

## The Role of Muslims in the development of Phytomedicine and Pharmacy.

(By Mohammed Ali Al-Bar – Published in 1999)

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The role of Muslims in the development of Phytomedicine and Pharmacy book was published in 1999 by Dar Al Manarah. This small book is written in Modern Standard Arabic with quotes from Quran and prophetic narrations mainly in the introduction, in addition to statements from a diverse group of cited authors.

The book is divided into 10 sections that start with the principles of Islamic philosophy that drove the scientific movement in general, and the role it has played over 8 centuries up to the end of golden Islamic ages in progressing the pharmaceutical field.

The first three sections delve into the Islamic attitudes towards science. The author starts with the Quranic injunctions and Hadiths encouraging to acquire and spread knowledge, including the study of human health and seeking new cures, placing an equal importance on both the physical and mental aspects. As was customary at that time, simple natural medicinal remedies were used to treat various ailments including Honey, Nigella, *Salvadora persica*, truffles, *Aloe vera* and many more. The author highlights the recent resurgence of herbalism and eastern phytotherapy research in academia, citing works by himself (on Senna, Cress and dill), Ahmad El-Kadi (on Nigella) and Hassan Chamsi-Pasha (on Honey) supporting their scientifically proven effectiveness.

The author dedicated the fourth section to discuss the drivers of the medical revolution seen throughout the era, which in his opinion are to be attributed to five factors:

- (1) Religious influence, the Islamic teaching encouraging to seek knowledge.
- (2) Openness to ideas and a high level of scientific integrity.

(3) State sponsorship, large budgets were allocated for the translation movement that helped preserving a lot of the human heritage, the aftermath is of this can be seen in reverse translations from Greek to Arabic then Latin.

(4) The large interest in medical science, even by philosophers (Ibn Sina 'Avicenna'), religious scholars (Al-Shafi'i) and legislators (Ibn Rushd 'Averroes').

(5) Equality among the state citizens, regardless of their origin or faith. This generated an inclusive environment that fostered cultural and scientific exchanges.

### دور المسلمين في تطوير العلاج بالاعشاب والصيدلة

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زميل وعضو الكلية الملكية للأطباء بلندن

مستشار قسم الطب الإسلامي

مركز الملك فهد للبحوث الطبية

جامعة الملك عبد العزيز - جدة

دار المنارة - الطبعة الأولى 1420 هـ - 1999 م

Section five is largely connected to the previous section, and it could be viewed as a direct result of points (2) and (4). The healthcare institutions and hospitals (Bimaristan or dar al-shifa) spread across the state from the countryside to big cities, providing free services, and embracing the diversity of both its staff and patients.

The author reports, that back then it was customary for patients discharged from the Qalawun hospital in Cairo to receive 5 golden Dinars as sustenance allowance during recovery as a form of paid leave, and that in its heyday Córdoba alone had 50 major hospitals.

The next three sections share the same theme, the pharmaceutical development accomplished during the era. According to this book, private pharmacies started to appear for the first time in history in 780 in undisclosed locations in the Islamic world.

However, the author does not elaborate how these private pharmacies were different from the state-regulated pharmacies established in Baghdad in 754.

The author continues to describe the documented internal design of past pharmacies and the white uniforms pharmacists wore, which seem to resemble modern practices. This included inpatient (hospital) pharmacies that had the capability to prepare and dispense medicine.

Interestingly, neither physicians nor pharmacists were allowed to practice without passing mandatory licensing examinations followed by the Hippocratic Oath.

Additionally, their practice would be continuously regulated and monitored to ensure the healthcare providers' performance was up to standards and prevent malpractice. All physicians were required to produce two copies of the drug prescription, one for their records and the other for the pharmacist, which are to be checked in the case of treatment failure or a medical error to penalise the responsible professional.

Then the author focuses on the progress the pharmaceutical science and chemistry underwent during the era. Where the Arab-Muslim pharmacists were the first to publish pharmacopoeias in their modern format, an encyclopaedic formulary format, that describes medicine, their indications and doses.

This era witnessed the rise of highly educated pharmaceutical chemists with sophisticated skills, who pioneered the two fields and unlisted various interactions to be used in clinical format including sublimation, crystallisation and the game changer distillation of alcohol by Al Razi.

The author counts a dozen dosage forms those brilliant scientist developed, some still exist to this day including coated tablets, various flavourings and packaging methods. It is even reported that they exploited natural photo and chemical interactions for treatments, examples include bread mould (*Penicillium*) and heated gypsum mixed with egg white to treat ulcers and was used to make casts, respectively.

Based on the Dioscorides's and Galen's work, generations of botanical pharmacists developed the specialty of pharmacognosy. These pioneers include Abu al-Abbas al-Nabati and his pupil Ibn Bitar who has mentioned and classified 1400 plant/medications, 400 of which never have been reported before him. An honourable mention goes to Al-Idrisi, the renowned geographer, who compiled a medical dictionary that contained the names of the drugs used during his time in 12 languages.

The last two sections discuss the role the cross-cultural Andalusian state played in connecting the medieval Europe with the Arab-Muslim world.

Advances in the Andalusian west only rivalled its sister cities like Cairo, Damascus and Baghdad, but nonetheless Andalusian botanical advances were propped by the large number of brilliant botanists who lived there, including Al-Ghassni who developed a plant taxonomy in the 16th century called *Hadiqat al-azhar fi mahiyyat al-ushb wa-l-aqqar* (Garden of Flowers in the Explanation of the Character of Herbs and Drugs), that classified plants based on the species, genus and family around the same time as Renaissance books.

This is followed by an ode to Ibn Sina and his book the Canon of Medicine, that remained the standard medical textbook in the Islamic world and Europe until the 18th century.

The author compares the experimental method in drug development used by Ibn Sina and elaborated in the Canon with modern day standards, principles detail similar modern day practices used by drug regulatory authorities.

After addressing regulatory concerns during treatment, the author transition to the standardisation of units across the state to ensure the quality of drugs delivered. This allowed to regulate formulation and doses given to patients citing Al zahrawi (Albucasis) book 'tafsser al awzan wal akyal fi al tib' (the interpretation of units and weights in medicine).

This small book is an easy read, although it could feel repetitive at some parts, and some of the references mentioned are historical documents that need to be cited

properly for the benefit of the readers, especially since the author cites both Arabic and English texts.

The book named many scientists who excelled in their fields and paved the way for the modern day advances.

Knowledge is collective, although the names of many whom were mentioned in the book have been overshadowed and replaced by renaissance and industrial revolution era scientists, but their knowledge lives on. In the words of Newton 'If I have seen further, it is by standing on the shoulders of giants.' If we are to decolonise science, many of the names who have been forgotten need to be brought back to light and taught to the next generation via similar publications.