The first in a two-part series

Treasures of Turkey



A renowned plantsman looks at the rich flora of this fabled land

by JIM ARCHIBALD

IN A FEW PARTS OF THE WORLD, circumstances of the remote past have combined to result in regional floras of incredible variety. As long as these are preserved, they will stimulate botanical investigation and provide a seemingly inexhaustible source of exciting plants for gardeners. Some such areas are California, Chile, southern Africa, and Turkey. All encompass many climates

and have complicated land surfaces, which have not only enabled ancient plants to survive in specialized niches but have encouraged new ones to develop. Turkey is a center of diversity for many groups of horticultural interest—Astragalus (372 species), Crocus (32), Cyclamen (10), Fritillaria (31), Linum (38), Salvia (86), Verbascum (228), and many attractive small genera such as

Aethionema, Ebenus, Glaucium, and Hyacinthella. For several years, my wife, Jenny, and I spent most of our summers traveling through this friendly and beautiful land to search for some of its special plants, photograph them, press dried specimens, and collect seeds in the hope that more of them could be established in cultivation.

GEOGRAPHY AND WOODY FLORA

Asiatic Turkey, or Anatolia, stretches over 300 miles from north to south, and almost 1,000 miles east to west from the Dardanelles to the borders of Iraq, Iran, and Armenia. It lies at around the same latitudes as a section from New York to Kansas City, or, more appropriately, from San Francisco to Denver. Rimmed by mountain ranges rising to over 13,000 feet, it can provide plants suited to conditions in almost all parts of North America. Turkey may be considered a Mediterranean country, but its mountains rise so abruptly from the sea that only a narrow strip is occupied by a typical Mediterranean association of pines (Pinus brutia and P. pinea) and oaks with a scrub of cistus, myrtle, pistacia, and juniper (Juniperus oxycedrus). Here and there are some populations of trees with more distant links. Maple-like Liquidambar orientalis has its relatives in the Chinese L. formosana and the North American sweet gum (L. styraciflua). Turkish snowbell trees (Styrax officinalis) do not differ much from the Californian population, and the privetlike ash relative Fontanesia phillyreoides crops up again in China with little change. Climbing rapidly to around 3,000 feet in the Taurus range, which runs for 500 miles along the south coast, Crimean pines (P. nigra var. caramanica) and several other junipers appear. There are fine forests of cedars (Cedrus libani) often mixed with silver firs (Abies cilicica).

SOUTHWESTERN TURKEY AND THE TAURUS MOUNTAINS Just as the ancient Greeks influenced the cultures of Caria, Lycia, and Pamphylia, kingdoms now commemorated in the names of their plants, so the flowers of the Aegean have a foothold in southwestern Turkey. Cyclamen graecum and many others are shared with the adjacent Greek islands, but there are also exclusive species like pink, autumn-flowering C. mirabile and C. trochopteranthum, with its distinct, honey-scented, carmine-pink flowers. In spring, the western mountains are splashed with purple Aubrieta deltoidea, parent of the cultivated forms, and there is a confusing profusion of different crocuses, including the parents of the widely grown Crocus chrysanthus hybrids. On one or two mountains, high up among the last of the cedars and pines, grow the beautiful, little, blue-flowered bulbs, the chionodoxas (Chionodoxa luciliae, C. forbesii, and C. sardensis), but there are probably more of these in gardens now than in the wild. Here and there, there are small yellow fritillaries (Fritillaria carica and others), scarlet tulips (Tulipa armena var. lycica), and white ornithogalums, to be followed by muscari and many fine herbaceous perennials, such as Thalictrum orientale, about one foot high and summer dormant, with petaloid flowers in white to deep lilac. Especially local are the plants of the limestone crevices of the Taurus. Woolly yellow Ajuga bombycina, pink Geranium glaberrimum, and the tiny, silvered, azure-blue alkannas challenge the expert cultivator, but the dwarf Verbascum dumulosum is more amenable. With its low mounds of felted foliage and short yellow spikes, it is one of the finest dry stone-wall plants. In nature, it is only known from the isolated hilltop ruins of Termessus, a city Alexander the Great did not trouble to conquer on his eastward march. Last time I visited, I could find no trace of it. A desire to tidy this spectacular archaeological site had resulted in the enthusiastic use of herbicide. Fortunately, the Madonna lilies (*Lilium candidum*) had survived.

Moving along the Cilician Taurus, there is an increasingly Levantine influence until in the Amanus Mountains, which turn south at right angles to the main range. Some plants are shared only with Syria and Lebanon. The elegant, glaucous yellow-green bells of *Fritillaria alfredae* appear here, as does tiny, pale blue, bulbous *Iris histrio*. Sumptuous, magenta, chocolate-blotched *Cyclamen pseudibericum* only grows here. Among the oak scrub on the crests of the hills are colonies of the extraordinary, summer-dormant *Helleborus vesicarius*. Unlike any other hellebore, this produces huge, inflated seed capsules that dry to fragile parchment balloons before they break off in the breeze, blowing up from the sea, to sail toward Gaziantep and the Syrian Desert.

NORTHERN TURKEY

In the north, Turkey borders the Black Sea. The climate here is wet. Tea and hazelnuts are grown on the terraced hillsides, and the wild plants come from the north and west. Dense deciduous forests of beech (Fagus orientalis) with oaks, maples, ash, and sweet chestnut clothe the steep slopes of the Pontus foothills. There is often a lush undergrowth of cherry laurel (Prunus laurocerasus) and largeleaved ivy (Hedera colchica), with evergreen Daphne pontica and many ferns, such as Pteris cretica and Asplenium scolopendrium. A multitude of plants familiar to gardeners in moist, temperate areas grow here. In early spring, near the coast, there is purple Iris lazica with its clumps of broad, glossy foliage. Unlike its Mediterranean cousin, I. unguicularis, it loves the stony, acid clay of our wet Welsh garden, and flowers all winter. On woodland banks there are primroses in lilac to magenta-pink shades (Primula vulgaris subsp. sibthorpii), carmine Cyclamen coum, and snowdrops (Galanthus rizehensis and G. ikariae). The hellebores (Helleborus orientalis), ancestors of most of the garden hybrids, are usually green-flushed whites and creams, occasionally with a pinkish tinge. In the west the influence is Balkan, with speckled martagon lilies and purple Clematis viticella, but toward the east new plants occur. Purest blue Omphalodes cappadocica grows along the woodland margins, and in a few places there is the distinct relic Primula megaseifolia. Many such species are shared with adjacent Georgia and Abkhazia.

This is the land of the Turkish rhododendrons and lilies, where the vegetation resembles that of the Pacific Northwest or southwestern China. It was the ancient kingdom of Colchis, from which Jason carried off the golden fleece and the princess Medea. It remains quite a remote area, where the brown bears roam through dense forests of spruce (*Picea orientalis*), fir (*Abies nordmanniana*), birch

(Betula medwediewii), and rowan (Sorbus subfusca). In fall, the hill-sides flame briefly with the dying leaves of the deciduous yellow azalea (Rhododendron luteum) and the magnificent, eight-foothigh Vaccinium arctostaphylos. The other Turkish rhododendrons are evergreen. In high, open sites or in frost pockets where the widespread, lower-altitude R. ponticum has been seared off by the cold, pink R. smirnovii predominates. In the thick, soft, white felt that clothes its young shoots and lower leaf surfaces, it recalls R. yakushimanum. Also hardier than R. ponticum is R. ungernii, but this prefers more humid areas or more shade. Although these

species produce natural hybrids, in its purest forms *R. ungernii* is most distinct, with very large leaves, and trusses of broad, pure white bells produced after all the others, in July. Growing well above the timberline, at up to 10,000 feet, creamy white *R. caucasicum* forms dense, low thickets.

HARDY TURKISH PERENNIALS

Gardeners in the Northeast, where cold winters and humid summers restrict plant choice, might find inspiration in some entirely natural plant associations in the mountain woodlands of this corner of Turkey. In shade, the early-flowering, big-leaved borages—lilac-blue *Trachystemon orientalis*, sky-blue and pink *Symphytum asperum*, and rich blue *Brunnera macrophylla*—create a solidly impressive groundcover. The leafy, three-foot sages, violet *Salvia forsskaolii* and pale yellow *S. glutinosa*, might gently enliven the summer. In woodland openings and subalpine meadows, the massed, soft lavender blues of *Campanula lactiflora* back blackeyed, intense magenta *Geranium psilostemon* and occasional blueand-white columbines (*Aquilegia olympica*). Along streams, the huge, long-rayed, brassy yellow daisies of *Telekia speciosa* jostle



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with the imperial purple bells of *Campanula latifolia*. The lilies grow at these middle altitudes. Here and there in the woods above Trabzon are purple-centered, yellow *Lilium ciliatum* and sweetly scented, sulphur *L. monadelphum* var. *armenum*. Up near the Georgian border is the stunning, creamy *L. kesselringianum*. Smaller *L. ponticum*, varying from speckled butter yellow to orange, occasionally almost all suffused with chocolate, is most numerous above the timberline. Often it grows in the high, steeply sloping hay meadows to be backbreakingly scythed by teams of men in late summer. The hay is a rich herbaceous mixture with white anemones (*A. narcissiflora*), pink bisort (*Persicaria bistorta* subsp. *carnea*) and masterwort (*Astrantia maxima*), lavender-blue scabious (*Scabiosa caucasica*), and rich violet-blue cranesbills (*Geranium ibericum*). After the hay is cut, the big, rosy purple goblets of *Colchicum speciosum* push through.

FROM DIFFICULT TO EASY

Some of the plants of the alpine turf are difficult to grow anywhere in cultivation. Few gardeners have cultivated creamy white Daphne glomerata, egg-yolk yellow, autumn-flowering Crocus scharojanii, or tiny pink Cyclamen parviflorum. The white-powdered, cool lavender-blue, high alpine Primula longipes verges on the impossible. On the cold cliffs and on tussocks in the meltwater streams of a few mountaintops, it grows with its roots in freezing water to remind it of the last ice age, when perhaps it and the other aristocratic nivalid primroses were more numer-

Finding inspiration in the plants

of Turkey is easy enough; finding the plants themselves can be more of a challenge. But it's simply a matter of knowing where to look. Most plant societies keep seed lists of unusual plants—one of the benefits of membership is access to the society's yearly seed exchange. The North American Rock Garden Society is a good source of Turkish plants, and their seed list is available for review at their Web site, www.nargs.org. Plant hunters themselves are also a good source for hard-to-find plants, and, happily, many maintain catalogs, Web sites, and mailing lists. For instance, Jim Archibald himself keeps a seed catalog (www.JJAseeds.com). For those willing to look around a bit—it's no hike through the Taurus—the plants of Turkey are there for the planting.—Meghan Lynch

For more suggestions of specialty seed and bulb catalogs, visit **www.hortmag.com**.

Further Reading

The Explorer's Garden

Daniel J. Hinkley Timber Press, 1999

The Plant Hunter's Garden

Bobby J. Ward Timber Press, 2004 (See review on page 76)

Naturalist in Western China

E. H. Wilson Everyman Publishers, 1987

Plants from the Edge of the World

Mark Flanagan and Tony Kirkham Timber Press, 2005

Growing Bulbs

Martyn Rix Timber Press, 1989

ous than today. Maybe a gardener in Alaska might grow them one day. Its companion, the red-purple to violet oxlip, *P. amoena*, is more growable in cool climates. Of course, not all the local plants are difficult. The dainty orange poppy *Papaver lateritium*, though restricted in nature, is an easy garden perennial. More widespread on drier slopes, ivory *Campanula alliariifolia* and spiny, silvery *Eryngium giganteum* can almost be considered aggressive in some gardens.

THE CORUH RIVER VALLEY

Amid all this luxuriance, there is a Mediterranean enclave in the deep, dry valley of the Coruh River. Olives are grown near the valley bottom and there are smoke bushes (*Cotinus coggygria*) on the slopes. *Origanum rotundiflorum*, an excellent garden plant with heads of drooping, greenish cream bracts, grows here and there in a confusion of beautiful white campanulas, centered on *C. betulifolia*, exclusive to the igneous cliffs of the Coruh drainage. *Campanula troegerae* has flat, wide-open flowers and grayish toothed leaves, which are shared by *C. corihensis*, whose big, pink-flushed flowers are more conventionally bell-shaped. Here is the last outpost of the hardy *Pelargonium endlicherianum*, whose flowers have two large, butterflylike, carmine petals. This is widespread across central Anatolia, but the larger, Kurdish *P. quercetorum* grows only among the oak-scrub of the southeast. Their nearest relatives grow thousands of miles away in the Cape of South Africa.

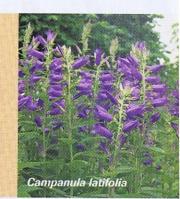
The second and concluding part of this article will appear in the May/June 2005 issue.

APRIL 2005



Hardy Perennials from Northern Turkey

The following Turkish plants have all proved to be first-class garden performers. All are hardy to at least USDA Zone 5.



At a Glance

Name	Height	Bloom Period	Description
Anemone narcissiflora	1–1.5 ft.	May-June	Variable flowers from white, pink, to pale yellow
Aquilegia olympica	2 ft.	June-July	Flowers have lovely purple spurs, with clear white inner petals
Astrantia maxima	1-2.5 ft.	June-July	Palmate leaves give rise to pinkish bracts; cultivars available in different shades
Brunnera macrophylla	1.5 ft.	April-July	Many cultivars are now available in a range of variegated leaves; small, clear blue flowers
Campanula lactiflora	3-5 ft.	June-Aug.	Flowers are opaque light blue to lilac blue on the species; a good naturalizer in shade or partial shade
Campanula latifolia	2.5-4.5 ft.	June-July	Wide trumpets of violet blue appear on a single spike or with axillary clusters
Geranium ibericum	1-1.5 ft.	July-Aug.	Clump-forming with overlapping and deeply-cut leaves; flower is bluish with purple veins
Geranium psilostemon	3-3.5 ft	June-Sept.	Flowers are a strong, clear magenta with dark center; grows best in cool summer climates
Lilium ciliatum	1-2 ft.	July	Nodding greenish yellow turks cap flowers with dark speckled throats
Lilium kesselringianum	2 ft.	May-June	Stalks give rise to 8 to 10 creamy to straw-yellow flowers with cinnamon interior spots
L. monadelphum var. armenum	1.5–3 ft.	May-June	Pale yellow, waxy flowers hang from this tall lily
Lilium ponticum	3-4 ft.	July	Primrose turks caps face downward and are stained with chocolate-black centers
Persicaria bistorta subsp. carnea	2 ft.	June-July	Narrow, spherical spikes of coral pink adorn this lovely plant
Salvia forsskaolii	2 ft.	July-Aug.	Deep, violet-blue flowers are marked with white streaks and yellow markings on the lower lip
Salvia glutinosa	3 ft.	July-Sept.	The pale yellow flowers and the lime-green calyces are sticky, which accounts for its specific name
Scabiosa caucasica	1-2 ft.	June-Sept.	A great cut flower and border perennial, best grown in dry sunny spots
Symphytum asperum	3-3.5 ft.	May-Aug.	Flowers often start out pink and later turn to blue or purple. Best in moist, deep, rich soil
Telekia speciosa	4-6 ft.	June-Aug.	Yellow-flowered composite that leaves behind lovely seedheads
Trachystemon orientalis	1-2 ft.	March-May	Flower stems with purpley blue flowers appear before the leaves; easily naturalized in moist shade

The second in a two-part series

Treasures of Turkey



Jim Archibald completes his tour with a look at Anatolian flora

by JIM ARCHIBALD

Turkey is a country rich in specialized environments that offer homes to an equally rich array of plants. Last month Horticulture explored a number of these botanical kingdoms; here we pick up where we left off, with Anatolia, the heart of the country and by far its largest geographic division.

A vast upland plateau with a severe continental climate, Anatolia is dry and fairly hot in summer and icy in winter. Its plants depend on winter snowfall for their moisture, sharing that characteristic with their counterparts across Iran into central Asia, Afghanistan, and western Pakistan.

These steppe plants represent a treasure trove of material for the

genuine dry garden. Once established, they need absolutely no irrigation in summer, and in mild, wet areas must be carefully protected from excessive moisture between midsummer and spring. Bulb frames, covered scree beds, and well-ventilated alpine houses all come into play here. Those fortunate enough to garden in dry climates with cold winters may succeed in growing them unprotected.

IN THE STATES

While experienced and knowledgeable steppe-gardeners are still few and plants not always easy to get, I'm convinced that a greater understanding and use of these valuable species is bound to come. There are many to choose from. A number have already been introduced to Colorado, Arizona, and New Mexico. In the Denver area, the enthusiasm of Panayoti Kelaidis of the Denver Botanic Gardens can be credited with the presence of the west Anatolian Salvia hypargeia in the garden center trade. Its whorls of lavender-blue flowers rise on two-foot stems above neat clumps of gray feltlike leaves. Tall campanulas are available, too, including the free-seeding Michauxia campanuloides, lilylike in its branching stems of white flowers. Prostrate, azure-blue Veronica liwanensis and its dwarfer cut-leaved cousin V. oltensis, both wispy denizens of basalt crevices, have proved to grow so vigorously in Colorado that they can be used as a groundcover.

And there are more. *Verbascum wiedaemannianum*, another plant of very limited distribution in north Anatolia, will grow readily in northern New Mexico, while the commercial forms of pink *Tulipa humilis*, a local plant in southern Turkey often sold as *T. pulchella* and *T. violacea*, set seed and naturalized freely in a garden in Littleton, Colorado. And an old friend of mine grew the notoriously recalcitrant Oncocyclus steppe irises in the chaparral of his Arizona ranch.

WELL-ADAPTED PLANTS

Many steppe plants have developed a distinctive low-mounded habit and sharp, stiff leaves, partly in response to the climate and partly to protect themselves against the countless sheep and goats grazing the near-barren countryside. The pink-flowered acantholimons—the spiny thrifts—are among the more numerous of these hedgehoghummocks. Many *Astragalus* adopt the same habit; I am particularly fond of members of the Hymenostegis Section, with dense, oblong, downy heads of purple, pink, or yellow flowers. Some of the genus *Ebenus* have similar silky heads of brilliant purple-pink flowers.

Most dwarf shrubs and perennials are not so well armed. Among the numerous sages, I especially like a woody, cut-leaved group that ranges from *Salvia potentillifolia* in the southwest to *S. rosifolia* near the Georgian border. Most are very local and almost all found only in Turkey. They vary in height, from mat-forming, lilac to pale yellow *S. caespitosa* to five-foot, shrubby *S. heldreichiana*, which boasts rich purple-blue flowers. Some of these are settling into cultivation. So too is *S. multicaulis*, a mat-forming sage whose stems are whorled with big calyces tinted the same purple as its small flowers. Large, bell-shaped, almost spurgelike greenishyellow calyces are a feature of the spectacular *S. kronenburgii*.

Borages contribute greatly to the rich plant life of the steppes. Onosmas are everywhere, many of them yellow-flowered biennials, while some of the perennial species can range into pinks and blues.

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(None of the latter rival the white *O. albo-roseum* we already have in gardens.) Two *Moltkia* species, deep blue *M. caerulea* and intense yellow *M. aurea*, are neat and colorful, but the truly showy borage of the steppes is stout *Arnebia densiflora*, whose crowded heads of large pale yellow flowers rise above clumps of bristly leaves on one-foot-tall stems.

It is possible to find some fine flaxes, particularly in the west, where *Linum hirsutum* subsp. *anatolicum* is the core plant. It varies considerably in height and habit, with color in the lilac and pink range. To the east *L. micronatum* also takes on many forms. Road building has favored the spread of the opportunist horned poppies; they thrive briefly on disturbed ground and come in a spectrum of colors from yellow and orange to the splendid black-blotched scarlet blossoms of *Glaucium grandiflorum*.

Beyond these basic groups of steppe plants, a number of memorable individualists are on regular display: the tight silvered cushions of white *Convolvulus compactus* and rose-pink *C. assyricus*; *Pterocephalus pinardii*, with stemless pink scabious-like blossoms on gray-leaved mats; thistle-leaved *Morina persica*, whose flowers form pink and white whorls on two-foot stems; and dwarf rosy-red *Acanthus dioscoridis*, with spineless leaves that vanish in late summer.

BULBS DIFFICULT AND EASY

Turkey has long been known for its bulb plants, and some of the most exciting flowers of the Anatolian plateau remain those that escape the summer heat by retreating into underground bulbs, corms, rhizomes, and tubers. Few plants can match the effect of the immense ebony and ivory blossoms of the dwarf Oncocyclus iris *I. iberica* subsp. *elegantissima*, or the strangeness of another Oncocyclus, *I. paradoxa* var. *choschab*, with its small, stiff black velvet falls below huge white lilac-veined standards. They are plants for the skilled specialist; breeders have not succeeded in transmitting their extraordinary characteristics to hybrid offspring. The same applies to the juno irises, among the first of the bulbs to flower. An intricate jewellike translucency is typical of the variable blossoms of *I. persica* and *I. galatica*, violet-blue *I. stenophylla*, and yellow *I. caucasica*.

Yet some steppe bulbs are as easy to grow as these are difficult. In their native place, thousands of pale *Puschkinia scilloides* and deepblue scillas (*Scilla bifolia* and *S. siberica* subsp. *armena*) follow the snow patches up the mountains. Moisture drains from the hills into seasonally marshy hay meadows that are sometimes washed blue with *Muscari armeniacum* and later with red-purple orchids (*Dactylorhiza* spp.) and *Gladiolus kotschyanus*. Just because plants grow together at the same altitude, incidentally, does not mean that they are equally cultivatable. The beautiful pink *Fritillaria alburyana* is exceptionally difficult, but the yellow-tipped, mahogany-purple *F. michailovskyi* has taken to cultivation with enthusiasm.

A particular group of species is found in the Kurdish southeast, where nomads pitch their tents in the mountain valleys to graze their herds on the highest slopes. Some of these plants are limited to

this corner of Turkey, others shared with neighboring Iran and Iraq. They include two races of *Fritillaria crassifolia*, *F. c. kurdica* and *F. c. hakkarensis*, whose fat bells come in yellow-greens and browns. Tall orange crown imperials (*F. imperialis*) and tiny *Tulipa biflora* with white, yellow-centered blossoms can be found here. The steep, stony slopes are also home to the yellow bells of *F. minima*, apricot to red-brown *F. minuta*, and purple-pink *Colchicum kurdica*. All these plants depend on water from melting snows high on the great mountains to the south of Lake Van, or the sea beyond the sunset, as it was called by the ancient Assyrians.

Gardenworthy Plants of Turkey

The following Turkish plants have proven themselves first-class garden performers. All are hardy to at least USDA Zone 5, except where noted.

Name	Bloom Time	Bloom Color	Height	Description
Dactylorhiza spp.	May-June	Shades of violet and purple	2-3 ft.	Requires a deep, rich, acid soil; may be hardier than expected. Zone 7
Fritillaria michailovskyi	May-June	Dark reddish purple with yellow tips	4-8 in.	This lovely frit is excellent in the rock garden or in a pot in a sunny position.
Muscari armeniacum	April-May	Deep purple blue with white rim	6–8 in.	A great cut flower with a subtle scent; many available cultivars from which to choose.
Puschkinia scilloides	April-June	Pale blue with dark blue stripe	4-8 in.	Easy to grow in good, well-drained soil; best planted in large drifts.
Scilla bifolia	March	Bright blue	4-8 in.	Great plant for the woodland; prefers a cool location and filtered light.
Scilla siberica subsp. armena	April-May	Dark purplish blue	6-8 in.	This hardy species doesn't do well with hot summers, but where happy makes a great mat of blue.
Tulipa humilis	April-June	Pink, purple to crimson	4 in.	This petite tulip is best grown in well-drained soil.

