



Frankincense & Myrrh: Gifts of Tree History

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The Winter holidays have many tree related symbols and images. The Christmas tree, frankincense, mistletoe, myrrh, holly berries, and mantle greenery over a wood fireplace all bring fond memories of past times. One symbolic gesture of holidays stretching back to the most ancient of days is giving of precious gifts. In the past there were few gifts as valuable as frankincense and myrrh tree resins.

Frankincense and myrrh are strange words denoting far away places and scents. Immense fortunes and kingdoms rose and fell because of these resins. Both resins came close to home for many Americans as our soldiers walked the roads of Somalia. Although children remember gifts of the Magi, few people know the origin of these resins. Frankincense and myrrh are aromatic resins gathered from dryland trees.

Secret Gifts

Through the ages, frankincense and myrrh have been kingly gifts. Realms in Palestine, Egypt, Greece, Crete, Phoenicia, Rome, Babylon, and Syria were all presented with frankincense and myrrh in tribute. In antiquity, few knew how these luxuries were made, whether they were grown, mined, or distilled. Most especially, gathering and production of myrrh was kept secret for the sake of commerce. The precious qualities of frankincense and myrrh were legendary, and so were their cost.

Since these precious substances were produced in only one place on Earth, the small kingdoms of Southern Arabia held a monopoly on the market and trade routes. The Queen of Sheba was one of the most famous rulers controlling the frankincense and myrrh trade. Caravans headed North were required to follow specific routes into cities where tariffs could be levied. Death penalties were in effect for smugglers and caravans that left main highways.

For more than 5,000 years, the trees of Somalia and Southern Arabia attracted traders and expeditions from all over the known world. These wild scruffy, scrubby trees of dry rocky places have been worked here for more than 100 generations to produce these tree-based resins.

Torchwood

Frankincense and myrrh come from a unique family of plants called the torchwood family, named because of how well the wood and resin burns. There are many species of trees in this part

of the world which produce various types of aromatic resins or gums. Many of these resins are sold as real or false myrrh, frankincense, balm, and balsam. Some real frankincense and myrrh resins are stretched or adulterated with more common resins of poorer quality.

Many common names are used for the same tree species across the region. There is much confusion about which species is which. Historically ancient texts and traditions do not clearly specify or define which resins and which trees species are mentioned. Today, the commercial marketplace usually separates the various types of resins for sale for the knowing buyers, and mixes them all for the unknowing. Only a few tree species generate actual historic frankincense and myrrh.

FRANKINCENSE

Frankincense is both a tree and its product. Frankincense is harvested from several species in the Boswellia genus (Burseraceae family): Boswellia carteri, Boswellia sacra, Boswellia thurifera, and Boswellia frereana. There are approximately 15 species in the Boswellia genus with most generating resin products. The quality of the resins differ greatly. Frankincense has also been called olibanum or libanum in ancient trade. Translated names include Arabic “luban” (milk of the Arabs), and Hebrew “levonah” or “lebonah.” The term frankincense means “free lighting” or “high quality incense.”

Frankincense trees are native to the Southern Arabian peninsula and to Northwest Africa concentrated in the Somalia area. Historically frankincense came from the lands and trade routes of the Kingdom of Saba in Southwestern Arabia (i.e. once ruled by the Queen of Sheba).

Tree Form

Frankincense is a small tree reaching 35 feet in height and 10 inches in diameter. It grows along old dry waterways on arid, rocky ground. The single stems are crooked with branches clustered near the top. Wood is heavy, hard and durable, and used locally for small items. These trees have a papery, peeling periderm (outer bark) with a rust colored secondary cortex (inner bark).

Leaves are long and odd-pinnately compound with 7-9 glossy bright green, small-toothed, wavy-edged leaflets. Leaves tend to grow clustered at twig tips. Flowers are star-shaped and pinkish in color with light yellow centers and five petals. Fruit is a dry capsule.

Resin Harvest

To extract gum resin from the trees, periderm is incised with an oval shaped wound. The thin periderm is peeled back and scared repeatedly to induce the flow of resin. Resin oozes to the surface in small white drips and droplets. The pearl-like drops have been called “tears of the sun.” These white droplets at first have the consistency of sweetened condensed milk. As the resin dries, it changes from a milky white to translucent, light amber colored, hard droplets.

Frankincense resin is easily damaged by rain so it is harvested only in the dry season. To begin the harvest, trees are wounded in November and December with harvest beginning 2-3 weeks

later. Upon wounding resin begins to ooze out onto the surface. Frankincense resin is composed of many chemicals including >20 different monoterpenes and >28 sesquiterpenes volatiles.

The first two scrapings are considered inferior, and are sold as such. The next scrapings are considered the best quality yielding a pure white resin. Later scrapings generate resins with spots of yellow and red, and is again considered of less quality. Frankincense resin is harvested beginning in December with the peak harvest period in April. All harvest is from native trees, not plantations. After trees are wounded and resin harvested for 5-6 years, they are rested for several years.

Ritual

Frankincense is probably best known for burning as an incense and as a fumigant. In the Old Testament, frankincense was used in carefully controlled mixtures with other resins for purification of the temple. Christians started using incense about 1,700 years ago in religious services. Early friars of Europe stated it helped cover the smell of parishioners. Frankincense is still used in many religious services including Roman Catholic, Coptic, and Orthodox Christian rites.

Usually frankincense is mixed with other resins for burning. For example, one ritual required frankincense as one of four materials mixed in equal parts, plus salt added as a preservative and desiccant. In other rituals more compounds were required to be mixed with frankincense including a total of 7 or 13 different materials. Today, a common proportion burnt in religious services is about 66% frankincense.

Production

Peak years of the ancient frankincense trade was 1,900 years ago when more than 3,000 tons per year were being shipped to the far reaches of the Roman Empire. Romans and Greeks burned huge volumes during ceremonies. Multiple tons were recorded burned in a single lavish public ceremony in Rome.

Frankincense is burned as an incense, and used medicinally as smoke, soot, and in its raw form. Frankincense has been used for cosmetics and medicines. Both ancient and modern perfumes use frankincense in the form of an extract, powder, or oil. Ashes of burned frankincense were used as cosmetics, primarily eye-shadow.

Frankincense has some antiseptic and anti-inflammatory properties, and was used over 2,000 years ago for treating wounds, skin sores, bleeding and as an unsuccessful antidote for hemlock poisoning. Today practitioners of aromatherapy still use frankincense.

The current annual world production of frankincense is about 1,000 tons. Most of this product comes from Somalia where it is estimated ~10,000 families are involved in the gathering. Some frankincense is also gathered in Southern Arabia. The United States imports approximately 10 tons per year for perfume and cosmetics (religious uses are not included here).

MYRRH

Myrrh is both a tree and a product. The myrrh of history and present day commerce comes from several species of Commiphora: Commiphora kataf (myrrh); Commiphora myrrha (myrrh, oil of myrrh,

stacte); Commiphora molmol (myrrh); and, Commiphora habessinica (Abyssinian myrrh, true myrrh). There are approximately 200 other species of Commiphora, all in the Burseraceae family. In historical documents and religious texts, the Hebrew word “mor” is translated as myrrh, although the precise species can not be determined.

Tree Form

Myrrh is a small tree or large shrub up to 10 feet in height. These trees have short open trunks, low branches, and thick stout twigs. Trees appear scrubby, stiff-branched, spiny, and thorny with pointed twig tips. The stem and larger branches have a light grey colored periderm which is thin, papery, and flaky. It peels easily, revealing a greenish secondary cortex (inner bark). There are many resin canals in the periderm which ooze gum resin when cut.

Leaves are small and alternatively attached to twigs. Leaves are compound with three small leaflets (trifoliate). Leaves have one large terminal leaflet and two much smaller side leaflets. Leaves are clustered in clumps. Leaflets are broad near their tip narrowing to the base (obovate). Leaflet margins are wavy. Flowers are small white-colored with four petals. Fruit is a small plum-like fleshy drupe.

Growth Zone

Myrrh grows along the Red Sea coast and is native to Somalia and Yemen. Over time the tree has been planted farther afield in Yemen, Omar, Somalia, Ethiopia, and Sudan. It is easily reproduced by cuttings and can be transplanted, but is seldom found in a commercial plantation setting. Myrrh grows in scrubby thickets of several large shrubs in rocky places and brush lands under semi-arid to arid conditions. Inferior myrrh or false-myrrh trees can be found growing across many dry areas from Africa to India.

Resin Harvesting

Trees are induced to ooze gum resin by making deep slanted incisions in thin periderm (outer bark). The newly exuded resin is clear yellow-brown in color. It quickly hardens and oxidizes to be reddish in color. True myrrh clumps have a crumbly, dark red interior with a whitish powdery exterior. The best myrrh has little scent and no oily texture. False, low quality, or adulterated myrrh is black inside clumps, with an oily look and a strong aromatic scent at room temperature.

The hardened resin is scrapped off the wound site in clumps and chunks. The best myrrh is gathered from a large area of the Southern Arabian peninsula, Somalia, and Ethiopia in interior uplands away from the sea. Poorer quality resins are taken from maritime trees. Myrrh did not keep well on long voyages in its natural form. To assure a valuable product at the final point of sale, the oil or liquid component of myrrh was distilled, or heated and pressed, from solid parts of myrrh resin. The liquid was then known as stacte or oil of myrrh. This concentrated liquid extract was extremely valuable.

Production

While frankincense was commonly used by middle and upper-class homes and in religious ceremonies, myrrh remained a special substance reserved for special uses and the most elite people and institutions. Myrrh was used by physicians in medicines and cosmetics, and for embalming.

The current annual world production is about 500 tons. Myrrh brings twice the price of frankincense. Today myrrh is used in some cosmetics and flavorings. It is used in natural medicines, cosmetics, perfumes, aromatherapy, toiletries, and associated with traditional embalming. Myrrh is not burnt as a resin, but dissolved, concentrated, and purified.

CONCLUSIONS

In today's world, use of real frankincense and myrrh has declined. Religious uses and cosmetics still require small amounts. Today old trees are being cut for firewood and damaged by over-grazing. Frankincense and myrrh gatherers are generally old men and small family units who receive less than 10% of the final market price per pound for the tree resin. The oil industry and other trades have enticed young people away from the resin trees where they grow.

Now markets are flooded with many cheaper resins and synthetics. Other more worldly products are being traded along the old frankincense and myrrh caravan routes. Secrets of the resin trade, and trees of the Southern Red Sea area still enrich our holiday traditions. Most of the people who worked these "trees of gold" are now but dust and history. A faint smell of burning incense lingers.

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