

Turkey as a source of garden plants, by John H. Harvey

The age of deliberate botanical exploration began, as Miss Alice Coats tells us,¹ with the travels of Pierre Belon in the Levant in 1546-48. Belon did not collect seeds or living specimens, but his observations in the Ottoman Empire opened the way for the first major wave of exotic plants to the west. Another notable pioneer, the Imperial ambassador Ogier Ghiselin de Busbecq, was in Turkey from 1554 to 1562.² Busbecq, members of his suite, and merchants encouraged by the success of his mission, were responsible for the sudden flood of species which reached Vienna, Antwerp, Paris and London. Busbecq also re-discovered the magnificently illustrated manuscript of Dioscorides which, thanks to him, became the Codex Vindobonensis and the key to identification of the classical flora.

The plants brought from Turkey and placed on the European market were almost entirely sorts already in cultivation. They were not, as most subsequent introductions have been, found in the wild, but were already improved by centuries of culture, grafting, or accidental hybridisation. Most of this, apart from a trickle of species that had found their way from China with the caravans on the Silk Road, was the result of Muslim gardening over a long period.³ Besides translating the works of ancient Greek science into Arabic, the Islamic conquerors became adept in the skilled technique of horticulture and in a special type of garden design, with pools and canals of water, pavilions and plots of trees and flowers bordered with aromatic shrubs and herbs.⁴ Some glimpses of this world had already been vouchsafed to western pilgrims and crusaders from the eleventh century onwards. Contacts through the Normans settled in Sicily and by way of Spain had brought the rudiments of walled garden, pool and pavilion to France, England and the Low Countries. Thus the garden idea had preceded most of the cultivated flora by several hundred years.⁵

Considered from the viewpoint of plantsmanship the question is: just what plants could be found in the gardens of Constantinople and the other royal cities of the Ottomans: Adrianople and Brusa, Manisa and Smyrna? By a process of deduction, based on the species known to have been introduced, we can be sure that before 1600 the West had derived from or through Turkey the great bulbs: Crown Imperial, Hyacinth, Lilium candidum var. cernuum, L. chalcedonicum, Muscari moschatum, various Narcissi and Tulip; the brilliant Anemones, Carnation, Iris pallida and I. susiana, Love-in-a-Mist, Ranunculus asiaticus; and the shrubs Cherry Laurel, Lilac and Syringa (Philadelphus coronarius), and the Oleaster (Elaeagnus angustifolia). At earlier but unknown dates we had received the Oriental Plane tree, the Black Mulberry and, indirectly, the Walnut; Hollyhock, White Jasmine, Scarlet Lychnis, 'Female' Peony and Opium Poppy. Within another generation there had been added the Horse Chestnut, Cloth of Gold Crocus, Galanthus plicatus, Byzantine Gladiolus, Day Lily, Purple Primrose (Primula acaulis rubra = P. sibthorpii) and the Sweet Sultan.

Even then the tale of our indebtedness was not told: soon after 1650 we had the Cedar of Lebanon; Sir George Wheler sent us Hypericum calycinum in 1676; the Weeping Willow arrived in 1692. We had the Oriental Poppy by 1714 and Arbutus andrachne ten years later. Under Sultan Ahmad III (1703-1730) Turkey became the floricultural centre of the western world, his reign famous as the Lale Devri (Tulip Period). The sultan's tulip fields in a summer pasture high in the Sipylus Range above Manisa are still remembered, and there may be significance in the fact that the great botanist William Sherard (1659-1728)

was British Consul at Smyrna (only some twenty-five miles from Manisa) from 1703 to 1716. Sherard's garden at his country home in Seydiköy ('Sedekio'), a few miles south of Smyrna near the Ephesus road, must have played a part in the transmission of plants to his brother James in England and to other botanists. In 1735 we got the Turkey Oak, later in the century Daphne pontica and, in 1793, Rhododendron luteum (Azalea pontica). R. ponticum had come thirty years earlier, but by way of Gibraltar. Within the last hundred years or so Anatolia has again yielded a splendid harvest: Galanthus Elwesii in 1874, Chionodoxa luciliae found by George Maw in 1877, Crocus ancycensis in 1879, and several of the best dwarf iris, from Iris Bakeriana of 1887 to I. histrio aintabensis of 1934.

Little is known of the records at the sending end, of the history of gardening in Turkey. It might be supposed that the horticulture of the Ottoman sultans after 1453 would owe a great deal to the practice of their Byzantine predecessors and thus ultimately to classical Greece and Rome. This seems doubtful, at any rate in regard to the species grown. The tulip, so distinctive a feature of Oriental and Turkish art, is not depicted in antecedent Byzantine work of Constantinople. On the contrary, both the character of Turkish gardens and the kinds of plants found in them, indicate an eastern derivation from Persia and a common Islamic tradition involving also the Central Asiatic Turkish dynasties who ruled in Bokhara and Samarkand and who, in the person of Babur, were to take over Afghanistan and India. We have to remember that the Moguls were not Mongols but Turks, speaking and writing Turkish.

From Babur's own journal a short list of trees and flowers which he particularly appreciated can be compiled.⁷ It includes some twenty-five fruits, as well as those which he met for the first time in India: the forest trees cypress, elm, holm oak, plane, poplar and willow; Judas-tree, oleander and rose among ornamental shrubs; and clover, jasmine, narcissus, screw-pine (Pandanus tectorius), tulip and violet as garden plants.⁸ He refers to colocynth, madder, rhubarb and sugar-cane as in cultivation, and mentions that his ancestor Tamerlane (A.D. 1369-1405) had formed at Samarkand gardens, including a garden with plane trees, and an avenue of white poplar; he himself planted gardens wherever he went.

Babur expressly states that he had various species planted and that he introduced plants from afar, notably sugar-cane and the banana to Kabul in 1523 and 1524.¹⁰ He writes of cuttings of the sour cherry (alubalu, Prunus cerasus);¹¹ and of plane and tal, possibly the handsome ivy, Hedera colchica = Pastuchowii.¹² These he set in 1519 above a large round seat in his garden at Khwaja Sih-yaran, which he had already planted round with willows in 1505 soon after his capture of Kabul.¹³ At Agra he had melons and grapevines planted in 1526 and was eating ripe fruit in 1529.¹⁴ He expressly states of the pleasure ground at Agra that 'plots of garden were laid out with order and symmetry, with suitable borders and parterres in every corner, and in every border rose and narcissus in perfect arrangement'.¹⁵

On 10 February 1529 he wrote from India to his lieutenant in Kabul, Khwaja Kalan, giving orders among much else for work to continue on a garden at Khwaja Basta, where he had already brought water to a reservoir and planted young trees. 'The place got the name of Belvedere (nazar-gah), because it faces the ford and gives a first-rate view. The best of young trees must be planted there, lawns arranged, and borders set with sweet-herbs and with flowers of beautiful colour and scent.'¹⁶ The mention of outlook is signifi-

cant of Babur's attitude to landscape, and his aesthetic reactions are also revealed by his sensitivity to autumn colour. On a visit to his famous Bagh-i-wafa (Garden of Fidelity) on 14 October 1519 he noted that 'those were the days of the garden's beauty; its lawns were one sheet of trefoil; its pomegranate trees yellowed to autumn splendour, their fruit full red; fruit on the orange trees green and glad'. Five days later, on the way to Quruq-sai, he noticed 'a few poplar trees in the utmost autumn beauty'.¹⁷ Even in the middle of November he was able to rest from a journey 'in a garden beautiful with autumn' and on the 16th he visited 'the Bagh-i-padshahi below Astar-gach. One young apple-tree in it had turned an admirable autumn-colour; on each branch were left five or six leaves in regular array; it was such that no painter trying to depict it could have equalled'.¹⁸

It may be of importance to Babur's career as a garden designer that he had visited Herat in the winter of 1506, and spent forty days on seeing the sights. Among those enumerated are at least ten gardens as well as the Gazur-gah Avenue, the Lily-house, and Kahad-stan, described as a meadow.¹⁹ Herat was a centre of culture - 'so refined a town' in Babur's phrase - and it was at Herat during the next few years that one of the few surviving manuals of gardening was compiled, by Qasim ibn Yusuf Abu Nasri Haravi. Although called Irshad az-zara'ah, A Treatise on Husbandry, the book, dated to 1515, is of far wider scope. It includes for the first time, as Mr R.H. Pinder-Wilson has pointed out, a 'categorical mention of flower beds' and directions for the layout of a chahar bagh and its central pavilion.²⁰ Qasim's book has thus some claim to be the earliest work on landscape gardening, but it also lists the species of plants to be grown, and indicates their appropriate associations with each other.

Mr Pinder-Wilson has reconstructed the schematic plan of the garden, with water channels and a central pool. The four plots were planted with fruit trees: peach, pear, pomegranate and quince, set amid clover lawns and with borders of camomile (or marigolds?), lilies and roses. The garden was enclosed within a row of poplars, then a surrounding bed of 'lilies' (probably species of iris) between water channels. Inside these were apricots, peaches and roses, while around the pavilion were grapevine, cherries, Judas-trees or other leguminous shrubs, mulberries and apples, with cucumbers at the base of the pavilion, presumably for shelter. Between pavilion and pool were garden plots divided into nine beds. For each bed Qasim suggested a grouping of different species, mostly including a flowering tree or shrub, and smaller bulbous or herbaceous plants: hundred-leaved rose with a 'lily', colchicum and violets; roses with narcissus and saffron crocus; 'yellow Judas-tree' and 'blue jasmine'²¹ (very likely Persian Lilac), with yellow violet, tulip and mauve stock. Another bed was to have yellow jasmine, rose of six months, Madonna Lily (zanbaq), water-lily, carnation, 'Lemon Lily' (probably a *Hemerocallis*), and Hibiscus rosa-sinensis.²² Qasim's book, a substantial volume of 284 pages in the printed edition, stands in need of full elucidation. Meanwhile, the plants listed, so far as they are identifiable, are included in the Appendix.

Formal gardens such as these were spread over the whole Islamic world, and would have been as much at home in Istanbul as at Kabul, Herat, Agra or Granada. The choice of species grown was relatively small and differed according to climate and accidents of distribution. In Istanbul there seems to have been a cult of florists' flowers, for it is even stated that the gardeners were concerned to grow and sell only the rose, carnation, tulip, hya-

cinth, daffodil (zerrin kadehi), jonquil and cyclamen, considering 'all others as simple wild flowers of the field'. The narcissus was regarded as the king of garden flowers, and the first known specialist was Ebusuud Efendi (died 1574), grand mufti under Süleyman the Magnificent for twenty-two years. Two centuries later there were yellow and white varieties from his garden at Karaağaç, still known by his name.²³

It is from about this period that the first trickle of information from original documents begins; much must still remain to be discovered in the vast resources of the Turkish public records.²⁴ A remarkable series of texts from specimen papers bearing upon all aspects of Turkish social life from A.D. 1553 to 1840 was published in romanised Turkish by the great historian Ahmet Refik Altınay in four volumes issued in 1930-35.²⁵ Among these are several orders by the sultans for plants for the palace gardens at Istanbul and Edirne. Unfortunately discrepancies between different editions of Refik's books and the inaccessibility of some of them outside Turkey, leave doubt as to the details and even date of the first record quoted by Arthur Baker in his classic paper on the tulip. This is said to have been an order from Selim II in 1574 for 50,000 (tulip) bulbs to be sent by the 'sheriff' of Aziz, within the treasurership of Aleppo. The place is Azez, now in Syria,²⁶ 7 km south of the Turkish frontier on the road from Kilis to Aleppo. The same statement,²⁷ as to date and essentials, is made elsewhere, but of the 'cadi' of Aziz. Baker states that he was quoting from an edition in romanised Turkish of c. 1930, yet the first romanised edition is said to be that of 1935, too late to have been used by Baker for his article published in 1931. This edition does not print any order for bulbs from Selim II, but on the contrary one from Murad III of May 1579, commanding that 500,000 (not 50,000) hyacinth (sunbul) bulbs should be sent by the Bey of 'Uzeyr', payment being made through the treasury of Aleppo. 'Uzeyr' is unknown and seems undoubtedly to be a misreading of the Arabic letters of Aziz.²⁸ In regard to the uncertainty between tulip and hyacinth, the Arabic word sunbul (in modern Turkish sümbül, the hyacinth) is used also of the tulip, and originally stood for Indian spikenard (Nardostachys jatamansi). Whatever the facts, the enormous numbers of bulbs to be collected have an obvious bearing upon the rarity or extinction in the wild of certain parent species.

The remaining orders for plants printed by Refik are: one of November 1587 for rose trees to be sent from Edirne (Adrianople); one of May 1593 for 50,000 white and 50,000 blue hyacinth bulbs from Maraş (the colours give a clear indication that true hyacinths are meant in this case); of September that year for rose trees to be sent to the gardens at Edirne by weight, 400 kantar of red roses and 300 kantar of pure white roses. The Turkish kantar was about 125 lb avoirdupois or over a hundredweight, so the whole order amounted to nearly 40 tons of rose trees. The remaining orders are of the eighteenth century and relate to trees: in 1735 the Palace Gardens at Istanbul were to have 4,000 young trees sent from Izmit, comprising ash, elm, Judas-tree, laurel, lime, mahaleb, oak, wild pear, plane and terebinth. For the gardens at Kara Ağaç beside Edirne, ten years later, 5,000 trees were to be provided, also from Izmit. The species were to include arbutus, ash, elm, hornbeam, lime, oak, plane 'and the like'.²⁹ The tree nurseries by this time established at Izmit must have been extensive and varied.

From these archival sources we return to the single Turkish horticultural treatise so far published, the Revnak'i Bostan (Beauty of the Garden) of Sahibülreis Elhaç Ibrahim ibnülhac Mehmet, a practical gardener, written in

A.H. 1070 (A.D. 1660). This survived in manuscript in the Esad Efendi collection of the Süleymaniye Mosque Library (no. 1019) until its publication by Hadiye Tunçer in 1961.³⁰ It is a small book of some fifty printed pages of original text, in six sections: Soils, Tree planting, Pruning and Grafting, Diseases and their treatment, Kitchen and Flower Garden, Fruit. Like the Spanish Moors Ibn Bassal and Ibn al-'Awwam five or six centuries before and Qasim at Herat, Ibrahim worked systematically through a list of plants, specifying particular methods of culture. Among his tips for dealing with pests are the suggestion of sowing mustard around the garden to repel insects, and the use of ashes of oak wood to kill cockchafer grubs.³¹ These were presumably procedures based on personal experience, but some curious and unlikely recipes are given among the otherwise practical directions.

The Rose is to be planted from August on until the middle of winter. It may be increased by division of roots and by cuttings. Like the olive and fig it dislikes fresh manure, but if grown in hard soil this must be softened with old manure. The rose should be given as much water as possible, being a thirsty plant. If a rose bud is put in an earthen pot, the mouth tied up very tightly and the pot buried in the ground, then it can later be taken out at any time and, on being placed in water, opens at once. Alternatively the bud can be cut off with a stem and put inside a hollow cane, the two ends stopped with mud; after leaving it for a long time it can still be opened and the cane filled up with lukewarm water, when the rose will open.³²

The Carnation is grown from seed, but the European varieties should be planted as roots in spring and autumn, or cuttings taken only in autumn. Some grape-must or old manure should first be worked into the soil. The ground must not be hard or trampled, but always well worked. Cuttings should be taken so that three leaves are left; the cutting is set in a hole scooped with the hand and then carefully filled up, leaving the three leaves exposed but cutting off their tips. Roots or cuttings should be planted out or in pots after Nevruz (the Persian spring festival on 22 March) when there are no more frosts. The soil must be kept moist and never allowed to dry out completely. If the weather becomes dry in May, the plants should be watered every second day, taking care not to over-water so that the soil becomes sticky like clay. The carnation dislikes cold winds and if kept in a pot inside the house it must only be put in places where there is no tobacco smoke, and brought out into the sun from time to time. But so long as there is no cold weather or frost it does better outdoors. If carnation seed is sown in the pod, with the pod head downwards, the plants will have double flowers.³³

Lilies (zanbak) may be planted at any time, but best in autumn. They grow large in black soil and like soft ground but cannot bear manure. If the bulbs are taken up when the rains begin at the end of August, and dried in the sun, they will increase after planting. A lily of a purple colour can be had by taking up the bulb with the stem after flowering, tying several together, and smoking them with tobacco smoke for some time. The bulbs should then be put into grape-must until they turn crimson and when planted grape juice should be mixed with the soil.³⁴

Hyacinths (sunbul), trumpet daffodils and suchlike bulbous rooted flowers should be planted on top of tiles, brickdust and lime mortar, or rubble from old buildings, to prevent moles and worms from getting at the bulbs. By this means the bulbs gain in strength and increase. Violets should be planted with three roots together to form a clump. Flowers which do not open because of the cold in winter should have manure put beneath the roots,

and be protected with a box or wickerwork cover like a basket. When the weather improves these should be opened to give sufficient air, and in any case the top must be opened every third day and the plants exposed to the sun.³⁵

Ibrahim's list includes sixty species, half of them fruits; a dozen forest and ornamental trees and shrubs, a dozen vegetables and economic plants; the flowers carnation, hollyhock, hyacinth, lily, narcissus, saffron crocus and violet make up the total. Jasmine, Judas-tree, rose and sweet briar (or perhaps Musk Rose), and presumptively the *Althea Frutex* (Hibiscus syriacus, lumped in along with the Hollyhock in the term hadmi), were shrubs grown for their flowers. Ibrahim does not name either cyclamen or tulip, though as mentioned above, sunbul may have included all cultivated bulbs other than narcissus, rather than the hyacinth alone. The Turkish nomenclature is a knotty problem. Many of the names of 1660 are Persian, and some of them can be traced back to earlier dates in the same sense. Others, however, changed their sense with time, or in crossing a frontier. The true lilies (genus *Lilium*) have been zambak in Turkish since the sixteenth century, though often called susan in Arabic, and thence azucena in Spanish. Yet the original word zanbaq had stood for jasmine, as sunbul for spikenard. Ibrahim used syup (Persian sib) for apple, interchangeably with the Turkish word elma. These Persian usages, and the mention of the Persian festival Nevruz (see Carnation, above) may mean that Ibrahim based his treatise upon some Iranian source or sources.

By a curious accident of history it has been possible for M. Paul Wittek to trace the Turkish version of violet (modern menekshe) back to the sixteenth century. In the later Middle Ages the Greek castle of Monovasia or Monembasia ('one way in') in the Peloponnese was held by the Venetians, who surrendered it to the Turks in 1540. It had already been renamed, in the famous manual of navigation by the Turkish admiral Piri Reis of 1525, Cape 'Benefshe', i.e. the cape of violets, adopting the Persian word. In 1540 the name was officially altered from Monavasya to Menefshe, the earlier Turkish form for violet. In 1589-90 the Moroccan ambassador to Sultan Murad III touched at Monemvasia on his journeys to and from Istanbul, and explained the name, by then Menekshe, as being because 'the place is full of violets'.³⁶

The books of flower paintings and lists of named varieties of florists' flowers, quoted by Baker and by Ünver,³⁷ are evidence for the extensive cultivation by the early seventeenth century at any rate, of Anemones, Ranunculi and Tulips as well as Hyacinths and Narcissi. Turkish poems are full of references to hyacinths, roses, violets, less frequently to cypress, jasmine, narcissus and tulip; occasionally to lilac.³⁸ The tulip, at least the word lala, occurs in the Turkic verse of the Chagatay Husayn Baygara in a manuscript copied by 1495, but just how wide was the botanical scope of the word is quite uncertain.³⁹ In Herat in 1515 Qasim explains that 'wild' and 'garden' laleh were really anemones, shaqayq al-nu'man (the former were probably Ranunculus asiaticus); but he then goes on to enumerate bulbous laleh, some of which were true tulips, though laleh kakli seems from his description to mean the crown imperial.

In retrospect we can see that the Muslim Middle East, from India to the Balkans, preceded western Europe in the development of highly sophisticated gardening. A keen interest in landscape, in autumn colour, in the grouping of plants, was being displayed by Turkish princes and by their gardeners long before such ideas formed any part of our horticultural currency. On the other hand, European scientific curiosity and technical invention, building largely

on the foundations laid by Persian and Arabic civilisation, began to catch up with the ancient East in the sixteenth century. Within a hundred years it was the West that led the way. But it was the work of the previous millenium by eastern scholars, explorers and craftsmen that had in great measure made western advances possible. In the special field of plantsmanship a great deal of our methods, and many of our most important plants, are due to the patronage of Turkish princes and to the master gardeners who served them.

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Notes

- ¹ A.M. Coats, The Quest for Plants (1969), 11-13.
- ² The Turkish Letters of Ogier Ghiselin de Busbecq, tr. E.S. Forster (Oxford 1927/1968).
- ³ See B. Laufer, Sino-Iranica (Field Museum of Natural History, Publication 201, Anthropological Series, XV No. 3, Chicago, 1919); and for gardening by the Moors in Spain, J.H. Harvey in Garden History, III, 1, Autumn 1974, 7-8; III, 2, Spring 1975, 10-21.
- ⁴ D.N. Wilber, Persian Gardens and Garden Pavilions (Rutland, Vermont, and Tokyo, 1962); J. Dickie, "The Hispano-Arab Garden: its Philosophy and Function", in Bulletin of the School of Oriental and African Studies, XXXI (1968), 237-48; and "The Islamic Garden in Spain", in 4th Dumbarton Oaks Colloquium, The Islamic Garden (Washington 1976), 87-105.
- ⁵ See J. Harvey, The Mediaeval Architect (1972), 59-67; and Early Nurserymen (1975), 15-16, 33-4.
- ⁶ A. Baker, "The Cult of the Tulip in Turkey", in Journal of the Royal Horticultural Society, LVI (1931), 240-1.

- 7 The Babur-Nama in English, tr. A.S. Beveridge (1922/1969).
- 8 Ibid., 5, 81, 209, 216-17, 398-9, 414, 514-15, 532, 580, 610, and see Index.
- 9 Ibid., 78.
- 10 Ibid., 208; cf. 203, 504.
- 11 Ibid., 203.
- 12 Ibid., 398; for tal, see H. Sabeti, Native and Exotic Trees and Shrubs of Iran (Teheran 1966), 176 no. 397.
- 13 Babur-Nama ..., 216-17.
- 14 Ibid., 686.
- 15 Ibid., 532.
- 16 Ibid., 647.
- 17 Ibid., 414.
- 18 Ibid., 418.
- 19 Ibid., 300-6.
- 20 R.H. Pinder-Wilson, "The Persian Garden: Bagh and Chahar Bagh", in 4th Dumbarton Oaks Colloquium, The Islamic Garden (1976), 71-85; I am greatly indebted to Mr Pinder-Wilson for his kindness in allowing me to see his account of Qasim's treatise before publication. The modern edition of Qasim is by Muhammad Mushiri, ed., Irshad az-zara'ah (Teheran 1346/1967-8).
- 21 The 'blue jasmine' was presumably Syringa persica, formerly known as Persian Jasmine, though really a lilac. The 'yellow Judas-tree' was noted by Babur growing alongside Cercis siliquastrum, a native plant in Persia, Afghanistan and Baluchistan (Babur-Nama ..., 217); it was possibly Astragalus parrowianus, as this has the Persian name gavan-i-zard (yellow gavan), very close to Qasim's arghavan-i-zard (H. Sabeti, Trees and Shrubs of Iran, 45 no. 114; cf. Irshad az-zara'ah, 281). Qasim (p. 221) describes the shabbuy as having an 'indigo-coloured' flower, which indicates that he was using the term only for the mauve stock, Matthiola (as his editor Mushiri points out). In modern Persian shabbuy, like its Turkish derivative şebboy, stands also for the wallflower, Cheiranthus, as khiri does in Arabic, and the derived alhelí in Spanish. Qasim (200, 281) refers also to flowers which he calls shab-bi-dustan, 'an evening with friends', which may be night-scented stock (Matthiola bicornis). Al-Biruni, writing his Book on Pharmacy and Materia Medica (Karachi 1973) in A.D. 1050, gave the Persian names for khiri as shab bogan or shab bautan, and remarks that the wallflower (including the stock) 'is very fragrant at night' (141, 151 note 51). Shab-buy itself means literally 'night-scented'.

- 22 'Rose of Six Months' is strongly suggestive of Rosa chinensis; zanbaq here (as the derived zambak in modern Turkish since c. 1550) stands for a Lilium, as Qasim (p. 217) describes it as bulbous (thus not the rhizomatous Iris florentina suggested by Mushiri, p. 307) and as having two varieties, one the common (i.e. L. candidum) and the other the colour of a Seville Orange (probably L. chalcedonicum). Gul-i-qaranfil, the 'Clove Rose', is undoubtedly the carnation (Dianthus caryophyllus), not the spice-bearing clove-tree (Caryophyllus aromaticus, as Mushiri, p. 310); the 'Lemon Lily' was very likely Hemerocallis flava.
- 23 S. Ünver, "The Narcissus in the History of Flowers in Turkey", in Royal Horticultural Society, The Daffodil and Tulip Year Book, No. 33, 1968, 67-8.
- 24 For the Turkish records see B. Lewis in Archives, IV no. 24, 1960, 226-30; and on the registers of the Sublime Porte, Tahsin Öz, Arsiv Kilavuzu (Istanbul 1938, 1940), a subject catalogue. 263 volumes of registers of Public Affairs (Mühimme Defteri) exist for the period 1553-1883, while there are some 50,000 bound registers in the Archives of the Office of the Prime Minister, as well as several millions of individual papers, mostly as yet uncatalogued. Cf. Midhat Sertoğlu, Muhteva Bakimindan Başvekalet Arşivi (Ankara 1955), a classification of Ottoman archives.
- 25 Ahmet Refik (Altınay), Istanbul hayati ('The Life of Istanbul'), (i) 1553-1591 (2nd ed., 1935); (ii) A.H. 1000-1100=A.D. 1592-1688 (1931); (iii) 1100-1200=1689-1785 (1930); (iv) 1200-1255=1786-1840 (1935). The first edition of (i) was published in Arabic script in 1915, but I have not been able to obtain access to a copy. My special thanks go to Mr Philip Waley and Dr Geoffrey L. Lewis for their trouble in attempting to trace this book.
- 26 Dr G.L. Lewis concludes that this must be the place named as Aziz (or by some mistranscription 'Uzeyr') in Refik's book; no other place of similar name is known within the region served by the treasurer of Aleppo.
- 27 A. Stratton, Sinan (1972), 219.
- 28 Owing to the normal Arabic system of writing without vowels, there is no apparent difference between the initials A and U, or between 'ey' and 'i'; Z is changed to R by the mere omission of a dot.
- 29 A. Refik, Istanbul hayati, (i) p. 6 no. 14, p. 12 no. 29; (ii), p. 3 no. 6, p. 9 no. 17; (iii) p. 133 no. 161, p. 160 no. 193.
- 30 Revnak'i Bostan, edited with a version in modern Turkish by H. Tunçer (Ankara, Tarım Bakanlığı, Müteferrik Neşriyat Serisi 1-2, 1961).
- 31 Ibid., 35.
- 32 Ibid., 36.
- 33 Ibid., 90-1.

³⁴ Ibid., 34.

³⁵ Ibid., 37.

³⁶ P. Wittek, "The Castle of Violets: from Greek Monemvasia to Turkish Menekshe", in Bulletin of the School of Oriental Studies, XX, 1957, 601-13. I owe this reference to the kindness of Dr G.L. Lewis.

³⁷ See above, notes 6 and 23.

³⁸ Lilac is mentioned in the ballads of Karacaođlan (died 1679), but much less often than roses, hyacinths and violets.

³⁹ J. Eckmann, Chagatay Manual (Indiana University: Bloomington 1966), 18, 265-6.

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Appendix: Plants cultivated in Iran and Turkey by c. A.D. 1600

No contemporary list of plants grown in Turkey in the period 1550-1650 seems so far to have been published, and it is necessary to compile a presumptive list from several sources. It has been assumed that most plants in cultivation in Iran, and at Herat (now in Afghanistan), were also known in Turkish gardens. The principal sources used are as follows:-

(1) Plants stated or clearly implied to have been in cultivation in A.D. 1050 by Al-Biruni in his Book on Pharmacy and Materia Medica (Karachi 1973) - here printed in CAPITALS.

(2) Plants mentioned by Babur as in cultivation in the temperate part of his dominions, c. A.D. 1505-1530 (The Babur-Nama in English, 1922/1969) - here marked B.

(3) Plants named in the Irshad az-zara^Cah of A.D. 1515 by Qasim ibn Yusuf of Herat, and identified by his editor M. Mushiri (Teheran 1967/68), with some emendations; here marked I.

(4) Plants, normally cultivated in vegetable, flower or physic gardens, and in plantations and orchards, found in the Pharmacopoeia Persica (Paris 1681) based upon Shifa^Ci's Medicine of c. A.D. 1600; here marked P.

(5) The plants mentioned as cultivated in Turkey in Revnak'i Bostan by Ibrahim ibnülhaç Mehmet, of A.D. 1660; marked R.

Besides the plants here printed in CAPITALS, other plants given Persian names by Al-Biruni are assumed to have been in cultivation by 1600, as well as plants known to have been introduced from Turkey to western Europe before 1650. Plants in italics, in addition to those in CAPITALS, are mentioned by Al-Biruni.

Scientific names are in most cases according to the Royal Horticultural Society's Dictionary of Gardening, 1956/1965. The spelling of Arabic, Persian and Turkish names is in accordance with the authorities used, and is not

necessarily consistent. Some names are obsolete. Names supplied in parenthesis () are those normally used at the present day but have not been found in early sources used for this list.

<u>English</u>	<u>Arabic</u>	<u>Persian</u>	<u>Turkish</u>	<u>Scientific</u>	<u>Sources</u>
FRUITS AND NUTS					
ALMOND	lawz	bādām	badem	<u>Prunus communis</u>	BIPR
APPLE	tuffah	sīb, sayb	elma, syüp	<u>Malus pumila</u>	BIPR
APRICOT	mishmish	zardālū	kayisi	<u>Prunus armeniaca</u>	BIPR
Azarole	za ^c rūr	(zālzālk)	aliç	<u>Crataegus azarolus</u>	R
BANANA	mawz	(mūz)	muz	<u>Musa paradisiaca</u>	B
<u>Barberry</u>	ambarbāris	zark, zirkash, dhirishk	(amberberis)	<u>Berberis vulgaris</u>	IP
BRAMBLE	^c ullīq	aldār, aldīr	(böğürtlen)	<u>Rubus fruticosus</u>	
<u>Carob</u>	khurnūb	zang falj, kharrub	(harnup, keçi boynuzu)	<u>Ceratonia siliqua</u>	P
CHERRY	qarāsiyā, zilm	gīlās, gulnar	kiraz	<u>Prunus avium</u> &c	BI R
<u>Chestnut</u>	qastal	shāh bullūt	kestane, sahi pellūt	<u>Castanea sativa</u>	PR
<u>Citron</u>	utrunj	badrang, turunj	(ağaçkavunu)	<u>Citrus medica</u>	B PR
Date	nakhli	khurmā	(hurma)	<u>Phoenix dactylifera</u>	BI
Date-plum	(kākī)	(kalhū)	qara-yimish	<u>Diospyros lotus</u>	B
FIG	tīn	anjīr	incir	<u>Ficus carica</u>	BIPR
GRAPE	^c inab khumrī	āngūr	üzüm	<u>Vitis vinifera</u>	BIPR
<u>Hazelnut</u>	bunduq	funduq	findik	<u>Corylus avellana</u>	IPR
JUJUBE	sidr	^c unnāb	ünnap, sinjid	<u>Zizyphus jujuba</u>	BIPR
<u>Lemon</u>	līmū	(līmū)	limon	<u>Citrus limonia</u>	B PR
<u>Medlar</u>	zu ^c rūr	(āzgīl)	döngel	<u>Mespilus germanica</u>	R
<u>Melon</u>	shimmām	dastambūyah, kharbozeh	dölek	<u>Cucumis melo</u>	BIPR
MORELLO	(ghwashna)	ālūbālū	vişne	<u>Prunus cerasus</u>	BI R
MULBERRY	tūth	tūt, shah tūt	dut	<u>Morus nigra</u> &c	BIPR
OLIVE	zaytūn	zītūn	zeytūn	<u>Olea europaea</u>	BIPR

<u>English</u>	<u>Arabic</u>	<u>Persian</u>	<u>Turkish</u>	<u>Scientific</u>	<u>Sources</u>
ORANGE	nāranj	nāranj	turunc	<u>Citrus aurantium</u>	B PR
<u>Peach</u>	nilk	shaftal	şefdalü	<u>Prunus persica</u>	BIPR
Nectarine	(ladhīdh, rahiqi)	shalīl	(tüysüz şeftali)		I
<u>Pear</u>	kumathrā	amrūd	emrud	<u>Pyrus communis</u>	BIPR
<u>Pistachio</u>	fustuq	fistiql	fisdik	<u>Pistacia vera</u>	BIPR
PLUM	ijjās	(ālū)	erik	<u>Prunus domestica</u>	B PR
Pomegranate	rummān	ānār	nar-rumman	<u>Punica granatum</u>	BIPR
<u>Quince</u>	safarjal	beh, raywandī	ayva	<u>Cydonia oblonga</u>	BIPR
<u>Sebesten</u>	dibq	sipistān, (ānbū)	(sebestan)	<u>Cordia myxa</u>	P
<u>Service</u>	ghubairā	silsilbak	üvez	<u>Sorbus domestica</u>	PR
Wild		(bār ānak)	berakine	<u>S. torminalis</u>	R
TEREBINTH	^C ilk al-nabāt	jakak	çitlenbik	<u>Pistacia terebinthus</u>	P
<u>Walnut</u>	jauz	gauz, jauz	cevizi rumi	<u>Juglans regia</u>	BIPR
Water Melon	sandhī	hendovāneh	karpuz	<u>Citrullus vulgaris</u>	BI R
<u>Winter Cherry</u>	^C inab al-thalab	rubā razah, purdah-i- ^C ārūsk	güvey- feneri	<u>Physalis alkekengi</u>	IP

FOREST AND ORNAMENTAL TREES AND SHRUBS

<u>Acacia</u>	umm ghaylān	kirit	(akasya)	<u>Acacia arabica</u>	P
Althaea	khatmī	khatmī-i- khiṭa ^C i	(hadmi)	<u>Hibiscus syriacus</u>	IPR
Arbutus	(qatlab)	(tūt frengi)	kocayemişi	<u>Arbutus unedo</u>	
<u>Ash</u>	dardār	banjashk zuban	dişbudak	<u>Fraxinus spp.</u>	P
(Azarole)	see Fruit Trees				
<u>Bamboo</u>	tabāshīr	(khīzarān)	(bambu)	<u>Bambusa arundinacea</u>	P
<u>Bay</u>	ghār	chubghār, dahmast	tefne	<u>Laurus nobilis</u>	P
<u>Box</u>	shamshād	shimshād	chamshir	<u>Buxus sp.</u>	I
(Chestnut)	see Fruit Trees				
<u>Cypress</u>	sarw	sarw	servi	<u>Cupressus semper- virens</u>	BI
<u>Elm</u>	būqīşār	(nārvān)	kara Ÿgaç	<u>Ulmus spp.</u>	B

<u>English</u>	<u>Arabic</u>	<u>Persian</u>	<u>Turkish</u>	<u>Scientific</u>	<u>Sources</u>
Hawthorn	^c iddat	(valik)	(akdiken)	<u>Crataegus</u> spp.	P
Hibiscus		<u>khatmī-i-chini</u>		<u>Hibiscus rosa-sinensis</u>	I
Hornbeam	(nir)	(mamraz)	gürgen	<u>Carpinus betulus</u>	
<u>Ivy</u>	lablāb	nawij, ^c ushaq pīchān	?tāl	<u>Hedera</u> spp.	BIP
JASMINE, WHITE	yāsamin	yāsaman	yasemin	<u>Jasminum officinale</u>	BI R
JASMINE, YELLOW	rāzqī	yāsaman- i-zard	(sari yasemin)	<u>J. fruticans</u>	I
<u>Judas-tree</u>	urjuwān	argawān	erguvan	<u>Cercis siliquastrum</u>	BI R
<u>Juniper</u>	^c ar ^c ar	^c ar ^c ar	ar ar	<u>Juniperus</u> spp.	I R
Laureole	khadrā	(<u>ghār farfiūnī</u>)		<u>Daphne laureola</u>	P
LAVENDER	<u>khuzāmā</u>	gul-i-navmah	(lāvanda)	<u>Lavandula</u> spp.	P
Lilac	(līlak)	(yās)	leylāk	<u>Syringa vulgaris</u>	
Lilac, Persian		yāsaman- i-kabūd		<u>Syringa persica</u>	I
Linden	(zīzfūn)	(namdār)	ihlamur	<u>Tilia</u> spp.	
<u>Mahaleb</u>	maḥlab	(maḥlab)	idris	<u>Prunus mahaleb</u>	P
<u>Mezereon</u>	māzariyūn	(haftbarg)	(mazaryon)	<u>Daphne mezereum</u>	P
MYRTLE	ās	mürd	(mersin)	<u>Myrtus communis</u>	IP
Oak				<u>Quercus</u> spp.	PR
Holm	ballūt	balūt	? ak pellūt	<u>Q. infectoria</u>	B
Oleander	diflā	<u>kharzahrieh</u>	(zakkum)	<u>Nerium oleander</u>	BI
Oleaster	(^c utum)	sinjid	(iğde)	<u>Elaeagnus angustifolia</u>	I
<u>Pine</u>	šanaubar	<u>chilghūzah</u>	jīlghūza, sanavber	<u>Pinus</u> spp.	PR
PLANE	dulb	<u>chunār,</u> <u>chenar</u>	çinar	<u>Platanus orientalis</u>	BI R
Poplar	şafşaf	safidār, sapaydar	kavak	<u>Populus</u> spp.	BI R
Privet	(faghīā)	mindār ^c heh	(kurtbağri)	<u>Ligustrum</u> spp.	P
ROSE	ward	gul	gül	<u>Rosa</u> spp.	BIPR
Musk	(ward al-misk)	nastaran		<u>R. moschata</u>	I
Yellow		zard şadbarg		<u>R. hemisphaerica</u>	I

<u>English</u>	<u>Arabic</u>	<u>Persian</u>	<u>Turkish</u>	<u>Scientific</u>	<u>Sources</u>
Rosemary	hasālbān	(rūmāran)	(biberiye)	<u>Rosmarinus officinalis</u>	P
RUE	sadhāb, fayjan	sadhāb	(sedef)	<u>Ruta graveolens</u>	P
<u>Savin</u>	abhul	burūs, wurs		<u>Juniperus sabina</u>	P
Savory (Service)	sa ^c tar	(mirzeh)	(geyik otu, zater otu)	<u>Satureia</u> spp.	P
<u>Tutsan</u> (Walnut)	hyūfāriqun	marw-i- dashti	(siraca otu)	<u>Hypericum androsaemum</u>	P
WILLOW	khilāf	bīd, mishkbīd	sögüt	<u>Salix</u> spp.	BIPR
FLOWERS AND HERBS					
<u>Agrimony</u>	ghāfat, ghafith	gul rūghan kah	(kasik otu)	<u>Agrimonia eupatoria</u>	IP
Amaranth	(al-daysam)	bostān afrūz	(lita)	<u>Amaranthus</u> spp.	I
Ammi, Bishop's-weed	nānakhwah	nagh ^h nakhwalān		<u>Ammi copticum</u>	P
ANEMONE	shaqayq al- nu ^c man	lālā, lāleh baghī	(Manise lalesi)	<u>Anemone coronaria</u> &c	IP
<u>Anise</u>	anīsūn	bādiyān-i- rumi	(anason)	<u>Pimpinella anisum</u>	IP
<u>Asarabacca</u>	asārūn	(esārūn shāmī)	(çobandüdüğü)	<u>Asarum europaeum</u>	P
<u>Balm</u>	(rihān awhābaq turanjānī)	bādranjbüyeh	oğulotu	<u>Melissa officinalis</u>	IP
<u>Basil</u>	rayhān	shāhsafaram	(reyhan)	<u>Ocimum basilicum</u>	IP
Bellflower, Blue	(zahr al-jars)	(gul-i- astakānī)	(çançiçeği)	<u>Campanula</u> sp.	P
Borage	(abū al- rashih)	(marmakhuz)	(hodan) ?	<u>Borago</u> , spp.	P
Bugloss	lisān al-thawr	gul gāv-zabān	(siğir dili)	? <u>Trachystemon orien- talis</u> ? <u>Caccinia macranthera</u>	IP
CAMOMILE	bābunaj	kāfurī, hamīsheh bahar-i- sefid	(papatya)	<u>Anthemis nobilis</u>	IP
<u>Caraway</u>	karuyā	karāwīyeh, shahzīrah	(keraviye)	<u>Carum carvi</u>	IP

<u>English</u>	<u>Arabic</u>	<u>Persian</u>	<u>Turkish</u>	<u>Scientific</u>	<u>Sources</u>
Carnation	(qarunful)	gul-i-qaranfil	karanfil	<u>Dianthus caryophyllus</u>	I R
<u>Centaury</u>	qantūriyūn	(? gharaz)	(kantaryon)	<u>Centaureum erythraea</u>	P
<u>Chicory</u>	talkhashūq	tālkin, hamīsheh bahar-i-kabūd	(hindiba)	<u>Cichorium intybus</u>	IP
Clary (Clover)	see Economic Plants, below			<u>Salvia sclarea</u>	P
Cockscomb	(^c urf al-dīk)	bostān afrūz, ? <u>chaman</u> afrūz	(horoz ibiği ciceği)	<u>Celosia cristata</u>	I
COLCHICUM	sūranjān, jaghuzab	sūrnajān, la ^c bat barbari, asāb ^c i hirmis	(itboğan)	<u>Colchicum</u> spp.	I
<u>Colocynth</u>	hanzal	hanzal, kabast	ebucehil karpuzu	<u>Citrullus colocynthis</u>	BIPR
Convolvulus	(nabātāt al-matsalifa)	? ^c ushaq pīchan labjū'i	(kahkaha çiçeği, boru çiçeği)	<u>Convolvulus tricolor</u>	IP
CORIANDER	kuzbarah	gashniz, kashniz	kişniş	<u>Coriandrum sativum</u>	IP
Crown Imperial		? laleh kākli	"tusai", (tuğu şahi)	<u>Fritillaria imperialis</u>	I
CUMIN	kammūn	zīreh	kimyon,	<u>Cuminum cyminum</u>	IP
<u>Cyclamen</u>	^c artanīthā	bakhūr-i- mariyam	(tavşan- kulağı)	<u>Cyclamen</u> spp.	P
<u>Persian</u>	qalād	balāl	(buhuru- meryem)	<u>C. persicum</u>	P
<u>Dandelion</u>	shajarah al-tais	gul kāsni	(kara- hindiba)	<u>Taraxacum officinale</u>	I
Day Lily	sawsan āsfar	? sūsan limū'i	(gün çiçeği)	<u>Hemerocallis</u> spp.	I
DILL	shabath shibthth	shiwit, shiwidh	(dereotu)	<u>Peucedanum</u> <u>graveolens</u>	IP
ELECAMPANE	jathjath, rāsin	rasin	(andizotu)	<u>Inula helenium</u>	P

<u>English</u>	<u>Arabic</u>	<u>Persian</u>	<u>Turkish</u>	<u>Scientific</u>	<u>Sources</u>
<u>Fennel</u>	bisbās, razyanaj	rāziyām, raziyana	(rezene, sirra)	<u>Foeniculum vulgare</u>	IP
(Fenugreek)	see Vegetables and Salads, below				
FORGET-ME-NOT	adhān al-fār	(gul marāfaramūsh makan)	(unutmabeni)	<u>Myosotis alpestris</u> &c	
FUMITORY	shāhtaraj	shāhtaraj	(şahtere)	<u>Fumaria officinalis</u> &c	P
<u>Gentian</u>	jintiyānah, kaff' al-dhi'b	kushad, jurmaqān	(centiyana)	<u>Gentiana lutea</u> &c	P
<u>Germander</u>	kamadhāryūs	(ārpeh)	(yer meşesi)	<u>Teucrium chamaedrys</u>	P
<u>Gum Ammoniac</u>	ushghaq, washaq	(balshar)	çadir uşağı	<u>Dorema ammoniacum</u>	R
<u>Hellebore,</u> Black	kharbaq	khirbaq, dari borbaq	(çöpleme)	<u>Helleborus niger</u>	P
Hellebore, White	kharbaq al-abyad, kandas	khirbaq- i-abyad	(ak çöpleme)	<u>Veratrum album</u>	P
Henbane	banj	gawz māthil	(banotu)	<u>Hyoscyamus niger</u>	P
<u>Hollyhock</u>	khitmī	gul khatmī, khayru	hadmi	<u>Althaea rosea</u>	IPR
Horehound	farāsiyūn, sūf al-ard	(farāsiyūn)	(bozotu)	<u>Marrubium vulgare</u>	P
Hyacinth	(sunbul)	sunbul	sūnbül	<u>Hyacinthus orientalis</u>	IPR
Hyacinth Grape			muscharumi	<u>Muscari botryoides</u>	
HYSSOP	zūfā'	zūfā	(çördük)	<u>Hyssopus officinalis</u>	P
<u>Iris</u>	sawsan, dalāl	sūsan ilchī sūsan	susan	<u>Iris</u> spp. ? <u>I. persica</u>	IP I
Leopard's Bane	darūnaj	darunāk	durunaj	<u>Doronicum</u> spp.	P
Lily	(zanbaq, sawsan)	zanbaq	zanbak	<u>Lilium candidum</u> &c	IPR
Lovage	kāshim	(anjadān- i-rumī)	(selâm otu)	<u>Levisticum officinale</u>	P
Maidenhair	sha ^c ar al-jiyād	parsiya washān	(baldiri- kara)	<u>Adiantum capillus- veneris</u>	P
MALLOW	mallūkiyah, khubbazi	panirak	(ebegüm- eci)	<u>Malva</u> spp.	
<u>Mandrake</u>	luffāh	sābizaj, sābizak	(adamotu, kankurutan)	<u>Mandragora officinarum</u>	P

<u>English</u>	<u>Arabic</u>	<u>Persian</u>	<u>Turkish</u>	<u>Scientific</u>	<u>Sources</u>
Marigold	ādhariyūn	hamīsheh bahar	(kadife çiçeği)	<u>Calendula officinalis</u>	I
MARJORAM	ša ^c tar	ūwīshan		<u>Origanum maru</u> &c	P
MARJORAM, SWEET	marw	marmāhūz	(merzengūş)	<u>O. majorana</u>	P
MARSHMALLOW	khitmī	? khirūjeh	(hatmi)	<u>Althaea officinalis</u>	P
MELILOT	hindqūqā, iklīl al-malik	deosapast, dar shāh	(kokulu yonca)	<u>Melilotus</u> spp.	P
MINT	fawtanaj, na ^c na	pūdnah	(nane)	<u>Mentha</u> spp.	IP
MUGWORT	mārjawaih	(mār chawbah)		<u>Artemisia vulgaris</u>	
<u>Mullein</u>	būsīn	būsīr	(siğir kuyruğu)	<u>Verbascum thapsus</u>	P
NARCISSUS (Nigella)	narjis see Economic Plants, below	narges	zerrin	<u>Narcissus</u> spp.	BIPR
<u>Nightshade</u> (Parsley)	^c inab al- tha ^c lab see Vegetables, below	rubā razah, rūzbāraj	(itūzūmü)	<u>Solanum nigrum</u>	P
<u>Pellitory of Spain</u>	^c aqīr qarhā'	tarakhūn	(ūdūlkurh)	<u>Anacyclus pyrethrum</u>	P
<u>Pennyroyal</u>	fawtanaj	pūdneh	(yarpuz)	<u>Mentha pulegium</u>	P
<u>Peony</u>	fāwāniyā, ud-i-salib	shaqā ^c eq	(şakayik)	<u>Paeonia</u> spp.	P
<u>Poly Mountain</u>	ja ^c dah	(marīm nakhūdī)		<u>Teucrium polium</u>	P
<u>Polypody</u>	thāqib al- hajar, basbāyaj	baspāyak		<u>Polypodium vulgare</u>	P
POPPY	khashkhāsh	khashkhāsh, koknar	(haşhaş)	<u>Papaver somniferum</u> &c	IP
Field	nārkiwā	shaqāyq	(gelincik)	<u>P. rhoeas</u>	IP
Horned	mamīthā, al-halut al-rīh	(mamīthā)		<u>Glaucium</u> spp.	P
Ranunculus	kabījak	? laleh kūhī	Trablus katmer lâle	<u>Ranunculus asiaticus</u>	I
Rocket, Sweet	(kashā)	? benefshe kūhī		<u>Hesperis matronalis</u>	I

<u>English</u>	<u>Arabic</u>	<u>Persian</u>	<u>Turkish</u>	<u>Scientific</u>	<u>Sources</u>
(Rose)	see	Forest Trees etc.			
(Rosemary)	see	Forest Trees etc.			
(Saffron)	see	Economic Plants, below			
<u>Screw-pine</u>	kāzī	armat	armat	<u>Pandanus tectorius</u>	B
Soapwort	ṣābūniyah	ṣābūnī	(çöven)	<u>Saponaria officinalis</u>	IP
SOUTHERNWOOD	shīh	dirannah	(karapeli-notu)	<u>Artemisia abrotanum</u>	P
<u>Squills</u>	ishqīl, unsul	piyāz mūsh	(ada-soğani)	<u>Urginea maritima</u>	P
<u>Stock</u>	todhrī	shabbuy, madhrabu	(şebboy)	<u>Matthiola incana</u>	I
<u>Swallowwort</u>	māmīrān, uruq al-sabgh	māmīrān	(kirlangiç-otu)	<u>Chelidonium majus</u>	P
Sweet Sultan	(zahra al-manbar)	? nafirmān	(peygamber çiçeği)	<u>Centaurea moschata</u>	I
Tarragon	andam	talkhān, tarkhun	(tarhun)	<u>Artemisia dracunculus</u>	I
THYME	nammām	sīsambar	(kekik)	<u>Thymus spp.</u>	P
Tulip	(sunbul)	laleh	lâle	<u>Tulipa spp.</u>	BIP
<u>Valerian</u>	fu, nārdīn	(sunbul)	(kediotu)	<u>Valeriana spp.</u>	P
Vervain	fastāriyūn	(gawmashang)	(mine-çiçeği)	<u>Verbena spp.</u>	P
<u>Violet</u>	banafsaj	benafsheh	benefşe, menefşe	<u>Viola odorata</u>	BIP
<u>Wallflower</u>	khīrī	shab bautān, ? shab bi-dustan	(şebboy)	<u>Cheiranthus cheiri</u>	I
Water Lily	urūs	nīlufār	(nilüfer)	<u>Nymphaea alba</u> &c	IP
Wormwood	afsantīn	marwah	(pelin)	<u>Artemisia absinthium</u>	P

VEGETABLES AND SALADS

ALEXANDERS	(karafs-i-abalī)	karafs-i-abalī	(mürbuy)	<u>Smyrniun olusatrum</u>	
<u>Artichoke</u>	harshaf	kangar	(enginar)	<u>Cynara scolymus</u>	P
<u>Asafoetida</u>	anjudhan	anqudān	(şeytan boku)	<u>Ferula asafoetida</u>	P

<u>English</u>	<u>Arabic</u>	<u>Persian</u>	<u>Turkish</u>	<u>Scientific</u>	<u>Sources</u>
ASPARAGUS	halyūn	mārchūbah	(kuş- konmaz)	<u>Asparagus officinalis</u>	P
Bean, Broad	bāqillā	bāqlā	(bakla)	<u>Vicia faba</u>	IP
Kidney	lūbyā	rāzhmūk, lūbiyā	(fasulya) ?	<u>Dolichos lablab</u>	I
Mungo	jullabān	māsh	(maş)	<u>Phaseolus mungo</u>	IP
BEET	silq	chughundar, sarbāh	(pancar)	<u>Beta vulgaris</u>	IP
CABBAGE	kurunb	karam	(lāhana)	<u>Brassica oleracea</u>	IPR
CARROT	jazar	jazar, gazar	(havuç)	<u>Daucus carota</u>	IP
CELERY	karafs	karafs juīni	(kereviz)	<u>Apium graveolens</u>	P
CHICKPEA	himmaş	nokhūd	nohut	<u>Cicer arietinum</u>	IPR
(Chicory)	see Flowers				
CRESS	jarjīr	kakiz, terah tīzak	(tere)	<u>Lepidium sativum</u>	IP
CUCUMBER	khiyār	khiyār-i- bāzrang	(hiyar)	<u>Cucumis sativus</u>	IPR
<u>Egg-plant</u>	bādhinjān	maghd, bādenjān	(patlican)	<u>Solanum melongena</u>	I
<u>Endive</u>	hindabā'	hindabā', mak talkhah	(andilya)	<u>Cichorium spp.</u>	P
<u>Fenugreek</u>	hulbah	shimlīt, shanbalīleh, hulbah	(boyotu)	<u>Trigonella foenum- graecum</u>	IP
<u>Garlic</u>	thūm	sīr	(sarmisak)	<u>Allium sativum</u>	I
Gourd,	see Pumpkin				
LEEK	kurrāth	gandanā	(pirasa)	<u>Allium (ampeloprasum) porrum</u>	IP
LENTIL	^c adas	narsak, ^c adas	(mercimek)	<u>Lens esculenta</u>	IP
Lettuce	(khas)	kāhū	marul	<u>Lactuca sativa</u>	IPR
<u>Lupin</u>	turmus	bāqillā- i-misrī	(aci bakla)	<u>Lupinus termis</u>	IP
(Mustard)	see Economic Plants, below				
(Nigella)	see Economic Plants				

<u>English</u>	<u>Arabic</u>	<u>Persian</u>	<u>Turkish</u>	<u>Scientific</u>	<u>Sources</u>
Onion	(baṣāl)	pīāz	(soğan)	<u>Allium cepa</u>	IP
<u>Parsley</u>	maqḍūnis, (baqḍūnas)	(ja ^c fari)	(maydanoz)	<u>Petroselinum crispum</u>	P
<u>Pea</u>	biṣallah, shātil	sātil, rūshnak	(bezelye)	<u>Pisum sativum</u>	P
Pumpkin	(qar ^c a)	kadu	(helvacı kabağı)	<u>Cucurbita pepo</u>	IPR
<u>Purslane</u>	farfakh, baqla hamqa'	(khurfeh)	(semizotu)	<u>Portulaca oleracea</u>	P
<u>Radish</u>	fujl	turub	turp	<u>Raphanus sativus</u>	IPR
<u>Rape</u>	(shaljam ul-fat)	salgham qamri	(kolza nebatı)	<u>Brassica napus</u>	P
Rocket	jarjār, jirjir)	jarjār, jarjir	(roka)	<u>Eruca sativa</u>	P
<u>Secacul</u>	jazar-i- aqliti	shaqāqul		<u>Pastinaca dissecta</u>	P
SORREL	humḡad al-bustāni	shih	(kuzukulağı)	<u>Rumex acetosa</u>	P
Spinach	(isbanaj, isfanaj)	esfenaj, isfanaj	(ispanak)	<u>Spinacia oleracea</u>	IP
TURNIP	lift, shaljam	shalgham shaljam	(şalgam)	<u>Brassica campestris</u>	I R
<u>Watercress</u>	jarjir	bakā	(suteresi)	<u>Rorippa nasturtium- aquaticum</u>	P

ECONOMIC PLANTS

Caper	usf, kabar	kabar	gebere	<u>Capparis spinosa</u>	IPR
<u>Castor-oil plant</u>	khirwa ^c	bīd-i- anjir, karchak	(gene otu, beydencir)	<u>Ricinus communis</u>	I
CHUFA	su ^c d		taparqāq	<u>Cyperus rotundus</u>	
<u>Clover</u>	nafal, shabdhar	sehbarga, shabdar	yūrunchqā, (yonca)	<u>Trifolium</u> spp.	BIP
<u>Cotton</u>	tūt, qutn	panbeh, juzqeh	(pamuk)	<u>Gossypium herbaceum</u>	I
Flax	(kittān)	katān, badhrak	(keten)	<u>Linum</u> spp.	IP

<u>English</u>	<u>Arabic</u>	<u>Persian</u>	<u>Turkish</u>	<u>Scientific</u>	<u>Sources</u>
HEMP	shāhdhānaj	shāh-dāneh	(kenevir)	<u>Cannabis indica</u>	I
<u>Henna</u>	hinna	hanna	(kina)	<u>Lawsonia inermis</u>	I
INDIGO	^c izlim	nīl	(çivit)	<u>Indigofera tinctoria</u>	IP
<u>Liquorice</u>	sūs	dazah washk, (bikh-i-mahk)	shīrīn, meyan bali, arak sus	<u>Glycyrrhiza glabra</u>	PR
Lucerne	(rutbah)	sabast, yunjeh	(yonca)	<u>Medicago sativa</u>	IP
MADDER	fuwah al- sabbaghīn	rūniyās, ruyin, rawdang	(fuvve)	<u>Rubia tinctorum</u>	BI
Mustard	khardal	ispandān- i-khush	hardal	<u>Sinapis alba</u>	PR
Pepper, Black	filfil	felfel	(biber)	<u>Piper nigrum</u>	IP
<u>Nigella</u>	shīnīz	siyāhdāneh, shunīz, bughanj	(çöreotu)	<u>Nigella sativa</u>	IP
<u>Rhubarb</u>	rewand	riwāj	rawāsh, (ravend)	<u>Rheum rhaponticum</u>	BIP
SAFFLOWER	^c asfur, ^c usfur	isparag	aspur	<u>Carthamus tinctorius</u>	IP
SAFFRON	za ^c farān	jafrān, kājīreh	zafran	<u>Crocus sativus</u>	IPR
Sainfoin	(sinna)	sehbargeh	(evliya- otu)	<u>Onobrychis viciifolia</u>	I
<u>Sesame</u>	simsim	kunjad	(susam)	<u>Sesamum indicum</u>	IP
<u>Sugar-cane</u>	qasab al- sukhar	neishakar	(şeker kamişi)	<u>Saccharum officinarum</u>	BI
<u>Sumach</u>	summaq	tatrat, summaq	(sopak)	<u>Rhus coriaria</u>	IP
<u>Vetch</u>	karsanah, (^c udāisa)	karsanah, (māshak)	(bakla)	<u>Vicia ervila</u>	P
<u>Woad</u>	wasma	wasmeh	(çivit otu)	<u>Isatis tinctoria</u>	I

In addition several varieties of each of the cereals Barley, Millet, Rice and Wheat were grown.

A note on varieties

The sources are seldom clear as to the number of sorts (species or

varieties) of any given plant in cultivation. But in several cases a wide range of forms was available. By the eleventh century the Rose was both single and double, in the colours white, yellow, deep red and 'black' as well as pink, and there were also musk roses and briars. In 1515 at Herat some fifteen kinds are named. Myrtles had existed in variety for a long time, and the shrubs Althea Frutex, Jasmine and Oleander were grown in more than one colour form. Anemones had been grown in different colours since remote antiquity, and by the sixteenth century there were not less than five recognised sorts of Carnation, twelve of Hollyhock, three or four of Iris, two of Lily, many of Narcissus, half a dozen of Poppy, several of Ranunculus and (?) Sweet Sultan, and about a dozen of Wallflower and Stock together. The Sweet Violet was listed under the five heads of Common, Blue, Double, Red-purple and White, in addition to the Yellow Violet which was presumably another species. All this clearly implies centuries of expert cultivation and selection.

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Postscript

That the Turks brought a new and improved style of gardening is implied by the descriptions in the History of Mehmed the Conqueror by Kritovoulos, a contemporary account. About 1452, before the capture of Constantinople, the Sultan completed a palace at Adrianople and: "Around it he planted gardens decked with all sorts of shrubs and domestic trees bearing beautiful fruit. In these gardens he put various kinds of domestic and wild animals and flocks of birds..." After the conquest of the City in 1453 he began the Topkapi Palace for himself, and ordered his chief courtiers to build themselves grand houses. His commander-in-chief, Mahmud, built a mosque, food-kitchens for the poor, inns and baths, and also "planted gardens with trees bearing all sorts of fruit for the delectation and happiness and use of many, and gave them an abundant water supply". Finally, by about 1465, the pleasure grounds around the Topkapi Palace were completed: "Around the palace were constructed very large and lovely gardens abounding in various sorts of plants and trees, producing beautiful fruit. And there were abundant supplies of water flowing everywhere, cold and clear and drinkable, and conspicuous and beautiful groves and meadows. Besides that, there were flocks of birds, both domesticated fowls and song-birds, twittering and chattering all around, and many sorts of animals, tame and wild, feeding there".*

* Kritovoulos, History of Mehmed the Conqueror, tr. Charles T. Riggs (Princeton, 1954/Westport, Conn., 1970), pp. 22, 141, 208.

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