



FLORA I. HISTORICAL BACKGROUND

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The indigenous knowledge of plants in Persia had a long standing tradition before the country's flora was explored by Europeans, who were eventually joined in modern scientific botany by Persian botanists. Traditional knowledge of plants was augmented through trade relations and scholarly exchange with other countries, and in the early Middle Ages it had reached a level of development that was in no ways inferior to botany in Europe. Persian names of plants were so deeply rooted and prevalent throughout the Middle East that long after the Arab conquest of Persia and the introduction of Arabic in Persia even Arabic scientific texts used Persian botanical terms, as in the Arabic translation of the pharmacology of Dioscurides (Dioscoredis) by Eṣṭafan b. Bāsīl (Stephanos b. Basileios) and Ḥonayn b. Eshāq in Baghdad in the mid-9th century (Ullmann, 1972, p. 88). Even Ebn al-Bayṭār, who originally came from Mālaqa (Malaga) in Andalus and lived in Egypt and Syria, frequently used Persian plant names in his book on simple drugs (*al-Jāme' le-mofradāt al-adwīa wa'l-āḡdīa*). The dissemination of Islamic medicine and natural sciences through Latin translations since the 11th century generated an influential intellectual revival in Europe, which, concurrent with other factors, ultimately resulted in the development of modern natural sciences.



Although the methodology and principles of modern sciences have been generally adopted in Persia for botanical research, and the exploration of the country's flora is based on international scientific groundwork, traditional Persian botany and plant names as well as their historic development are still indispensable for the understanding of the traditional natural sciences and education in Persia today.

The oldest Persian plant names. To the oldest class of Persian plant names belong those that correspond to paronymous forms of old-Indian and thus can be traced back to origins in the Indo-Iranian language or, if attested in other Indo-European languages, may even date back to the common Indo-European language. Among these are: *jow/jaw*, Av. *yava-*, Skt. *yava-* (barley); *gandom*, Sanskrit *godhūma-* (wheat); *zīra*, Skt. *jīraka-* (cumin, *Cuminum cyminum*); *berenj*, Skt. *vrīhē-*, Arm. *brinj*, Kurd. *birinj*, Osset. *brin*, which, according to Paul Horn (*Eytmologie*, p. 48), is a borrowed word with a definite Aryan origin; *bīd*, Av. *vaeiti-*, and OIr. *vētasā-*, paronymous with old-Nordic *vidir*, and old-high-German *weidā*, Greek *itea*, (willow). There is no paronymous word for OPers. *hauma-*, Av. *haoma-*, Skt. *soma-* in any other indo-European languages, which means that it is a plant only known to the Indo-Iranians (for a recent study see Flattery and Schwartz).

Plant names documented in Middle Persian. Despite its small volume and limited interest in themes pertaining to natural sciences, Pahlavi literature preserves a substantial number of plant names. Examples, mostly derived from MacKenzie, are *alalag*, NPers. *lāla* (tulip); *anār*, NPers. *anār* (pomogranate); *aspast*, NPers. *aspast*, Pashtu *spastu* (medicago sativa, lucern), is derived from the OPers. *aspo-asti* (*asb* “horse” and the root of *ad* “eating,” thus designating horse feed). Lucerne was the preferred horse feed in ancient Persia. Horses were exported to Anterior Asia and since the 2nd century B.C.E. also to East Asia; the plant for feed was brought along with them. In this way the Persian name (*aspastu*) was adopted by the Akkadian in the 7th century B.C.E. (Laufer, 9. 210; Meissner, p. 296, apud Shahbazi, in *EIr.* II, p. 726; Waley).

Spand (< Av. *spānta* “holy”), NPers. *esfand* (q.v.; wild rue, pergamum harmel, *Peganum harmala*); *wātrang*, NPers. *bādrang* (lemon, *citrus medica*; see BĀLANG); *gōz*, NPers. *gowz* (walnut); *gaz*, NPers. *gaz* (q.v., tamarisk); *gišnīz*, NPers. *gešnīz* (coriander, q.v.); *hamē-wahār*, NPers. *hamīša-bahār* (marigold); *sarv*, NPers. *sarv* (cypress, q.v.); *šambalīlag*, NPers. *šanbalīd*, *šambalīla* (fenugreek, *Trigonella foenum-graecum*); *sīr*, NPers. *sīr* (garlic, q.v.); *zardak*, NPers. *zardak* (safflower, *Carthamus trinatorius*).



Borrowed plant names in Middle Persian: *sīsīambar*, NPers. *sīsambar* (< Gk. *sisymbrium*); *nīl*, NPers. *nīl* (< Skt. *nīla-*, blue, *indigoferea tinctoria* “indigo”); *wanaḥšag*, probably to be read *wanaḥšg*, NPers. *ba/bonaḥša* (violet; from Skt. *vanāvsaka-*, a compound of *vana-* (Av. *vana-*) “woods” and *vas-* (OPers. *vah-*) “to sojourn” with the adjective-forming suffix *-ka*, lit. “wood dwellers”); *halīlag* NPers. *halīla*, (Skt. *haritaki-* “myrobalan”); *bis*, Av. *viš-*, *vīša-*, (poison; Skt. *viṣa-* “aconite, *Acontium*”).

The adoption of these and other words which are documented later but were probably borrowed from Indian at the same time may be placed in the later Sassanian period when the Indian book of tales, *Pañcatantra*, was brought to Persia by Borzūya (q.v.), the personal physician of Kōsrow I Anōšīravān.

Plant names contained in Middle Persian literature, however, certainly do not render a complete picture of Sasanian plant names with their Greek and Indian loan-words. A complete list must have been considerably larger, a conclusion supported by the scientific developments in Persia of Sasanian times and the early Islamic period under the Greek influence. A link to Greek medicine and natural sciences was the school at Gondēšāpūr, which was founded in the aftermath of the Sasanian Šāpūr I’s victory over the Roman emperor Valerian at Edessa in 260 C.E. Šāpūr brought many educated Romans to various places in southern Persia, like Gondēšāpūr, the city named after him, near the present-day Dezful. The hospital there had a staff of Greek physicians and was affiliated with an academy which became famous in the Orient. It survived the Arab conquest of Persia and was a breeding ground of intellectual culture at the time of the first ‘Abbasid caliphs. The Boḳtīšū’s (q.v.), a Nestorian family of physicians, monopolized the position of the academy’s directorship and were repeatedly called to Baghdad as court physicians. The son of the medical assistant of Gondēšāpūr, Yoḥannā b. Māsūya (d. 243/857), was the first director of the Bayt al-ḥekma (House of Wisdom), which was founded in Baghdad by al-Ma’mūn in imitation of the Gondēšāpur academy. The Bayt al-ḥekma became the center of prominent scientific translation work, especially during the tenure of Ḥonayn b. Ešḥāq (d. 260/873), the disciple and successor of Ebn Māsūya. He translated the pharmacology of Dioscurides, the most famous Greek work about medicinal plants, into Syriac (Ullmann, 1970), and later, together with his disciple Eṣṭafan b. Bāsīl around the mid-9th century, into Arabic. It may be assumed, although it cannot be proven, that the *Materia medica* of Dioscurides was known in Gondēšāpūr before these translations and may even have been translated into Middle Persian. Greek



herbal pharmacology was, however, known in Persia through a translated Greek standard text by the mid-9th century. Indian medical science was also known through the chapters on Indian medicine in the *Ferdaws al-ḥekma* of ‘Alī b. Rabban Ṭabarī and the physicians of the Indian hospital in Baghdad (Ullmann, 1970; Schmucker).

The oldest documentation of tNew Persian plant names. The oldest preserved New Persian manuscript is the *Ketāb al-abnīa ‘an ḥaqāyeq al-adwīa* by Abū Maṣṣūr Mowaffaq Heravī (q.v.), a text of pharmacology emphasizing medicinal plants written, as Ullmann argues, during the reign of the Samanid Maṣṣūr b. Nūḥ (350-65/961-76), to whom it seems to be dedicated. The oldest of the two known manuscripts, copied by the poet Asadī Ṭūsī (q.v.), is dated Šawwāl 447/December 1055-January 1056 and is kept at the Austrian National Library in Vienna (Monzawī, *Nosḡahā* I, pp. 463-64). The great value of this book lies in the fact that it expounds in alphabetical order on simple drugs, mainly medicinal herbs, and cites the names by which they were commonly known in Persia. It also contains numerous loan words and Arabic nomenclature which can often be traced back to other Semitic languages. The names are frequently listed in phonetically different forms, which may reflect the development of the ending-*h* through the older *g* (Ar. *j*), e.g., *davālag*, *davālah*, *davāleh* (beard moss, usnea).

Greek loan words in Abū Maṣṣūr’s work are, *anīsūn* (< *anison* “anis”); *asārūn* (< *asaron* “hazelwort”); *fotrāsālyūn* (< *petroselinon* “parsely”); *oṣṡokūdūs* (< *stoichados*, gen. of *stoichas*, lavender, *Lavandula stoechas*).

Examples of Indian terms from pre-Arian origin are, *šekar* (< Skt. *śarkarā* “brown sugar”); *qand* (< Skt. *khaṇḡaka* “lump sugar, candis”); *felfel* (< Skt. *pippalī*, the long pepper, *Piper longum*, not *Piper nigrum*, the common black pepper); *zanjabīl* (< Skt. *ṣṛṅgavēra*, ginger, probably from the Tamil word *inči* “ginger” and *ver* “root”; in Skt. the word was transformed to *ṣṛṅga* “horn, antler” because of the antler-shape look and the rhizome used as medicine and spice).

Examples of Arabic plant names used by Abū Maṣṣūr, which can be traced back to Akkadian origins, are: *kamūn* (Akk. *kamūnu*, cumin, *Cuminum cyminum*), the Arabic equivalent for the NPers. *zīra* (see above); *sūsan* “lily” (*sūsan āsmāṅgūnī*, blue lily, iris; Akk. *šešannu*); *na’nā* (Akk. *nanahu*, “mint”); *kattān* (Akk. *kitinnu* “linen”; probably related to Sumerian *gad*).



Persian botany and international botanical nomenclature. The New Persian botanical terms in Abū Manṣūr's work constitute only a small part of Persian botanical names used in the various regions of Persia today. The first botanical identification of Persian plant names through the internationally recognized Latin names took place in the second half of the 19th century. The pioneer work was *Términologie médico-pharmaceutique* by J. L. Schlimmer, an instructor at Dār al-fonūn (q.v.), the first modern institute of higher education, founded in 1850 in Tehran. It comprised 600 folio pages and was based on first-hand knowledge of Persian plants and herbs.

The scholarly activities started by the teachers of Dār al-fonūn were unfortunately constrained by adverse circumstances but were revived with the founding of the University of Tehran in 1935. This was true for the discipline of botany as well, the revival of which owes a great deal to the efforts of Aḥmad Pārsā, whose research, published in Persian and French, provided the systematic morphologic and floristic tools for botanical study in Persia. In addition to his main work, *Flore de l'Iran (la Perse)*, his studies on *Plants of Northern Iran* (2 vols., Tehran, 1938-39) and *Taxonomy of Plants* (3 vols., Tehran, 1952, 1955-56) should also be mentioned. The books that were published in rapid sequence by the University of Tehran after the war provided a general, reliable, and extensive corpus of information. Under its auspices were also published the general phytography (*Gīāh-šenāsī: Tašrīḥ-e 'omūmī-e nabātāt*, Tehran, 1949) by Ḥabīb-Allāh Ṭābetī and the principles of phytology (*Gīā: Rāhnemā-ye gīāhī*, Tehran, 1961) by Ḥosayn Gol-e Golāb, as well as the arboreal botany (*Jangal-šenāsī*, Tehran, 1948) by Karīm Sā'ī. The latter contains larger compendiae of Persian and Latin botanical names in the floral lists of different woodtypes. Persian botanical names are also listed in the work of 'Alī Zargarī about medicinal plants. Lastly should be mentioned the *Botanical Dictionary* by Esmā'īl Zāhedī.

These examples of botanical textbook literature illustrate the successful endeavor to introduce modern botany into Persia. More or less associated with this process is the research carried out by individual scholars. The development and literature of Persian research has been discussed by Wolfgang Frey and Wilfried Probst (below). This section mainly deals with the current scientific publications by the University of Tehran and younger universities like the University of Shiraz, because they provide a picture of the progress made within a few decades.

The effective improvement of a scientific Persian nomenclature of plants may



provide the decisive support for further development of botanical research in Persia and, in the long run, provide for the use of simple Persian terms as genus names, eventually employing the Persian designation of the species as the equivalents of the scientific binary Latin names. This kind of scientific nomenclature, combined with the vernacular language, has long been developed in Europe and has contributed a great deal to the spread of independent observation of nature in various strata of the society (Hummel, 1974).

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