

Medieval Recipes about Toothpastes by Abulcasis

Luisa Maria Arvide Cambra

Department of Philology, University of Almeria, Spain

Received May 6, 2020; Revised May 22, 2020; Accepted June 23, 2020

Copyright©2020 by authors, all rights reserved. Authors agree that this article remains permanently open access under the terms of the Creative Commons Attribution License 4.0 International License

Abstract Abulcasis Al-Zahrāwī (c.936-c.1013) is a very important physician of Al-Andalus, besides an eminent surgeon, the first one of Medieval Islam. His main work, titled *Kitāb al-Taṣrīf* (Book of medical arrangement), contains in its 19th treatise, which deals with cosmetics and drugs for health and embellishment of body, interesting recipes of a great value to the diverse scientific fields, such as the pharmacology, dentistry, dermatology, cosmetics and aesthetic medicine. Reading this handbook allows to reconstruct the aesthetic canons of Arab society in the late 10th and early 11th centuries, as well as indicates the interest showed by this society in hygiene, beauty, ornament and perfume, and how these factors are closely connected to body health. This article is an approach to the study of the treatise above mentioned, and includes the translation from Arabic to English of some recipes about toothpastes, according to the 5774th Arab manuscript of the National Library at Paris. The pages translated in this article exemplify the high level achieved by Arab scientific knowledge in the Middle Ages, and certify the importance of Abulcasis Al-Zahrāwī in the history of Islamic science. His work *Kitāb al-Taṣrīf* is in a high-ranking place within surgery, medicine and pharmacology of Al-Andalus. For the influence exercised in Europe until the early 17th century, among other reasons, Abulcasis has a very relevant position in the history of both universal culture and science.

Keywords Abulcasis Al-Zahrāwī, *Kitāb al-Taṣrīf*, Medieval Arabic Science, History of Medicine, History of Dentistry, Aesthetic Medicine

1. Introduction

The Cordovan Abulcasis Al-Zahrāwī (c.936-c.1013) [1] is one of the most important physicians of Al-Andalus, besides an eminent pharmacist and surgeon, the first one of Medieval Islam [2].

The importance of Abulcasis is restricted not only to the

history of Arabic science [3], but also to the history of the universal scientific knowledge, due to his influence in the European scientists until early the 17th century [4].

In the field of pharmacology, which this article mainly is about, Abulcasis is certainly one of the most outstanding representatives of Islamic science, for his achievements in pharmacy and pharmacopoeia [5]; and in the field of dentistry, which this paper also deals with, he takes a high place, for his advances and discoveries, such as the dental filling technique he already used late the 10th century and early the 11th century [6].

The 19th treatise of his main work, titled *Kitāb al-Taṣrīf* (Book of medical arrangement), deals with cosmetics and drugs for improvement and embellishment of body [7]; and, among other things, it contains in the 5th chapter interesting recipes for health and dental care of a great value to both the fields of pharmacology and dentistry, as well as to aesthetic medicine.

The high scientific level reached by the Arab and Islamic civilization in the Middle Ages is witnessed by its many developments and advances made in the different areas of knowledge. One of them is the art of preparing, distributing and selling drugs and remedies, in which the Arabs were pioneers getting a great progress [8].

Among the factors that determine this high level of the Arabs in the Middle Ages, we have to mention their relevant role in both theoretical and practical scientific knowledge of the time, over all in medicine field [9], and Abulcasis and his work is an example of this.

The Arabs have written one of the most golden pages of history of science, mainly for being the transmitters of the thought and the knowledge of the Antiquity, especially of the Greeks, to the Europe of the Renaissance [10], and secondly for being pioneers in many aspects of science, and authors of great theories.

2. The 19th Treatise from the *Kitāb al-Taṣrīf*

The *Kitāb al-Taṣrīf*'s 19th treatise is contained in folios

74v° - 92r° of the 5774th Arabic manuscript from the National Library at Paris. It is an interesting manual of both aesthetic medicine and cosmetics about perfumes, drugs and remedies for the body health as well as for its improvement and embellishment.

Reading this handbook allows to reconstruct the aesthetic canons of Arab society in the late 10th and early 11th centuries, as well as indicates the interest showed by this society in hygiene, beauty, ornament and perfume, and how these factors are closely connected to body health, characteristics all of them still in force in today's society, eleven centuries later. For example, then the tooth whitening was so recognized, and so excellent toothpastes and other remedies for getting whiter teeth are described.

This treatise has great pharmacological value and is divided into two sections:

Section I: About perfumes. It is divided into ten chapters.

Section II: About drugs and remedies for the body health as well as for its improvement and embellishment. It is also divided into ten chapters.

The 5th chapter of the section II (folios 86r°-88r°) is about drugs and remedies for health and dental care, and includes seventeen medieval recipes, valuable for history of pharmacology and dentistry. This chapter, as the rest of the book, incorporates many quotes to other outstanding authors, such as Ishāq b. 'Imrān (tenth century) [11], Al-Rāzī (865-925) [12], Ibn Māsawayh (d.875) [13]; etc.

The translation to English of this entire chapter about toothpastes, according to the 5774th Arabic manuscript of the National Library at Paris, can be seen below.

3. Recipes of Toothpastes for Health and Dental Care

According to Abulcasis, the drugs that are good for health of teeth and oral cavity are: clove, nutmeg, fennel, cubeb, and both small and big cardamom. All of them are used, simple or compound.

1. *Recipe of tablets written by Ibn Māsawayh to perfume the breath and eliminate the halitosis* [f°86v°]

This remedy has been proved. You take clove, cinnamon, nutmeg and fennel, from each, 5 *mithqāls*; 7 *mithqāls* of yellow sandalwood; 4 *mithqāls* of cubeb and big cardamom; 7 *mithqāls* of red rose; 1 ounce of Indian wood; and 3 *mithqāls* of *sukk* and incense. You crush everything and knead it with apple juice; and with this you make some tablets bigger than the chickpeas. These tablets dissolve in the mouth, and then swallow.

2. *Recipe of a remedy to the halitosis* [f°86v°]

Eating celery regularly is beneficial for the halitosis.

3. *Another recipe from Al-Rāzī* [to combat the halitosis] [f°86v°]

You take myrtle, crush it with raisins and with this make some tablets. The patient will have one tablet every night at bedtime, God willing.

4. *Recipe of tablets written by Ibn Māsawayh to strengthen the gums, perfume the breath and color the lips* [f°86v°]

You take cinnamon, incense tree bark, bark and leaves of grapefruit, red rose leaves, yellow sandalwood and sedge, from each, 5 *mithqāls*; cubeb, clove, mastic, fennel and nutmeg, from each, 4 *mithqāls*; 10 *mithqāls* of flowery lichen; and 2 *mithqāls* of camphor. You crush everything, sieve and knead it with lily wine and grapefruit leaf water; and with this you make some tablets same size as the chickpeas. These tablets dissolve in the mouth, and then swallow. This remedy has been proved.

5. *Recipe of other tablets also written by Ibn Māsawayh to eliminate the halitosis, God willing* [f°86v°]

You take rush flowers and sedge, from each 2 *mithqāls*; Chinese cinnamon, lily root, white olibanum, celery seed, acacia gum and cardamom, from each, 1 *mithqāl*; and ½ *mithqāl* of *sukk*. You crush everything, sieve and knead it with lily wine; and with this you make some tablets same size as the chickpeas. These tablets dissolve in the mouth, and then swallow.

6. *Recipe of pills to strengthen the gums, color the lips and perfume the breath, and that are good for the mouth* [f°86v°-f°87r°]

This remedy has been proved. You take bamboo mana and red rose leaves, from each, 10 *dirhams*; tuberose, sumac, pomegranate flower, and white and red sandalwood, from each, 5 *dirhams*; 3 *dirhams* of Armenian bolus; and lily, camphor, clove, cubeb, Indian wood, Indian spikenard and cardamom, from each, [f°87r°] 2 *dirhams*. You crush everything, sieve and knead it with old wine; and with this you make some pills same size as the dinars. Let them dry in the shade, and in case of need a pill will be used as a toothpaste. These pills are beneficial.

7. *Recipe of a toothpaste to strengthen the gums, color the lips and perfume the breath* [f°87r°]

You take red sandalwood, clove, cubeb and cinnamon, from each, 5 *mithqāls*; red rose, sumac and pomegranate flower, from each, 3 *mithqāls*; and Chinese cinnamon and sealing wax, from each, 2 *mithqāls*. You crush everything, sieve and knead it with safflower starch; and with this you make some pills and leave them to dry in the shade. Then, you mash a pill, sieve and use it as a toothpaste. This is beneficial, God willing.

8. *Recipe to eliminate both garlic and onion smell in mouth* [f°87r°]

You take cheese, cut it into pieces and put it in olive oil; then, sprinkle it with crushed clove and have it.

9. *Another recipe to eliminate both garlic and onion smell in mouth* [f°87r°]

Eating well-chewed dried coriander is good to eliminate both garlic and onion smell in mouth. Likewise, chewing bramble together with basil wine.

10. *Other recipe to perfume the breath, eliminate both garlic and onion smell in mouth, and strengthen the gums* [f°87r°]

You take clove, cardamom, cubeb, emblic myrobalan, ginger, saffron, *rāmik*, peeled cherry fruits, mastic, Yemeni alum, nutmeg, *sukk* and fennel, from each, 1 *mithqāl*; and 3 *mithqāls* of Indian wood. You crush everything, sieve and knead it, and with this you make some pills, leave them to dry in the shade, and in case of need you take and use them.

11. *Another recipe written by Abū 'Alī ibn Al-Khurāsānī for the same use than the previous ones* [f°87r°]

You take fennel, cardamom, nutmeg, sweet cinnamon, sandalwood, Indian pepper, cubeb, clove, spikenard, Chinese cinnamon, fern, cinnamon, dry rose, peeled cherry fruits, amber and *sukk*, from each, 1 portion. You crush everything, sieve and knead it with boiled water from musk; and with this make some pills same size as chickpeas, and leave them to dry in the shade. Then, you take and use these pills in case of need. This remedy is beneficial, God willing.

12. *Recipe of a toothpaste to whiten teeth and perfume breath* [f°87r°]

You take borax, halcyon and rock salt, from each, 1 *mithqāl*; and ½ *mithqāl* of saffron. You crush everything and use it as a toothpaste. This remedy certainly cleanses and whitens teeth, and also perfumes breath.

13. *Recipe of pills to whiten teeth and perfume breath* [f°87v°]

You take peeled China ginger, dried grapefruit peels, camphor and saffron, from each, 3 *dirhams*. You crush everything, knead it with rose water, and with this make some pills same size as chickpeas. The pills are left to dry in the shade, then you take and use them, if the Almighty wants.

14. *Recipe of a toothpaste written by Ishāq b. 'Imrān to clean and whiten teeth as well as to perfume breath, and prevent and stop pyorrhea* [f°87v°]

You take rock salt mixed with honey burnt and later slaked with rose water, and also barley flour kneaded with wine and slaked with rose water, from each 20 *dirhams*; 10 *dirhams* of halcyon; 5 *dirhams* of Chinese cinnamon, licorice, *sukk*, and sedge; 3 *dirhams* of Indian wood, pomegranate flowers and myrrh; and 2 *dirhams* of clove, fennel and Indian spikenard. You crush everything, sieve it and use it as a toothpaste. For those who have a hot physical constitution, it can be added 1 *dirham* of camphor,

and this will be beneficial.

15. *Recipe of a toothpaste to clean and whiten teeth, as well as to perfume breath* [f°87v°]

You take burnt emblic myrobalan, snail burned, burnt vine sticks and burnt goat hoofs, from each, 4 *mithqāls*; alcyon, faience and pumice, from each, 3 *mithqāls*; burnt deer horn, burnt date pit and bamboo manna, from each, 2 *mithqāls*; and *rāmik*, pomegranate flowers, rose seed and sumac, from each, 1 *mithqāl*. You crush everything, knead it and use it as a toothpaste in the morning. This extraordinarily whitens teeth, God willing.

16. *Recipe of a toothpaste to clean, whiten and polish teeth, as well as to eliminate dental stains* [f°87v°]

I [Abulcasis] have already tested. You take faience, nitre burned, burnt cow hoof bone, burnt goat horn and coral burned, from each, 10 *dirhams*; 5 *dirhams* of pumice; 3 *dirhams* of licorice; 2 *dirhams* of pomegranate; and 1 *dirham* of spikenard, nitre, Yemeni alum and costus. You crush everything, sieve it and use it as a toothpaste. It is beneficial, God willing.

17. *Recipe of a toothpick to clean teeth and strengthen the gums* [f°87v°-f°88r°]

To those who want to use [f°88r°] a toothpick, in case they have hot constitution, it is convenient to make it from palm leaves or branches and tamarisk branches, willow's or carob tree's, and to use that remedy after having this macerated in rose water or vinegar. And, in case they have cold constitution, it is convenient to make the toothpick from olive branches or mastic's, or terebinth fruits and nut's, and to use that remedy after having this macerated in thyme water, mint's or peppermint's.

4. Glossary: Weights, Measures and Remedies

1 *Dirham*= 3,12 grams

1 *Mithqāl*= 4,68 grams

1 Ounce= 37 grams

Rāmik, in Arabic: It is a medicine made up dye gall, raisins, emblic myrobalan and olive oil. If musk is added, it is named as *Sukk*.

5. Conclusions

The pages translated in this article exemplify the high level achieved by Arab scientific knowledge in the Middle Ages, and certify the importance of Abulcasis Al-Zahrāwī in the history of Islamic science. His work *Kitāb al-Taṣrīf* is in a high-ranking place within surgery, medicine and pharmacology of Al-Andalus. For the influence exercised in Europe until the early 17th century, among other reasons,

Abulcasis has a very relevant position in the history of both universal culture and science.

REFERENCES

- [1] Ibn Abī Uṣaybi‘a. ‘Uyūn al-anbā’ fī-ṭabaqāt al-aṭibbā’, Vol.II, Dar Maktabat Al-Hayat, Bayrūt, 1979, 85.
- [2] L.M. Arvide Cambra. Abulcasis Al-Zahrawi, The Surgeon of Al-Andalus, European Scientific Institute, European Scientific Journal, Special edition, 240-247, 2016 (Proceedings 2nd Pan-American Interdisciplinary Conference, PIC 2016, Buenos Aires, 24-26, 2016).
- [3] M. Ullmann. Die Medizin im Islam, E. J. Brill, Leiden, 1970, 128-136.
- [4] M. Levey. Early Arabic pharmacology. An introduction based on ancient and medieval sources, E. J. Brill, Leiden, 1973.
- [5] A. Mieli. La science arabe et son rôle dans l'évolution scientifique mondiale, E. J. Brill, Leiden, 1966.
- [6] L. M. Arvide Cambra. Tratado de odontoestomatología en Abulcasis, Editorial Universidad de Almería, Almería, 2003.
- [7] L. M. Arvide Cambra. Tratado de estética y cosmética en Abulcasis, Grupo Editorial Universitario, Granada, 2010.
- [8] D. C. Lindberg. Science in the Middle Ages, University of Chicago Press, Chicago, 1978.
- [9] E. G. Browne. Arabian Medicine, Cambridge University Press, Cambridge, 1921.
- [10] D. Campbell. Arabian Medicine and its influence on the Middle Ages, Philo Press, Amsterdam, 1974.
- [11] L. Leclerc. Histoire de la médecine arabe, Vol.I, Ernest Leroux Éditeur, Paris, 1876, 408-409.
- [12] C. Brockelmann. Geschichte der arabischen Litteratur, Vol.I, E. J. Brill, Leiden, 1937, 233.
- [13] F. Sezgin. Geschichte des arabischen Schrifttums, Vol.III, E. J. Brill, Leiden, 1975, 231-236.