



Atanas Kumanov presents
The Plants of Strandja
Nature park, Bulgaria.

Photographer and Curator Atanas Kumanov (Nasko) seeks to share captured images through the medium of internet in much the same way that writers, painter, poets, and musicians seek to evoke feelings and reactions through their respective media.

Born in Plovdiv, Bulgaria, Atanas considers himself a "Southerner by choice," and a portion of his work depicts his love of the natural beauty that is Sunny Balkans. Experiencing his vivid scenic and macro photography of the flora, fauna and historical sites of the area give the effect of being immersed in the moment with the photographer. His color photography depicts his love of composition that draws the eye to the interplay of light, color and shadow.

In another aspect of his work, Nasko's black and white portfolio runs the gamut from the natural to architectural perspectives and more avant garde macro photography that emphasizes texture and contrast.

Currently Photojournalist at BGTON.COM, based in London, his focus is curating and writing on electronic art and cultures manifested in networked, virtual, responsive, biological, wearable and distributed practices and environments.

Enjoy his Virtual Exhibitions on
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









Svetla Uzunova, Spas Uzunov

The Plants of Strandja Nature Park



The Plants of Strandja Nature Park

Legend

-  Biodiversity act - Annex 3
 -  Species which are restricted or forbidden to collect by law
 -  Bulgarian Red Data Book - Endangered species
 -  Bulgarian Red Data Book - Rare Species
 -  Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
 -  Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)
 -  Floristic element
 -  Bulgarian endemic plant
 -  Balkan endemic plant
 -  Medicinal plant
 -  Poison plant
 -  0-1800 Elevation
 -  Diagram of the families
- J F M A M J J A S O N D Flowering months

Floristic elements

Alp	Alpine
Anat	Anatolian
Am	American
As	Asiatic
Bal	Balkan
Boreal	Boreal
Bul	Bulgarian
Eur	European
Eux	Euxinian
Kos	Cosmopolitan
Med	Mediterranean
Or	Oriental
Pann	Pannonic
Pont	Pontic
Sib	Siberian

Prefixes

C -	central-
N -	north-
S -	south-
sub-	sub-





About Strandja

Strandja and its Black Sea Coast are among the most floristically intriguing regions in all of Bulgaria. This is due to the unique location of the mountains and the microclimatic factors that they create, as well as the area's distinctive geologic past. The geographical crossroads at which Strandja is found, proximity to large bodies of water, and diversity of relief and microclimate on one hand, and the lack of Quaternary-Pleistocene glaciation on the other, are reasons why one can encounter a mix floristic elements found nowhere else on the European continent. These factors help explain why the Strandja Mountains harbor refuges for many tertiary relict species, especially evergreen plants and communities. Strandja flora is distinguished from other European plant formations and is, in fact, closer in nature to the Pontic-Euxine floral characteristics of the Caucasus and Asia Minor. Here, the most western remnants of this flora can be found on the border of Mediterranean and Continental European vegetation. The flora of Strandja is a conglomerate of plant species with very different origins, biological characteristics and evolutionary history that represent a complex with a high degree of conservation importance. The overall number of higher plant species found in Strandja is around 1670 - over 44% of all those found in Bulgaria. The Mediterranean, Caucasian and Euxinian presence all combine to impart a unique continental aspect to the flora of Strandja. The Bulgarian, Balkan, Euro-asiatic, European Continental, Pontic-Central Asiatic and other floristic elements add to the floral richness of Strandja, and reinforce the region's standing as a biogeographical crossroads of global significance.

About the Book

This publication, without pretense of being an overly scientific or exhaustive presentation of plant species found in the Strandja region, nonetheless represents a large portion of species of conservation importance in Strandja - relicts, endemites, rare and threatened plants, species with protected status, as well as more frequently encountered medicinal plants and species with interesting evolutionary origins. Significant resources used for constructing this publication include: "A Field Guide to Plants of Bulgaria", Delipavlov, D., et. al, 1992 - for the systematic relationships of species, and "Conspectus of Higher Flora of Bulgaria", Assyov, B, et. al, 2002 - for taxonomy of species. Also used was the multiple-volume "Flora of Bulgaria", Stoyanov, N, et. al, 1967. For species distributions, elevations, flowering period and conservation status, previous publications of the Strandja Nature Park, the Official Management Plan for Strandja Nature Park and personal data of the authors were used. Localization of species in Strandja was established primarily from current research into species distributions within the territory of the nature park, and from habitat data and literature both past and present.

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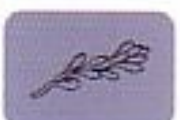
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HART'S TONGUE FERN

Phyllitis scolopendrium (L.) NEWMAN

Description: A fern with elongated, entire leaves shaped like an ox tongue. Groups of sporangii (sori) are linear and arranged along the length of the leaf veins. Its roots are substantial and thickly covered by scales.

Height: 15 - 80 cm

Habitat: Damp forests

Distribution in Bulgaria: All mountainous areas

Distribution in Strandja: All of Strandja



subBoreal



0-1800

J F M A M J J A S O N D



PERSIAN LIP FERN

Cheilanthes persica (BORY) METT. EX KUHN

Description: A small, perennial fern with a creeping root system. Sori are arranged on top of the fatter ender of the leaf veins, and are obscured by the curled leaf margins. The populations are small in number and isolated. A similar, rare fern species encountered in Strandja is *Thelypteris palustris* SCHOTT - from the family *Thelypteridaceae*.

Height: 20 - 40 cm

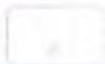
Habitat: Rocky limestone and siliceous ledges

Distribution in Bulgaria: Eastern Central Balkan Mountains, Mesta River Valley, Rhodope Mountains, Strandja

Distribution in Strandja: The villages of Stoilovo, Kalovo; areas of "Trionski Dol" and "Kovach"



Med-CAs



0-1500

J F M A M J J A S O N D





YEW

Taxus baccata L.

Description: A tree or shrub with thin, reddish-brown bark which is arranged in sections. Leaves are dark green and shiny above, and rather dull and pale green underneath. It is dioecious and a tertiary relict which is very poisonous, with the exception of its dark-red arils. It grows very slowly and is difficult to reestablish.

Height: Up to 15 m

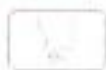
Habitat: Undergrowth in damp, shaded forests

Distribution in Bulgaria: Central Balkan Mountains (Stara Planina), Vitosha, Rila Mountains, Pirin Mountains, Rhodopes, Strandja

Distribution in Strandja: Rare in forests of the central areas of Strandja; around Malko Turnovo and the villages of Slivarovo, Gramatikovo, Bulgari, Kosti and Kondolovo



Euro-NAM



200-1700

J F M A M J J A S O N D



Taxaceae



JUNIPER

Juniperus communis L.

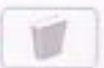
Description: An upright-growing shrub or low-growing tree. Leaves are needle-like, with a single whitish stripe on the upperside. It is dioecious and a tertiary relict species with spherical, pulpy, bluish seed-cones with a waxy coating. Another rare species from the same genus which can be found in Strandja is the relict *Juniperus oxycedrus* L., which has reddish-brown seed cones.

Height: Up to 5 m

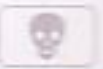
Habitat: Shrublands, forests, dry rocky areas

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: Rare in shrublands in the Strandja interior, around Malko Turnovo, Slivarovo and Stoilovo; the Black Sea Coast



subBoreal



200-1700

J F M A M J J A S O N D



Cupressaceae

SEA GRAPE / EPHEDRA

Ephedra distachya L.

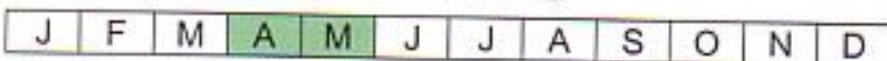
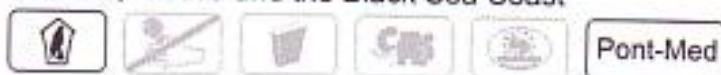
Description: A small, dioecious shrub with twigs which grow either opposite or grouped close together at nodes. Its leaves grow together at its base. Male flowers have a double-leaved covering. Female flowers grow in groups of up to 3 at the ends of the stems, and are covered by between 2 and 4 double leaves. These become pulpy and succulent as the fruit ripens and contain a red-colored juice. Along the plant's stem are a number of stiff and resilient nodes.

Height: 20 - 50 cm

Habitat: Rocky areas and crevices

Distribution in Bulgaria: Black Sea Coast, Rhodopes, western Central Balkans, Strandja

Distribution in Strandja: Rare in the Uzunbudjak Reserve, near Stoilovo, Kalovo and the Black Sea Coast



YELLOW WATER LILY

Nuphar lutea (L.) SIBHT. ET SM.

Description: A perennial, aquatic plant with both floating and underwater, kidney-shaped leaves which have arched veins and 3-sided stalks. The leaves do not have stipules. Its flowers grow individually, and are bulky and yellow with a strong fragrance. The fruit is a pulpy pod which matures and ripens underwater.

Height: Depends on water depth

Habitat: Standing or slow moving fresh water sources

Distribution in Bulgaria: Along the Danube River, Maritsa River, Struma River, and the Black Sea Coast

Distribution in Strandja: Mouth of the Veleka River



MARSH MARIGOLD

Caltha palustris L.

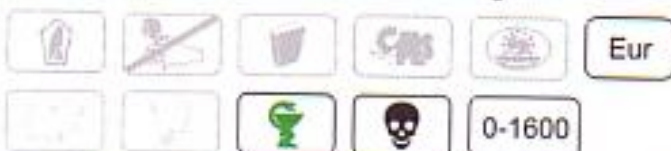
Description: A perennial, herbaceous plant with alternate, entire or slightly dentate leaves. The stem is bare, hollow and weakly branched. Flowers are large and yellow, and are arranged either several together, or singly at the ends of the stems. It has a large, whorled calyx composed of 5 sepals and numerous stamens and ovaries. The fruit is composed of between 5 and 10 vesicles containing many seeds.

Height: 15 - 50 cm

Habitat: Boggy areas and alongside streams

Distribution in Bulgaria: All mountain ranges and high-altitude fields, as well as the Thracian Plain

Distribution in Strandja: Rare along river courses



J F M A M J J A S O N D



LOVE-IN-A-MIST

Nigella damascena L.

Description: An annual, herbaceous plant with a single, pale blue flower. Sepals are petal-like, and are crowded in a short tube. Its leaves are fine, and almost thread-like. The uppermost leaf forms underneath the flower node, and is longer than the calyx. The stem is straight, and slightly branched. Fruits are unusual in having membranous, puffy pods fused along their inner margins.

Height: 20 - 40 cm

Habitat: Shrublands and fields

Distribution in Bulgaria: Black Sea Coast, eastern Rhodopes, eastern Central Balkans, Strandja, Struma and Mesta River Valleys.

Distribution in Strandja: Almost all of Strandja and Black Sea Coast



J F M A M J J A S O N D





YELLOW (WOODLAND) ANEMONE

Anemone ranunculoides L.

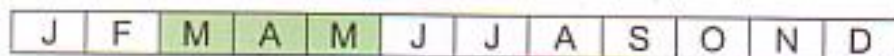
Description: A perennial, herbaceous plant which usually has a solitary, yellow flower. The perianth is whorled, and is composed of 5 petals. The stem supports 3 sets of whorled, dentate leaves, divided into three leaflets. The root system is long and creeping.

Height: 15 - 25 cm

Habitat: Shady, broadleaf forests and shrublands

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



STAR ANEMONE

Anemone pavonina LAM.

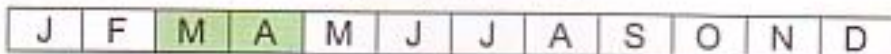
Description: A perennial, herbaceous plant with violet, blood-red or rose-colored flowers. The perianth is composed of 8 - 9 petals. The ovary is covered in short hairs. Leaves are joined, short and elliptical, are usually entire, but may be serrated.

Height: 10 - 30 cm

Habitat: Shrublands and sunny oak and beach forests

Distribution in Bulgaria: Strandja, Black Sea Coast, Struma River Valley, eastern Rhodopes, Thracian Valley and Tundja Plain.

Distribution in Strandja: Almost all of Strandja





WOOD ANEMONE / WINDFLOWER

Anemone nemorosa L.

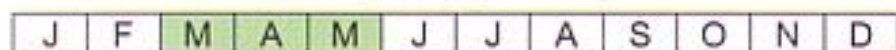
Description: A perennial, herbaceous plant with a single, white flower. The stem is bare on its lower half. The corolla is whorled and composed of 6 petals. Leaves are attached to nodes with well-developed petioles, are divided into three-parts, and are either serrate or crenate. It has a well-developed root system.

Height: 10 - 30 cm

Habitat: Forests, shrublands and damp grassy areas

Distribution in Bulgaria: Strandja, central and western Central Balkans, Rila, Pirin, Rhodopes, Vitosha and Osogovo

Distribution in Strandja: Rare throughout Strandja



VIRGIN'S-BOWER

Clematis viticella L.

Description: A perennial shrub or arboreal liana with a woody, twisting stem. Leaves are entire. The petals of the corolla are hairy on their outer side, and are either dark-purple or violet-red. Flowers are cupped, hanging and arranged one per stem. The fruit is an achene and has a bare stalk.

Height: 3 - 6 m

Habitat: Shrublands and sunny forests

Distribution in Bulgaria: Almost all of southern Bulgaria

Distribution in Strandja: Almost all of Strandja





TRAVELER'S-JOY

Clematis vitalba L.

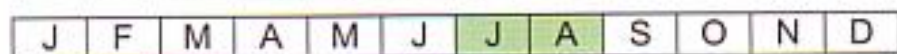
Description: A perennial shrub or arboreal liana with a woody stem. Its leaves are pinnately divided, with cordate or lanceolate leaflets. Flowers are grouped in panicles and the corolla is cream-white. Anthers are shorter than the filaments. Petals are rather woolly on both their upper and lower sides. Fruits are achenes covered in woolly fibers. A tertiary relict species.

Height: 3 - 30 m

Habitat: Shrublands and open forests

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



Ranunculaceae



YELLOW HORNED-POPPY

Glaucium flavum CRANTZ

Description: A biennial or perennial, herbaceous plant with white, milky sap. It has a single, yellow flower with 4 petals and 2 sepals which drop off during its development. The stem is bare, with pinnately divided, lyriiform leaves. The stalk which supports the capsular fruit is hairy, and the seeds are not separated by sinuses.

Also encountered in Strandja, is another member of the family; the Balkan endemite - *Hypecoum ponticum* VELEN.

Height: 30 - 70 cm

Habitat: Rocky and sandy areas

Distribution in Bulgaria: Black Sea Coast, Tundja Plain, northeastern Bulgaria, Danubian Plain and in the Sofia region

Distribution in Strandja: South of Tsarevo



Papaveraceae



FUMEWORT / BIRD-IN-A-BUSH/

Corydalis solida (L.) SCHWARZ

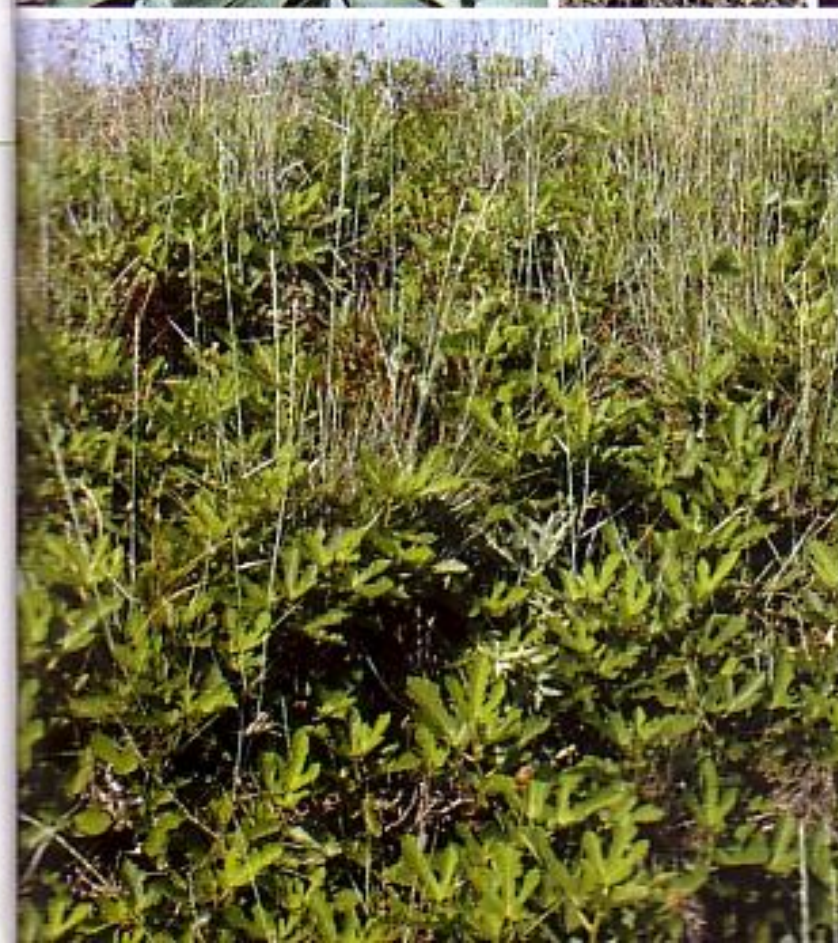
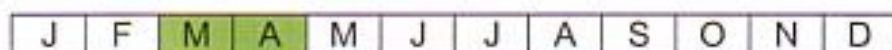
Description: A perennial with underground, fleshy tubers, and white or rose-colored flowers. Bracts are serrated or palmately divided. The inflorescence is a thick, cylindrical raceme. At the base of the plant's stem are horn-shaped, membranous leaves. It produces a 2-sided fruit which contains a large number of seeds.

Height: 10 - 20 cm

Habitat: Broadleaf forests and shrublands

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



FIG

Ficus carica L.

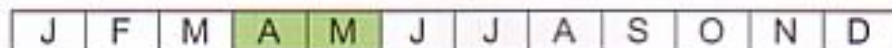
Description: A low-growing tree or shrub with large, palmate leaves covered with small, bristly hairs. Flowers are enclosed within fleshy beds, which develop into numerous, pear-shaped and fleshy fruits. It is a Mediterranean plant, which grows wild in Bulgaria, and is only pollinated by a single species of insect the wasp *Blastophaga psenes*.

Height: 1 - 10 m

Habitat: Dry, rocky coastal areas

Distribution in Bulgaria: Southern Black Sea Coast, Struma Valley, and eastern Rhodopes

Distribution in Strandja: Along the Black Sea Coast and around the village of Brodilovo





ORIENTAL BEECH

Fagus orientalis LIPSKY

Description: A tall tree which produces leaves with 9-11 paired veins. This sets it apart from the Common Beech, which has leaves with between 7 and 9 pairs of veins. Its trunk is covered in a smooth, greyish-white bark. Its fruit is a three-parted acorn covered in green, scaly tendrils that turn a light brown as the acorn matures. Tertiary relict.

Height: 20 - 30 m

Habitat: Forests in Strandja, it is found in especially wet and shaded ravines often together with oaks

Distribution in Bulgaria: Eastern Central Balkans, eastern Rhodopes, Strandja

Distribution in Strandja: Almost all of Strandja



SEux



0-800

J F M A M J J A S O N D

Fagaceae



STRANDJA OAK

Quercus hartwissiana STEVEN

Description: A tall tree which produces leaves with between 8 and 12 pairs of veins. The acorn cups are composed of greyish, overlapping scales which leave only a small portion of the nut uncovered. Acorns grow in racemes. The Strandja Oak is a pre-glacial relict, which in all of Europe, is found only in Strandja. Other relicts of the same genus encountered in Strandja include *Quercus cerris* L. and *Quercus polycarpa* SCHUR.

Height: 10 - 25 m

Habitat: Along rivers and on hillsides with northern exposure

Distribution in Bulgaria: Strandja

Distribution in Strandja: Around Ahtopol, Sinemorets, Malko Turnovo, Kostî, Bulgari, Zvezdets, Everenezovo, Bliznak, and areas of western Strandja



Pont-Eux



0-500

J F M A M J J A S O N D

Fagaceae





NAILWORT

Paronychia cephalotes (BIEB.) BESSER

Description: An herbaceous plant with a tuft-like stem, which is thick and very stiff at its base. Leaves are linear lanceolate, fringed and fleecy, with membranous stipules. The calyx is composed of 5 fleecy sepals. Petals are small, and may be either shorter than the sepals, or absent altogether. Its flowers are gathered into a head.

Height: 5 - 15 cm

Habitat: Limestone cliffs and rocky/grassy areas

Distribution in Bulgaria: Almost all of Bulgaria

Distribution in Strandja: In the karst terrain around Malko Turnovo, Kalovo, Mladejko and Evrenozovo



STRANDJA SOAPWORT

Saponaria stranjensis JORDANOV

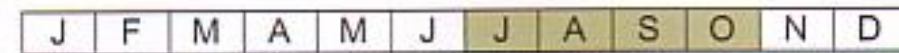
Description: Low-growing shrubby plant. Leaves are opposite, sessile, and only have a single vein, a characteristic which differentiates this species from other soapworts whose leaves have three veins. Its inflorescences, which grow in the form of a corymb are typical of those of the soapwort family. Flowers are large and rose-colored. The stem and calyx are covered in glandular trichomes.

Height: 50 - 60 cm

Habitat: Dry rocky areas and rock crevices

Distribution in Bulgaria: Eastern Rhodopes and Strandja

Distribution in Strandja: Along the Resovska and Elenitsa Rivers, and around the villages of Slivarovo and Brodilovo





COMPACT MAIDEN'S TEARS / ORIENTAL CAMPION

Silene compacta FISCH.

Description: An annual or biennial, herbaceous plant with light green leaves which are covered in a waxy coating. Its bright pink flowers are almost completely without pedicels and gathered into a large head at the top of the stem. The stem itself has sticky rings below the nodes.

Height: 15 - 85

Habitat: Shrublands and cliffs

Distribution in Bulgaria: Southern and eastern Bulgaria

Distribution in Strandja: Rare along rocky seashores and fields along the seacoast and interior



BLACK SEA CATCHFLY

Silene euxina (RUPR.) HAND. - MAZZ.

Description: An annual or perennial, herbaceous plant with white to pale pink or white flowers and a hairy stem. The calyx is covered with long hairs along its veins. Leaves lack margins, and are up to 1 cm wide. The fruit is capsular, and the seeds are roughly textured.

Height: 15 - 40 cm

Habitat: Sandy areas and coastal cliffs

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: South of Tsarevo, Protected Area "Silistar", Protected Area "Mouth of the Veleka"





THYME-LEAVED CATCHFLY

Silene thymifolia SIBTH. ET SM

Description: A perennial herbaceous plant with a calyx thickly covered in glandular trichomes. The tube formed by the flower petals is around 1 cm in length. Leaves are narrow, linear and ellipsoid. Along the entire plant are grey hairs. Its root system is woody and strongly branched. The plant often forms large tufts of vegetation where it grows on sandy beaches.

Height: ~20 cm

Habitat: Sand and cliffs

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: Along coastal stretches of sand to the south of Tsarevo



SEA LAVENDER

Limonium gmelinii (WILLD.) O. KUNTZE

Description: A perennial herbaceous plant with entire, bare, basal leaves. The inflorescence is a branched panicle with lavender-colored flowers gathered into small spikes. Each flower has three sepals. The calyx is cone-shaped or tubular, is dry, membranous and has five teeth. Another representative of the same genus found in Strandja is the rare *Limonium vulgare* MILL.

Height: 35 - 40 cm

Habitat: Sea cliffs and damp, clay soils with high mineral content

Distribution in Bulgaria: Northeastern and southeastern Bulgaria, along the Danube River

Distribution in Strandja: Rare to the south of Tsarevo





CRIMSON-FLOWERED PEONY

Paeonia peregrina MILLER

Description: A perennial herbaceous plant with wide, ovate leaves divided into three parts. The ends of each leaf are strongly dentate or serrate. Its flowers are large and bright red, with yellow stamens and red filaments. The fruit is composed of pods containing a large number of seeds. Another very rare species of the same genus which is found in Strandja is *Paeonia tenuifolia* L.

Height: 50 - 90 cm

Habitat: Shrublands, dry rocky or grassy areas, and forest edges

Distribution in Bulgaria: Almost all of Bulgaria

Distribution in Strandja: Almost all of Strandja and the Black Sea Coast



subMed



0-1000

J F M A M J J A S O N D

Paeoniaceae



CREeping ST. JOHN'S WORT / AARON'S BEARD

Hypericum calycinum L.

Description: A shrub-like plant with tough, thick, evergreen leaves. It has five stems which support large, solitary yellow flowers with numerous, bushy stamens. Its leaves, sepals and petals lack black or red glands. The fruit is capsular, and splits into five parts when mature. Its stem is bare, with 4 protruding lines. Tertiary relict. Another rare species of the same genus found in Strandja is *Hypericum androsaemum* L.

Height: 20 - 50 cm

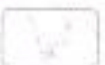
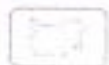
Habitat: Oak forests

Distribution in Bulgaria: Strandja

Distribution in Strandja: Rare around Kosti, Bulgari, and Gramatikovo



Pont-Med



0-100

J F M A M J J A S O N D

Hypericaceae





PINK ROCKROSE/ LARGE PINK ROCKROSE

Cistus incanus L.

Description: An evergreen, low-growing, shrub-like plant with large pink flowers. Sepals are joined in some parts, are of equal width, and are covered in white fuzz. Its lower leaves are rounded, while the others are oblong, spade-shaped and covered in a whitish, stratified pattern. The fruit is capsular, and contains a large number of seeds.

Height: 20 - 50 cm

Habitat: Dry, sun-baked rocky areas, and shrublands

Distribution in Bulgaria: Strandja, Black Sea Coast, eastern Rhodopes, Slavianka, and the western border mountains

Distribution in Strandja: Almost all of Strandja



Med



0-700

J F M A M J J A S O N D



Cistaceae



SAGE-LEAF ROCKROSE

Cistus salvifolius L.

Description: An evergreen, low-growing, shrub-like plant with large white flowers. The outer sepals are wider than the interior sepals, and lack glandular hairs. Leaves are grass-green, elliptical and lack a white, fuzzy coating. The stem is bare, and the fruit is a many-seeded capsule. Tertiary relict.

Height: 20 - 50 cm

Habitat: Dry, sun-baked rocky areas, and shrublands, often co-existing in the same community as Pink Rockrose

Distribution in Bulgaria: Strandja

Distribution in Strandja: Rare around Brodilovo, Bulgari, Kostli and Gramatikovo, Protected Area "Silistar", Protected Area "Mouth of the Veleka"



Euro-As



0-200

J F M A M J J A S O N D

Cistaceae



COMMON ROCKROSE

Helianthemum nummularium (L.) MILLER

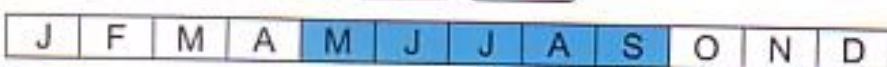
Description: A shrub-like plant with a woody lower stem and thick roots. Leaves are linear, opposite, and have stipules. They are green on their upperside, and have grey or white fuzz on their underside. Basal leaves do not form a rosette. The stigma is located on a small stalk. Flower petals are yellow, and are longer than the inner sepals.

Height: 10 - 50 cm

Habitat: Dry grassy and rocky areas

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



CORALROOT / CORALWORT

Cardamine bulbifera (L.) CRANTZ

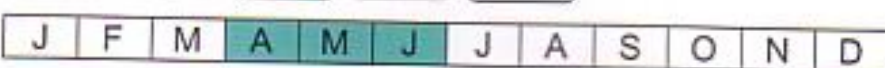
Description: A perennial, herbaceous plant with pinkish, white or violet flowers. It does not have basal leaves. Lower leaves are pinnately divided, while its upper leaves are entire. It has small, black bulbs located in the axils of its leaves and inflorescence. It has a creeping root system, covered in fleshy integuments.

Height: 30 - 70 cm

Habitat: Deciduous forests, and shrublands

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



BULGARIAN ALYSSUM

Alyssoides bulgarica (L.) MOENCH

Description: A perennial, herbaceous plant with a root mat at the base of its stem. Leaves are oblong and, along with its stem, covered with stellate or bipartite hairs. The flower stalk is completely bare. Petals are yellow, entire and grow together at their base. The calyx has two swellings at its base. The fruit is a spherical pod.

Height: 20 - 50 cm

Habitat: Dry rocky and limestone terrain

Distribution in Bulgaria: Central Balkans, Znepolski Regions (western border with Serbia), Slavianka, Rhodopes, Strandja

Distribution in Strandja: Primarily found in western Strandja and around the village of Brodilovo, Resovska River



subMed



50-1900

J F M A M J J A S O N D



LESSER SHEPHERDSCRESS

Teesdalia coronopifolia (J. P. BERG.) THELL.

Description: An annual, herbaceous plant with feathery, pinnate leaves which grow in the form of a basal rosette. Its stem is leafless. The outer petals of the uppermost flowers of the inflorescence are larger or the same size as the other flowers. The corolla is composed of white flowers. The fruit is a round silicle with a concavity on its topside.

Height: 5 - 20 cm

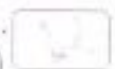
Habitat: Dry, rocky areas

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: South of Tsarevo



subMed-CAs



0-1000

J F M A M J J A S O N D





SEA ROCKET

Cakile maritima SCOP.

Description: An annual plant with succulent, entire or incised leaves and a bare stem. Petals are pink or light purple, sometimes almost white. The fruit is a pod divided into two cells - the top one sword-shaped and the bottom, rhomboid-wedge shaped. Seeds are dispersed by sea water.

Height: 15 - 40 cm

Habitat: Coastal beaches

Distribution in Bulgaria: Black Sea Coast, Northeastern Bulgaria

Distribution in Strandja: South of Tsarevo



SEA KALE

Crambe maritima L.

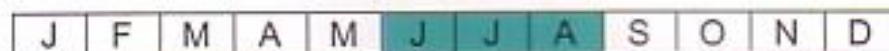
Description: A perennial plant with bare, bluish-green, succulent leaves and bare stem. Petals are white and obovate. The calyx is outspread with identical sepals. Flowers are gathered in a panicle. The fruit is composed of two cells, the lower one narrow, and the upper rounded.

Height: 30 - 75 cm

Habitat: Coastal beaches

Distribution in Bulgaria: Black Sea Coast, Northeastern Bulgaria

Distribution in Strandja: South of Tsarevo





STRANDJA (PONTIC) RHODODENDRON

Rhododendron ponticum L.

Description: A tall, evergreen shrub with large violet-pink flowers. The corolla is funnel-shaped and bare on its outer-side. Flowers are gathered at the apex of the individual stems in a large, spreading inflorescence. Leaves are waxy, shiny green, large and elongated-lanceolate. The fruit is a capsule which breaks open as it ripens. A tertiary relict that, in Europe, is found only in Strandja and the Caucasus.

Height: Shady, damp forests and ravines

Habitat: 1 - 3 m

Distribution in Bulgaria: Strandja

Distribution in Strandja: To the south of Malko Turnovo, Tsarevo east to Gramatikovo, west to Brodilovo, around Papia Peak, Protected Area "Mouth of the Veleka"



Eux



10-350

J F M A M J J A S O N D

Ericaceae



CAUCASIAN WHORTLEBERRY

Vaccinium arctostaphylos L.

Description: A shrub with smooth bark which loses its leaves during winter. Flowers are white, urceolate and gathered in several grape-like inflorescences. The leaves are ellipsoid or oblong, dentate, with a fleecy mid-rib on their underside. A tertiary relict that, in Europe, is found only in Strandja and the Caucasus.

Height: 1 - 3 m

Habitat: Damp, shady areas

Distribution in Bulgaria: Strandja

Distribution in Strandja: Rare around Gramatikovo, Kosti, Slivarovo, Kondolovo, Malko Turnovo, Tisovitsa River and Uzunbudjak Reserve



Pont



150-300

J F M A M J J A S O N D

Ericaceae





SCOTCH HEATHER

Calluna vulgaris (L.) HULL

Description: A low-growing, evergreen shrub. Leaves overlap one-another, are linear-lanceolate, lack a petiole, and have an arrow-shaped base. Flowers are pinkish-white, and are gathered into raceme-like inflorescences. The calyx is whorled, with 4 sepals, and the corolla is composed of 4 petals. The fruit is a 4-chambered capsule. Tertiary relict.

Height: 20 - 80 cm

Habitat: Alongside and in oak forests, and on dry, rocky slopes

Distribution in Bulgaria: Strandja

Distribution in Strandja: Rare in central Strandja and Black Sea Coast



subBoreal



20-500

J F M A M J J A S O N D

Ericaceae



TREE HEATHER

Erica arborea L.

Description: An evergreen shrub with needle-like leaves gathered in groups of threes. Flowers are small, white and aromatic, and grow in terminal inflorescences. The calyx is divided into 4 parts, and is shorter than the corolla. Its fruit is a 4 to 8 chambered capsule. Tertiary relict.

Height: 50 - 80 cm

Habitat: Dry, rocky areas

Distribution in Bulgaria: Strandja

Distribution in Strandja: Rare around Kosti, Gramatikovo, Bulgari, Stoilovo, Brashlian and Resovo; Uzunbudjak Rezerve



Pont-Med



100-500

J F M A M J J A S O N D

Ericaceae





EUROPEAN STRAWBERRY TREE

Arbutus unedo L.

Description: Evergreen shrub, or low-growing tree. It has dark-colored bark, which peels off in strips. Leaves are leathery and shiny. Flowers are white or reddish with a bell-like or urceolate form, and are gathered in terminal inflorescences. It produces a red, knobby fruit with very high sugar content, and numerous seeds. Tertiary relict.

Height: 2.5 m - 10 m

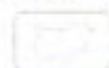
Habitat: Sunny, deciduous forests

Distribution in Bulgaria: Strandja, eastern Rhodopes

Distribution in Strandja: Around the village of Kosti



subMed-As



100-350

J

F

M

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M

J

J

A

S

O

N

D

Ericaceae



YELLOW BIRD'S NEST

Monotropa hypopitys L.

Description: A perennial, herbaceous plant which lacks chlorophyll. Flowers are cylindrical, bell-shaped, and are arranged in thick inflorescences with the fruit-bearing node located underneath. The stem is unbranched and is yellowish-tan colored. Leaves are small, elongated, ovate and sessile. It has a capsular fruit which splits apart to release its seeds.

Height: 10 - 25 cm

Habitat: Shady, deciduous and coniferous forests

Distribution in Bulgaria: Strandja, Central Balkans, Rhodopes, Rila, Pirin, Belasitsa, Znepolski region, Vitosha

Distribution in Strandja: Almost all of Strandja



Boreal



300-2000

J

F

M

A

M

J

J

A

S

O

N

D

Monotropaceae

44





BURGUNDY GOOSENECK LOOSESTRI

Lysimachia atropurpurea L.

Description: An annual or biennial, herbaceous plant. Leaves are entire, and it has small, wine-red flowers arranged in a spike. Pedicels are shorter than 1 mm. Stamens are longer than the corolla. The fruit is capsular.

Height: 20 - 80 cm

Habitat: Dry, rocky areas

Distribution in Bulgaria: Black Sea Coast, Strandja, Eastern Rhodopes

Distribution in Strandja: Rare throughout almost all of Strandja



Med



0-300

J F M A M J J A S O N D

Primulaceae



ROUND-LEAVED CYCLAMEN

Cyclamen coum MILLER

Description: A perennial, herbaceous plant which grows from a spherical tuber. Leaves are large, reniform and appear before it blooms. Flowers are large, 5-parted, and either pinkish-purple, or very rarely, white. Its petals grow backwards, and are supported by a long pedicel which grows directly from the tuber. The fruit is a capsule which ripens belowground.

Height: 5 - 15 cm

Habitat: Forests and shrublands

Distribution in Bulgaria: Eastern Central Balkans, Strandja, Black Sea Coast

Distribution in Strandja: All of Strandja



Pont-Med



0-500

J F M A M J J A S O N D

Primulaceae





DOUBLE LILAC PRIMROSE

Primula acaulis ssp. *rubra* (L.) L.
sin. *Primula vulgaris* ssp. *sibthorpii*

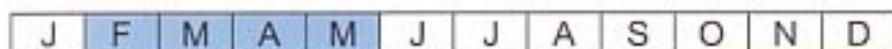
Description: A perennial, herbaceous plant which grows without a discernable stalk. Flowers are large, and may be varying shades of pink, red or pale purple. Pedicels grow directly from the plant's roots, and are covered with glandular hairs. There are a number of reported cases of people having an allergic reaction after coming in contact with these hairs. Leaves are spatulate, fibrous, bare on their upperside, and grow together in a thick clump. The fruit is a capsule which splits apart to release its seeds. Tertiary relict.

Height: 10 - 15 cm

Habitat: Forests and shrublands

Distribution in Bulgaria: Black Sea Coast, Strandja, eastern Stara Planina

Distribution in Strandja: Almost all of Strandja



Primulaceae



SAND SPURGE

Euphorbia peplis L.

Description: An annual, herbaceous plant with milk-like sap. The stem is bare and rests on the ground. Flowers lack true petals (apetalous), and are gathered in umbrella-shaped inflorescences. The peduncles of these inflorescences grow from the axils of the plant's leaves. The leaves, themselves, are small, succulent, and have short petioles which are emerge from nodes along the plant's stem.

Height: 7 - 30 cm

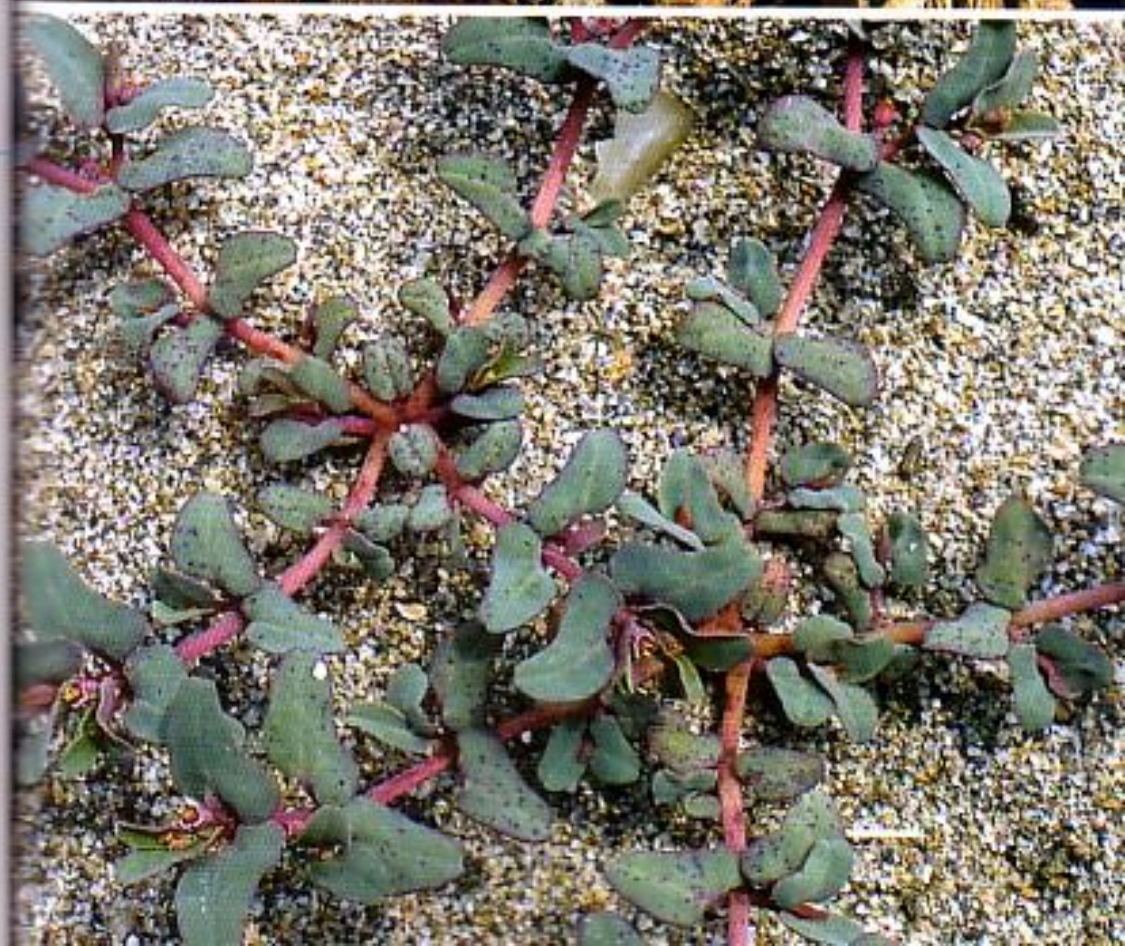
Habitat: Beaches and dunes

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: To the south of Ahtopol



Euphorbiaceae





Euphorbia paralias L.

Height: 30 - 70 cm

Habitat: Beaches and dunes

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: To the south of Tsarevo



J	F	M	A	M	J	J	A	S	O	N	D
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Daphne pontica L.

Description: A small shrub with evergreen leaves which remain on the plant throughout the winter. Flowers are yellowish-green, grouped in twos or threes, and have well-developed petioles. Portions of the perianth are linear-lanceolate, and the tube-like shaft of the flower is bare. Leaves are ovate and entire. The fruit is a black and contains a hard pit. A tertiary relict, this species is found in Europe only in Strandja.

Height: 30 - 80 cm

Habitat: Damp forests and shrublands

Distribution in Bulgaria: Strandja

Distribution in Strandja: Almost all of Strandja



J	F	M	A	M	J	J	A	S	O	N	D
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PALE-FLOWERED SEMPERVIVUM / HOUSE LEEK

Sempervivum leucanthum PANČIČ

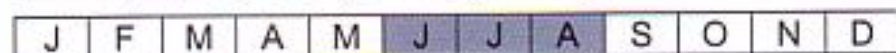
Description: A perennial, herbaceous plant which produces sterile clones. Leaves are continuous and arranged in large rosettes covered with minute hairs. Flowers are gathered in terminal inflorescences. The corolla and filaments are yellow. Sepals and ovaries are the same in number as the petals, but there are twice as many stamens. A rare species of the same genus which is found in Strandja is *Sempervivum marmoreum* GRISEB., which has pink or red flowers.

Height: 10 - 25 cm

Habitat: Dry, rocky areas

Distribution in Bulgaria: Belasitsa, Pirin, Rila, Rhodopes, Tundja Plain, Strandja

Distribution in Strandja: Around the village of Brodilovo



Crassulaceae



SCARLET FIRETHORN / PYRACANTHA

Pyracantha coccinea M. J. ROEMER

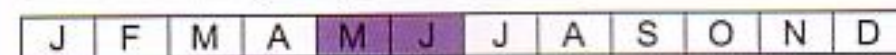
Description: A low-growing, thorny shrub. Leaves are lanceolate, fuzzy and evergreen. Younger twigs are covered in hairs. Flowers are monoecious. Petals are joined at their base, and the inflorescences are thick and corymb-like. The fruit is fleshy and a bright reddish-orange color. A pre-glacial relict species.

Height: 1.5 - 2 m

Habitat: Deciduous forests, shrublands and rocky areas

Distribution in Bulgaria: Strandja, Northeastern Bulgaria

Distribution in Strandja: Rare throughout almost all of Strandja



Rosaceae





MEDLAR

Mespilus germanica L.

Description: A thorny shrub or short tree. Flowers are single, large and dioecious. Sepals are larger than the petals, which are white colored. Leaves are lanceolate, either entire or slightly dentate, and have very reduced petioles. The fruit is large and fleshy and can be eaten when overripe. The wild-growing form has thorns and is found in Europe only in Strandja. A tertiary relict species.

Height: 1.5 - 3 m

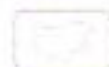
Habitat: Shrublands and forests

Distribution in Bulgaria: Strandja

Distribution in Strandja: Rare across almost all of Strandja



Pont-Med



100-400

J	F	M	A	M	J	J	A	S	O	N	D
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Rosaceae



HAWTHORN

Crataegus monogyna JACQ.

Description: A thorny shrub or short tree. Leaves are strongly divided into 3 - 5 parts and have stipules. The petiole is fuzzy. Young twigs are most often bare, but rarely may be covered in small hairs. Flowers are small, white and gathered in corymbs. The fruit is fleshy, red and small with either one, or more rarely, two seeds.

Height: 1.5 - 5 m

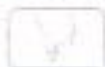
Habitat: Shrublands, forests, riverbanks

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



subBoreal



0-1500

J	F	M	A	M	J	J	A	S	O	N	D
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Rosaceae





CHERRY LAUREL

Laurocerasus officinalis M. J. ROEMER

Description: An evergreen shrub with white flowers which are gathered into racemes. Leaves are elliptical and elongated, entire or slightly serrated, and terminate in a point. The fruit has an oblong form and is red and lustrous. A tertiary relict species.

Height: 1 - 4 m

Habitat: Shady beech forests and damp ravines

Distribution in Bulgaria: Strandja and the central portions of the Central Balkan Mts.

Distribution in Strandja: Rare around Malko Turnovo, Zvezdets, Gramatikovo, Bulgari and Kostl



Pont



200-1400

J	F	M	A	M	J	J	A	S	O	N	D
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SEA MEDICK

Medicago marina L.

Description: A perennial, herbaceous plant with a stem which spreads along the ground. Leaves are tripartite, and the entire plant is covered with fine, white hairs. The inflorescence is raceme-like, with yellow flowers gathered in rounded heads at the ends of the branches. The fruit is a coiled pod with small spurs along the suture. A rare species of the same genus, also found in Strandja, is *Medicago littoralis* RIHDE EX LOIS.

Height: 20 - 50 cm

Habitat: Beaches

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: To the south of Tsarevo



Med



0-0

J	F	M	A	M	J	J	A	S	O	N	D
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WILD CHICKPEA

Cicer montbretii JAUB. ET SPACH

Description: A perennial, herbaceous plant with odd-pinnate, strongly dentate leaves. Flowers are white or yellowish white, and are gathered in loose, raceme-like inflorescences. The calyx has the form of small teeth. The fruit is a swollen, oblong legume which bursts open, dispersing its 3 - 4 seeds. Tertiary relict species.

Height: 20 - 50 cm

Habitat: Sunny, dry oak forests, and grassy or rocky areas

Distribution in Bulgaria: Black Sea Coast and Strandja

Distribution in Strandja: Rare around Malko Turnovo, Stoilovo, Kostî, Gramatikovo, Brodilovo, Resovo and the protected area "Mouth of the Veleka"



Fabaceae



BURNING BUSH

Dictamnus albus L.

Description: A perennial, herbaceous plant with odd-pinnate leaves. Flowers are pink or white, slightly irregular, and gathered in large racemes. The inflorescence and the stem are covered in sessile glandular trichomes, which give off an essential oil with a very distinctive scent and skin-irritating properties. The fruit is capsular, and spits open when ripe.

Height: 30 - 80 cm

Habitat: Dry grassy and rocky areas, primarily with limestone soils

Distribution in Bulgaria: Almost all of Bulgaria

Distribution in Strandja: Rare around Malko Turnovo, Mladejko, and Stoilovo



Rutaceae





TEREBINTH / TURPENTINE TREE

Pistacia terebinthus L.

Description: A shrub or tree with small, dioecious flowers which have a simple perianth. The inflorescence is in the form of a panicle. Leaves are odd-pinnately compound, bare and elliptical, with a short "nose" at their apex. The fruit is also bare. The plant smells of turpentine, and its bark may be composed of up to 25% of this fragrant resin.

Height: 3 - 7 m

Habitat: Shrublands, rocky slopes and outcrops

Distribution in Bulgaria: Strandja, Rhodopes, Tundja and Thracian plains, eastern Central Balkan Mts., eastern Sredna Gora Mts., Struma Valley, Pirin Mts., and Belasitsa

Distribution in Strandja: Rare across almost all of Strandja



YELLOW FLAX

Linum tauricum WILLD.

Description: A perennial, herbaceous plant with few umbrella-like inflorescences. Its large yellow flowers each have five sepals, and as many petals, stamens, and stigmas. Leaves are tapered to a point and arranged alternately along the stem. Lower leaves form rosettes which have one vein, and are both shorter and smaller than the others. The fruit is a five-chambered capsule.

Height: 10 - 30 cm

Habitat: Grassy, rocky and sandy areas

Distribution in Bulgaria: Black Sea Coast, northeastern Bulgaria, Danube Valley, western Central Balkan Mts., Znepolski Region, eastern Rhodopes, and the Thracian and Tundja Plains

Distribution in Strandja: To the south of Tsarevo





SEA HOLLY

Eryngium maritimum L.

Description: A perennial, herbaceous plant with a greyish-blue hue and prickly, holly-like leaves. The umbels of the plant are made up of 8 - 15 bare rays. Flowers are white to slightly pink. The outer flowers of the umbel are larger than the inner flowers, and each petal is sharply incised. The fruit is oval and has three reduced ribs with bristles that burst open to release the plants seeds.

Height: 20 - 65 cm

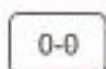
Habitat: Beaches

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: Rare around the village of Sinemorets



Euro-Med



0-0

J F M A M J J A S O N D

Apiaceae



SMALL SEA CARROT

Astrodaucus littoralis (BIEB.) DRUDE

Description: A biennial, herbaceous plant with parted leaves. The umbel has 8 - 15 rays which lack leaflets. Terminal flowers are larger than the others and the corolla is white and deeply incised. The fruit is oval and has 3, somewhat convex, bristly ribs.

Height: 20 - 65 cm

Habitat: Sand beaches

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: Rare around Sinemorets



subMed



0-0

J F M A M J J A S O N D

Apiaceae



HEPTAPTERA

Heptaptera triquetra (VENT.) THRIN.

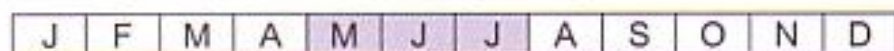
Description: A perennial, herbaceous plant with a distinctive three-ribbed stem. The lower and upper leaves are entire, but the middle ones are pinnately divided, with thick, elongated segments. The calyx has either no teeth, or has 5 reduced teeth. The corolla is entire and yellow, with a bent apex. The fruit is flattened and has 5 sutures.

Height: 50 - 120 cm

Habitat: Shrublands, fields and open forests

Distribution in Bulgaria: Southern Black Sea Coast, eastern Central Balkans, Tundja Valley, Strandja

Distribution in Strandja: Rare throughout almost all of Strandja



ROCK SAMPHIRE

Crithmum maritimum L.

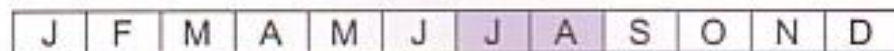
Description: A perennial, herbaceous plant. Leaflets are succulent, lanceolate in shape, and entire. Both the primary ray of the umbel and the pedicels of its flowers have their own bracts. Flowers are yellowish, and the calyx has relatively short teeth. The fruit is elliptical, with sharp, elongated sutures.

Height: 20 - 60 cm

Habitat: Along seaside cliffs

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: Rare to the south of Tsarevo





WILD PARSLEY

Oenanthe millefolia JANCA

Description: A perennial, herbaceous plant with triternate leaves whose outer portions are very fine, and almost threadlike in form. The main ray of its umbel has a covering of leaflets at its base. Flowers are white, and the fruit is elongated, with blunt, elongated sutures. Two rare species of the same genus which are encountered in Strandja, are *Oenanthe tenuifolia* BOISS. ET ORPH. and *Oenanthe pimpinelloides* L.

Height: 30 - 80 cm

Habitat: In dry, grassy areas, and alongside and in open oak forests

Distribution in Bulgaria: Northern Bulgaria, Thracian Plain, Eastern Rhodopes, Strandja

Distribution in Strandja: Rare across almost all of Strandja



Apiaceae



COLCHID HOLLY

Ilex colchica POJ.

Description: A perennial shrub or short tree with prickly, leathery, evergreen leaves. Flowers are gathered in large numbers in the leaf axils. The calyx is tri-partite, with 4 - 5 teeth. The corolla is white, and is composed of 4 - 5 petals. The fruit is a red berry with 4 - 5 seeds. It is a tertiary relict species whose wild distribution in Europe is limited to Strandja.

Height: 2 - 4 m

Habitat: Damp beech forests

Distribution in Bulgaria: Strandja

Distribution in Strandja: Rare primarily in western and southern Strandja



Aquifoliaceae





YELLOW CENTAURY

Centaurium maritimum (L.) FRITSCH

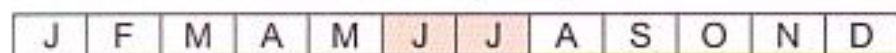
Description: An annual, herbaceous plant with a four-ribbed stem. Leaves are opposite, and the inflorescence is either a spike or a strongly branched, umbrella-like panicle with a relatively small number of yellow flowers. This is the only representative of this genus in Bulgaria with yellow flowers. The fruit is a two-celled capsule with many seeds. Another species of the same genus which is found in Strandja is the rare *Centaurium turcicum* (VELEN.) RONN. EX. FRITSCH.

Height: 10 - 20 cm

Habitat: Shrublands and fields

Distribution in Bulgaria: Southern Black Sea Coast

Distribution in Strandja: Rare between Ahtopol and Resovo



Gentianaceae



COMMON CENTAURY

Centaurium erythraea RAFIN.

Description: An annual or perennial, herbaceous plant. The stem has four ribs, which is branched only in the region of the inflorescence. Leaves are oppositely arranged. The inflorescence is either a spike or a panicle with a large number of flowers. The corolla is pink, but may rarely be white, and has a tubular form with elongated lobes. The fruit is a many-seeded capsule, which may be as long as the tube.

Height: 10 - 70 cm

Habitat: Dry, grassy or rocky areas

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



Gentianaceae





WILD YELLOW JASMINE

Jasminum fruticans L.

Description: A short, upright-growing, evergreen shrub. Leaves are dark green, tri-partite and slightly fringed at their margins. Flowers are yellow, and arranged in groups of 2 - 4 in semi-umbels situated atop short side stems. The calyx is tubular or in the shape of a bell. The fruit is red, almost dry, and has a solitary seed.

Height: 0.5 - 1.5 m

Habitat: Shrublands, dry and sunny rocky areas

Distribution in Bulgaria: Black Sea Coast, almost all of southern Bulgaria

Distribution in Strandja: Almost all of Strandja



Pont-CAs



0-1000

J	F	M	A	M	J	J	A	S	O	N	D
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FLOWERING ASH

Fraxinus ornus L.

Description: A shrub or short tree with opposite, undivided leaves. Flowers are gathered in large, umbel-like inflorescences which develop after it comes into leaf. The corolla is white and both it and the calyx are 4-parted. Each blossom has two stamens, while the fruit is a flattened samara with a single, well developed winglet. A tertiary relict species.

Height: 4 - 8 m

Habitat: Forests and dry areas

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



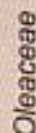
subMed



0-1500

J	F	M	A	M	J	J	A	S	O	N	D
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Phyllyrea latifolia L.

Height: 0.5 - 4 m

Habitat: Dry, sunny, rocky areas

Distribution in Bulgaria: Southern Black Sea Coast, Struma River Valley, southern Pirin, eastern Rhodopes, Strandja

Distribution in Strandja: Rare throughout almost all of Strandja



Lonicera etrusca SANTI

Description: A perennial, climbing shrub. Upper leaves are joined, but do not form a complete whorl, while the lower leaves grow separately. Inflorescences of yellowish flowers grow on a peduncle. The corolla is tubular, with the upper part wide and nearly split into two parts. The fruit is pulpy. A tertiary relict species.

Height: 1 - 2 m

Habitat: Forests and shrublands

Distribution in Bulgaria: Eastern Rhodopes, Slavianka, Belasitsa, Strandja

Distribution in Strandja: Rare across almost all of Strandja





SEA BINDWEED / BEACH MORNING GLORY

Calystegia soldanella (L.) R. BR.

Description: A perennial plant with a horizontally-growing stem and kidney-shaped leaves. Flowers are lavender-pink and have long pedicels which grow from the leaf axils. The corolla is large and tube-shaped. The calyx is short and is covered at its base by two large, ovate bracts.

Height: 15 - 60 cm

Habitat: Sand beaches

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: Rare south of Ahtopol



Convolvulaceae



LARGE BINDWEED

Calystegia sylvatica (KIT.) GRISEB.

Description: A perennial, climbing plant with sagittate or ovate leaves. Flowers are white and large with a corolla that is 7 - 8 cm long. There are wide, ovate, slightly swollen bracts which completely cover the calyx. Portions of the calyx, itself, are blunt.

Height: 1.5 - 3 m

Habitat: Damp, shady areas

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



Convolvulaceae



SIBERIAN SEA ROSMARY

Argusia sibirica (L.) DANDY

Description: A perennial, herbaceous plant with alternate, sessile and entire leaves. The calyx is 5-parted, and the corolla is white with a funnel-like form. The fruit is a drupe, with an endocarp which breaks apart into 2, 2-seeded mericarps.

Height: 15 - 40 cm

Habitat: Sandy beaches and coastal rock outcrops

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: To the south of Tsarevo



Boraginaceae



CRIMEAN COMFREY

Symphytum tauricum WILLD.

Description: A biennial, herbaceous plant with leaves which are either cordate or ovate. Upper leaves are sessile, while the lower leaves are attached with a petiole. The calyx is 5-parted, and the corolla is bell-shaped with creamy-yellow color. The fruit is a drupe.

Height: 30 - 50 cm

Habitat: Shady forests and shrublands

Distribution in Bulgaria: Black Sea Coast, northeastern and southeastern Bulgaria, Strandja

Distribution in Strandja: Rare across almost all of Strandja



Boraginaceae



ORIENTAL TRACHYSTEMON

Trachystemon orientalis (L.) G. DON. FIL.

Description: A perennial, herbaceous plant with large leaves covered in stiff hairs. The corolla is lavender-blue, and the outstretched portion of the flower has long linear sections which are significantly longer than the relatively short tube. Filaments have short hairs which stand up like bristles, and the anthers are loosely attached. The fruit is composed of 4, unconnected nutlets.

Height: 20 - 60 cm

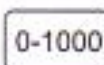
Habitat: Damp and dark forests

Distribution in Bulgaria: Eastern Central Balkans, Strandja

Distribution in Strandja: Almost all of Strandja



SEux



0-1000

J F M A M J J A S O N D

Boraginaceae



GROUND PINE

Ajuga chamaeptytis (L.) SCHREBER

Description: An annual or perennial, low-growing herbaceous plant which smells like pine when crushed. Leaves are deeply divided into three linear lobes with sticky, glandular hairs at their base. Flowers are yellow with a red-spotted lip, and grow singly in the leaf axils. The corolla is long, 0.7 - 1.5 cm. The stem is wooly. Fruit is a small nut with mesh-like surface.

Height: 5 - 15 cm

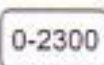
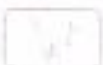
Habitat: Dry, grassy and rocky areas

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



Pont-Med



0-2300

J F M A M J J A S O N D

Lamiaceae





NETTLE-LEAVED GERMANDER

Teucrium lamiifolium D'URV.

Description: A perennial or biennial, herbaceous plant. Leaves are with petioles and have heart-shaped laminae. The inflorescence is a thick spike with awl-shaped bracts which protrude from between its small, white flowers. The calyx is double-lipped, with the upper lip entire and oval, and the bottom, 4-toothed. The fruit falls apart into nutlets.

Height: 20 75 cm

Habitat: Shrublands and oak forests

Distribution in Bulgaria: Strandja

Distribution in Strandja: Around Malko Turnovo, Stoilovo, Slivarovo, Brodilovo and Kalovo



Med



0-500

J F M A M J J A S O N D



MOUNTAIN IRONWORT

Sideritis montana L.

Description: An annual, herbaceous plant with comparatively few, long hairs. The calyx is single-lipped, and the calyx teeth terminate in short thistles. The corolla is yellow, and after some time in bloom, becomes purple. Flowers are arranged in the leaf axils.

Height: 15 35 cm

Habitat: Dry, grassy or rocky areas

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Bulgaria



subMed



0-1500

J F M A M J J A S O N D





CRIMEAN MOUNTAIN TEA

Sideritis syriaca L.

Description: A perennial, herbaceous plant whose roots are quite woody, and form small clumps or tussocks. The leaves and stem are covered in thick, white wool. The inflorescence is in the form of a spike, with a yellow corolla which is longer than the calyx. Calyx teeth are two times shorter than the tube. The middle bracts are 0.6-1.2 cm long.

Height: 10-50 cm

Habitat: Dry areas with limestone outcrops

Distribution in Bulgaria: Dobrudja, Strandja

Distribution in Strandja: Around Malko Turnovo



Lamiaceae



THRACIAN HEDGENETTLE

Stachys thracica DAV.

Description: A perennial, herbaceous plant. Leaves are opposite and are wide and either ovate or cordate at their base, but taper to a narrow tip. The corolla is crimson, and the sepals are covered in wooly, glandular hairs. Flowers are located in the leaf axils, and the terminal, spike-like inflorescence is quite dense, with small leaf-like bracts growing thickly among the blooms. There is a gap between the lowest node of the inflorescence and next leaf node.

Height: 20-80 cm

Habitat: Dry, rocky areas and open forests

Distribution in Bulgaria: Strandja

Distribution in Strandja: Rare across all of Strandja



Lamiaceae





COASTAL HEDGENETTLE

Stachys maritima GOUAN

Description: A perennial, herbaceous plant with a creeping, reddish root system and sterile tufts of leaves. Calyx teeth have glandular and wooly hairs all the way to their tips. The corolla is a creamy-yellow, peppered with violet spots. The upper lip is concave, while the lower is tripartite, with a wide center portion.

Height: 10 - 30 cm

Habitat: Sandy beaches

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: Rare South of Tsarevo



Lamiaceae



VIOLET SAGE

Salvia forskahlei L.

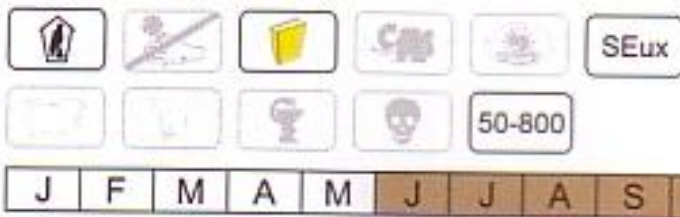
Description: A perennial, herbaceous plant with a tall, straight or slightly branched stem. The gap between the basal leaves and the first node is 10 - 20 cm. Leaves are cordate, ovate or lyriform, irregularly dentate, and are covered in glandular hairs. The corolla is violet-blue with a white, central tongue-patch speckled with violet spots.

Height: 25 - 100 cm

Habitat: Open forests and shrublands

Distribution in Bulgaria: Black Sea Coast, eastern Central Balkans, Thracian Valley, Strandja

Distribution in Strandja: Almost all of Strandja



Lamiaceae



HENBANE

Hyoscyamus niger L.

Description: An annual or biennial, herbaceous plant. Leaves are alternate, sessile, and have oblong laminae. Flowers are large and almost entirely sessile in the axils of the uppermost leaves. The calyx is tubular, while the corolla is bell-shaped, cream colored, laced with purple veins, and houses purple anthers.

Height: 0.5 - 3 m

Habitat: Damp and shady shrublands

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



DEADLY NIGHTSHADE

Solanum dulcamara L.

Description: A semi-climbing plant or shrub with violet flowers. The calyx and stem lack spines. Leaves are ovate to lanceolate, entire or with 1 - 2 teeth at their base. Fruits are red, round and juicy.

Height: 0.5 - 3 m

Habitat: Damp and shady shrublands

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja





YELLOW-PURPLE MULLEIN

Verbascum xanthophoeniceum GRISEB.

Description: A biennial, herbaceous plant with an unbranched stem that has small leaves on its lower portion. Basal leaves are gathered in a rosette and are lobed or somewhat divided. Flowers are yellow with a purple circle in the center formed by spots at the base of each petal. Flowers have quite long pedicels. The fruit is a capsule with many seeds as it is in nearly every member of the *Scrophulariaceae* family.

Height: 35 - 70 cm

Habitat: Dry, grassy or rocky areas, shrublands and open forests

Distribution in Bulgaria: Struma River Valley, eastern Rhodopes, Thracian Valley, Strandja

Distribution in Strandja: Almost all of Strandja



PURPLE MULLEIN

Verbascum phoeniceum L.

Description: A perennial or annual, herbaceous plant. The stem is leafless or has only a few small leaves with short hairs on their undersides. Pedicels are longer than the calyx. The corolla is violet or blue, rarely yellow or white. Hybridization is characteristic for this species in areas where many individuals are growing closely together.

Height: 30 - 100 cm

Habitat: Open forests, gassy and rocky areas, meadows and shrublands

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: Predominately along the Strandja Black Sea Coast





VARIEGATED MULLEIN

Verbascum bugulifolium LAM.

Description: A perennial, herbaceous plant with an unbranched stem. Leaves form a rosette at the plants base. Laminae are ovate, and shallowly dentate. Flowers are sessile, and are yellow to bluish-green, with red and purple stripe patterns. An endangered species in Europe. Another rare species of the same genus which can be found in Strandja is *Verbascum lagurus* FISCHER ET C. A. MEYER.

Height: 50 - 75 cm

Habitat: Shrublands, fields and the borders of open oak forests

Distribution in Bulgaria: Black Sea Coast, Strandja

Distribution in Strandja: Around the villages of Sinmorets and Brodilovo, and in Uzunbudjak Nature Reserve



TURRILL'S SPEEDWELL

Veronica turrilliana STOJ. ET STEFANOV

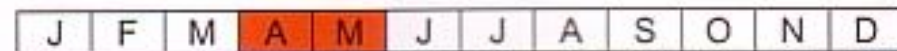
Description: A perennial, herbaceous plant with an upright, branched stem. Branches are covered in short, somewhat curly hairs. Leaves are leathery, and dully dentate along their margins. Flowers are blue, numerous, and are gathered in spikes. The calyx is bare. It is a tertiary relict species, and a local endemite which is endangered in Europe. It is also included in the IUCN World Conservation Unit's threatened species list.

Height: 10 - 30 cm

Habitat: Limestone outcrops

Distribution in Bulgaria: Strandja

Distribution in Strandja: Rare around Malko Turnovo, Stoilovo and Brashlian





SPIKE / FALSE-ORCHID SPEEDWELL

Veronica orchidea FRIES

Description: A perennial, herbaceous plant. Leaves are dentate, nearly bare, and either rounded, dulled or weakly pointed at the tip. The stem is somewhat hairy on its lower half, and has glandular hairs on its upper half. The inflorescence is a raceme, with a large number of blue flowers which grow very thickly together. The fruit is a capsule. Another species of the same genus which is found in Strandja is the Bulgarian endemite *Veronica krumovii* (D. PEEV) D. PEEV.

Height: 5 - 60 cm

Habitat: Grassy areas and shrublands

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



J F M A M J J A S O N D



GRECIAN FOXGLOVE

Digitalis lanata EHRH.

Description: A perennial, herbaceous plant. The stem and leaves on the lower half are bare. Leaves are entire or weakly crenate. The inflorescence is wooly, the calyx is pointed, and the corolla is off-white with brown or violet, membranous veins. Another species of the same genus which can be found in Strandja is the Balkan endemite *Digitalis viridiflora* LINDLEY.

Height: 30 - 70 cm

Habitat: Forests, grassy and rocky areas

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



J F M A M J J A S O N D





MEDITERRANEAN LINSEED

Bellardia trixago (L.) ALL.

Description: An annual, herbaceous plant which has a stem covered in glandular hairs. Leaves are opposite and dentate. Flowers are sessile, and the calyx is swollen and bell-like, with 4 short teeth. The corolla is whitish-pink, with a helmet-like upper lip, and a bottom lip which is tripartite. The inflorescence is compact. Seeds are numerous and small.

Height: 15 - 70 cm

Habitat: Grassy areas and shrublands

Distribution in Bulgaria: Southern Black Sea Coast, Thracian Valley, Tundja Plain, Strandja

Distribution in Strandja: All of Strandja



J F M A M J J A S O N D



COMMON TOOTHWORT

Lathraea squamaria L.

Description: A perennial, parasitic plant which is completely lacking in chlorophyll. The flower-bearing stem and underground root systems are covered in short, colorless scales. Flowers are drooping, turned to one side, and gathered in a raceme. The calyx is bell-shaped, and is lightly covered in long hairs. The corolla is double-lipped. The entire plant is a pale reddish-pink.

Height: 10 - 20 cm

Habitat: Damp forests a parasite of tree-roots

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



J F M A M J J A S O N D





GLOBULARIA / BLUE GLOBE DAISY

Globularia aphyllanthes CRANTZ

Description: A perennial, herbaceous or shrub-like plant with alternate, entire or linear leaves, and a basal rosette. The leaf blade is wide, with 3 - 5 veins and a well developed petiole. Flowers are blue, irregular and grow terminally in globe-shaped inflorescences. Calyx teeth are all the same length. The fruit is a small nut.

Height: 10 - 30 cm

Habitat: Rocky, often limestone terrain

Distribution in Bulgaria: Dobrudja, Central Balkan Mts., Slavjanka, Pirin, Rhodopes, Strandja, Znepole Region

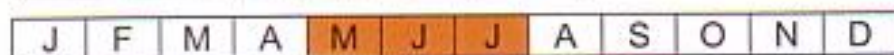
Distribution in Strandja: Cliffs around Malko Turnovo, Stoilovo, Mladejko and Brodilovo



Eur



0-2200



Globulariaceae



PEACH-LEAVED BELLFLOWER / CAMPANULA

Campanula persicifolia L.

Description: A perennial, herbaceous plant with large, bell-shaped flowers which grow singly in a loosely-flowered spike. Petals are wide and light blue, although white individuals do occur rarely. Calyx teeth are linear-lanceolate, while the pedicel is hairy. The stem is unbranched with linear or linear-lanceolate leaves. Another species of the same genus which is found in Strandja is the Balkan endemite *Campanula sparsa* FRIV.

Height: 30 - 70 cm

Habitat: Forests, shrublands and fields

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



Euro-Sib



0-2000



Campanulaceae





YARROW

Achillea clypeolata SM.

Description: A perennial, herbaceous plant with golden-yellow flowers. Flower heads are relatively large, and are gathered in tight, hemispherical inflorescences. Leaves are white, elongated and linear, with a wooly covering. Leaves on the mid-portion of the stem are pinnately divided. Leaflets are oval, lanceolate or oblong, and between 3 and 5 mm wide. The fruit is flattened.

Height: 20 - 70 cm

Habitat: Rocky areas, primarily on limestone

Distribution in Bulgaria: Southern Bulgaria

Distribution in Strandja: Almost all of Strandja



Asteraceae



COTTONWEED

Otanthus maritimus (L.) HOFFM. ET LINK

Description: A perennial, spreading plant with leaves covered in thick, wooly fuzz. The inflorescence is a relatively small but thick head composed of tube-shaped, yellow florets grouped at the ends of the branches. The receptacle is covered by an involucre of wooly, white bracts. The fruit is oblong.

Height: 15 - 50 cm

Habitat: Sand beaches

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: Rare south of Ahtopol



Asteraceae



THRACIAN KNAPWEED

Centaurea thracica (JANKA) HAYEK

Description: A perennial, herbaceous plant. Basal leaves are pinnately divided with a spear-shaped tip. Flowers are yellow. The involucre which cover the unopened flower head have unbranched and permanent spines lining their tips. Another species of the same genus which can also be found in Strandja is the rare and protected *Centaurea pichleri* SIBTH. ET SM.

Height: 30 - 90 cm

Habitat: Dry, gassy areas and shrublands

Distribution in Bulgaria: Black Sea Coast, northeastern Bulgaria, eastern Stara Planina, Tundja Plain, Thracian Valley, Strandja

Distribution in Strandja: Rare across almost all of Strandja



Asteraceae



SQUARROSE KNAPWEED

Centaurea triumfetti ALL.

Description: A perennial, herbaceous plant without tuberous roots. The stem is well-developed and somewhat alate. Leaves are ovate or lanceolate, entire, and are covered in grey, tomentose hairs. Flowers are bluish-purple, or more rarely, reddish-purple or white. Another species of the same genus which is also found in Strandja is the Balkan endemite *Centaurea amplifolia* BOISS. ET HELDR.

Height: 10 - 50 cm

Habitat: Grassy areas, shrublands, open oak forests

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



Asteraceae



ROUGH KNAPWEED

Centaurea napulifera ROCHEL

Description: A perennial, herbaceous plant with thick roots which become slightly narrower at their tips. Leaves have glandular, cobweb-like hairs on their upper surface. Flowers are white, more rarely pink or violet.

Height: 5 - 30 cm

Habitat: Pastures, dry, rocky areas

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



Asteraceae



SAND-PIT KNAPWEED

Centaurea arenaria BIEB.

Description: An annual or perennial, herbaceous plant with pinnate leaves deeply divided into linear leaflets. The entire plant is covered in white hairs which grow together in membranous patches on its lower parts. The inflorescence is a violet, outspread head.

Height: 30 - 120 cm

Habitat: Sand beaches

Distribution in Bulgaria: Black Sea Coast, northeastern Bulgaria, Tundja Plain

Distribution in Strandja: South of Tsarevo



Asteraceae





GOLDEN THISTLE

Scolymus hispanicus L.

Description: An annual or perennial, herbaceous plant covered in cobweb-like hairs. Leaves are pinnate and divided into very spiny portions. The stem is branched, spiny and alate. The head-like inflorescences are large, yellow and grow from either the stem apex or leaf axils. The fruit is flattened, with a pappus of a few rigid hairs which aid in wind dispersal.

Height: 30 - 80 cm

Habitat: Dry, grassy, storm exposed and sandy areas

Distribution in Bulgaria: Southern Bulgaria, Black Sea Coast, coastal mountain foothills

Distribution in Strandja: All of Strandja



Med



0-1000

J F M A M J J A S O N D

Asteraceae



BLUE LETTUCE

Lactuca tatarica (L.) C. A. MEYER

Description: A perennial, herbaceous plant with milky sap. Leaves are pinnately divided, flowers are bluish-purple and are gathered in terminal panicles. The fruit is brownish with its seed-bearing portion 4 - 6 times longer than the non seed-bearing portion.

Height: 20 - 60 cm

Habitat: Sand beaches

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: South of Tsarevo



Pont-As



0-200

J F M A M J J A S O N D

Asteraceae





MARTAGON LILY / TURK'S CAP LILY

Lilium martagon L.

Description: A perennial, herbaceous plant which grows, like many members of the lily family, from an underground bulb. Leaves are bare, with the middle ones whorled. The inflorescence is a raceme with drooping, reddish-pink flowers covered in purple spots. The petals curl back on themselves.

Height: 40 - 100 cm

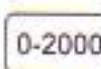
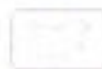
Habitat: Forests and clearings

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: Rare in the forests of Strandja



Euro-As



0-2000

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PONTIC FRITILLARY

Fritillaria pontica WAHLENB.

Description: A perennial, herbaceous plant with lower leaves which are lanceolate or elliptical and upper leaves gathered 2 - 3 per node. Flowers grow solitary and are large and drooping, with a bell-shaped form. Petals are pale, wine-red along their margins and tip, with yellowish-green vertical bands. Included in the IUCN threatened species list. A rare species of the same genus found in Strandja is *Fritillaria graeca* BOISS. ET SPRUN.

Height: 20 - 45 cm

Habitat: Forests and shrublands, forest clearings and grassy areas on limestone and damp, siliceous soils

Distribution in Bulgaria: Black Sea Coast, northeastern Bulgaria, central and eastern Central Balkan Mts., Struma River Valley, central Rhodopes, Strandja

Distribution in Strandja: Rare in oak forests throughout Strandja



Med



0-1500

J	F	M	A	M	J	J	A	S	O	N	D
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ALPINE SQUILL

Scilla bifolia L.

Description: A perennial, herbaceous plant with 2 (rarely 3) long, blunt-tipped basal leaves which develop together with the flowers. Flowers are blue, rarely white or pink, and are gathered in raceme-like inflorescence of 2 - 5 (but sometimes up to 14) blossoms. Sepals are almost completely undeveloped. A very rare species of the same genus found in Strandja is *Scilla bithynica* BOISS., which has clearly developed sepals and usually 3 - 4 leaves at the base of its stem.

Height: 10 - 20 cm

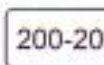
Habitat: Shady forests and shrublands ascending into mountains

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



Pont-subMed



200-2000

J F M A M J J A S O N D



Liliaceae



TASSEL HYACINTH

Muscari comosum (L.) MILLER

Description: A perennial, herbaceous plant with a leafless stem. Flowers are bluish-purple, have reduced bracts, and are situated at the top of the stem in an elongated raceme. The upper, sterile flowers form a cluster at the stem apex, and change in form and color as they mature. The fruit is a sharp, 3-chambered capsule. Another species of the same genus which is found in Strandja is the Balkans endemite *Muscari vandasii* VELEN.

Height: 10 - 30 cm

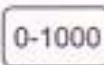
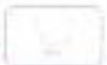
Habitat: Grasslands and fields

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



Med



0-1000

J F M A M J J A S O N D



Liliaceae

SNOW DROP

Galanthus nivalis L.

Description: A small plant that blooms early in the spring from an underground bulb. It most commonly has 2 or 3 linear basal leaves. Flowers are solitary and drooping. The perianth is white and divided down to its base into 6 parts. The interior petals have a green patch at their tip. The fruit is a fleshy capsule. A rare species of the same genus found in Strandja is *Galanthus elwesii* HOOK. FIL., which has a green spot on both the base and tip of its petals.

Height: 10 - 20 cm

Habitat: Forests, shrublands and forests meadows

Distribution in Bulgaria: Black Sea Coast, Dobrudja, western Stara Planina, western foothills

Distribution in Strandja: Rare throughout almost all of Strandja



J	F	M	A	M	J	J	A	S	O	N	D
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SUMMER SNOWFLAKE

Leucojum aestivum L.

Description: A perennial plant with 3 - 4 long, linear, dark green basal leaves. The inflorescence grows in a terminal cluster of 3 - 8 white flowers, and resembles an umbel. Flowers are bell-shaped, with a green spot at their apex.

Height: 20 - 40 cm

Habitat: Boggy meadows, riverside forests, vernal wetlands

Distribution in Bulgaria: Around the rivers Danube, Maritsa, Tundja, Kamchia, Ropotamo, Stuma, Veleka and Silistar

Distribution in Strandja: Around the Veleka, Silistar and Resovska rivers



J	F	M	A	M	J	J	A	S	O	N	D
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SLENDER STERNBERGIA

Sternbergia colchiciflora WALDST. ET KIT.

Description: A perennial, herbaceous, fall-blooming plant with bright yellow flowers. The perianth is funnel-shaped with a long tube which is deeply divided into 6, somewhat spatulate petals. The stem is 3-chambered, and the stigma is tripartite. The fruit is capsular. Blooms during the fall, but the leaves and fruit appear the following spring.

Height: 10 - 15 cm

Habitat: Dry, grassy areas

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



Euro-Pont



0-1200

J F M A M J J A S O N D



SEA DAFFODIL

Pancratium maritimum L.

Description: A perennial plant with long, narrow basal leaves which may be up to 50 cm long. Leaves are covered in a waxy coating. The flower-bearing stem is longer than the leaves and terminates in an umbel of 3 - 12 large, white flowers. The bulb is large and grows from relatively deep in the sand. The fruit is a 3-ribbed seed capsule.

Height: 30 - 80 cm

Habitat: Sand beaches and sand spits

Distribution in Bulgaria: Southern Black Sea Coast

Distribution in Strandja: Along the Black Sea Coast south of Ahtopol and Resovo



Pont-Med



0-0

J F M A M J J A S O N D





WILD ASPARAGUS

Asparagus acutifolius L.

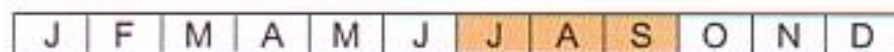
Description: A prickly, woody-stemmed, low-growing evergreen shrub. Leaves are scale-like, with axils where tufts of narrow, green, leaf-like branches develop. These cladodes eventually replace the regular leaves. Cladodes are hard, short and spiky. The stem is climbing. The perianth is bell-shaped, whitish to yellow-green. The fruit is a red to black berry. Young shoots can be eaten and are regarded as a more flavorful, but bitter, substitution for the cultivated variety.

Height: 60 - 150 cm

Habitat: Shrublands and xeric oak forests

Distribution in Bulgaria: Black Sea Coast, Rhodopes, Struma River Valley, Strandja

Distribution in Strandja: Black Sea Coast and eastern Strandja



Asparagaceae



HORSE-TONGUE / LARGE BUTCHER'S BROOM

Ruscus hypoglossum L.

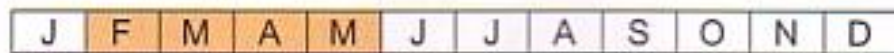
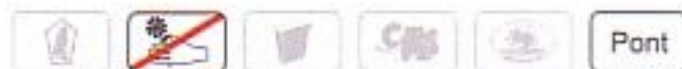
Description: A small, evergreen shrub with large cladodes which grow without a spiny tip. Flowers are whitish, and grow singly on the upper side of the cladodes in the axils of the lanceolate, scaly bracts. The fruit is a red (sometimes yellow) berry, and only grows on female or hermaphroditic plants. Tertiary relict species.

Height: 20 - 40 cm

Habitat: Damp, shady forests

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: Almost all of Strandja, primarily in beech forests



Asparagaceae



BUTCHER'S BROOM

Ruscus aculeatus L.

Description: An evergreen shrub with small, dark green cladodes which have a sharp, spiny tip. The stem is heavily branched and green. Flowers are whitish, and are gathered 1 - 2 in the axils of the small bract on the underside of the cladode. The fruit is a red berry. Tertiary relict species.

Height: 30 - 50 cm

Habitat: Shrublands and forests

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: Almost all of Strandja and along the Black Sea Coast, primarily in xeric oak forests



SPont



0-1000

J F M A M J J A S O N D



Asparagaceae



YELLOW IRIS / YELLOW FLAG

Iris pseudacorus L.

Description: An herbaceous plant with long, sword-shaped leaves and a semi-cylindrical stem. Flowers are large and yellow. Interior petals are shorter than the stigma, and stand up straight. The outer petals are bare, lack hairs and fall downwards. The fruit is a 3-chambered, many-seeded capsule.

Height: 50 - 150 cm

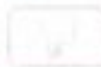
Habitat: Boggy areas, along rivers and frequently flooded areas

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: Along the lower stretches of rivers



Eur



0-1000

J F M A M J J A S O N D



Indaceae



DWARF BLUE IRIS

Iris sintenisii JANKA

Description: A perennial, herbaceous plant with violet-blue flowers. The tube of the flower is longer than the pedicel. The receptacle is flatted, and shorter than the leaves. Sepals are green, grass-like and resemble leaves. The fruit is a 3-chambered, many-seeded capsule.

Height: 15 - 40 cm

Habitat: Meadows, gassy areas, shrublands

Distribution in Bulgaria: Southern Bulgaria, Black Sea Coast, Struma River Valley

Distribution in Strandja: Rare throughout almost all of Strandja



J F M A M J J A S O N D



Indaceae



DWARF BEARDED IRIS

Iris suaveolens BOISS. ET REUTER.

Description: A perennial, herbaceous plant with long, narrow, linear leaves which have wavy margins. Each stem carries 1 - 2 flowers. This is a highly variable species, and individuals may differ in stem length, flower size and coloration. Yellow, blue, white, brown and purple flowers may all be encountered. The fruit is a 3-chambered, many seeded capsule.

Height: 10 - 15 cm

Habitat: Dry, grassy and rocky areas, steep slopes

Distribution in Bulgaria: Strandja, Black Sea Coast, Tundja Plain, Tracian Valley, eastern Rhodopes, Pirin, Slayanka, Belasitsa, Struma and Mesta River Valleys

Distribution in Strandja: Almost all of Strandja



J F M A M J J A S O N D



Indaceae



YELLOW CROCUS

Crocus flavus WEST.

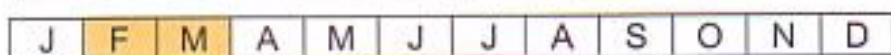
Description: A perennial, herbaceous plant with yellow flowers. The corm tunic frays, becoming hair-like, and covers part of the aboveground portion. Leaves are bare or covered along their margins by short hairs. Stigmas are yellow, and the style is three-parted. Another species of the same genus which is found in Strandja is the Balkan endemite *Crocus olivieri* J. GAJ.

Height: 10 - 20 cm

Habitat: Meadows, dry gassy areas, shrublands

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



Iridaceae



SCOTCH CROCUS / CLOTH OF SILVER

Crocus biflorus (L.) MILLER

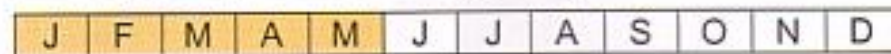
Description: A perennial, herbaceous plant which grows from a corm covered by the husks of old leaves. The stem is shortened, and during flowering, is concealed in the ground. Leaves are linear, and the perianth is regular with 6 identical petals joined at the base to form a tube. Flowers are violet or whitish, with darker stripes on their outer side. The ovary is inferior and 3-chambered. There are 3 stamens, and the fruit is capsular.

Height: 10 - 15 cm

Habitat: Dry, grassy areas and shrublands

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



Iridaceae



HAIRY CROCUS

Crocus pulchellus HERBICH

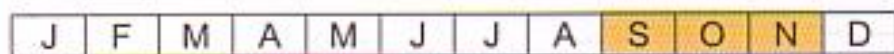
Description: A perennial, herbaceous, fall-blooming plant which grows from a corm. The husk of the corm has rings near its base. The anthers are white and the flowers are pale violet-blue with dark lavender veins. The ovary is inferior, and 3-chambered. There are 3 stamens and the fruit is capsular.

Height: 12 - 20 cm

Habitat: Gassy areas, shrublands, forests

Distribution in Bulgaria: Struma River Valley, Blasitsa, Slavianka, Rhodopes, southeastern Bulgaria

Distribution in Strandja: All of Strandja



Iridaceae



SAND CROCUS

Romulea linaresi PARL.

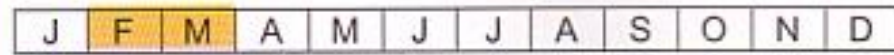
Description: A perennial, herbaceous plant which grows from an underground bulb. Leaves are linear and bare. The bulb is elongated, with a hairy covering. The stem is rounded with 1 - 3 violet, or less commonly, white flowers. Another species of the same genus found in Strandja is *Romulea bulbocodium* (L.) SEB. ET MAURI.

Height: 10 - 15 cm

Habitat: Grassy areas and shrublands

Distribution in Bulgaria: Black Sea Coast, eastern Rhodopes, Strandja

Distribution in Strandja: Rare along ridges around Malko Turnovo, Zvezdets and Stoilovo, and south of Sinemorets, protected area "Silistar"



Iridaceae



LONG-LIPPED SERAPIAS

Serapias vomeracea (BURM.) BRIQ.

Description: A perennial, herbaceous plant with a tuberous root system. Leaves are lanceolate and flowers are few and large. The interior petals are raspberry red. The lip is three-parted, dark purple, and does not have a spur. The middle portions are long and the tip folds backwards. A tertiary relict species.

Height: 20 - 35 cm

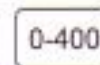
Habitat: Shrublands and the borders of sunny fields

Distribution in Bulgaria: Southern Black Sea Coast, eastern Rhodopes, Slavianka, Strandja

Distribution in Strandja: South of Ahtopol, around of Sinemorets, and around the villages of Brodilovo, Kosti and Slivarovo



Med



0-400

J F M A M J J A S O N D



BALKAN LIZARD ORCHID

Himantoglossum caprinum
(BIEB.) SPRENGEL

Description: A perennial, herbaceous plant with a tuberous root system. The flowers are violet-white, with violet veins and purple spots inside. The labellum is 3 to 5 times longer than the other petals. The middle portion is narrow, ribbon-like and curled from its base.

Height: 60 - 70 cm

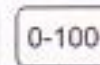
Habitat: Shrublands

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: All of Strandja



Med



0-1000

J F M A M J J A S O N D





BUTTERFLY ORCHID

Orchis papilionacea L.

Description: A perennial, herbaceous plant with a tuberous root system. Leaves are lanceolate. Flowers are purple of varying shades. The lip is entire at the front, with slightly wavy teeth, and is longer than the other petals.

Height: 20 - 40 cm

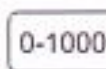
Habitat: Fields and meadows

Distribution in Bulgaria: Stara Planina, Loulin, Rhodopes, southern Black Sea Coast, Strandja

Distribution in Strandja: Almost all of Strandja



subMed



0-1000

J F M A M J J A S O N D



WOODCOCK ORCHID

Ophrys scolopax STEVEN

syn. *Ophrys scolopax* subsp. *cornuta* (STEVEN) E. G. CAMUS

Description: A perennial, herbaceous plant with a tuberous root system. The lip is convex, velvety and three-parted. On the base of the upper surface there are two purple, horn-shaped marks. The side leaves of the corolla are always pinkish-purple. The lip has a clear protuberance at the apex. The side lobes are large, wooly, and shaped like horns.

Height: 15 - 50 cm

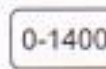
Habitat: Fields and shrublands

Distribution in Bulgaria: All of Bulgaria

Distribution in Strandja: Almost all of Strandja



Bal-Anat



0-1400

J F M A M J J A S O N D





REINHOLD'S ORCHID

Ophrys reinholdii H. FLEICSHM.

Description: A perennial, herbaceous plant with tuberous roots. The inflorescence is loosely spaced and the flowers are bee-like. Outer petals are pinkish-red, and are lanceolate in form. The labellum is pink-purple. The center portion is butterfly-velvety. The side lobes are lighter colored and wooly.

Height: 20 - 60 cm

Habitat: Rocky, limestone terrain, shrublands

Distribution in Bulgaria: Strandja

Distribution in Strandja: Rare around Malko Turnovo, and the areas of Gogovo and Kachul



						Or-Med					
						0-300					
J	F	M	A	M	J	J	A	S	O	N	D

Orchidaceae



SAND GALINGALE / SAND SEDGE

Galilea mucronata (L.) PARL.

Description: A perennial, herbaceous plant with linear leaves and a curly stem. The inflorescence is compact, globular head composed of many spikelets, with green, curly leaves longer than itself. Glumes are lanceolate to ovate and purplish. The fruit is a 1-seeded, ribbed nut.

Height: 30 - 50 cm

Habitat: Sand beaches

Distribution in Bulgaria: Black Sea Coast

Distribution in Strandja: To the south of Tsarevo

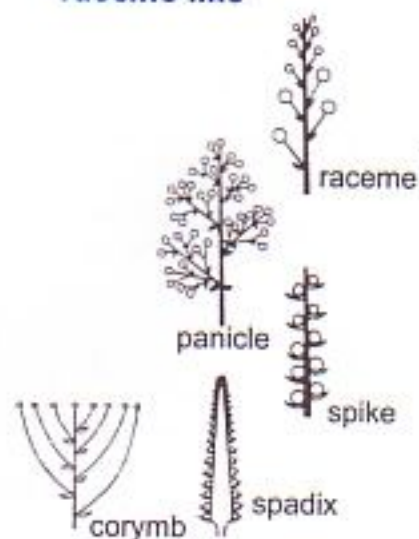


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J	F	M	A	M	J	J	A	S	O	N	D

Cyperaceae

INFLORESCENCE

raceme-like



cyme-like

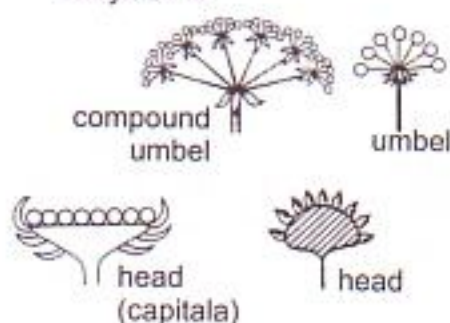
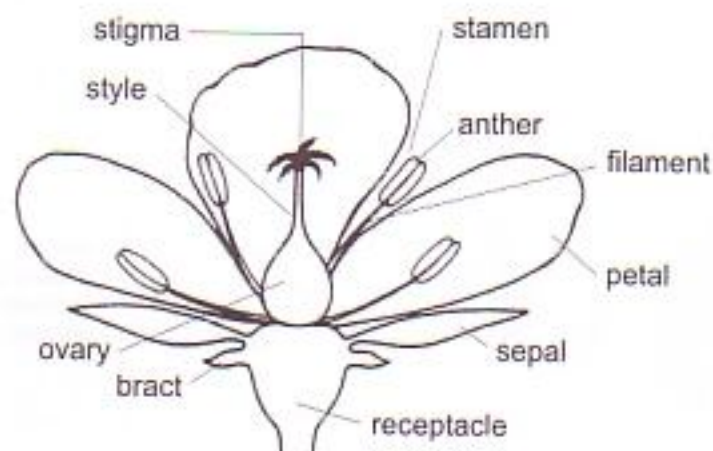
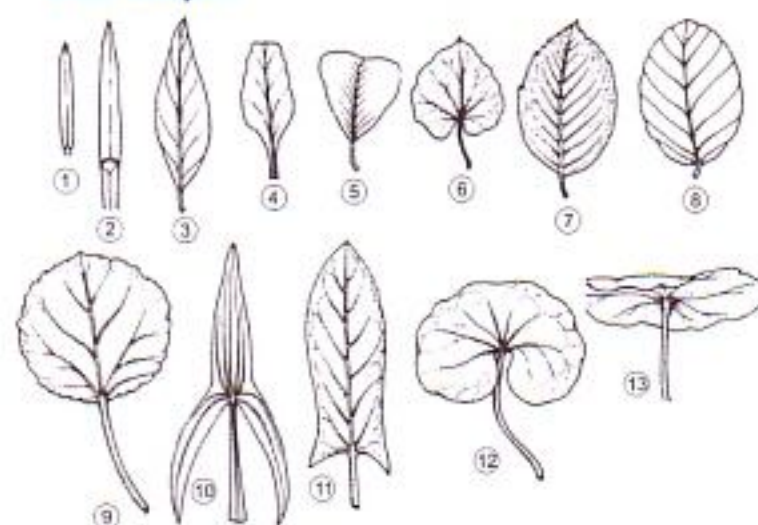


DIAGRAM OF FLOWER



LEAF TYPES

Leaf shapes



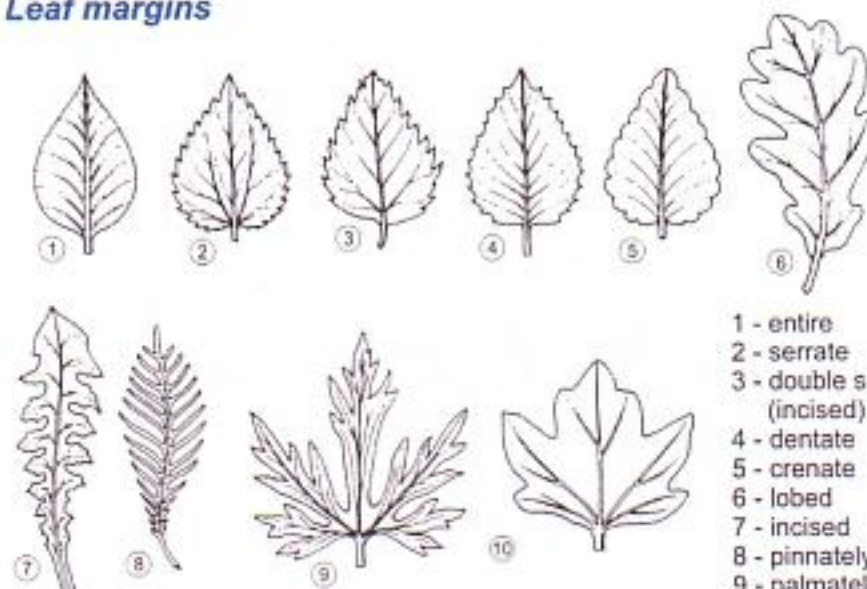
- 1 - needle-like
- 2 - linear
- 3 - lanceolate
- 4 - spatulate (spade-shaped)
- 5 - obcordate (wedge-shaped)
- 6 - cordate
- 7 - ovate
- 8 - elliptical
- 9 - circular
- 10 - sagittate (arrow-shaped)
- 11 - hastate (lance-shaped)
- 12 - reniform (kidney-shaped)
- 13 - peltate

Leaf arrangements



- 1 - even pinnate
- 2 - odd pinnate
- 3 - pinnately trifoliate
- 4 - compound bipinnate
- 5 - palmately trifoliate
- 6 - palmate

Leaf margins



- 1 - entire
- 2 - serrate
- 3 - double serrate (incised)
- 4 - dentate
- 5 - crenate
- 6 - lobed
- 7 - incised
- 8 - pinnately incised
- 9 - palmately divided
- 10 - palmately lobed

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The Plants of Strandja Nature Park

