon. In the course of as long as three hundred years the Ptolemy dynasty at Alexandria were improving philosophy, medicine, astronomy and other sciences. Scientists from Sicily, through Macedonia to Babylon and Mithradates, were educated at Alexandria. Philo from Larissa, Ptolemy and Antioch carefully chose the head of the Alexandrian library. Those famous heads of the library were Theophrastus, Callimachus, Eratosthenes, Eratosthenes, Apollodoro, Xenodotus, Aristophanes, Apollonius of Pergamum and others. Many imperial doctors originated from Alexandria to continue their careers in both Alexandria and in Rome. Cleopatra's doctor was Apollodoro, and her educator was Nicholas.

The doctor of Marcus Antonius, and of Cicero before, from 124 to 60 BC was Asclepius from Bethany. In the times of Nero, Trajan, Marcus Aurelius and other emperors, the doctors originated from the Alexandrian schools of medicine. They were Galen, Sore, Dioclis and others.

The names of the Roman gods also originated from Alexandria, but the name of Apollo, the deity of medicine remained unchanged. What also arrived to Alexandria from Rome was the program of Dionysus wherefrom Varo and Marcus Terentius learned about the Latin language, as a continuator of the rich Macedonian culture. The Romans did not know about hygiene, pharmacy or medicine. The scarce knowledge from the Etruscians was suffocating. The Etruscians understood their close link to Macedonia and they introduced science, literacy and education through Alexandria.

Soren from Ephesus is among the popular doctors who originated from the Alexandrian Macedonian medicine and he came to Rome in the times of Hadrian and Trajan. His specialty was gynecological diseases although medicine requires broad education in order to identify the causes of a certain disease.

In the first fifty years of our millennium doctor Athenaeus arrived in Rome from Cilicia. Some time later Aretaeus arrived from Cappadocia. He applied the books on pneuma which they were left by Hippocrates in his times.

Ruphus from Ephesus named the parts of the body. He treated renal diseases and strictly observed medical ethics.

The famous doctors of Pergamum were Asclepius and Galen. Pergamum was constituted as a Macedonian city by the generals of Alexander, and therefore medicine was applied at the Asclepiad as an imperial hospital. Claudius Galen (in 129 to 200 BS) went to Alexandria to upgrade his knowledge. He specialized surgery and was called to Rome to be a doctor of gladiators. He was very much respected there. He spread medical science by lecturing. He was also a travelling doctor, until he was appointed by Marcus Aurelius as imperial doctor of his son Commodus. But he soon returned to Pergamum. He wrote books on medicine in 150 tomes. The medical discipline that he studied most deeply was anatomy which helped him be successful in medicine. Like Hippocrates, he considered that the best doctor is a philosopher dedicated to medical ethics. As in philosophy and in history, in medicine too, most of the works are lost, copied, modified before they appeared under the names of other authors. Galen died in 200 BC and it can not yet be established which are his original books and which books are allegedly his, as is the case with Hippocrates.

Another doctor, named Onesander (Alexander) appeared in Pergamum. The emperor Justinian incited him to make an encyclopedia of medicine, from the works of Hippocrates and Galen. The book was to be used in Rome. Thirty-two books are preserved out of 72 and they were copied and used for centuries. There were also four medical handbooks.

Dioscorides made a textbook and a handbook on pharmacy as a compilation of the already existing scripts. Afterwards, Menon and Theophrastus, upon the request of Aristotle, made a list of all plant and medicaments, and the said handbook remained in use in the Roman Empire for a long period of time.

It is necessary to mention Philon who came to Rome to teach ascetism, spiritual purification, repentance and other principles which through ethics came to be applied in Christianity. All these places, Bethany, Caria, Cilicia, Cappadocia, Ephesus, Pergamum and Alexandria were Macedonian at those times.

The Macedonian state was spreading, lands were conquered, armies fought supported by medicine. Dedicated works, devoted imperial doctors and medicine for the people filled with paganism, magic, curses and respect for the deities of the agricultural tradition. The Macedonian schools of Pergamum, Alexandria and the islands gave a lot of doctors. None of them was from Athens or from Rome. Macedonian medicine served all nations, east and west from Macedonia.

In the East from Armenia to Alexandria, Aristotle's works remained preserved for about a thousand of years in original, to be used for medical needs. From Aristotle's scripts about nature the Arabian

philosophers and doctors compiled handbooks on medicine, same as the medical handbooks compiled from Hippocrates' books in Rome.

Avicenna, Averroes and Maimonides are the missing link which spread the ancient Macedonian medicine through Spain into mediaeval Europe. This medicine was applied until the nineteenth century.

Conclusion

It can be concluded from the above that medicine existed and was studied in antiquity on the territory of Ancient Macedonia to be spread later throughout the rest of the world.

We should not permit that science and medicine become subject of falsification by present-day politicians because this will turn our human population into a bunch of losers.

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