

## ORIGINAL ARTICLE


### Investigating the Role of Single Herbal Medicine Trade in the Development of Pharmacological Knowledge in Fars in the Eighth and Ninth Centuries AH

#### Abstract

One of the most important conditions for the development of medical and pharmacological knowledge in human societies is the availability of drugs. In the past, the most important and widely used types of medications were medicinal herbs. The trade in herbal medicines, imported mainly from India, China, and Southeast Asia, flourished in Fars in the eighth and ninth centuries AH. Examination of the writings of prominent Shirazi physicians and pharmacists, such as Najm al-Din Mahmud ibn Ilyas al-Shirazi, Haji Zain Al-Attar and Muhammad ibn Abdullah Lari, showed that the development of pharmacological knowledge in Fars in the eighth and ninth centuries AH was mainly due to the availability and trade of herbal medicines. The medicine trade was reflected in the poems of Kamal Ghias and Boshag Atameh Shirazi, the poets of the eighth and ninth centuries AH, as well. This research, based on a descriptive-analytical method and library sources, seeks to find out how the trade of single herbal medicament was in Fars in the eighth and ninth centuries AH and what effects it had on the development of pharmacological knowledge. The findings indicate that the prosperity of the single herbal medicine trade played an important role in the development of the Fars medical school in the mentioned centuries.

**Key words:** Herbal Medicine Trade, Pharmacological Knowledge, Fars, Eighth and Ninth Centuries AH, Plants Medicinal, India, China

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## Introduction

One of the areas in which medical knowledge had significant progress and where there was an independent medical school was Fars province. Some of the top Iranian physicians and pharmacists were from this province. Through history, the development of medical knowledge in Fars, in addition to the presence of brilliant physicians from Fars and the support of sultans, princes and benevolent viziers in constructing and equipping the hospital, was the single herbal medicine trade. In fact, the herbal medicinal trade and the availability of drugs were the prerequisites of the development of medical knowledge in various societies. In the past, in medical and pharmacological textbooks, drugs were generally divided into two categories: single medicine, i.e. *Mofradeh* medicinal herbs, which, in turn, were divided into three categories of herbal, mineral and animal medicines and compound medicines, i.e. compound medications. As each type of herbals required special climatic conditions to grow, and there were few communities in which all plant species could grow, the trade in single herbal medicines were essential.

Medicines have long been one of the most important commercial commodities in the world. In the past, the Medicine trade was so crucial that the most important trade sea route of South Asia was called *the Advieh Road*. In the first Islamic centuries, the Persian Gulf, especially Siraf port, was a transit warehouse for trade in goods, such as spices, and played an important role in trade with China. The export of medicinal plants and various types of medicinal and aromatic medicinal plants and incense played an important role in trade between Iranians and Arabs with China (Schottenhammer, 2013, pp. 147, 150). *Youyang zuzu*, a document from the Tang Dynasty in China, cited a significant number of trees and plants of Iranian origin (Schottenhammer, 2013, p. 187), indicating the importance of the herbal medicine trade from the distant past.

In the eighth and ninth centuries AH, there were extensive commercial activities in Fars, most importantly, that related to single herbal medicine trade. The trade of herbal medicines during the eighth and ninth centuries AH in Fars significantly contributed to the development and continuity of medical knowledge. The purpose of this study is to investigate the role of herbal medicine trade in Fars in the development and continuity of medical knowledge in the eighth and ninth centuries AH. The main question of this research is how the trade of herbal medicines has been in Fars and what effects it has had on the advancement of medical and pharmacological knowledge.

So far, no independent research has been conducted on the trade of single herbal medicines in Fars in the eighth and ninth centuries AH and its impact on the development of pharmacological knowledge. Mohammad Taghi Mir in the book entitled *Famous physicians of Pars* (in Persian) wrote the biographies of prominent physicians of Fars from the Buyid dynasty to the contemporary period. Golshani, Forouzani and others, in an article entitled 'Shiraz Medical School from the Buyid dynasty to the beginning of Safavid period' wrote about physicians and schools, hospitals and libraries in Shiraz from the Buyid dynasty to the beginning of the Safavid dynasty. However, none mentioned anything about the issue of single herbal medicine trade and its role on the development of medical and pharmacological knowledge. Khatereh Esmizadeh in a research entitled *Trade in the Persian Gulf* (in Persian), focusing on three strategic goods





(dates, pearls and spices) from the early centuries of Islam to the end of the Safavid dynasty, wrote about the spice trade in the Persian Gulf, but her study did not comprise the issue that the present research aims to investigate.

### Single Medicinal Herb Trade in Fars in the Eighth and Ninth Centuries AH

The eighth and ninth centuries AH are considered as the brilliant periods of trade in Fars province. The importance of the subject of trade and the need to know the methods and secrets of conducting trades in this period encouraged Shoja, the Shirazi writer, to dedicate one chapter of his book, called *Anis al-Nas* (in Persian), to the proper trade etiquette (Shoja, 1977, pp. 118-140). In the eighth and ninth centuries AH, the main commodities imported to Shiraz was a single herbal medicine. Joseph Barbarossa, the Venetian merchant, evinced this in his travelogue (Barbarossa, 2002, p. 91). The invoice related to the year 844 AH denoted that various kinds of pearls and goods, including amber, incense, sandalwood, pepper, ginger, nutmeg, dianthus barbatus, logwood, ebony, and indigo, were transferred from Shiraz to the Volga coast and Herat (Hinz, 1950, pp. 316-318). In the invoice, there was no direct mention of the origin of these goods, but examining the description of the perfumes and medicines showed that they belonged to India, China and Southeast Asia. These goods were transported to Shiraz through the Persian Gulf, some of which were sold in Shiraz and the rest, exported to other cities. During this period, the Persian Gulf was one of the important centers for importing medicines. Johann Schiltberger, a German tourist, in the early ninth century, wrote about medicine in Qeshm (Schiltberger, 2016, p. 83), and the Venetian merchant, Joseph Barbarossa, reported the transfer of medicine from India to Hormuz (Barbarossa, 2002, p. 96). This invoice clearly indicated that Shiraz was a dock for storage and export of imported goods, especially medicines, from Hormuz to other areas.

The trade of single Persian herbal medicines was also prolific. Thanks to the diversity of climate and the vast territory of Fars province, various medicinal plants were grown. Mostofi noted that there was plenty of medicines grown on Rostam (Rostam) mountain, known as Patileh mountain, located on the way to Shabankareh (Mostofi, 1983, pp. 194, 195). Fragrant herbs and various vegetable oils were common commercial products of Fars. Firoozabad's rosewater<sup>1</sup>

1- Persian rosewater, especially that of Firoozabad, was famous for its high quality from the distant past. According to Ibn Hawql's travelogue, written in the middle of the fourth century AH, it was exported to regions, such as Rome, Andalusia, Egypt, Yemen, India and China (Ibn Hawqal, 1987, p. 65).



was the most fragrant and of the best quality in the regions (Mostofi, 1983, p. 118). In Bashavar, Fars, there were plenty of fragrant herbs, such as lotus, violet, jasmine and narcissus (Mostofi, 1983, p. 126). Upon the request of Khajeh Rashid al-Din Fazlullah Hamedani, in order to supply medicinal oils to *Rab-e Rashidi* Hospital in Tabriz, every year 300 hundred kilograms mixture of *Viola Odota* oil and almond oil; one hundred and fifty kilograms of almond flower oil; jasmine and almond oil, narcissus and almond oil and jonquil and almond oil, each of sixty kilograms; and 300 kilograms rosewater oil were sent from Shiraz to Tabriz (Khajeh Rashid al-Din Fazlullah Hamedani, 1979, pp. 65, 66). In the ninth century AH, Shiraz was well known for its medicinal plants and plants such as Goji (watercress), sorrel and docks, ashtarqaz (the root of Lovage) and badran (radish-like plant) were in great demand (Beshagh atma-ye Shirazi, 2013, p. 200).

### **Cultivation and Export Centers of single Herbal Medicaments Imported to Fars**

Examination and analysis of the invoice related to the year 844 AH and the writings of prominent physicians and pharmacologists of Shiraz showed that most herbal medicaments used in Fars were not native to Fars and Iran. This study examines the cultivation and export centers of some of these medicinal plants used to be imported from foreign countries.

**Cinnamon:** Ceylon Island (Sri Lanka) was the center of Cinnamon (Ibn Majed al Saadi Bandar Kangi, 1993, p. 422). Haj Zain-al Attar considers Ceylon Cinnamon to be the best (Ansari Shirazi, 1992, p. 160). India and China were also other centers of cinnamon production (Khajeh Rashid al-Din Fazlullah Hamedani, 1989, p. 77).

**Sandalwood:** Sandalwood is a fragrant tree, with medicinal properties in two colors: white and red (Lari, no date, p. 123). The best white sandals, known as mace sandals, were in Java and red sandals were found in Ceylon and nearby Islands (Khajeh Rashid al-Din Fazlullah Hamedani, 1989, pp. 89, 90).

**Pepper:** The production centers of Quilum pepper was Malibar and Gujarat in India, Cipangu Islands (Japan) and Java (Marco Polo, 1984, pp. 182, 184, 208, 211, 212). White pepper was grown around China (Khajeh Rashid al-Din Fazlullah Hamedani, 1989, p. 81).

**Ginger:** Malibar and Gujarat in India, Fuju in Manji province (Marco Polo, 1984, pp. 172, 174, 211, 212), China, and Khanbaligh in Khata (northern China) were the centers of ginger cultivation (Khatai, 1993, p. 116). Also in the ninth century AH, ginger of Aden was popular in Fars (Bashaq At'ameh Shirazi, 2013, p. 24).

**Nutmeg:** Nutmeg, known as Indian nutmeg, is also called *Boya*, or *jowzaltabib* nutmeg, grown in Java, Malibar (Marco Polo, 1984, pp. 184, 211) and Sumatra (Ibn Majed al Saadi Bandar Kangi, 1993, p. 420).

**Carnation:** Khata was one of the production centers of Carnation (Khatai, 1993, p. 116).

**Logwood** is a red wood (Lari, no date, p. 42) with medicinal properties that was used in India, Zanzibar (Ansari Shirazi, 1992, p. 69), Ceylon and Bengal (Ibn Battuta, 1997, Vol. 2, p. 248).

**Ebony** is a tree with medicinal properties. There were two types of ebony: one type





was brought from Zanzibar and the other from India (Lari, no date, p. 8).

**Indigo:** Indigo is a medicinal plant (Ansari Shirazi, 1992, p. 440). Indigo was an Indian commodity (Khajeh Rashid al-Din Fazlullah Hamedani, 1989, p. 162), and was abundant, especially in Gujarat (Marco Polo, 1984, pp. 211, 212).

**Myrobalans:** This plant is of different varieties, namely yellow, black and chebula (Ansari Shirazi, 1992, p. 451). One of the habitats of this plant was in Kollam, India, in the eighth century (Khajeh Rashid al-Din Fazlullah Hamedani, 1989, p. 83).

**Areca:** It is the fruit of a tree that has medicinal properties (Ansari Shirazi, 1992, p. 331), found in Java, Javi, Ceylon, Kollam, and Bengal (Khajeh Rashid al-Din Fazlullah Hamedani, 1989, p. 84).

**Aloe:** The best Aloe was Soqotra Aloe (Lari, no date, p. 120) (or Soqotra) that was grown in the Soqotra island (Ibn Battuta, 1997, Vol. 1, p. 197), off the coast of Yemen (Ansari Shirazi, 1992, p. 264).

**Cubeba or Cubeba pepper** was obtained in Saqaleh in India (Ansari Shirazi, 1992, p. 367) and Java (Marco Polo, 1984, p. 184).

**Cardamomum:** There are two types of *Elletaria cardamomum*: small and large; the green or true cardamomum is small (Ansari Shirazi, 1992, p. 335), native to Kozhikode (Calicut) (Lari, no date, p. 139).

Herbs such as saffron, coriander, cumin, docks, citron pulp, chicory, caper bush, echium, rose petals, fennel, etc., which were used in the manuscripts of Haj Zain al-Attar, a prominent pharmacist of the eighth and ninth centuries AH (Ansari Shirazi, no date, pp. 5-8, 10, 11, 15, 19, 20, 26, 24, 34), either were native to Fars province or were imported from different parts of Iran to Fars. Saffron was one of the high quality medicinal plants that was cultivated in Fars. Haj Zain al-Attar pointed out that: "The fresh saffron is red in color and very fragrant, grown in Giluyeh mountain, Fars, and this is the best kind of saffron<sup>2</sup>." (Ansari Shirazi, 1992, p. 205) Roses, extensively elaborated in the manuscripts of Haj Zina al-Attar (Ansari Shirazi, no date, pp. 5, 8, 19, 30, 39, 46), were cultivated in the Fars province and the high quality rose water was obtained from this kind of Rose Rashid al-Din Fazlullah Hamedani said that rose water was among the commodities exported from Fars to Egypt and the Levant (or Shamat or Greater Syria) (Khajeh Rashid al-Din

2- Saffron cultivation has a long history in Fars. Abu Ishaq Ibrahim Istakhri in the fourth century in the book Masalak wa Mamalak informs about the quality of Persian saffron.



Fazlullah Hamedani, 1989, p. 63).

### **The status of Medical Knowledge in Shiraz from the Period of Buyid Dynasty to the End of the Ninth Century AH**

Fars province and its center, Shiraz, has long had an advanced medical system, which has been referred to as the Shiraz School of Medicine. In the fourth century AH, Maghdasi stated that Shiraz Hospital, having sufficient equipment and skilled physicians (Maghdasi, 1982, p. 642), was well known.

The formation and flourishing of the Shiraz school dates back to the reign of Buyid over Fars. During this period, there were prominent physicians in Fars (Mir, 1969, pp. 1-20), the most famous physician was Abu Maher Shirazi, the master of Ali ibn Abbas Majusi of Ahwaz, the author of the book *Kitāb Kāmīl as-Sinā'a at-Tibbiyy* (Complete Book of the Medical Art). Abu Maher Shirazi was the first to write a book on surgical instruments (Mir, 1969, pp. 9-11). Aḍud al-Dawla Dailami (d. 372 AH) founded a hospital in Shiraz. According to Mustawfi in the book, *Nuzhat al-qulub* (Hearts' Bliss) and Zarkoob Shirazi, in the book, *Shiraznameh* (Shiraz letter), this hospital remained active until the eighth century AH (Mostofi, 1983, p. 115; Zarkoob Shirazi, 1971, p. 51). During the rule of Atabakan over Fars, measures were taken to develop medical knowledge. Atabak Muzaffar al-Din Abu Bakr ibn Sa'd (d. 623-688 AH) and his vizir, Amir Moğreb-al-dīn, each built a hospital in Shiraz (Zarkoob Shirazi, 1971, pp. 84, 85).

The efforts made in Fars, in the eighth and ninth centuries AH, led to the development of medical centers and the expansion of medical education. In the late seventh and early eighth centuries, Khajeh Rashid al-Din Fazlullah Hamedani, the vizier of Ilkhan, who was also a *tabib* (physician), made valuable efforts to promote medical knowledge in Iran. The letters of Khajeh Rashid al-Din Fazlullah Hamedani show his efforts and activities to supply medicine and equipment to Iranian hospitals (Khajeh Rashid al-Din Fazlullah Hamedani, 1979, pp. 235, 65-7, 176-8). In the correspondence of Khajeh Rashid al-Din Fazlullah Hamedani, there is a letter according to which he appointed Najm al-Din Mahmud ibn Ilyas al-Shirazi as the director of Darvazeh Salm Hospital in Shiraz, one of the constructions built during the Atabakan of Fars and registered as an endowment property. Najm al-Din Mahmud ibn Ilyas al-Shirazi was also an important figure because of teaching medical sciences. One of the most famous students of Ilyas Shirazi was his nephew, Jalal, the poet and physician at the court of Shah Shoja Muzaffarid. Maulana Asila al-Din, another student of Najm al-Din Mahmud ibn Ilyas al-Shirazi, was also a writer in the field of medicine (Ansari Shirazi, 1992, p. 94). In 779 AH, Shah Shoja Muzaffarid assigned Seyyed Sharif Jorjani (816-740 AH) to teach in a hospital in Shiraz and he held this position for ten years (Setoodeh, 1968, p. 290).

The medical school of Shiraz was at its peak in the eighth and ninth centuries AH, and the presence of prominent physicians in this period in Fars gives witness to this. Qotb al-Din Shirazi (d. 710 AH), the author of the book *Al-Tuhfa al-sa'diyah*, Najm al-Din Mahmud ibn Ilyas al-Shirazi (d. 720-730 AH), Mirza Jalal Tabib Shirazi, contemporary of Shah Shoja Muzaffarid (d. 759-760 AH), Ali ibn Hossein Ansari Shirazi, known as Haj Zain al-Din Attar (729-806 AH), Mansour ibn Muhammad ibn Ahmad





ibn Yusuf ibn Ilyas al-Shirazi, the author of the book, *Kefayeh Mojahedieh* and the other on anatomy, known as *Mansur's anatomy (Tashrih-i Mansuri)*, Ali ibn Muhammad ibn Abdullah Tabib Abzari, the author of the book, *Al-Mukhtasar Fi Al-Tib*. In 795 AH, Sadid al-Din Kazeruni, the author of a commentary on *The Canon of Medicine*, and Mahmud ibn Muhammad Abdullah, the author of the book *Tahfa Khani*, are some of the most prominent Shirazi physicians of the eighth and ninth centuries AH, each having written valuable books and treatises.

### **The Role of Single Herbal Medicament Trade in the Development of Pharmacological Knowledge**

Each of the authors of the books on pharmacology and medicine used his own style in the arrangement and composition of the compound medicaments. Most likely, these differences were related to the diversity of plant species in different regions, the transport network and the medicament trade (Ilyas Shirazi, 2007, p. 68).

Najmuddin Mahmoud bin Sainuddin Elias Shirazi was one of the greatest physicians and pharmacists in Iran in the late seventh and early eighth centuries AH. The exact date of his death is not known, but based on the available evidence, the date of his death was probably around 720 to 730 AH (Ilyas Shirazi, 2007, pp. 41-42). As mentioned before, Khajeh Rashid al-Din Fazlullah Hamedani appointed him as the general director of Darvazeh Salm Hospital in Shiraz (Khajeh Rashid al-Din Fazlullah Hamedani, 1989, pp. 231-234). The most important and famous book written by Elias Shirazi is *Al-Hawi Fi Alam Tadawi* or *Al-Hawi Saghir*. The book is written in five articles, the first, second and third articles are about diseases, the fourth article, about Single medicaments, ordered alphabetically and the fifth article is about compound medicaments, their composition and use (Ilyas Shirazi, no date, pp. 2-9). In the introduction of *Al-Hawi*, it is stated that this book contains information about the popular medicaments that are available in shops (Ilyas Shirazi, no date, p. 2). Regarding the information given throughout the book, *Al-Hawi*, (Ilyas Shirazi, no date, pp.1-446) and the extensive use of Single herbal medicaments, such as cinnamon, hawthorn, cardamom, ginger, Pepper, sandal, etc., it can be said that the trade of herbal medicaments was one of the effective factors in encouraging writing medical and pharmacological books as well as developing the pharmacological knowledge in Fars in the eighth century AH.

Ghiasieh treatise or treatise in medicine is another work of Elias Shirazi in four articles. The first article is on the theoretical science of medicine in seventeen chapters, the second article, on the practical science of medicine and the description of diseases in fifty-nine chapters, the third article, on Single medicaments in alphabetical order in twenty-eight chapters and the fourth article, on compound medicaments in twenty two chapters (Ilyas Shirazi, 2007, pp. 79, 130, 219, 252). In the second, third and fourth articles, various medicaments have been recommended for the treatment of diseases (Ilyas Shirazi, 2007, pp. 130-298), which, as Elias Shirazi has stated in the introduction of his book *Al-Hawi*, shows the availability and prosperity of the herbal medicinal trade.

One of the most important physicians and pharmacologists in the history of Iranian medicine, namely Ali ibn Hossein Ansari Shirazi known as Haj Zain al Din Attar (729-





806 AH) lived in Shiraz during the period the present research has focused on. Haj Zain Al-Attar practiced medicine in the court of Al-Muzaffar. He first wrote the book, under the title *Miftah al-Khazain*, but later made some changes in the book and dedicated it to Badi'a al-Jamal, the wife of Amir Mobariz al-Din Muhammad (Ansari Shirazi, 1992, pp. 4, 5), in 770 AH. Haj Zain Al-Attar alphabetically ordered the Single medicaments, explaining about their origin, useful parts, properties, produced medicine, uses and medicinal forms (Ansari Shirazi, 1992, p. 13). In fact, the book, *Ikhtiarat Badi'ee*, shows the effects of available herbal medicaments, the diversity of native herbals, and the medicament trade in Fars on Haj Zain Al-Attar. In this book, there is a lot of information about the cultivation areas and the export of Single herbal medicaments. For example, as stated by Haj Zain Al-Attar: shiranjshir is a yellow stalk that is imported from India (Ansari Shirazi, 1992, p. 263), and in the case of Arizburna, he says, "It is like a spitted onion that is grown in Sistan" (Ansari Shirazi, 1992, p. 25). He, as quoted by his son, also says that Anise is planted in Shooshtar (Ansari Shirazi, 1992, pp. 43-44). This verifies that Haj Zain Al-Attar has been quite aware of the importance of drug supply and trade centers.

Prior to writing his book, he surveyed the merchants who were in Shiraz. Concerning white pepper, Haj Zain Al-Attar wrote in his book, *Ikhtiarat Badi'ee*, as follows: "the merchants who have come from India have stated that longum piper (*Dar filfil*) differs from pepper tree and is grown in Bengal" (Ansari Shirazi, 1992, p. 329). This statement, in addition to showing that pepper was a completely-imported commodity and that the information shared by the merchants, about the medicinal plants of different countries, contributed to the enrichment of medical knowledge and pharmacology.

Haj Zain Al-Attar's book is a big step towards the improvement of pharmacological knowledge in the eighth and ninth centuries AH in Iran. One of the reasons for this is that Haj Zain al-Attar has not only used the opinions of pharmacists before him, but, in order to write this book, he has also attempted to conduct research, to make observations and to undergo experience. Haj Zain al-Attar quotes a lot from past pharmacists, but it is worth mentioning that he takes a critical look at their content while citing the resource he employed. Here are some examples in which Haj Zain al-Attar has criticized the writings of the preceding pharmacists and at times, expressing his own opinion.

A) *Trigonella foenum-graecum*: Ibn al-Baitar, the author of *Compendium on Single Medicaments and Foods* states that according to Tamimi, it is the blossom of *Colchicum speciosum*, but Ibn Jazla, the author of *Al-Minhaj*, holds that it is *Colchicum speciosum* leaf, and the former idea is correct (Ansari Shirazi, 1992, p. 258).

B) Elecampane seede (*Hab-al Rasen*): The author of *Almofradat (Compendium on Single Medicaments and Food)* states that it is raisins-Kulian, but this is wrong" (Ansari Shirazi, 1992, p. 109).

C) *Zelkova carpiniifolia* : The author says that its fruit is good for coughing phlegm, although the author of *Al-Minhaj* and that of *Compendium* hold that it is deadly (Ansari Shirazi, 1992, p. 27).

D) *Artemisia absinthium*: The author says that it is a kind of wild *Artemisia vulgaris* ... it is extremely useful for cold stomachs ... but it is harmful to warm and sore stom-





achs ... but the author of Compendium holds that that it is a tonic for warm stomachs and good for cleansing it .. . » (Ansari Shirazi, 1992, p. 38).

In the third treatise of the book, *Muftah al-Khazain*, the book on compound medicament, Haj Zayn al-Attar explains about some of the medications he has prescribed to his patients. In these prescriptions, plenty of herbal medicines, most being non-native plants, is advised. They are as follows: cinnamon, carnation, black and white pepper, ginger, nutmeg, Mace<sup>3</sup>, *Elletaria cardamomum*, *Alpinia officinarum*, sandalwood, myrobalan, cubeb, *Rheum officinale*, *Ghomari* incense, *Areca* and *Aloe vera* (Ansari Shirazi, no date, pp. 5-8, 15, 10, 11, 18-20, 24, 22, 37, 41, 39). This indicates the availability and commercial prosperity of these medicines and their role in advancing pharmacological knowledge.

Husayn ibn Ali ibn Husayn Ansari Shirazi, son of Haj Zayn al-Attar, played an important role in compiling his father's book. Haj Zayn al-Attar quotes his father about various issues (Ansari Shirazi, 1992, pp. 93,106, 105, 101, 125, 141, 147, 148, 159, 172, ...). Haj Zayn al-Attar, for instance, writes about the healing properties of Myrobalans (*Halilah Zard*): "Ibn Mulf says that if the skin of Myrobalans is removed and crushed and then is placed on the base of the tooth, it will stop bleeding and make the root of the tooth strong" (Ansari Shirazi, 1992, p. 47). In many cases, when the author of *Ikhtiarat Badiie* enumerates the herbal medicaments, he expresses their equivalent in Shirazi language (Ansari Shirazi, 1992, pp. 15-457). The book *Ikhtiarat Badiie* became a reference for pharmacists and *attaran* (perfumers), so that even Mohammad Momen bin Mohammad Zaman, a Tonekaboni physician and the author of the book, *Tahfeh Hakim Momen*, belonging to the Safavid period, admits (Tonkaboni, 1966, p. 2) this despite criticizing the book<sup>4</sup>.

Muhammad ibn Abdullah Lari, a physician and pharmacist from Lar, wrote the book *Manahal al-Anzar* in 893 AH. He dedicated the book to Mahmud Shah ibn Muhammad Shah ibn Ahmad Shah, the King of Gujarat (917-863 AH). Most parts of this book were lost, but fortunately the first article, which was about medication, was left with the exception of the end section of the article (Sadeghi, 1985, p. 33). In this book, Lari, while mentioning the names of some herbal medications, gave the equivalent words in *Garmsir*<sup>5</sup> dialect and sometimes in the dialect of Fars province. This shows

3- Mace: some say that it is the skin of nutmeg and some other holds that it is the blossom of a nutmeg

4- For instance, Tonkaboni states that the author of *Ikhtiarat Badiie* considers bel, shol, and ghol, belonging to the same family, while this is not true (Tonkaboni, 1966, p. 54).

5- In the term of geographers, Garmsir is the southern and lowland lands of Fars, Lar belonging to that area.





that the author, before migrating to India, was already familiar with medical science and pharmacology as well as medicinal plants found in the Fars region, and had probably compiled some of the contents of his book. Most of the plants for which Lari presented a local equivalent were native plants of Fars, which were well known to the locals. With regard to their medicinal value, at that time, there was probably a good market for these herbs. He, for instance, stated that Chamomile was *baboonj* in Fars and the people of the *Garmsir* called it *Butako*. (Lari, no date, p. 32). Regarding the *Arghamoni* plant, he said that it was a plant similar to poppy (Papaveraceae), and the people of Fars called it *Misha-Sorkh* (Lari, no date, p. 17). Concerning *Bazr-al-marv*, it was called *marv rashk* in Fars and *Tokhm parooz* in Garmsir (Lari, no date, p. 38). It should also be noted that Muhammad ibn Abdullah was from Lar, which was one of the major trading centers of Fars in the eighth and ninth centuries AH, and its merchants frequently traveled to India (Aubin, 1969, p. 32).

The expansion of herbal medicinal trade in Fars in the eighth and ninth centuries AH led to the further promotion of the status of *Attaran* (perfumers) and development of pharmacological knowledge mainly because *Attaran*, in addition to selling medicinal herbs, functioned as a *tabib* (traditional doctor) and pharmacologist. As Ubayd Zakani humorously said in his treatise on *Attar's* job, "he who wants everyone sick" (Ubayd Zakani, 2005, p. 370). In the book of *Shorout-e-Farsi* (literary Persian conditions) written by Dristi Kazeruni in the ninth century AH, the method of writing collateral for renting an *Attari* (a medicinal plant shop) reflects the importance of this profession at that time (Dristi Kazeruni, no date, p. 93). Tarak, a Shirazi poet, wrote a lyric about the *Attari* profession (Tarak Shirazi, no date, p. 60) in his *divan* in the late ninth century, which shows the importance of the *Attari* profession in his time.

### **Reflection on the Link between the Single Medicinal Herb Trade and Pharmacological Issues in the Eighth and Ninth centuries AH in the Poems of Kamal Ghias and Bashaq At'ameh Shirazi**

The eighth and ninth centuries AH were the heyday of Persian literature in Fars. In this period, numerous poets lived in Fars. Apart from their literary value, the poems of many of these poets are important for their economic, social, religious and even medical themes.

Kamal Ghias Shirazi (d. 848 AH) was a Shirazi poet and physician of the first half of the ninth century AH. According to Dolatshah Samarghandi, the author of *Tazkereh al-Shoara*, Kamal Ghias Shirazi was associated with the court of Ibrahim Sultan Teymouri and used to sell medicinal herbs in Saadat Square in Shiraz (Dolatshah samarghandi, 2003, pp. 418, 419), affecting the theme and content of some of his poems (Kamal Ghias Shirazi, 2011, pp. 11, 492-496). There, he referred to Single medicinal herbs, namely carnation, pepper, saffron, Mandragora, mint, Ebony, colocynthis and Incense (Kamal Ghias Shirazi, 2011, pp. 189, 522, 525, 302, 116, 88, 434, 541, 284). Kamal Ghias talked about the medicinal properties of the dock and jujube in his poems (Kamal Ghias Shirazi, 2011, pp. 34, 255).

In the second half of the eighth century and the beginning of the ninth century AH, the Shirazi poet, Bashaq At'ameh describes various types of food in his works in a hu-





morous way. This, in addition to leaving a valuable treasure of the types of food, gives some information about the economic and cultural status of that time. Having examined his works, one can also find some information about the trade of herbal medicines and pharmacological issues because in his poems a number of herbal medicines used in food are enumerated. As stated in *Boghraname*, written by Bashaq: “Tamarind said: let’s import two or three spices, such as cloves, peppers and ginger, so that in this prison, they communicate with this *korbali*<sup>6</sup>, in Hindi” (Bashaq At’ameh Shirazi, 2013, p. 252). This implies that Indian medicines are imported to Fars and are used in food. Also, as Bashaq indicates some people from India have come to him with various medicines (Bashaq At’ameh Shirazi, 2013, p. 297), again implying that spice and medicinal plants have been imported from India. Of course, as mentioned, at that time, some of these medicines were imported from other Asian countries, but as they entered Persian Gulf through India to Fars, they were known as Indian medicines.

In the books written by Bashaq At’ameh, various herbal medicines, such as ginger, cinnamon, myrobalan, saffron, cumin, coriander, basil, tarragon and mint, are mentioned (Bashaq At’ameh Shirazi, 2013, pp. 44, 36, 48, 110, 116, 179, 147, 189, 173, 238), indicating their availability. As his works bear witness, Bashaq At’ameh has been familiar with pharmacological subjects. In the fourth chapter of the book, *Kanzaleshteha*, Bashaq Nutameh writes about the healing properties of sour pottage for bile disease and considers sour grape pottage to be good for eye sight and cumin pottage good for the patient (Bashaq At’ameh Shirazi, 2013, p. 21).

*Dava-o-mask* (a mixture of fragrant medicines) was a medicine. It was of various types, in some of which single herbal medicines, such as elletaria cardamomum, carnation, ginger and longum piper (*Dar filfil*), were used (Ansari Shirazi, no date, pp. 6, 7). As one of the therapeutic properties of *Dava-o-mask*, Bashaq wrote about its beneficial effects on digestion (Bashaq At’ameh Shirazi, 2013, p. 44).

In the seventh chapter of *Kanzaleshteha*, Bashaq At’ameh wrote about medicinal drinks. He mentioned sandalwood, dock and *deinar* (from *Cuscuta monogyna* family) syrups, and then wrote about Single herbal medicines, like pepper, cloves, *Fragrans myristica*, *Piper cubeba*, nutmeg, cardamomum and carnation (Bashaq At’ameh Shirazi, 2013, p. 24). The book also referred to the therapeutic use of saffron and

6- It means Korbali rice. Korbali is a region in Fars that was known for growing high quality rice (Hafiz-e Abru, 1996, p. 116).





rosewater in chickpea stew (Bashaq At'ameh Shirazi, 2013, p. 18).

The works of Bashaq At'ameh contained issues like pharmacological topics and various types of single herbal medicines, indicating the availability and trade of herbal medicines in his time. This provided ground for the growth of pharmacological knowledge so much so that even Bashaq At'meh, who probably had no education in this field, knew a lot about pharmacological issues. In other words, there was an inseparable link between the knowledge of pharmacology and the trade in single medicinal herbs.

### Conclusion

Fars was one of the major commercial centers of Iran in the eighth and ninth centuries AH. Numerous single herbal medicines, such as saffron, rose and various vegetable oils were grown in Fars, mainly due to the diverse climatic condition, but some of the most valuable plant species, such as ginger, cinnamon, sandalwood, halibut and some others were not native to the Fars region or even to Iran and were imported through foreign trades.

While writing prescriptions, Fars physicians and pharmacists in the eighth and ninth centuries considered the availability and the possibility of medicinal herb and medicines trades, as Elias Shirazi mentioned at the beginning of his book, *Al-Hawi fi Alam al-Tadawi*. A study of the works of Fars physicians and pharmacologists showed that the trade in herbal medicines in Fars led to their widespread use of various non-native herbal medicines in Iran, contributing to the development of pharmacological knowledge. Haj Zain Al-Attar's book, *Ikhtiarat Badi'ee*, was a great step towards the progress of Iranian pharmacology. The study and analysis of this book showed that the single medicinal herbal trade, along with Haj Zain al-Attar's knowledge in this field, played a major role in the writing of this book, leading to the advancement of pharmacological knowledge.

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