

## ORIGINAL ARTICLE


### Introducing the Book *Ikhtiyarat Badiei*: An Investigation over its Importance in the Pharmacology of the Islamic Period

#### Abstract

*Ikhtiyarat Badiei* is a well-written book authored by Haji Zain al Din Ansari (15th AD) in the era of Mozaffarid dynasty in Shiraz. The main tenet of the book is to introduce plant, animal and inanimate drugs in an alphabetical order. In this book, the writer has talked about the ancient terms used for drugs and medications. In addition, in writing the book, he has given reference to all related works used. Basically, the present study is a library research using the descriptive method and its main aim is to investigate the strong and weak points of *Ikhtiyarat Badiei*, as one of the most important books on pharmacology written in Persian in the Islamic era in the 15th century.

**Key words:** Islamic era medicine, Islamic era pharmacology, drugs, Haji Zain al Din Ansari, *Ikhtiyarat Badiei*, Books, Writing, Libraries

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## Introduction

In the early Islamic world, most books written on medicine and pharmacology were translated and edited by Muslim scholars.<sup>1-3</sup> However, there were some Muslim pharmacologists, such as Ibn al Baytar (1248 AD), who wrote numerous important books.<sup>4-7</sup> Some of the most famous physicians, like Rhazes (925 AD) and Avicenna (1037AD), in fact, promoted the field of pharmacology.<sup>8-10</sup> Although, Mughal invaders demolished Islamic scientific heritage, Muslims, especially Iranians, played an important role in spreading science in the Muslim World. Injuids (1335-1357 AD), a Shia dynasty of Mughal origin in Shiraz supported literature and science.<sup>11-13</sup> At this time, Zain al Din Attar, a prominent pharmacologist compiled *Miftah al Khazain* and *Tohfah al Khavatin* on pharmacology. He had also a special status during the Muzaffarid dynasty (1314-1393 AD) in Fars. *Ikhtiyarat Badi'i*, a Persian book on pharmacology, was written by Zain al Din Attar. He dedicated the book to the wife of Amir Mobariz al Din, Badi'a al Jamal. In addition, Shah Shuja, son of Mobariz al Din and a close friend of Hafiz (a famous Persian Poet), had an intimate relationship with Zain al Din Attar.<sup>14, 15</sup>

## Biography

Haji Zain al Din Ali Hossaini Ansari, known as "Attar", (1329 - 1404 AD in Shiraz ) was a renowned physician and scientist as well as the special physician at the court of Amir Mobariz al Din Mohammad and later at the court of Shah Shuja Mozaffari. *Ikhtiyarat Badi'i* was the sole work of Haji Zain al Din written in Persian about drugs. This book was entitled "*Ikhtiyarati Badi'*"<sup>16</sup> because it was written after the name of Shahzdeh Badi'a al Jamal, Amir Mobariz al Din's wife. This book was first entitled *Miftah al Khazain*, introducing and describing simple drugs, alternative drugs and compound drugs. After some years, the writer expanded one part of the book, and named it *Ikhtiyarat Badi'i*.<sup>17</sup> According to Ahmad, Haji's son, Haji Zain al Din Ansari, in addition to this Persian book, published some other books, as follows: *Tohfah al Salatin*, a treatise about anatomy, *Dastur al Motaakelin* a treatise about features of men and women, *Dastur al Zeraah* and *Dastur al Soada*.

## Scientific Impact of Zain al Din Ansari (Attar)

Out of 2549 entries which he used in this book, about 900 entries were references out of which 657 ones gave reference to the name of writers and their works, comprising 65 names.

- 1- Levey, 1973: 31, 118.
- 2- Gutas, 2012: 623.
- 3- Majeed, 2005: 1476-7.
- 4- Cabo González, 1997: 23-39.
- 5- al-Baytar, 2005: 28.
- 6- al-Baytār, 1874: 45.
- 7- Al-Baytar, 1874: 178.
- 8- Avicenna, 1982: 15-87.
- 9- Ibid.
- 10- Smith, 1980; 133:367.
- 11- Dale, 2009: 53-67.
- 12- Turner, 2010: 129.
- 13- Nasr, 1987: 72.
- 14- Ibid.
- 15- Ramezany, 2011: 80-83.
- 16- Tehrani, 1983: 368.
- 17- Elgood, 1970: 36.



**Table 1:** Frequency of references mentioned in *Ikhtiyarat Badi'ei*

Ref.	F	Ref.	F	Ref.	F	Ref.	F	Ref.	F					
1	Sahib Minhaj	89	14	In Masavieh	37	27	Soleiman	1	40	Galheman	1	53	Hounain	5
2	Sahib Taqwim	48	15	Gafegi	14	28	Pules	4	41	Yunes	3	54	Is,hag ibu Honain	1
3	Sahib Jame	50	16	Ibn Samjun	9	29	Rofes	14	42	Sahib Felahe	6	55	Erniasmus	1
4	Moalef	114	17	Avicenna	51	30	Tamimi	9	43	Jaish	2	56	AbuSarih	1
5	Ibn Moalef	121	18	Abu Reghon	6	31	Damashqi	2	44	Ibn Rezvavi	3	57	Ibn Telmiz	1
6	Sharif	75	19	Tabari	9	32	I,shaq	2	45	Savfartes	1	58	Abu Jafar	1
7	Razi	71	20	Ibn Rashed	1	33	Tiazoq	2	46	Ibn Heraz	1	59	Ali Ibn Isa	1
8	Aristotle	12	21	Is,hag	98	34	Persian	2	47	Majusi	2	60	Isa Basri	6
9	Dioscorides	74	22	Hobeish Hassan	1	35	Khozi	7	47	Ibn Betrigh	1	61	Isa Basri	1
10	Galen	36	23	Ibn Salt	1	36	Shapur	5	49	Ibn Vafed	2	62	Isa Ibn Masaweh	2
11	Hippocrates	18	24	Ibn Sarabiun	1	37	Shayk	1	50	Tahmaseb Hakim	1	63	Sahib Mofradeh	6
12	Masarjawaih	14	25	Masih	13	38	Hafiz	2	51	Hakim	1	64	Hermes	1
13	Ishaqlbn Omran	41	26	Basri	6	39	Ibn Zuhr	43	52	Hakim Sharif	1	65	Kesufritis	1

As Table 1 shows, the following three books, *Minhaj*<sup>18</sup>, *Jame*<sup>19</sup> and *Taghwim* are found to be the most frequently-cited references. In *Ikhtiyarat Badi'ei*, the name of Al-Ghāfiqī has been repeated 14 times, but no reference is given to the name of Ibn al-Baitar, the writer of *Jame*. It is likely that by the writer of *Jame*, Haji Zain al Din has Al-Ghāfiqī in mind and by the name *Jame*, he means the book *Kitāb al-Jāmi' li-mufradāt al-adwiya wa-l-aghddhiya* (The Herbal of Al-Ghāfiqī).<sup>20, 21</sup> And about the third book, *Taghwim*, there are few works entitled *Taghwim: Taghwim al adviyyah fi ma ashtahar meual ashab val aghaghir val aghzieh* by Yuhanna ibn Bukhshiu (DD. 9AD)<sup>22</sup>; *Taqwīm as Sihha* by Ibn Butlan (DD. 10AD); *Taghwim al-Abdan fi Tadbir al-Insan* by Ibn Jazleh (DD. 10AD); *Taghwim almofradah* by Abu Saeed Alaei Maghrebi (DD.11AD) and *Taghwim aladviah Moradeh* by Hobeish Teflisi in the 12th century.<sup>23</sup> Eleven references are devoted to Greek writers, from whom Dioscorides and his book *Materia medica* has had great impact on the scholars of the Islamic era.<sup>24-26</sup> Galan's *al-adwiya al-mufrada* also plays an important role in this book. In addition, the book has frequently given references to Rhazes, Avicenna (1037AD) and Al-Majusi Ahwazi.

18- Attar Isreili, Davood-In Abinasr (2004). *Menhadj Al Dokkan and Dastour Al Ayan*. Tehran: Iran University of Medical Sciences.

19- In more recent Islamic references, physicians gave reference to Ibn al-Baitar's (DD.646H./1248 AD) *Kitāb al-Jāmi' li-mufradāt al-adwiya wa-l-aghddhiya*. Or Al-Ghāfiqī's (DD. 560 H./ 1164 AD) *Kitāb al-Jāmi' li-mufradāt, Islamic-Iranian Encyclopedia* (in Persian), p.178.

20- Ghāfiqī, 2014: 545 - 750.

21- Rius-Piniés, 2015: 1158-60.

22- Sturgeon JM. Ibn Bukhtishu was a famous doctor during the time of al-Mansur who headed the medical school until his death in AD 771. The Bakhtishu family carried the medical traditions of Jundishapur when they served several Abbasid caliphs as their personal physicians (The Golden Age of Persia). The Cambridge History of Iran expands: The members of the Bukhtyishu family were directors of the Jundishapur hospital and produced many outstanding





### The content and structure of the book

Zain al Din has written several books in various branches of science, in particular in medical sciences. *Ikhtiyarat Badiei* is one of the Persian books in the field of pharmacology and pharmaceuticals in Islamic era that introduces medical properties of substances.<sup>27</sup> The book states that medicines and drugs are made up of three sources: plants, animals and inanimates. One of the advantages of the book is that it has enjoyed a very simple and fluent language. Ansari Shirazi has allocated the preface of his book to some general issues, such as various types of medicine, methods of preserving them and different kinds of food. Simple (not compound) plant medicine is taken from garden (cultivated plants), grains, leaves, roots, wood, juices, gums, flowers, fruits and oils. Animal drugs are made from animal's body limbs, urine, and residue. He recommends that "body limbs such as, horn, gall- bladder and livers be taken from young animals in spring."<sup>28</sup> Inanimate drugs are made of stone and mud. It is advised to extract them from known mines to make sure that they are pure and unalloyed; they should be of the right color, as well.<sup>29</sup>

Ansari Shirazi, in addition to presenting the medicinal properties of one plant, has introduced its morphology as well. For example, he has compared the external shape and different parts of one plant with that of a more known plant. He has also categorized the plants either according to area they are indigenous to, namely Indian, Ethiopian, Egyptian, Meccan, Hijazian, Khorasanian, Tabrizian, Nabatian, Roman, Shirazian or according to the point that if the plants are cultivated or wild. The writer has also paid attention to the growing season, size and color of the plants. To Ansari Shirazi, the medicinal qualities of each drug are also of prime importance. To him, the main features affecting the qualities of drugs are as follows: the color, smell, softness or roughness of the plant, the appropriate kind of the drug, drug classification in terms of four qualities determining its effectiveness, supplements (eliminating the harmfulness of the medicine or contributing to its effectiveness), the dosage, and the area or country from which the drug is prepared.

Haji Zain al Din has stated that drugs prescribed for the sick are prepared in different kinds: tablet, oil, paste, vinegar, syrup, cooked and mixture. In different parts of the book, he carefully explains about rubbing and friction. He has also divided the foods and drinks into five categories: "pure food, pure drug, medicinal food, edible drug and poisons."<sup>30</sup> Haji

physicians. One of them, Jiris, was called to Baghdad by the Abbasid caliph al-Mansur, to cure his dyspepsia. Due to his success he became court physician of the caliphs, and after them the whole school was transferred to Baghdad marking the real beginnings of Islamic medicine.

(Le Strange, 1905: 238).

23- Naderi, 2012: 63.

24- Levey, 1973: 31, 118.

25- Hummer, 2010: 1587-1591.

26- Olivieri, 2017: 193-215.

27- Shirazi, 2009: 64.

28- Shirazi, 1992: 9.

29- Ibid.

30- Ibid.



Zain al Din has categorized the medicines from A to Z in some chapters, elaborating each of them. The number of entries discussed in his book comprises 2549 ones. His method in this book is to write the name of the drugs in Persian as well as other languages and then to discuss the quality of the drugs. He has mentioned the name of the drugs in 33 languages.

### Superstitions found in the book

Ansari Shirazi, in addition to writing about the quality of drugs, has written about the consumption of drugs based on some superstitious beliefs, such as using plans for washing the body and clothes to repel the plagues and harmful animals. In three entries in *Ikhtiyarat Badiei*, the author has illustrated some superstitious ideas, namely that “If the food is poisonous, and the weasel finds out, it will shout and its hair will stand on its end.” and says: “looking at zebra is good for the eyesight.”<sup>31</sup>

### Discussion

Pharmacology books were always important in all civilizations throughout the world. Greek Pharmacology books were very important and influential to such an extent that they were used and given reference to by Muslim scholars.<sup>32,33</sup> Owing to the importance of drugs, their names were recorded in Pharmacology books in different languages. For example, Haji Zain al Din mentioned the names of the drugs in 33 languages and dialects.<sup>34</sup>

The frequency of the old terms used in the book gives some important clues to the researchers. It seems that the author is to acquaint the Iranian readers with the names of drugs. In one section of the book, he refers to the children of Shiraz (*Ikhtiyarat Badiei*: 36)<sup>35</sup> and in another place, he says that he has asked some questions from the merchants returning from India to find the correct name of certain medicine.

In the history of Persian medicine, the book *Ikhtiyarat Badiei* is considered the most important book written in Persian. It contains the names of numerous simple drugs (non-compound) in the text, as well as the names of Pharmacology works either as the footnote or in the margin of the book, along with some explanations. The book has had a great contribution to the evolvement of Persian pharmacopeia. The first book evolved from *Ikhtiyarat Badiei* is *Ashah-al Adwiyah* written by his son, Zein al- Din Ali ibn Hussein Ansari in a lexicographical style. In the latter book, the names of

31- Shirazi, 1992: 41.

32- Levey, 1973: 31, 118.

33- Browne, 2011: 25, 89.

34- Olivieri, 2017: 193-215.

35- Shirazi, 1992: 36.



some plants and drugs under each entry has been corrected and then been added to *Ikhtiyarat Badiei*. Furthermore, in *Ikhtiyarat Badiei*, Zein al- Din Ali ibn Hussein Ansari has given the Persian meaning of the medical terms previously written in Arabic<sup>36</sup>. However, not everyone has welcomed his attempts. Mohammad Momen Hossaini Tonekaboni, known as Hakim Momen (DD 1669 AD), for instance, in his book *Tohfeh Hakim Momen*, has accused him for being careless in registering the medical terms and lexicon in *Ikhtiyarat Badiei*.<sup>37-40</sup> In spite of this, Elgood believes that he has been inspired by his father's book.<sup>41</sup>

### Conclusion

As mentioned above, *Ikhtiyarat Badiei*, the book written by Haji Zain al Din Ansari is one of the most important works in expanding the Islamic pharmacology. It is one of the best in mentioning the scientific works in Persian language. The old medical terms and the references used in the book demonstrate the writer's mastery over Islamic and ancient pharmacology of that era and the preceding eras. The writer's style of giving reference to the works of preceding scholars is quite comparable to that of modern time. Among the scholars, he had most confidence in the works of Rhazes, Avicenna and Al-Majusi Ahwazi. He had some objections to Galen. His attention in mentioning the drugs and botanical characteristics is admirable. However, there are also some superstitious points found in his writings.

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- 36- Tehrani, 1983: 368.  
 37- Ibid.  
 38- Momen, 2009: 116.  
 39- Emami, 2015: 269-277.  
 40- Hossaini-Tabib, 1959: 8.  
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