

Plant in Focus, June 2019
Cedrus libani Cedar of Lebanon



Cedrus libani in their natural habitat, Lebanon. Note the distinguishing feature of Cedars of Lebanon: their layered branches, more or less horizontal.

Left: The hillside behind the tree may have been covered by Cedar forest 8,000 years ago, before wholesale felling began. Photo: Bob Judge, Wikimedia Commons, CC BY 2.0.

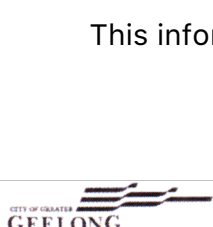
Right: *Cedrus libani* var. *libani*, the Cedars of God Nature Preserve, Mount Lebanon, Lebanon. Photo: Xtcrider, Wikimedia Commons, Public Domain.

Description

Cedrus libani, commonly known as the Cedar of Lebanon or Lebanon cedar, is a species of cedar native to the mountains of the Eastern Mediterranean basin. The specific epithet refers to the Lebanon mountain range where the species was first described by French botanist Achille Richard. The tree is endemic to elevated mountains around the Eastern Mediterranean in Lebanon, Syria, and Turkey. It is an evergreen conifer that can reach 40 m in height with a monopodial columnar trunk up to 2.5m across.

It is widely used as an ornamental tree in parks and gardens. The Lebanon cedar is the national emblem of Lebanon and is displayed on the flag and coat of arms of Lebanon.

Its natural habitat is characterised by warm, dry summers and cool, moist winters with an annual precipitation of 1,000 to 1,500 mm; the trees are blanketed by a heavy snow cover at the higher altitudes. In Lebanon and Turkey, it occurs most abundantly at altitudes of 1,300 to 3,000 m, where it forms pure forests or mixed forests with Cilician fir *Abies cilicica*, European black pine *Pinus nigra*, eastern Mediterranean pine *Pinus brutia*, and several Juniper species. In Turkey, it can occur as low as 500 m.



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Left: The female Cedar cones have flaky, paper-like scales packed tightly together. Photo: Roger Griffith, Wikipedia, Public Domain. Centre: The male cones are prolific producers of pollen. Each tiny pollen grain has two air bags to help the wind carry it for distances as great as hundreds of kilometres. Photo: Christian Ferrer, Wikipedia, CC BY-SA 4.0. Right: The leaves of cedars grow in distinctive tufts. Photo: Crusier, Wikimedia Commons, CC BY 3.0

The trunks of old trees ordinarily fork into several large, erect branches. The rough and scaly bark is dark grey to blackish brown. Trees growing in dense forests maintain a more pyramidal shape. The shoots are dimorphic - both long and short shoots. The leaves are needle-like, arranged in spirals. *Cedrus libani* produces cones at around the age of 40; it flowers in autumn, the male cones appear in early autumn and the female ones in late autumn. The trees grow rapidly until the age of 45 to 50 years transitioning to extremely slow after the age of 70.

History of The Tree of Lebanon

The Lebanon cedar is mentioned several times in the Tanakh. Hebrew priests were ordered by Moses to use the bark of the Lebanon cedar in the treatment of leprosy. Solomon also procured cedar timber to build the Temple in Jerusalem. The Hebrew prophet Isaiah used the Lebanon cedar as a metaphor for the pride of the world, with the tree explicitly mentioned in Psalm 92:12 as a symbol of the righteous.

The Lebanese Cedar is often mentioned in the Christian Bible and The Cedar Forest of ancient Mesopotamian religion appears in several sections of the Epic of Gilgamesh – an epic poem from Mesopotamia.

Uses

It is used for furniture, construction, and handicrafts. In Turkey, shelterwood cutting and clearcutting techniques are used to harvest timber and promote uniform forest regeneration. Cedar resin (cedria) and cedar essential oil (cedrum) are prized extracts from the timber and cones of the cedar tree.

Conservation

Over the centuries, extensive deforestation has occurred, with only small remnants of the original forests surviving. Deforestation has been particularly severe in Lebanon and on Cyprus.

Attempts have been made at various times throughout history to conserve the Lebanon cedars. The first was made by the Roman emperor Hadrian.

Extensive reforestation of cedar is carried out in the Mediterranean region. In Turkey, over 50 million young cedars are planted annually, covering an area around 300 square kilometres. Lebanese cedar populations are also expanding through an active program combining replanting and protection of natural regeneration from browsing goats, hunting, forest fires, and woodworms.

UNESCO site

The Cedars of God (Arabic: أرز الرب Arz ar-Rabb "Cedars of the Lord") located at Bsharri, are one of the last vestiges of the extensive forests of the Lebanon cedar that once thrived across Mount Lebanon in ancient times. Their timber was used by the Phoenicians, Israelites, Egyptians, Assyrians,

Babylonians, Persians, Romans, and Turks. The wood was prized by Egyptians for shipbuilding; the Ottoman Empire used the cedars in railway construction.

In 1998, the Cedars of God were added to the UNESCO list of World Heritage Sites.

Current status

The forest is rigorously protected. It is possible to tour if escorted by an authorized guide. *C. libani* is susceptible to a number of soil-borne, foliar, and stem pathogens, so after a preliminary phase in which the land was cleared of detritus, the sick plants treated, and the ground fertilised, the "Committee of the Friends of the Cedar Forest" initiated a reforestation program in 1985.

Summary

Pylum: Pinophyta (Conifers)

Family: Pinaceae (Pine family)

Species: *Cedrus libani*

Common name: Cedar of Lebanon

Conservation Status: Threatened – Vulnerable

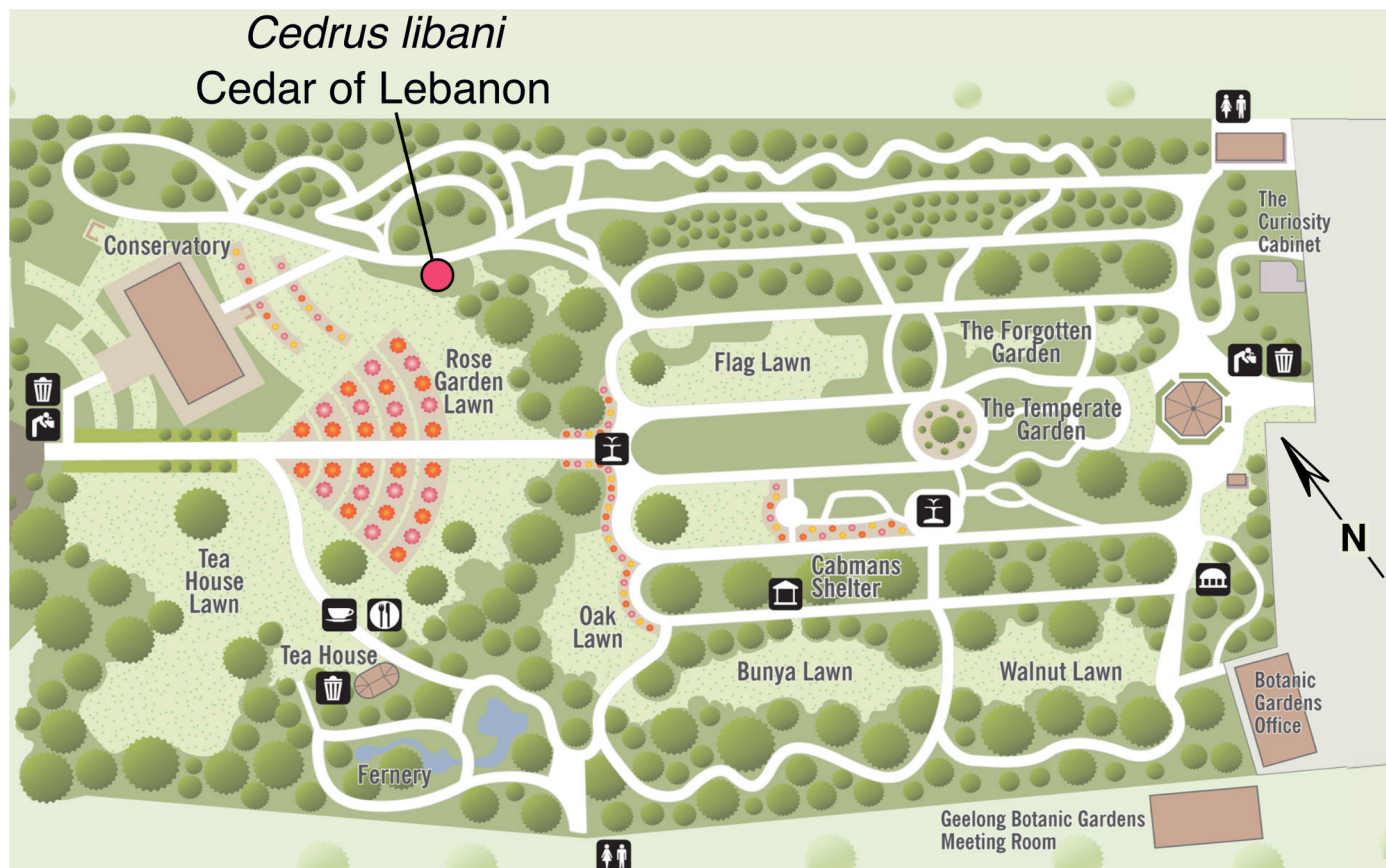
Distribution: Lebanon, Syria, and Turkey



Above: Logs of Cedar of Lebanon, being transported by boat. Detail from low-relief from the North wall of the main court, palace of Sargon II at Dur Sharrukin in Assyria (now Khorsabad in Iraq), ca. 713–716 BC. Now in the Louvre Museum, Paris. Photo: Jastrow.

Left: Flag of Lebanon, showing the Cedar of Lebanon.

Both images: Wikimedia Commons, Public Domain.





Botanical drawing of Cedar of Lebanon, now named *Cedrus libani*. Note the male cones are close to the tip of the stem and the female cones are closer to the trunk. The seed have a single wing. Cedars have two different leaf arrangements. There are distinctive clusters of leaves that grow at the end of short peg-like stems (bottom right of drawing). On new stems the leaves are arranged around the long stem (left stem on the drawing). Image from *The North American sylva, or A description of the forest trees of the United States, Canada and Nova Scotia*, François André Michaux 1819. Wikimedia Commons, Public Domain.