بعض مراجع من التراث

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medicine among the Bedouin is observed among all the sectors of the Bedouin society, i.e. men, women and children. This knowledge has been transferred to the main cities. Herbalists and *Attarin* in the cities get the plants from the desert and use them according to the knowledge of the Bedouin. Conservation and sustainable use are imperative. This conserves the plants as a natural resource and a component of biodiversity, as well as the knowledge and culture of the Bedouin

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Management of the Shop) had a widespread reputation and is still used by all the native bazaar druggist of the Middle East. It survived in many MSS and was printed more than five times since 1287 A.H. (1870 A.D.) in Cairo alone.

A famous scholar is Dawud b. Umar al-Antaki (d.1008 Hj, 1599 A.D.), who lived in Cairo and left an alphabetical list of drugs and medical terms known as *Tadhkirat Uli al-Albab* "Memorandum for Intelligent People". It was printed for the first time in Cairo in 1254 A.H. (1838 A. D.), and then numerous times since. It is used till now by the contemporary druggists in Egypt and the other Arab countries.

A Muslim Andalusian Scholar, Al-Ghassani (d. 1019 Hj., 1611 A.D.) innovated a system for the classification of the plants. He described in his book about 380 drugs, mainly of plant origin. He described the plants, their habitats and differentiated between annual and perennial herbs. He introduced diagnostic characteristics of the different plants of the various families.

The Present Knowledge of the Desert Medicinal Plants among the Bedouin

The inherited traditional knowledge of desert plants and their use for curing diseases is tremendous among the Bedouin. All over the Arab countries, the Bedouin have common knowledge of using some plants. However, *hokamah* (Sing. *hakim*) who are the traditional healers have more knowledge and know the use of more plant species as well as compound medicaments formed of more than one plant. The community knowledge of herbal

book that it "is not equaled in excellence or in sense". Al-Ghafiqi abridged the writings of Dioscorides and the great Galenos in succinct language yet (preserving nevertheless) their full meaning. This book became a collection of the sayings of those who excelled in (the knowledge of) simple drugs and an encyclopaedia to which one had to refer in case of necessity for verification. Gregorius, Abul-Farag Ibn al-Ibri (Son of the Hebrew), latinized Barhebraeus (d. 1286 A.D.) wrote an abridged version of the "Book of Simple Drugs" of Al-Ghafiqi. Meyerhof and Sobhy published parts of this book with excellent commentaries in 5 volumes from 1932 to 1940 as publications of the Faculty of Medicine, the Egyptian University.

Another famous Muslim Scholar in N. Africa is Ibn al-Beitar (Diya' ad-Din Abu Mohamed Abdallah bin Ahmed Ibn al-Beitar (died 646 Hj., 1248 A.D.) who traveled in North Africa and the Near East collecting plants and information about these plants. He wrote the well-known monumental work " *Gamie Al Adwiyah wal-Aghzia.*" which has been translated to Latin (in 1758) and other languages. Ibn al-Beitar described 1400 drugs, including 300 not mentioned by Dioscorides and other herbalists before Ibn el-Beitar. He gave the names of the plants in different languages, its description, habitat and geographical distribution. Leclerc in his "Histoire de la Medicine Arabe" called him "the greatest botanist of the East".

Abu'l-Muna Dawud b. Abi Nasr known as Kohen Al Attar (d. 658 Hj, 1259 A.D.) lived in Cairo in the XIIIth century A.D. and composed in 1295 a book on the composition of remedies divided into 25 chapters. This book *Minhag Ad-Dukkan* (i.e. the

Abu Bakr Mohammed b. Zakariya ar-Razi (d. about 313 Hj, 925 A.D.), known in Europe mostly under the latinized name of Rhazes. *Rhazya* spp. were called after him, e.g. *Rhazya stricta*, (in Arabic *harmal*; one should distinguish between the *harmal*: *Peganum harmala* and the *harmal* for *Rhazya* in the countries of Arabia). He was a Persian Muslim, who produced a most incredible number of works on medicine, natural sciences, logic, metaphysics, mathematics, alchemy, theology and ethics. Among them is the bulky work "Continens" (*al Hawi fi'Tibb*) in 20 volumes on therapeutics. It has been the main source for writings in this field for centuries

A famous Moslem Scholar who was born and lived in North Africa is Ibn El Jazzar al-Quairawani (died 389 Hj, 1005 A.D.) who wrote many books; one of them about simple drugs. This book includes 272 drugs, mainly of plant origin, and has been translated to Greek, Latin and Hebrew.

Among the famous Muslim physicians and philosophers is Ibn Sina (Abu Ali al-Husain b. Abdallah (d. 428 Hj, 1036 A.D.), known in Europe as Avicenna (the name of the genus *Avicennia* was given after him). He wrote hundreds of books and treatises His book the "Canon of Medicine" (*al-Qanun fit'Tibb*) contains a section on simple drugs. The book was translated to Latin, e.g. the Latin edition "Abuali ibn Tsina (Avicenna) Canon Medicinae" interprete et scholiaste V.F. Plempio. Lovain 1658.

Abu Ga'far Ahmed b. Mohammed al-Ghafiqi (d. about 1160 A.D.) wrote "Book of Simple Drugs". It has been written about this

shape of the fruit and even the habitat features and geographical distribution were cited as criteria. The spiny plants were further divided into herbs, shrubs and trees

The Arabs gave names for particular habitats in the desert. These names have been latinized and are still used by modern scientists. The names of Arabic origin include *hamada*, *reg*, *serir*, *sabkha*, and *wadi.*

Phytomedicine in the Arabic Heritage

The folk medicine in the Arab countries is full of recipes for curing various diseases. The term "*Hakim*" "*Attar*" and "Herb's seller" denotes the persons who sell drugs and medicinal plants for curing diseases or for health care. Usually this is the herbalist of the old times.

Dioscorides, in his *Materia Medica*, gave the names of many plants from Egypt (*Acacia nilotica*, the Egyptian thorn) and from Cyrenaica (*Dorema ammoniacum*). The "*Materia Medica*" was translated to Arabic in the IXth century A.D. by Stephan son of Basil. However, improved translations were done later in Andalusia

The Muslim herbalists wrote over centuries many books and treatises on medicinal plants in the Islamic World. In view of the vast area occupied by the Islamic nation, the names of these plants were given in Arabic, Amazighy (Berber), Greek, Persian, Hindi and other languages. We give here only glimpse of the subject

botanical materials were included in the book of Abu Zaid Al Ansari (d. 830 AD). This was written and published by one of his disciples: Ibn Kalawih (d. 980 AD).

The famous book of Abu Hanifa Ad-Dinawary (d. 895 AD), which was called 'The Book of Plants' gives the names of plants, their habitats and life forms (trees, shrubs or forbs). Its thoroughness and the care taken in the description of each species mark this work, which combines a philological, historical and botanical approach to the study of plants. It has been read widely by numerous authors and cited on many occasions over the centuries. He gives numerous quotations from poetry and philological interpretations of the verse.

In the 4th century (AH), 10th (A.D.) several philosophical studies of plants appeared. The Ikhwan al-Safa devoted one of their Epistles to the morphology, genesis and manner of growth of plants as well as the numerical symbolism of their various parts and their place in the total cosmic order'. The *Kitab al-I'tibar* (The Eastern Key) of Abd al-Latif al-Baghdadi is particularly rich in its description of the plants of Egypt.

Muslim studies on botany deal mostly with such questions as the classification of plants, their physiology, genesis and modes of growth, the description of their parts, their relation to geographical and climatic conditions and their medical as well as 'occult' properties. These books and others classified plants (of course mainly desert plants) according to very efficient criteria, e.g. the presence and the absence of spines, the colour of the flower, the

(*awsaj*) and *Ziziphus* (*sidr*) and the ecotype living in moist habitats. It was pointed out that the latter types have less spines.

Many Latin names for plants growing in the Middle East are derived from their original Arabic names. As examples we might mention *Zilla* (from *silla* an Arabic word denoting a spine), *Retama* from the Arabic *retem* and the Hebrew *rothem*, *Jasminum* from *yasmin*, *Caddaba* from *cadhabah*, *Rokama* from *roqamah*, *Cuminum* from *cammoon*, the specific epithet *termis* from *termis*, etc. The specific epithet *pyrotechnica* was given to *Leptadenia* as Forsskal noticed that the Arabs were using the fibres of its stem to produce fire using the stone and the flint.

Plants were valued as a natural resource by the Bedouin. They gave the names of plants to themselves. Men and women were named after plants such as: *arfaja* (*Rhanterium*), *handhal* (*Colocythis*), *salama* (*Acacia ehrenbergiana*), *samr* (*A. tortilis*), *murreir* (*Centaurea*), *sudairy* from *sidr* (*Ziziphus*), *suwaidy* from *Suaeid* (*Suaeda*), *morikhy* from *Markh* (*Leptadenia*) and many others.

In the ninth century AD, the Arabs began registering their heritage of poetry, philology, religion and medicine, in addition to a large number of translations from the Greek and other languages. Since then, a huge number of books and treatises dealing with botanical nomenclature and different aspects of plant life and uses have appeared. To give a few examples, one may mention Al Asma'i (who died about 831 AD) and his 'Book of Plants' in which he included information about plants and plant life. Some useful

is from Hejaz, but when he mentions *arta* (*Calligonum comosum*) then he is from Najd.

Plants in the Arabic Heritage

Arabs and the Arabic language have a unique characteristic. In the classic Arab dictionaries the lexicographers give innumerable plant names with descriptions and even statements about their life form, geographical distribution and uses. Examples include: *Al Mokhassas* (Ibn Sida, 1007-1066 A.D.), *Lisan Al Arab* (Ibn Mandhour d.1311 A.D.) and *Qamoos Al-Muhit* (Fairuzabadi, 1329-1415 A.D.).

Abul-Abbas an- Nabati, Ibn al-Rumiya (d. 637 Hj. 1239 A.D.) who had been given the title (Botanist), made an excursion in N. Africa, the Levant and Iraq. After his return to Seville in Andalusia, he established a pharmacy for selling drugs and wrote a book entitled: Botanical Journey.

One famous Arab botanist is Rashid Ad-Din Ibn As Suri (1177-1243 A.D.) who lived in Syria and traveled in the Near East accompanied by a painter. He described many unknown plants, and had them painted as fresh and preserved. Unhappily his book has been lost. Mention of this book can be found in many dictionaries and other books.

In old Arabic books and classic Arabic dictionaries, there has been reference to the ecotypic variations. The authors differentiated between the desertic (xerophytic) ecotypes of *Lycium*

Arabic poetry contains innumerable references to desert plants and even to their habitat, phenology and morphological features. This is due to the vital importance of plants in the life of the Arabs in the desert.

Indigenous Knowledge of Desert Plants

Nomadic pasturalism enables the Bedouin dominate vast areas and traverse hundreds of miles with their flocks to reach the verdant patches occurring at various periods of the year in various sites. The Bedouin, from their childhood, are in intimate relation with the plants growing in their environment.

The Bedouin as a herdsman knows by nature much about palatable plants. In the classic Arabic, there has long been clear distinction between *khullah* (sweet plants) or the glycophytes of today and *hamdh* (salt plants) or halophytes. Moslem philologers, lexicographers and writers provided examples of the *hamdh* (halophytes), e.g. *Shnan* (*Seidlitzia rosmarinus*) *Harm* (*Zygophyllum* sp.), *Girm* or *Shurah* (*Avicennia marina*), *Ikrish* (*Aeloropus lagopoides*) and many other plants.

Arabs give particular names for the so-called community types, i.e. defining vegetative cover and its habitat together. These names give a correct idea about the prevailing habitat features where the community dominated by a particular plant abounds. The geographic distribution of plants was also considered in the writings of the Arab scholars. They could distinguish between the native homes of the different poets by the names of plants given in their poems. If a poet mentions *salam* (*Acacia ehrenbergiana*) he

Indigenous Knowledge and Ethnobotany in the Deserts of the Arab World

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Introduction

Without doubt a review of the human life on the planet would not be complete without a look at the role of plants. Over years, every ethnic group on this earth accumulated a tremendous indigenous knowledge of their own. Due to the present modernization and being far from nature the knowledge of indigenous cultures will be lost.

The Arab World is the cradle of famous and very old civilizations, e.g. the Pharaonic, Assyrian and the Babylonian. Plants and plant names were depicted on the walls of the temples and on the papyri paper.

The Arab World is unique as regards the plants and the available traditional information about the plants and plant life. Perhaps, it is the only area on earth in which one can trace the presence of some plant species since times immemorial. This can be evinced from the Holy Scriptures. Plants and plant products are frequently mentioned in the Bible, the ***Quora'n*** and the Sayings (***Hadith***) of the Prophet Mohammed 'Peace be upon Him' Classic

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