



جامعة بيروت العربية
BEIRUT ARAB UNIVERSITY

Glance at the Bloom of Debbieh



Research Center
for Environment and Development

Bekaa Campus 2022



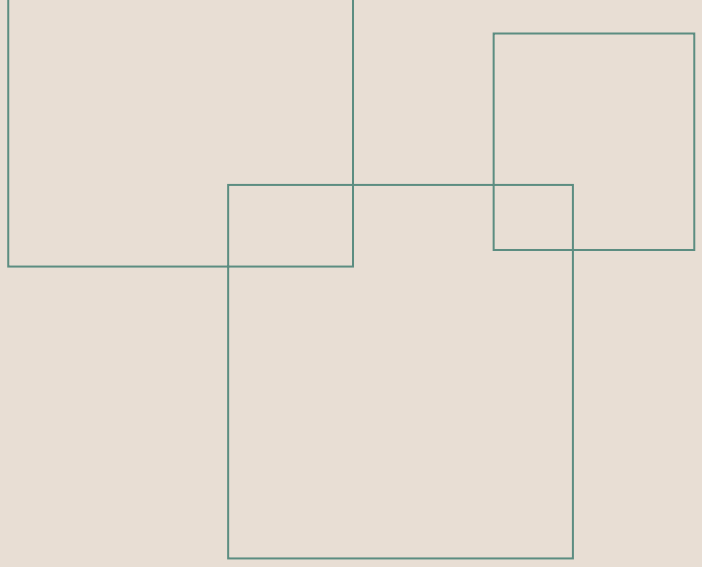
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Table of Contents

4	Preface
5	Authors
7	Acknowledgment
8	Overview of Debbieh
14	Abbreviations
15	Floristic Species
39	References



Preface

This booklet responds to the interest of the Faculty of Science, Beirut Arab University (BAU), expressed by its Dean, Prof. Ramadan Awad, to conduct a preliminary checklist of the flora of BAU Debbieh campus. The flora of campus represents a sample of the unique and rich biodiversity of the coastal ecosystem of Debbieh (دببية), Iklim Al-Kharroub (إقليم الخروب), Chouf Mountains (جبل الشوف), Lebanon. The booklet aims to enhance the awareness of students and staff to the importance of flora biodiversity of campus and inspire all to work together towards a better understanding and conservation of Debbieh ecosystem. A small bouquet of characteristic plant species identified through field excursions by the authors during 2018 and 2019 is presented. Species identification was based on the taxonomic keys of the “New Flora of Lebanon and Syria” (Mouterde, 1983,1970,1966) and updated nomenclature of The Plant List (<http://www.theplantlist.org/tpl1.1/record/kew2406990>) and Euro+Med Plant Base (2006-) (<http://ww2.bgbm.org/EuroPlusMed/>). Personal illustrations of landscape and species with key botanical description, flowering time, habitat, native geographical range, traditional use, and origin of name are provided. It is hoped the booklet is successful in expressing BAU’s profound interest in increasing the appreciation of the valuable and unique natural heritage of Debbieh, thus raising awareness towards the pressing need to conserve this valuable Lebanese patrimony.



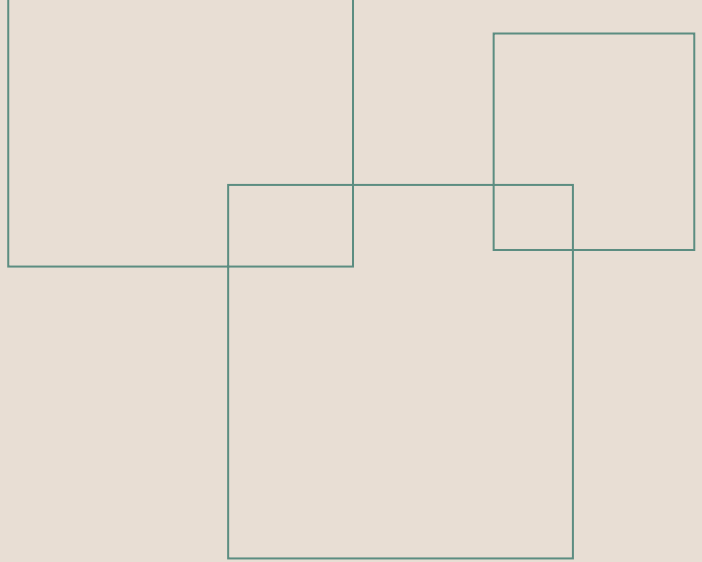
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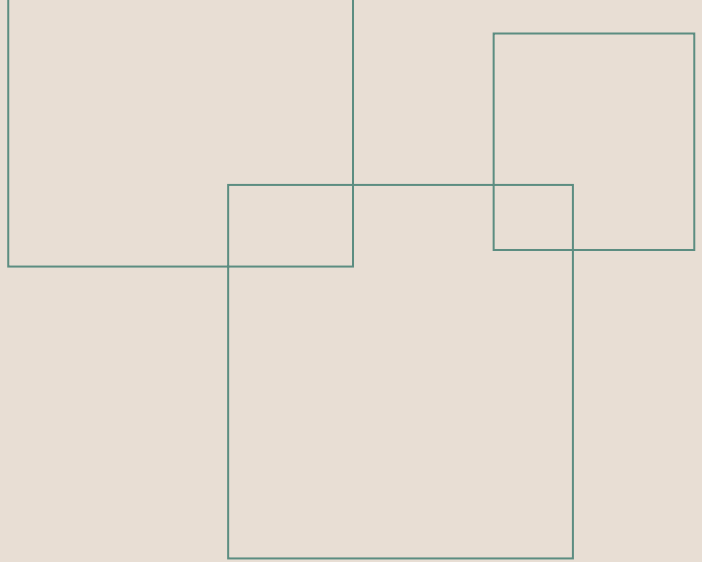
Doctorate of State in Pharmacy, Descartes University, Paris, France (1985); Doctorate of State in Pharmacy, René Descartes University, Paris, France (1979); C.E.S. in Drug Biological Control (Pharmacognosy, Toxicology, Microbiology), University René Descartes, Paris, France (1973); French State Diploma in Pharmacy, Lyon, France (1965). Main awards include: Medal of Pharmacognosy and Ethnopharmacology, Prize of Chemistry, Robert Prize, Prize of Botany and Cryptogamy, and Laureate of René Descartes University, Paris, 1985; Award of Lebanese Association for the Advancement of Science and National Council for Scientific Research, Lebanon (LAAS), 2015. Has been a professor of Botany, Cryptogamy, Plant Biology, Pharmacognosy at several universities in Europe and Lebanon. Currently teaching at the Holy Spirit University of Kaslik and Université Saint-Joseph de Beyrouth, Lebanon. Author of the book *“Ethnobotanique et ethnopharmacologie de la flore de Chypre et de l’Est méditerranéen”* and more than 200 articles, and co-author of the booklet *“A Glance at the Wild Flora of Mount Hermon, Lebanon”*. Research interests are mainly focused on Herbal Medicine, Flora biodiversity, Pharmacognosy, Phytochemistry, and Ethnopharmacology.



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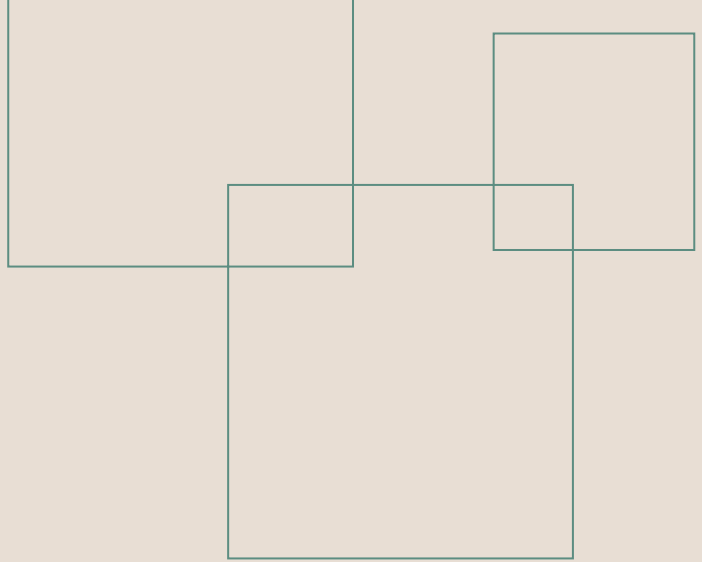


Prof. Emerita Nelly Apostolides Arnold



Acknowledgment

First and foremost, the authors would like to express sincere gratitude to Professor Amr Galal El Adawi, President of Beirut Arab University (BAU), for his keen passion for the conservation of Lebanese flora and providing the opportunity for the preparation of this booklet. Special thanks to Professor Ramadan Awad, Dean of Faculty of Science, and Dr. Omar Houry, Secretary General of BAU, for their tremendous encouragement and valuable suggestions. Also thanks go to Dr. Hatem Nasser, Mr. Ousama Halblab, and Engineer Ali Mshaik for their efforts and technical assistance during field excursions and herbarium preparations. This booklet could not have been prepared without the support of the management team of Debbieh campus, Mr. Mohamad Zankar and Mr. Said Nasr El-Din for facilitating field excursions.



Overview of Debbieh



Overlooking the Mediterranean Sea, Debbieh (دبّية) is a small town on one of the spectacular hills of Iklim Al-Kharroub (إقليم الخروب) of Chouf Mountains (جبل الشوف) Lebanon. It is located at a midway point of 400 m altitude between the capital Beirut and the rest of Mount Lebanon. It occupies an area of 16.61 km² and has a population of a few thousands.

The geographical location of Debbieh

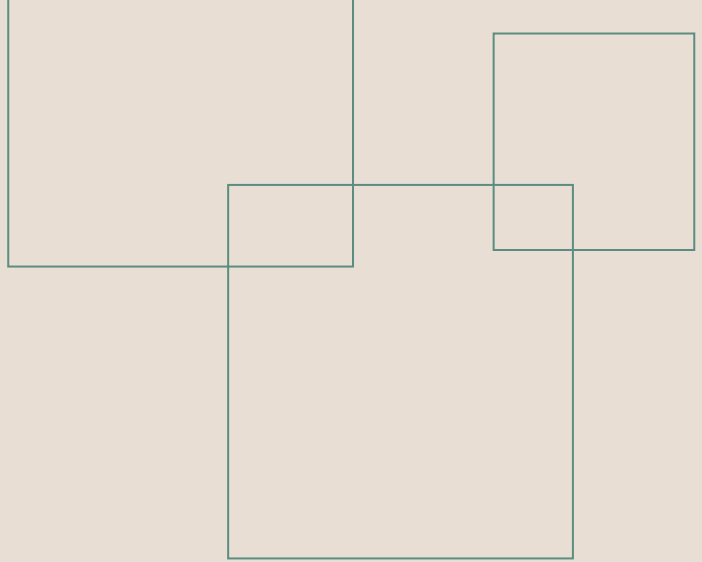
Source: https://en.wikipedia.org/wiki/Chouf_District#/media/File:Lebanon_districts_Chouf.png.



Spectacular scene of Debbieh hills from BAU.

Until recently, Debbieh has been considered a picturesque landscape and serene natural beauty a true “havre de paix” (safe haven) and “le régal des yeux” (a regal for the eyes) that majestically reveals God’s glory and love to his creation. Debbieh has been among the best-preserved Lebanese ecosystems and a home for a rich mosaic of plant communities and wildlife. Debbieh’s vegetation features a conifer-sclerophyllous-broadleaf forest ecosystem that characterize Eastern Mediterranean forests. It can be organized into three main groups: (i) broadleaf sclerophyllus vegetation (maquis); (ii) Coniferous stands of Calabrian Pine (*Pinus brutia*); and various associations of Oak (*Quercus* sp.) woodlands and formations (*Calicotome villosa*, *Sarcopoterium spinosum*). The chief tree taxa include Kermes oak (*Quercus coccifera*) community, Cyprus Turpentine (*Pistacia palaestina*) and Greek Strawberry (*Arbutus andrachne*). In this highly valuable ecosystem, Calabrian Pine (*Pinus brutia*) form the upper story of the forest while *Quercus coccifera* and other evergreen shrubs form the lower one. The town’s name is derived from “Ze’biyeh”, Aramaic for “The Place of Wolves”. It is believed that Debbieh is used to be a home to a large number of grey wolves in the past. The town is one of the largest municipalities in Lebanon by area. Fairuz, a renowned Lebanese singer, recounts spending summers in Debbieh with her grandmother as a child.

Today, the intensive urbanization growth recently witnessed in Debbieh has started to cause severe destruction to the vegetation cover causing major habitat fragmentation and loss of biodiversity. The recent establishment of a new BAU campus (<http://www.bau.edu.lb/Debbieh-Campus>) has attracted locals and foreign companies to extensively invest in construction projects and commercial development.



This has caused intensified damage to the natural habitats and mounded up threats to wildlife and plant species. The campus area is 1,353,000 m² and is still mostly natural. The campus captures a wonderful view of the Mediterranean Sea and encompassed with an array of hills and woods with magnificent colorful and fragrant plants inhabited by birds, butterflies, bees and other forms of diverse wildlife.

In spite of Debbieh's striking ecosystem features, sadly limited consideration has been given to the protection of its natural habitat and biodiversity. Debbieh is now experiencing a wide range of severe threats starting from habitat degradation, over-exploitation, invasive alien species and pollution. This situation is exacerbated by climate change and socioeconomic constraints along with complex political conflicts, lack of security, and stability in the country and the region. The recent devastating forest fire that hit Debbieh in October, 2019, whether it started naturally or arson, it has certainly resulted in serious threats to the entire forest ecosystem and wildlife existence .

This booklet presents a preliminary assessment of flora biodiversity that may serve as a public awareness tool on the importance of Debbieh's forest ecosystem. Hopefully this booklet will contribute towards biodiversity conservation development and forest fire prevention efforts.



Debbieh forest fire. *Source:* Youtube. Uploaded by: Fayad, Oct 14, 2019



Pine trees of Debbieh burning. *Source:* 104 Fires In 24 Hours, Lebanon Is Burning (<https://www.beirut.com/l/58655>).



Harmonious landscape of *Cistus creticus* and *Calicotome villosa* under *Quercus coccifera*.



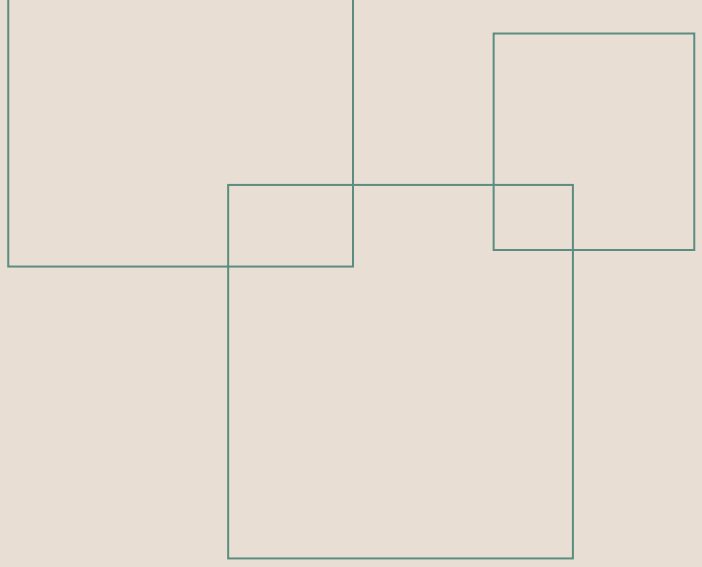
Beauty of flowering *Teucrium creticum* in its natural rocky habitat.



Ancient *Ceratonia siliqua* (Carob) trees, a predominant species of Iklim Al Kharroub (Carob district).



Graceful view of Blue Iris, *Iris sisyriuchium*, believed to be one of the oldest iris species in existence, retaining the archaic features of which many other irises have descended (“The Encyclopedia of BULBS”, http://www.lifile.com/Encyclopedia/BULBS/Family/Iridaceae/34003/Iris_sisyriuchium).



Abbreviations:

Ft: Flowering Time

Hab: Habitat

Alt: Altitudinal Level

Distr: Distribution

Allium Trifoliatum Cirillo

Pink Garlic, Hirsute garlic

ثوم ثلاثي الورق

Amaryllidaceae (*Liliaceae*, *Alliaceae*)



Bulbous perennial herb, 10-50 cm, has garlic odor when crushed, not common but forms large colonies. **Leaves** 2-3, most often linear, almost basal, hairs along margins at the base giving the name “Hirsute (hairy) Garlic”. **Umbel** erect and closely parallel, emerging from a common point, pedicels. **Flower** star-shaped, perianth two whorls, white petaloid segments, lanceolate, acute, with a pink vein. **Fruit** capsule round-trigonal.



Distr: Dinniyeh, Jabal Moussa, Feytroun, Ghazir, Beirut, Baabda, Bsous, Joun, Kfarhouni, Rihane, Debbieh.

Uses: Edible-Bulbs cooked or raw in salads, milder flavour than cultivated garlic, toxic if consumed in large quantities. Medicinal-Bulbs anti-infection.

Etymology: “*Allium*” from Latin for garlic and “*Trifoliatum*” from Latin for three.

Ft: March-May.

Hab: Rocky stony soil, hillsides.

Alt: Mediterranean region.



Anchusa azurea Mill

Italian Bugloss/ Italian Alkanet

لسان الثور أزرق، بلغصون

Boraginaceae



Perennial herb, 30-60 cm, hispid. **Stem** erect, paniculately branched, densely setose. **Leaves** lanceolate or oblong, acute, mostly basal, lower leaves petiolate, upper leaves sessile. **Inflorescence** usually forked. **Flowers** deep blue, large. **Corolla** tubular base, 5-lobed, flat faced obtuse lobes. **Sepals** linear, acute very hairy. **Fruit** achene, triangular.



Distr: Iaat, Aayha, Sirawan (Dinnyeh), Bqaakafra, Arz Bsharreh, Laqlouq, Monsef, Nahr Ibrahim, Damour, Mristi, Mlikh, Ahiram Tomb, Debbieh.

Uses: Edible-Leaves & Shoots cooked as vegetable, blue flowers decorative for salads. Medicinal-Aerial parts as antitussive, diaphoretic, depurative, diuretic, against inflammations. Natural materials (colouring red dye from roots). Melliferous.

Etymology: "*Anchusa*" from Greek for a root pigment used as a cosmetic paint for skin and "*Azurea*" from Latin for sky blue in reference to flower colour.

Ft: May-June.

Hab: Fields, disturbed areas, open sunny areas.

Alt: Mediterranean and Irano-Turanian, also Euro-Siberian.



Arbutus andrachne L.

Greek Strawberry

قطلب

Ericaceae



Evergreen small tree, 3-5 m. **Trunk** red-brown, peeling off in sheets revealing the reddish inner bark. **Branches** tortuous. **Leaves** large, entire or little dentate, alternate, ovate elliptical, glabrous, dark green, and shiny on upper side, dull green underneath, short petiole. **Flowers** small, in pubescent sparse racemes, numerous, terminal panicle. **Corolla** white-cream, urceolate. **Calyx** small, deeply lobed. **Fruit** orange berry with fine ridges, many-seeded, dry pulp.



Distr: Qoubaiyat, Dlepta, Rihanyeh, Jabal Moussa, Qousaybeh, Baabda, South Awali, Debbieh.

Uses: Edible-Fruits but not common. Medicinal-Leaves treatment for diabetic, infections, hypertensive, rheumatism and skin lesions, and as a diuretic and laxative. Ornamental and manufacturing woods for roofing and tools. Archeological evidence shows *Arbutus* wood in a beam supporting the roof of the «Sunken Room» at Sidon, Lebanon. According to available radiocarbon, the wood dates back to c.1390-1120 BCE (Before Common Era).

Etymology: “*Arbutus*” from Latin for a tree or “*Arbustus*” for plantation of trees and “*Andrachne*” from Greek for strawberry tree.

Ft: March-April.

Hab: East Mediterranean. **Endemic for Euro+Med.**

Alt: Mediterranean woodland, shrubland and forest. Usually grows dispersed as single individuals. *Arbutus andrachne* is one of the constituents of oak forests of Lebanon Mountain Range, usually at 600-1500 m altitude.

Ceratonia siliqua L.

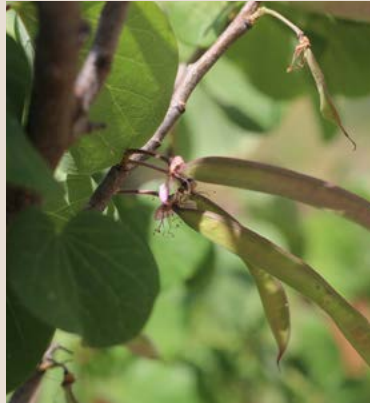
Carob tree, St. John's bread

خروب

Fabaceae (Leguminosae)



Evergreen tree, up to 10 m, thick trunk, brown rough bark. **Branches** curved, flexuous. **Leaves** paripinnate, leaflets 2-5 pairs, oval leaflets, opposite, glabrous above, hairy below, coriaceous, dark green and shining above, pale green beneath. **Inflorescence** axillary, racemes 5-30 cm long, solitary or clustered, numerous flowered. **Flowers** small, numerous, green-tinted red, have calyx but not corolla. **Pods**, directly on branches, long, curved, brownish-violet, pendent, compressed, thick and turgid. **Seeds** hard, numerous, pale brown, shining, transverse, embedded in sweet pulp.



Distr: Nuryeh, Monsef, Aintoura, Chouaifat, Jisir Qadi, Damour, Iklīm El-Kharroub.

Uses: Edible-Fruits (pods) rich with sugars and protein, highly nutritive as forage and production of molasses (Carob Dibs) from pulp. Carob Dibs mixed with sesame seeds paste (Tehini) is consumed as traditional dessert. Seeds as substitute of coffee, high in the polysaccharide galactomannan carob bean gum (GBG) or locust bean gum as food additive and pharmaceutical industry. Medicinal-molasses as laxative, leaves anti-diarrheic and anti-diabetic. Melliferous.

Etymology: "*Ceratonia*" from Greek "*keras*" or "*keration*" for horn referring to carob fruit and "*Siliqua*" from Latin referring to the hardness and shape of the pod. The word "*carat*", a mass unit used since ancient times in the Middle East to weigh gold and gemstones against the seeds of the carob tree, is derived from "*Keration*".

Ft: July-November.

Hab: One of the most important maquis trees, sunny places, poor sandy soils, rocky hillsides, well-drained loams, costal hill slopes up to 1000 m, Highly abundant in Iklīm El-Kharroub (إقليم الخروب), believed to be named after the tree.

Alt: Mediterranean. Widely naturalized.

Cercis siliquastrum L.

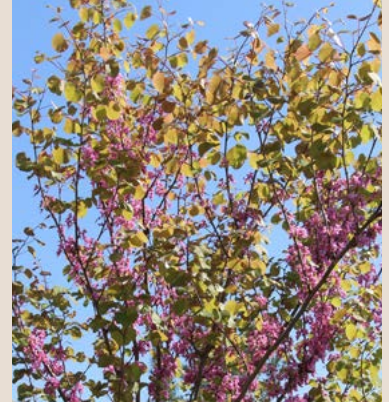
Judas tree

زمريق

Fabaceae (Leguminosae)



Deciduous tree, small, bushy, multi-stemmed, 5-10 m. **Leaves** petiole-late, cordate at their base, alternate, heart shaped, glabrous, turning bronze to burgundy when young and yellow in the fall. **Flowers** before the leaves, in small racemose clusters, pink petals. **Fruit** pod, long, compressed brown.



Distr: Nahr Ibrahim, Dlepta, Aaramoun, Baabda, Houmal, Damour, Beit Eddine, Rihane, Niha, Ain Wa Zein, Akkar. Chekka, Beiteddine, Rihane, Debbieh.

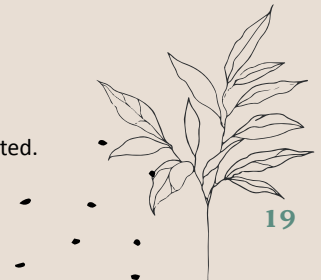
Uses: Edible – Flowers as decorative for salads. Ornamental and manufacturing wood for tools and furniture.

Etymology: “*Cercis*” from Greek, *kerkis*, a weaver’s shuttle; “*Siliquastrum*”: “*Siliqua*”, pod of a legume; “*Astrum*”, suffix to nouns for inferiority, often used to distinguish wild from cultivated kind. “Judas tree” from the story of Judas Iscariot, the betrayer of Christ. It is said that when Judas hung himself on this tree, the flower turned from white to red because of his blood and the tree’s shame.

Ft: March-April.

Hab: Often in forests, stony arid slopes, calcareous soils.

Alt: East and North Mediterranean, with slight extension into W. Irano-Turanian. Widely cultivated.



Cistus creticus L.

Cretan rockrose/Pink Rock Rose

لاذن أحمر

Cistaceae



Shrub branched from base, 20-150 cm. **Stem** hairy, reddish shoots, quickly become wooden. **Leaves** simple, opposite, petiolate. **Flowers** terminal, numerous, large, slightly scented, petals pink, wrinkled, yellow centre, numerous yellow stamens. **Fruit** capsule, broadly ovoid or subglobose, densely hairy.



Distr: Ibrissa, Beino, Aabri, Machnaqa, Ghazir, Qoussaybeh, Nabaatasseh.

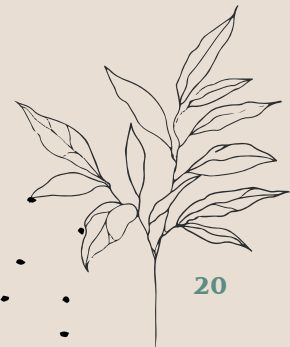
Uses: Medicinal – Flowers & Leaves as anti-inflammation, analgesic and wound healing, Ornamental. Melliferous.

Etymology: “*Cistus*” from Greek “*kisthos*” or “*kistos*”, the rock-rose and “*Creticus*” from the island of Crete.

Ft: February-April.

Hab: Rocky places, dry hills, up to 1000 m. Dominates Mediterranean mountains.

Alt: East Aegean Islands, East Mediterranean, North Africa, South Europe. **Endemic for Euro+Med.**



Crataegus azarolus L.

Crete Hawthorn, Azarole, Mediterranean Hawthorn

زعرور

Rosaceae



Deciduous tree, small 2-10 m, thorny branches, pubescent when young. **Leaves** alternate, pubescent, coriaceous, triangular-cuneate, narrow base gradually towards petiole, cleaved into 3-5 lobes, deeply dentate apex. **Inflorescence** numerous **flowers**, compact. **Flowers** white petals, triangular sepals, multiple stamens, reddish anther, styles 2 rarely 3. **Fruit** small, round, globulus, yellow or orange red.



Distr: Khourbet Qanafar, Kefraya, Rachaiya, Jabal Moussa, Baalchmay, Arz Ain-Zhalta, Rihane, Bikfaya, Ain El Lija, Dlepta, Debbieh, Hermel.

Uses: Edible-Fruits (still sold in local markets). Medicinal, (Leaves & Flowers treatment of diabetes, cardiovascular conditions, hyperlipidemia, cancer, and as antioxidant), Melliferous.

Etymology: "*Crataegus*" from Greek "kratus", "*kratys*" for strong and mighty, "*kartos*" for strength and "*akakia*", "*akis*" for tip, thorn or a sharp point and "*Azarolus*" from Arabic Za'arour, the name of the fruit.

Ft: March-May.

Hab: Mediterranean woodland and pre-desert scrub, mainly light sandy soil, sunny open hills, rocky areas, found in single trees. Cultivated.

Alt: Turkey, East Mediterranean countries and Egypt.

Cyclamen persicum Mill.

Persian cyclamen

بخور مریم

Primulaceae



Herbaceous perennial tuber, fragrant, globe-shaped or depressed globe-shaped, many flowers, rooting from base. **Leaves** straight up from the tuber, sometimes after flowers, broadly oval, heart-shaped, acute or obtuse apex, somewhat thickened, very dentate, greenish grey or silver with lighter parts, dark purplish underside. **Flowers** white and pink petals with darker purplish basal zone, large corolla, lobes reflexed, pointed tips, highly twisted. **Fruit** capsule.



Distr: Fghal, Monsef, Ghbaleh, Aaraya, Bsous, Moukhtara, Mlikh, Debbieh.

Uses: Edible - Leaves (caution roots toxic). Medicinal - Tuber anti-infection. Ornamental.

Etymology: “*Cyclamen*”, from Latin “*cyclamīnos*” or ancient Greek “*kyklaminos*” possibly from “*kyklos*” circle referring to the shape of leaf or rounded tubers. “*Persicum*” of Persia.

Ft: February-April.

Hab: On limestone, *Pinus brutia* and *Quercus* woodland, shrubland, rocky slopes, in shades, up to 800 m, often in crevices in rocks.

Alt: East Aegean Islands, East Mediterranean, Greece, Cyprus, Algeria. **Endemic for Euro+Med.**

Gladiolus italicus Mill.

Common Gladiolus, Corn-flag

عروس القمح

Iridaceae



Perennial tuber, 30-100 cm, subglobular tuber, tunics coarsely fibrous, brown and partly reticulate. **Stem** striated, unbranched, erect, glabrous. **Leaves** 3-5, sword-like, acute, rosette, lanceolate, entire, more or less distant. **Inflorescences** spike, bracts lanceolate. **Flowers** pink-purple, sessile with spathe, nearly straight, unscented, campanulate, style: violet. **Fruits** capsule, trigonal.



Distr: Qammouaa, Qoubaiyat, Seraal, Chekka, Monsef, Jabal Moussa, Moukhtara, Louaizeh, Debbieh.

Uses: Medicinal-Leaves and bulbs for lactation, menstruation, as aphrodisiac, Bulbs for cold treatment (by inhalation of smoke when burned), cancer, rheumatic pains, dysentery.

Etymology: "*Gladiolus*" from Latin "*gladius*" for sword, "*gladiolus*" of small sword. Gladioli have also been called "*xiphium*" from the Greek word "*xiphios*" for sword. "*Italicus*" Italian. Gladiolus flowers symbolize strength and moral integrity. In Rome, they were associated with gladiators. Some say that gladiators wore gladiolus corms around their necks during battles to help them win and protect them from death.

Ft: March-May.

Hab: Mediterranean woodlands and shrublands, forests, fields; especially cereals.

Alt: Mediterranean, Eurasia and North Africa.



Michauxia campanuloides L'Hér.

Rough-leaved Michauxia, Michaux's Bellflower

ميشوكسيا

Campanulaceae



Biennial herb, 1-2 m. **Stem** covered with stiff short bristles, erect, ending in numerous flowers. **Leaves** shortly hirsute on both sides, short-petiolate, lanceolate in outline, pinnatipartite or pinnatisect-lyrate, acute, with ovate-oblong dentate lobes, upper cauline leaves sessile, half-clasping, lobed and dentate. **Flowers** white, showy, nodding. Corolla white petals, rotate, hispid, lobes linear-ligulate, long, reflexed. Calyx-lobes stiff short bristles-ciliate, acuminate, shortly hirsute on margin and middle nerves, spreading-reflexed. Stamens leaning. Style pubescent, reddish, with segments. **Fruit** capsule nodding, ovate.



Distr: Berdawni, Qannoubine, Seraal, Jabal Moussa, Aintoura, Roumieh, Nahr Beirut, Kahaleh, Jezzine, Kfarhouneh, Dillafeh, Debbieh.

Uses: Edible-Stems when fresh. Medicinal (Leaves: wound healing, anti-inflammation, and antioxidant). Ornamental.

Etymology: "*Michauxia*" named after Andre Michaux (1803-1746), botanist and explorer, notably regarded for early flora explorations in North America and "*Campanuloides*" from Latin "*campanula*" for little bell.

Ft: May-August.

Hab: Rocky cliffs, stony, sunny places.

Alt: East Mediterranean, Greece, Turkey. **Endemic for Euro+Med.**

Moluccella spinosa L.

Spiny molucca

ذبيبة شائكة

Lamiaceae



Annual herb, 50-100 cm (or more), very glabrous. **Stem** erect, simple or sparingly branched below, bearing flower almost from base. **Leaves** petiolate, opposite, entire, ovate or nearly orbicular, deeply incised-lobed. **Inflorescence** multi-flowered, distant, bracteoles subulate, spinose, deflexed. **Flowers** white, pink, and villous. Corolla 2-labiate, upper lip long helmet shaped, hairy, lower lip lobed. Calyx 2-labiate, coriaceous, very oblique, with reticulate veins, upper lip ending in a long spine, lower lip ending with 7 unequal spines. **Fruit** nutlet.



Distr: Ehden, Laqlouq, Aamchit, Jiddayel, Deir El Qamar, Qasmyeh, Tyre.

Use: Ornamental as dry in arrangement with other plants.

Etymology: "*Moluccella*", name is uncertain, may be from the Indonesian Molucca Islands or from an Arabic word "Mouluki" for kingly. "*Spinosa*" from Latin for spiny.

Ft: June-July.

Hab: Mediterranean woodlands, shrublands, fallow fields, roadsides, sunny spaces.

Alt: East Mediterranean, Turkey, South Europe, North Africa, Debbieh.

Myrtus communis L.

Myrtle

آس، حمبلاس

Myrtaceae



Evergreen shrub, woody, aromatic, glabrous, 0.5-2 m. **Stems** numerous, branched from the base, young twigs quadrangular, very leafy. **Leaves** opposite or whorled, short-petioled, entire, glossy, coriaceous, ovate to lanceolate, acuminate. **Flowers** fragrant, solitary, axillary, long-pedicelled. Petals spreading, white, obovate to orbicular, concave. Sepals ovate, acute. Stamens numerous, long, white. **Fruit** berry, bluish-black in the wild subsp. *communis* or white in the cultivated subsp. *leucocarpa*, sweet fragrant smell.

Distr: Enfeh, Feghal, Aintoura, Nahr El Kelb, Jisr El Qadi, Nahr Damour, Debbieh.

Etymology: “*Myrtus*” from Myrsine, a legendary Greek maiden, killed by a young man beaten in the gym games and transformed by Pallade into a shrub of Mirto. “*communis*” from Latin for common, ordinary.

Ft: May-October.

Hab: Mediterranean forests, shrubland and scrubland. It is one of the main components of the low Mediterranean, frequent on coasts up to 500 m.

Alt: Mediterranean with extensions into the south and west of Irano-Turanian and Euro-Siberian regions. Cultivated in Sardinia for liqueur production and south coastal part of Lebanon for ritual use.



Uses: Edible – Berries; Leaves as condiment; Essential oil of leaves in food preservation. Medicinal - cold, bronchitis, diabetes, skin disease, ulcer, diarrhea, dysentery, cancer, rheumatism, hemorrhage, anxiety, insomnia and hypertension. Cosmetic, soaps and perfumery (essential oil). Ritual use and symbol of love and bridal wreaths. Myrtle has an ancient record of ritual use that dates back to Sumerian civilization where it was used in sacrifices. In the ancient world, it was dedicated to several goddesses; i.e. Semitic Ištar (Asterate), Greek Aphrodite, and the Roman Venus. In many cultures, myrtle symbolized various sublime virtues and supernatural powers, such as immortality and eternity, vitality, fertility, beauty, love, and protection. It has also been associated with the dead and graves since antiquity. In particular, the ancient Greeks placed myrtle twigs on graves to symbolize the virtues of the respected dead. In Christianity, myrtle was dedicated to the Virgin Mary as it symbolized purity and fertility. Brides and grooms were crowned by the priest with garlands of myrtle. The use of myrtle in funerals, burials, and cemeteries is still quite common among Muslims and Christians reflecting the belief in the transmigration of souls and continuity in heavens. In the Mediterranean, myrtle branches were placed in the grave and myrtle wreaths were made to decorate graves. Graves of kings and nobles were decorated with gold wreaths in the form of myrtle.

Origanum syriacum L.

Wild marjoram, Syrian Marjoram, Hyssop

زعتّر زوباع، زعتّر سوري

Lamiaceae



Perennial subshrub, 40-80 cm, woody base, hirsute-tomentose and glandular. **Stem** not branching, erect, rigid, diverging from base, ending in spike-like inflorescences. **Leaves** opposite, short often hairy, petiole to sessile, obtuse, entire or remotely serrulate, rather thick, with elevated veins on lower surface, greyish green lower surface. **Flowers** dense, terminal clusters, white to light pink, tubular, 2-labiate, spreading. **Fruit** nutlet, ovoid, smooth.

Distr: Jabal Moussa, Faqra, Nahr Beirut, Aanout, Arz El-Chouf, Debbieh.

Uses: Edible-Leaves & Tops with flowers raw for salads, seasoning, species as “oregano”, dried herb mixed with sumac (*Rhus coriaria*) and toasted sesame seeds to form “Za’atar”, with olive oil as a topping for “Lebanese Mankoushe” (flat bread). Medicinal leaves and flower anti-infection, antihyperglycemic, treatment of heart diseases and gastrointestinal complaints, as sedative, antioxidant, anthelmintic, antispasmodic, anti-cough, expectorant, anti-parasitic, anti-rheumatic, anti-inflammation (atherosclerosis), Alzheimer disease, insecticidal, to improve memory and metabolism. Melliferous. The plant is protected in Lebanon against wild harvesting.

Etymology: “*Origanum*” from Latin “*origanus*” or from Greek “oreiganon”: “*oros*” for mountain; “*ganos*” for joy. “*Majorana*” from Greek “*amarakos*” or Latin “*amaracum*” possibly derived from the Sanskrit maruva. “*Hyssop*” can be traced back almost unchanged through the Greek hyssopus meaning «holy herb». Much debate has ensued over which plant is the Hyssop of the Bible. According to Mouterde, s.j. (1983), *Origanum syriacum* may be the true Hyssop and not the common Hyssop (*Hyssopus officinalis*) as the latter is not native to the Mediterranean area.

Ft: June-December.

Hab: Mediterranean maquis and forest, woodlands and shrublands, semi-steppe shrublands, shrub-steppes, rocky hills, calcareous rocks and slopes, often in partial shade, 200-2700 m.

Alt: East Mediterranean and south of Turkey.



Ornithogalum narbonense L.

Southern Star of Bethlehem

صالح برون، نجمة بيت لحم

Asparagaceae



Perennial herb, 30–100 cm, with underground ovoid bulb. **Stem** erect, strong. **Leaves** rosette, dull blue-green, narrow, channelled beneath, linear, canaliculated, smooth or denticulate. **Flowers** pyramidal cylindrical raceme, multi-flowered, long bract, star-shaped, white tepals, with pale green central vein, with longitudinal green stripes. **Fruit** capsule, ovoid, with furrows.



Distr: Ehden, Qannoubine, Tannourine, Machnaqa, Chouane, Baskinta, Saadiyat, Wadi El Laymoun, Rachaya El Foukhar, Aaytroun, Debbieh.

Uses: Edible-Bulbs. Medicinal-anticancer, antioxidant. Melliferous.

Etymology: "*Ornithogalum*" from Latin for Bird's-milk, "*ornis*" for a bird, "*ornith*" pertaining to birds. "*Galum*" from Latin for milk. "*Narbonense*" from Narbonne, a city in southern France.

Ft: April-May.

Hab: Shrub-steppes, Mediterranean woodlands and shrublands, open sunny places.

Alt: Mediterranean.



Pinus brutia Ten.

Calabrian pine

صنوبر قبرصي

Pinaceae



Evergreen tree, 5-10 m, open crown, irregular branches. Bark brown-reddish, thick on lower trunk, scaly, fissured, patterned red-brown. **Shoots** slender, grey-buff, rough with persistent small decurrent scale-leaf bases. **Leaves** needle-like (narrower than in *Pinus pinea*), in pairs, persisting for 2 years, forming rather lax tufts at the ends of branches, bright green to yellow-green, slender, about 1 mm thick. **Flowers** without perianth. Male yellow spotted with red. Female violet on short peduncle, grouped 2-3 or more. **Fruit** female violaceous cones, solitary or paired (occasionally more in a cluster) erect, sessile, ovoid conic, scales short, broad, thick, woody, rounded, with a slight to moderate transverse ridge. **Seeds** pale-brown, winged, somewhat compressed, not edible.

Distr: Bared, Aabri, Bkerke, Baabdate, Roumieh, Baabda, Choueifat, Gharifeh, Debbieh.

Uses: Production of ‹Pine honey› by honeybees feeding on honey-dew of a sap-sucking insect; Oleoresin as food additive. Timber for carpentry and constructions, firewood and pulp. Oleoresin in pharmaceuticals and cosmetic. Oleoresin as organic insecticide and disinfectant.

Etymology: “*Pinus*” from ancient Greeks “*pitys*” who was in Greek mythology an Oreiad-nymph loved by the god Pan. She fled his advances and was transformed by gods into a mountain pine or fir tree. “*brutia*” from “*brutium*” after the old name of Calabria, a region in Southern Italy, after an ancient Italic tribe that had occupied the land.

Ft: March-May.

Hab: Most important forest tree in the North and East Mediterranean, hills and mountains, in fairly open stands of pure composition, or with *Cupressus sempervirens* and *Juniperus excelsa*, mostly from sea level to 600 m up to 1,200 m. It forms pine-oak woodlands with drought-tolerant species including *Quercus coccifera*, and *Pistacio lentiscus*. Forms natural hybrids with its close congener *Pinus halepensis* with mating successful only when *P. halepensis* is the pollen donor and *P. brutia* is the female parent (but not reciprocally); thus *P. brutia* populations are introgressed by *P. halepensis* (Aleppo Pine). The two species are similar except for slight differences in cone shape and arrangement relative to the stem. Cones of *P. halepensis* are attached to the branch by a stalk and grow parallel to the branch. *P. brutia* cones are sessile and vertical to the branch.

Alt: East Mediterranean, most of Bulgaria, East Aegean Islands and Middle East.

Pistacia terebinthus subsp. *palaestina* (Boiss.) Engl.[§]

Pistacia palaestina Boiss.*

Turpentine Tree, Terebinth Tree

بطم فلسطيني

Anacardiaceae



Deciduous tree, dioecious, up to 7-8 m, a single trunk, brown to reddish, when wounded secretes a resin, red sprouting **leaves** and young branches. **Leaves** shiny with a strong resinous smell, petiolate, compound, pinnate with 4-5 pairs, leaflets 3-6 cm long, ovate, oblong-lanceolate, pointed tips, terminal leaflets reduced or absent. **Inflorescence** panicle with dense racemes of tiny flowers. **Flowers** tiny, no corolla, red stamens and stigmas giving the inflorescence its red color. **Fruits** drupe, ovoid to ovoid-globular, somewhat compressed laterally, brown reddish.



Distr: Jaj, Jabal Moussa, Roumieh, Baabda, Jisr El Qadi, Baaqline, Butmeh, Zaarourieh, Debbieh.

Uses: Edible-fruits raw or roasted as snack and spice for Maanic (Lebanese sausages). Medicinal for infections, tumor, dysentery. Toiletry toothpaste, facial toner. Manufacturing of handles and tools.

Etymology: *Pistacia*, *pistacium* (Latin), "pistachio nut", from Greek pistakion, from pistakē, the Greek name for the nut, perhaps from Persian pistak. Palaestina, of Palestine. Terebinth, (Latin) terebinthus, from Greek terēbinthos, turpentine tree.

Ft: February-April.

Hab: Mediterranean maquis and forest, hills and mountains. Most important associate of *Quercus coccifera*. Usually found in single individuals.

Alt: East Mediterranean and Levant region forest.

* Unresolved names (not yet possible to assign a status as either 'Accepted' or 'Synonym') according to the PlantList.

§ Accepted name according to Euro+Med PlantBase (2006-).

Quercus coccifera L.

Evergreen Oak, Kermes Oak, Palestine Oak

بلوط، سندیان دائم الخضرة

Fagaceae



Evergreen tree, 2.5-4 m, sometimes up to 20 m or more (Oak tree of Ain Trez), bark deep fissures. **Leaves** leathery, shiny dark green, alternate, prickly dentate, spinescent, pubescent beneath, oblong to elliptical, rounded or subcordate at base, obtuse or somewhat acute at apex, serrate-dentate, often spiny-toothed, rarely entire or wavy-margined, glabrous or sparingly and minutely pubescent beneath, petiole short, tomentose. **Flowers** catkins, long cylindrical cluster with no petals. Female catkins, 1-3 flowered, 3 styles, linear, elongate, grow as acorn. Male catkins numerous, rather dense, perianth cup with 4-5 hairy, obtuse or rounded lobes. **Fruit** acorn with a single large seed, biannual maturation, enveloped in its lower part by a lignified cup-like structure (cupule) with prominent scales, covers all of 1/2-1/3 of fruit. **Acorns** short –peduncled, maturing at the second year, varies in shape and size, ovoid, cupule hemispherical, finely velvety within, scales variously shaped, mostly prickly, stiff.

Distr: Roumieh, Nahr Beirut, Ain Traz, Mlikh, Karm El Mohr, Ehden, Jaj, Jabal Moussa, Debbieh.

Uses: Edible-Acorns roasted as “poor-men’s bread”. Medicinal-Fruits anti-diabetic. Ornamental and wood for furniture and construction, sculpting statues, coal and cork production. Forage for livestock leaves.

Etymology: “*Quercus*”, from Latin “*quercus*” for oak, a plant sacred to Jupite, “*coccifera*” is controversial. According to some authors, it is linked to the scale insect cochineals (*Kermes ilicis*) and “*calliprinos*” from Latin “*callos*” for beauty and “*prinos*” for a tree.

Ft: February-April.

Hab: *Mediterranean forests*, woodlands (oak-pistachio), shrublands, semi-steppe shrublands and mountainous stony poor soils. *Quercus coccifera* is predominant of the three oak species growing in Lebanon. Trees appear as a large bush, though some tall individual trees do exist, particularly those that remained for many years because they are revered by local residents as “holy trees”. Some botanists consider *Quercus calliprinos* (Palestine Oak) as a subspecies or variety of *Quercus coccifera*. The latter can be distinguished by its smaller trees and smaller acorns

Alt: Mediterranean with the exception of Egypt and Sinai.

Ricotia lunaria (L.) DC.

Maltese Cross, Syrian Honesty, Egyptian honesty

سيلان، ريكتيا قمرية

Brassicaceae



Annual herb, 20-60 cm, glabrous or sparingly hairy. **Stem** often pendulous, branched. **Leaves** alternate, petiolate, dissected. **Flowers** violet to pink. Petals 4 arranged in a cross, flat, sessile, large, obovate to 2-lobed, narrow at base. **Fruit** silicle, strongly flattened, lenticular to elliptical. **Seeds** a few in a row, compressed, and orbicular.



Distr: Machghara, Eddeh, Houmal, Delhamyeh, Zaarouryeh, Rihane, Khardali, Debbieh.

Use: Ornamental.

Etymology: "*Ricotia*", probably named after M. Ricot, an obscure French botanist; "*lunaria*" from Latin "*luna*" for the moon as an adjective for the flat, round seedpod that resembles a full moon. "*Maltese Cross*", the arrangement of four petals in the form of a cross, which resembles the Carmelite cross of the Catholic religious order perhaps founded in the 12th century on Mount Carmel (Arabic: الكرميل, Al-Karmil, or جبل مار إلياس, Jabal Mar Elyas) near the Haifa city of occupied Palestine.

Ft: February-May.

Hab: Garrigue, sunny and rocky ground, woodlands and shrublands, roadsides in South Lebanon.

Alt: Egypt, Jordan, and Lebanon. **Endemic for Euro+Med.**

Salvia fruticosa Mill.

Salvia libanotica Boiss. & Gaill.

Three-lobed sage, Greek Sage

قصعين، مريمية

Lamiaceae



Perennial shrub, evergreen 1 m, branched, aromatic, tomentose, greyish green. **Stems** thick, tomentose. **Leaves** petiolate, upper cauline with 1-2 (up to 4) segments at base, ovate-oblong to lanceolate, rugulose (wrinkly), crenulate, lower surface white tomentose to velvety. **Inflorescences** 4-6 to many flowered, mostly remote. **Flower** pedicellate, viscose. **Corolla** pale rose, rarely white, petals 2-labiate, upper lip mostly concave, lower lip spreading, 3-lobed, with middle lobe the largest, viscose. **Calyx** tubular-campanulate, densely glandular, viscous, sharp teeth. **Fruit** nutlet, ovoid, smooth.



Distr: Beino, Nahr Ibrahim, Mchati, Beit Meri, Baabda, Aaley, Tasseh, Rihane, Qasmyeh, Debbieh, Tyre.

Uses: Edible-Leaves food flavouring, spice, herbal tea. Medicinal-Leaves blood circulation, nervous disorders, cough, gastric disturbances and diabetes. Ritual-incense "Bakhour". The plant is protected in Lebanon against wild harvesting.

Etymology: "*Salvia*" from Latin "*salvere*", to save, referring to the long-believed healing properties of salvia and "*fruticosa*" for shrubby and bushy from Latin "*frutex*" for a shrub and "*triloba*": "tri" / "tres" from Latin for three and "*lobus*" from Greek "*lobe*" of the ear.

Ft: Feburay-July.

Hab: Limestone rocks, dry sunny hillsides, rocky slopes, abundant in garigue and maquis, often stand forming, 100-800 m.

Alt: Eastern Mediterranean (Lebanon), southern Italy, North Africa.

Salvia judaica Boiss.

Judean sage

قويسة يهودية

Lamiaceae



Perennial herb, 60-100 cm, sparsely with minute bristles. **Stems** non-woody erect, flowering stems purple. **Leaves** opposite, petiolate, crenate or dentate-lobed. Basal leaves and sometimes also cauline leaves lyrate-pinnatifid or pinnatisect, with ovate obtuse segments, uppermost sessile, cordate-ovate to oblong, acute. **Inflorescence** 6-12 to flowered, remote, raceme-like. Corolla violet, petals 2 labiate, upper lip concave, lower lip spreading, 3-lobed with middle lobe largest. Calyx tubular, purple, scabrous. **Fruit** nutlet, ovoid, smooth, nearly triquetrous.



Distr: Beit Chlala, Monsef, Kfarbaal, Baabdate, Jabal Moussa, Deir El Qamar, Debbieh.

Use: Melliferous.

Etymology: "*Salvia*" from Latine "*salvere*", to save referring to the healing properties; "*judaica*" from Hebrew "*Juda*" for the biblical mountain of Judah (yehudah), the fourth son of Jacob by Leah. The name originated in Leah's words of praise to the Lord on account of his birth.

Ft: May-June.

Hab: Mediterranean woodlands, shrubland and semi-steppe shrublands, sunny open places, rocky soil.

Alt: Syro-Palestinian area of the East Mediterranean.

Teucrium creticum L.

Greek teukrion

جعدة كريت

Lamiaceae



Perennial subshrub, much branched, 1-2 m, slender, erect, rigid branches, old wood covered with pale brown, young shoots sharply tetragonous, shortly white-tomentose or glabrescent. **Leaves** linear, curved edges, woolly basal leaves, upper dark green, white tomentose, undersides, apex obtuse or subacute, base tapering to an indistinct petiole, margins entire, revolute. **Flowers** shortly pedicellate, with tomentose pedicels. Corolla purplish pink, shortly glandular externally, tube campanulate. Calyx campanulate, tomentose, triangular teeth. **Nutlets** oblong-obovoid.

Distr: Damour, Kfarfalous, Anane, Debbieh, Naqoura, Hazmieh, Baabda, Akkar.

Uses: Medicinal-Leaves & Flowers stomach disorders. Melliferous.

Etymology: "*Terbium*" from Greek "*teukrion*", probably named for "*Teucer*" "*Teukros*", the son of King Telamon of Salamis and his second wife Hesione, daughter of King Laomedon of Troy; "*creticum*" from Crete, the largest island in Greece.

Ft: April-September.

Hab: Dry rocky hillsides, Mediterranean woodlands and shrublands, dry rocky hillsides on calcareous or igneous rocks.

Alt: Lebanon, Syria, Palestine, Cyprus, Turkey.



Teucrium polium L.

Felty Germander

جعبرة

Lamiaceae



Perennial subshrub, 20-40 cm, tomentose with fine greyish-white woolly hairs, much branched at base. **Stems** and branches terete, branches erect, simple, elongate. **Leaves** sessile, oblong or linear, obtuse, crenate, strongly revolute, rarely flat. **Flowers** capitulate, short pedunculate. Corolla white or pale cream-coloured. Calyx subsessile, tomentose or woolly, campanulate. **Fruit** very tiny nutlet.



Distr: Qammouaa, Akkar, Tannourine, Aamchit, Jabal Moussa, Nahr El-Kalb, Kneisseh, Arz Maasser, Joun, Anane, Debbieh.

Uses: Medicinal-Leaves & Stems (flowering) hypertension, diabetes, infections, gastric conditions and as a sedative.

Etymology: "*Teucrium*" from Greek "*teukrion*", probably named for "*Teucer*" "*Teukros*", the son of King Telamon of Salamis and his second wife Hesione, daughter of King Laomedon of Troy; "*polium*" possibly from classic Greek "*pólion*" "*polios*" for grey or white.

Ft: May-September.

Hab: Stony, sunny, dry places, *Quercus* scrub, rocky slopes, steppe, dunes, field margins.

Alt: Mediterranean and West Irano-Turanian



Thymbra spicata L.

Spiked thyme

زعتّر دقة، زعتّر سبلة

Lamiaceae



Perennial subshrub, 20-50 cm, glandulous. **Stems** numerous, erect, rigid, simple or branched, quadrangular, minutely pubescent. **Leaves** rigid, linear-lanceolate, obtuse. **Flowers** purplish-pink, 2-labiate petals. **Fruit** nutlet, **ovoid**, smooth.



Distr: Kefraya, Fghal, Bintaal, Harissa, Aintoura, Souq El Gharb, Dear Qoubel, Butmeh, Aammatour, Debbieh

Uses: Edible-Leaves spice, mixed with *O.syriacum* in Za'atar; Medicinal-Leaves infections, hypercholesterolemia, cough and asthma. Perfumery and cosmetics. Melliferous.

Etymology: "*Thymbra*" from Ancient Greek "*thúmbra*" for a name of a town in the Troad, near Troy and also the location of a major temple and sanctuary of Apollo and "*spicata*" from the Latin name "*spicatus*" meaning spiked.

Ft: April-May.

Hab: Mediterranean climate, chalky soil and rocks, slopes, sunny rocky places.

Alt: Lebanon, Syria, Turkey



Veronica leiocarpa Boiss.*§

Glabrous Speedwell

فيونيكيا ملساء

Plantaginaceae



Perennial herb unbranched or slightly branched at base, pubescent with short curved or longer crisp hairs, 30-70 cm, black when dry. **Stem** erect, non-woody, rigid, pubescent. **Leaves** oblong-to-oblong-ovate, incised-serrate. **Flowers** blue. **Corolla** 4-5 lobed petals. **Calyx** 4-5 lobed, narrow. **Fruit** capsule, compressed, obcordate, somewhat thickened along margin. **Seeds** few, suborbicular.



Distr: Britel, Yammouneh, Beino, Ehmej, Jabal Moussa, Nammoura, Ghineh, Ghazir, Baalchmey, Debbieh.

Uses: Medicinal (Leaves, stem and flowering tops: tonic, promote metabolism, sore throat, wound healing). Ornamental.

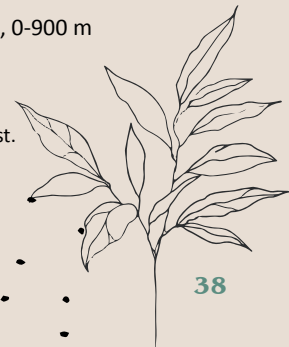
Ft: April-May.

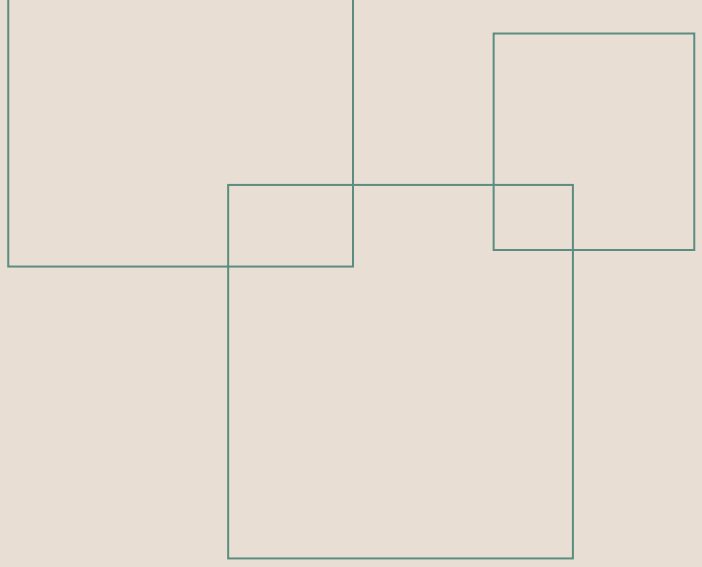
Hab: Mediterranean maquis, shade of *Quercus calliprinos*, *Pinus brutia* forests and scrub, rocky slopes, 0-900 m

Alt: ran, Turkey, Jordan, Lebanon. **Endemic for Euro+Med.**

* Unresolved names (not yet possible to assign a status as either 'Accepted' or 'Synonym') according to the PlantList.

§ Accepted name according to Euro+Med PlantBase (2006-).





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