

# An Overview of the Family Burseraceae, With Notes on History and Cultivation Techniques.

By Dave Moellendorf

Over many millennium, the plants of the family Burseraceae have provided many cultures with terpene rich resins used in religious ceremonies, magical rites, and in ethnobotanical medicine. Mention of these plants occurs in many early works often as Bdellium or Myrrh or Frankincense , and they were important plants to the Hebrews:(Gen 2:12-13 (KJV) And the gold of that land is good: there is bdellium and the onyx stone. And the name of the second river is Gihon: the same is it that compasseth the whole land of Ethiopia.) Often, these resins were burnt as offerings in North Africa, The Middle east and a great trade existed between these regions and the Far East. In Central America, these plants were called Copal, and Elemi, the resins which were used to ward off evil spirits and mixed in boiling water or fruit juices to give relief from everything from Dysentery to Stomach Ailments and Fever. Current Ayurvedic medicine uses an extract of the species *Commiphora wightii* to lower cholesterol, balance the thyroid, and reduce inflammation. In fact, many herbal preparations as well as current studies being done with this family of plants indicate a strong anti-inflammatory action and sufferers of Fibromyalgia may find that these plants, especially *Boswellia* and *Commiphora* yield a product that may someday treat that condition. The saps also seem to have strong antimicrobial properties , which probably protect the plants from pathogenic diseases. The beauty of these plants are that not only do they provide us with fragrant aromatic saps and medicine, they are constituents in many wonderful oils, soaps, cologne, and on top of all of this, they are mostly very easy to grow, and provide wonderful natural bonsai for the plant enthusiast.

## Culture

**Light:** Grow all of these plants in a well lit location, with at least 4-6 hours of direct sun, and in some cases even full sun. Just remember that more sun means more water! These plants typically grow in rocky soils, and may grow in between boulders and in the filtered shade of other plants. The higher the light, generally the slower the growth, more compact the plant, and smaller the leaves. More shade will tend to produce a more spreading plant.

**Water:** Watering these plants tends to present no real problem. They are ideal for the forgetful waterer, although when dry they may lose all of their leaves, but after a few good waterings in hot weather, they burst into leaf and growth. It is very important to pot these plants in a well drained mixture of half perlite and half good potting soil or soilless mix, perhaps with some granite or pumice added. Typically, these plants grow through the Spring-Fall, and as the days get shorter, leaves are dropped and plants enter dormancy. It is very important not to overwater at this time. I typically water 3-4 times a week when temperatures are in excess of 100 degrees, and keep the plants relatively rootbound. As the plants enter dormancy, I may water a good drink twice a month on large plants, and perhaps a bit more for small seedlings. If you have a plant not well established or small, it may fare the best by being kept overwinter under full spectrum lights and on a heat pad.

**Fertilizer:** A good fertilizer to use on a once monthly basis is Medina Hasta-Grow. I recommend not feeding too often or you will get very uncharacteristic lush growth.

## Species of Interest

**Balm of Gilead-*Commiphora gileadensis* syn. *Opobalsamum*-** This plant has to be one of my favorites and is not quite as easy to establish as other species, but once established is quite hardy. The word balm is derived from the Hebrew *bot smin*, 'chief of oils,' or *bâsâm*, 'balm,' and *besem*, 'a sweet smell. This small tree, the source of the genuine Balm of Gilead around which so many mystical associations

have gathered stands from 10 to 12 feet high, with wandlike, spreading branches. The bark is of a rich brown colour, the leaves, trifoliate, are small and scanty, the flowers unisexual small, and reddish in colour, while the seeds are solitary, yellow, and grooved down one side. It is rare, and is so much valued by the Turks that its importation is prohibited. They have grown the trees in guarded gardens at Matarie, near Cairo, from the days of Prosper Alpin, who wrote the *Dialogue of Balm*, and the balm is valued as a cosmetic by the royal ladies. In the Bible, and in the works of Bruce Theophrastes, Galen, and Dioscorides, it is lauded.

**Bdellium-Commiphora africana-** This is a very beautiful plant with oak like blue grey leaves and semi thorny stems. In good sunlight the stems develop a rose color which is a great contrast to the leaves! This undistinguished shrubby tree gives us bdellium (pronounced "delm"), once an adulterant of myrrh, which bdellium resembles in color and shape but not smell. In sacred rites, it was steeped in wine to increase its fragrance and is associated with Mars. The name comes from Hebrew, bedolach, for something that is stuck together, like rice. This small, spiny tree with papery bark likes to grow in very dry and rocky areas. The gum makes a good fixative of scent in perfumes but adds dark notes of its own. Parkinson, the 16th century English herbalist writes that the tree which provides the aromatic gum known as bdellium grew in Havilah, the territory eastward of Persia. He goes on to say that the leaves resemble those of an oak, and when the bark is incised, the gum that oozes out is "the bigness of a white olive." Pliny mentions it around the 1st Century A.D. as an odoriferous gum from a tree growing in Arabia Felix. He also states that it was sent from Bactria in India. When the gum was removed from the bark of tree, the pieces would soon harden. They became transparent and waxlike, and looked like pearl. The women of Egypt were wont to carry little pouches filled with these pieces of bdellium, for they have a delightful perfume. The Bdellium appears again in Holy Writ, in the book of Numbers 11.

**Myrrh-Commiphora myrrha, C. mukul, C. kua, C. merkeri-Myrrh** is a general name given to the trees of the genus commiphora, and while many of these are aromatic, it was the species myrrha or mukul that is most likely the myrrh of the bible. The bushes yielding the resin do not grow more than 9 feet in height, but they are of sturdy build, with knotted branches, and branchlets that stand out at right-angles, ending in a sharp spine. The trifoliate leaves are scanty, small and very unequal, oval and entire. It was first recognized about 1822 at Ghizan on the Red Sea coast, a district so bare and dry that it is called 'Tehama,' meaning 'hell.' Botanically, there is still uncertainty about the origin and identity of the various species. There are ducts in the bark, and the tissue between them breaks down, forming large cavities, which, with the remaining ducts, becomes filled with a granular secretion which is freely discharged when the bark is wounded, or from natural fissures. It flows as a pale yellow liquid, but hardens to a reddish-brown mass, being found in commerce in tears of many sizes, the average being that of a walnut. The surface is rough and powdered, and the pieces are brittle, with a granular fracture, semi-transparent, oily, and often show whitish marks. The odour and taste are aromatic, the latter also acrid and bitter. It is inflammable, but burns feebly. It has been used from remote ages as an ingredient in incense, perfumes, etc., in the holy oil of the Jews and the *Kyphi* of the Egyptians for embalming and fumigations.

**Frankincense-Boswellia carteri-** syn. *B. sacra*, also *B. serrata*. *Boswellia neglecta*, while being an interesting species in cultivation produces no real odor. This is my all time favorite plant, not only because of the mystical associations, but it is truly rare, but easily grown, and the aroma is like no other. Obtained from the leafy arid forest tree *Boswellia carteri*, with leaves deciduous, alternate towards the tops of branches, unequally pinnated; leaflets in about ten pairs with an odd one opposite, oblong, obtuse, serrated, pubescent, sometimes alternate; petioles short. Flowers, white or pale rose on short pedicels in single axillary racemes shorter than the leaves. The trees on the Somali coast grow, without soil, out of polished marble rocks, to which they are attached by a thick oval mass of substances resembling a mixture of lime and mortar. The young trees furnish the most valuable gum, the older yielding merely a clear, glutinous fluid, resembling coral varnish. To obtain the Frankincense, a deep, longitudinal incision is made in the trunk of the tree and below it a narrow strip of bark 5 inches in length is peeled off. When the milk-like juice which exudes has hardened by exposure to the air, the incision is deepened. In about three months the resin has attained the required degree of consistency, hardening into yellowish 'tears.' The large, clear globules are scraped

off into baskets and the inferior quality that has run down the tree is collected separately. The season for gathering lasts from May till the middle of September, when the first shower of rain puts a close to the gathering for that year. The coast of Southern Arabia is yearly visited by parties of Somalis, who pay the Arabs for the privilege of collecting Frankincense, and in the interior of the country, about the plain of Dhofar, during the southwest Monsoon, Frankincense and other gums are gathered by the Bedouins. (The incense of Dhofar is alluded to by the Portuguese poet, Camoens.) The ceremonial incense of the Jews was compounded of four 'sweet scents,' of which pure Frankincense was one, pounded together in equal proportion. It is frequently mentioned in the Pentateuch. Pure Frankincense formed part of the meet offering and was also presented with the shew-bread every Sabbath day. With other spices, it was stored in a great chamber of the House of God at Jerusalem.

According to Herodotus, Frankincense to the amount of 1,000 talents weight was offered every year, during the feast of Bel, on the great altar of his temple in Babylon. The religious use of incense was as common in ancient Persia as in Babylon and Assyria. Herodotus states that the Arabs brought every year to Darius as tribute 1,000 talents of Frankincense, and the modern Parsis of Western India still preserve the ritual of incense. Frankincense, though the most common, never became the only kind of incense offered to the gods among the Greeks. According to Pliny, it was not sacrificially employed in Trojan times. Among the Romans, the use of Frankincense (alluded to as *mascula thura* by Virgil in the *Eclogues*) was not confined to religious ceremonials. It was also used on state occasions, and in domestic life. The *kohl*, or black powder with which the Egyptian women paint their eyelids, is made of charred Frankincense, or other odoriferous resin mixed with Frankincense. Frankincense is also melted to make a depilatory, and it is made into a paste with other ingredients to perfume the hands. A similar practice is described by Herodotus as having been practiced by the women of Scythia and is alluded to in Judith x. 3 and 4. In cold weather, the Egyptians warm their rooms with a brazier whereon incense is burnt, Frankincense, Benzoin and Aloe wood being chiefly used for the purpose.

Copal-Bursera copalifera, B. odorata, B. pennicellata, B. aloexylon-The genus Bursera contains many many species of which several species form complexes of very similar plants and may indeed be relegated to varieties of one another upon further study, the most commonly cultivated being the species B. fagaroides. In Central and South America, as well as in the Southwestern United States, these plants have been used in folk medicine and in incense and offerings. Twigs of many species are burned in churches of Mexico as offerings and in many homes to ward off evil spirits. The resins of many species are often citrus in odor or almost pine like. These plants range from the Sonoran Desert of Arizona to parts of North and Central South America and the Caribbean. The resins are given many names such as Copal Blanco or Copal Negro according to color. These plants present no particular difficulties of culture. Bursera simaruba (the gumbolimbo tree), is a Zinacanteco remedy for loose teeth and dysentery but is not used by Tzotzil speakers for incense, although some other Mayans use it so. The Chorti plant a tree as a symbolic cross in preparation for the pilgrimage to Esquipulas. The tree is identified as Bursera simaruba, and it stands at the center rear of the altar area, just as do conventional crosses in other ceremonies. Huastec Mayans living in San Luis Potosi, more than 500 miles away from the Tzotzil, and even farther from the Chorti, also utilize Bursera simaruba for purposes other than incense, such as in the treatment of burns, headache, nosebleed, fever, and stomach ache, and for predicting rain by its flowering.

# Sources

## Rare Plant Research

Burl Mostul

13245 S. E. Harold,  
Portland, Oregon, USA, 97236  
Fax: (503) 762-0289

e-mail: [rareplantr@aol.com](mailto:rareplantr@aol.com)

If you thought the only *Bursera* species available were *Bursera fagaroides* or *B. microphylla*.....guess what? Burl Mostul has many many species of plants, *Bursera* and otherwise that are probably not grown anywhere else or are in collections for the first time.....the plants I have recieved are many and really nice!

## Out of Africa

Maureen & Mike Massara  
<http://out-of-africa-plants.com>

If you wish to contact us by telephone, our number is (740).625.5790.

We can also be reached by fax at (740).625.5900

E-mail-[outofafrica@ecr.net](mailto:outofafrica@ecr.net)

I have to say, for *Commiphora* species and pretty much any other caudiciform, this is the place to go for diversity and specimen size.....the plants are simply wonderful, and you will pay more for some of these, but they are worth it! Many are larger specimen sized, some are seed grown, but most are field collected.

## Arid Lands Greenhouse

3560 W. Bilby Rd.

Tucson, AZ 85746

Phone (520) 883-9404 Fax (520) 883-8874

I have been dealing with Arid lands for many years and I have to say I love this place. They are unsurpassed in their *Euphorbias* and *Dorstenias*, and always have seed grown plants.....never field collected. I have gotten many wonderful plants over the years from here, and Marilyn is supremely helpful and knowledgeable!