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## **OLD VETERINARY MANUSCRIPTS IN TURKEY AND A STUDY ON THE 15 th CENTURY MANUSCRIPT\***

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### **Türkiyedeki Veteriner Hekimlik Yazmaları ve 15 inci Yüzyıla Ait Bir Yazma Üzerinde İnceleme**

**Özet:** Ülkemiz kitaplıklarında veterinerlik konusunda çok sayıda yazma vardır. Türkçe, Arapça ve Farsça olan bu eserler İslâm uygarlığı çağındaki veteriner hekimlik bilgilerinin zengin kaynaklarıdır. Ortaçağın önemli bir eseri kabul edilen "Naseri"nin en değerli nus-halarının Bursa ve İstanbuldaki kitaplıklarda bulunduğu anlaşılmıştır. Avvam ve Hizzam ile diğer yazarların yapıtları yanında anonim yazmalar da veterinerlik tarihine ışık tutacak niteliktedir. Genellikle hipoloji ve hipiatri konularına yer verilmiş olan bu eserlerde çeşitli at minyatürleri de vardır. Ancak anatomik amaç ile yapılmış resimlere ilk kez "Kitâb az-Zardaka" adlı 15 inci yüzyıla ait bir yazmada raslanmıştır. Yapılan çalışma sonu tek nusha olan bu eserin ilim tarihinde önemli yer tuttuğu, özellikle anatomik resim ve bilgileri ile batıdaki çağdaşı örneklerden daha bilimsel yazıldığı anlaşılmıştır. Eserin, İslâm uygarlığı çağında anatomik amaç ile diseksiyon yapıldığını kanıtladığı ve veteriner tarihinin ilk resimli at anatomisi kitabı olduğu ileri sürülmüştür.

Hundreds of manuscripts on veterinary medicine which were written in Ottoman Turkish, Arabic or Persian can be found in libraries of Turkey. These books were called "Baytarname" or "Feresname", and are rich sources of Islamic veterinary science. Many of these are preserved in the libraries of Bursa, the first capital of the Ottoman Empire, Konya where the eminent philosopher Mevlana was buried and Istanbul. For example, the sixth copy of "Naseri" which includes the most important section, the tenth, was found in

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Bursa by Erk (9,10). It is the best-ordered and most complete book of its kind, written in Medieval times, as Sarton (21) indicated. I have also recently come across another copy (1) of this treatise in Topkapı Museum Library, in Istanbul, which is indicated as being written by Abu Bekr, on September 29, 1322, and this, probably, is the oldest and most valuable of the 6 copies. Similarly, the works of the famous Moslem veterinarians Hizzam (12) and Awwam (11) who flourished in the 9th and 12th centuries, and of many other unknown writers on which critical studies have not yet been made are a valuable source of information about the Islamic period.

As these manuscripts of their translations did not reach Western countries, and library catalogues give only bibliographical notes, veterinary historians of the West have sometimes failed to appreciate veterinary achievement of the Islamic Era.

Although some of the Islam veterinarians who wrote in Arabic such as Hizzam, Awwam, Dimyatî and Abu Bekr were represented to the Western World by some authors (4,14,16,20,23,24) critical studies on their works have recently been started in Turkey, especially by Erk, director of my department. As Smitcors (25) wrote "Dr. Erk's evaluation is especially noteworthy as being the first".

The veterinary manuscripts found in Turkey, were usually written about horses, and deal with the selection and breeding of horses, symptoms and treatment of diseases. Many of them contain horse miniatures representing the proportions of the horse, or indicate the sites of diseases and blood-letting regions. We have not met any manuscript with an anatomical illustration except kitâb az-Zardaka (3) on which I made a critical study. Théodorides (28) and Poulle-Drieux (19), referring to the first, speak about this book who based on F. Edhem and Stchoukine's bibliographical pamphlet (13). This, unique 15th century manuscript which is kept in the Central Library of Istanbul University was written in Arabic by an anonymous author for Yelbay who was Commender in Chief of the Army in 1466, and Sultan of the Memluk Dynasty in 1467. The book is on 84 large pages; it contains coloured anatomical miniatures of horses in addition to anatomic, physiologic and aetiologic information. In this paper only the anatomical value of the miniatures and the knowledge given by the legends will be discussed from the point of view of veterinary history.

*Fig. 1.:* This is the first page of the book. The title which means "The Book on Horse Breeding, and the Diseases of Horses and Their Treatment" is at the top and the bottom. The dedication to

Yelbay which is also repeated on the last page (Plate 13) is in the centre.

*Fig. 2. Fol. 17<sup>a</sup>:* A ten month pregnant mare is figured, and related with this a good description of pregnancy and parturition is given correctly. The position of the foetus in the uterus near birth could only be drawn after keen observation. Although the Islamic veterinarians had their own experience and original knowledge on obstetrics and gynaecology, this probably is the first representation of its kind in veterinary literature.

*Fig. 3. Fol. 18<sup>a</sup>:* A horse with colic is shown. The symptoms and causes are given above, and also information about septicaemia supposing the causal agent to be suppuration which disperses into the visceral organs.

*Fig. 4. Fol. 19<sup>a</sup>:* A very important miniature for the history of religion which appears to be the only one in existence in Turkey. The winged horse of Archangel Gabriel is represented.

*Fig. 5. Fol. 21<sup>a</sup>:* A view from the ventral of a horse. Mostly anatomical and some physiological knowledge is given about it. Most of the principal parts and visceral organs were surprisingly well represented for that time. Detailed descriptions about bones, joints, ligaments, nerves, arteries and veins are also given around the figure. Especially bones of the head, their structure and joints are clearly described. The details of sutura cranii and fontenella are very similar to those of Hippocratic Writtings (2). The anatomy of the ears and especially of the os pyramidealis, and also the physiology of hearing are in accord with Galen (15).

*Fig. 6. Fol. 24<sup>a</sup>:* A view from the dorsal of a horse. On this figure articulations, columna vertebralis, ribs and the bones of the extremities are shown crudely, but give a clear idea on the subject.

*Fig. 7. Fol. 25<sup>a</sup>:* A rabid dog and a horse. The explanation deals with the contagious character of rabies. Its cause is attributed to the corruption of blood and excess of black bile which acts as a poison, but the writer distinguishes it from other poison-cases by its ability to be transferred by biting. He also indicates that it is incurable.

*Fig. 8. Fol. 26<sup>a</sup>:* The localisation of diseases mentioned in the text is indicated on a horse.

*Fig. 9. Fol. 27<sup>a</sup>:* This miniature is purely an osteological figure of a horse. Almost all bones of the skeleton are dealt with. The representation of the back-bone and ribs is characteristic. Although it

was drawn consisting of 16 vertebrae, except coccyx, and 16 ribs, Figure 6 shows more vertebrae and 17 ribs. On the other hand the sternum is described with its 5 bones. This can be corpus sterni which consists 5 sternebrae segments. The costa-vertebral articulation is clearly explained, and is in accord with Galen (15).

*Fig. 10. Fol. 30<sup>a</sup>*: An another figure on which the same diseases indicated in Fig. 8. (Fol. 26<sup>a</sup>) were shown.

*Fig. 11. Fol. 30<sup>b</sup>*: The qualities of a fine horse are mentioned.

*Fig. 12. Fol. 31<sup>a</sup>*: There is no explanation about the miniature on the figure or in the text.

Beside these miniatures, the MS contains also much anatomical and pathological information. Both the illustrations, their descriptions, and their knowledge reveal that anatomical dissections and postmortem examinations were carried out. According to Mettler (18) the developmen of anatomy is difficult to separate from that of physiology until the 17th century. This book is also in the same character. The general view presented is Hippocratic-Galenic medicine from as far back as Byzantine and Greek times; however, Islamic ideas appear, for example in obstetrics, and the illustrations are characteristic of Islamic veterinary medicine.

According to Poulle-Drieux (19), in the West, the works of the 13th to 15th century hippiaters do not contain even an elementary anatomical knowledge, and visceral organs are mentioned only by name; physiological data is also based on Hippocratic-Galenic medicine. Therefore, Kitâb az-Zardaka (3) can easily be excused for experring the Hippocratic-Galenic traditions, but it is quite different in character and of course superior to its contemporary works.

Some of the Western writers (5,6,17,24) doubted whether for religious reasons dissection was ever practiced by Moslems, but Mettler (18), speaking on this subject, stated there was no evidence in support of this.

Elgood (8), Sarton (20) and Wilson (29) speak positively on the subject. This 15th century manuscript is a striking example for dissection and its performance, not only in human medicine, but also in veterinary science in Islam. It is especially interesting to note that the manuscript was written at the end of a period when dissection were indeed prohibited in the West.

Poulle-Drieux (19) informs us about an horse figure in the 15th century Catalanische manuscript on which some diseases of extremi-

ties were shown. According to Stork (26) the oldest figure of this kind in the book of 1565, and she adds that the earliest anatomical illustration can be found in books of the 2nd half of the 16th century (27).

Although Schmutzer (22) informed us of an anatomical study in 1450, and many painters and sculptors, such as Leonardo da Vinci, Dürer are known to have used the scalpel for anatomy, these are "more artistic anatomy than a veterinary contribution" as Smith-cors (25) noted.

As for Carlo Ruini, his prominent work "L'Anatomia del Cavallo" was written at the end of the 16th century, in 1598, and is accepted as the first in scientific veterinary anatomy (7).

In conclusion, Kitâb az-Zardaka is a very important work in the history of science. Although its figures are very crude from the point of view of artistic veterinary art, they are more scientific than in contemporary Western work, and it can be said to be the first known illustrated horse anatomy treatise in veterinary history.

### References

1. **Abu Bekr.** (1322): *Kâmil aş-Şinâ'ateyn al-Baytara (Naserî)*. Topkapı Müzesi Kütüphanesi, A. 1956, İstanbul, 151 yk.
2. **Adams, F.** (1946): *The Genuine Works of Hippocrates*. 2nd Ed., The Williams and Wilkins Company, Baltimore, 142-143.
3. **Anon.** (1466): *Kitâb az-Zardaka fî Ma'rifat al-Hayl ve Ecnasuha ve Emrazuha ve Edviyetuha*. İstanbul Üniversitesi Merkez Kitaplığı, A.Y. 4689, İstanbul, 84 yk.
4. **Brockelmann, C.** (1938-1949): *Geschichte der Arabischen Litteratur. Band I-II, Supplementband I-III*. E.J. Brill, Leiden und Netherlands.
5. **Brown, E.G.** (1962): *Arabian Medicine*. 2nd Ed., Bradford and Dickens Ltd., London, 36-37.
6. **Doby, T.** (1963): *Discoverers of Blood Circulation*. Abelard-Schuman, New York, 54-57.
7. **Dyce, K.M. and R.H.A. Merlen.** (1953): *Carlo Ruini and "L'Anatomia del Cavallo."* Brit. vet., 109, (9): 385-390.
8. **Elgood, C.** (1951): *A Medical History of Persia and the Eastern Caliphate from the Earliest Times Until the Year A.D. 1932*. University Press, Cambridge, 328-346.

9. **Erk, N.** (1959): *İslâm Medeniyeti Çağında Veteriner Tababette Gelişmeler ve "Naserî"*. A.Ü. Veteriner Fakültesi Yayınları: 109, Ankara, 1-93.
10. ——— (1960): *Abu Bekr and Arabic Veterinary Medicine in the XIV th Century*. M.S.U. Veterinarian, 20, (3): 114-117.
11. ——— (1960): *A Study of the Veterinary Section of İbn al-Awwam's "Kitab al-Falaha."* M.S.U. Veterinarian, 21, (1): 42-44.
12. ——— (1972): *A Study on "Kitâb al-Hayl wal Baitara" written in the Second Half of the 9 th Century by Muhammed ibn Ahi Hizam*. Delivered at the 9th International Symposium of History of Veterinary Medicine, June 7-11, 1972, Vienna.
13. **F. Edhem et I. Stchoukine.** (1933): *Les Manuscrits Orientaux Illustrés de la Bibliotheque de L'Université de Stambol*. Mémoires de L'Institut Français D'Archéologie de Stambol I. E. de Boccard, Ed., I., Rue de Médecus, I., 49, 50, 68.
14. **Froehner, R.** (1929): *Das Naserische Buch des Abu Bekr ibn Bedr*. Arch. Tierhkl., 60, 362-375 (Ref. Jahr Vet. Med. B. 11, 1398, 1930).
15. **Galen.** (1968): *On the Usefulness of the Parts of the Body*. Vol. I-II. (Translated From the Greek with an Introduction and Commentary by M.T. May) Cornell University Press, Ithaca, New York, 1-802.
16. **Leclainche, E.** (1936): *Histoire de la Médecine Vétérinaire*. Office du Livre, Toulouse, III-116.
17. **Long, E.R.** (1965): *A History of Pathology*. Dower Publ. Inc., New York, 26.
18. **Mettler, C.C.** (1947): *History of Medicine*. The Blakiston Company, Philadelphia, 31-32.
19. **Pouille-Drieux, Y.** (1966): *"L'Hippiatrie dans L'Occident Latin du XIII<sup>e</sup> au XV<sup>e</sup> Siecle"*, II-167, G. Beaujouan, Ed., *Médecine Humaine et Vétérinaire a la fin du Moyen Age*. Librairie Droz S.A., Geneve, 1-473.
20. **Sarton, G.** (1950): *Introduction to the History of Science. Vol. I. From Homer to Omar Khayyam*. The Williams and Wilkins Company, Baltimore, 574, 610.
21. ——— (1953): *Introduction to the History of Science. Vol. III. Science and Learning in the Fourteenth Century*. Part I. The Williams and Wilkins Company, Baltimore, 828.

22. **Schmutzer.** (1912): *Zur Frühgeschichte des Anatomiestudiums am Pferde.* Berliner Tieraerztl. Wschr., 28, (49): 414-415.
23. **Smith, F.** (1919): *The Early History of Veterinary Literature and Its British Development.* Vol. I. Bailliere, Tindall and Cox, London, 56-61.
24. **Smithcors, J.F.** (1958): *Evolution of the Veterinary Art. A Narrative Account to 1850.* Bailliere, Tindall and Cox, London, 120, 121, 179.
25. ——— (1960): (Footnote). M.S.U. Veterinarian, 20, (3): 114.
26. **Stork, M.** (1971): *Lehrskemata in Europaeischen Tierheilkunde Büchern des 16. bis 18. Jahrhunderts. Lassrösslein-Krankheits-Namenpferd-Fehlerpferd.* Zbl. Vet. Med.-A., 18, (8): 661-707.
27. ——— (1972): *Anatomische Abbildungen als Grunglage eines Tiermedizinischen Unterrichts.* (Delivered at the 9th International Symposium of History of Veterinary Medicine, June 7-11, 1972. Vienna.
28. **Théodorides, M.J.** (1958): *La Zoologie au Moyen Age.* Université de Paris, Conférence Faite au la Découverte le 1er Février 1958, Histoire de Sciences, Paris, 25-26.
29. **Wilson, L.G.** (1962): *The Problem of the Discovery of the Pulmonary Circulation.* J. Hist. Med., 17, (April): 229-244.

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Fig. 1. The first page of the manuscript.



Fig. 2. A ten month pregnant mare (Fol. 17<sup>a</sup>.)



Fig. 3. A horse with colic (Fol. 18<sup>a</sup>)



Fig. 4. The winged horse of Archangel Gabriel (Fol. 19<sup>a</sup>)



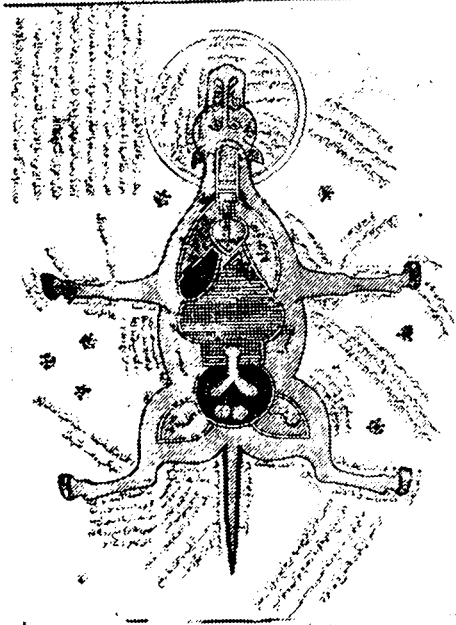


Fig. 5. An anatomical view from the ventral of a horse (Fol. 21<sup>a</sup>)

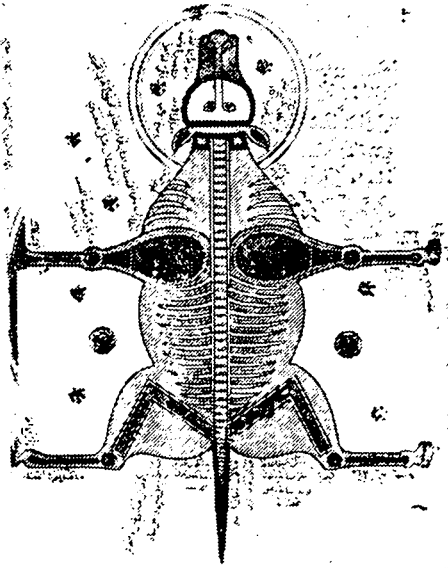


Fig. 6. An anatomical view from the dorsal of a horse (Fol. 24<sup>a</sup>)



Fig. 7. A rabid dog and horse (Fol. 25<sup>a</sup>)

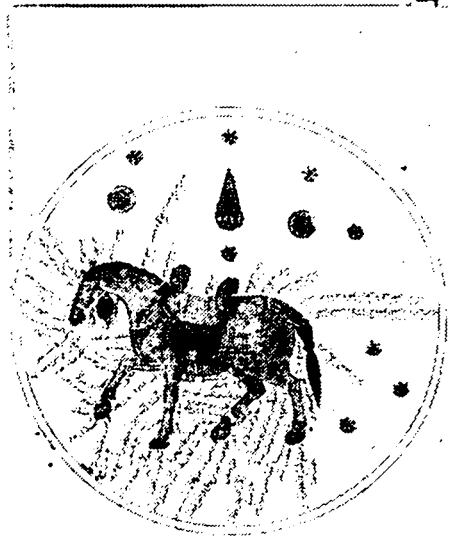


Fig. 8. The sites of diseases (Fol. 26<sup>a</sup>)



Fig. 9. An osteological figure of a horse (Fol. 27<sup>a</sup>)



Fig. 10. The same diseases indicated in Fig. 8 are shown (Fol. 30<sup>a</sup>)



Fig. 11. The qualities of a fine horse (Fol. 30<sup>a</sup>)

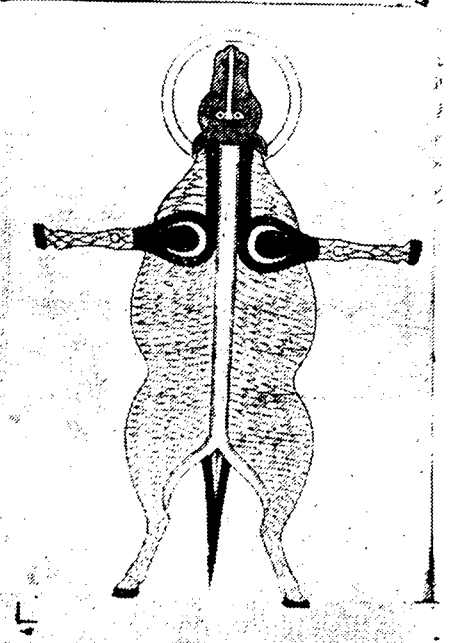


Fig. 12. The miniature figured on Fol.31<sup>a</sup>.