

PAULUS AEGINETA, a Byzantine Physician, and His Contribution to Ophthalmology

Παύλος ο Αιγινήτης και η συμβολή του στην Οφθαλμολογία

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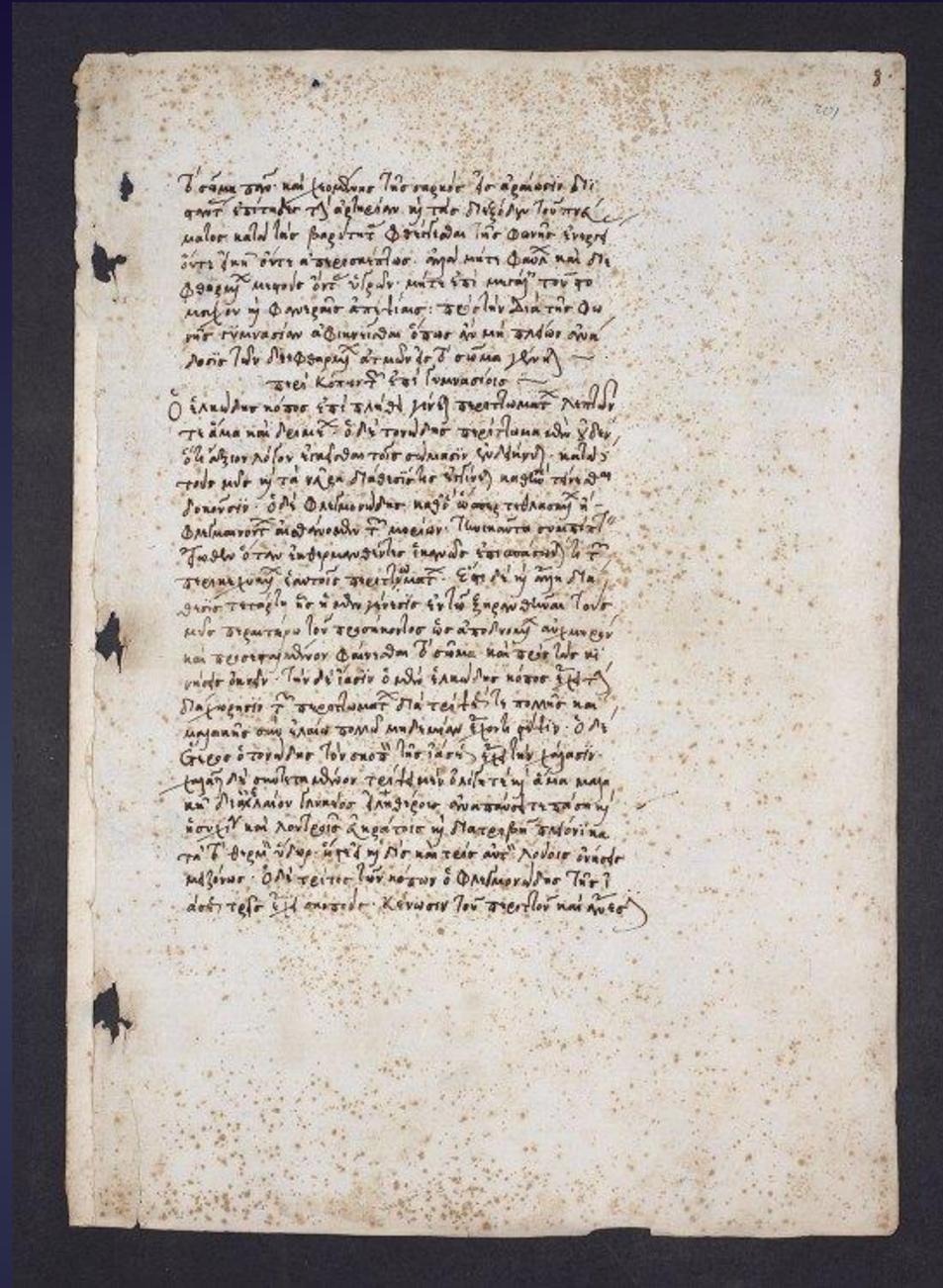


Fig. 1 : Paulus, Aegineta, manuscript: 1400s, paper ; 330 x 230 mm

Leaf from a 15th-century copy of Paulus Aegineta's *Epitomae medicae libri septem*, with text from Book 1, Chapters 19-22.

Paulus composed his compilation in the seventh century and drew Chapters 20-21 from the *Synopsis ad Eustathium* (Book 5, Chapters 15-16), written by Oribasius in the fourth century. The material before Chapter 20 and after Chapter 21 on this leaf matches Paulus more closely than Oribasius. The leaf is numbered 8 in ink, upper right recto.

From the Kislak Center for Special Collections, Rare Books and Manuscripts, University of Pennsylvania.

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HIS LIFE

Paul of Aegina (Παῦλος Αἰγινήτης), was an Ophthalmologist of the Greek Middle Ages. The dates of his birth and death are not precisely known, but he undoubtedly flourished in the first half of the seventh century. Baas sets the limits of his life as 625-690 A. D., on the other hand, as pointed out by Handerson, “if the date assigned [by Baas] for the birth of Paul is correct, he could have been but sixteen years old when Alexandria was captured an age when his medical education at least could have been scarcely begun.” We know but little of his life. He, however, was educated in Alexandria, and practiced in that city with very great success.

During the life of Paulus Aegineta (625-690 A.D.) a number of emperors passed from the Constantinople’s throne. Heraclius (610-641 A.D.) his sons Constantine III (641), and Heraklonas (641), after them Constans II, the Bearded (641-668) Constantine IV (668-681) and Justinian II (685-695). It was a turbulent period of Byzantine empire.

We know but little of his life. We can say with some certainty that the ‘Seven Books of Paulus Aegineta were written by a great physician named Paulus who was born on the Greek island of Aegina. It is unlikely to learn much more of his life. He, however, was educated in Alexandria, and practiced in that city with very great success. He was also a famous writer, but of all his works, and they must have been numerous, the only one preserved until our day is the great compendium of medicine in seven books, called “Hypomnema.” This book became at once a high authority, and so remained not merely throughout the Byzantine Middle Ages, but also through the whole of the Saracenic period.



Fig. 2: Paulus Aegineta, ...Praecepta salubria. Close-up of historiated initial of a young woman’s face. Notice the plant visible in the background. From a medieval edition of his compedium

'Ἐπιτομαί ἰατρικαί' is the original title of Paulus Aegineta's work. At least two manuscripts from Paulus's work are kept in the library of Megisti Lavra monastery of Mount Athos ('Ἅγιον Ὄρος'). One is of the 12th century in parchment and the other on paper of the 14th century. This library was established around 970 A.D. by the St. Athanasius Athonite (920-1003 A.D.), founder of the conventus ascetic life of Mt. Athos. St. Athanasios was a literary man but also a great reformer of the monastic life. He brought from Constantinople to Mt. Athos an illustrated manuscript of Pedanius Dioscorides 'De materia medica' Πεδανίου Διοσκουρίδους 'Περὶ ὕλης ἰατρικῆς' in Greek.

Paulus Aeginetus was the only physician of the ancients who described the cataract operation with details. He also described burns of the eyelids by medicines and the subsequent creation of a symblepharon (Συμβλέφαρον).

The "Seven Books of Paulus Aegineta" or Epitomae medicae libri septem ("Medical Compendium in Seven Books") became very popular work of this 'obscure' writer who was one of the great compilers and epitomizers of medical knowledge. It was so successful that formed the basis of Arabic medicine for the long period of its flourishing. Paulus Aegineta was due to his work one of the great keepers and preservers of the medicine of the Greeks and the Romans.

Fig. 3: Saint Athanasius the Athonite, the founder and reformer of the monastic community of Mt. Athos (961 AD). He was the builder of one of the greatest monastic libraries having a lot of medical manuscripts, as of Paulus of Aegina, Aetius of Amida and also of Pedanius Dioscorides (St Athanasios , fresco 1547, Dionysiou, Monastery, Mt. Athos or Agion Oros)



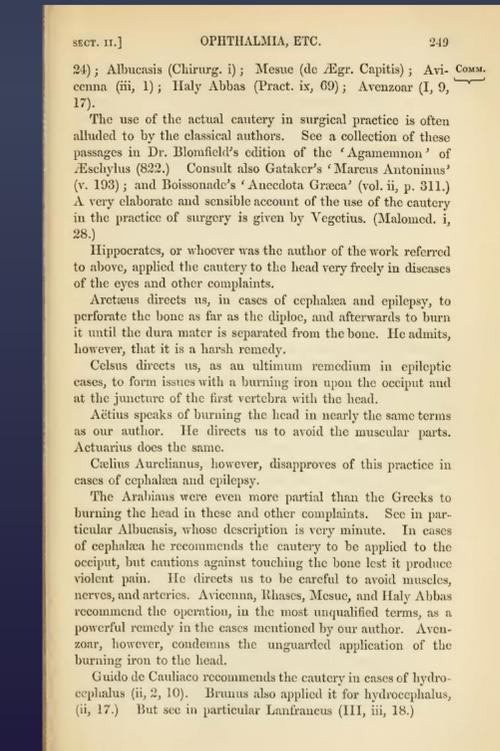
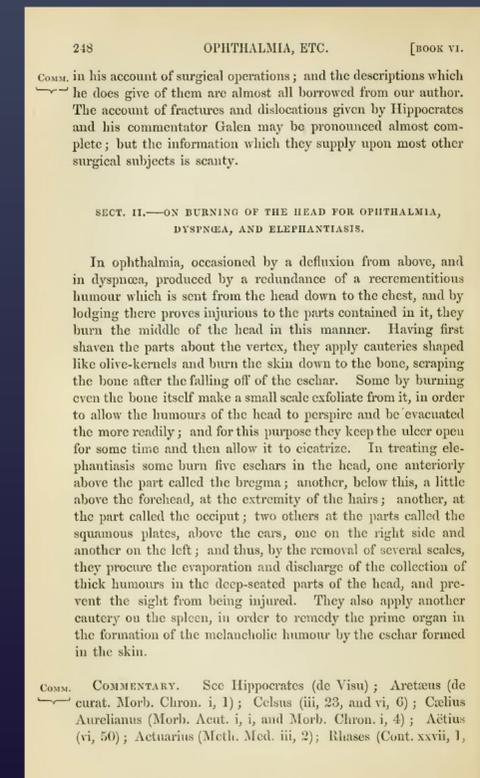
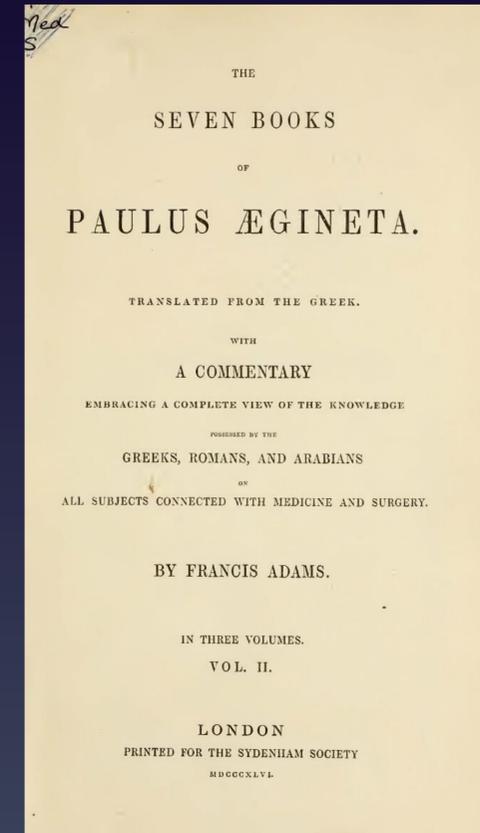
Fig. 4: Φυτό φοίνιξ, ο αιγύπτιος ο θηβαικός και ελάτη (Περὶ ὕλης ἰατρικῆς του Πεδανίου Διοσκουρίδους) Phoenix from Egypt and spruce
From the Dioscorides's manuscript ,Megisti Lavra Mt. Athos c. 10th century A.D.

THE COMPEDIUM

Based largely on the works of such earlier Greek physicians as Galen, Oribasius, and Aëtius, the Epitome greatly influenced the medical practice of the Arabs, who considered Paul among the most authoritative of Greek medical writers. The Persian master physician al-Rāzī (Rhazes) drew extensively from the work in writing his Kitāb al-Manşūrī (“Book to al-Manşūr”) and Abū al-Qāsim, one of Islam’s foremost surgeons, borrowed heavily from the Epitome’s sixth, or surgical, book in compiling the 30th chapter (“On Surgery”) of his Al-Taşrīf (“The Method”). Thus, Paul’s work exercised a lasting influence on Western medieval medicine when the Arabic works were adopted as primary references in medieval Europe.

This book became at once a high authority, and so remained not merely throughout the Byzantine middle ages, but also through the whole of the Saracenic period. Even at the present day it possesses a remarkable interest, for the sponge-like Paulus, having, as it seems, the freest access to that great repository of ancient learning the Alexandrian library, and at a time just prior to its destruction by the Arabs absorbed the medical and surgical learning of the age and gave it forth again to later generations in the form of his all-embracing work “Hypomnema” truly a monument both to his own industry and to the medical and surgical attainments of the Greco-Roman world. The parts of the great treatise that deal with ophthalmology are: Book 1, Section 31, “On Dimness of Sight”; Book III, Section 22, “On Diseases of the Eye”; Book VI (Surgical), Section 2 “On Burning of the Head for Ophthalmia,” and Sections 4 to 22 inclusive, which treat of nearly all the other surgery of the eye as this was known and practiced in the seventh century. From his writings we can exact the impression that the author was a competent surgeon. Book VI and Book IV are dedicated to Surgery.

Fig.5-7 : The English edition of Paulus Aeginita ‘Επιτομαί Ιατρικαί’ by the Sydenham Society in 1846 in three volumes contained the Books IV-VI, The article about ‘ophthalmia’ Fig. 8: Paulus Aeginetus in medieval early printing (c. 1580)



In 1846 the Sydenham Society published a three-volume translation of Paulus Aeginetus work. The translator was Francis Adams (1796 – 26 February 1861) a Scottish physician, and translator of Greek medical works. The manuscripts from western libraries and Megisti Lavra in Mt. Athos are before 1500 AD and after the Arabs. To the English-speaking world Paulus Aegineta's works remained in practice for several centuries.

HIS OPHTHALMOLOGY

The essays concerning Ophthalmology included in the sixth book (VI).

in the section II he describes the symptoms and causes of OPTHALMIA and its relation with other conditions.

Section VIII refers to other infectious conditions such as 'ON SUTURE OF THE UPPER EYELID, AND OTHER MODES OF OPERATING FOR TRICHIASIS. In this essay he described infectious condition of the eyelids and cleaning and removing the eyelashes from the eyelids and applying compresses with remedies for healing. The other sections concerning eye conditions follows

Sect. IX: ON BURNING OF THE EYELIDS BY MEDICINES

Sect. X: ON LAGOPHTHALMOS OR HARE-EYE

Sect. XI-ON THE SUTURE OF THE UNDER EYELID, AND THE BURNING OF IT BY MEDICINES

Sect. XII- ON ECTROPION, OR EVERSION OF THE LOWER EYELID

Sect. XIII: ON ANABROCHISMUS AND BURNING WITH IRON

Sect. XIV: ON HYDATIDS

Sect. XV.-ON ADHESION OF THE EYELIDS

Sect. XVI- CHALAZIA OR TUMOURS RESEMBLING HAIL-STONES

Sect. XVII- ON ACROCHORDON AND ENCANTHIS

Sect. XVIII- ON PTERYGIA

Sect. XIX- ON STAPHYLOMA

Sect XX- ON HYPOPYON OF THE EYE

Sect. XXI-ON CATARACTS

Sect. XXII-ON AEGILOPS OR FISTULA LACHRYMALIS

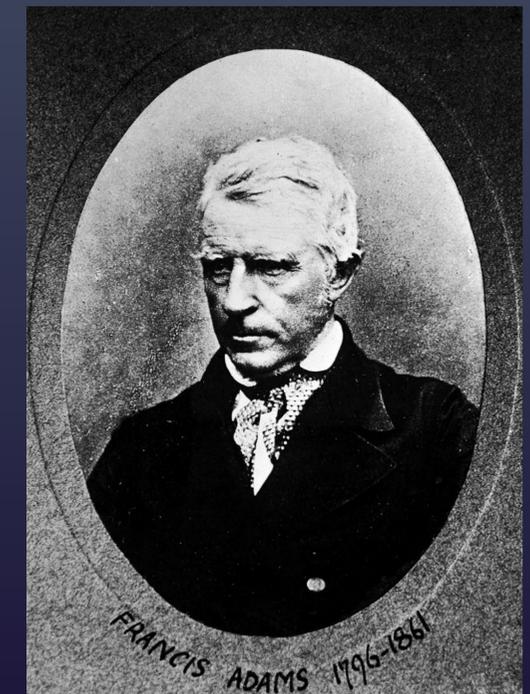
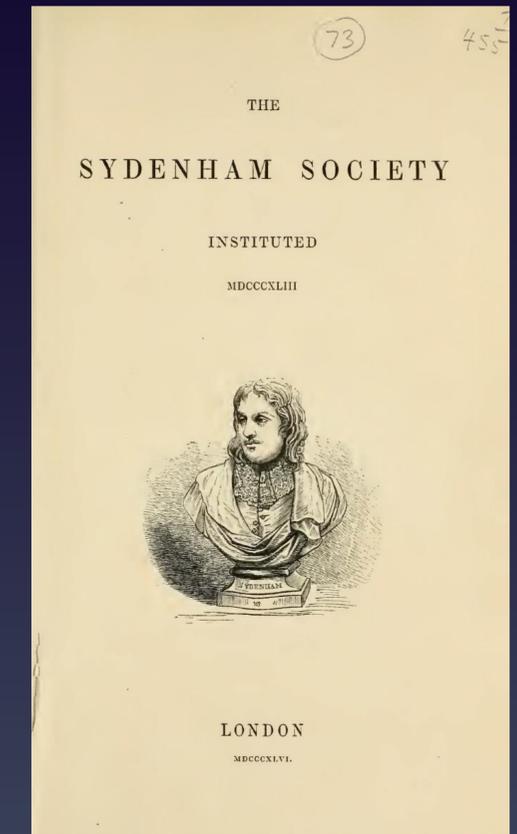
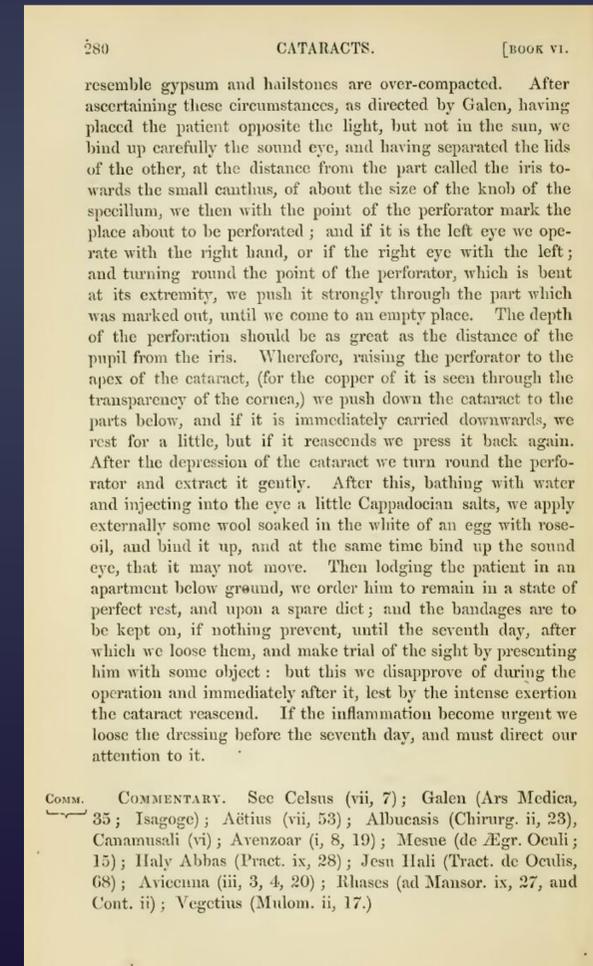
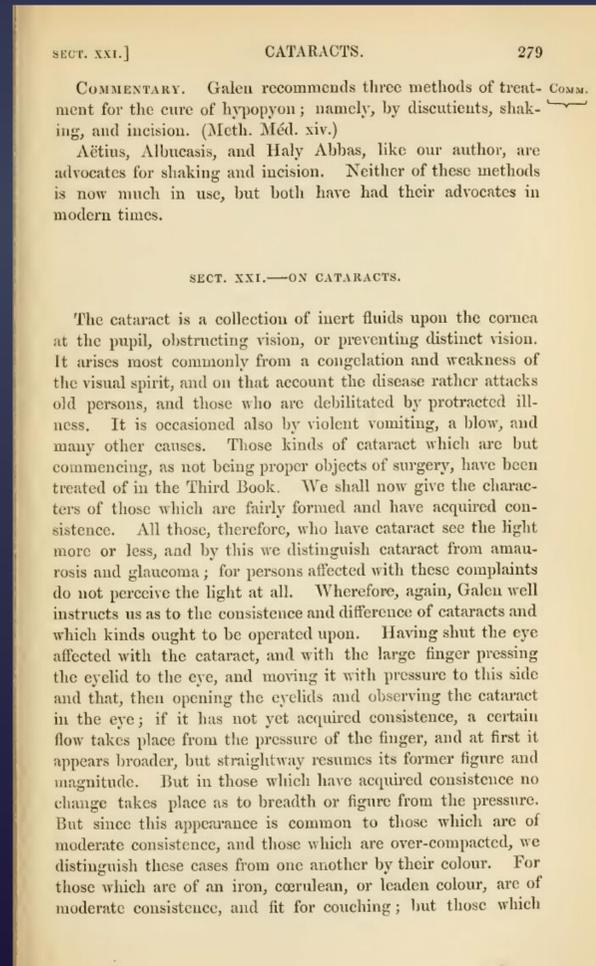


Fig. 9-10: The Sydenham Society's English Edition of Paulus Aegineta works and his translator, the Scottish physician Francis Adams. **Fig. 11-12:** The Cataracts, nature and operation pages 279-280 from the book VI

.... The Cataract issue

Paulus Aegineta describes vividly the cataract operation. He is the only Greek doctor who described cataract couching in detail. He pressed the closed eye by the eyelid and then, after observing the condition of the eye to make an assessment, inserts the needle from the temporal side of the globe and depress the lens downward of the iris. Only Sextus Plonicus however mentions that the diseased part is sometimes to be depressed with a specillum. He makes a cataract classification depending on the condition of the crystalloid lens. All the Arabs copied this technique from Paulus treatise. Avicenna adopted the same technique but also mentions the extraction of the cataract by opening the cornea in the lower part, without supporting this method.



Fig. 13 : The Exonarthex 'Εξωνάρθηκας' of Megisti Lavra monastery, Mt. Athos (c. 961 AD)

EPILOGUE

Paulus Aegineta (625 AD-690 AD), substantially his life unknown to us today, but his imprint in the History of Medicine was powerful and essential. He was a great encyclopedist and probably a great surgeon, as seen from the detailed description of the surgical operations. He was the first physician to describe cataract surgery precisely. He handed over to humanity all the knowledge of ancient medicine, and his work was the connecting link with modern medicine.

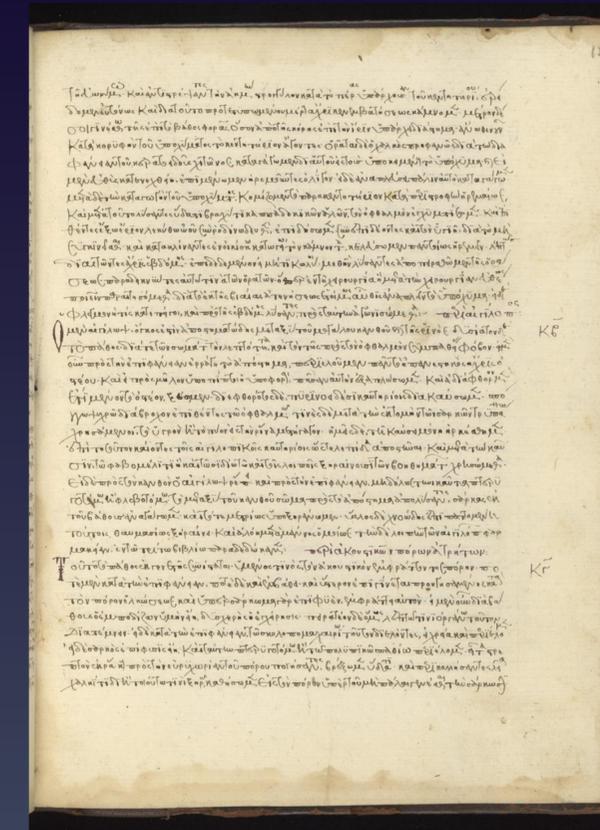
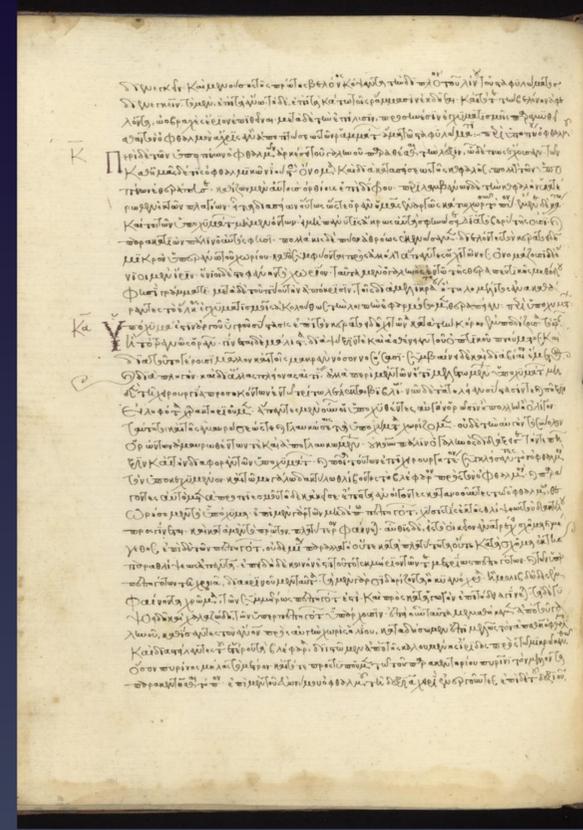


Fig. 14-15: The Paulus Aegineta Greek manuscript, describing the cataract surgical procedure, Wellcome Library Collection, c. 1500

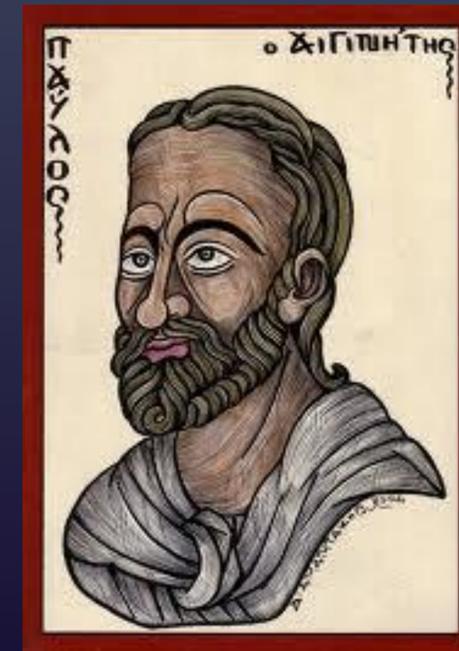


Fig. 16: Paulus Aegineta , a contemporary portrait with byzantine-like technique

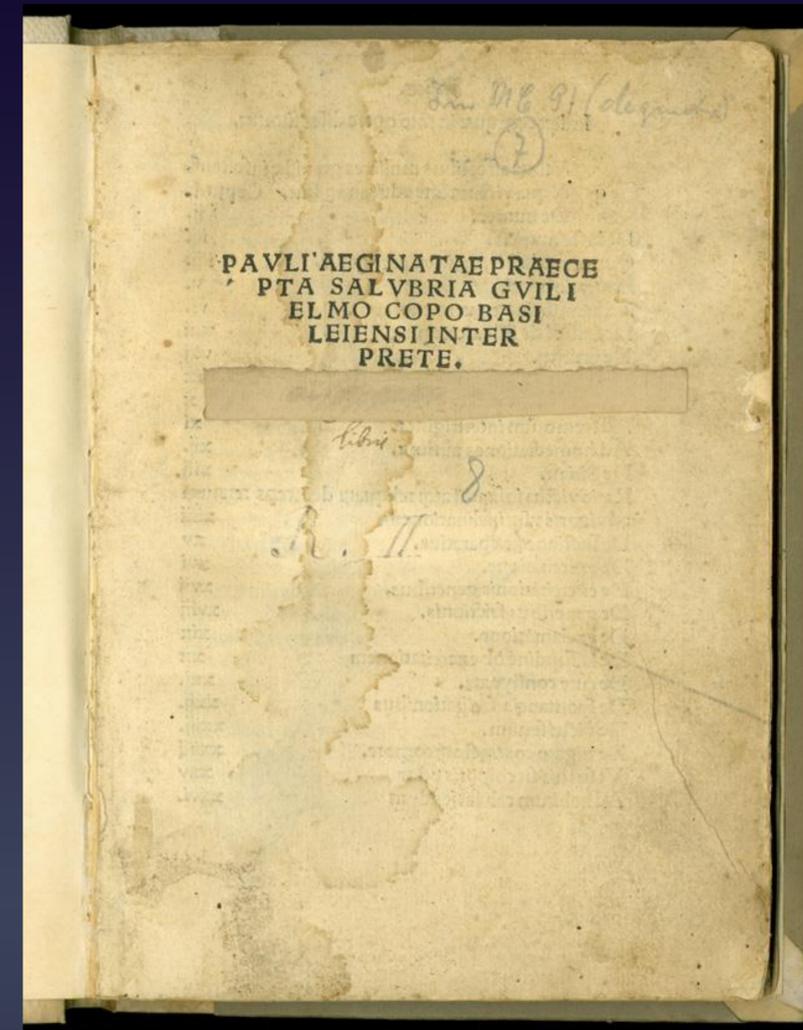


Fig.17:Paulus Aegineta, ...*Praecepta salubria*. Argentorat: ex aedibus Mathiae Schurerij..., 1511 A.D.The title page shows the title arranged in a centered style. It lists only the author and “interpreter (*translator*). The printer is not named.

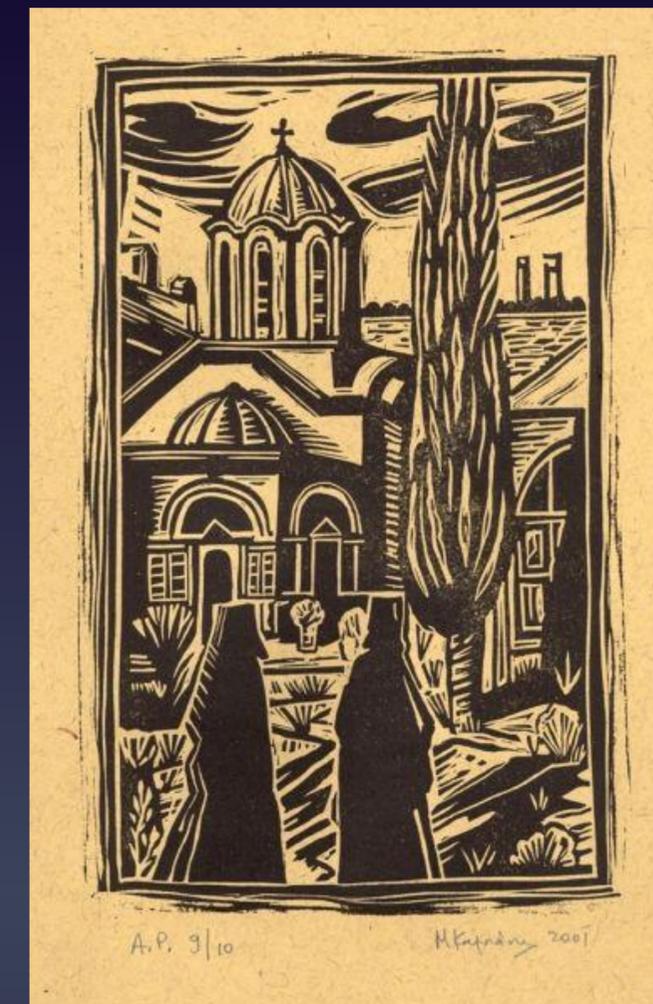


Fig.18: Iveron monastery, *Mt Athos* Print in linocut paper, Markos Kampanis

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- 1-3: "The seven books of Paulus Aegineta," translated from the Greek, with a commentary embracing a complete view of the knowledge possessed by the Greeks, Romans, and Arabians on all subjects connected with medicine and surgery by Francis Adams, Volume I,II,III, 1846, 1847, 1848, Sydenham Society.
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Manfred Ullmann, Die Medizin im Islam, Handbuch der Orientalistik, Abteilung I, Ergänzungsband vi, Abschnitt 1 (Leiden: E.J. Brill, 1970).
- 3.-Rene Briau, Chirurgie de Paul d' Echine, Paris, 1855.
- 4.-Three codes in the Library of 'Megisti Lavra', manuscripts of 15th-17th century.
- 5.-One code in the Library of 'Iveron Monastery', one code in the Patriarch Library of Jerusalem and one last In Alexius Kolyvas library.