

## Noor Al-Uyonwajame' Al-Funoon (The Light of the Eyes and the Collector of Arts)

(By Salah Al Din Al-Kahhal Al-Hamwy (Circa 969AH = 1296CE)

Edited by: M. Zafer Wafai, MD. and Prof. M. Rawwas Kalaji, Ph.D.

Published by: King Faisal Center for Research and Islamic Studies, Riyadh, KSA. 1987 (Fig.1)

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Figure 1 Front page of the Book

We, the medical historians, are indebted to the late Lucien Le Clerk (1) for his discovery of this invaluable book and for bringing it to the attention of the medical historian community based on the only manuscript known of the time in the national library (Bibliothèque Nationale) in Paris # 1042 Suppl. Arabe.

W. Pertsch (2) described another copy at the Ducal Library of Gothe # 1994.

J. Hirschberg wrote extensively about this book in his famous encyclopedia (Die Arabischen Augenärzte) (3) translated recently by the late Prof. Frederick C. Blodi into English (The History of Ophthalmology). In addition, Hirschberg, J. Lippert and E. Mittwoch, wrote a book about the Arabian Ophthalmology in which they reviewed this book along with two other books written by the famous Occulists Ammar Ibn Ali Al-Mawsily and Khalifeh Ibn Abi Al-Mahasen Al-Halabi (4).

Two more manuscripts exist of this book:

The first is in the Alexandria National Library # 1098. The second was discovered by M. Z. Wafai, MD. and was not mentioned by any historian before, in Hamediyah Library # 1038 in Istanbul, Turkey.

Unfortunately, both copies were incomplete and missing pages and even whole chapters, sometimes.

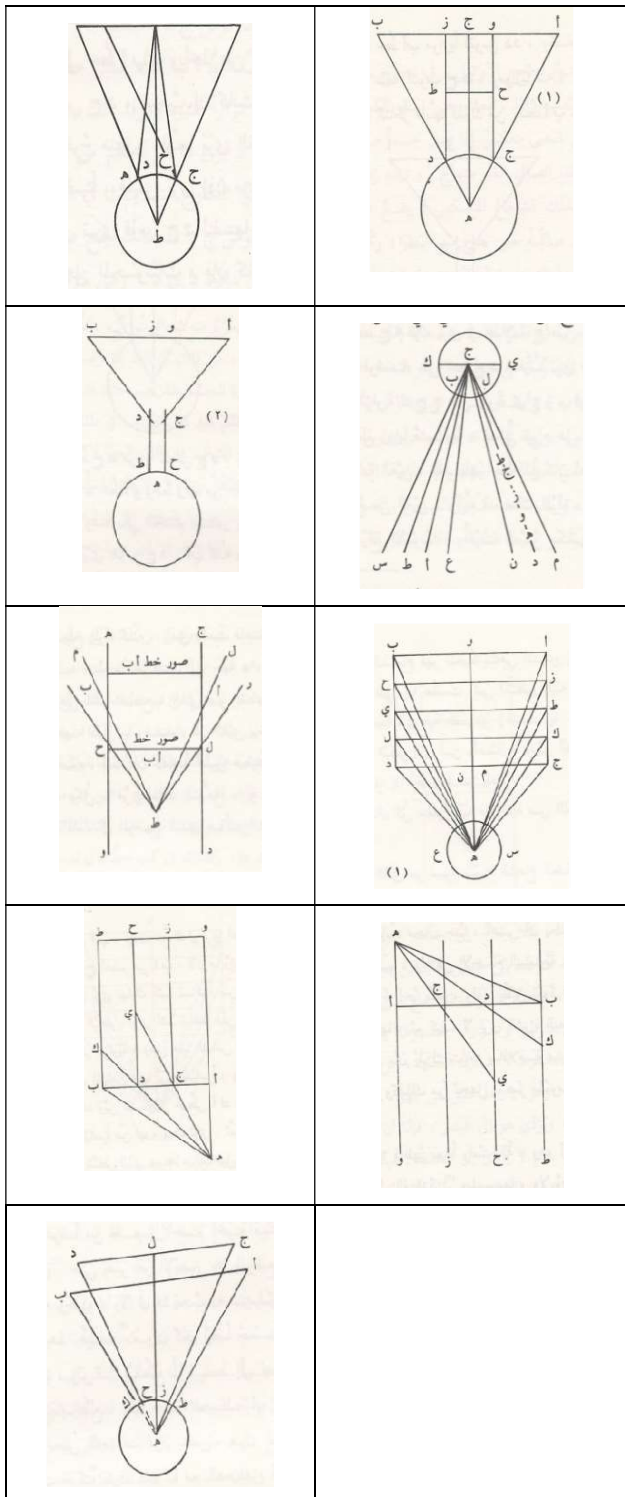


Figure 2

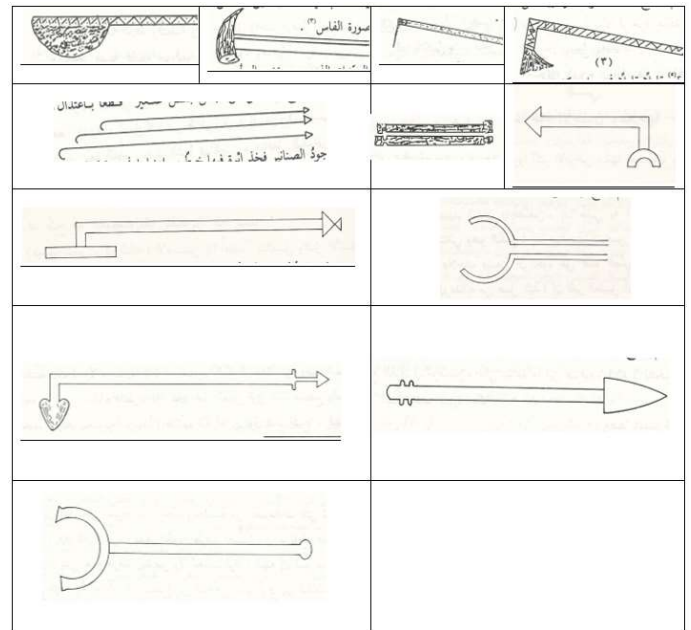


Figure 3

As mentioned above, the editors of the book (Wafai and Kalaaji) chose the Paris copy as the mother copy because it is the oldest (written in 1126AH=1714 CE), and complete (contains all the ten chapters, or maqalahs) as well as the introduction and all the geometrical figures to explain the theory of vision in the second maqalah, (Fig. 2) some of which were taken from the book of optics by Euklid, and the eighteen surgical instruments scattered throughout the chapters on surgery, (Fig. 3), and the outstanding and the first colored drawing of a cross section of the eye (Fig. 4) (5) .



Figure 4

This manuscript consists of 178 folios (353 pages), each page contains 27 lines, with 13-15 words in each line.

The other three manuscripts were incomplete and lack all the illustrations mentioned above. For example:

Gotha # 1994: Consists of 154 folio or 300 pages, 21 lines in each page, the pictures and the figures, in addition to several pages and occasionally full chapters are missing.

Alexandria # 1098: consists of 230 folio or 460 pages, 17 lines in each page, written by two different calligraphers, and all the figures and drawings are missing.

Istanbul (Hamedia) #138 which was discovered and mentioned for the first time by M. Zafer Wafai, MD is a copy of the Paris manuscript.

In the introduction of the book, Salah al-Din referenced most of the Arabian oculists prior to his time who were experts in the field of ophthalmology (diagnosis and medical and/or surgical management) in addition to fifteen prominent Grecian oculists. In this chapter he exhibited an outstanding humanitarian spirit and fear of Almighty God. He emphasized the doctor's behavior and how it should be characterized by perfection and noble spirit and mercy.

Salah Al- Din stressed the importance of behavior and dignity by stating:

- One must have purity, chastity, and the fear of God.
- One must keep the secrets which are confined to him/her.
- One must have goodness and faith.
- One must work hard in the study of science and avoid the useless and vain lust of the body.
- One must follow the scholars and to dedicate oneself to the sick and the needy.
- One must think of their treatment and how to find ways and means to restore their health, and if it is possible one can support the poor with their own money and do it with pleasure.
- One's aim should not be to hoard treasures, but to collect only fees.
- Never prescribe lethal medications or an ointment which could harm or damage the vision.

(God the exalted may support you and me as He pleases.)

After this lengthy introductory chapter stressing the importance of fearing the Almighty God and seeking his mercy, guidance and eternal reward in the life after, Salah Al-Din goes to the first chapter (maqalah) dealing with the anatomy of the eye in a very systematic, eloquent and comprehensive way, and follows the same system in the remaining nine chapters. We should stress what was mentioned earlier, that this first chapter contains the very first colored drawing of a cross section of the globe.

In the second book (maqalah), Salah Al-Din dared to present geometrically his theory of vision. In this chapter he divides the scholars who dealt with this topic into three groups: the first are the mathematicians who claim that the visual ray originates in the eye. The second group claims that the vision occurs with the help of the air around us. The third group is the naturalists who claim that vision is due to perception.

He then goes on to explain the mirage phenomenon, and the straight object being seen bent in the water, etc.

Each of the following five chapters covers a specific part of the eye in the same systematic and elegant way, starting with different kinds of eye diseases, diseases of the eyelids, diseases of the canthi, conjunctiva, and the cornea.

The eighth book deals with diseases of the iris, the pupil, and extensively with diseases of the lens (cataract). He describes the different sizes and the eight different causes of the cataract and the eleven different colors that it may have.

He emphasizes the importance of the papillary reaction to light prior to performing the procedure to ensure favorable results. Then he spares no time or effort in describing in great detail the surgery itself, the surgeon, and his/her assistant regarding their clothing and courteous behavior with the patient, positioning the patient to ensure adequate light for the surgeon, and finally recommending a soft or liquid diet for the patient post operatively. At the end of this chapter, Salah Al-Din describes the couching of the cataract using the hollow couching needle invented and used by Ammar Ibn Ali Al-Mousily in his book *The Chosen of the Eye Diseases and their Management*.(6) .

In the ninth book (maqalah), Salah Al-Din discusses the

occult diseases of the eye which are not apparent to the examiner such as the diseases of the Retina, choroid, and the optic nerve, and discusses their causes and types of treatment if possible.

In the tenth book (maqalah), he lists an excellent and very extensive collection of simple medications and a few combined medications useful to treat eye diseases.

In brief, Salah Al-Din should be considered one of the few geniuses in the field of ophthalmology and a pioneer in describing the eye diseases and their management.

## References:

- 1- Histoire de la Medicin Arab, Vol.2 P.205.
- 2- Die Arab Handschriften der Herzogl. Bibl. Zu Gotha( vol .IV P. 30, 1883).
- 3- Geschichte der Augenheilkunde. J Hirschberg. Printed by J.Spring Verlag, Berlin. Translated lately by the late Prof. Frederick C. Blodi into English (The History of Ophthalmology)
- 4- Die ArabischenAugenarzte, J. Hirschberg, J. Lippert, und E. Mittwoch Leipzig Verlag Von Veit & Co. 1905. Translated into English by Frederick C. Blodi, Wilfried J. Rademaker, Gisela Rademaker, and Kenneth F. Wildman. Edited by M.Z. Wafai, M.D. Published by King Abdulaziz City for Science and Technology 1993.
- 5- The drawing was explained by P. Pansier: Coll. Ophth. Vit. Auctor. Fasc II Paris 1903 P. 89
- 6- The Chosen of the Eye Diseases and their Management, Ammar Ibn Ali Al-Mousily (circa 400AH=1010 AD) Edited by: Prof. M RawwasQalaaji and M. Zafer Wafai, MD. Published by Al-Obaikan Publishing House, Riyadh, Kingdom of Saudi Arabia 1991.